



Stakeholder Meetings Restoration Project Viewer and Water Supply Forecast Tracking Tool

Presented by:

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Presented to:

Klamath Basin Stakeholders
Klamath Falls, Oregon

Presented on behalf of:

Klamath County
Klamath Falls, Oregon

Document Guiding DSS Development

Submitted to:

Klamath County, Oregon



**Klamath
County**

**Klamath Basin Information Portal
Draft Functional/Technical Requirements
Document**

January 2009

Submitted by:



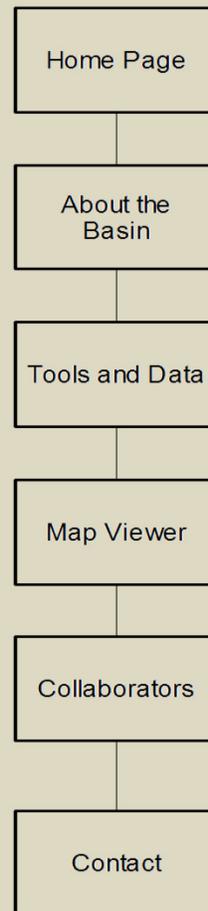
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Maple Grove, Minnesota 55369

In Association With

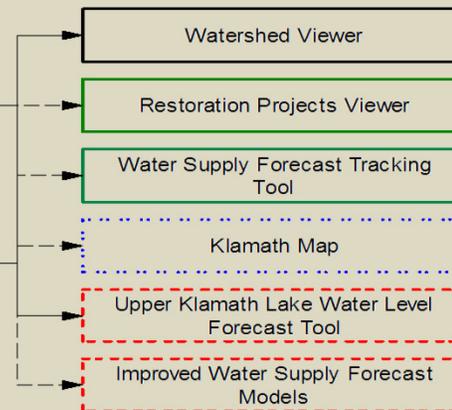
Dan Keppen and Associates, Inc.
P.O. Box 216
Klamath Falls, Oregon 97601

DSS Framework and Status

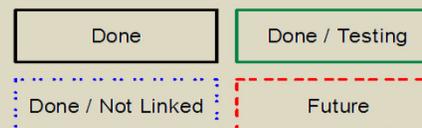
Web Page



Web Applications and Tools



legend



Klamath Map - Windows Internet Explorer

http://klamathcounty.houstoneng.com/

File Edit View Favorites Tools Help

Watershed Viewer Klamath Map

Klamath County Klamath Map

Home Help

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Jump To: [Dropdown]

Map Layers Information

- Taxlot Layers
 - MTL Labels
 - Owner Labels
 - Taxlots
 - Townships
 - Sections
- District Layers
 - Vector Districts
 - Livestock Districts
 - Fire Protection Districts
 - Zipcode
- Boundary Layers
 - County Boundary
 - Voter Precincts
 - Cities
 - Communitis
 - County Urban Growth Boundary
 - Air Quality Zone Boundary
 - Klamath Falls Wards
 - Zoning
 - Railroad
 - Federal Lands
- School Layers
 - Schools
 - High School Districts
 - Middle School Districts
 - Elementary School Districts
- Reference Layers
 - Centerlines
 - Rivers
 - Water
- Basemaps
 - Google Street
 - Google Terrain
 - Google Hybrid
 - Google Satellite

Lat, Lon: 0.000, 0.000 USNG: 31NAA660000 Scale: 1:1733376

Developed by HOUSTON ENGINEERING

http://klamathcounty.houstoneng.com

- HEi Hosting
- Hosting and maintenance contract in place
- County updating layers

Demonstration Goals

- Concept refresher
- Activities completed since last meeting
- Technical challenges encountered
- Demonstrate beta version of application
- Present ideas for completion / feedback
- Obtain comments / direction for completing application

County Commissioner Meeting

- Klamath Map Demonstration
- Water Supply Tracking Tool Demonstration
- Restoration Project Viewer Demonstration
- Discuss Next Steps

Current NRCS Forecast Products

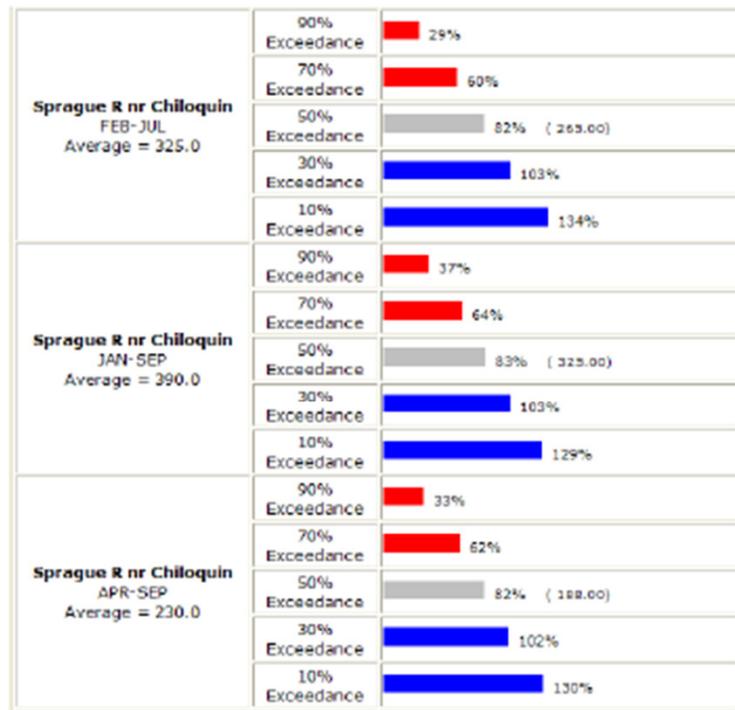
Streamflow Forecasts

KLAMATH BASIN							
Streamflow Forecasts - March 1, 2008							
<==== Drier === Future Conditions === Wetter =====>							
Forecast Pt							
Chance of Exceeding * =====							
Forecast	90%	70%	50% (Most Prob)	30%	10%	30 Yr Avg	
Period	(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	(1000AF)
Clear Lake Inflow (2)							
MAR-JUL	39	72	94	118	116	149	80
APR-SEP	23	40	52	108	64	81	48
Gerber Reservoir Inflow (2)							
MAR-JUL	16.0	29	38	103	47	60	37
APR-SEP	4.5	12.6	18.0	101	23	31	17.8
Sprague R. nr Chiloquin							
MAR-JUL	188	240	275	100	310	360	275
MAR-SEP	215	270	305	100	340	395	305
APR-SEP	161	200	230	100	260	300	230
Upper Klamath Lake Inflow (1,2)							
MAR-JUL	410	545	605	97	665	800	625
MAR-SEP	490	635	700	97	765	910	720
APR-SEP	355	455	500	97	545	645	515
Williamson R. bl Sprague R. nr Chiloquin							
MAR-JUL	320	385	430	98	475	540	440
MAR-SEP	375	445	490	97	535	605	505
APR-SEP	285	340	375	97	410	465	385

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

(1) - The value listed under the 10% and 90% Change of Exceeding are actually 5% and 95% exceedance levels.

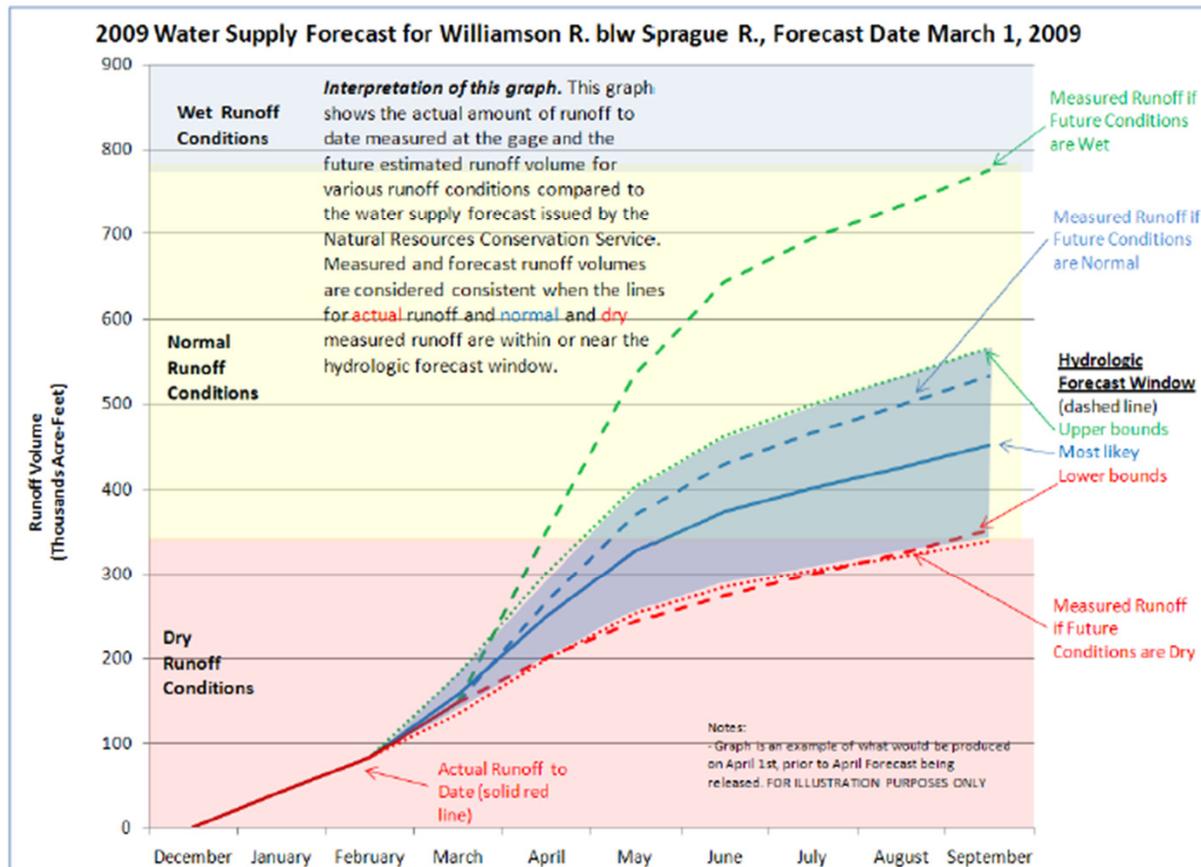
(2) - The value is natural flow - actual flow may be affected by upstream water management.



Water supply forecasts are issued by the Natural Resources Conservation Service monthly beginning in January and ending in June of each year.

Our Original Concept

Graphical Summary No. 2 (Water Supply Forecast Tracking Tool) – Comparison of Water Supply Forecast to Measured Amount of Water



Our Evolved WSFTT Concept

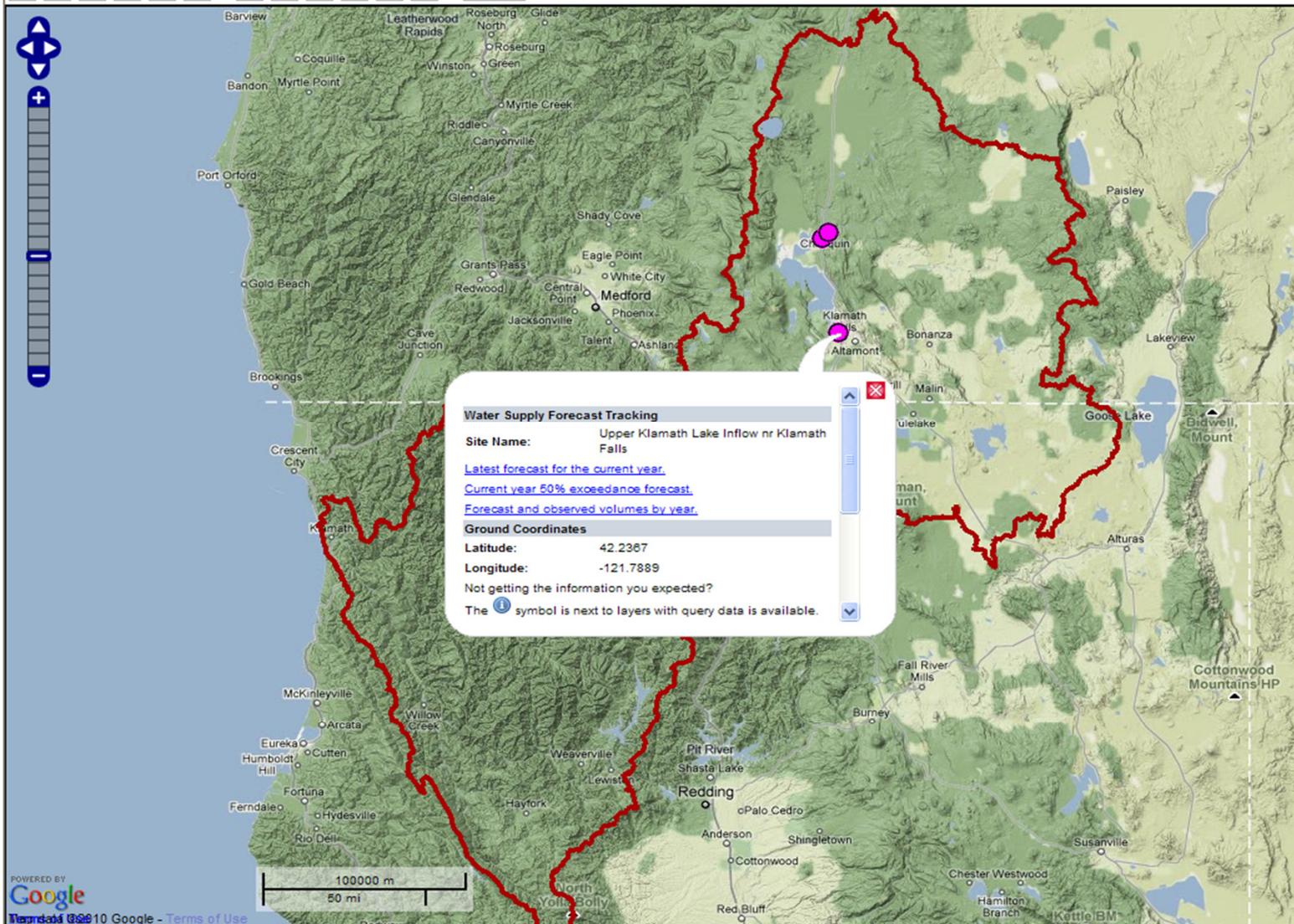
- Understand how seasonal forecast volume is revised during a water year
- Compare historic seasonal forecast volumes (from NRCS) to actual runoff volumes (from USGS/BoR)
- Provide indication of the timing of future water supply based on the seasonal forecast volume
- Retrieve historic forecasts
- Access real-time data (through WatershedViewer)

WSFTT Facts

- Daily download of stream flow and reservoir stages from agency ftp locations automated
- Downloaded data stored in database
- Calculations fully programmed
- Graphs use free Fusion Charts
- Little maintenance needed if
 - Agency data locations remain unchanged
 - Data storage format remains unchanged
- Using typical streamflow patterns to estimate future volumes
- Can access through Watershed Viewer OR tools page

Klamath Basin DSS Watershed Viewer

Home Layer Information Disclaimer Help



Water Supply Forecast Tracking

Site Name: Upper Klamath Lake Inflow nr Klamath Falls

[Latest forecast for the current year.](#)

[Current year 50% exceedance forecast.](#)

[Forecast and observed volumes by year.](#)

Ground Coordinates

Latitude: 42.2367

Longitude: -121.7889

Not getting the information you expected?

The symbol is next to layers with query data is available.

Zoom To [v]

Map Layers | Information

- Water and Weather Observations
- Water Forecasts
 - Forecast Tracking Sites
 - Water Supply Forecast Sites
- Water Rights and Claims
- Water Features
- Landscape Physical Features
- Water Management Features
- Land Management and Ownership
- Basemaps
 - Google Terrain
 - Google Street
 - Google Hybrid
 - Google Satellite
 - Printable Basemap
 - Oregon Orthos
 - USGS DOQs
 - USGS Topo Quads



GeoMOOSE 2.0 Lat, Lon: 42.237, -121.789 Scale: 1:1733376

WSFTT – Four Charting Tools

Home

About the Basin

Tools and Data

Map Viewers

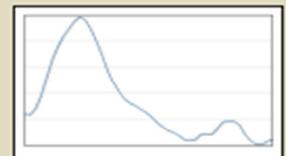
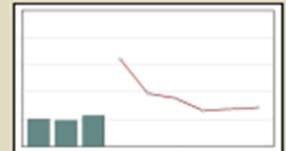
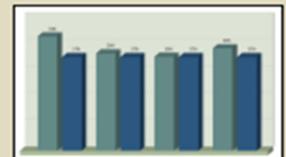
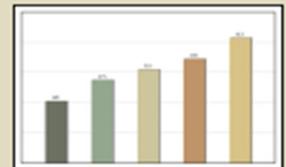
Collaborators

Contact

Water Supply Forecast Tracking Tool (WSFTT)

Water supply forecasts are issued by the Natural Resources Conservation Service (NRCS), National Water and Climate Center. The forecasts are issued beginning in January of each year at the first of the month for the water supply season (through September). These forecasts are based upon multiple linear regression models using measured information at various locations throughout the Klamath Basin. The purpose of the WSFTT is to integrate forecast information issued by the NRCS and measured streamflow information, usually collected by the United States Geological Survey (USGS), as a qualitative assessment of the forecast information.

- **Upper Klamath Lake near Klamath Falls, Oregon**
 - Latest forecast for the current year
 - Current year 50-percent exceedance forecast
- **Williamson River below Sprague River near Chiloquin, Oregon**
 - Latest forecast for the current year
 - Current year 50-percent exceedance forecast
 - Forecast and observed volumes by year
- **Sprague River near Chiloquin, Oregon**
 - Latest forecast for the current year
 - Current year 50-percent exceedance forecast
 - Forecast and observed volumes by year
- **Daily Hydrologic Data Charts**
 - Upper Klamath near Klamath Falls, Oregon Lake Elevations
 - Streamflow rates, Sprague River near Chiloquin, Oregon
 - Williamson River below Sprague River near Chiloquin, Oregon streamflow rates



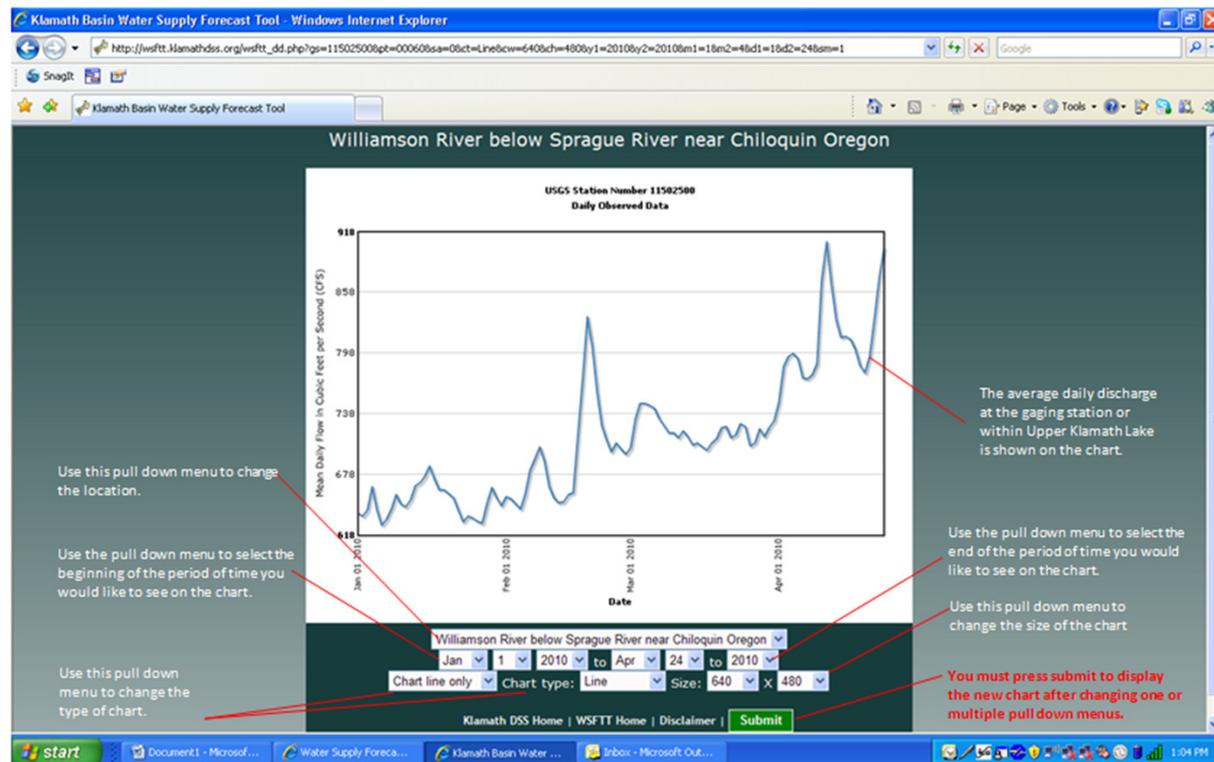
Select a link or image to create a chart in a new tab or window.

[View a PDF Document](#) with details of this application and each of the various tools.

<http://wsftt.klamathdss.org/>

Real-Time Data

Charting Tool No. 4 -- Show Real-time Observed (Measured) Runoff Volumes and Lake Levels. The "value" of Charting Tool No. 4 is the ability to view the measured daily runoff volume or lake elevation on a real-time basis, without having to leave the Klamath DSS. Charting Tool No. 4 provides access to the daily stream flow (current and historic) measured at select U.S. Geological Survey gages and the water level of Upper Klamath Lake. Presently only select gages are available for charting. The average daily stream flow is updated automatically at the end of each day by the charting tool. These are the same data that can be accessed through the U.S. Geological Survey NWIS and Bureau of Reclamation Hydromet sites.



Current & Historic Seasonal Forecast Volume

Charting Tool No. 1 – Accessing Current and Historic Seasonal Water Supply Forecasts. *The “value” of Charting Tool No. 1 is the ability to compare the current seasonal water supply forecast volume issued by the National Water and Climate Center of the Natural Resource Conservation Service to previous years including years of drought like 2001 by toggling between years using the pull down menu (see below).* Charting Tool No. 1 provides access to current and historic seasonal water supply forecasts issued by the National Water and Climate Center of the Natural Resource Conservation Service. The information presented is the same probability charts as presented by the Natural Resources Conservation Service (http://www.wcc.nrcs.usda.gov/cgibin/strm_chrt.pl...). The advantage of Charting Tool No. 1 is that multiple probability charts can be displayed on the same chart and comparison between years is possible.

Klamath Basin Water Supply Forecast Tool - Windows Internet Explorer

http://wsftt.klamathdss.org/wsftt_ve.php

Upper Klamath Lake near Klamath Falls Oregon

USGS Station Number 11507001
April to September Forecast Volumes - Last issued forecast for 2010

Exceedance Frequency in Percent	Volume in Thousand Acre Feet
95	205
70	275
50	310
30	345
05	415

Use this pull down menu to change the forecast location.

Select the range of years for the seasonal water supply forecast. You can display the seasonal forecast for more than one year on the same graph. Use the pull down menu to select the year to begin and end.

Use this pull down menu to change the type of chart.

Use the pull down menu to select the period for the seasonal water supply (probabilistic) forecast.

Press to see the available seasonal water supply forecast periods.

You must press submit to display the new chart after changing one or multiple pull down menus

Use this pull down menu to change the forecast location.

This is the forecast volume for the season you selected.

This is the likelihood or chance of receiving the amount (415,000 acre-feet) or a greater amount of water.

Use the pull down menu to select the period for the seasonal water supply (probabilistic) forecast.

Press to see the available seasonal water supply forecast periods.

You must press submit to display the new chart after changing one or multiple pull down menus

Upper Klamath Lake near Klamath Falls Oregon | April to September

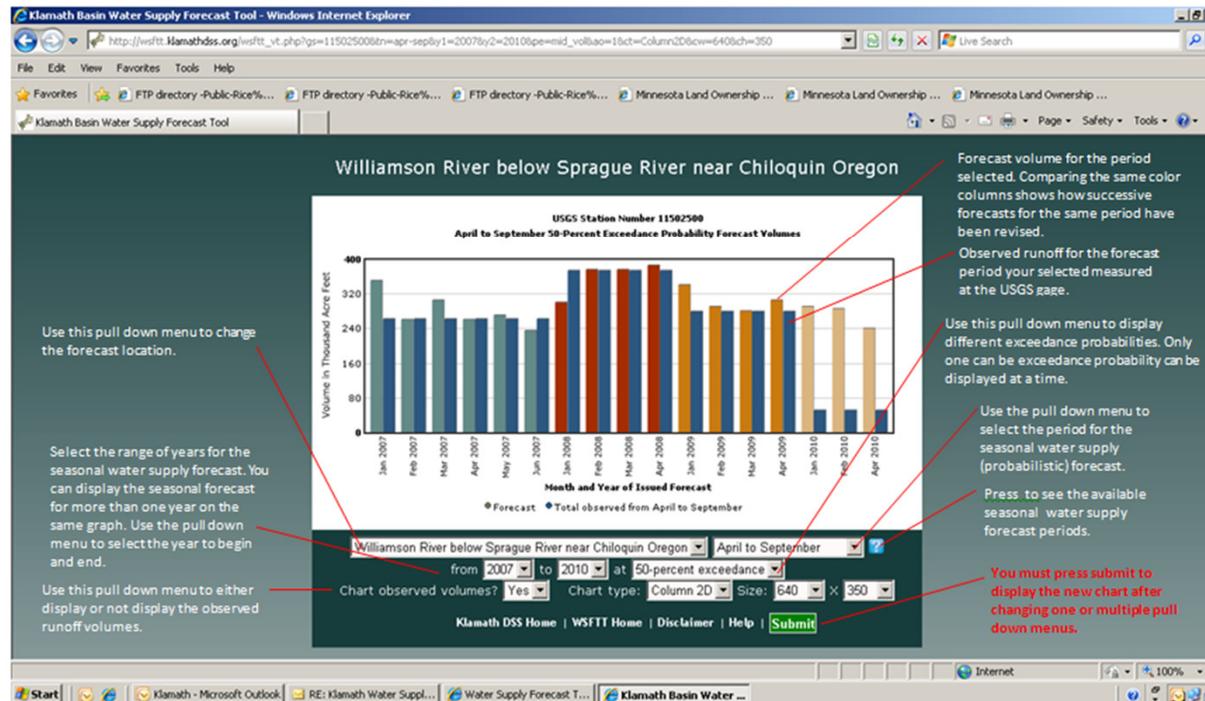
from 2010 to 2010 using Last Forecast of Year

Chart type: Column 2D | Size: 640 X 480

Klamath DSS Home | WSFTT Home | Disclaimer | Help | Submit

Compare Actual and Forecast Volumes

Charting Tool No. 2 – Compare Seasonal Water Supply Forecast Volumes and Observed (Measured) Runoff Volumes for the Same Period. *The “value” of Charting Tool No. 2 is the ability to compare the volume of water actually measured in the river at a location, to the amount that was forecast for the same period of time by the National Water and Climate Center of the Natural Resource Conservation Service. You can also use this tool to compare which probabilistic forecast has “best” matched the measured runoff volume.* Charting Tool No. 2 is available for three locations; 1) Upper Klamath Lake; 2) the Williamson River below the Sprague River; and 3) the Sprague River at Chiloquin, Oregon. Observed runoff volumes are actual volumes measured by the U.S. Geological Survey and are lacking for Upper Klamath Lake because there is no stream flow measurement at this location. This charting tool allows the user to compare the seasonal water supply forecasts for different periods to the measured runoff volumes for the same period, giving a relative sense of the accuracy of the seasonal water supply forecasts. Multiple seasonal water supply forecasts are issued for the same period each year. Forecasts are issued near the beginning of each month by the National Water and Climate Center. Observed flows are automatically computed from the U.S. Geological Survey gaging information at the end of each month from the daily values.



Williamson River below Sprague River near Chiloquin Oregon

USGS Station Number 11592500
April to September 50 Percent Exceedance Probability Forecast Volumes

Volume in Thousand Acre Feet

Month and Year of Issued Forecast

Forecast Total observed from April to September

Williamson River below Sprague River near Chiloquin Oregon | April to September

from 2007 to 2010 at 50-percent exceedance

Chart observed volumes? Yes Chart type: Column 2D Size: 640 X 350

Klamath DSS Home | WSFTT Home | Disclaimer | Help | **Submit**

Use this pull down menu to change the forecast location.

Select the range of years for the seasonal water supply forecast. You can display the seasonal forecast for more than one year on the same graph. Use the pull down menu to select the year to begin and end.

Use this pull down menu to either display or not display the observed runoff volumes.

Forecast volume for the period selected. Comparing the same color columns shows how successive forecasts for the same period have been revised.

Observed runoff for the forecast period your selected measured at the USGS gage.

Use this pull down menu to display different exceedance probabilities. Only one can be exceedance probability can be displayed at a time.

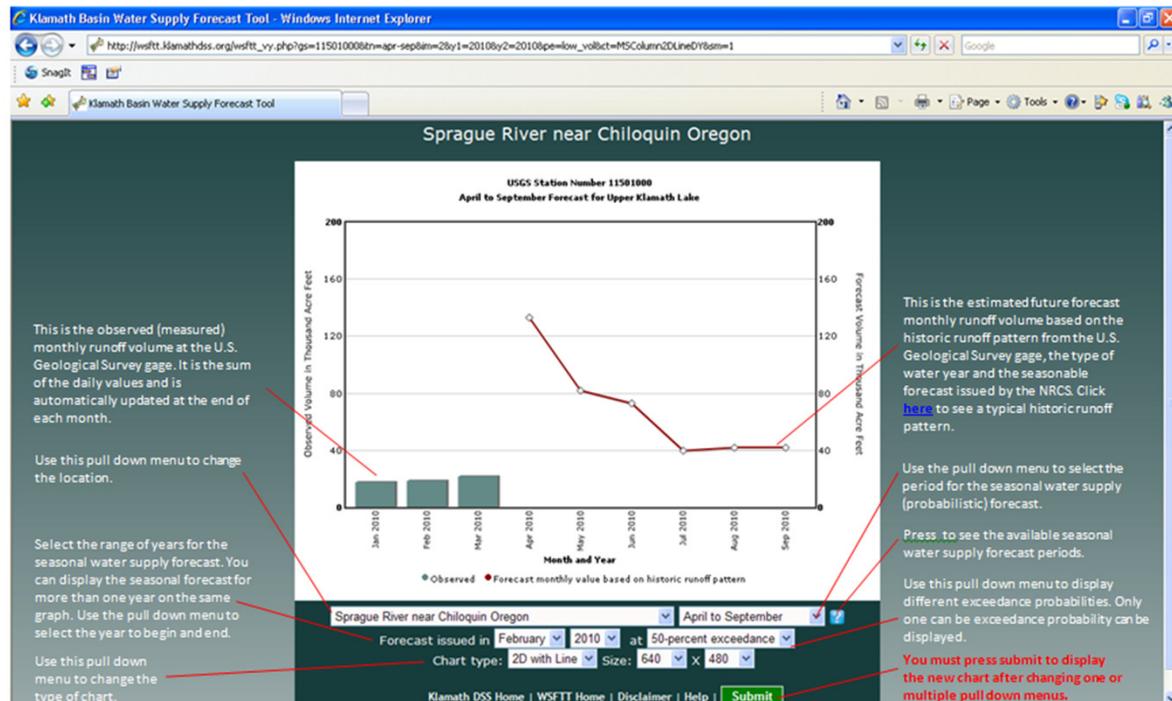
Use the pull down menu to select the period for the seasonal water supply (probabilistic) forecast.

Press to see the available seasonal water supply forecast periods.

You must press submit to display the new chart after changing one or multiple pull down menus.

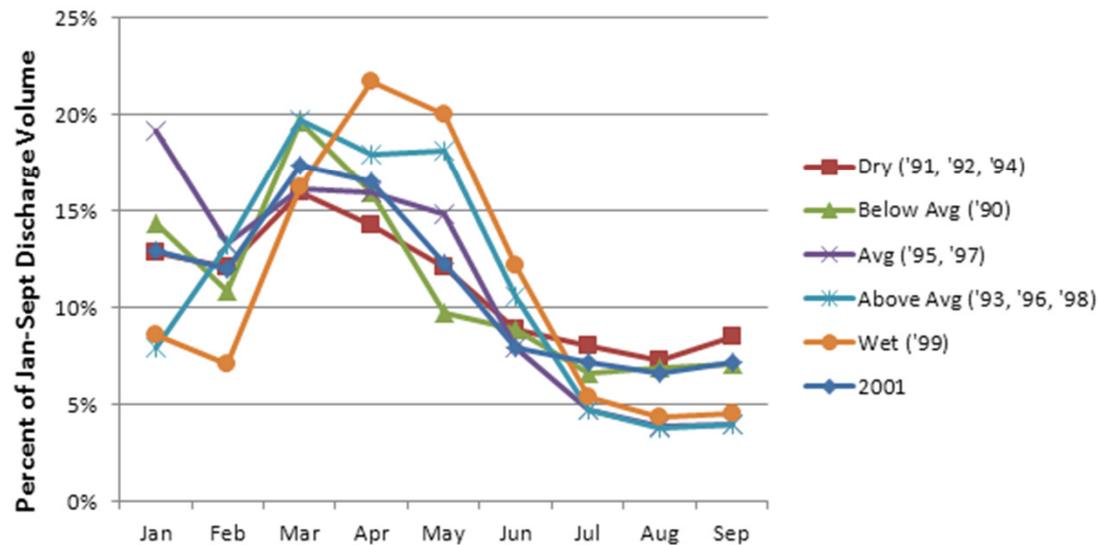
Estimated Timing of Future Forecast Volume

Charting Tool No. 3 – Estimate Future Monthly Runoff Volume using the Seasonal Water Supply Forecast Volume and Observed Runoff Volumes. *The “value” of Charting Tool No. 3 is the ability to view the actual measured monthly runoff volume to date at a location and to obtain a qualitative sense of the possible future monthly volume, assuming the amount of runoff is equal to the forecast volume and the pattern of runoff is similar to previous years and hydrologic conditions.* Charting Tool No. 3 provides information to the user about the probable (future) monthly runoff volume. The probable monthly runoff volume is estimated using two pieces of information: 1) the seasonal water supply forecast issued by the National Water and Climate Center of the Natural Resource Conservation Service; and 2) the pattern of monthly runoff volumes for differing types of hydrologic years (e.g., a dry year) observed at a U.S. Geological Survey gage location. The total seasonal water supply forecast volume is apportioned to each month based on the historic monthly runoff pattern from the U.S. Geological Survey gage. The charting tool automatically adjusts the shape of the historic monthly runoff pattern depending upon the type of water year. The shape is flatter for dry years and more peaked for wet years. Classification of the water year type is the same as described in the 2008 Operating Plan for the Klamath Project. The charting tool automatically updates the observed runoff volume measured at the U.S. Geological Survey Gage, using the interim daily discharge estimates.



Timing of Volume

Historic Runoff Patterns
Williamson River below Sprague River
USGS Gage Station: 11502500



Historic runoff patterns. This chart shows the historic runoff patterns for various water year types for the Williamson River below the Sprague River. These distributions are used to apportion the seasonal water supply forecast to the future months for Charting Tool No. 3. The values used for a water year type are the average of the years shown. The year 2001 is shown for comparison purposes.

Items to Consider

- “Accuracy” of forecast volumes
- Forecast volume apportioned according to gage
- Close to answering questions
 - Compare real-time flow to BIOP
 - Compare real-time UKL lake levels to BIOP
 - Understand water availability for decisions
- Maintenance

Finalizing the WSFTT

- Stakeholder feedback
- Revise given limitations (vision challenge)
- Public release (county approval)

UKL Water Level Forecasts

DECISION SUPPORT SYSTEM Water Supply Forecasting POINT PAPER Houston Engineering, Inc

SUBJECT: Enhanced Water Supply Forecasting – A Concept

REFERENCE: Klamath River Basin, Enhanced Water Supply Forecasting, A Concept (attached – dated November 5, 2009)

DATE: Thursday, November 19, 2009

BACKGROUND: The County Board of Commissioners recently funded the initial development and deployment of several web-based tools. These include Klamath Map and the Klamath Basin Decision Support System (DSS). The Klamath Basin DSS includes specific applications related to accessing water and resource related information (“Watershed Viewer”), accessing and sharing information about restoration projects in the Klamath Basin (“Restoration Viewer”) and most recently a tool coined the Water Supply Forecast Tracking Tool (WSFTT). The WSFTT allows the comparison of forecast water supplies to measured water supplies at forecast locations within the Basin. Most recently, Houston Engineering Inc. is working on these efforts and is presenting a concept to improve the water supply forecast methods being used in the Klamath Basin. These tools may be accessed through the prototype web site www.klamathdss.org.

THE CONCEPT: The attached concept is comprised of multiple phases intended to result in the development and deployment of new water supply forecast methods and techniques within the Basin. In order for the concept to be successfully implemented, it must include those state and federal agencies currently responsible for issuing forecasts and managing resources in the basin. The concept is being presented for discussion purposes only, consistent with the vision established the County Board of using the Klamath Basin DSS as a demonstration application to improve data sharing and resources in the Klamath Basin.

COUNTY ROLE: Klamath County has provided the foundation and stimulus for developing and implementing improved tools for addressing water and resource issues in the Klamath Basin. The most probable role of the County is not as primary funding entity, but to use the investment in the current DSS as a starting point, to encourage the implementation of this concept at the federal level. The implementation of this concept can only successfully occur in cooperation with and through the federal agencies responsible for water supply forecasting within the Klamath Basin. Expectations are that the County would serve in an advisory role. The County may wish to continue to retain technical resources to stimulate the development of select portions of the concept, provided external funding is available.

FUNDING: No funding commitment is being requested. Assuming concurrence of the concept among the potential participants, grant applications would need to be prepared, and used to fund implementation of the concept.

DISCUSSION: The primary issues for discussion are whether to support the proposed concept.

RECOMMENDATION:

1. Support the proposed concept.
2. Work with other local organizations (e.g., KWAPA) to encourage the concept.

PRELIMINARY – FOR DISCUSSION PURPOSES



WHITE PAPER FOR IMPLEMENTING

ENHANCED WATER SUPPLY FORECASTING AND WATER MANAGEMENT TOOLS - A CONCEPT

PREPARED BY

HOUSTON ENGINEERING, INC.
SUITE 140, 6901 EAST FISH LAKE ROAD
MAPLE GROVE, MINNESOTA 55369

AND

DAN KEPPEN, P.E.
DAN KEPPEN AND ASSOCIATES
P.O. Box 216
KLAMATH FALLS, OREGON 97601

CONCEPT SUPPORTED BY

KLAMATH COUNTY BOARD OF COMMISSIONERS
KLAMATH WATER AND POWER AUTHORITY
KLAMATH WATER USERS ASSOCIATION
KLAMATH IRRIGATION DISTRICT

FEBRUARY 19, 2010

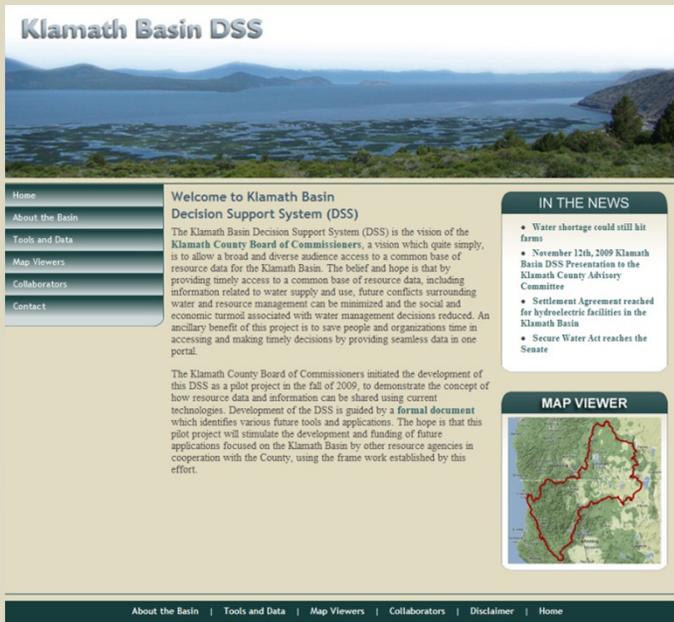
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Synergistic Activities

Klamath Basin DSS



Klamath Basin DSS

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Welcome to Klamath Basin Decision Support System (DSS)

The Klamath Basin Decision Support System (DSS) is the vision of the Klamath County Board of Commissioners, a vision which quite simply, is to allow a broad and diverse audience access to a common base of resource data for the Klamath Basin. The belief and hope is that by providing timely access to a common base of resource data, including information related to water supply and use, future conflicts surrounding water and resource management can be minimized and the social and economic turmoil associated with water management decisions reduced. An ancillary benefit of this project is to save people and organizations time in accessing and making timely decisions by providing seamless data in one portal.

The Klamath County Board of Commissioners initiated the development of this DSS as a pilot project in the fall of 2009, to demonstrate the concept of how resource data and information can be shared using current technologies. Development of the DSS is guided by a formal document which identifies various future tools and applications. The hope is that this pilot project will stimulate the development and funding of future applications focused on the Klamath Basin by other resource agencies in cooperation with the County, using the frame work established by this effort.

IN THE NEWS

- Water shortage could still hit farms
- November 12th, 2009 Klamath Basin DSS Presentation to the Klamath County Advisory Committee
- Settlement Agreement reached for hydroelectric facilities in the Klamath Basin
- Secure Water Act reaches the Senate

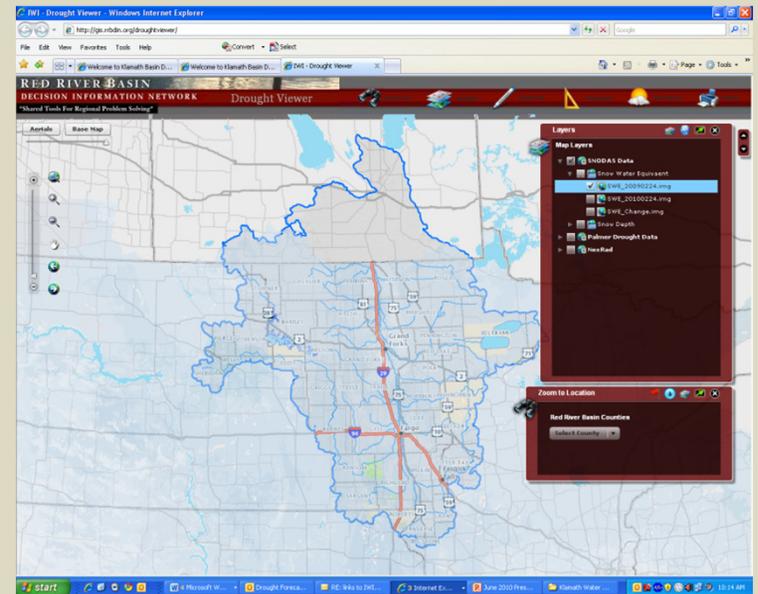
MAP VIEWER



About the Basin | Tools and Data | Map Viewers | Collaborators | Disclaimer | Home



NOAA Regional Drought DSS



NIJ - Drought Viewer - Windows Internet Explorer

http://go.rtdss.org/droughtviewer

File Edit View Favorites Tools Help

RED RIVER BASIN
DECISION INFORMATION NETWORK
Drought Viewer

Map Layers

- ENDGAS Data
- State Water Equipment
- ERIE_200300024 Army
- ERIE_200300024 Army
- ERIE_Change Army
- ERIE_Depth
- Publisher Drought Data
- NewRad

Zoom to Location

Red River Basin Counties

Select County

Real-time products
Model results
Satellite data
Basin water reports

Capitalizing on multiple project allows sharing of products / tools / technologies.

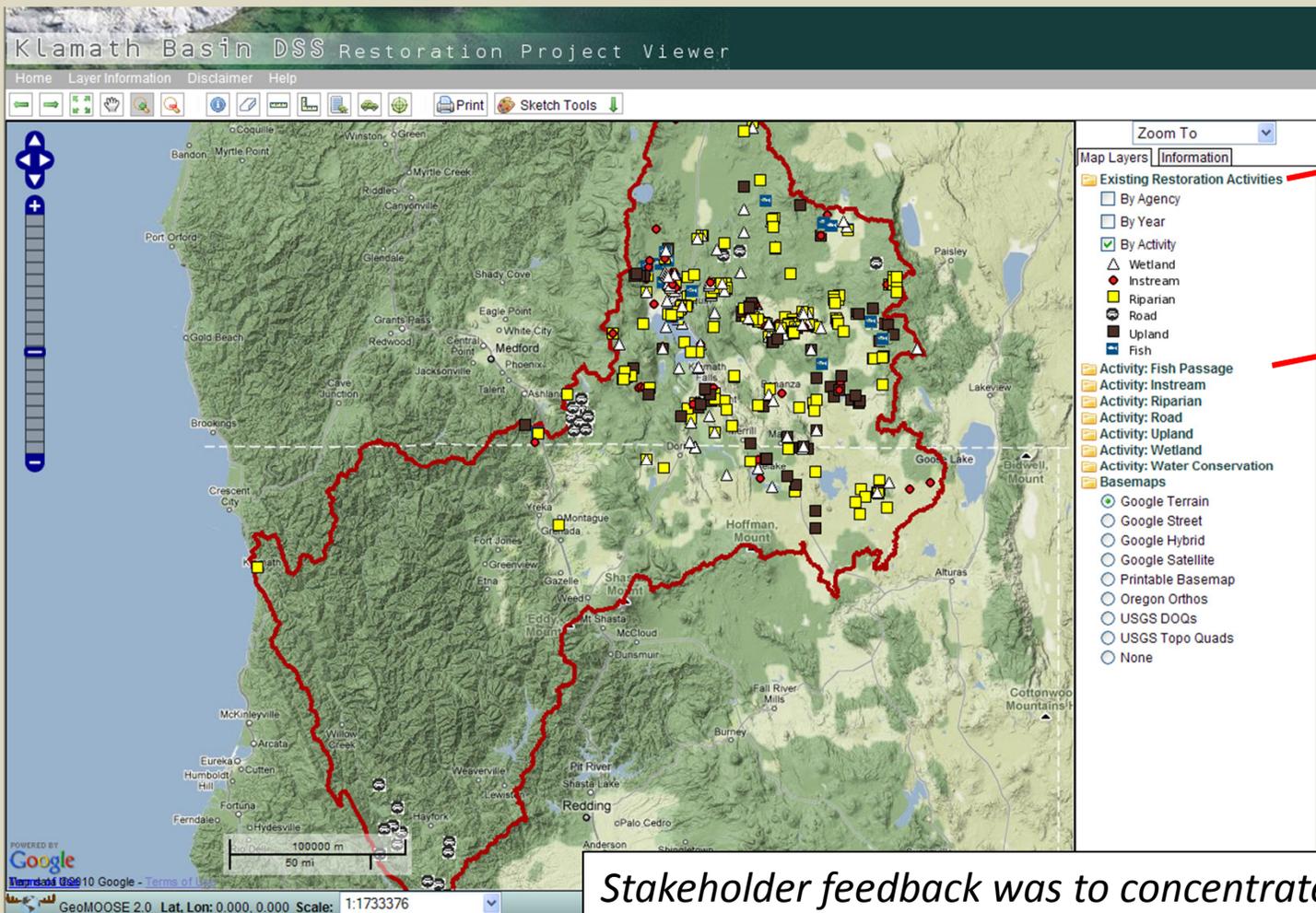
Background

- Continuation of Klamath DSS
- Grant received by Klamath County
 - From Fremont-Winema USFS
- Goal:
 - “Develop and integrate a watershed restoration web application into the existing Klamath Basin DSS”

Original Concept

- Geographic scope (Fremont-Winema National Forest)
 - Potential to expand it to the whole Klamath Watershed
- Portal for searching and viewing restoration activities
 - Interactive map and database
 - Making USFS WIT database accessible to external users
- Integration of external organizations restoration activities
 - Potential stakeholders: USFW, BLM, NRCS, Klamath County, KWP, etc.
 - Tools for entering new activities and projects by external users
- Tools for identifying new restoration sites

Last Time (i.e., November)

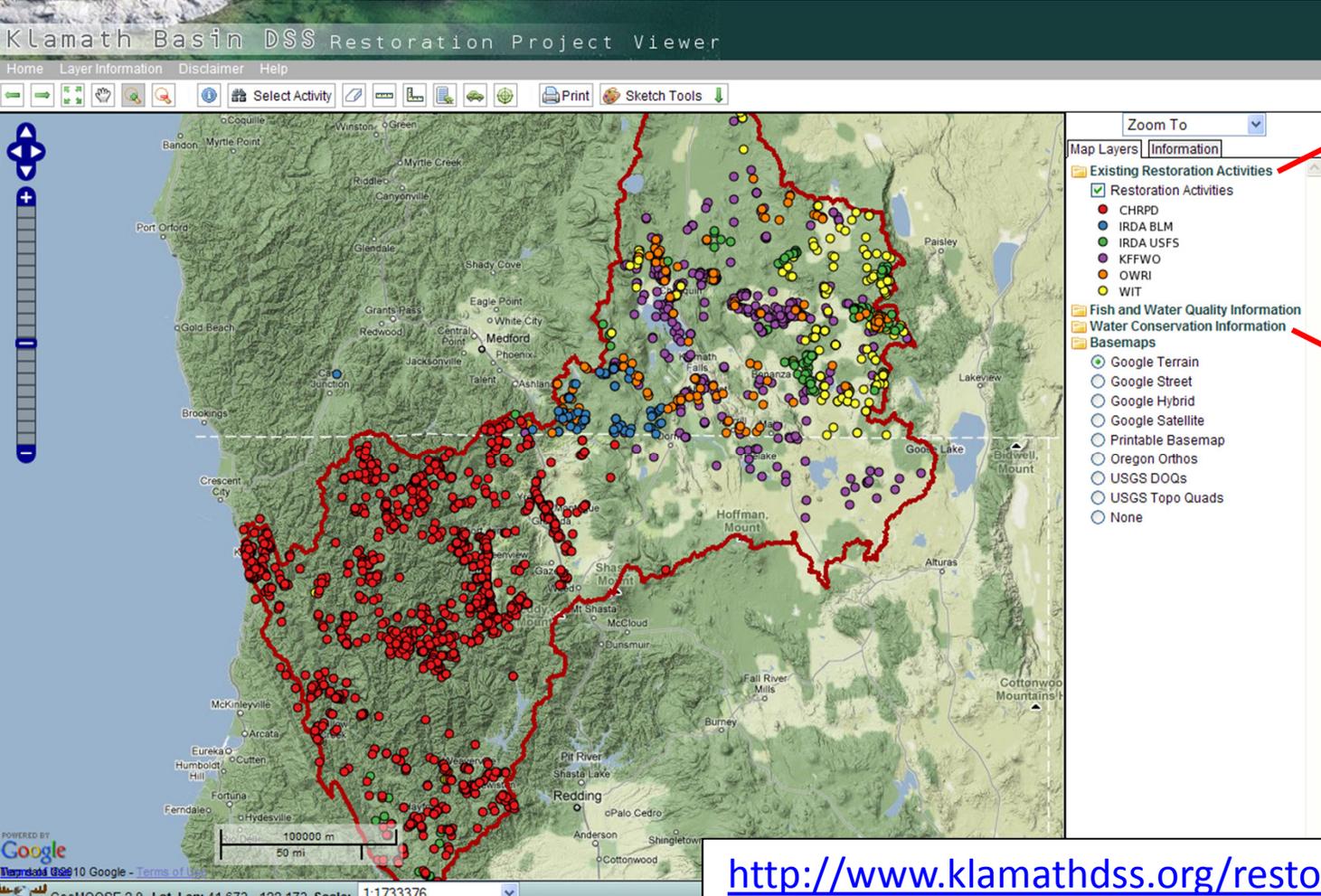


Had 4 databases –
no WIT

Layers by Activity to
highlight “tool”
concepts

Stakeholder feedback was to concentrate on *database* first

Current Viewer



Klamath Basin DSS Restoration Project Viewer

Home Layer Information Disclaimer Help

Select Activity Print Sketch Tools

Zoom To

Map Layers Information

- Existing Restoration Activities
 - Restoration Activities
 - CHRPD
 - IRDA BLM
 - IRDA USFS
 - KFFWO
 - OWRI
 - WIT
- Fish and Water Quality Information
- Water Conservation Information
- Basemaps
 - Google Terrain
 - Google Street
 - Google Hybrid
 - Google Satellite
 - Printable Basemap
 - Oregon Orthos
 - USGS DOQs
 - USGS Topo Quads
 - None

Now have 6 databases – 2,283 sites (previously 890 sites)

Retained fish/water conservation “tool” layers for future potential

<http://www.klamathdss.org/restorationviewer/rv.php>

POWERED BY Google
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GeoMOOSE 2.0 Lat, Lon: 41.673, -122.173 Scale: 1:1733376

Details on Progress

- Added WIT and CHRPD (CA Habitat Restoration Project Database) data
 - Increased Activities in the watershed from 890 to 2,228
- Redesigned common schema based on WIT data
- Created code to automate database compilation process
- Added new query/identify functionality

Schema

ACTIVITY TABLE

- ID (HEI-created)*
- Database
- Activity Site ID
- Project ID
- Activity Site Name
- Local Name
- Activity Site Class
- Activity Type Code
- Site Type Class
- Site Type Code
- Treatment Class
- Treatment Code
- Treatment Description
- Acres Accomplished
- Miles Accomplished
- Stream Miles Accessed

PROJECT TABLE

- ID (HEI-created)*
- Database
- Project Name
- Project Objective
- Admin Code 1
- Admin Name 1
- Admin Code 2
- Admin Name 2
- Admin Code 3
- Admin Name 3
- State

FUNDING TABLE

- ID (HEI-created)*
- Database
- Phase Type Description
- Fiscal Year Implemented
- Total Cost
- Funding Source
- Funding Code
- Funding Code Description
- Amount Funded

AGENCY TABLE

- ID (HEI-created)*
- Database
- Agency

*HEI created ID = "database_" + database unique ID

Fitting the Data to the Schema

HEI Category	WIT	IRDA (USFS)	IRDA (BLM)	OWRI	KFFWO	CHRPD
id	"wit_"+spatial_id	"irda_usfs_" + KEY_ID	"irda_blm"+irda_id	"owri_" + projnum	"kffwo_" + ogc_fid	"chrpd_" + ogc_fid
database	wit	irda_usfs	irda_blm	owri	kffwo	chrpd
activity_site_id	Activity_Site_ID	key_id	act_id	---	---	SITEID
project_id	Project_ID	key_id	irda_id	projnum	er_number	PROJID
activity_site_name	Activity_Site_Name	---	---	---	---	sitename_1
local_name	Local_Name	---	---	---	---	---
activity_site_class	Activity_Site_Class	---	---	---	---	---
activity_type_code	Activity_Type_Code	---	act_activity_type	TreatmentTable.ActivityLUID (<i>get Activity from Activity LUID from Lookup table: ActivityLU</i>)	---	---
site_type_class	Site_Type_Class	---	---	---	habtype	---
site_type_code	Site_Type_Code	---	---	---	---	habcat
treatment_class	Treatment_Class	Activity	---	ActivityCost.ActivityTypeLUID (<i>get Activity Type from ActivityType LUID from Lookup table: ActivityTypeLU</i>)	---	---
treatment_code	Treatment_Code	---	act_activity	---	---	---
treatment_description	Treatment_Description	Treatment	<i>See table for dom_IRDA_activity (p. 27 of "IRDA_Edit Guide")</i>	TreatmentTable.TreatmentLUID (<i>get Treatment from TreatmentLUID from Lookup table: TreatmentLU</i>)	descript	treatments
acres_accomplished	Acres_Accomplished	Acres	act_activity_acres	TreatmentMetricTable.Quantity	---	---
miles_accomplished	Miles_Accomplished	Miles	act_activity_miles	TreatmentMetricTable.Quantity	---	---
stream_miles_accessed	Stream_Miles_Accessed	---	---	---	---	---

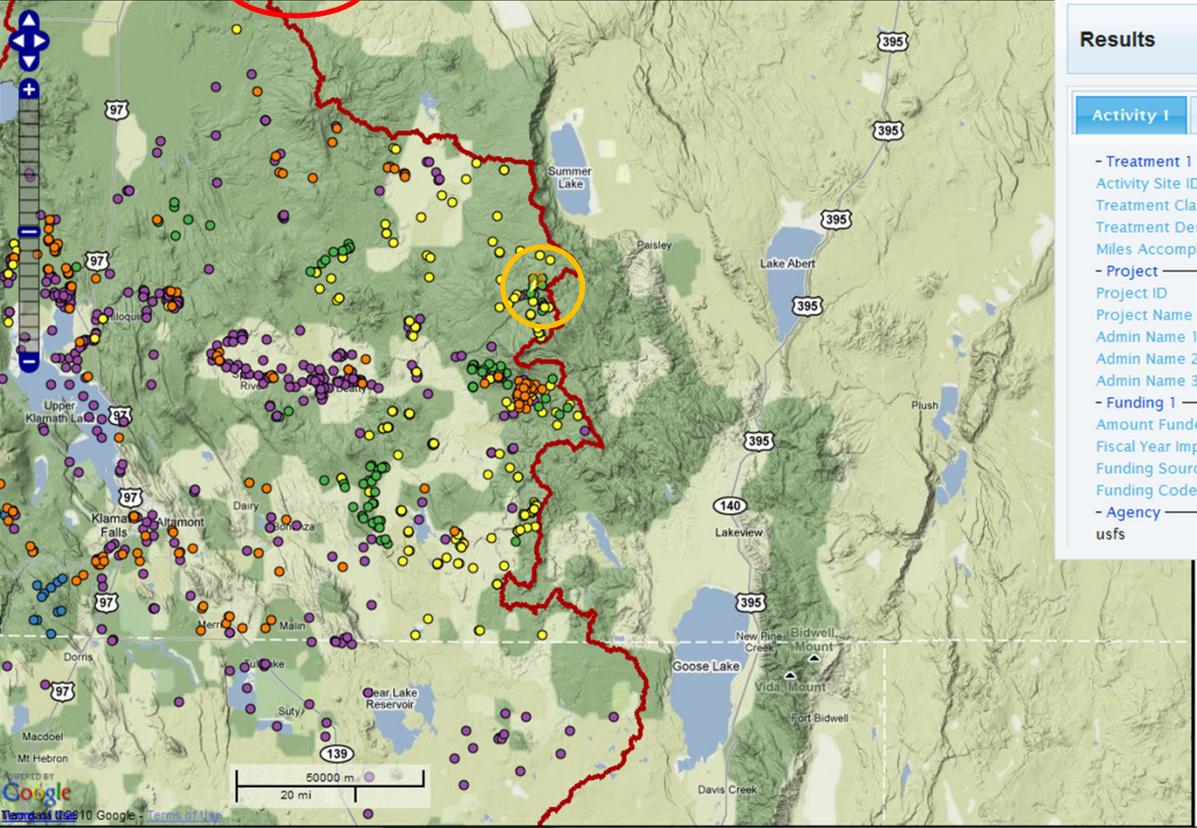
Note: no consistently filled categories – difficult to use single category for general classification

New Query/Identify Functions

Klamath Basin DSS Restoration Project Viewer

Home Layer Information Disclaimer Help

Select Activity



Results

Activity 1	Activity 2
- Treatment 1 -	
Activity Site ID	1972
Treatment Class	RD
Treatment Description	road eliminated
Miles Accomplished	2
- Project -	
Project ID	irda_usfs_1972
Project Name	1972
Admin Name 1	R6
Admin Name 2	Fremont NF
Admin Name 3	Paisley RD
- Funding 1 -	
Amount Funded	3,500
Fiscal Year Implement	2003
Funding Source	County
Funding Code	5882
- Agency -	
usfs	

GeoMOOSE 2.0 Lat, Lon: 42.616, -120.811 Scale: 1:866688

Activity 1	Activity 2
- Treatment 1 -	
Activity Site ID	224
Treatment Class	R
Treatment Description	stand thinning
Acres Accomplished	202
- Project -	
Project ID	irda_usfs_224
Project Name	224
Admin Name 1	R6
Admin Name 2	Fremont NF
Admin Name 3	Paisley RD
- Funding 1 -	
Amount Funded	40,134
Fiscal Year Implement	2006
Funding Source	FS
Funding Code	CWKV
- Agency -	
usfs	

Decisions

- Classifying type of restoration project
 - None
 - Manually re-classifying the 2,220 activities in the database
 - Agencies re-classify
- Searching / Query – on what and how
- Reporting – a report that prints and allows you to see all the restoration activities for a given project (or similar)

Example: Searching / Querying by Project



Klamath Basin DSS Restoration Project Viewer

Home Layer Information Disclaimer Help

Select Activity Print Sketch Tools

Zoom To

Map Layer Zoom To

Existence

N Fork Sprague Habitat Culvert

Activity 1 Activity 2 Activity 3

- Treatment 1

Activity Site ID Rd 3341 Cold Cr. Culvert

Activity Site Name Rd 3341 Cold Cr. Culvert

Local Name Rd 3341 Cold Cr. Culvert

Activity Site Class Aquatic

Activity Type Code Passage Impr

- Project

Project ID wit_1708dc5bab6-6ad017

Project Name North Fork Sprague Habitat/Culvert

Admin Code 1 06

Admin Code 2 02

Admin Code 3 03

Admin Name 3 Paisley Range

State OR

Activity 1 Activity 2 Activity 3

- Treatment 1

Activity Site ID Rd 3372 NF Sprague

Activity Site Name Rd 3372 NF Sprague

Local Name Rd 3372 NF Sprague

Activity Site Class Aquatic

Activity Type Code Passage Improvement

- Project

Project ID wit_dea69681-1d52-42a7-b655-fe15ead497b2

Project Name North Fork Sprague Habitat/Culvert

Admin Code 1 06

Admin Code 2 02

Admin Code 3 03

Activity 1

- Treatment 1

Activity Site ID Rd 3323000 Cold Cr. Culvert

Activity Site Name Rd 3323000 Cold Cr. Culvert

Local Name Rd 3323000 Cold Cr. Culvert

Activity Site Class Aquatic

Activity Type Code Passage Improvement

- Project

Project ID wit_dea69681-1d52-42a7-b655-fe15ead497b2

Project Name North Fork Sprague Habitat/Culvert

Admin Code 1 06

Admin Code 2 02

Admin Code 3 03

Process

- Query by project (using dropdown)
- Associated activities selected on map
- Identify information for each activity

Example: Project Report

PROJECT: North Fork Sprague Habitat/Culvert

Activity 1

Treatment 1

Activity Site ID Rd 3323000 Cold Cr Culvert
 Activity Site Name Rd 3323000 Cold Cr Culvert
 Local Name Rd 3323000 Cold Cr. Culvert
 Activity Site Class Aquatic
 Activity Type Code Passage Improvement

Project

Project ID wit_dea69681-1d52-42a7-bb5b-1e1bead49/dz
 Project Name North Fork Sprague Habitat/Culvert
 Admin Code 1 06
 Admin Code 2 02
 Admin Code 3 03
 Admin Name 3 Paisley Ranger District
 State OR

Funding 1

Total Cost \$8,146
 Amount Funded 4,177
 Fiscal Year Implement 2009
 Funding Code NFWF
 Funding Code Description Wildlife and Fisheries Habitat Mgt
 Phase Type NEPA/ESA

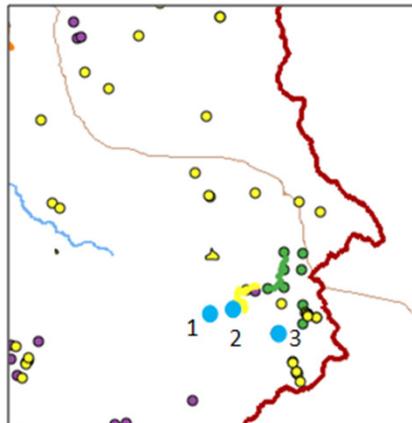
Funding 2

Total Cost \$8,146
 Amount Funded 3,969
 Fiscal Year Implement 2009
 Funding Code NFWF
 Funding Code Description Vegetation and Watershed Mgt
 Phase Type NEPA/ESA

Agency

usfs
 Source

ID wit_dea69681-1d52-42a7-bb5b-1e1bead49/dz
 Data Source wit



Activity 2

Treatment 1

Activity Site ID Rd 3341 Cold Cr. Culvert
 Activity Site Name Rd 3341 Cold Cr. Culvert
 Local Name Rd 3341 Cold Cr. Culvert
 Activity Site Class Aquatic
 Activity Type Code Passage Improvement

Project

Project ID wit_1708dc57-5f92-4659-bab6-6ad0170ac269
 Project Name North Fork Sprague Habitat/Culvert
 Admin Code 1 06
 Admin Code 2 02
 Admin Code 3 03
 Admin Name 3 Paisley Ranger District
 State OR

Funding 1

Fiscal Year Implement 2009
 Phase Type NEPA/ESA

Agency

usfs
 Source

ID wit_1708dc57-5f92-4659-bab6-6ad0170ac269
 Data Source wit



Activity 3

Treatment 1

Activity Site ID Rd 3372 NF Sprague Culvert
 Activity Site Name Rd 3372 NF Sprague Culvert
 Local Name Rd 3372 NF Sprague Culvert
 Activity Site Class Aquatic
 Activity Type Code Passage Improvement

Project

Project ID wit_4a686de5-3235-49bb-9ac8-54d4b5131270
 Project Name North Fork Sprague Habitat/Culvert
 Admin Code 1 06
 Admin Code 2 02
 Admin Code 3 03
 Admin Name 3 Paisley Ranger District
 State OR

Funding 1

Fiscal Year Implement 2009
 Phase Type NEPA/ESA

Agency

usfs
 Source

ID wit_4a686de5-3235-49bb-9ac8-54d4b5131270
 Data Source wit

Items to Consider

- Issue with Project Names
 - Public and private version?
- Maintenance
 - Updating databases

URLs

- Klamath Map
<http://klamathcounty.houstoneng.com>
- Water Supply Forecast Tracking Tool
<http://wsftt.klamathdss.org/>
- Restoration Project Viewer
<http://www.klamathdss.org/restorationviewer/rv.php>

Thanks & Acknowledgement

- County Board (the vision)
- Lani Hickey
- Randy Paul and Bruce (Klamath Map)
- Amy Gowan (Restoration database / viewer)