



*Salmon Spawning in the Upper Lemhi  
Photo by Ron Troy, September 2, 2014*

# Idaho Water Resource Board

Meeting No. 3-15  
March 20, 2015  
Boise, Idaho



# AMENDED

## WORK SESSION IN PREPARATION FOR IWRB MEETING NO. 3-15

March 19, 2015 at 8:00 am  
Idaho Water Center  
Conference Rooms 602 B,C,D  
322 East Front Street, Boise, Idaho 83720

### WORK SESSION AGENDA

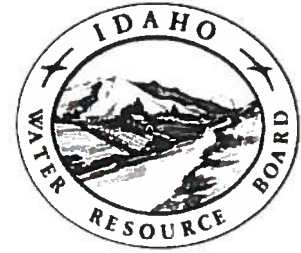
1. Financial Status Report
2. Overview of Water District 1 Refill Settlement
3. Idaho Water Use – *Presentation by Tim Merrick, USGS*
4. Economic Impacts of Curtailment- *Presentation by Dr. Garth Taylor, University of Idaho*
5. Municipal Vulnerability to Curtailment – *Presentation by Christian Petrich, SPF Water Engineering*
6. Proposal Preview- *Presentation by Paul Kimmel, Palouse Basin Aquifer Committee*
7. ESPA Recharge
8. Public Information Support

*The Board will break for lunch at approximately 12:00pm.*

#### Americans with Disabilities

The meeting will be held in facilities that meet the accessibility requirements of the Americans with Disabilities Act. If you require special accommodations to attend, participate in, or understand the meeting, please make advance arrangements by contacting Department staff by email [Mandi.Pearson@idwr.idaho.gov](mailto:Mandi.Pearson@idwr.idaho.gov) or by phone at (208) 287-4800.

# MEMO



**To:** Idaho Water Resource Board  
**From:** Brian Patton  
**Subject:** Financial Status Report  
**Date:** March 9, 2014

As of **February 1st** the IWRB's available and committed balances in the Revolving Development Account, Water Management Account, and the Secondary Aquifer Management Account are as follows.

*Revolving Development Account (main fund)*

Committed but not disbursed

Loans for water projects	\$2,292,463
Water storage studies	1,465,197
Aqualife Hatchery, HB644 2014	0
HB479 2014	
Mountain Home	1,495,750
Galloway	1,912,500
Boise/Arrowrock	1,500,000
Island Park	2,500,000
Water supply Bank	500,000

Total committed but not disbursed	11,664,911
Loan principal outstanding	11,501,209
Uncommitted balance	1,246,325
Estimated revenues next 12 months	3,200,000
Commitments from revenues next 12 months	0
Estimated uncommitted funds over next 12 months	4,446,325

*Rev. Dev. Acct. Bell Rapids Sub-Account*

Committed but not disbursed	\$180,836
Estimated revenues next 12 months (1)	1,000
Commitments from revenues over next 12 months	1,000
Estimated uncommitted funds over next 12 months	0

*Rev. Dev. Acct. Pristine Springs Sub-Account (5)*

Committed but not disbursed	
Repair/Replacement Fund	\$1,007,428
To go to Aquifer Planning Fund	716,000
Loan principal outstanding	7,127,940
Uncommitted balance	0
Estimated revenues next 12 months	1,000,000
Commitments from revenues over next 12 months	1,000,000
Estimated uncommitted funds over next 12 months	0

*Rev. Dev. Acct. Treasure Valley & Rathdrum Prairie CAMP Sub-Account*

Committed but not disbursed	\$18,873
Available for RP and TV CAMP projects	173,745
Estimated revenues next 12 months (5)	200,000
Estimated Available funds over next 12 months	373,745

<i>Rev. Dev. Acct. Upper Salmon/CBWTP Sub-Account</i>		
Committed but not disbursed		\$3,237,614
(Upper Salmon flow enhancement/reconnect projects)		
Estimated revenues next 12 months (4)		10,000
Commitments from revenues over next 12 months		10,000
Estimated available funds over next 12 months		0
<i>Rev. Dev. Acct. Water District 02 Water Smart Grant Sub-Account (6)</i>		
Committed but not disbursed		\$90,426
(Water District 02 Measurement Devices)		
Commitments from revenues over next 12 months		\$90,426
Estimated available funds over next 12 months		0
<i>Rev. Dev. Acct. Water Supply Bank Sub-Account (7)</i>		
Committed but not disbursed		\$5,212
(Owners share – water bank lease/rentals)		
Estimated revenues next 12 months		1,000
Commitments from revenues over next 12 months		\$5,212
Estimated available funds over next 12 months		\$1,000
<i>Rev. Dev. Acct. ESPA Sub-Account</i>		
Committed but not disbursed		
CREP	2,419,581	
Aquifer recharge	337,594	
Bell Rapids	361,620	
Palisades storage	10,000	
Black Canyon Exchange	529,445	
Total committed but not disbursed		\$3,658,240
Loan principal outstanding		296,233
Uncommitted balance		452,730
Estimated revenues next 12 months		100,000
Commitments from revenues over next 12 months		0
Estimated uncommitted funds over next 12 months		552,730
<i>Rev. Dev. Acct. Dworshak Hydropower (2)</i>		
Committed but not disbursed (repair fund, etc.)		\$1,337,151
Estimated revenues next 12 months (3)		200,000
Commitments from revenues over next 12 months		200,000
Estimated uncommitted funds over next 12 months		0
<i>Water Management Account</i>		
Committed but not disbursed:		\$111,376
Loan principal outstanding		0
Uncommitted balance		9,915
Estimated revenues next 12 months		0
Commitments from revenues over next 12 months		0
Estimated uncommitted funds over next 12 months		\$9,915

*Secondary Aquifer Management Fund*

Committed but not disbursed:

HB 479 2014

ESPA Managed Recharge Infrastructure	3,945,696
Northern Idaho Future Water Needs	444,690
Recharge wheeling fees	1,215,432
Recharge sites	44,971
Cloud Seeding	512,000
Loan – North Snake & Magic Valley GWD	1,260,000
Public Information Services (Steubner)	55,000
Other	121,938
<b>Total Committed</b>	<b>\$7,690,725</b>
Uncommitted balance	728,731
Estimated revenues next 12 months (Cigarette Tax)	5,000,000
Commitments from revenues over next 12 months	0
Estimated uncommitted funds over next 12 months	5,728,731

*Secondary Aquifer Fund Aquifer Mon. Meas. & Model Sub-Acct (8)*

Committed but not disbursed	\$446,165
Commitments from revenues over next 12 months	\$446,165
Estimated available funds over next 12 months	0

<b>Total committed but not disbursed</b>	<b>\$30,074,541</b>
<b>Total loan principal outstanding</b>	<b>18,925,382</b>
<b>Total uncommitted balance</b>	<b>2,629,625</b>
<b>Total estimated uncommitted funds over next 12 months</b>	<b>11,112,446</b>

- (1) Exclusive of pass-through payments made by the U.S. Bureau of Reclamation.
- (2) Excess funds generated by the Dworshak Hydropower Project are deposited into the Revolving Development Account (Main Fund) on a monthly basis. To the date of this report this has totaled \$2,496,174.
- (3) This line item includes power sales and interest income after removing debt service. Debt service is paid prior to the funds being deposited in the Revolving Development Account.
- (4) Exclusive of project funds provided by Bonneville Power Administration or federal appropriation sources. These funds are provided to the Board based on individual project proposals and so are not included in the income projection.
- (5) Excess funds generated by the Pristine Springs Project are deposited into the Revolving Development Account (Main Fund) or into the Rathdrum Prairie/Treasure Valley Sub Account.
- (6) Pass-through for Bureau of Reclamation grant to assist with installation of measurement devices in Water District 02.
- (7) Pass-through for owners share of Water Supply Bank lease/rentals. Interest earned accrues to IWRB.
- (8) Source is Pristine Springs loan repayments of \$716,000 annually through 2027.

**The following is a list of potential loans:**

Potential Applicant	Potential Project	Preliminary Loan Amount	Comment
IGWA/Ground Water Districts	Additional projects in Hagerman Valley	\$10 million	Includes tailwater pipeline from Magic Springs to offset irrigation use from Billingsley Creek and other projects.
Raft River Ground Water District	Ground water-to-surface water conversion pipeline	\$4 million	Project in planning. Applying for NRCS cost share grants.
Marysville Irrigation Company/North Fremont	Gravity pipeline system – next phase	\$1.5 million	Project in planning and design. Applying for NRCS cost share grants

Big Wood Canal Co.	Gravity pipeline	\$2 million	Project in planning
Jefferson Irrigation Company	Ground water well reconstruction	\$200,000	

### **Administrative Management of the Annual Cigarette Tax Receipts**

Staff has been considering how best to administratively manage the \$5 Million annual Cigarette Tax receipts for aquifer stabilization. We anticipate first \$5 Million this coming July, with annual \$5 Million receipts every July thereafter. Rather than have the IWRB authorize every expenditure, Staff is suggesting moving to the IWRB authorizing an annual budget for the use of these funds. This could work as follows:

- Every spring, Staff would work with the IWRB Finance Committee to develop an annual budget for the use of the annual \$5 Million to be received in July, together with any other available funds the Secondary Aquifer Fund, for aquifer stabilization purposes. Any un-used funds remain in the Secondary Aquifer Funds for future use.
- Staff suggests that the budget be broken into broad categories, such as “ESPA recharge operations,” or “ESPA recharge infrastructure development.” There should be sideboards, however, as may be recommended by the Finance Committee.
- Every year prior to the receipt of the \$5 Million in Cigarette Tax funds, the full IWRB would adopt a resolution approving the annual budget and authorizing Staff to spend the funds according to the budget.
- Significant changes to the approved budget would need to be approved by the IWRB.

The IWRB gave its approval for moving forward with this approach at the September meeting. Therefore, Staff suggests that the IWRB Finance Committee begin meeting in March/April to start working on the draft budget.

IDAHO WATER RESOURCE BOARD  
Sources and Applications of Funds  
as of January 31, 2015  
REVOLVING DEVELOPMENT ACCOUNT

Original Appropriation (1969).....	\$500,000.00
Legislative Audits.....	(\$49,404.45)
IWRB Bond Program.....	(\$15,000.00)
Legislative Appropriation FY90-91.....	\$250,000.00
Legislative Appropriation FY91-92.....	\$280,700.00
Legislative Appropriation FY93-94.....	\$500,000.00
IWRB Studies and Projects.....	(\$249,067.18)
Loan Interest.....	\$7,051,444.65
Interest Earned State Treasury (Transferred).....	\$1,675,856.57
Filing Fee Balance.....	\$47,640.20
Bond Fees.....	\$1,469,601.45
Arbitrage Calculation Fees.....	(\$12,000.00)
Protest Fees.....	(\$625.00)
Series 2000 (Caldwell/New York) Pooled Bond Issuers fees.....	\$43,657.93
2012 Ground Water District Bond Issuer fees.....	\$377,000.00
Bond Issuer fees.....	\$39,207.59
Attorney fees for Jughandle LID.....	(\$3,600.00)
Attorney fees for A&B Irrigation.....	(\$4,637.50)
Water Supply Bank Receipts.....	\$4,270,771.60
Legislative Appropriation FY01.....	\$200,000.00
Pierce Well Easement.....	\$2,000.00
Transferred to/from Water Management Account.....	\$317,253.80
Legislative Appropriation 2004, HB843.....	\$500,000.00
Legislative Appropriation 2009, SB 1511 Sec 2, Teton/Minidoka Studies.....	\$1,800,000.00
Legislative Appropriation 2009, SB 1511 Sec 2, Teton/Minidoka Studies Expenditures.....	(\$1,229,460.18)
Welser Galloway Study - US Army Corps of Engineers.....	(\$1,597,099.12)
Boise River Storage Feasibility Study.....	(\$333,000.00)
Geotech Environmental (Transducers).....	(\$6,402.61)
<b>Legislative Appropriation 2014, HB 479 Sec 1 and 2.....</b>	<b>\$10,500,000.00</b>
Appraisal (LeMoyné Appraisal LLC).....	(\$4,500.00)
Payment to JR Simplot Co for water rights.....	(\$2,500,000.00)
IWRB WSB Lease Application.....	(\$750.00)
Galloway Dam & Reservoir Project (HB 479).....	(\$87,500.00)
Aqua Life Hatchery, HB644, 2014.....	(\$1,885,000.00)
Aqualife Lease receipt from Seapac.....	\$18,000.00

**Bell Rapids Water Rights Sub-Account**

Legislative Appropriation 2005, HB392.....	\$21,300,000.00
Interest Earned State Treasury.....	\$692,977.07
Bell Rapids Purchase.....	(\$16,006,558.00)
Bureau of Reclamation Principal Amount Lease Payment Paid.....	\$8,294,337.54
Bureau of Reclamation Interest Paid.....	\$179,727.97
Bureau of Reclamation Remaining Amount Lease Payment Paid.....	\$9,142,649.54
First Installment Payment to Bell Rapids.....	(\$1,313,236.00)
Second Installment Payment to Bell Rapids.....	(\$1,313,236.00)
Third Installment Payment to Bell Rapids.....	(\$1,313,236.00)
Fourth Installment Payment to Bell Rapids.....	(\$1,040,431.55)
Interest Credit due to Bureau of Reclamation (Part of Fourth Installment).....	(\$19,860.45)
Fifth Installment Payment to Bell Rapids.....	(\$1,055,000.00)
Transfer to General Fund - Principal.....	(\$21,300,000.00)
Transfer to General Fund - Interest.....	(\$772,052.06)
BOR payment for Bell Rapids.....	\$1,040,431.55
BOR payment for Bell Rapids.....	\$1,313,236.00
BOR prepayment for Bell Rapids.....	\$1,302,981.70
BOR prepayment for Bell Rapids.....	\$1,055,000.00
BOR payment for Alternative Financing Note.....	\$7,117,971.16
Payment to US Bank for Alternative Financing Note.....	(\$7,118,125.86)
Payment for Ongoing Bell Rapids Finance Costs (trustee fees, water bank, etc.).....	(\$6,740.10)
Commitments	
Ongoing Bell Rapids Finance Costs (trustee fees, etc.).....	\$180,836.51
Committed for alternative finance payment.....	\$0.00
Total Commitments.....	\$180,836.51
<b>Balance Bell Rapids Water Rights Sub-Account.....</b>	<b>(\$0.00)</b>

**Pristine Springs Project Sub-Account**

Legislative Appropriation 2008, SB1511, Pristine Springs.....	\$10,000,000.00
Legislative Appropriation 2006, HB870, Water Right Purchases.....	\$5,000,000.00
Interest Earned State Treasury.....	\$36,865.65
Loan Interest.....	\$2,116,784.68
Transfer from ESP Sub-Account.....	\$1,000,000.00
Payment for Purchase of Pristine Springs (3).....	(\$16,000,000.00)
Payment from Magic Valley & Northsnake GWD for Pristine Springs.....	\$3,630,980.51
Appraisal.....	(\$25,500.00)
Insurance.....	(\$33,662.25)
Recharge District Assessment.....	(\$26,605.25)
Water District 130 Annual Assessment.....	(\$3,841.45)
Hydro Plants Engineering Certification (Straubhar).....	(\$3,000.00)
Payment to EHM Engineers for pipeline work.....	(\$1,200.00)
Payment to John Root for Easement Survey.....	(\$1,000.00)
Payment to MWH Americas Inc.....	(\$11,326.27)
Payment to Dan Lafferty Construction.....	(\$16,846.68)
Telemetry Station Equipment.....	(\$15,193.92)
Rein Tech LLC (Satellite phone annual payment).....	(\$1,485.00)
Standley Trenching (Trac system for communication equip).....	(\$2,783.99)
Property Taxes and other fee assessments (Jerome County).....	(\$6,939.15)
Rental Payments.....	\$1,456,823.30
Payments to Scott Kaster.....	(\$89,439.14)

Utility Payments (Idaho Power).....	(\$36,362.33)	
Costs for property maintenance.....	(\$38,668.24)	
Travel costs for property maintenance.....	(\$351.30)	
Pipeline repair (IGWA).....	(\$170,000.00)	
Transferred to Secondary Aquifer Fund (2011 Legislature; HB 291).....	(\$2,465,300.00)	
Transferred to Secondary Aquifer Fund (2012 Legislature; SB 1389).....	(\$1,232,000.00)	
Transferred to Secondary Aquifer Fund (2013 Legislature; HB 270).....	(\$716,000.00)	
Transferred to Secondary Aquifer Fund (2014 Legislature; HB 618).....	(\$716,000.00)	
Pristine Springs Hydropower Projects		
Net power sales revenues.....		\$418,334.50
Pristine Springs Committed Funds		
ESPA CAMP (to be transferred to Secondary Fund).....	716,000.00	
Repair/Replacement Fund.....	\$1,007,427.96	
TOTAL COMMITTED FUNDS.....	\$1,723,427.96	
Loans Outstanding		
North Snake and Magic Valley Ground Water Districts.....	\$7,127,940.18	
Total Loans Outstanding.....	\$7,127,940.18	
<b>Funds to RP CAMP &amp; TV CAMP Sub-Account .....</b>		<b>\$271,672.34</b>
<b>Pristine Springs Revenues Into Main Revolving Development Account.....</b>		<b>\$51,183.37</b>
<b>Rathdrum Prairie CAMP &amp; Treasure Valley CAMP Sub-Account</b>		
Pristine Springs Hydropower and Rental Revenues.....	\$271,672.34	
Interest Earned State Treasury.....	\$573.11	
Spokane River Forum.....	(\$8,000.00)	
Treasure Valley Water Quality Summit.....	(\$500.00)	
Kootenai-Shoshone Soil & Water Cons. Dist. - Agrimet Station.....	(\$16,000.00)	
Rathdrum Prairie-Spokane Valley Aquifer Pumping Study (CON00989).....	(\$55,127.45)	
Committed Funds.....		
Kootenai-Shoshone Soil & Water Cons. Dist. - Agrimet Station.....	\$4,000.00	
Spokane River Forum.....	\$0.00	
Rathdrum Prairie-Spokane Valley Aquifer Pumping Study.....	\$14,872.55	
Treasure Valley Water Quality Summit.....	\$0.00	
TOTAL COMMITTED FUNDS.....	\$18,872.55	
<b>Balance Rathdrum Prairie CAMP &amp; Treasure Valley CAMP Sub-Account.....</b>		<b>\$173,745.45</b>
<b>Upper Salmon/CBWTP Sub-Account</b>		
Water Transaction Projects Payment Advances from CBWTP/Accord .....	\$2,846,320.47	
PCSRF Funds for Administration of Non-Diversion Easements on Lemhi River.....	\$237,807.26	
Interest Earned State Treasury.....	\$103,676.66	
Transfer to Water Supply Bank.....	(\$64,801.33)	
Change of Ownership.....	(\$600.00)	
Alturas Lake Creek Appraisal.....	(\$8,989.23)	
Payments for Water Acquisition .....	(\$627,423.03)	
Committed Funds		
Administration of Non-Diversion Easements on Lemhi River.....	\$148,686.69	
Alturas Lake Creek (Breckenridge).....	(\$0.00)	
Bayhorse Creek (Peterson Ranch).....	\$34,748.18	
Beaver Creek (DOT LLP).....	\$0.00	
Big Hat Creek.....	\$0.00	
Big Timber Tyler (Leadore Land Partners).....	\$521,949.64	
Canyon Creek/Big Timber Creek (Beyeler).....	\$479,809.99	
Fourth of July Creek (Vanderbilt).....	\$18,437.16	
Iron Creek (Phillips).....	\$0.00	
Iron Creek (Koncz).....	\$259,273.22	
Kenney Creek Source Switch (Gail Andrews).....	\$26,363.56	
Lemhi - Big Springs (Merrill Beyeler).....	\$65,133.50	
Lemhi River & Little Springs Creek (Kauer).....	\$23,004.68	
Little Springs Creek (Snyder).....	\$307,687.37	
Lower Eighteenmile Creek (Ellsworth Angus Ranch).....	\$1,777.78	
Lower Lemhi Thomas (Robert Thomas).....	\$2,100.00	
P-9 Bowles (River Valley Ranch).....	\$331,363.86	
P-9 Charlton (Sydney Dowton).....	\$21,933.08	
P-9 Dowton (Western Sky LLC).....	\$262,827.99	
P-9 Elzinga (Elzinga).....	\$325,096.74	
Patterson-Big Springs (PBSC9).....	\$201,170.12	
Spring Creek (Richard Beard).....	\$1,628.64	
Spring Creek (Ella Beard).....	\$2,387.07	
Whitefish (Leadore Land Partners).....	\$202,244.87	
Total Committed Funds.....	\$3,237,624.14	
<b>Balance CBWTP Sub-Account.....</b>		<b>(\$751,633.34)</b>
<b>Water District 02 WaterSmart Grant Sub-Account</b>		
Received from BOR.....	\$84,612.14	
Payments made to contractors.....	(\$97,677.36)	
Committed Funds:		
Grant Approval.....	\$90,425.78	
Total Committed Funds.....	\$90,425.78	
<b>Balance WaterSmart Grant Sub-Account.....</b>		<b>(\$13,065.22)</b>
<b>Water Supply Bank Sub-Account</b>		
Payments received from renters for 2013 season.....	\$529,823.25	
Payments received from renters for 2014 season.....	\$609,120.41	
Payments received from renters for 2015 season.....	\$0.00	
Payments made to owners for 2013 season.....	(\$522,645.12)	
Payments made to owners for 2014 season.....	(\$594,522.16)	
Payments made to owners for 2015 season.....	\$0.00	
Interest Earned State Treasury.....	\$1,613.23	
Committed Funds:		
Owners Share.....	\$5,211.95	
Total Committed Funds.....	\$5,211.95	
<b>Balance Water Supply Bank Sub-Account.....</b>		<b>\$18,177.66</b>
<b>Eastern Snake Plain Sub-Account</b>		

Legislative Appropriation 2005, HB392.....		\$7,200,000.00	
Legislative Appropriation 2005, HB392, CREP Program.....		\$3,000,000.00	
Interest Earned State Treasury.....		\$1,901,630.38	
Loan Interest.....		\$211,581.01	
Bell Rapids Water Rights Closing Costs.....		(\$6,558.00)	
First Installment Payment to Bell Rapids Irr. Co. (Partial).....		(\$361,800.00)	
Second Installment Payment to Bell Rapids Irr. Co. (Partial).....		(\$361,800.00)	
Third Installment Payment to Bell Rapids Irr. Co. (Partial).....		(\$361,800.00)	
Fourth Installment Payment to Bell Rapids Irr. Co. (Partial).....		(\$614,744.00)	
Fifth Installment Payment to Bell Rapids Irr. Co. (Final).....		(\$1,675,036.00)	
Reimbursement from Commerce & Labor W-Canal.....		\$74,709.77	
Transfer to Pristine Springs Sub Account.....		(\$1,000,000.00)	
Reimbursement from Magic Valley GWD - Pristine Springs.....		\$500,000.00	
Reimbursement from North Snake GWD - Pristine Springs.....		\$500,000.00	
Reimbursement from Water District 1 for Recharge.....		\$159,764.73	
Palisades (FMC) Storage Costs.....		(\$3,513,078.26)	
Reimbursement from BOR for Palisades Reservoir.....		\$2,381.12	
W-Canal Project Costs.....		(\$326,834.11)	
Black Canyon Exchange Project Costs.....		(\$71,680.00)	
Black Canyon Exchange Project Revenues.....		\$23,800.00	
2008 Recharge Conveyance Costs.....		(\$14,580.00)	
2009 Recharge Conveyance Costs.....		(\$355,253.00)	
2010 Recharge Conveyance Costs.....		(\$484,231.62)	
Additional recharge projects preliminary development.....		(\$12,405.89)	
Pristine Springs Cost Project Costs.....		(\$6,863.91)	
Loans and Other Commitments.....			
Commitment - Remainder of Bell Rapids Water Rights Purchase (1).....		\$361,620.00	
Commitment - CREP Program (HB392, 2005).....		\$2,419,580.50	
Commitment - Additional recharge projects preliminary development.....		\$337,594.11	
Commitment - Palisades Storage O&M.....		\$10,000.00	
Commitment - Black Canyon Exchange Project (fund with ongoing revenues).....		\$529,444.95	
Total Loans and Other Commitments.....		\$3,658,239.56	
Loans Outstanding:			
American Falls-Aberdeen GWD (CREP).....	\$96,701.70		
Bingham GWD (CREP).....	\$0.00		
Bonneville Jefferson GWD (CREP).....	\$59,255.62		
Magic Valley GWD (CREP).....	\$92,072.19		
North Snake GWD (CREP).....	\$48,203.07		
TOTAL ESP LOANS OUTSTANDING.....	\$296,232.58		
Uncommitted Balance Eastern Snake Plain Sub-Account.....		\$452,730.08	
Dworshak Hydropower Project			
Dworshak Project Revenues			
Power Sales & Other.....	\$6,251,812.94		
Interest Earned State Treasury.....	487,574.16		
Total Dworshak Project Revenues.....		\$6,739,387.10	
Dworshak Project Expenses (2)			
Transferred to 1st Security Trustee Account.....	\$148,542.63		
Construction not paid through bond issuance.....	\$226,106.83		
1st Security Fees.....	\$314,443.35		
Operations & Maintenance.....	\$1,789,885.89		
Powerplant Repairs.....	\$58,488.80		
Capital Improvements.....	\$318,366.79		
FERC Payments.....	\$50,227.33		
Total Dworshak Project Expenses.....		(\$2,906,061.62)	
Dworshak Project Committed Funds			
Emergency Repair/Future Replacement Fund.....	\$1,314,575.00		
FERC Fee Payment Fund.....	\$22,576.30		
Total Dworshak Project Committed Funds.....		\$1,337,151.30	
Excess Dworshak Funds Into Main Revolving Development Account.....			
TOTAL.....		\$2,496,174.18	
		\$24,412,445.30	
Loans Outstanding:	Amount	Principal	
A&B Irrigation District (18-July-14; pipeline and conversion project).....	Loaned	Outstanding	
Aberdeen-Springfield Canal Company (WRB-491; Diversion structure).....	3,500,000	\$3,500,000.00	
Boise City Canal Company (WRB-492)...Grove St Canal Rehab	\$329,761	\$152,228.25	
Bonnie Laura Water Corporation (14-Jul-06; Well repairs).....	\$110,618	\$29,997.00	
Canyon County Drainage District No. 2 (28-Nov-12; Drain tile pipeline	\$71,000	\$24,101.33	
Challis Irrigation Company (28-Nov-07; river gate replacement).....	\$35,000	\$29,362.87	
Chaparral Water Association.....	\$50,000	\$20,744.35	
Chaparral Water Association (21-Jan-11; Well deepening & Improvem	\$90,154	\$5,167.79	
Cloverdale Ridge Water Corp. (Irrigation system rehab 25-Sep-09).....	68,000	\$22,921.75	
Consolidated Irrigation Company (July 20, 2012; pipeline project).....	106,400	\$63,356.56	
Country Club Subdivision Water Association (18-May-07, Well Project).	1,500,000	\$1,046,900.00	
Cub River Irrigation Company (18-Nov-05; Pipeline project).....	\$102,000	\$47,040.57	
Cub River Irrigation Company.....	\$1,000,000	\$692,203.48	
Enterprise Irrigation District (14-Jul-06; Pipeline project).....	\$500,000	\$345,326.67	
Enterprise Irrigation District (North Lateral Pipeline).....	\$37,270	\$13,309.58	
Firth, City of.....	\$105,420	\$36,135.10	
Foothills Ranch Homeowners Association (7-Oct-11; well rehab).....	\$112,888	\$29,512.12	
Garden Valley Ranchettes Homeowners Association (25-Jan-05).....	\$150,000	\$122,566.54	
Harvest Valley Homeowners Association (22-Mar-13; Pump Replaceme	\$2,716	\$0.00	
Jefferson Irrigation Company (well deepenings).....	4,500.00	\$3,288.95	
Jefferson Irrigation Company (9-May-2008 Well Replacement).....	\$207,016	\$24,043.73	
Jughandle HOA/Valley County Local Improvement District No. 1 (well p	\$81,000	\$49,420.63	
King Hill Irrigation District (24-Sep-10; Pipeline replacement).....	\$907,552	\$720,119.76	
Lake Reservoir Company (29-July-11; Payette Lake-Lardo Dam Outle	\$300,000	\$106,730.14	
Last Chance Canal Company (WRB-497).....	\$594,000	\$186,147.87	
Lava Hot Springs, City of.....	\$500,000	\$82,519.91	
Lindsay Lateral Association (22-Aug-03).....	\$347,510	\$139,078.44	
Lindsay Lateral Association (Engineering Design Project & Pipeline Stu	\$9,600	\$922.49	
	\$19,700	\$16,236.53	

Live-More Lake Community (9-Jun-04).....	\$42,000	\$13,432.26
Lower Payette Ditch Company (2-Apr-04; Diversion dam replacement)	\$875,000	\$166,179.49
Marsh Center Irrigation Company (13-May-05; Hawkins Dam).....	\$236,141	\$134,768.26
Marysville Irrigation Company (18-May-07, Pipeline Project Phase 1)....	\$625,000	\$296,627.98
Marysville Irrigation Company (9-May-08, Pipeline Project Phase 2).....	\$1,100,000	\$467,140.18
McGuire Estates Water Users Association (4-Mar-05).....	\$60,851	\$9,209.33
Meander Point Subdivision Homeowners Association (7-Sep-07; comm	\$330,000	\$33,905.66
Meridian Heights Water & Sewer Association (18-May-07).....	\$350,000	\$0.00
Mores Creek Rim Ranches Water District.....	\$221,400	\$27,282.24
North Fremont Canal Systems (25-Jan-13; Marysville Project).....	\$2,500,000	\$2,000,000.00
Point Springs Grazing Association (July 20, 2012; stock water pipeline)	48,280.00	\$43,753.18
Preston-Whitney Irrigation Company (29-May-09; Fairview Lateral Pipe	\$800,000	\$111,600.52
Producers Irrigation Company (17-Mar-06; well replacements).....	\$185,000	\$22,766.04
Ranch Subdivision Property Owners Assoc.....	\$24,834	\$8,463.59
Riverside Independent Water District .....	\$350,000	\$149,180.60
Skin Creek Water Association.....	\$188,258	\$75,745.13
Spirit Bend Water Association.....	\$92,000	\$34,600.04
Sunset Heights Water District (17-May-13; Exchange water project)...	\$48,000	\$43,747.40
Thunder Canyon Owners Association (6-Feb-04).....	\$92,416	\$0.00
Twin Lakes Canal Company (Winder Lateral Pipeline Project).....	\$500,000	\$297,061.24
Twin Lakes Canal Company (Bear River Narrows).....	\$90,000	\$23,119.83
Whitney-Nashville Water Company.....	\$225,000	\$33,243.94
<b>TOTAL LOANS OUTSTANDING.....</b>		<b>\$11,501,209.32</b>
<b>Loans and Other Funding Obligations:</b>		
<b>Legislative Appropriation 2014, HB 479 Sec 1 and 2</b>		
Mountain Home AFB Water Rights (HB479).....	\$1,494,750.00	
Galloway Dam & Reservoir Project (HB 479).....	\$1,912,500.00	
Boise River (Arrowrock Enlargement) Feasibility Study (HB479).....	\$1,500,000.00	
Island Park Enlargement (HB479).....	\$2,500,000.00	
Water Supply Bank Computer Infrastructure (HB 479).....	\$500,000.00	
Aqua Life Hatchery, HB644, 2014.....	\$0.00	
Senate Bill 1511 - Teton Replacement and Minidoka Enlargement Studies.....	\$678,161.82	
Boise River Storage Feasibility Study.....	\$325,414.93	
Weiser-Galloway Study (28-May-10).....	\$461,620.87	
A&B Irrigation District (18-July-14; pipeline and conversion project).....	\$500,000.00	
Bee Line Water Association (Sep 23, 2014; System Improvements).....	\$400,000.00	
Clearview Water Company (5-Nov-14).....	\$50,000.00	
Clearwater Water District - pilot plant (13-Jul-07).....	\$80,000.00	
Consolidated Irrigation Company (July 20, 2012; pipeline project).....	\$453,100.00	
Dover, City of (23-Jul-10; Water Intake project).....	\$194,063.00	
Lake Reservoir Company (29-July-11; Payette Lake-Lardo Dam Outlet Gates).....	\$0.00	
Lindsay Lateral Association .....	\$15,300.00	
North Fremont Canal Systems (25-Jan-13; Marysville Project).....	\$500,000.00	
Pinehurst Water District (23-Jan-15).....	\$100,000.00	
Point Springs Grazing Association (July 20, 2012; storck water pipeline).....	\$0.00	
<b>TOTAL LOANS AND OTHER FUNDING OBLIGATIONS.....</b>		<b>\$11,664,910.62</b>
<b>Uncommitted Funds.....</b>		<b>\$1,246,325.36</b>
<b>TOTAL.....</b>		<b>\$24,412,445.30</b>

(1) Actual amount needed may vary depending on final determination of water actually purchased and interest income received.

(2) Debt service on the Dworshak Project bonds is paid before the Dworshak monies are deposited into the Revolving Development Account and is therefore not shown on this balance sheet.

Idaho Water Resource Board  
Sources and Applications of Funds  
as of January 31, 2015

**WATER MANAGEMENT ACCOUNT**

Original Appropriation (1978).....	\$1,000,000.00
Legislative Audits.....	(\$10,645.45)
IWRB Appraisal Study (Charles Thompson).....	(\$5,000.00)
Transfer funds to General Account 1101(HB 130, 1983).....	(\$500,000.00)
Legislative Appropriation (6/29/1984).....	\$115,800.00
Legislative Appropriation (HB988, 1994).....	\$75,000.00
Turned Back to General Account 6/30/95, (HB988, 1994).....	(\$35,014.25)
Legislative Appropriation (SB1260, 1995, Aquifer Recharge, Caribou Dam).....	\$1,000,000.00
Interest Earned.....	\$120,475.04
Filing Fee Balance.....	\$2,633.31
Water Supply Bank Receipts.....	\$841,803.07
Bond Fees.....	\$277,254.94
Funds from DEQ and IDOC for Glenns Ferry Water Study.....	\$10,000.00
Legislative Appropriation FY01.....	\$200,000.00
Western States Wate Council Annual Dues.....	(\$7,500.00)
Tranfer to/from Revolving Development Account.....	(\$317,253.80)
Legislative Appropriation (SB1239, Sugarloaf Aquifer Recharge Project).....	\$60,000.00
Legislative Appropriation (HB 843 Sec 6).....	\$520,000.00
Legislative Appropriation (SB1496, 2006, ESP Aquifer Management Plan).....	\$300,000.00
Legislative Appropriation (HB 320, 2007, ESP Aquifer Management Plan).....	\$849,936.99
<b>TOTAL .....</b>	<b>\$4,497,489.85</b>

Grants Disbursed:

Completed Grants.....	\$1,291,110.72
Arco, City of.....	\$7,500.00
Arimo, City of.....	\$7,500.00
Bancroft, City of.....	\$7,000.00
Bloomington, City of.....	\$4,254.86
Boise City Canal Company.....	\$7,500.00
Bonnars Ferry, City of.....	\$7,500.00
Bonneville County Commission.....	\$3,375.00
Bovill, City of.....	\$2,299.42
Buffalo River Water Association.....	\$4,007.25
Butte City, City of.....	\$3,250.00
Cave Bay Community Services.....	\$6,750.00
Central Shoshone County Water District.....	\$7,500.01
Clearwater Regional Water Project Study, City of Orofino et al.....	\$10,000.00
Clearwater Water District.....	\$3,750.00
Cottonwood Point Water and Sewer Association .....	\$7,500.00
Cottonwood, City of.....	\$5,000.00
Cougar Ridge Water & Sewer.....	\$4,661.34
Curley Creek Water Association.....	\$2,334.15
Downey, City of.....	\$7,500.00
Fairview Water District.....	\$7,500.01
Fish Creek Reservoir Company, Fish Creek Dam Study.....	\$12,500.00
Franklin, City of.....	\$6,750.00
Grangeville, City of.....	\$7,500.00
Greenleaf, City of.....	\$3,000.00
Hansen, City of .....	\$7,450.00
Hayden Lake Irrigation District.....	\$7,500.00
Hulen Meadows Water Company.....	\$7,500.00
Iona, City of.....	\$1,425.64
Kendrick, City of.....	\$7,500.00
Kooskia, City of.....	\$7,500.00
Lakeview Water District.....	\$2,250.00
Lava Hot Springs, City of.....	\$7,500.00
Lindsay Lateral Association.....	\$7,500.00
Lower Payette Ditch Company.....	\$5,500.01
Maple Grove Estates Homeowners Association.....	\$5,020.88
Meander Point Homeowners Association.....	\$7,500.00
Moreland Water & Sewer District.....	\$7,500.00
New Hope Water Corporation.....	\$2,720.39
North Lake Water & Sewer District.....	\$7,500.00

Northside Estates Homeowners Association.....	\$4,492.00	
North Tomar Butte Water & Sewer District.....	\$3,575.18	
North Water & Sewer District.....	\$3,825.00	
Parkview Water Association.....	\$4,649.98	
Payette, City of.....	\$6,579.00	
Pierce, City of.....	\$7,500.00	
Potlatch, City of.....	\$6,474.00	
Preston Whitney Irrigation Company.....	\$7,500.00	
Preston & Whitney Reservoir Company.....	\$3,606.75	
Preston & Whitney Reservoir Company.....	\$7,000.00	
Roberts, City of.....	\$3,750.00	
Round Valley Water.....	\$3,000.00	
Sagle Valley Water & Sewer District.....	\$2,117.51	
South Hill Water & Sewer District.....	\$3,825.00	
St Charles, City of.....	\$5,632.88	
Swan Valley, City of.....	\$5,000.01	
Twenty-Mile Creek Water Association.....	\$2,467.00	
Valley View Water & Sewer District.....	\$5,000.02	
Victor, City of.....	\$3,750.00	
Weston, City of.....	\$6,601.20	
Winder Lateral Association.....	\$7,000.00	
<b>TOTAL GRANTS DISBURSED.....</b>		<b>(\$1,632,755.21)</b>
<b>IWRB Expenditures</b>		
Lemhi River Water Right Appraisals.....	\$31,000.00	
<b>Expenditures Directed by Legislature</b>		
Obligated 1994 (HB988).....	\$39,985.75	
SB1260, Aquifer Recharge.....	\$947,000.00	
SB1260, Soda (Caribou) Dam Study.....	\$53,000.00	
Sugarloaf Aquifer Recharge Project (SB1239).....	\$55,953.69	
ESPA Settlement Water Rentals (HB 843 2004).....	\$504,000.00	
ESP Aquifer Management Plan (SB1496, 2006).....	\$300,000.00	
ESP Aquifer Management Plan (HB320, 2007).....	\$801,077.75	
<b>TOTAL IWRB AND LEGISLATIVE DIRECTED EXPENDITURES.....</b>		<b>(\$2,732,017.19)</b>
<b>WATER RESOURCE BOARD RECHARGE PROJECTS.....</b>		<b>(\$11,426.88)</b>
<b>CURRENT ACCOUNT BALANCE.....</b>		<b>\$121,290.57</b>
<b>Committed Funds:</b>		
<b>Grants Obligated</b>		
Cottonwood Point Water & Sewer Association.....	\$0.00	
Preston - Whintey Irrigation Company.....	\$7,500.00	
Water District No. 1 (Blackfoot Equalizing Reservoir Automation).....	\$35,000.00	
<b>Legislative Directed Obligations</b>		
Sugarloaf Aquifer Recharge Project (SB1239).....	\$4,046.31	
ESPA Settlement Water Rentals (HB 843, 2004).....	\$16,000.00	
ESPA Management Plan (SB 1496, 2006).....	\$0.00	
ESP Aquifer Management Plan (HB320, 2007).....	\$48,829.24	
<b>TOTAL GRANTS &amp; LOANS OBLIGATED &amp; UNDISBURSED.....</b>		<b>\$111,375.55</b>
<b>Loans Outstanding:</b>	<b>Amount</b>	<b>Principal</b>
	<b>Loaned</b>	<b>Outstanding</b>
Arco, City of.....	\$7,500	\$0.00
Butte City, City of .....	\$7,425	\$0.00
Roberts, City of.....	\$23,750	\$0.00
Victor, City of.....	\$23,750	\$0.00
<b>TOTAL LOANS OUTSTANDING.....</b>		<b>\$0.00</b>
<b>Uncommitted Funds.....</b>		<b>\$9,915.02</b>
<b>CURRENT ACCOUNT BALANCE.....</b>		<b>\$121,290.57</b>

Idaho Water Resource Board  
Sources and Applications of Funds  
as of January 31, 2015

SECONDARY AQUIFER PLANNING, MANAGEMENT, & IMPLEMENTATION FUND

Legislative Appropriation (HB 291, Sec 2).....	2,465,300.00
Legislative Appropriation (SB 1389, Sec 5).....	1,232,000.00
Legislative Appropriation (HB270, Sec 3).....	716,000.00
Legislative Appropriation (HB479, Sec 1).....	4,500,000.00
Legislative Appropriation (HB479, Sec 1) Managed Recharge Infrastructure Expenses.....	(54,305.40)
Legislative Appropriation (HB479, Sec 1) Northern Idaho Future Water Needs Studies.....	(55,310.35)
Interest Earned State Treasury (Transferred).....	68,712.41
Water Users Contributions.....	100.00
Conversion project (AWEP) measurement device payments.....	(16,455.21)
Contribution from GWD's for 2011 ESPA Managed Recharge	71,893.16
Contribution from GWD's for Revenue Bond Prep Expenses.....	14,462.50
American Falls Res. Dist#2 - MP31 Recharge Site Engineering.....	(1,593.75)
American Falls Res. Dist#2 - MP31 Recharge Site Construction.....	(34,435.44)
Bond Issuer Fees.....	(3,500.00)
Payments for 2012 Recharge.....	(260,031.02)
Payments for 2013 Recharge.....	(8,133.00)
Payments for 2014 Recharge.....	(16,404.00)
Payment for Recharge.....	(80,000.00)
Payment for High Country RC&D Cloud Seeding.....	(20,000.00)
Payment for Idaho Irrigation District.....	(13,200.00)
Payment for Magic Valley GWD and A&B Irrig. Dist. - Walcott Recharge Engineering.....	(85,644.00)

**Aquifer Monitoring, Measurement, and Modeling Sub-Account**

Legislative Appropriation/Funds Transfer (HB618, Sec 3).....	716,000.00
Interest Earned State Treasury (Transferred).....	692.78
Personnel Costs.....	(124,916.23)
Professional Services.....	(136,693.00)
Equipment Purchases.....	(4,022.19)
Travel Expenses.....	(3,080.83)
Supplies.....	(1,404.92)
Miscellaneous Expenses.....	(411.09)
Total Expenses.....	(270,528.26)
<b>Balance Aquifer Monitoring, Measurement, and Modeling Sub-Account.....</b>	<b>\$446,164.52</b>

**Committed Funds**

Legislative Appropriation (HB479, Sec 1, 2014)	
ESPA Managed Recharge Infrastructure (HB479).....	3,945,694.60
Northern Idaho Future Water Needs Studies (HB479).....	444,689.65
Loan - Magic Valley & North Snake GWDs (Magic Springs Pipeline).....	1,260,000.00
Measurement devices for AWEP conversion projects.....	183,544.79
High Country RC&D Cloud Seeding	20,000.00
Cooperative Weather Modification Program (Cloud Seeding).....	492,000.00
American Falls Res. Dist#2 - MP31 Recharge Site Engineering	4,406.25
American Falls Res. Dist#2 - MP31 Recharge Site Construction	564.56
Magic Valley GWD and A&B Irrig. Dist. - Walcott Recharge Engineering	0.00
Public Information Services (Steubner).....	55,000.00
Five-Year Managed Recharge Pilot Program	1,215,431.98
Contribution from GWD's for 2011 ESPA Managed Recharge	(8,106.84)
GWD Bond Preparatory Expenses.....	37,500.00
Fremont-Madison Irrigation District Egin Recharge.....	40,000.00
<b>Total Committed Funds.....</b>	<b>\$7,690,724.99</b>

**TOTAL UNCOMMITTED FUNDS.....** **\$728,730.91**

**CURRENT ACCOUNT BALANCE.....** **\$8,865,620.42**



## Basin 01 Refill Settlement Overview

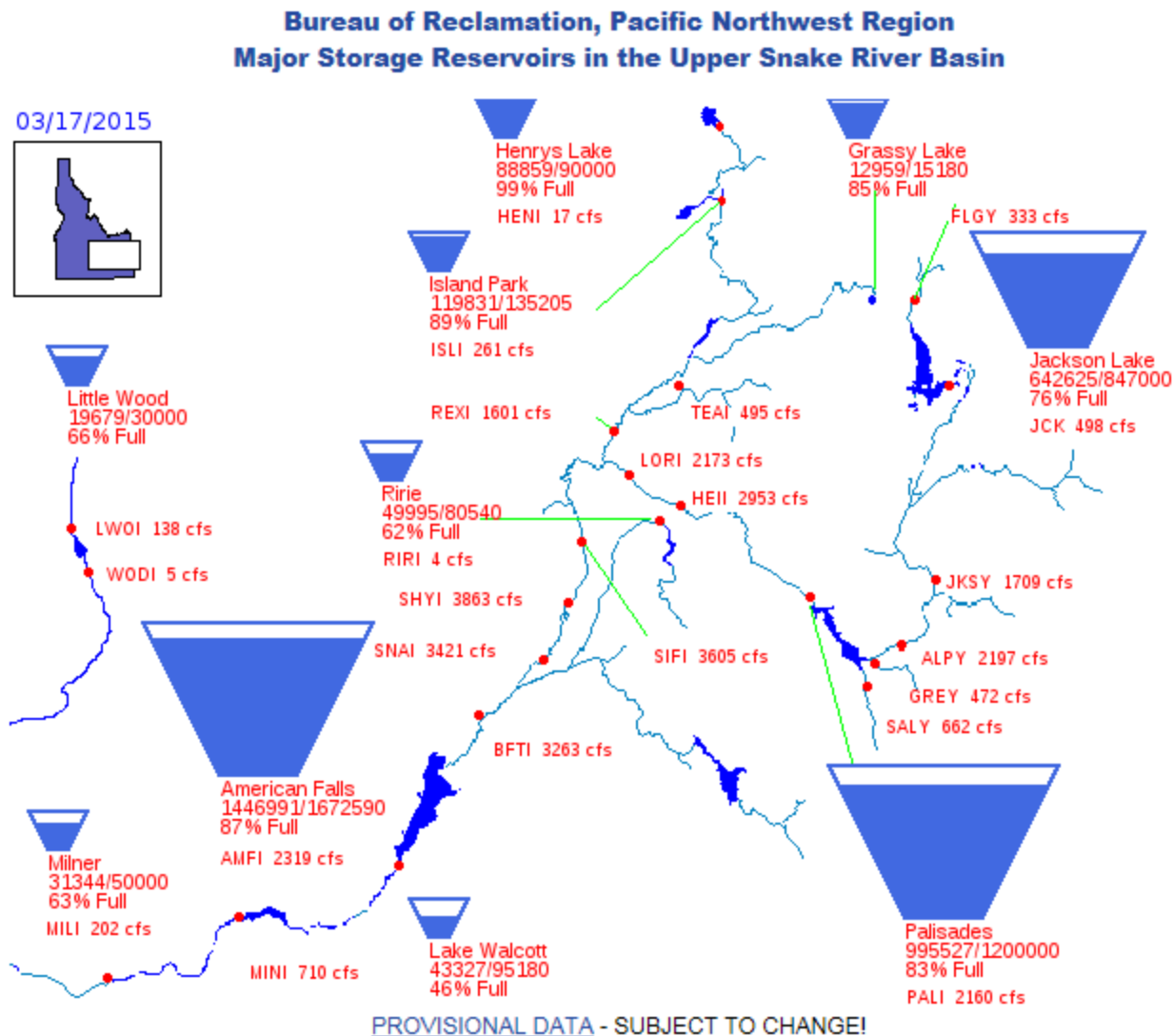
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Presented by Mathew Weaver

March 19, 2015



# What's the Basin 01 Refill Issue?



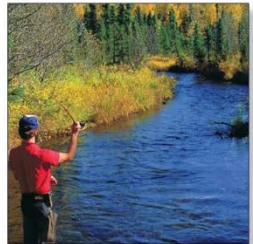
# Where is the Settlement Now?

1. All parties, except USBR, signed settlement on or before Jan. 30
2. USBR agreed to settlement, signature pending
3. Settlement recommended to SRBA in February
4. Anticipate decrees in 3-4 months



# Benefits of the Settlement

1. Establishes Water Rights
2. Protects a large volume of water from future development
3. Preserves current relationship of priority date diversions (i.e. the status quo)
4. Resolves nine pending SRBA late claims
5. It's a solution that works for all parties



# Refill 1 WRs (Fully Subordinated)

**Summary Table - Fully Subordinated Refill Water Right Recommendations**

Reservoir Name	Annual Volume Limit (AF)	Priority Date	Effective Priority Date
Lake Walcott	11,641,000	1965	Fully Subordinated
American Falls Reservoir	11,714,000	1965	Fully Subordinated
Ririe Reservoir	228,000	1984	Fully Subordinated
Palisades Reservoir	6,048,000	1965	Fully Subordinated
Island Park Reservoir	569,000	1969	Fully Subordinated
Grassy Lake	11,800	1978	Fully Subordinated
Jackson Reservoir	1,485,000	1956	Fully Subordinated
Henry's Lake	64,000	1969	Fully Subordinated

# Refill 2 WRs (Un-subordinated)

**Summary Table - Unsubordinated Refill Water Recommendations**

Reservoir Name	Annual Volume Limit (AF)	Priority Date	Effective Priority Date
Palisades Reservoir	1,043,000	1976	2014
Ririe Reservoir	12,000	1982	2014

# Questions and/or Discussion



# Water Use in the United States and Idaho

Tim Merrick

USGS Idaho Water Science Center

# Topics

- The role of the USGS National Water-Use Information Program
- 2010 national water-use data and trends
- How Idaho ranks
- Questions

# The Role of the USGS National Water-Use Program

The USGS National Water-Use Information Program is responsible for compiling and disseminating the nation's water-use data.

- Analyze the source, use, and disposition of water at different scales
- Document trends in water use in the United States
- Cooperate with state and local agencies on projects
- Develop and maintain water-use databases
- Publish local, state, and national water-use data
- Fulfill public requests for water-use information

<http://water.usgs.gov/watuse/>

# Sources of Water Withdrawals



Groundwater



Surface Water



Freshwater



Saline

# Water Withdrawals by Category



Aquaculture



Irrigation



Livestock



Mining



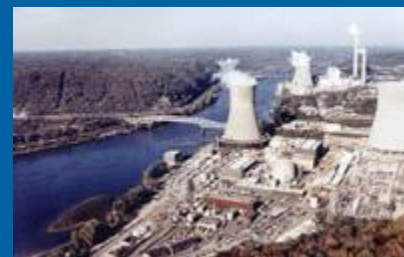
Public Supply



Self-Supplied Domestic



Self-Supplied Industrial



Thermoelectric Power

# USGS Water Use Data Online

2015 FISSA+ Privacy and R... Welcome to the USGS - U... Travel Free Hotmail USGS Idaho Water Science... Web Slice Gallery

**USGS**  
science for a changing world

**National Water Information System: Web Interface**

USGS Water Resources (District Access)

Data Category: Home Geographic Area: United States GO

Click to hide News Bulletins


- January 5, 2014
- Try our new [Mobile-friendly water data site](#) from your mobile device!
- [Full News](#)

## USGS Water Data for the Nation

### Search for Sites With Data

**Current Conditions** Sites with real-time or recent surface-water, groundwater, or water-quality data.

**Site Information** Descriptive site information for all sites with links to all available water data for individual sites.

 Map of all sites with links to all available water data for individual sites.

### Frequent Searches By Data Category

**Surface Water** Water flow and levels in streams and lakes.

**Groundwater** Water levels in wells.

**Water Quality** Chemical and physical data for streams, lakes, springs, wells and other sites.

**Water Use** Water use information.

### Introduction

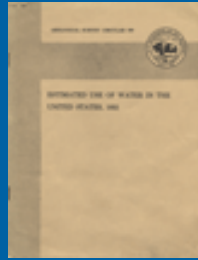
These pages provide access to water-resources data collected at approximately 1.5 million sites in all 50 States, the District of Columbia, Puerto Rico, the Virgin Islands, Guam, American Samoa and the Commonwealth of the Northern Mariana Islands. Online access to this data is organized around the categories listed to the left.

The USGS investigates the occurrence, quantity, quality, distribution, and movement of surface and underground waters and disseminates the data to the public, State and local governments, public and private utilities, and other Federal agencies involved with managing our water resources.

[About Us](#) [Help](#) [Tutorial](#)



1950



1955



1960



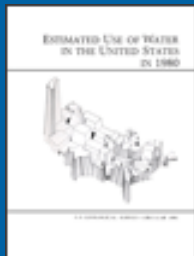
1965



1970



1975



1980



1985



1990



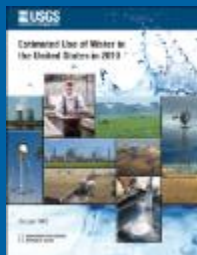
1995



2000



2005



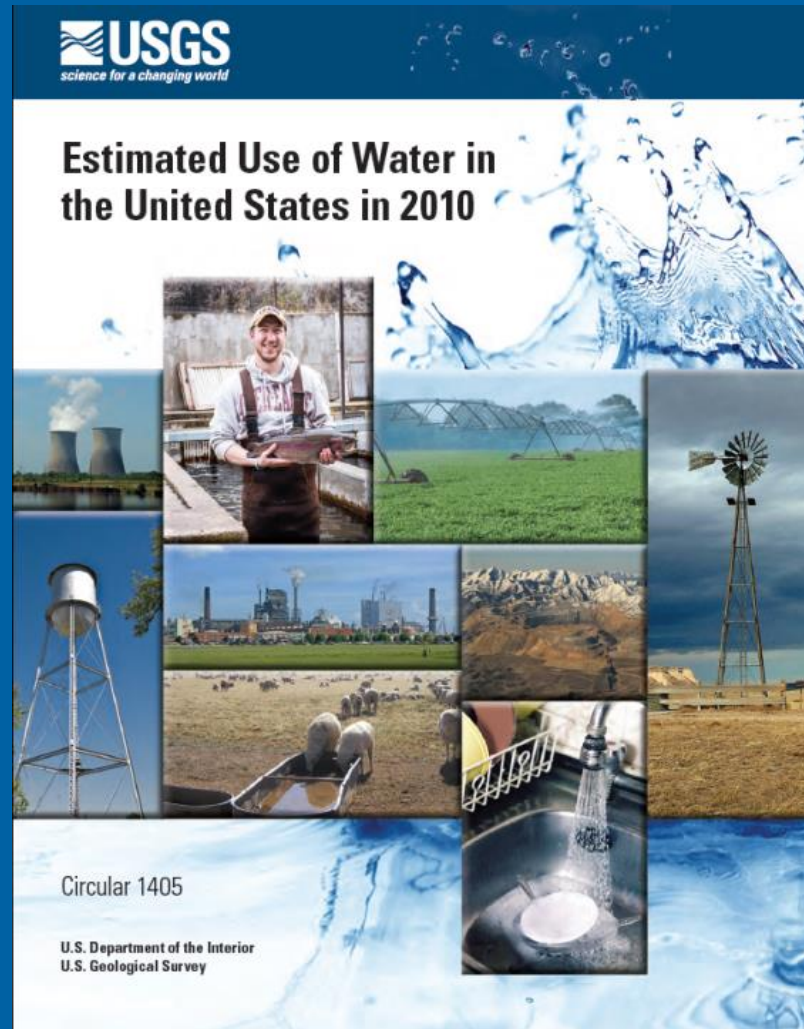
2010

“These reports, ‘Estimated Water Use in the United States,’ have been published every five years since 1950 and are one of the most widely cited publications of the USGS.”

- National Research Council, 2002

<http://water.usgs.gov/watuse/50years.html>

# 2010 National Water-Use Data and Trends



# Withdrawals by Category

Livestock



1 percent

Self-Supplied Domestic



1 percent

Public Supply



12 percent

Thermoelectric Power



45 percent



1 percent



Mining

3 percent



Aquaculture

4 percent



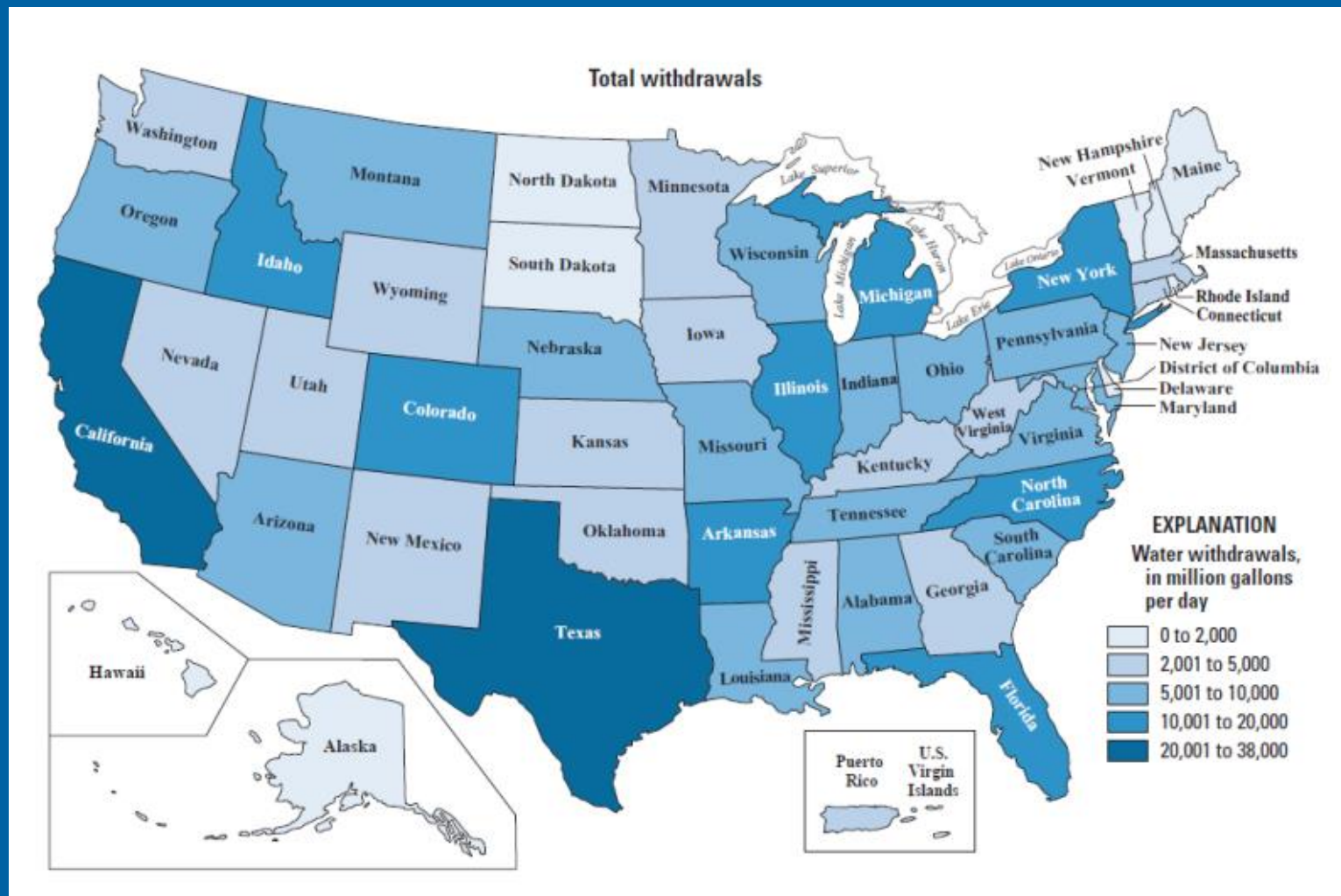
Self-Supplied Industrial

33 percent



Irrigation

# Withdrawals by State



# Withdrawals by Category by State

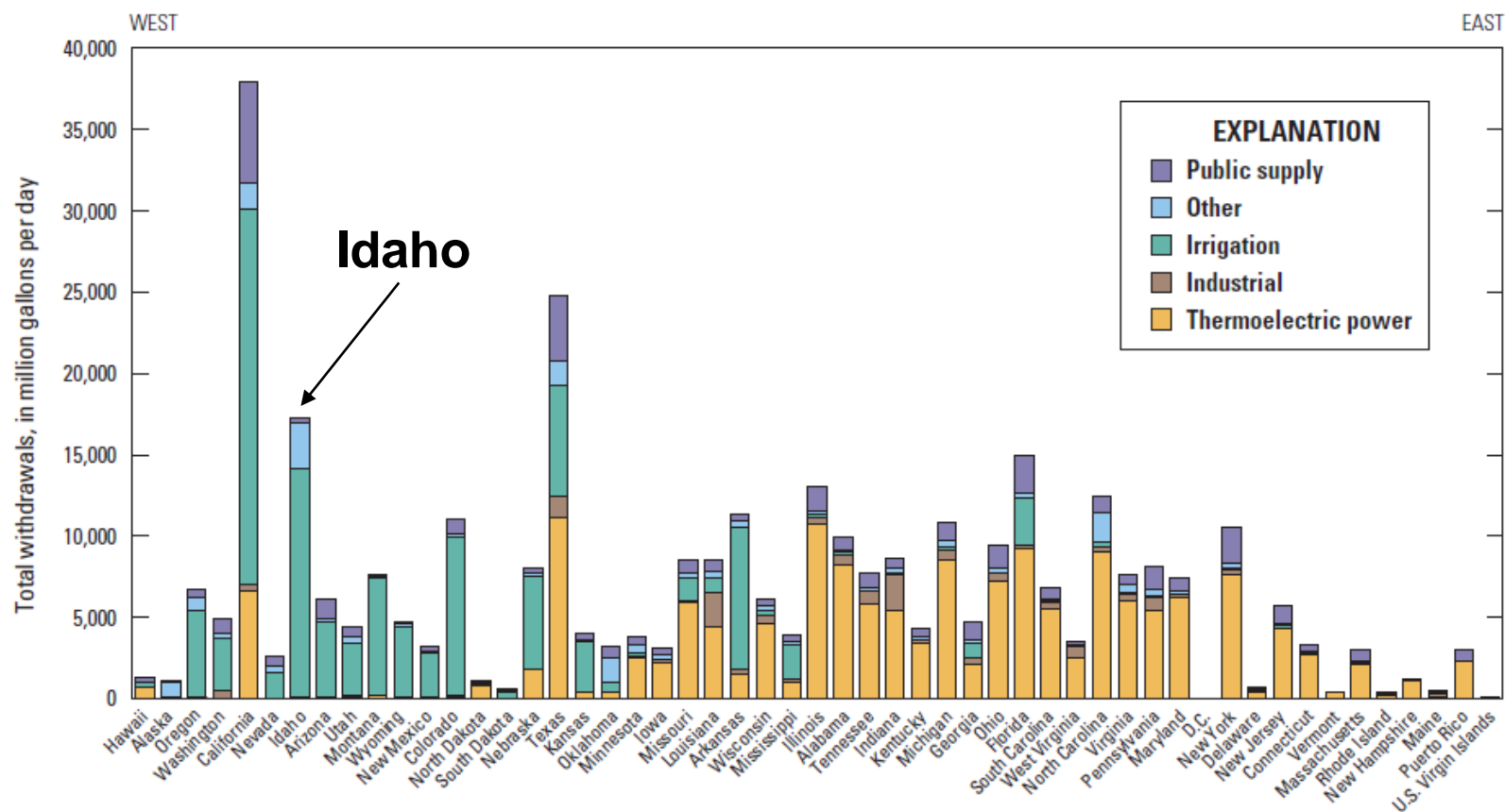
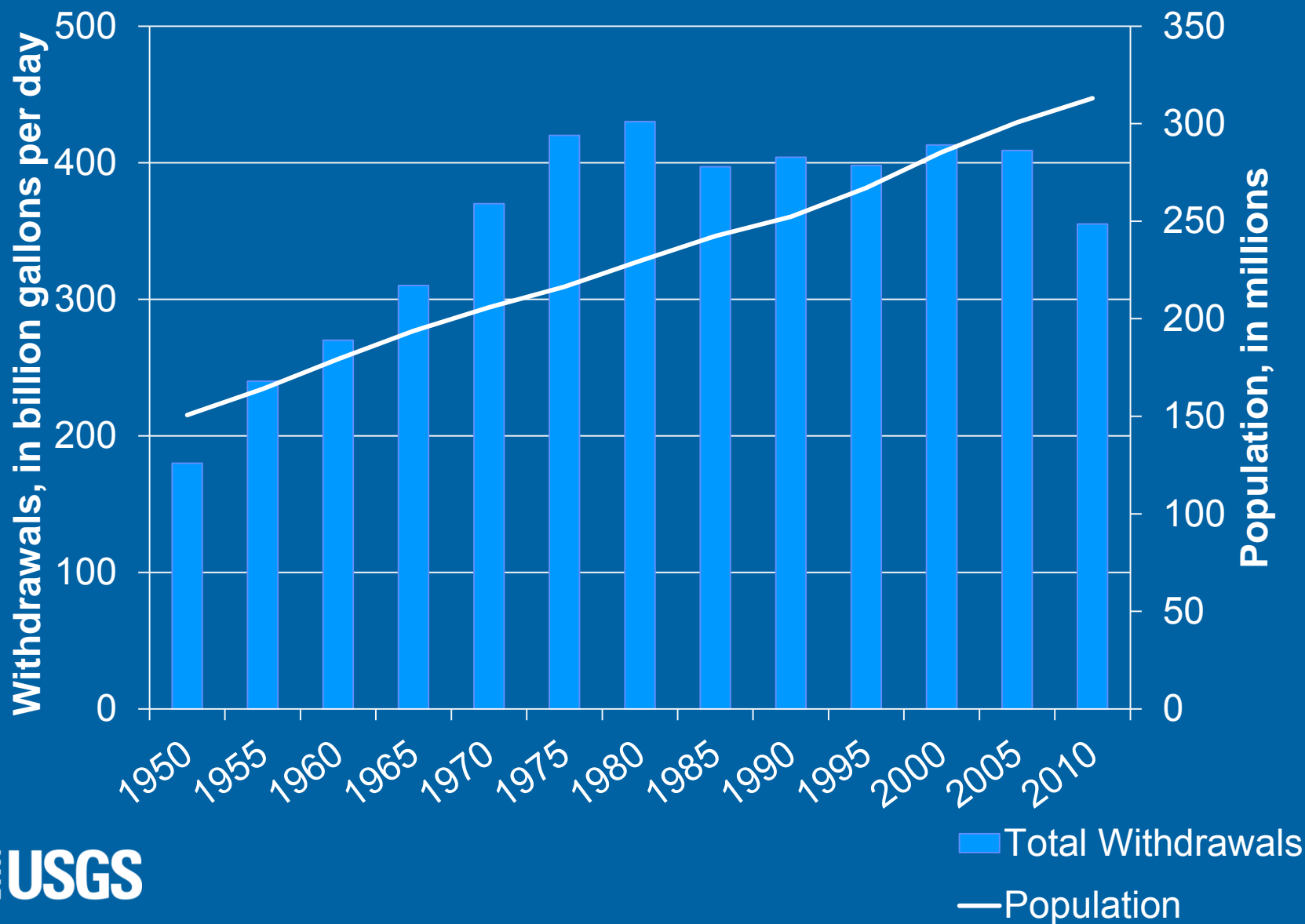
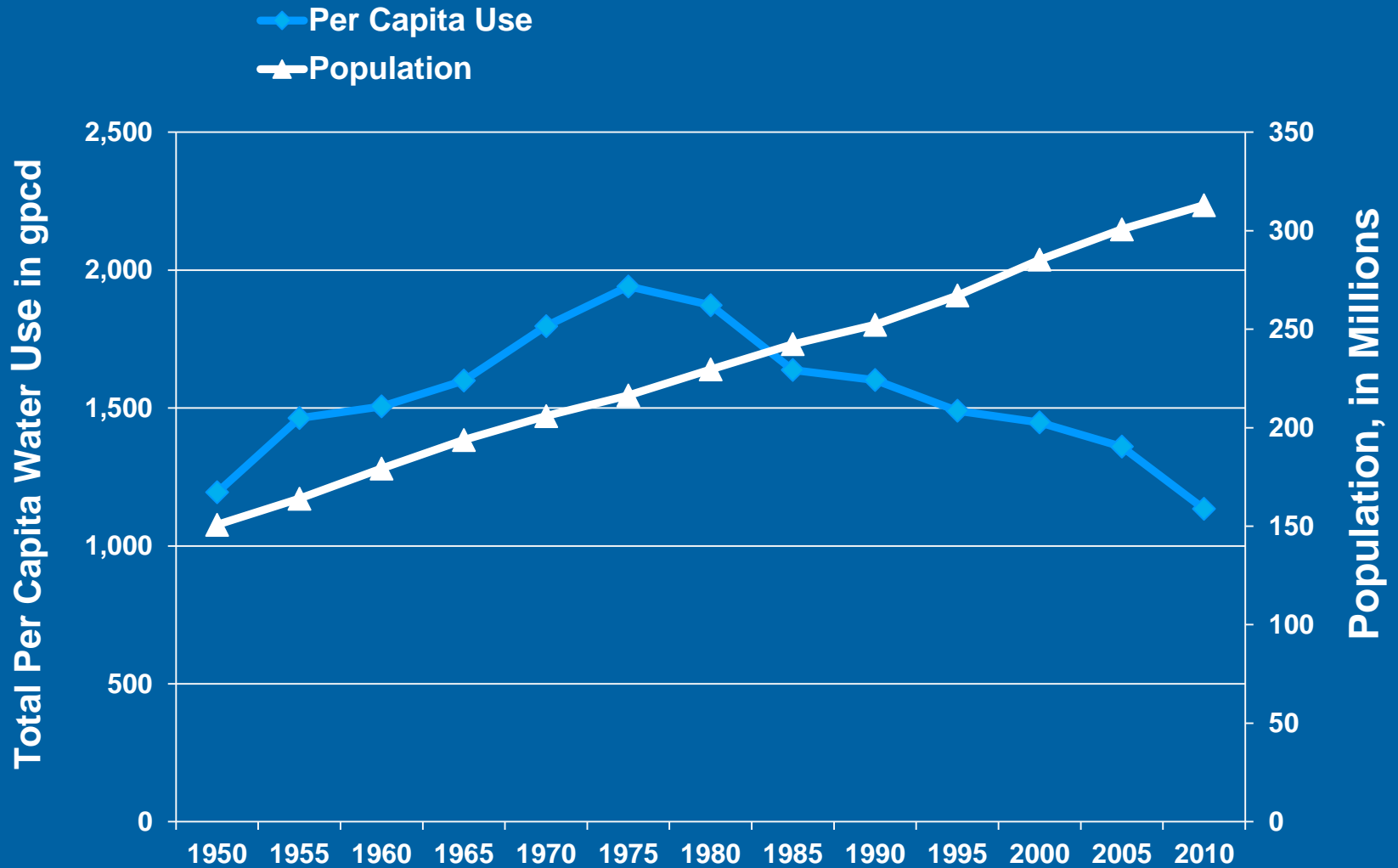


Figure 2. Total water withdrawals by State and barchart showing categories by State from west to east, 2010.

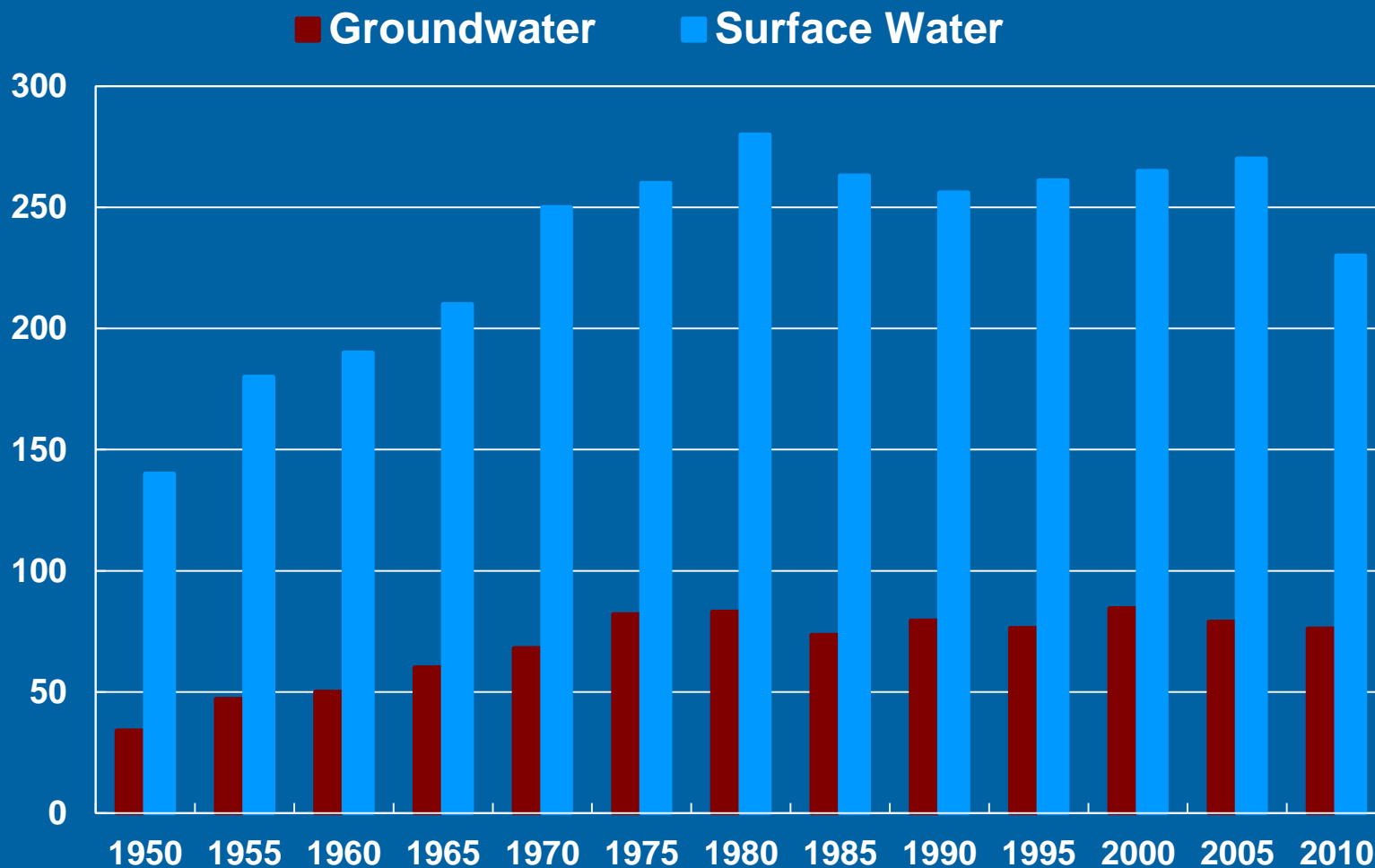
# Population and Withdrawals, 1950-2010



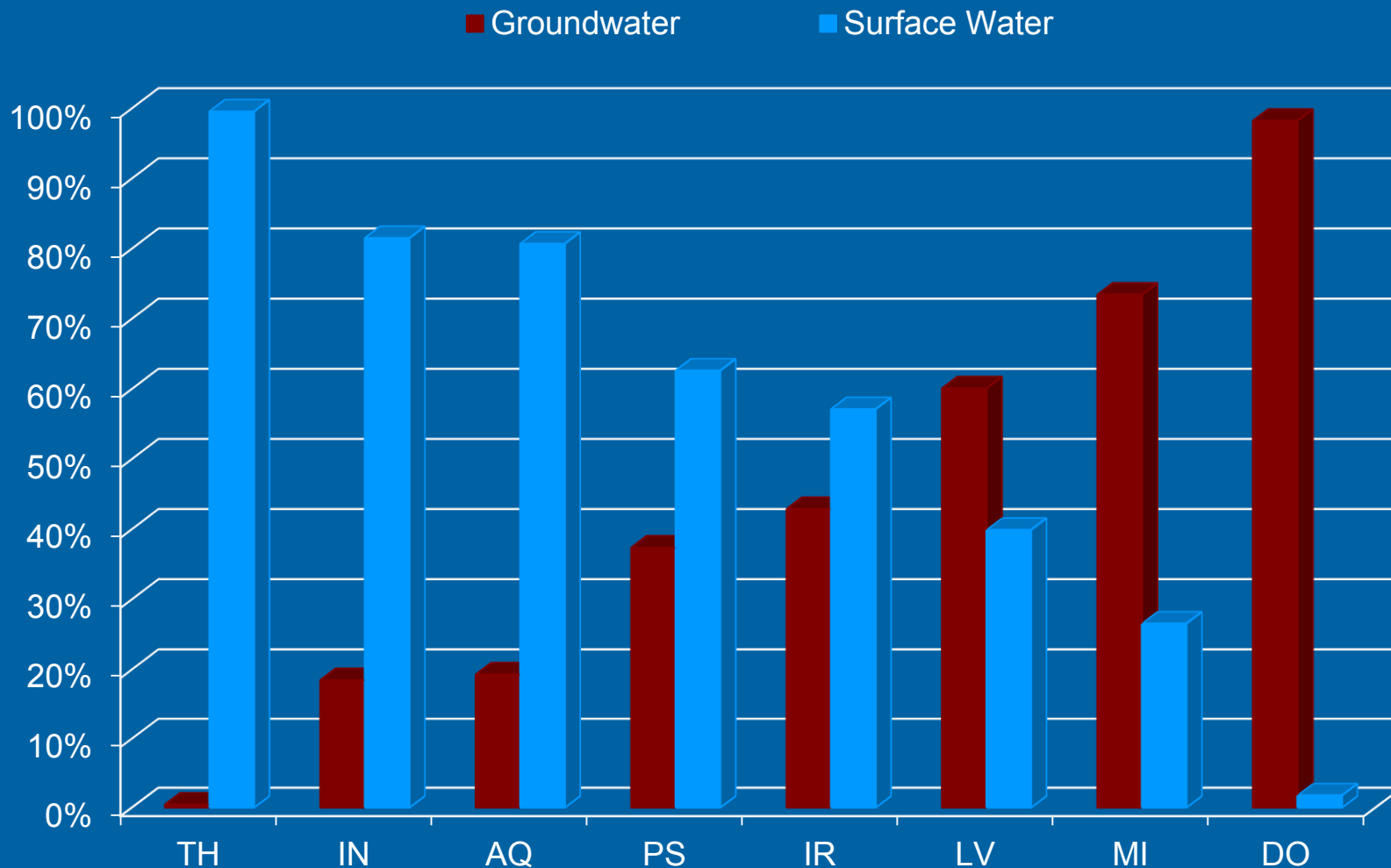
# Total Per-Capita Withdrawals, 1950-2010



# Freshwater Trends, 1950-2010 (mgd)



# Percentages of Groundwater and Surface Water by Category, 2010



# Key Points

Total withdrawals in 2010 = 355 BGD,  
13 percent less than in 2005.

Largest percentage decline in total  
withdrawals nationally since 1950.

Although population continues to  
increase, 2010 total withdrawals were  
the lowest since 1970.

# Key Points

Nearly 97 percent of the total decline occurred in two categories:

- Thermoelectric = 75 percent
- Irrigation = 22 percent

Only mining (40 percent) and aquaculture (7 percent) increased, but these categories account for only 1 percent and 3 percent of total withdrawals, respectively.

# Water Withdrawals, Thermoelectric

Livestock



1 percent

Self-Supplied Domestic



1 percent

Public Supply



12 percent

Thermoelectric Power



45 percent



1 percent



Mining

3 percent



Aquaculture

4 percent



Self-Supplied Industrial

33 percent



Irrigation

# Thermoelectric Change, 2005 to 2010



**20 percent decline**

- Better data reporting
- Improved cooling system efficiencies
- Coal to gas
- Plant closures



Bull Run Steam Plant

# Thermoelectric Trends, 1950 to 2010

↑ 11-fold increase in  
energy production

↑ 4-fold increase in  
water use

↓ Reduced gal/kWh  
■ 63 gal/kWh  
■ 19 gal/kWh



Bull Run Steam Plant

# The Type of Cooling System Matters

- Plants that use recirculating cooling systems generated 53 percent of the electricity in the U.S.
- These plants used only 6 percent of the water.



# Water Withdrawals, Irrigation

Livestock



1 percent

Self-Supplied Domestic



1 percent

Public Supply



12 percent

Thermoelectric Power



45 percent



1 percent



Mining

3 percent



Aquaculture

4 percent

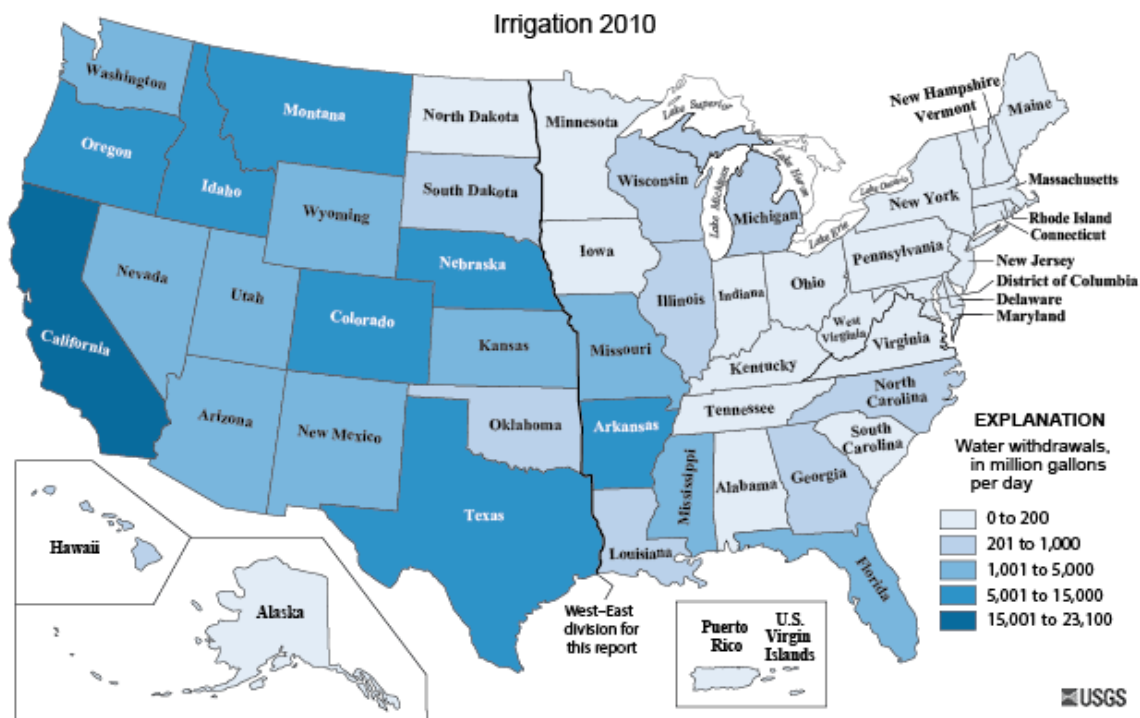


Self-Supplied Industrial

33 percent



Irrigation



**Irrigation withdrawals, top states, 2010**  
[percentages calculated from unrounded values]

State	Percentage of total withdrawals	Cumulative percentage of total withdrawals
California	20%	20%
Idaho	12%	32%
Colorado	8%	41%
Arkansas	8%	48%
Montana	6%	54%

# Irrigation Change, 2005 to 2010



**10 percent decline**



**Large surface  
water declines in  
MT, ID, CA, CO,  
UT.; accounts for  
97 percent of total  
irrigation surface  
water decline**



# Irrigation Changes, 2005-2010

↓ Irrigation application rates 2.07 acre-ft per acre in 2010, down 11 percent

↑ Acres irrigated, 62.4 million in 2010, up 1.5 percent

↑ Sprinkler and micro-irrigation 58 percent of acreage in 2010

↑ Groundwater, 43 percent of total in 2010



# Water Withdrawals, Public Supply

Livestock



1 percent

Self-Supplied Domestic



1 percent

Public Supply



12 percent

Thermoelectric Power



45 percent



1 percent



Mining

3 percent



Aquaculture

4 percent



Self-Supplied Industrial

33 percent



Irrigation

# Public Supply Change, 2005 to 2010



## 5 percent decline

- This is the first time public supply withdrawals have declined since we have maintained records.



# Public Supply Changes, 2005-2010



**Groundwater = 37 percent of  
public supply use**



**Population served = 86  
percent in 2010**



**Residential deliveries = 57  
percent in 2010**



**Domestic per capita use = 88  
gpd in 2010**



# Water Withdrawals, Industrial

Livestock



1 percent

Self-Supplied Domestic



1 percent

Public Supply

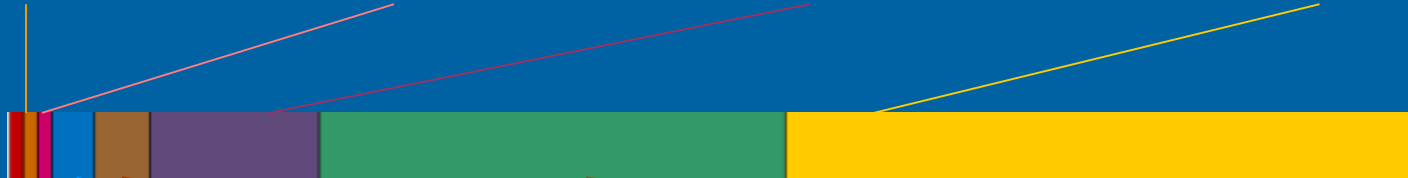


12 percent

Thermoelectric Power



45 percent



1 percent



Mining

3 percent



Aquaculture

4 percent



Self-Supplied Industrial

33 percent



Irrigation

# Industrial Change, 2005 to 2010



12 percent decline



# Industrial Changes, 2005-2010



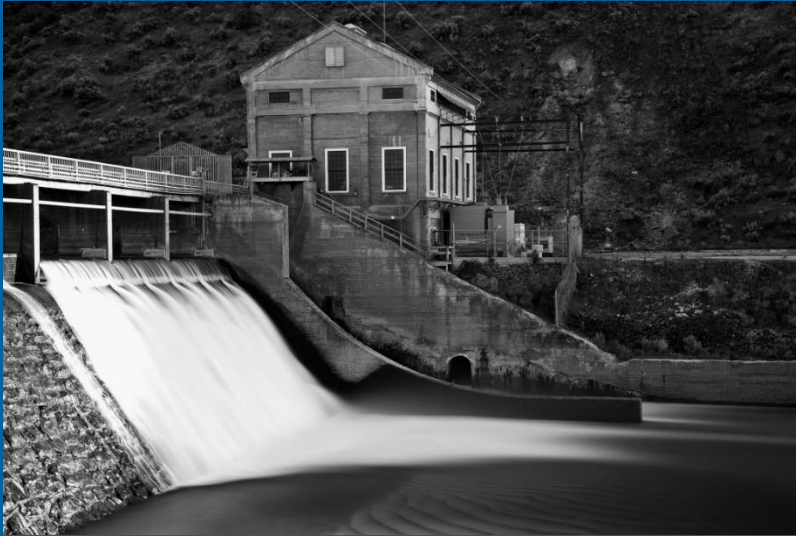
**Surface water  
accounts for 82  
percent of  
industrial use**



**94 percent of  
withdrawals for  
industrial use  
were freshwater**



# How Idaho Ranks



# Idaho's Rank in U.S. Withdrawals

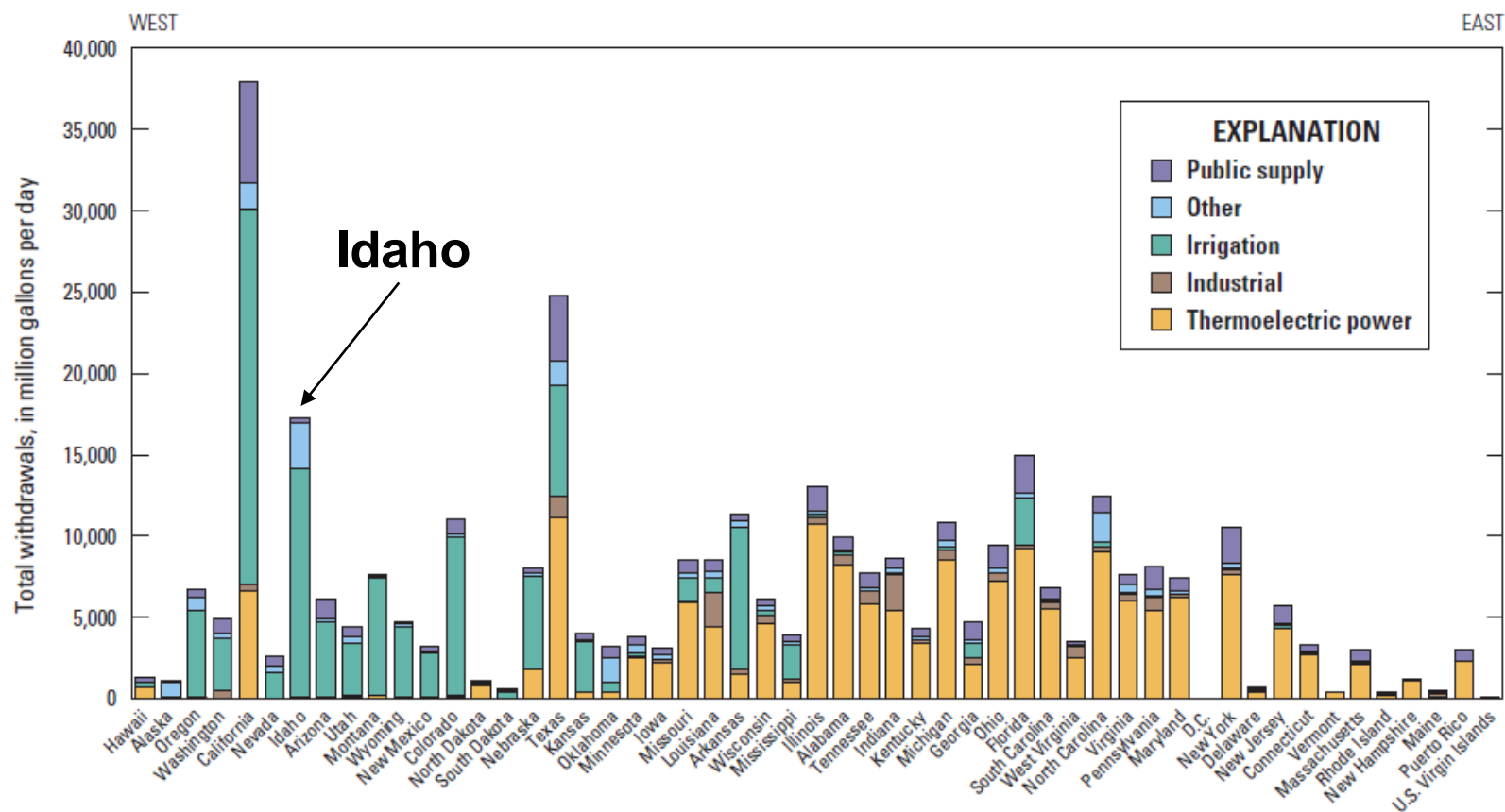
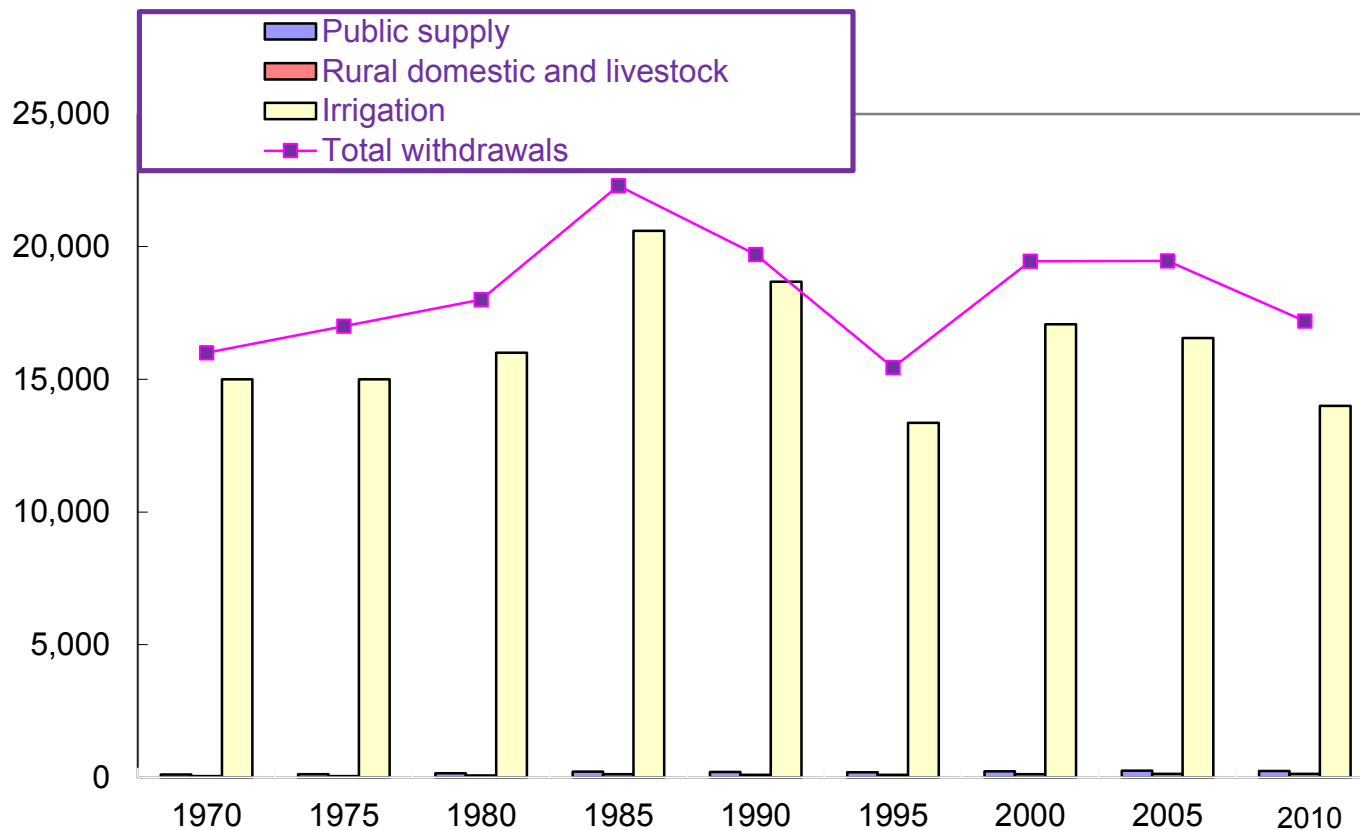


Figure 2. Total water withdrawals by State and barchart showing categories by State from west to east, 2010.

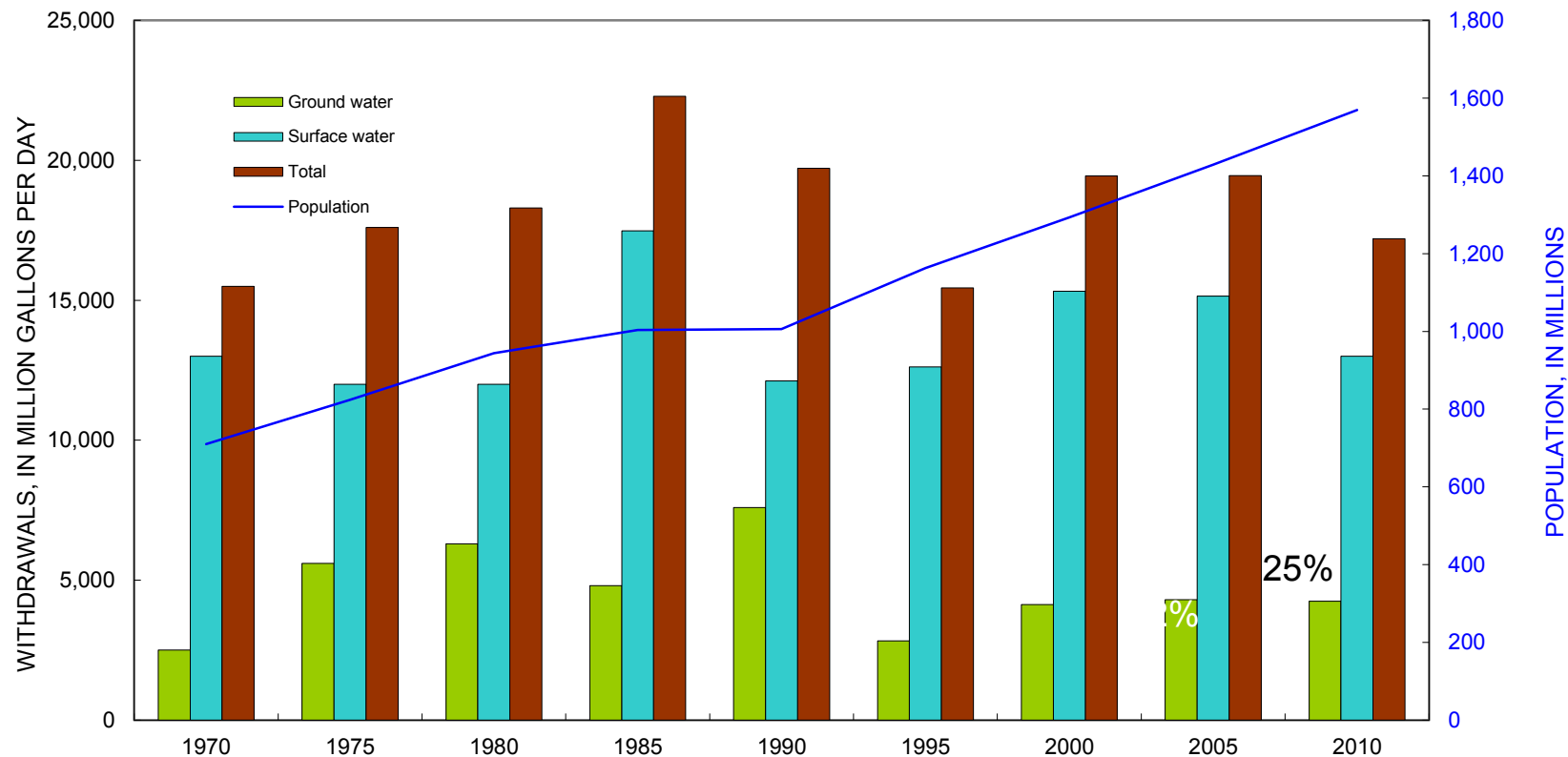
# More Idaho Rankings

- 40<sup>th</sup> for public-supply use
- 34<sup>th</sup> for domestic use (incl. public supply deliveries and self-supply)
- 40<sup>th</sup> in total population
- 1<sup>st</sup> in domestic per capita use

# Idaho Withdrawals by Category, 1970-2010



# Idaho Withdrawals by Source, 1970-2010



Idaho trends in population and freshwater withdrawals by source, 1970-2010

# Irrigation Change, 2005-2010

- 15 percent decline in total use (surface water)
- Groundwater increased from 23 percent to 27 percent of total use
- No significant difference in total irrigated acres
- ~5 percent more sprinkler irrigated acres
- Shift to sprinkler from flood
- Improved application rate (5.26 to 4.37 af/a)

# Total Population and Public Supply

- Population between 1985-2010 grew 56 percent (to 1.56 million)
- Public-supply withdrawals ranged from 190 to 250 mgd, peaking in 2005
- Between 2005 and 2010, public supply declined 3.5 percent (conservation, metering, reduced system losses, recycling)
- Deliveries to domestic users increased from 73 percent to 77 percent of total public-supply use
- Population served increased from 70 percent to 72 percent

# Domestic Use

- Public supply and self-supply withdrawals
- Per capita use was 168 gpd in 2010, down from 187 in 2005.
- Driven by public-supply deliveries, population-served coefficients
- Arid western states all within top tier (>134 gpd)  
UT 167 gpd, AZ 147 gpd
- Factor of metering, conservation, data quality, climate



# Aquaculture

- Idaho ranks #1 for aquaculture use
- World's largest trout farm (Clear Springs Foods)
- Flow-through raceways
- No significant consumptive use



# Questions?

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**Molly Maupin**  
**mamaupin@usgs.gov**  
**(208) 387-1307**

# Idaho Water Economics

*Garth Taylor, Steve Hines, and Joel Packham*

**Idaho Water Board**

**March 19, 2015**

**University of Idaho**

College of Agricultural *and* Life Sciences

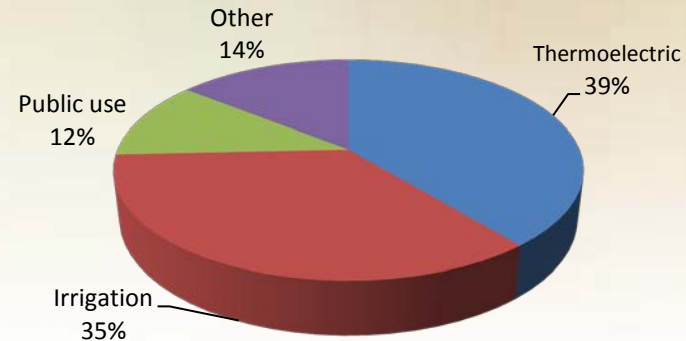
# Overview

- US water
- Idaho water
- Idaho Ag
- Economic impact of water calls and/or drought

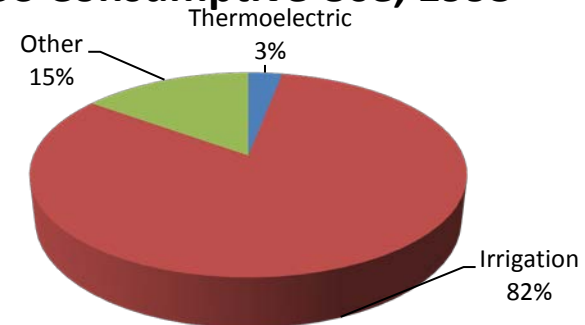
# Water Use Metrics

- Withdrawals: surface water diversions and groundwater pumping
- Consumptive use: evaporation and evapotranspiration
- Applied: agricultural applied to field

**US Withdrawals, 1995**

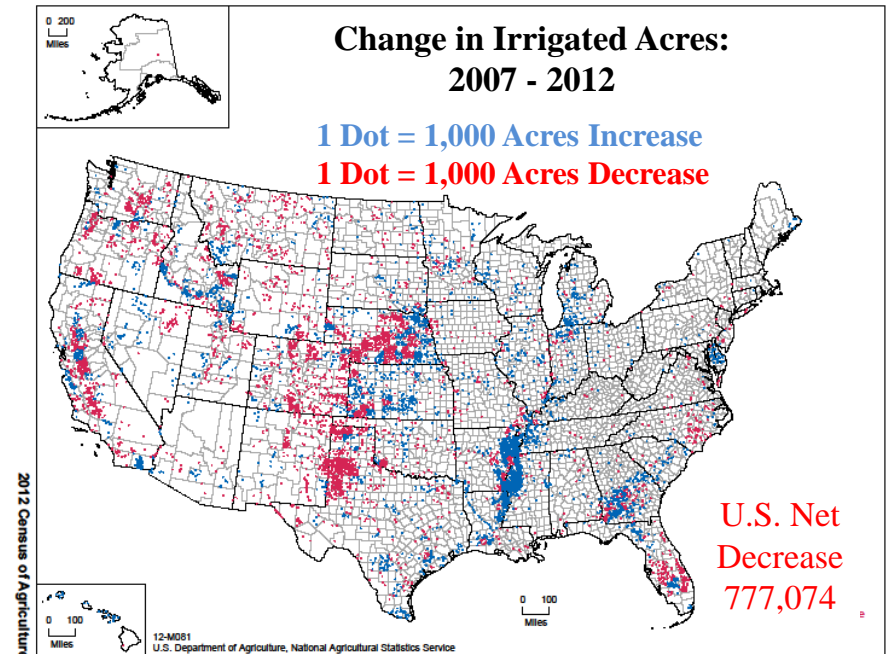
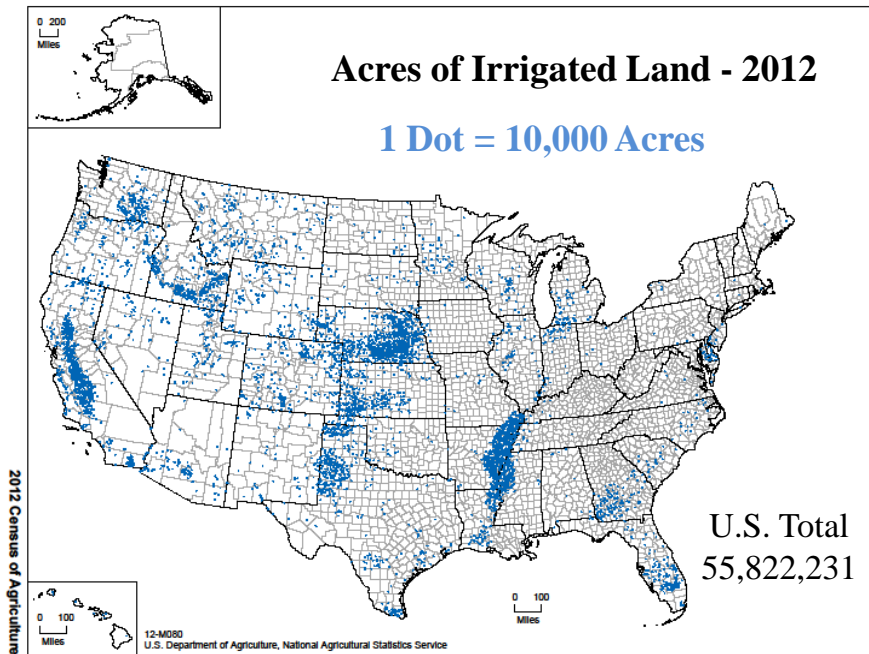


**US Consumptive Use, 1995**



# Where does crop irrigation occur ?

## How has it changed over time ?



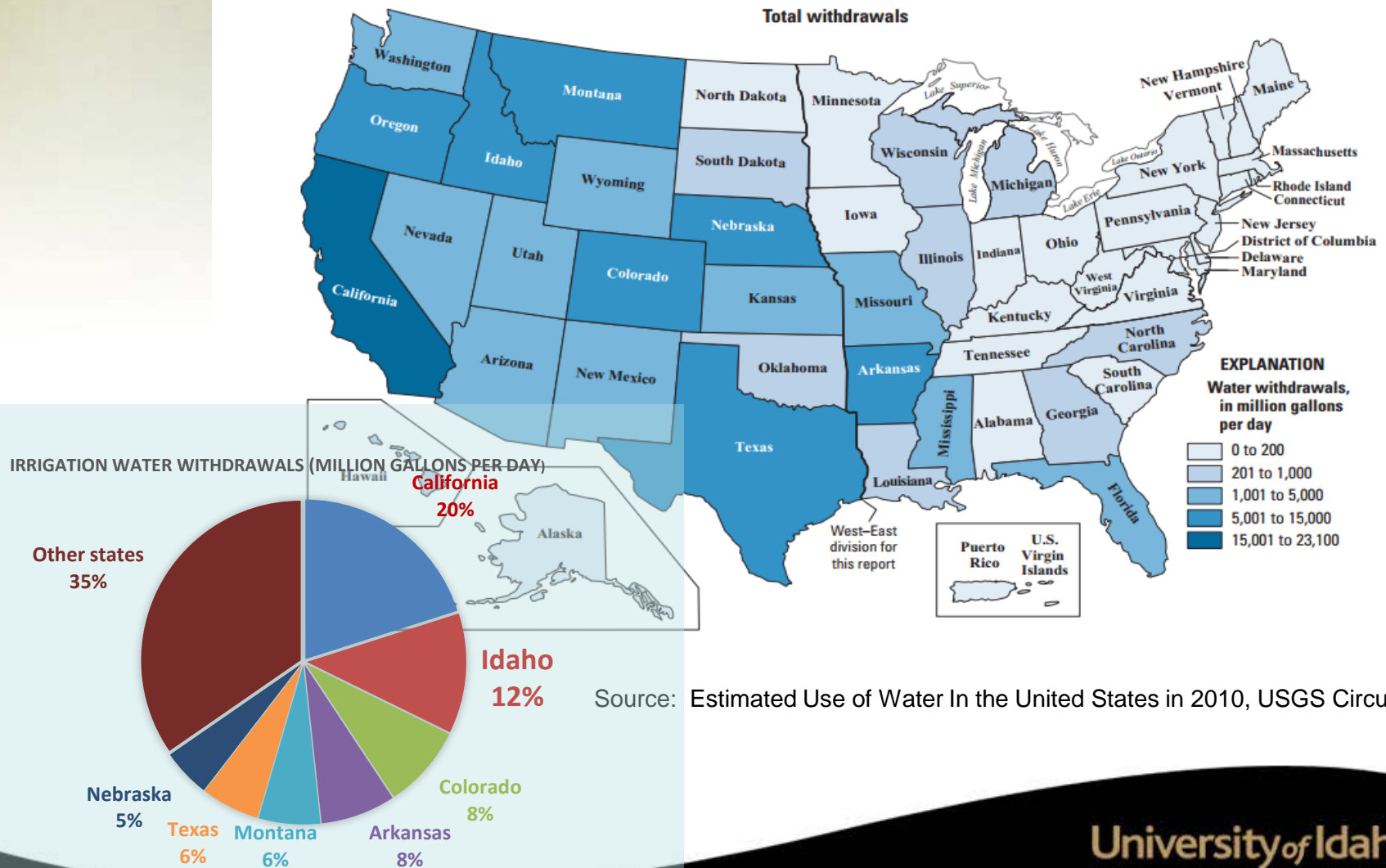
Source: 2012 Agricultural Census, National Agricultural Statistics Service, U.S. Department of Agriculture, 2014.



United States Department of Agriculture, Economic Research Service

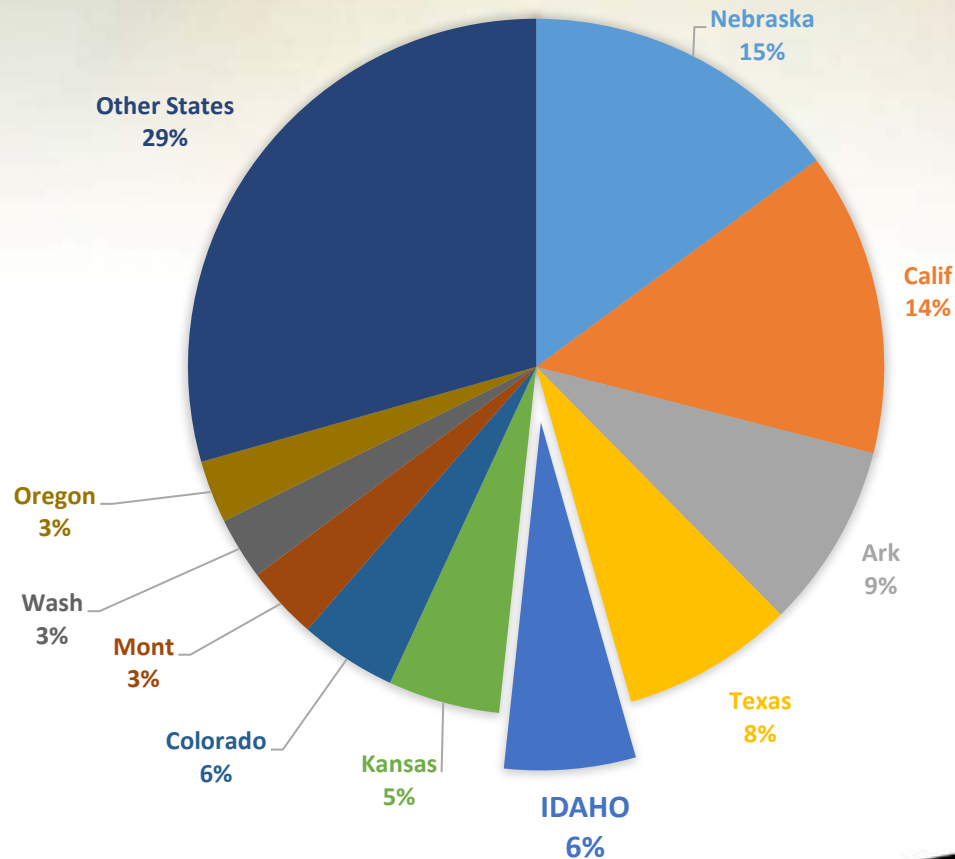
The views expressed are those of the author(s) and should not be attributed to the Economic Research Service or USDA.

# Idaho, 2<sup>nd</sup> irrigation withdrawals



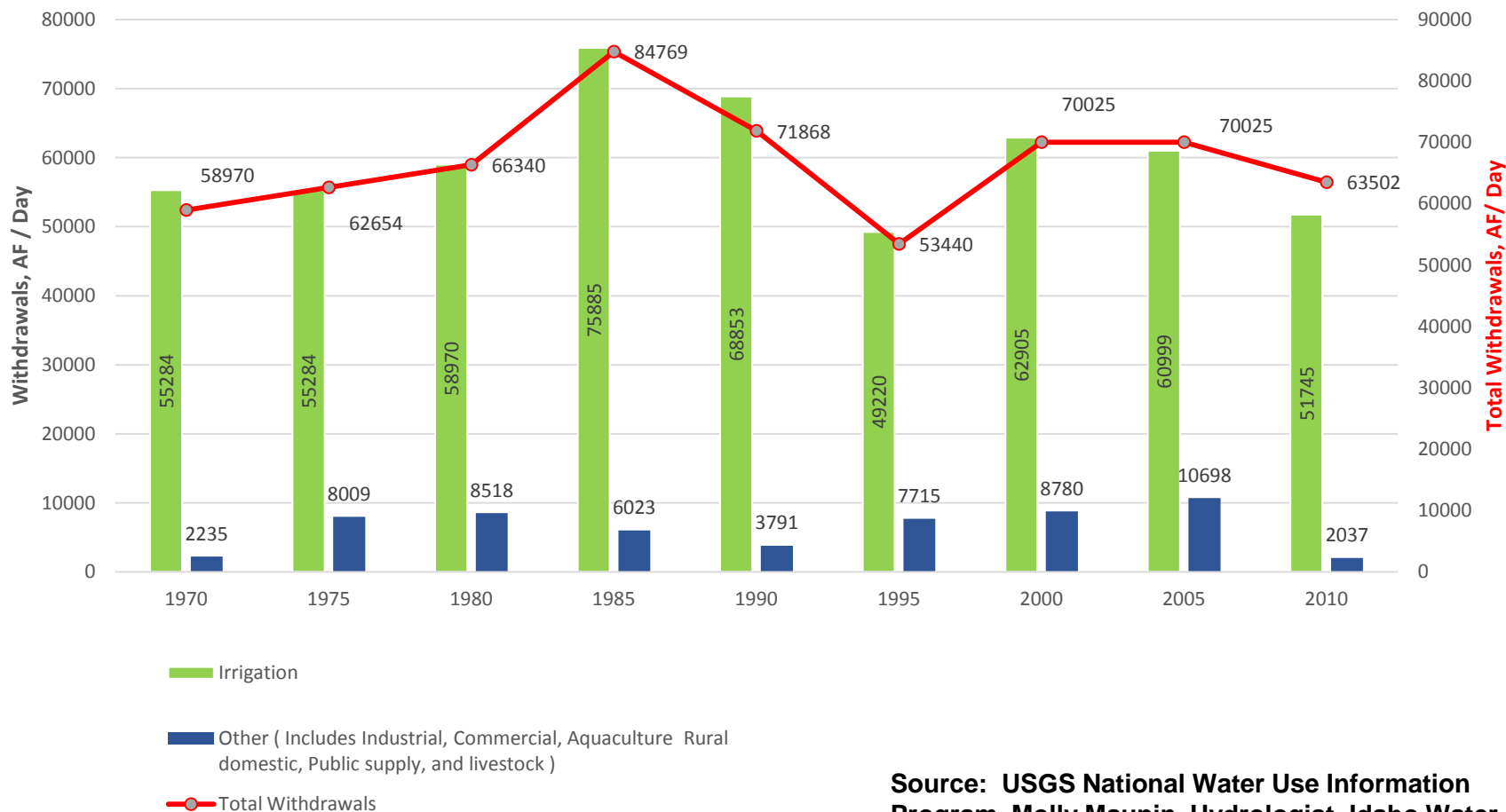
# Idaho, 6<sup>th</sup> in US irrigated acres

## State Shares of Total U.S. Irrigated Acres for 2012



Source: 2012 Census of Agriculture, National Agricultural Statistics Service (USDA, 2014)

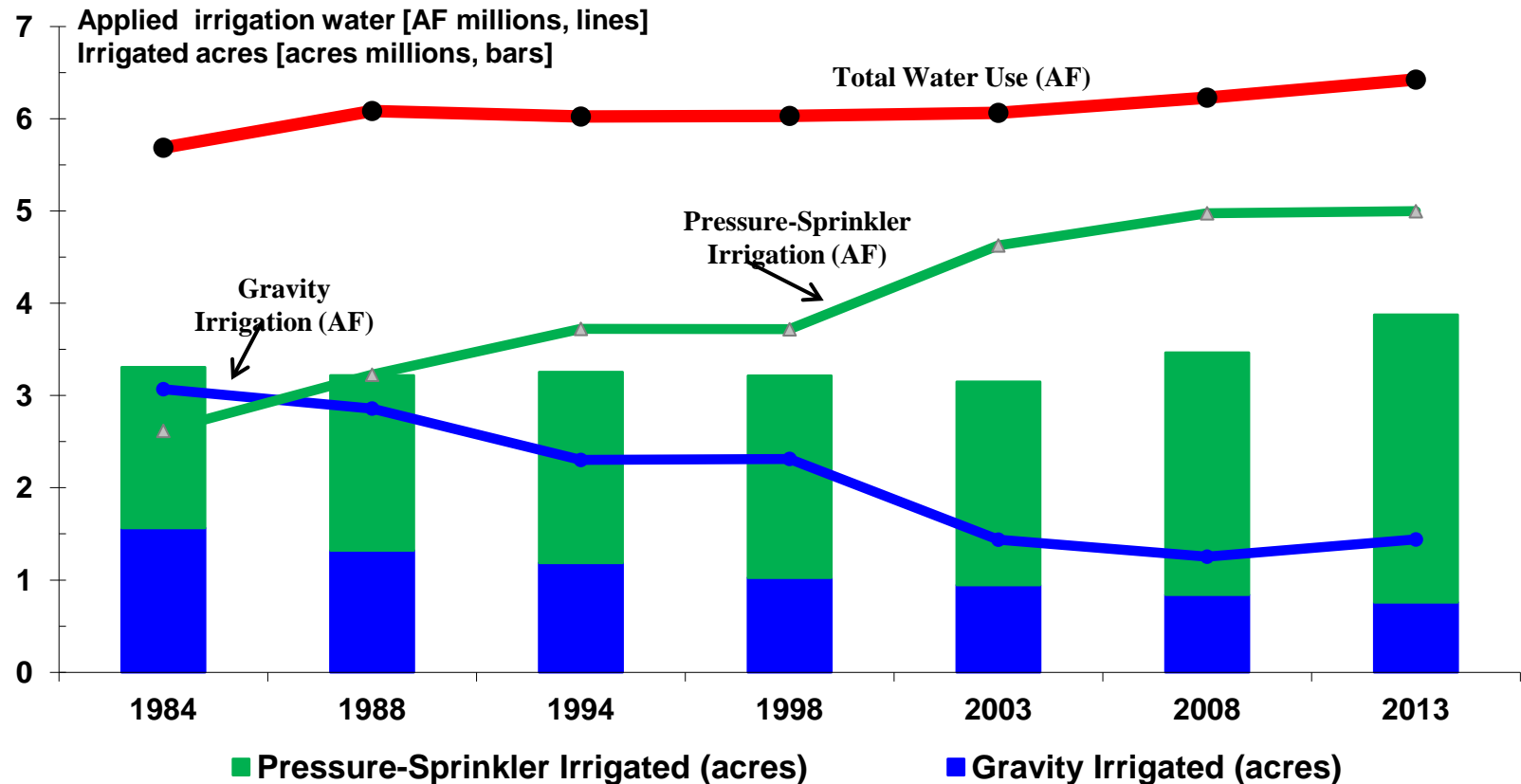
## Trends in total water withdrawals by water - use category, Idaho 1970-2010



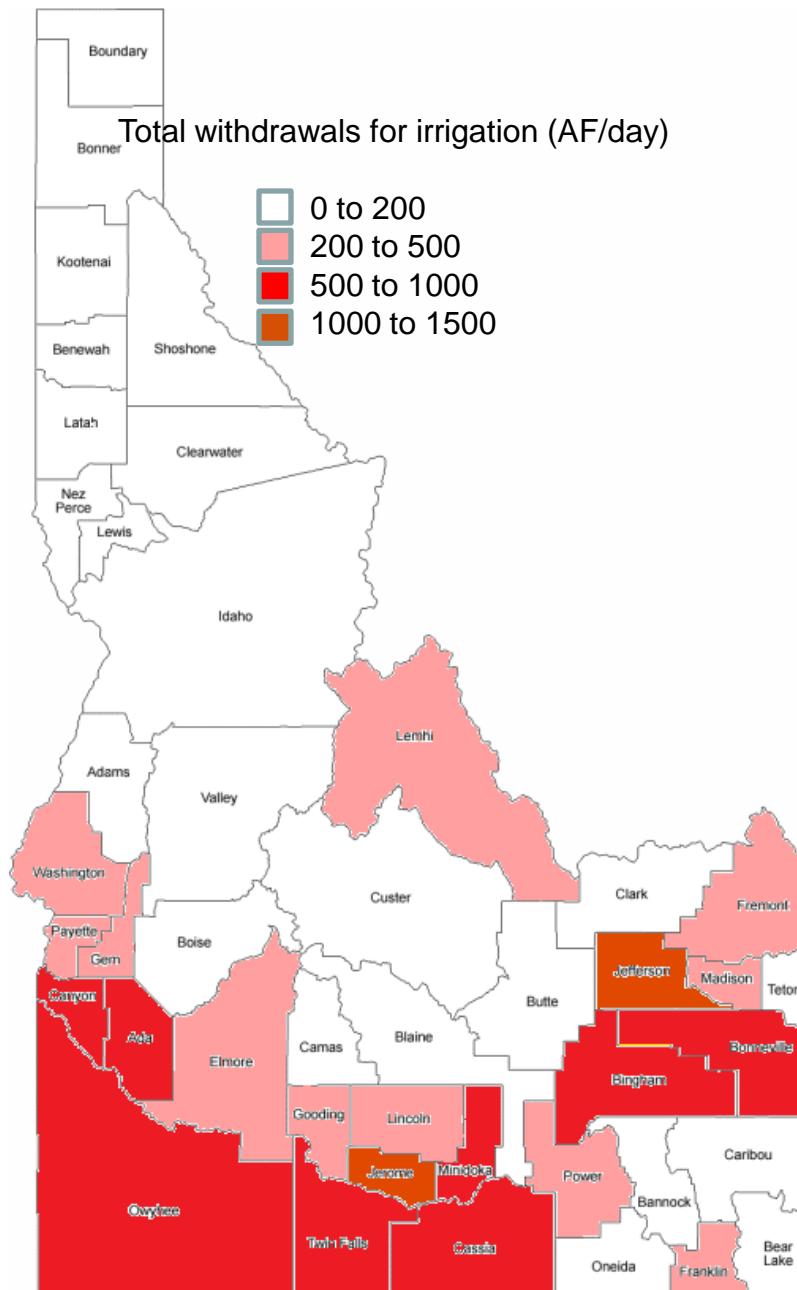
**Source: USGS National Water Use Information Program, Molly Maupin, Hydrologist, Idaho Water Science Center**

# Idaho switches from gravity to sprinklers

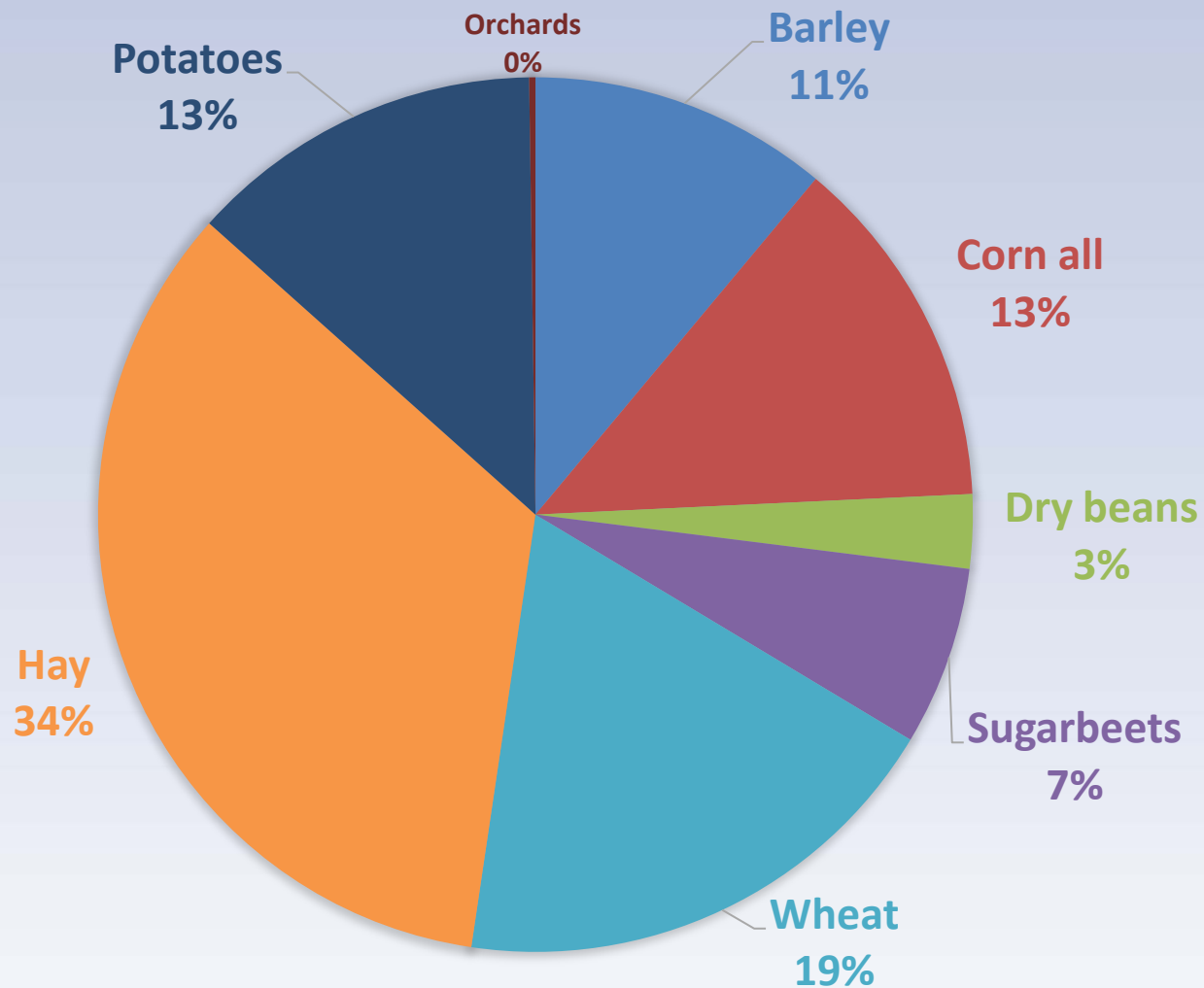
Trends in irrigated acres and applied irrigation water, Idaho 1984-2013



Source: USDA, Economic Research Service calculations based on USDA, National Agricultural Statistics Service, 1984, 1988, 1994,



## IDAHO CROP IRRIGATED ACRES, 2012



2.8 million irrigated acres the entire crop is irrigated  
Source: 2012 Census of Agriculture

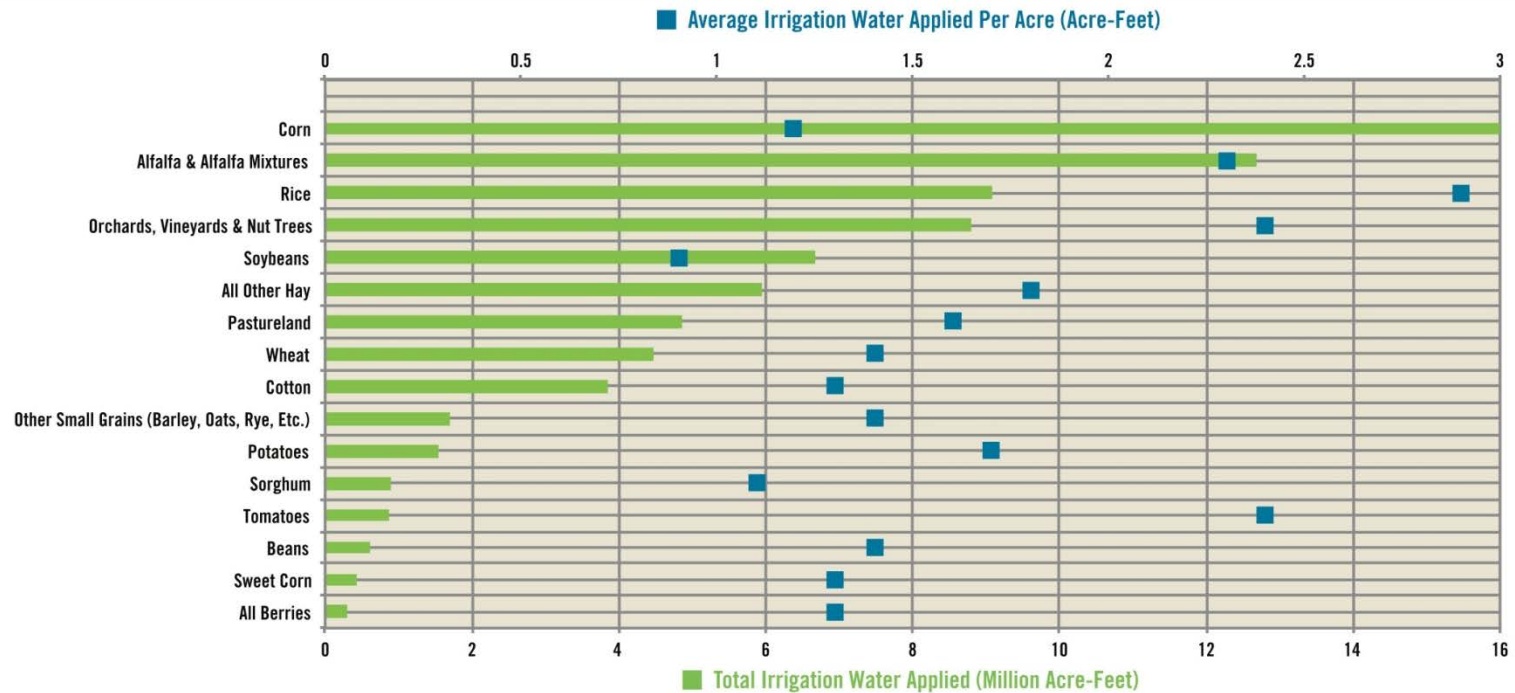


United States Department of Agriculture, Economic Research Service

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# Rice is thirsty but hay is king

Total Water Use by Crop (2013)

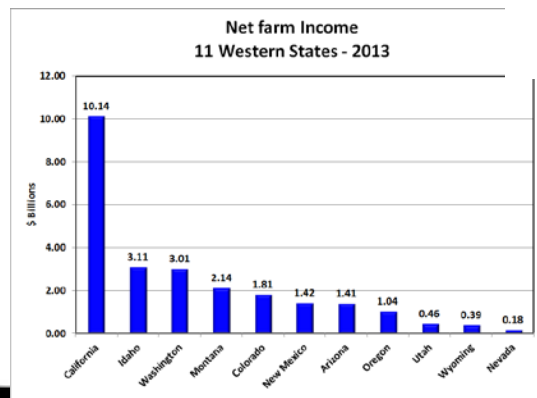
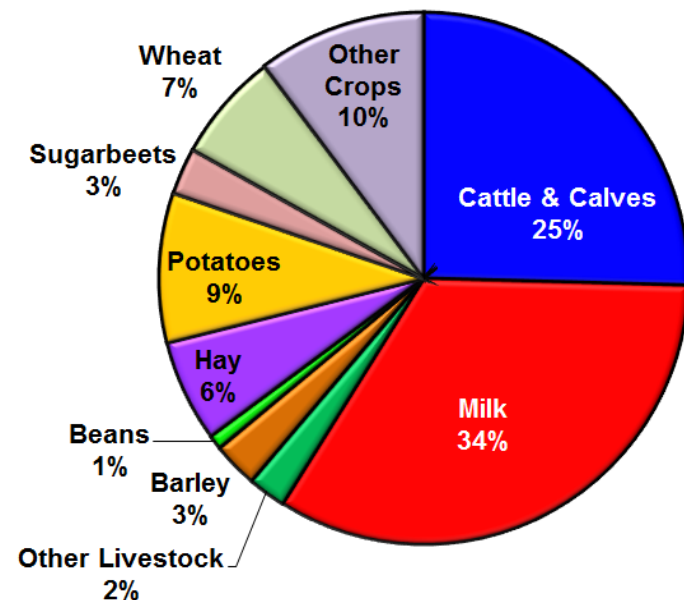


Source: USDA, Farm and Ranch Irrigation Survey, 2013

# Idaho Ag Quick Facts

- 2014 record high receipts (\$9.7 billion) and farm income (\$4.5 billion)
- Livestock cash receipts exceed 60% of total - indirectly even more
- Farming is Idaho's fastest growing industry
- Ag Biz is Idaho's largest industry
  - 20% of output, \$24 million is 2011
  - 14% of jobs
  - 14% of GDP
- Western states ranking
  - 2<sup>nd</sup> in net farm income
  - 3<sup>rd</sup> in farm gate cash receipts

Idaho Cash Receipts, 2014

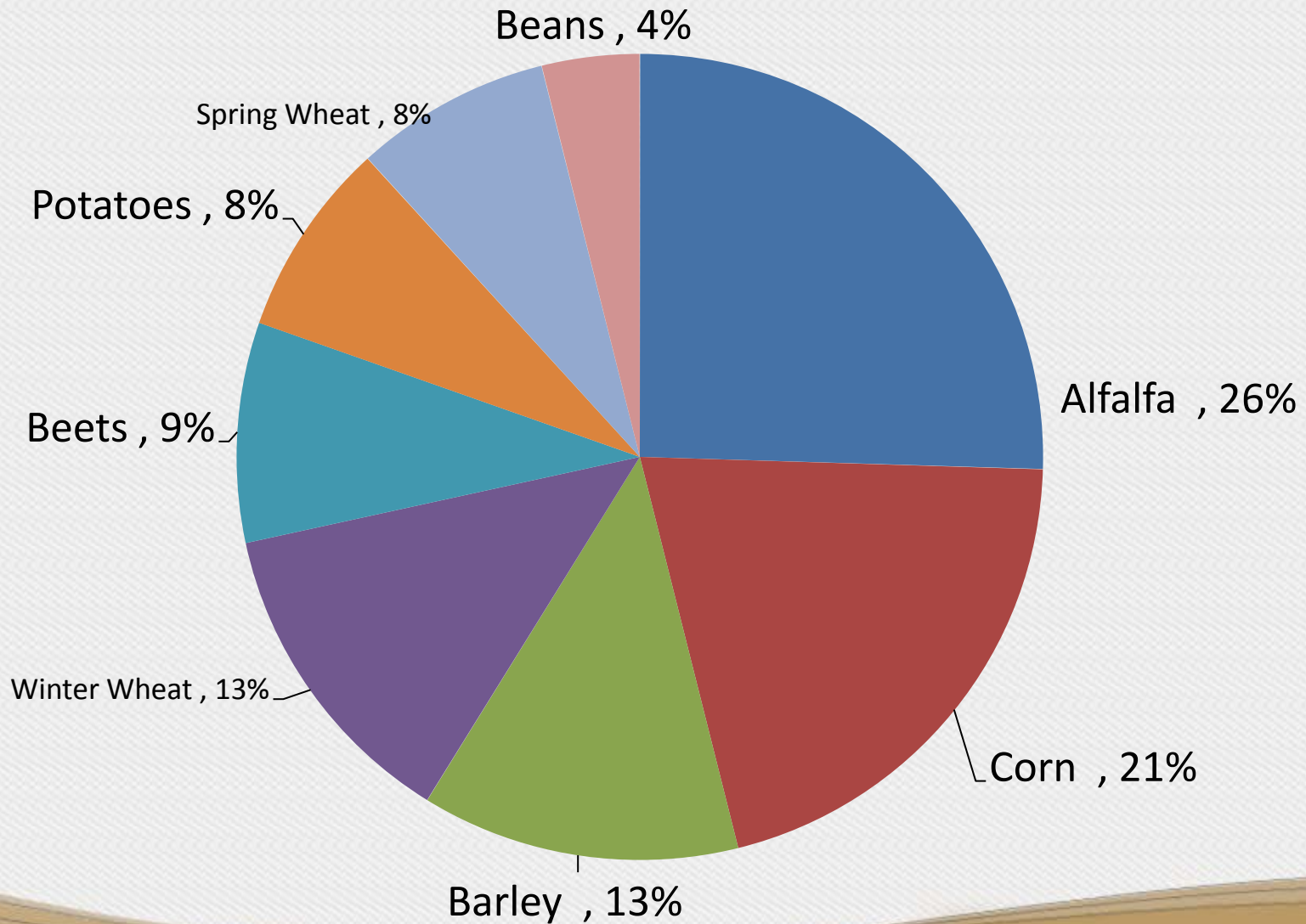


# Magic Valley Ag Quick Facts



- Over 50% of Idaho's farm gate cash receipts.
- More than  $\frac{1}{4}$  of Idaho's GDP
- 70% of Idaho's dairy herd and dairy cows to people 2.5 to 1
- Idaho's top four ag counties (Cassia, Gooding, Twin Falls, Jerome)
- Agribusiness is 60% of the Magic Valley exports
  - Agribusiness create directly or indirectly over  $\frac{1}{3}$  of 89,000 Magic Valley jobs.
  - 2 of 3 dollars of sales from the Valley's businesses are directly or indirectly created by exports from agribusiness.
  - Dairy processing alone accounts for over 1 of 5 dollars of sales and 1 in 7 Magic Valley jobs

# Magic Valley Crop Acreage (905,000 acres)



## Rangen Delivery Call Affected Water Rights Junior to July 13, 1962

- Southwest - Goose Creek Irrigation District
- Eastern Snake Plain Model Boundary
- Ground Water Districts
- Area of Common Ground Water Supply
- Rift Area

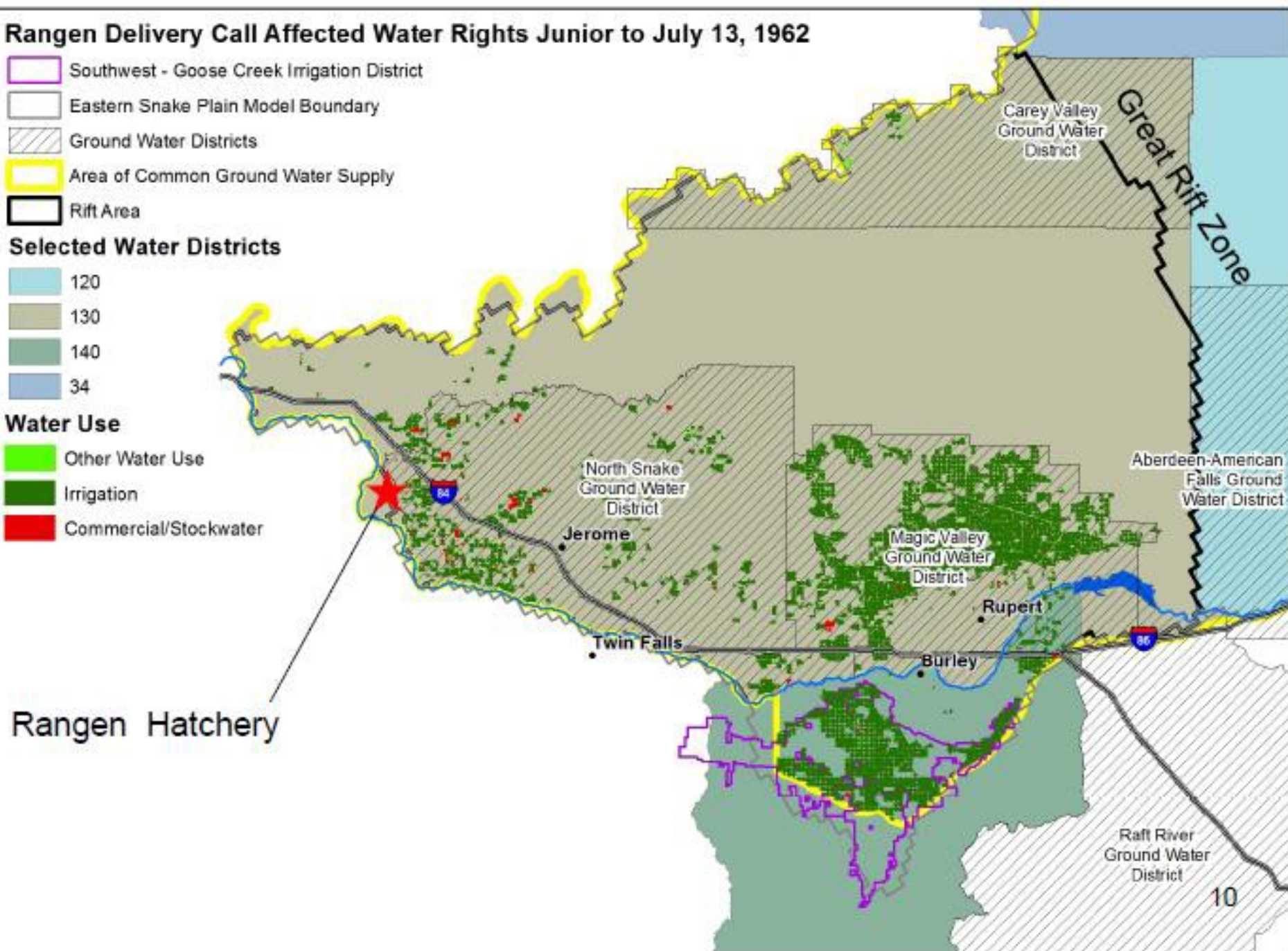
### Selected Water Districts

- 120
- 130
- 140
- 34

### Water Use

- Other Water Use
- Irrigation
- Commercial/Stockwater

Rangen Hatchery

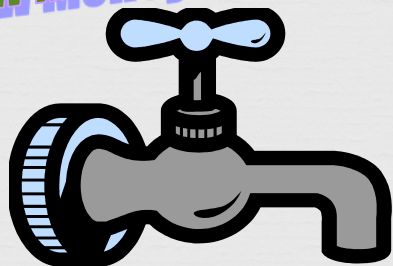


# Impact Analysis Steps

- Farmer and processor adaption to water calls and/or drought
  - Water calls cut acres NOT crops or cows
  - Drought cuts water – both water and crops are flexible.
  - Farmer adaptation
    - Advanced notice – year, pre-planting, next week?
    - Alternate water sources – wells or drains
    - Flexibility of contracts and rotations
    - Alternative crops, feed importing, exporting acres
  - Processor adaptation – importing beets or milk shortfalls
- Translate crop loss to exports (new money) loss.
- Apply multipliers... including taxes.

New Money

# The Leaky Tub



Exports



Imports

Leakages

# Scenario Parameters

- Dairy processing multiplier: \$2.50 per \$1 exports
- Crops multipliers: \$1.50 per \$1 exports
- Jobs multipliers: 7.5 jobs per \$1,000,000 million exports
- Tax coefficient: \$5,200 per job
  - Individual income, corporate income and sales taxes
  - About 80% of state budget
  - No local taxes i.e. property tax

# Water Call Impact Scenarios

## Less Flexible

- Loss in hay means decrease in cows and decrease in cheese production

## More Flexible

- Import hay
- Silage displaces grain
- Hay displaces grain
- Beets displace grain and hay

## Economic Impact of Water Calls Upon the Magic Valley: Flexible

	Immediate Sales Reduction (\$ millions)	Long-term Sales Reduction (\$ millions)	Total Sales Reduction (\$ millions)
<b>Crops</b>	\$163	\$76	\$239
<b>Dairy Processing</b>	\$0	\$0	\$0
<b>Total Impact</b>	\$163	\$76	\$239

	Immediate Job Reduction	Long-term Job Reduction	Total Job Reduction
<b>Crops</b>	534	691	1,225
<b>Dairy Processing</b>	0	0	0
<b>Total Impact</b>	534	691	1,225

	Immediate Tax Reduction (\$ millions)	Long-term Tax Reduction (\$ millions)	Total Tax Reduction (\$ millions)
<b>Crops</b>	\$2.8	\$3.6	\$6.4
<b>Dairy Processing</b>	\$0.0	\$0	\$0.0
<b>Total Impact</b>	\$2.8	\$3.6	\$6.4

## Economic Impact of Water Calls Upon the Magic Valley: Less Flexible

	Immediate Sales Reduction (\$ millions)	Long-term Sales Reduction (\$ millions)	Total Sales Reduction ( \$ millions)
<b>Crops</b>	\$77	\$36	\$113
<b>Dairy Processing</b>	\$103	\$84	\$186
<b>Total Impact</b>	\$179	\$120	\$299

	Immediate Job Reduction	Long-term Job Reduction	Total Job Reduction
<b>Crops</b>	259	330	589
<b>Dairy Processing</b>	82	646	769
<b>Total Impact</b>	341	976	1,358

	Immediate Tax Reduction (\$ millions)	Long-term Tax Reduction (\$ millions)	Total Tax Reduction (\$ millions)
<b>Crops</b>	\$1.3	\$1.7	\$3.1
<b>Dairy Processing</b>	\$0.4	\$3.4	\$3.8
<b>Total Impact</b>	\$1.8	\$5.1	\$6.9

# We don't know.....

- Volume and timing of potential calls
- Where and how many acres affected in each county and outside MV
- Specific crop mix affected
- Medium and long term processor impacts
- Mixed impacts outside the Magic Valley
  - State hay prices increase
  - Land rental rates increase
  - Milk demand increases
- Multiplier effects in Boise



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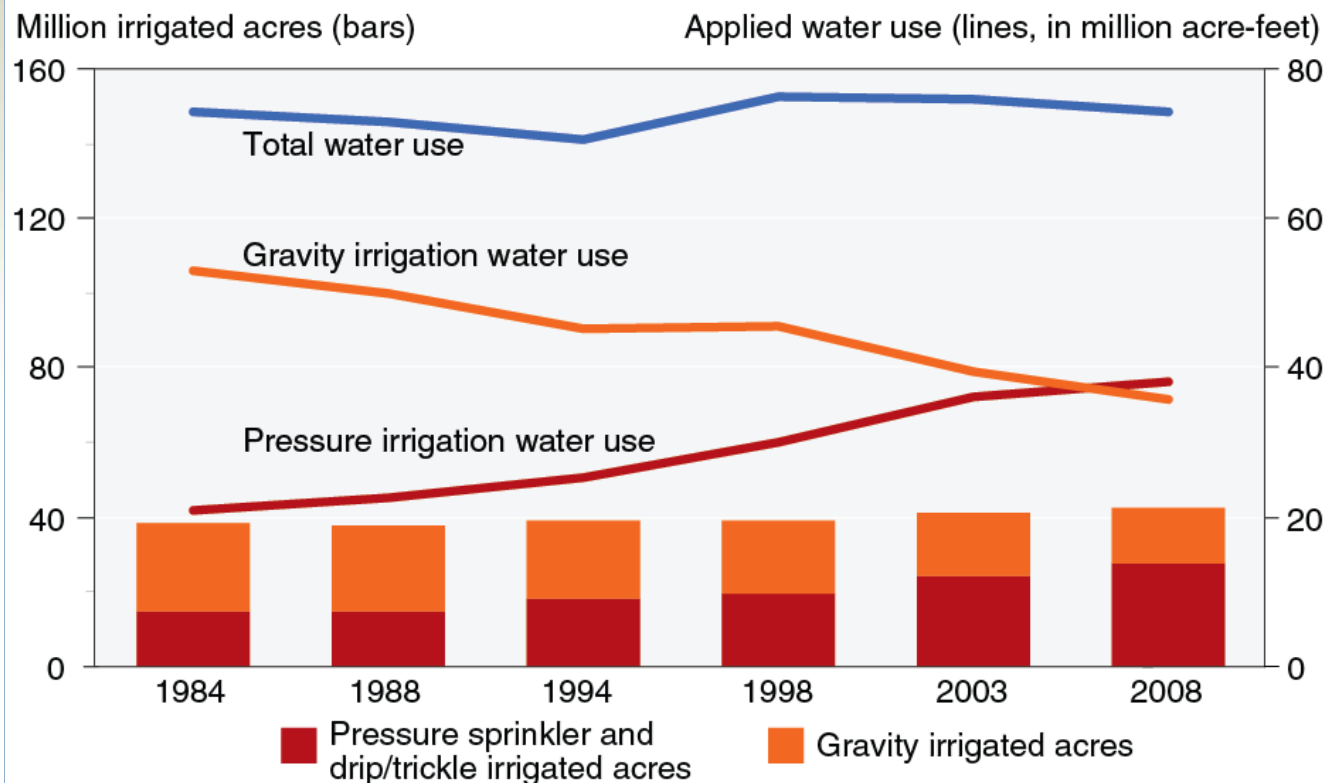
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Extension

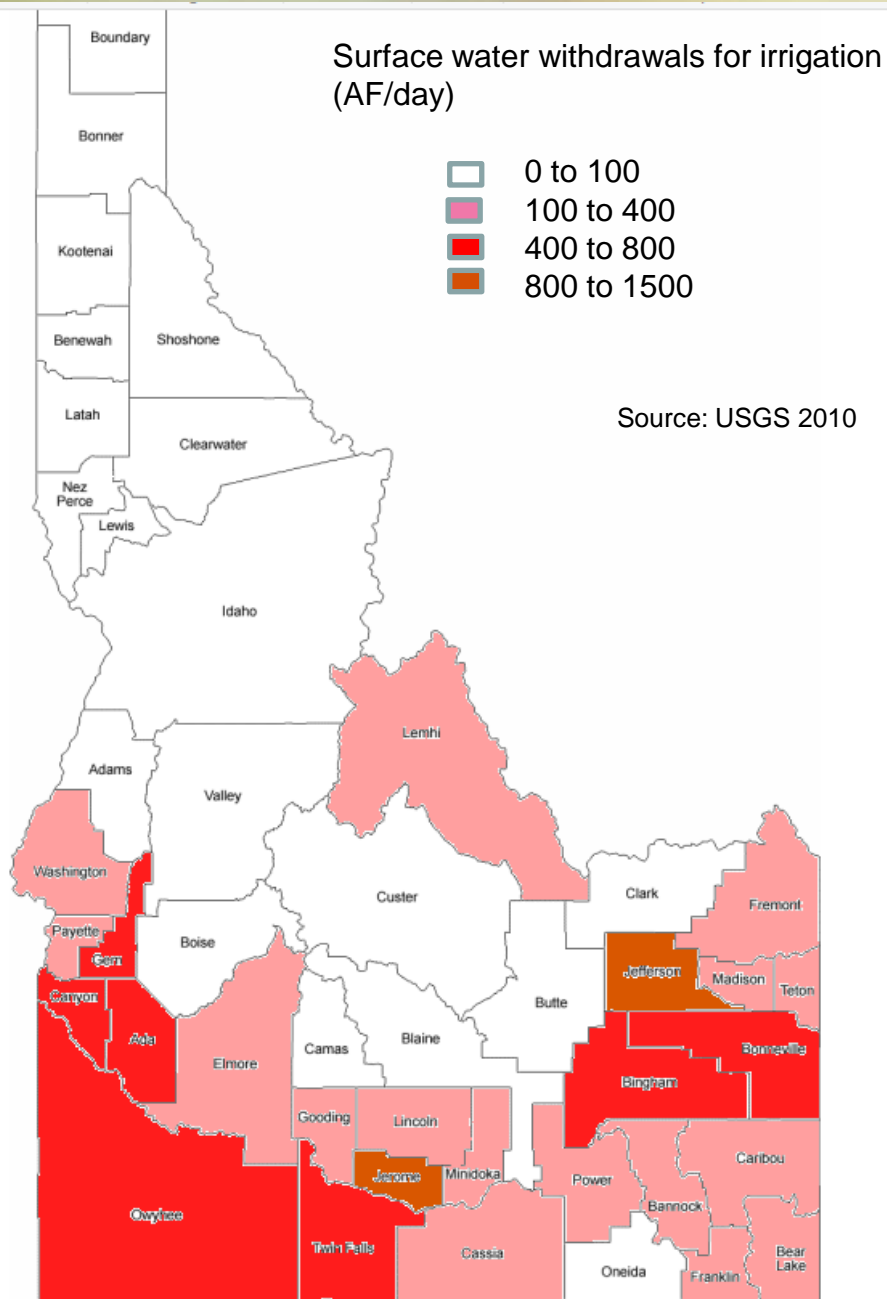
**University of Idaho**  
College of Agricultural and Life Sciences

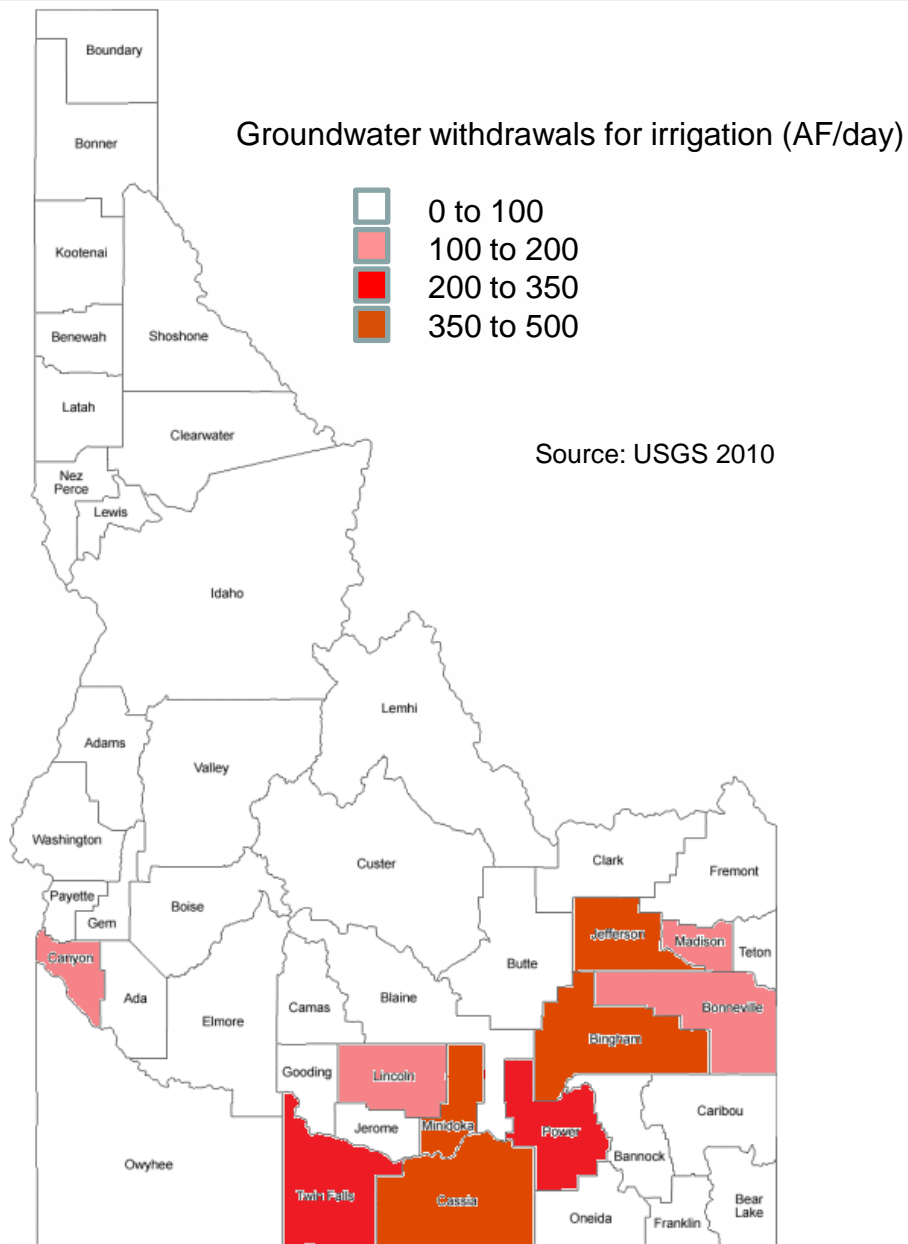
# 17 western states irrigation trends

Irrigated acres and applied water use, 17 western States, 1984-2008



Source: USDA, Economic Research Service using USDA, National Agricultural Statistics Service, Farm and Ranch Irrigation Survey data.





# Municipal Water-Right Curtailment

Idaho Water Resource Board

March 19, 2015

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Christian Petrich, Ph.D., P.E., P.G.,  
SPF Water Engineering, LLC

## Overview

- Rules for quantifying vulnerable municipal pumping are unclear
- Lack of parity between municipal and exempt domestic/commercial uses
- Need for administrative guidance regarding municipal curtailment
- Rangen Delivery Call example



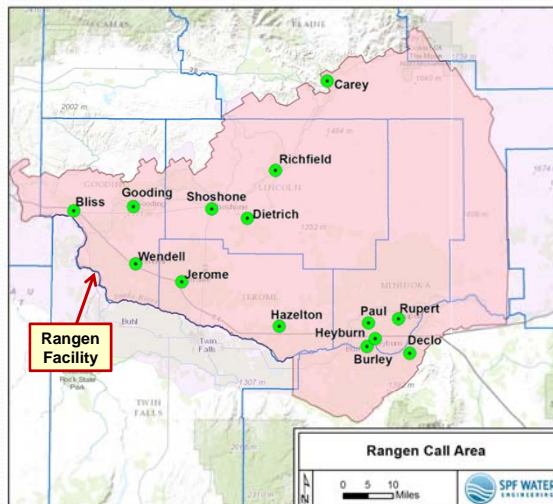
## Basis for Curtailment

- Diversions for consumptive uses under junior-priority, non-exempt water rights may be curtailed during times of shortage to ensure sufficient supply for senior water-right holders
- Governed by conjunctive management rules (IDAPA 37.03.11)



## Rangen Delivery Call

- 14 cities have rights listed in Rangen Delivery Call
- Cities have total of 97 water rights
- 34 municipal rights have priority date junior to 8/12/1973
- Each of 14 cities has at least one post-8/12/1973 right



## Rangen Curtailment Orders

- Rangen orders required curtailment of pumping for “consumptive uses” under junior-priority rights (including municipal rights)
- Consumptive municipal uses include
  - Irrigation
  - Certain commercial/industrial uses
  - Indoor domestic?
- Indoor domestic and commercial/industrial uses may be *non-consumptive* if treated wastewater is returned to the “local hydrologic system” (e.g., discharge of treated wastewater to river)



## Municipal Consumptive Use (cont.)

- Municipal use (*including* indoor domestic use) may be fully consumptive *if*
  - Wastewater is evaporated or land-applied
  - Wastewater discharge does not return to source aquifer
- 8 of 14 Coalition cities dispose of municipal wastewater via land application or evaporation ponds – most of this water is “consumptively used”



## Rights Exempt from Curtailment

- Rights exempt from curtailment:\*
- Domestic rights, which authorize irrigation of up to ½ acre and maximum diversion of up to 13,000 gpd
- Any other uses with a maximum diversion of less than 0.04 cfs and diversion volume of 2,500 gpd
- These exemptions do not apply to municipal rights
- Previous curtailment orders (Surface Water Coalition, Blue Lakes, Clear Springs) explicitly exempted “culinary” and/or in-home uses from curtailment
- Director’s letters to owners of curtailed rights in Rangen Call stated that “non-consumptive uses and culinary in-house uses of water are not subject to curtailment”



\*(IDAPA 37.03.11.020.11, Idaho Code § 42-111)

## IDWR letter to Twin Falls (2/20/2015)

**“Municipal use includes the consumptive use of water for irrigation of parks and open spaces, including lawn and garden irrigation for residential use. Municipal use also includes water for other domestic, commercial, and industrial uses, and may be partly or fully consumptive. In addition, municipal use allows the re-use of wastewater to its full consumption. For those reasons, *the Department normally considers municipal use to be fully consumptive.*” (emphasis added)**



## Quantify Vulnerability to Curtailment

- Estimate consumptive and non-consumptive use
  - Municipal use may be fully consumptive if wastewater is land-applied or evaporated
  - A portion of municipal use may be non-consumptive if treated wastewater is available to downstream users
- Allocate consumptive use to senior-priority water rights
- Estimate volume of consumptive use under junior-priority water rights



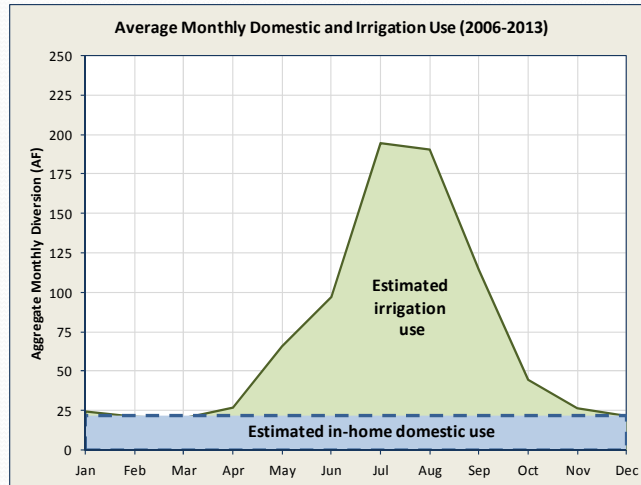
## Quantifying Consumptive and Non-Consumptive Municipal Use

- Difference between summer and winter use is mostly consumptive irrigation
- Estimate consumptive use based on per-capita averages
- System by system, connection-by-connection analysis



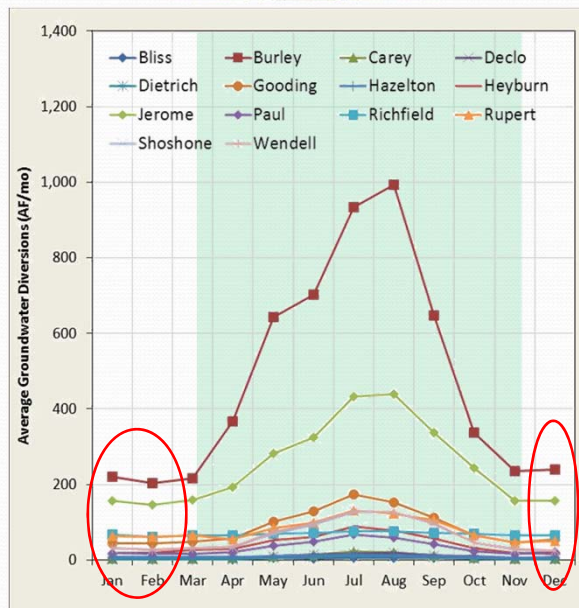
## Winter-Summer Difference

- Summer irrigation represents a consumptive use
- Portion of “in-home domestic” production may include commercial use



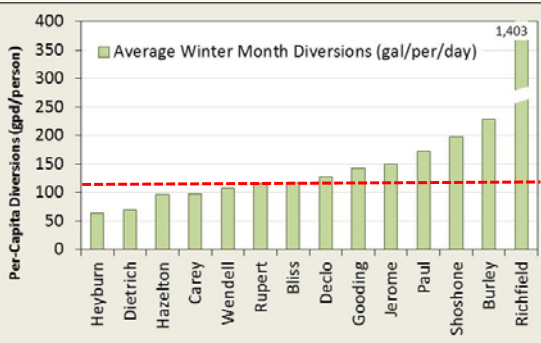
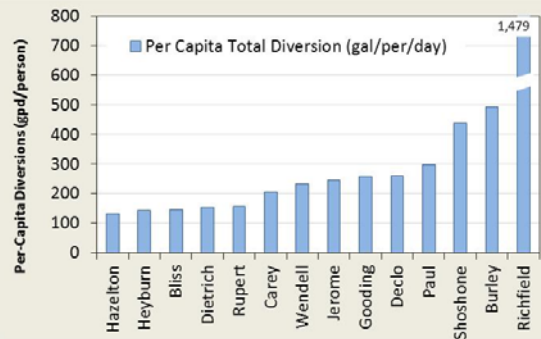
## Average Monthly Diversions 2009-2013

- December, January, and February pumping reflects non-irrigation use



### Per Capita Diversions

- Substantial variation in
  - Total per capita diversions
  - Average per capita winter-month diversions
- “Average” indoor use:  $\pm 110$  gpd/person)



### Complicating Factors

- Typical city has authorized service area (place of use), multiple wells within service area, and multiple rights (with multiple priority dates)
- Some cities have multiple, separate water systems
- Some cities have integrated water rights (listing multiple points of diversion to reflect integrated delivery system)
- Water for consumptive and non-consumptive uses (and under different priority dates) may be pumped from the same wells



## Complicating Factors (continued)

- Portions of some cities are irrigated with surface water under non-municipal rights
- Different wells may tap different aquifers
- Some cities have multiple wastewater treatment methods



## Analysis Timeframe

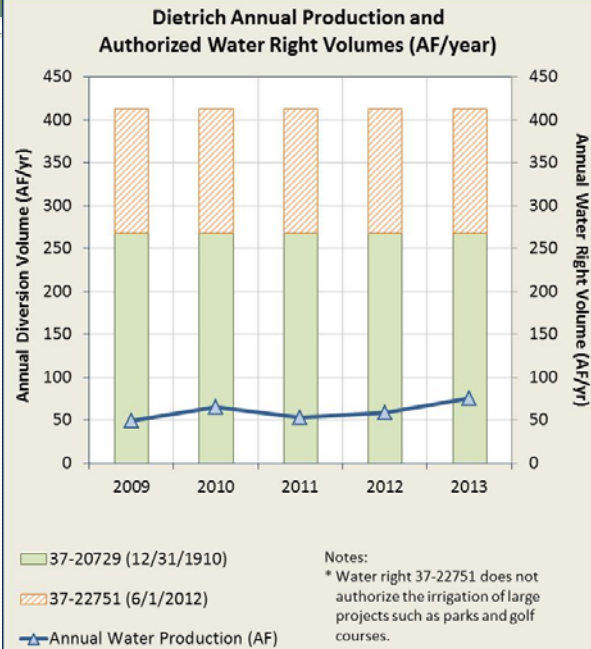
- Allocate senior-priority volume on a daily, monthly, or annual basis?
  - Most municipal water rights have implicit annual volume limit
  - Monthly intervals reflect seasonal use
  - ESPA depletions currently are calculated on a monthly basis
  - Analysis timeframe depends on circumstances (impact distance, etc.)?



# Municipal Water-Right Curtailment

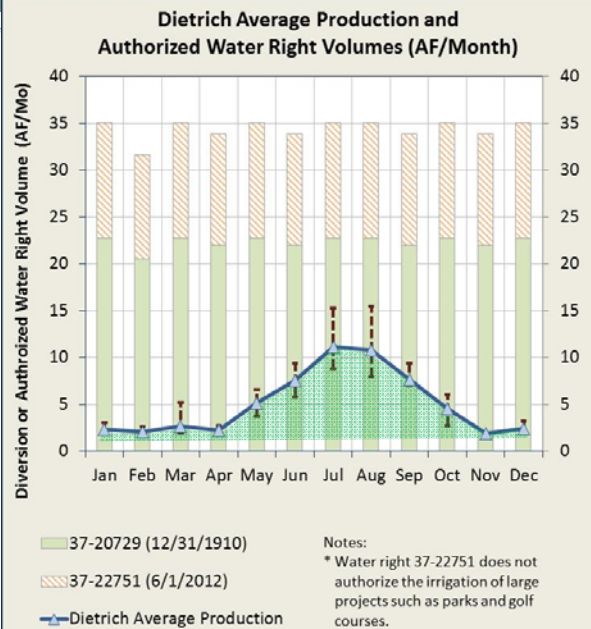
## Allocation on Annual Basis

- 2 water rights
- Annual production, 2009-2013



## Allocation on Monthly Basis

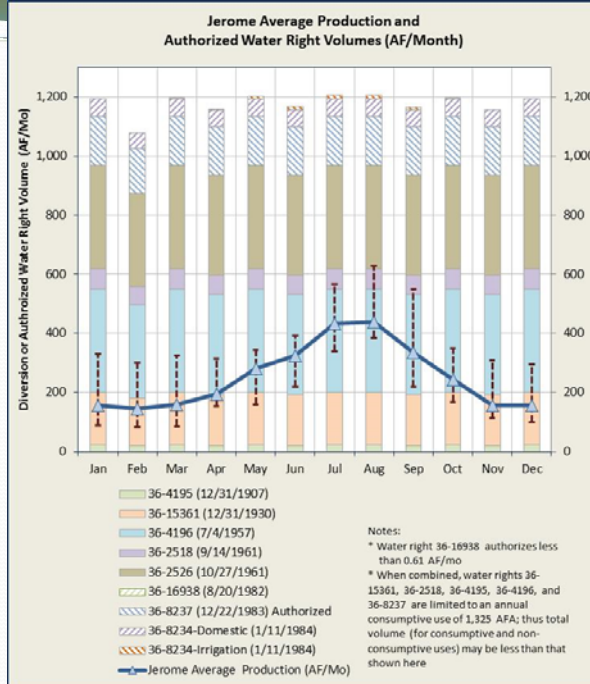
- Monthly volume; varies based on:
  - Days per month
  - Irrigation pattern (for irrigation rights)
- Monthly average production (2009-2013)
- Production range



# Municipal Water-Right Curtailment

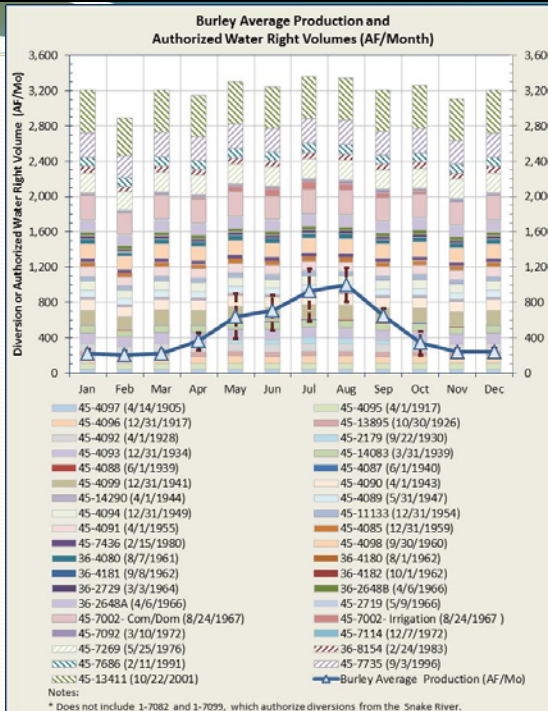
## Jerome

### Water Right Volume & Production



## Burley

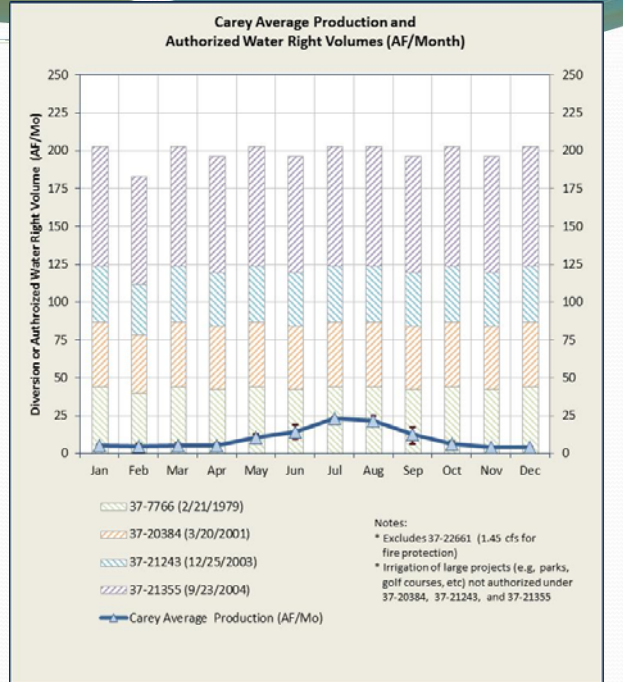
### Water Right Volume & Production



# Municipal Water-Right Curtailment

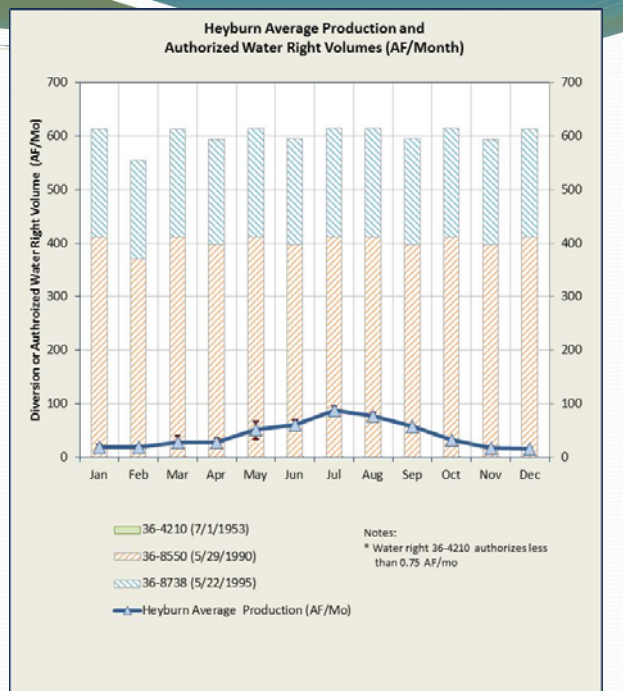
## Carey

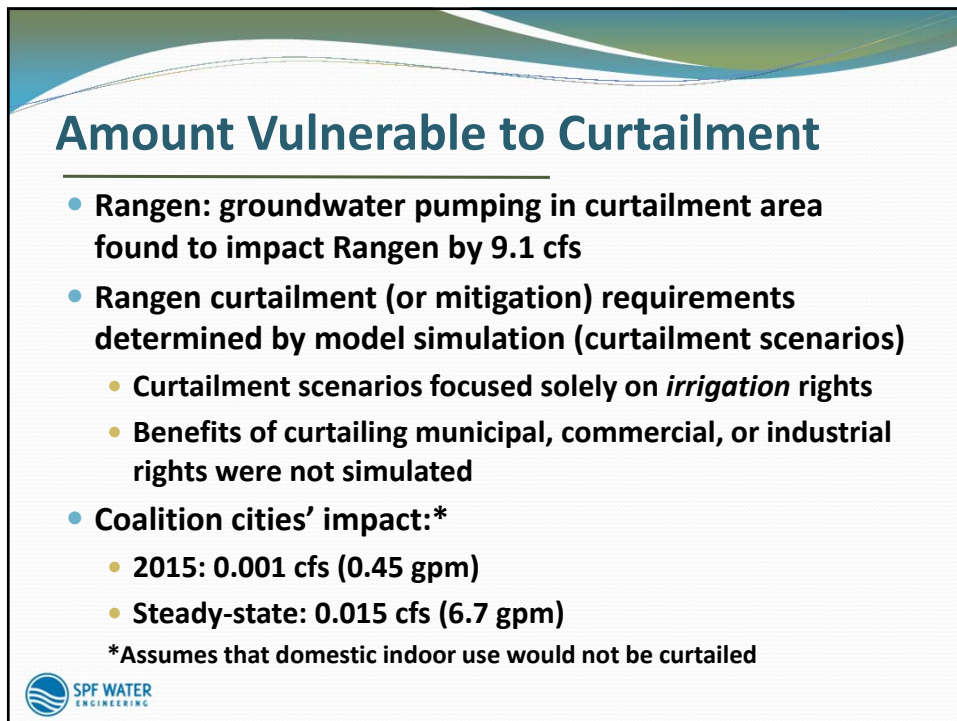
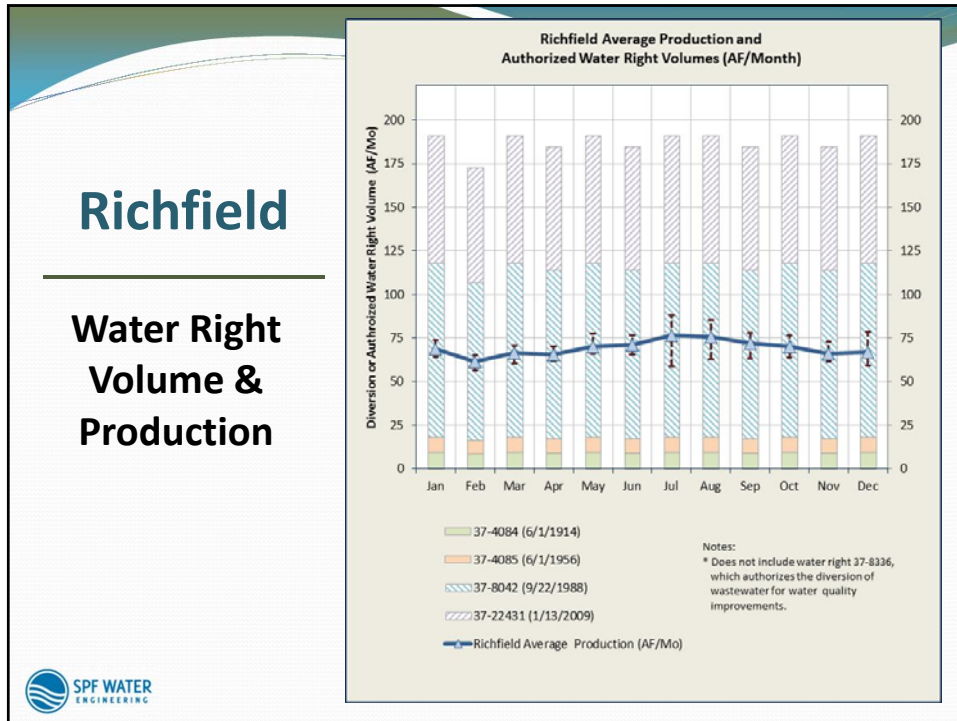
### Water Right Volume & Production



## Heyburn

### Water Right Volume & Production





## Outcome

- 2015 Mitigation Plan
  - Recharge at Gooding Recharge Site (and in Milner-Gooding Canal)
    - 1,500 AF Clear Springs Foods storage water
    - High conveyance losses met with diversions under IWRB recharge rights (natural flow)
  - Between 700 and 1,000 AF reached Gooding Recharge Site



## Outcome

- IDWR approved mitigation plan, but mitigation not recognized until (1) modeled transient benefits equal the modeled depletions *or* (2) April 1, 2015
- Covered by IGWA direct-delivery mitigation since 2/7/2015



## Need for Clarification

- Is some amount of municipal domestic use exempt from curtailment, regardless of wastewater disposal method?



## Constitution (Article XV, Section 3)

- “Priority of appropriations shall give the better rights as between those using the water, but when the waters of any natural stream are not sufficient for the service of all those desiring the use of the same, *those using the water for domestic purposes ... have the preference over those claiming for any other purpose*, and those using the water for agricultural purposes shall have preference over those using water for manufacturing purposes.”



## Parity

- Individual domestic rights are exempt from curtailment
- Does constitutional preference also apply to municipal domestic uses?
- Will city residents begin to drill wells under exempt rights?



## Verification of Curtailment

- Curtailment of individual irrigation rights is easily verified with aerial photography



## Verification of Municipal Curtailment

- Verification of municipal curtailment more difficult than irrigation curtailment; depends on
  - Wastewater treatment method
  - Commercial/industrial/institutional uses
  - Irrigation source (surface water or ground water)
  - Degree of water system integration
  - Mix of senior- and junior-priority irrigation rights
  - Record-keeping time frame
  - Efficient method to identify indoor, culinary uses?
    - Winter use may include commercial use
    - Per capita analyses may be skewed by varying water-use patterns, seasonal population changes



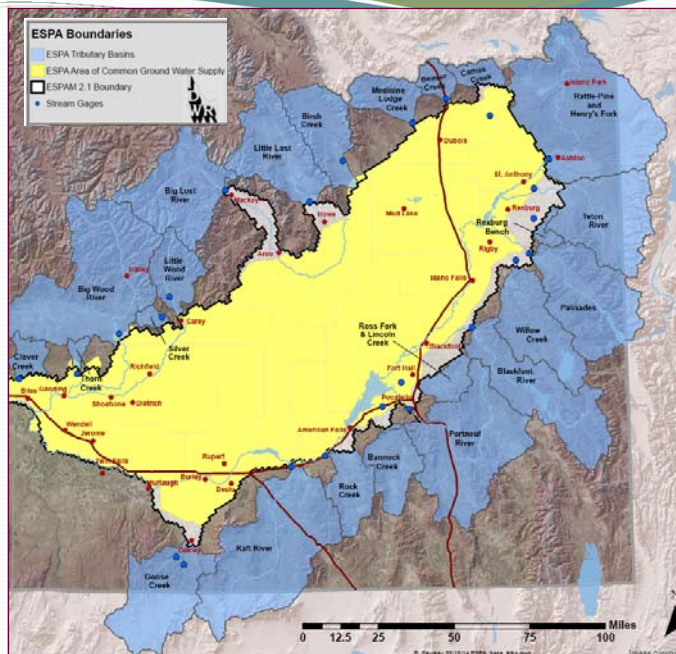
## Verification (continued)

- How will the IDWR administer consumptive use (and possible curtailment) under junior-priority rights?
  - Dry ground?
  - Monthly monitoring, reporting, and analysis?
  - What level of detail?
  - At what cost?
  - For what benefit?



### Relevant to Other Idaho Cities

- Extended Rangen call area
- Surface Water Coalition remand
- Swan Falls
- Wood River Valley
- Treasure Valley



### Summary

- Municipalities relying on groundwater need to quantify vulnerability to potential curtailment
  - Ability to quantify vulnerability reduces water-supply uncertainty
  - Enables cities to plan for curtailment, mitigation requirements



## Summary (continued)

- Statute and rules do not provide a precise basis for calculating diversions vulnerable to curtailment
  - Are city residents entitled to some level of protection from curtailment (consistent with constitution and exempt domestic rights)?
  - Are some commercial/industrial uses not vulnerable to curtailment?



## Summary (continued)

- Suggest developing a consistent approach for quantifying exempt and non-exempt consumptive and non-consumptive uses
  - Difference between summer and winter pumping?
  - Standard per capita rate to define “non-consumptive use”?
  - Connection-by-connection analyses?
  - Other?
- Time interval for allocating consumptive uses to senior-priority water rights?



## Summary (continued)

- How will the Idaho Department of Water Resources (IDWR) administer consumptive use (and possible curtailment) under junior-priority municipal rights?
  - Dry ground?
  - Monthly monitoring, reporting, and analysis?



## Recommendation

- Develop administrative guidance (by statute or rule) for quantifying municipal water use that is
  - Vulnerable to curtailment
  - Exempt from curtailment
- Do so prior to litigation





## **Idaho Water Resource Board**

Work Session 3-15

Idaho Water Center

Thursday, March 19, 2015

Paul J. Kimmell, PBAC Vice Chair

# Thank You!

# Today's Discussion



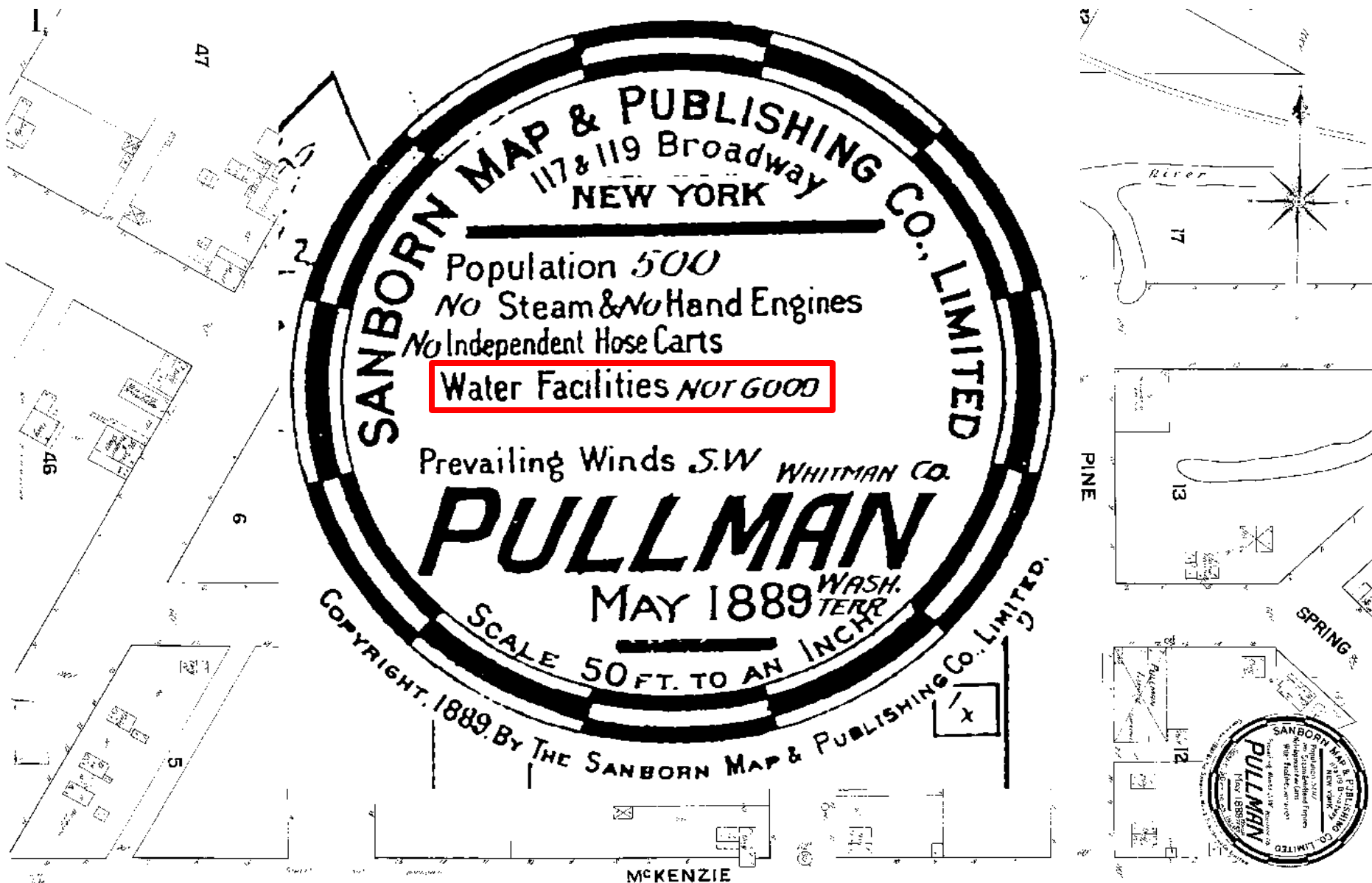
[illegible]

**SHEET**

SEE

WASHINGTON

# Map of Central Pullman – May 1889



Pullman Herald  
May 25, 1889

At nine o'clock Friday morning, the shrieks of the whistle announced that water had been struck. . .

. . . the water overflowed freely to the great satisfaction of . . . the interested citizens who soon gathered in crowds to see the first artesian well in Pullman

. . . the fact that artesian water can be had so easily makes it possible for Pullman to have . . a system of water-works unequaled in the territory.

## ARTESIAN WELL.

Water Struck at a Depth  
of 65 Feet.

A Constant Flow of 50  
Gallons per Minute.

SUFFICIENT WATER FOR  
FROM 3000 TO 8000 IN-  
HABITANTS.

Other Wells Will be Bored for a Sys-  
tem of Water Works.

For the past two weeks J. J. Shupe has been at work boring a well for M. C. True on his property on Main-st. where his new hotel will be built. The constant thud, thud of the drill was getting monotonous as it slowly bored through the hard rock. At nine o'clock Friday morning, the shrieks of the whistle announced that water had been struck and when the drill was withdrawn it at once came to the surface. After boring a few more feet through the sand the water overflowed freely to the great satisfaction of, not only Mr. True, but the interested citizens who soon gathered in

PALOUSE BASIN  
**AQUIFER**  
committee

in crowds to see the first artesian well in Pullman. The hole is six inches in diameter, and the flow, by actual measurement, is 50 gallons per minute, or 72,000 gallons in 24 hours. In cities where water is supplied for water closets, etc., it is estimated that the consumption to each individual is 25 gallons a day; this well, then, will supply the needs of a town of 3,000 inhabitants. Although it has not yet been analyzed magnetic iron is one of its prominent component parts. Dr. Webb, who has tested it says: "If a steele knife be laid in the water for six hours (or, possibly, less) it will become so magnetized that a pen can be picked up with it." A temporary ditch conveys it to the South Palouse river. When piped it can be raised to a height of, at least, 30 feet above the ground which will enable Mr. T. to have water in every room in his hotel. The value of this well to the owner cannot be estimated, and the fact that artesian water can be had so easily makes it possible for Pullman to have, at small expense, a system of water-works unequaled in the territory.

Moscow Mirror  
September 13, 1889

The people of Moscow voted to bond the town for thirty thousand dollars to be used in building water works . . .

If a system requiring pumps is accepted, the salaries of engineers, wood etc. will create a heavy tax on the town . . .

The people of Moscow voted to bond the town for thirty thousand dollars to be used in building water works, last Monday. The town is in need of water and now that the citizens have shown their willingness to become responsible for the construction, it behooves the town trustees to see that the very best is given for the money expended. That is accept a plan that will be of less expense after it is in working order. If a system requiring pumps is accepted, the salaries of engineers, wood etc. will create a heavy tax on the town, but if an artesian well is bored or water brought from the mountains, the expense will be trifling.

Moscow Mirror  
May 9, 1890

On Wednesday afternoon the steam drill struck an immense stream of water . . .

There is sufficient water running away from the well to supply the town for all purposes.

It cannot hereafter be said that Moscow is without water for it is to-day (sic) better situated than if it had a small river coursing by it, for nothing can be better than pure water.

PALOUSE BASIN  
**AQUIFER**  
committee

**A GUSHER!!**  
**A YOUNG RIVER!**  
Wm. Ladd & Co. the Lucky Finders  
of a Well Which Flows 160  
Gallons of Water a Minute.  
On Wednesday afternoon the steam  
drill struck an immense stream of water  
in Wm. Ladd's well at a depth of about  
eighty feet, in soft or porous rock. The  
force of the water upward was so great  
that a drill weighing twelve hundred  
pounds struck with little force. The  
force of the water has cut out a large  
cavity around the piping and is rushing  
away like a small river. There is suffi-  
cient water running away from the well to  
supply the town for all purposes. It is  
said that it is the biggest and strongest  
flow on the coast and will equal the famous  
Dakota well's with but two exceptions. It  
cannot hereafter be said that Moscow is  
without water for it is to-day better situ-  
ated than if it had a small river coursing  
by it, for nothing can be better than pure  
water.

Moscow Mirror  
May 9, 1890

No town in the northwest should have better lawns and nicer shrubery . . .

Last year some residents of the neighboring towns jeered at Moscow . . . The laugh is now on the other side.

The Palouse country will soon become noted for its artesian wells.

Pullman has two . . . and Moscow takes the lead with four . . .

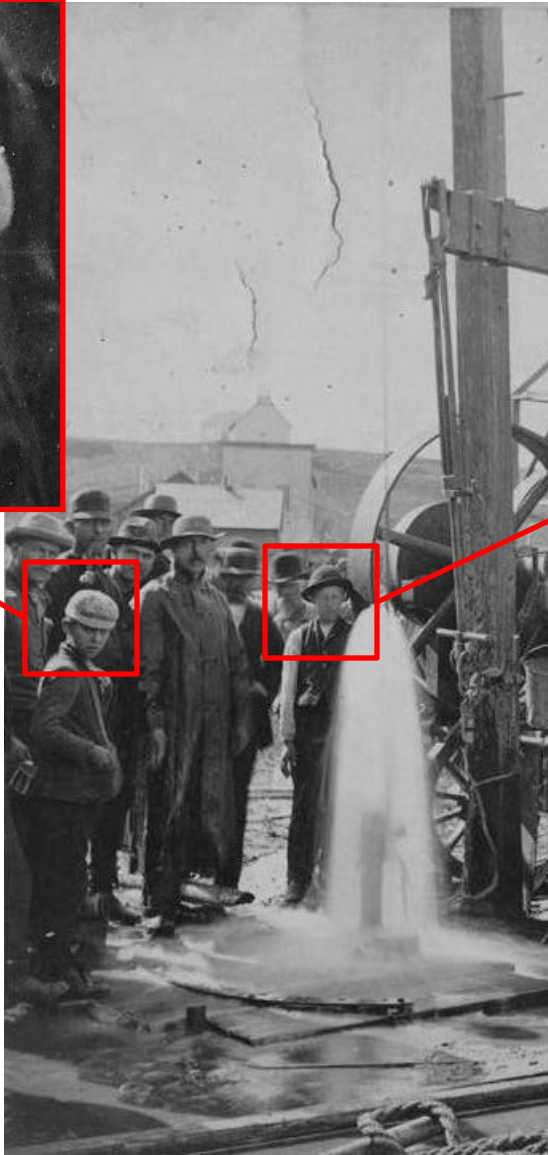
PALOUSE BASIN  
**AQUIFER**  
committee

No town in the northwest should have better lawns and nicer shrubery than Moscow. She has the soil, location and surroundings to make it, besides having a small river of artesian water for all purposes.

Last year some residents of the neighboring towns jeered at Moscow, saying it would never amount to anything as it had no water. The laugh is now on the other side. Moscow can now supply its neighbors and have some to spare.

The Palouse country will soon become noted for its artesian wells. Pullman has two, one flowing about fifty and the other sixty gallons per minutes and Moscow takes the lead with four, three of which flows from twenty-five to fifty gallons per minute while the fourth one forces out a six inch stream equal to fifty inches of running water.

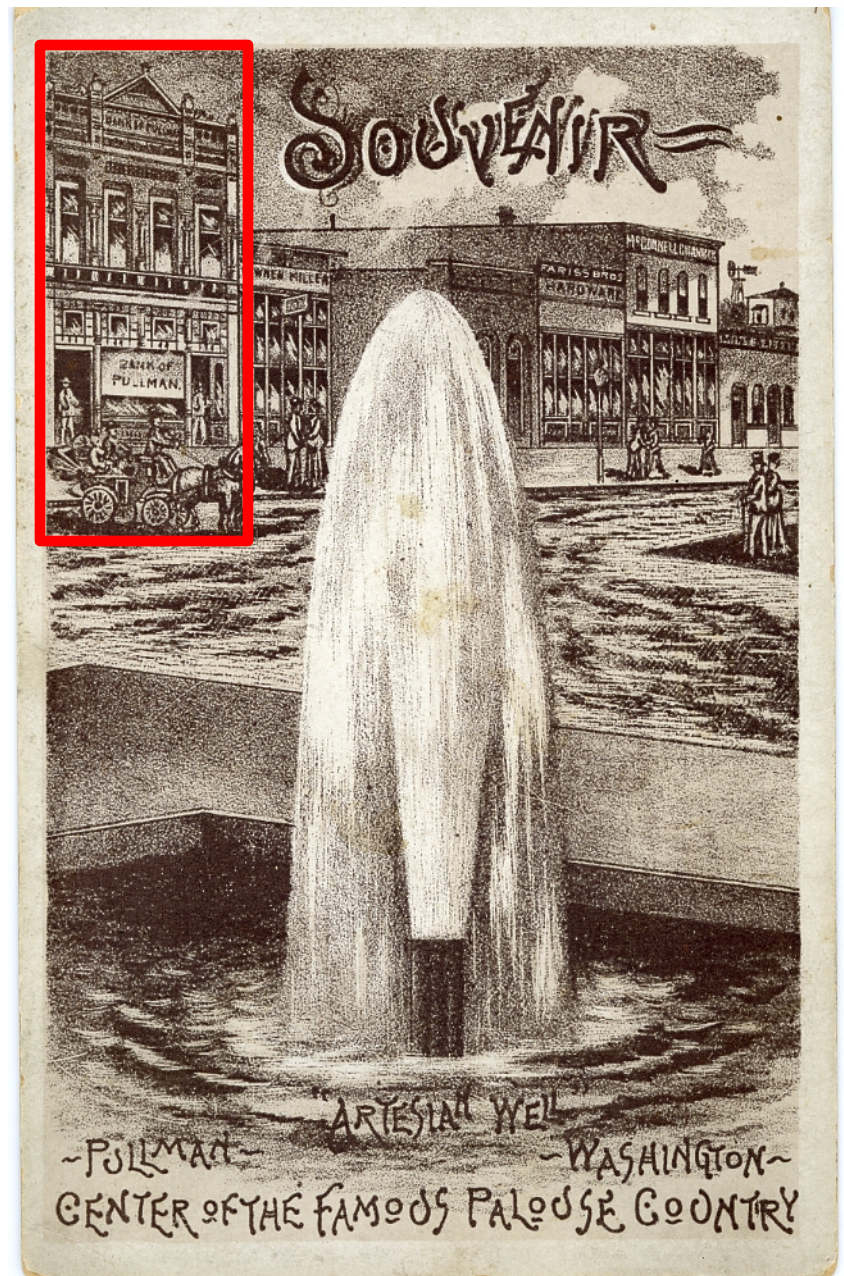
Pullman City Well  
November 1890





PALOUSE BASIN  
**AQUIFER**  
committee

Crawford Well  
May 1890



Pullman Herald  
May 2, 1891

The Agricultural College and  
School of Science come to . . .

The City of Flowing Wells



## PULLMAN WINS.

The Agricultural College and School of Science come to The City of Flowing Wells.

The Vedder property is the accepted site. Only one-third of a mile from postoffice.

Building will be commenced in a short time. A Richly endowed Institution.

"The fight is over. Whitman wins. Pullman gets the agricultural college and school of science. Throw cheers for the little star of the Palouse!"

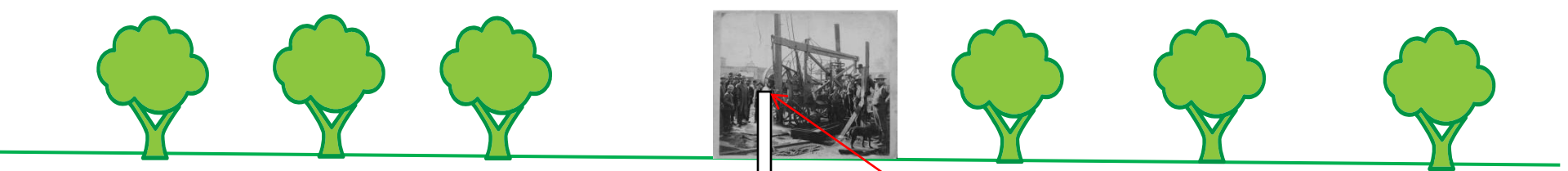
The above was a telegram received last Monday morning, from E. H. Letterman, one of the delegates who had been looking out for the county's interests at Olympia, that sent a thrill of joy throughout all Whitman, and the thrill was especially thrilling in Pullman, the favored spot.

For eighteen months Whitman county has been presenting her claims as the most suitable place for the location of the institution, and the claim was recognized.

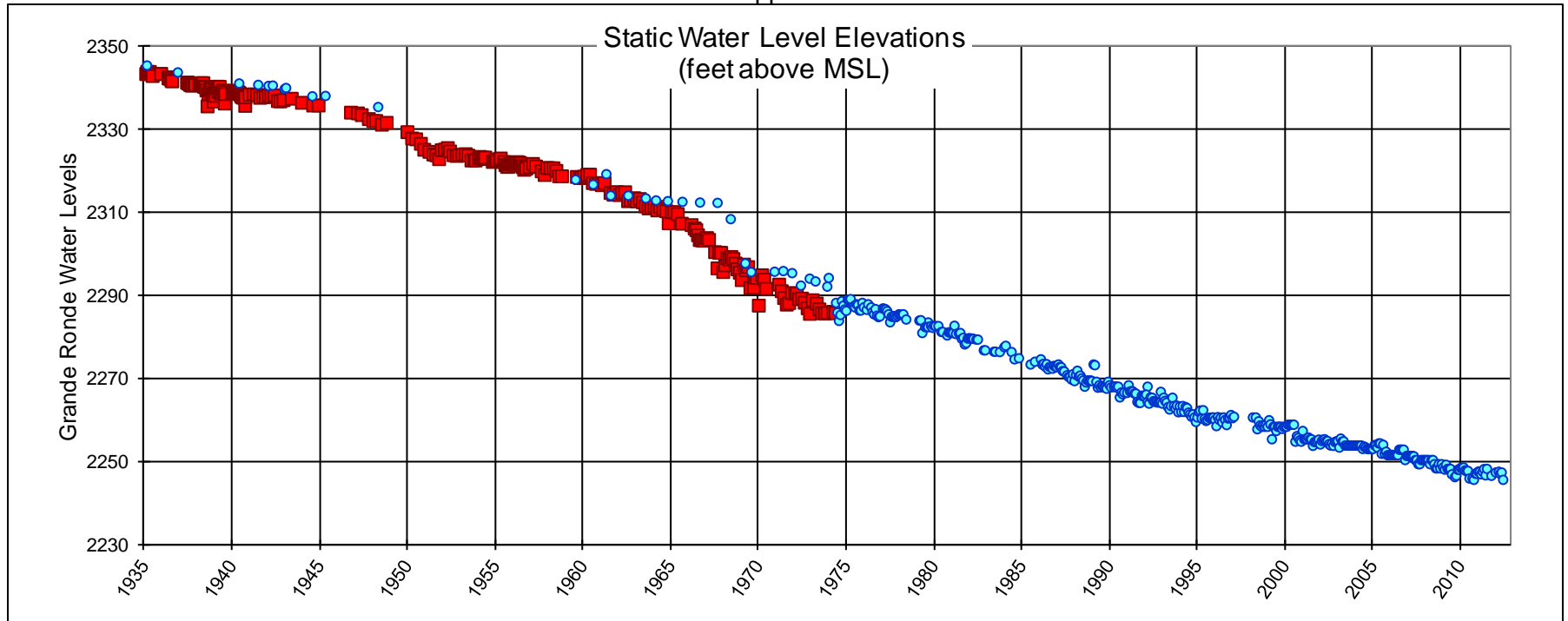
## Laney (1923)

The report indicates that there exists at Moscow a sufficient artesian supply to take care of the needs of the City of Moscow for many years and that by proper means this can be made available for municipal use at reasonable cost; also that the apparently alarming decrease in the pumpage from the municipal wells is found to be due to easily explainable causes and to have but little bearing on the ultimate supply. In these conclusions I concur fully.

The report indicates that there exists at Moscow a sufficient artesian supply to take care of the needs of the City of Moscow for many years . . .



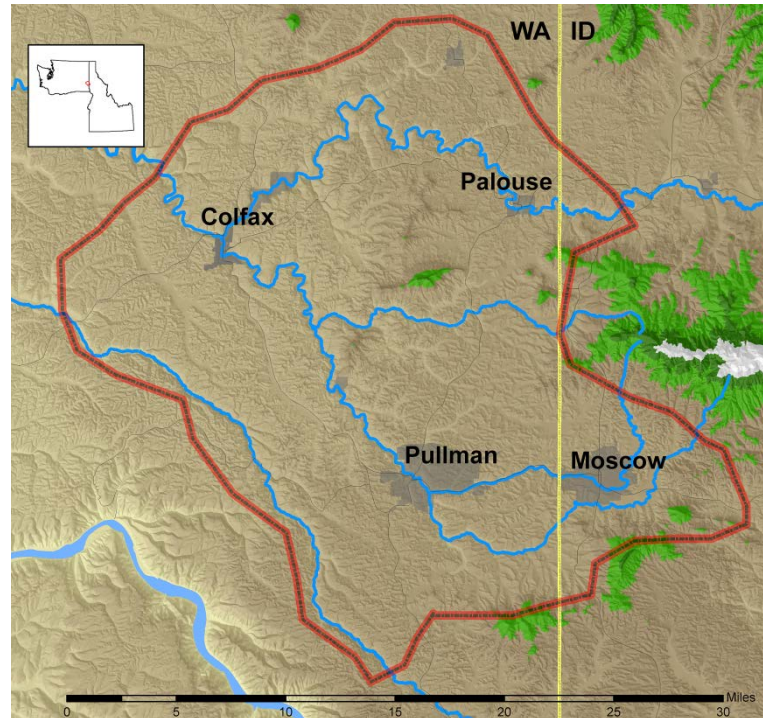
1890 Water Level



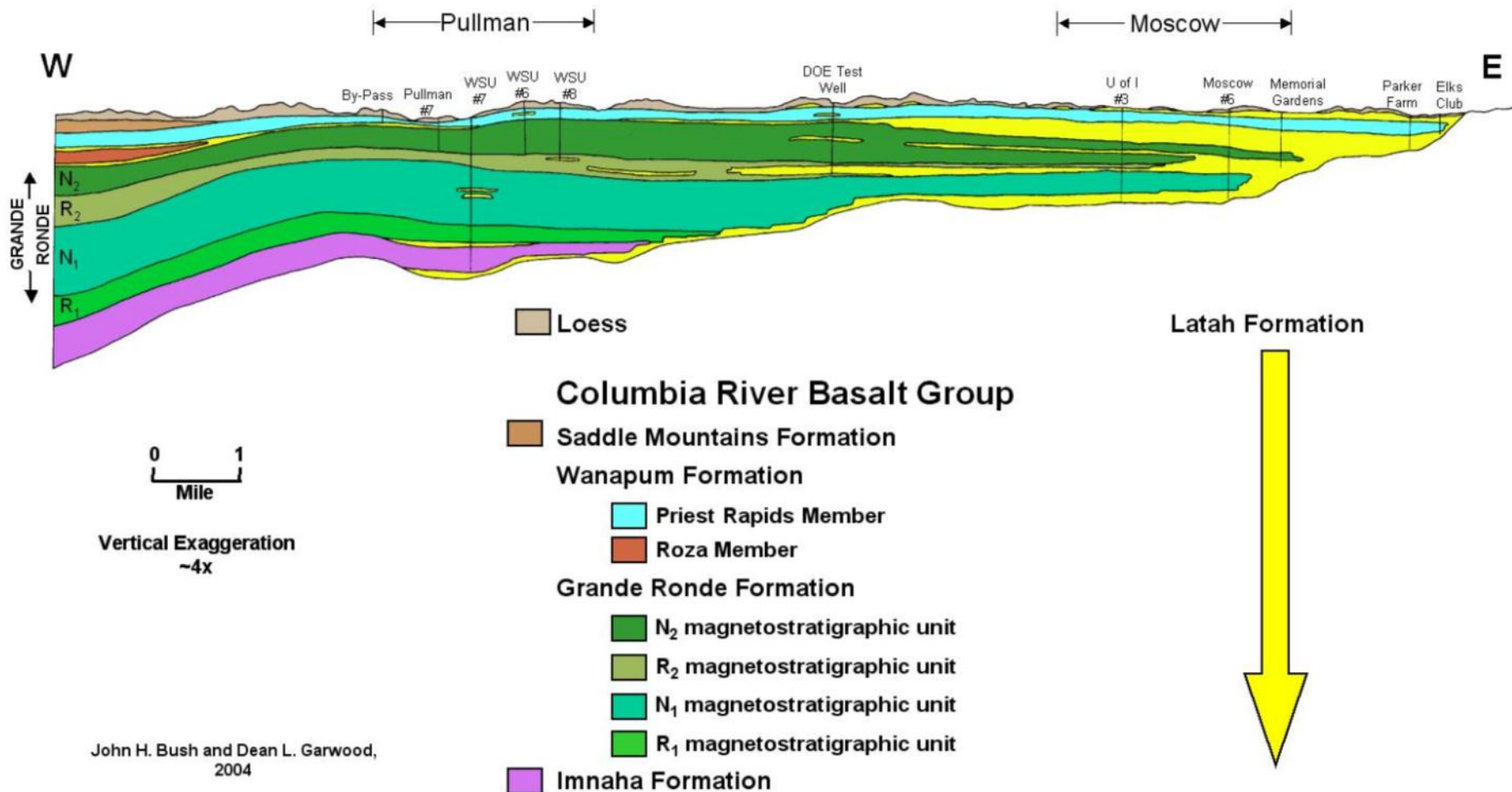
2014 Water Level

A Little Local Hydrology

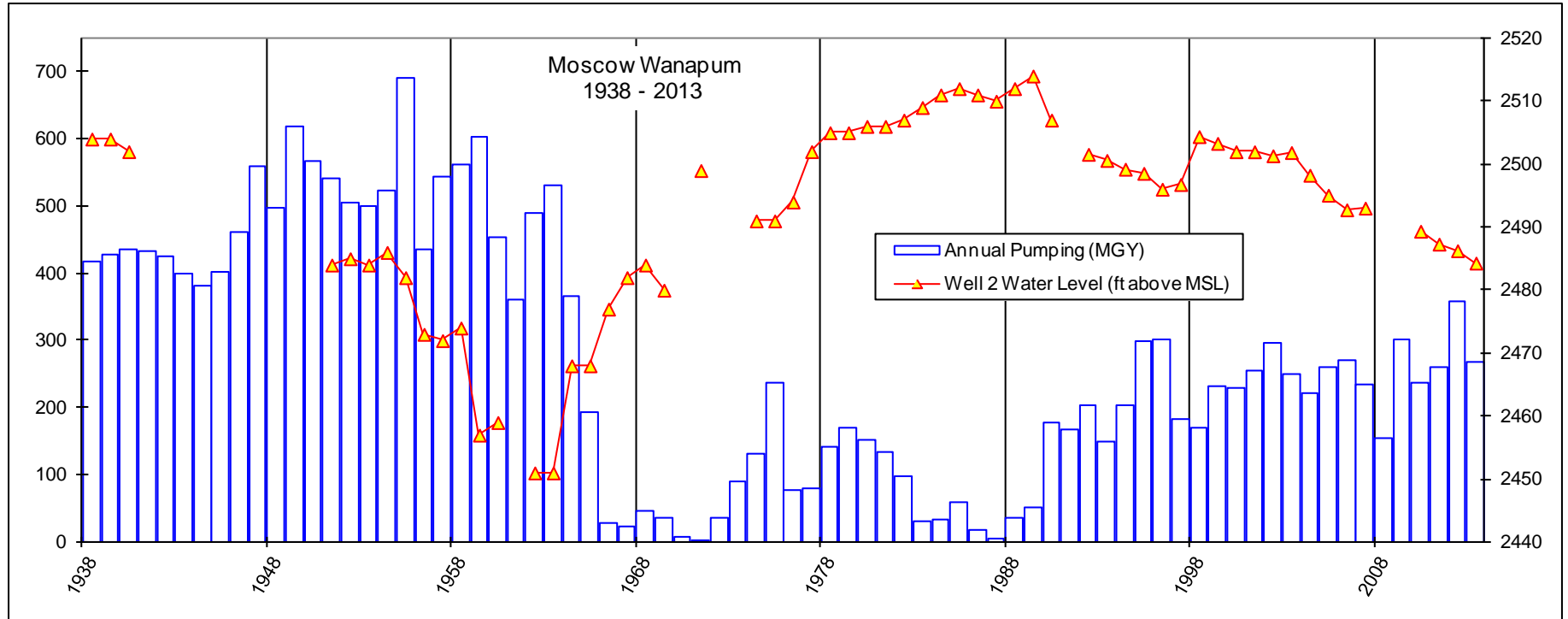
# Palouse Basin Boundaries



# GEOLOGIC CROSS-SECTION MOSCOW-PULLMAN, IDAHO-WASHINGTON



# Water Levels – Upper Aquifer, Long-Term



A Little More Local Hydrology



# EBASCO SERVICES

INCORPORATED

ENGINEERS - CONSTRUCTORS - BUSINESS CONSULTANTS

TWO RECTOR STREET

NEW YORK 6, N. Y.

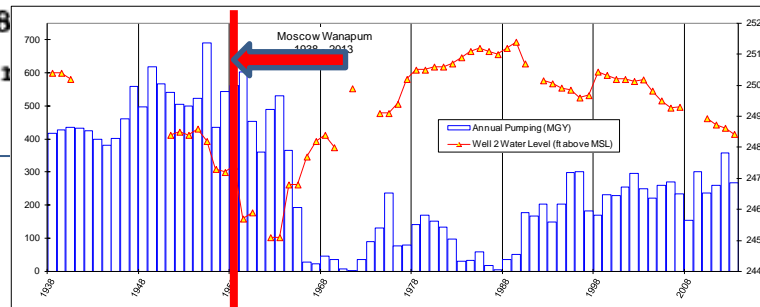
CABLE ADDRESS "EBASCOE"

December 12, 1958

Water Resources Committee  
City of Moscow  
Moscow, Idaho

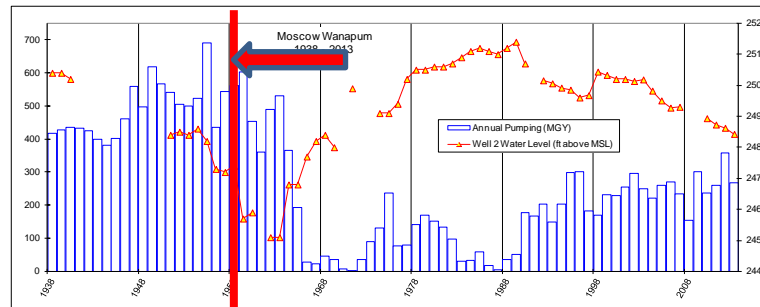
Gentlemen:

We submit herewith our Interim Report on Supplemental Water Supply for the City of Moscow. This report covers Phase One - Preliminary Reconnaissance and Consultation specified in our Letter Agreement dated September 2, 1958. The report contains recommendations for further study.

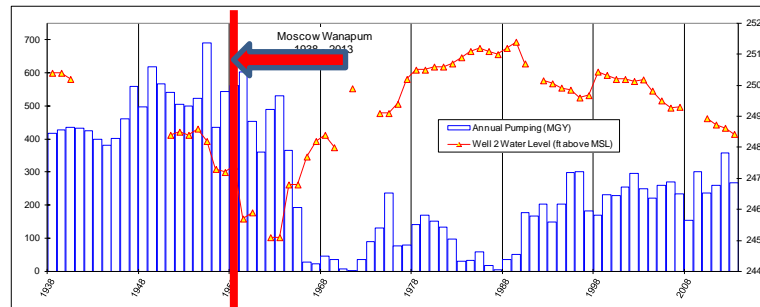


## B - CONCLUSIONS - PHASE ONE

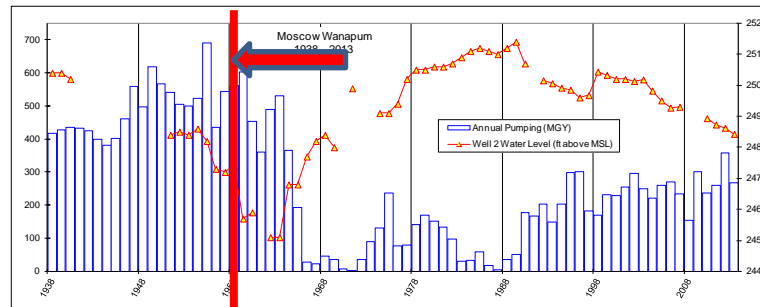
- 1) There is a limited supply of ground water in the Moscowbasin which should be conserved by joint use of supplemental surface water to take care of the future requirements of the City and University of Idaho.
- 2) Present data are insufficient to determine the safe yield of the artesian aquifers which are now tapped by the City and University wells, but geological indications are that considerable water remains in storage. Water levels have progressively declined, but the decline appears to have moderated during

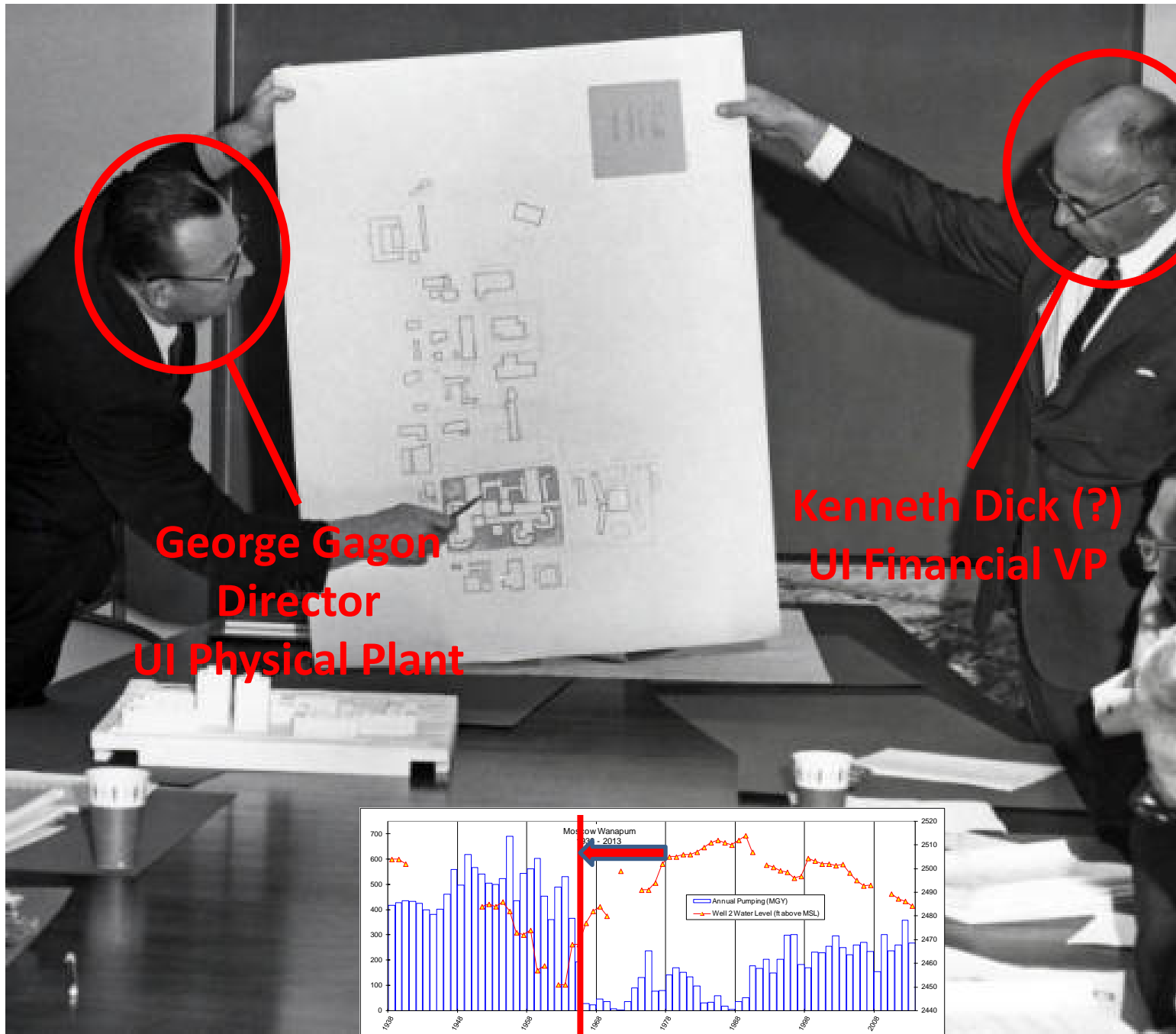


3) Supplemental water supply for future industrial, agricultural and domestic requirements should be obtained by the development of storage reservoirs for the utilization of surface flow. (It is estimated by USGS that average annual runoff from surface streams in the Moscow basin is about 12,000 acre-ft.) Several possible sites for on-stream and off-stream reservoirs exist on the tributaries and main stream of the South Fork of the Palouse River,



4) It does not presently appear necessary or economic to divert surface water from outside of the Moscow basin in view of the availability of adequate runoff from the South Fork of the Palouse River. However, possibilities exist for future diversion of water from (a), Potlach River, at a point below Juliaetta, about 15 miles airline distance southeast of Moscow, (b), Clearwater River above Lewiston, which would be about 18 miles airline distance from Moscow, or (c), North Fork of the Palouse River, about 12 miles airline distance north of Moscow. Use of any of the above possible sources would entail high pumping costs to overcome friction and static head





## REPORT

### Meetings

Following review of the domestic water supply problems with The Regents at the 2 March 1967 meeting, three meetings have been held with the four governmental, institutional units concerned with the local problem.

- 13 March 1967 University of Idaho Student Union.  
Review of concepts and philosophy.
- 3 April 1967 University of Idaho Student Union.  
Review of possible sources of water and selection  
of Potlatch River as best source.
- 11 April 1967 On site inspection of Potlatch River.

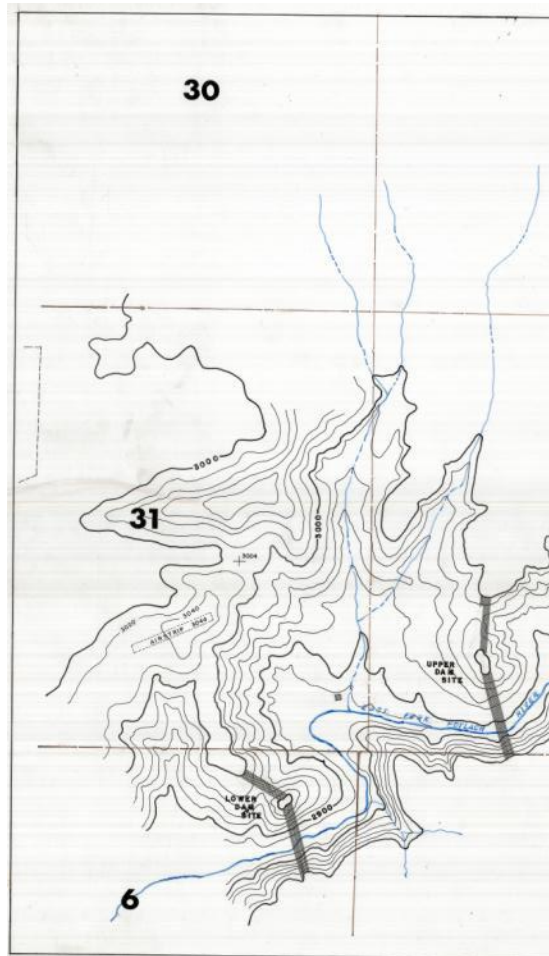
### Participating Parties

- 1. City of Pullman  
Joe Street  
Larry Larsen
- 2. Washington State University  
Dr. E. Roy Tinney, Director, State of Washington  
Water Research Center  
Jim Crosby
- 3. City of Moscow  
Marvin Kimberling  
Richard Day
- 4. University of Idaho  
George Gagon  
Kenneth A. Dick

## UI/Moscow Domestic Water Supply Report (1968)

In the Spring of 1967, a series of meetings was held with the four governmental and institutional units concerned with the domestic water supply problems participating. The participating parties were the City of Pullman, Washington State University, the City of Moscow, Idaho, and the University of Idaho. From these meetings agreement was developed and endorsed by all four parties on the following points:

6. A non-profit corporate entity, owned by the four parties to construct and operate the system, should be developed.
7. Enabling legislation in both Idaho and Washington, would be necessary, and should be developed for consideration at the 1969 legislature.



# **NOTICE OF APPLICATION FOR PERMIT TO APPROPRIATE THE PUBLIC WATERS OF THE STATE OF IDAHO**

In Accordance with the Provisions of Section 42-203, Idaho Code

NOTICE IS HEREBY GIVEN, that the REGENTS OF THE UNIVERSITY OF IDAHO of Moscow, Idaho has made application No. 42127 on May 15, 1967, to appropriate 33.91 cubic feet per second of the east fork of the Potlatch River and the Potlatch River, for domestic purposes for the University of Idaho.

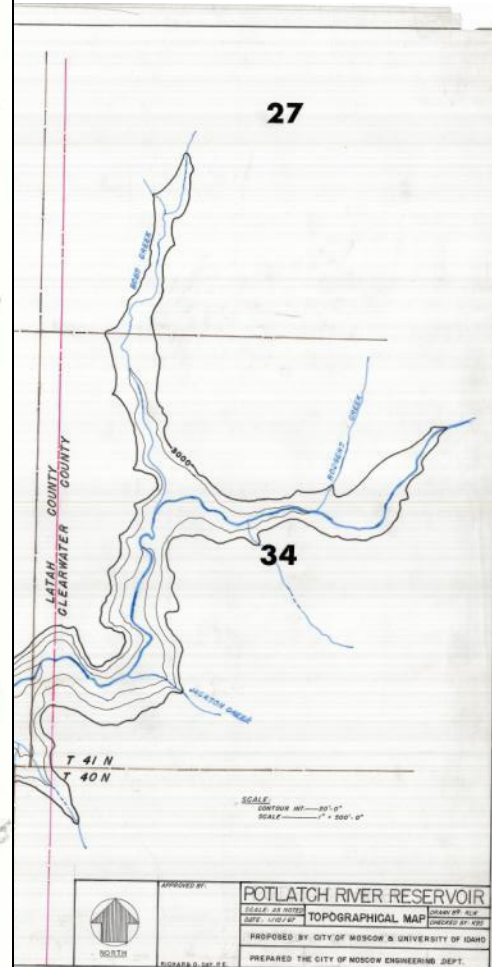
That the points of diversion are located in: 1) SW 1/4, Sec. 32, T. 41 N, R. 1 E, and 2) NW 1/4, Sec. 34, T. 40 N, R. 1 W. B. M.

That the place of use is the University of Idaho, City of Moscow, Idaho.

That any protests against the approval of this application must be filed in the Department of Reclamation at Boise, Idaho, within forty (40) days from the date of this notice, and such protest shall state the name and address of the protestant, and shall clearly set forth his objection to the approval of said application.

Dated this 1st day of December 1967.

R. KEITH HIGGINSON,  
State Reclamation Engineer  
Dec. 9, 16, 1967



# University's Water Rights Request Criticized

By WALKER ROBERTS  
Tribune Staff Writer

The communities of Kendrick, Juliaetta and Bovill are rising in bewildered protest to combat what appears to be a mutual threat, vaguely understood.

The University of Idaho at Moscow recently published legal advertising pursuant to obtaining water rights on the Potlatch River. The university desires 22.51 cubic feet of water per second from the East Fork of the Potlatch River and the Potlatch River proper.

Prior to publication of this notice, say residents of this massive coulee gouged into the fringes of Palouse Prairie by the Potlatch, they had heard nothing that would alert them to the desire of the university for water. Chairman of Ken-

now under study by the Army Corps of Engineers, the Bureau of Reclamation and the Soil Conservation Service. Detailed studies would still have to be made on flow, storage capacity and such but a high priority was given to the Potlatch as a source of water.

"The water is of high quality, the area concerned has no pollution problems, there are few habitations in the immediate upstream area and the site for the storage area would be on state property."

## Careful Review First

Gagon said that water rights would be given to the university only after careful review of the factors involved.

Robert Magnuson, Kendrick village clerk, said he under-

stood that the university intended to take the water near Bovill. Bovill is almost 25 miles from Moscow.

Idaho Wildlife Federation District 2 took a stand on the issue at a recent meeting at Kendrick. The decision was to actively oppose taking water from the creek and request a hearing on the issue by the Bureau of Reclamation at Boise.

The Kendrick Village Board is drafting a letter of protest to the bureau which should arrive prior to the Dec. 26 deadline established by the legal advertisement. Juliaetta residents are drafting petitions and Bovill residents are actively trying to draft petitions and a letter of protest from the city government.

## Draws Attention

It was W. L. McCreary, pub-

July 9-3, August 3-2 and September 6.

Felton had no averages or totals of water volume. He said that the flood period lasted slightly less than 1½ months and that the sample year was average or slightly below in water volume.

The Potlatch River and its tributaries drain about two-thirds of Latah County. Its branches drain from the divide shared with the drainage of the North Fork of the Clearwater River and roughly forming the eastern boundary of the county. It reaches about 15 miles northeast of Bovill to the divide shared with the St. Joe River drainage. On the west it meets the Palouse River and the Clearwater forms the southern and eastern boundary.

precedent as it would have been constructed purely for recreation and wildlife by the Bureau of Reclamation.

Stuart Murrell, Idaho Fish & Game Department official at Lewiston, said that Idaho water laws do not recognize recreation and wildlife as a legitimate use for water. He said he felt it was obvious that it was a legitimate use, considering its value for attracting tourist and area recreation.

McCreary drew attention to existing water rights and suggested that allowing the university quantiles of water in the magnitude it suggested might well be impossible if existing water rights were respected. He listed nine parties whose water rights he had con-

Chri

ONOFF  
tree bush  
will be b  
Don Mc  
owner be  
"The pi  
as last y  
averaging

formed. A  
certain a  
had rese  
awarded  
and for l

There  
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ing water  
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enced pre  
and spring  
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quantiles  
might pre  
gard.

Harris  
had come  
residents  
needed to  
versity w

The communities of Kendrick, Juliaetta and Bovill are rising in bewildered protest . . .

Prior to publication of this notice, say residents . . . they had heard nothing that would alert them to the desire of the university for water.

# Crowd Is Not Convinced On U of I Water Right Filing

KENDRICK — About 100 less-than-hostile, but not quite convinced, area resident-land-owners, met in the high school cafeteria here Monday night to discuss circumstances surrounding the University of Idaho's recent filing for water rights on the Potlatch River.

Townpeople from Kendrick, Deary, Bovill and Juliaetta recently sent letters of opposition to the granting of the right by the Bureau of Reclamation.

The Monday meeting was called by the Latah Soil & Water Conservation board, who invited George Gagon, U of I physical plant director, Marvin Kimberling, Moscow's administrative assistant and Richard Day, Moscow's city engineer, to explain their views on the matter.

don't use and protect our water rights in our county...we may find people in Washington (taking) those rights and we may have no rights when the day comes we need them for our own use," Kimberling said.

Lester Clemm, conservation board chairman, said the district is presently "making an effort...to inventory reservoir sites, and future sites," and added a map of such sites should be available in the spring.

Clemm said numerous Idaho counties have problems in the area of water, that "the demand is huge...who has priority?"

Clemm added that the Wildlife Service "is talking of a reservoir in this area...to reactivate steehead and trout fishing," taken away by recent dam con-

the study?) That will show who benefits."

Gagon said he didn't know who would pay for the study; "that's a problem."

Mel Hamilton of Juliaetta said "it doesn't take an engineer to see what's available" on the river, saying that "a sparrow could walk across it (at certain times) and not get its feet wet."

## School Needs

(Continued From Page 1)

Two rooms, 324 and 315, in the high school building are really not satisfactory except for special classes."

He pointed out that of the 25 academic classrooms in use on

- 1969

## How Long Will the Water Last? (Jones and Ross)

-17-

Billions of Gallons

<u>Artesian Zone</u>	<u>In Storage 1965</u>	<u>Consumption 1965-2000</u>	<u>In Storage 2000</u>
Upper	36.9	?	?
Middle	86.7	10.5	76.2
Lower			
Minimum	184.0	39.6	144.4
Optimum	252.8		213.2
Totals, Middle and Lower Zones			
Minimum	270.7	50.1	220.6
Optimum	349.5		299.4

The water in storage is adequate to meet the needs of Moscow Basin past the year 2000. Pumping levels in wells will be 50 to 80 feet deeper in the year 2000. The 220 to 300 billion gallons remaining in storage at the year 2000 should meet the needs of the basin until at least 2050 and perhaps until 2100.

These figures are based on the assumption that no recharge takes place. If recharge does take place, pumping levels will not be the same as predicted by the models. The effect of recharge, and of other factors, on the model aquifers is still under study.

REFERENCES CITED

Chang-Lu, Lin, 1967, Factors affecting ground-water recharge in the Moscow basin, Latah County, Idaho. Washington State University, Master of Science Thesis in Geology, 86 p.

Crosby, J.W. III, and Chatters, R.M., 1965, Water dating techniques as applied to the Pullman-Moscow ground-water basins. Washington State University, College of Engineering Bull. 296, 21 p.

... should meet the needs of the basin  
until at least 2050 and perhaps until 2100.

- 1969

## Status Report

The results of the studies during the past year . . have not materially changed the concepts regarding municipal water supply. The findings of the groundwater investigation were inconclusive. The various agencies and geologists consulted have differing opinions on its feasibility; however, the consensus is that groundwater would only be a temporary solution.

FPI study has been initiated on Paradise Creek, which will cover the reach between the mouth and the state line.

6. Foundation exploration and mapping of the Harvard damsite were completed. Estimates of water supply (runoff) at the Harvard and Laird sites have been revised. Cost estimates for the Harvard site have been revised, based on the results of foundation explorations, and a review of the Laird cost estimates is underway. Cost versus yield relationships for the Harvard site have been prepared, and project formulation studies have been initiated.

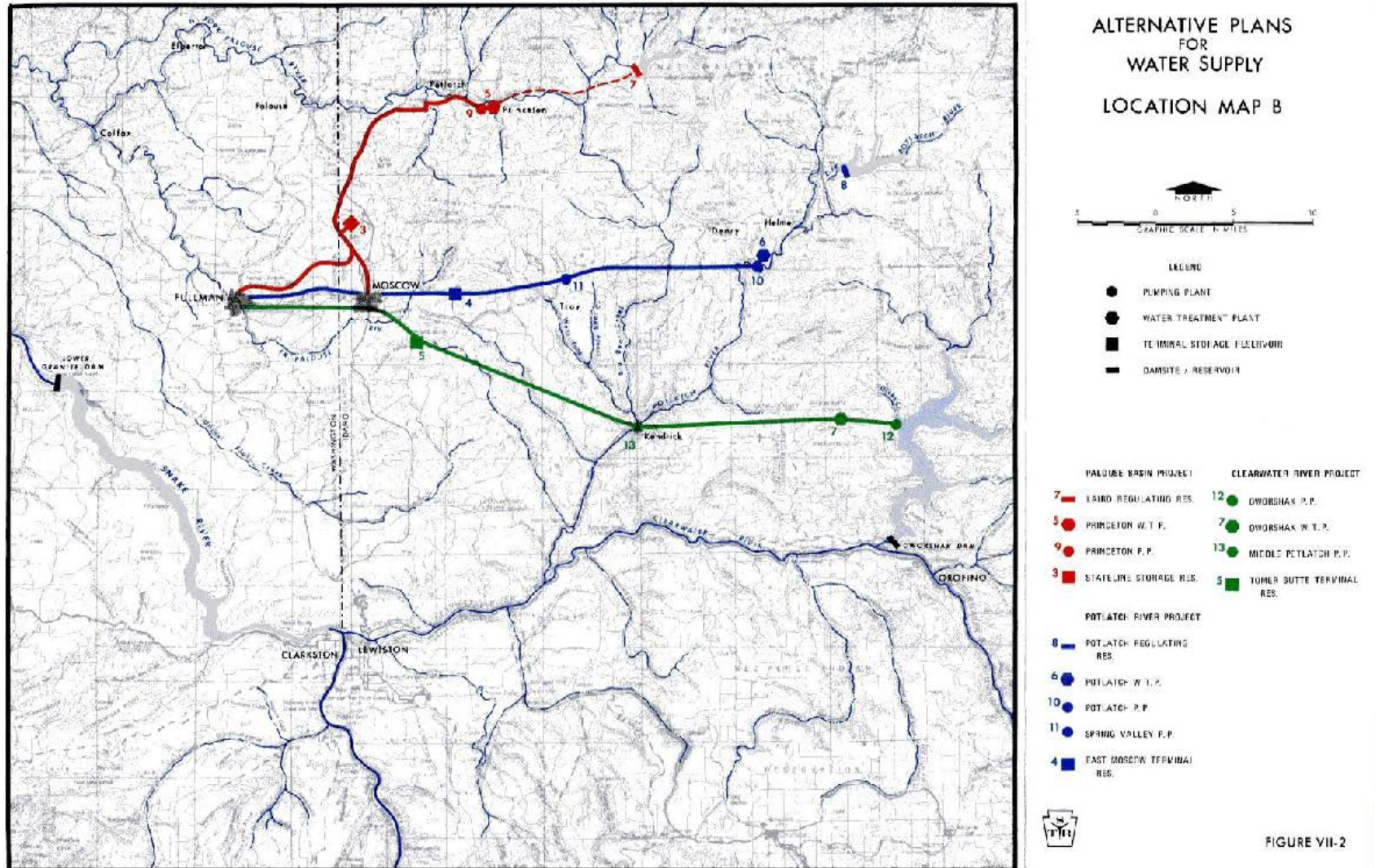
7. We have been advised by the Bureau of Reclamation that irrigation benefits would be realized from reservoir storage on the North Fork Palouse River. The unit value assigned to irrigation water will determine the optimum reservoir capacity.

8. Monetary benefits for water quality control, other than downstream fishing, have not been established.

9. The results of the studies during the past year (September 1969) have not materially changed the concepts regarding municipal water supply. The findings of the groundwater investigation were inconclusive. The various agencies and geologists consulted have differing opinions on its feasibility; however, the consensus is that groundwater would only be a temporary solution. The Snake River is the least costly surface source that will assure a dependable, long-range supply. The benefits creditable to a reservoir on the North Fork Palouse River will be the difference in pumping and pipeline costs between the North Fork and the Snake Rivers.

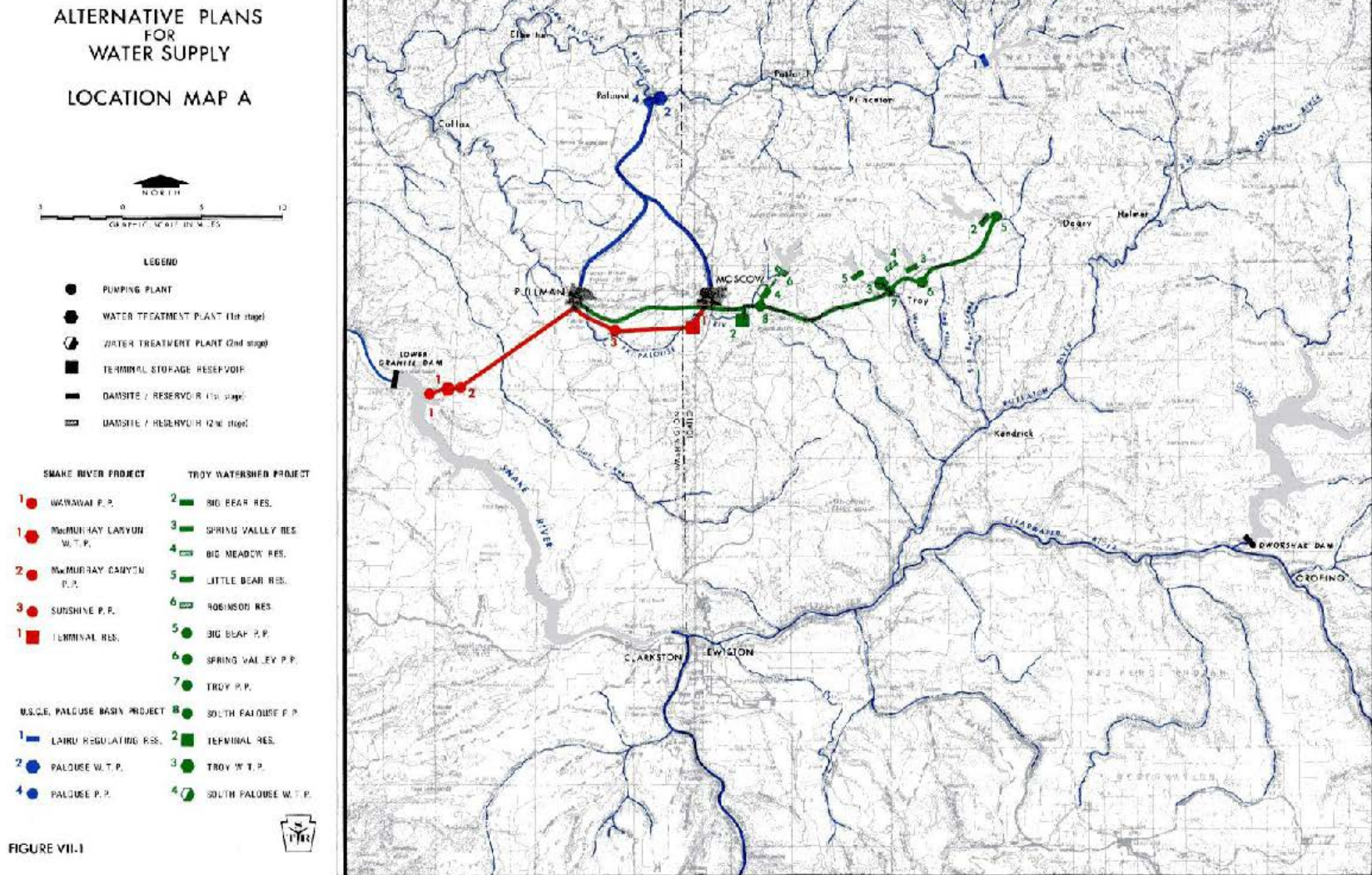
• 1970

## Water Supply Study (6 potential projects)



• 1970

## Water Supply Study (6 potential projects)



- 1970

## Water Supply Study (6 potential projects)

TABLE 7-9  
SUMMARY OF CAPITAL COSTS (\$1,000)

\$14,682,000 in 1970 ⇒ \$90,734,760 in 2014

<u>Alternative Project</u>	<u>First Stage</u>	<u>Second Stage</u>	<u>Third Stage</u>	<u>First Year Annual Costs</u>
Snake River	\$ 9,014	\$ 4,772	\$ 896	\$ 1,143
Palouse River Basin	\$14,600	\$ 345	\$ 4,062	\$ 1,457
Troy Watershed	\$14,544	\$ 9,149	\$ 5,572	\$ 1,435
Potlatch River	\$15,555	\$ 683	\$ 8,194	\$ 1,516
Clearwater River	\$14,498	\$ 683	\$ 9,506	\$ 1,556
USCE-Palouse Basin	\$12,260	\$ 301	\$ 3,068	\$ 907

• 1971

About two years ago, the Committee deliberated the feasibility of relying on the groundwater resources . . .

Because of the many "unknowns" . . . the Committee set aside detailed groundwater studies at that time

The present position of the PMWRC is that the communities should not be placed in the rather untenable spot of deciding yes or no on a surface water alternative on the basis of current information.

PULLMAN, WASHINGTON 99163

COLLEGE OF ENGINEER  
RESEARCH DIVISION  
ALBROOK HYDRAULIC LABORATORY  
(509) 335-4546

June 18, 1971

Dr. Calvin Warnick, Director  
Water Resources Research Institute  
University of Idaho  
Moscow, Idaho 83843

Dr. A. F. Agnew, Director  
Water Research Center  
Washington State University  
Pullman, Washington 99163

Dear Sirs:

As you are aware, the Pullman-Moscow Water Resources Committee has been studying future potential water supply sources for the two communities for several years. About two years ago, the Committee deliberated the feasibility of relying on the groundwater resources in this vicinity to supply future water demands. Because of the many "unknowns" of geologic characteristics and aquifer boundaries and because of the position of the Washington Department of Water Resources (Ecology) and the Idaho Reclamation Department relative to further groundwater withdrawals, the Committee set aside detailed groundwater studies at that time recognizing that they would have to be made at a later date. Reconnaissance studies of surface water sources have been made, and preliminary cost estimates have been prepared for several schemes by a consultant.

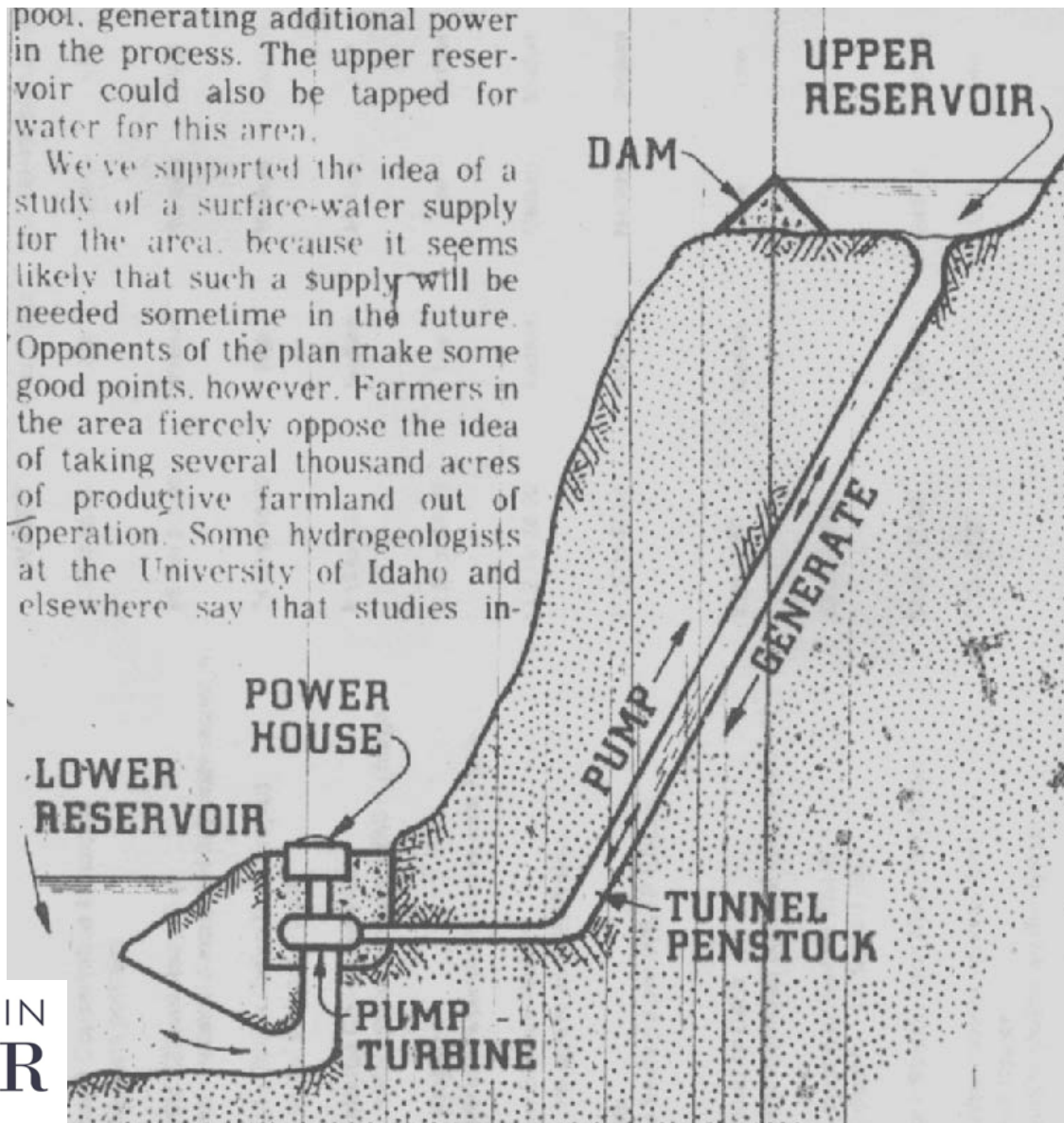
Recently, a paper was presented to the P-MWRC by members of WSU Department of Agricultural Economics illustrating the economics of continuing to rely on groundwater pumpage for the next 50 years. Based upon certain development and operating costs, this analysis indicates that it would be approximately half as costly to continue this pumpage as to import surface waters by the least expensive scheme identified even if groundwater level decline was as much as 40 feet per year. This conclusion is subject to some debate on the basis of capital costs, but cost comparison would still favor the pumping procedure. This comes as no surprise to P-MWRC but the analysis is premised on the availability of water in future years at more or less unlimited quantity. Projections of such availability cannot now be made accurately because of the unknowns mentioned above. Such projections have been made for the Moscow subbasin but the P-MWRC feels the procedures here are questionable so that reliability is extremely doubtful.

The present position of the P-MWRC is that the communities should not be placed in the rather untenable spot of deciding yes or no on a surface water alternative on the basis of current information. They must be advised on the reliability of continued groundwater draft as a decision can be made between this and surface water importation with conjunctive use. Prior to that, the P-MWRC must

- Early 70's – Pumped Storage

pool, generating additional power in the process. The upper reservoir could also be tapped for water for this area.

We've supported the idea of a study of a surface-water supply for the area, because it seems likely that such a supply will be needed sometime in the future. Opponents of the plan make some good points, however. Farmers in the area fiercely oppose the idea of taking several thousand acres of productive farmland out of operation. Some hydrogeologists at the University of Idaho and elsewhere say that studies in-



- 1976 - Pumped Storage Proposal

# Idahoan

## Wednesday

Mar. 10, 1976

VOL. 83 NO. 83 MOSCOW, IDAHO 10 Cents

# Citizens, Officials Rap Corps, Reservoir Plan

By KENTON BIRD

PULLMAN — Col. Nelson Conover of the U.S. Army Corps of Engineers may have felt a little like General Robert E. Lee at Appomattox. And Moscow Mayor Paul Mann said he didn't realize how appropriate his grey coat would be.

It was, though, because with the exception of some muted defense of the Corps by Mann in his "Confederate" role, the evening belonged to what the mayor called "the Union Army," a delegation of more than 900 opponents of a pumped-storage reservoir proposed for the Union Flat Creek area southwest of Pullman.

A four-hour parade of public officials and private citizens told Conover that not only are they against building such a reservoir, there's no

need to even study the proposal. And several suggested a better study would be to determine if there is still a need for the Corps of Engineers.

per reservoir and then released when needed for power generating and other purposes.

flooding of farmland, he said. After the study is completed, it would be up to Congress to authorize the project and appropriate money for it. Actual

was going to be a need for additional electrical generating power in the future. "I hope when the alternatives show up, you will be willing to accept

jects that will help people not displace them."

Norman Hatley of Pullman, president of an anti-reservoir group called OPAL, the Organization for the Preservation of Agricultural Land, drew the biggest cheers for his attacks on the reservoir plan, the study and the Corps is general.

Although several other members of the Hatley family spoke in opposition, Hatley didn't want the crowd to think "this was a Hatley vendetta." There used to be a story in Whitman County, he said, that the squirrels, the Hattleys and the Druffels (another family in the area) would some day take over the county. "That was before the Army Corps of Engineers came along," he quipped.

Hatley called for an immediate halt in the study and suggested instead a feasibility study "on whether it's feasible to have an Army Corps of Engineers."

He said there are only three things the Corps understands: hydroelectric power, political power and people power. "Let's stand up and show the colonel some of that last kind of power," whereby all but a few of the crowd stood up and applauded.

... a delegation of more than 900 opponents

difference in elevation between the Palouse and the Snake River, the Union Flat Creek area is ideally suited for such a reservoir system, he said.

Preliminary studies showed the area to be a prime candidate for a pumped-storage reservoir because of the possible use of water for irrigation in the Lacrosse area and for a supplemental water supply for Moscow and Pullman, he said.

Because of the widely fluctuating water levels in the upper reservoir, however, there would be little or no use of it for recreation or fish and wildlife, Conover stated. Earlier literature from the Corps listed recreation, fish and wildlife enhance-

and building reservoirs, he would recommend that it be built," he said.

His words fell on deaf ears for most of the crowd, 91 of which expressed a desire to make a statement. By the time 11:30 p.m. rolled around and the last name was called, more than 50 had spoken in opposition, the rest had grown weary and left.

Mayor Mann was the only speaker not to criticize the Corps plan and he drew scattered boos for his defense of the feasibility study as necessary to "provide us with some answers."

Mann said the Moscow City Council didn't feel it knew enough about the plan to take a position prior to the hearing but said the council in the past has been interested in the possi-

ble type of reservoir used in the Lower Granite pool, Mann said. "But we won't know unless the Corps is permitted to make the study." That study may turn up a location that would have a minimal impact on farmland, he added.

At the conclusion of Mann's remarks, Moscow businessman Art Heibling strode to the podium, grabbed the microphone from Conover and exclaimed, "There are more of us from Moscow than he."

Mann's comments came amid a steady stream of citizens against the plan, who rapped the loss of fertile farmland, harmful effects on fish and wildlife and the displacement of families in the area and the increased

... suggested instead a feasibility study "on whether it's feasible to have an Army Corps of Engineers."

PALOUSE BASIN  
AQUIFER  
committee

# Organization for Preservation of Agricultural Land Suggestion (1976)

## Organization for Preservation of Agricultural Land

President  
Rt. 2, Box 402  
Pullman, Wash. 99163



Secretary-Treasurer  
Rt. 2, Box 404  
Pullman, Wash. 99163

March 24, 1976

Our organization is greatly concerned about the future policy of your efforts in your joint venture in regards to water research

It is our suggestion . . . That authority to "secure" projects be greatly curtailed.

. . . all offices concerned should give formal authorization for each project . . .

To further restrict their authority . . .

Mayor Karen Klesling, Pullman  
Mayor Paul Mann, Moscow  
President Glenn Terrell, WSU  
President Ernest Harkung, U of I  
Latah County Commissioners, Moscow  
Whitman County Commissioners, Colfax

Ladies and Gentlemen:

Our organization is greatly concerned about the future policy of your offices in your joint venture in regards to water research.

It is our suggestion, if the Moscow Pullman Water Research Committee is to still function, that authority to secure "study" projects be greatly curtailed.

We feel that all offices concerned should give formal authorization for each project and the public be notified before any study or project is authorized.

To further restrict their authority we would like to suggest you restructure your committee to include two members from both Latah County and Whitman County, and that both Whitman and Latah County Commissioners be made a part of the governing body.

It is our understanding the Water Research Committee meetings are open to the public. If this is the case we would like to be notified of each and every meeting and be sent minutes of these meetings.

We understand the need to have water research, and it is our desire that you have control and the public be kept informed.

We hope you understand our deep concern in this matter.

Respectfully,

Norman Hatley  
President, OPAL

cc: C. C. Warnick, Pullman Moscow Water Resource Committee, Chairperson  
Ralph Schardhorst, OPAL, Moscow Chairperson  
Nora Mae Keifer, OPAL, Pullman Chairperson  
Jim Hatley, OPAL, WSU and U of I Chairperson

RECEIVED

MAR 23 1976

WATER RESOURCES  
RESEARCH INSTITUTE

## PMWRC Becomes Inactive (1976)

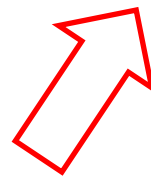
P-MWRC Members:

I suggest we better decide soon what the future of our Committee is to be.

... assess what our Administrators' views are

If any agree in principle with the OPAL letter, I'm for abandoning further work.

Due to recent "controversy" and a letter dated 3/24/76 from OPAL, I suggest we better decide soon what the future of our Committee is to be. I further suggest that we assess what our Administrators' views are. If any agree in principle with the OPAL letter, I'm for abandoning further work. If a study Committee can't study, to [redacted] with it all.



Hepp  
4/2/76



US Army Corps  
of Engineers  
Walla Walla District


## Reconnaissance Report Palouse River Basin

### COMPARISON OF M&I WATER SUPPLY ALTERNATIVES

<u>PROJECT</u>	<u>CAPITAL COST</u>	<u>ANNUAL COST</u>
Laird Dam	\$36,913,000	\$3,437,000
Pipeline	<u>42,946,000</u>	<u>6,799,000</u>
Total	\$79,859,000	\$10,236,000
Snake R.	\$47,600,000	= \$90,916,000 in 2014
Dworshak	\$77,400,000	\$12,433,000

In comparing these alternatives, the Snake River provides the least cost source of water. For 25,000 acre feet per year the cost per 1,000 gallons of potable water would be about \$1.10.

## IDWR Letter to WDOE - 1987

	State of Idaho	RECEIVED MAY 22 1987
	DEPARTMENT OF WATER RESOURCES STATE OFFICE, 450 W. State Street, Boise, Idaho	
CECIL D. ANDRUS Governor		Mailing address: Statehouse Boise, Idaho 83720 (208) 334-4440
A. KENNETH DUNN Director		
May 15, 1987		
Andrea Beatty Riniker, Director Department of Ecology		

**This is to advise you of the reason Idaho has protested  
Application . . . filed by Washington State University . . .**

permit to appropriate 2500 gpm for continuous municipal supply.

The Notice of Application appears to propose an additional water use. However, in the February 17, 1987, memorandum from Mr. Dillingham of Washington State University to Mr. Earl Moore it is stated:

the proposed 2500 gpm well (well No. 7) is intended to replace three other wells as they become inoperable, and the well will not "go online" until it is required as a direct substitute for WSU wells that have either gone dry or become inoperable. The memorandum further states that WSU water consumption will

**The model predicts that should withdrawals increase even  
at a rate as low as one percent per year the aquifer will  
not reach a recharge/discharge equilibrium and water  
level declines will continue . . .**

PALOUSE BASIN  
**AQUIFER**  
committee

withdrawals increase even at a rate as low as one percent per year the aquifer will not reach a recharge/discharge equilibrium and water level declines will continue. The Pullman/Moscow water supply problem has been subjected to numerous studies over the years and clearly it

## IDWR Letter to WDOE - 1987

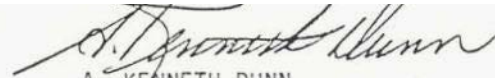
State of Washington

2

May 15, 1987

is in the interest of both the state of Washington and Idaho to seek a solution to the problem.

**I propose . . . meet. A memorandum of understanding between the two agencies could be developed which would clearly identify the conditions under which additional water use development would be allowed, outline conservation programs which would be enforced, and support the development of a long term management plan for the region**

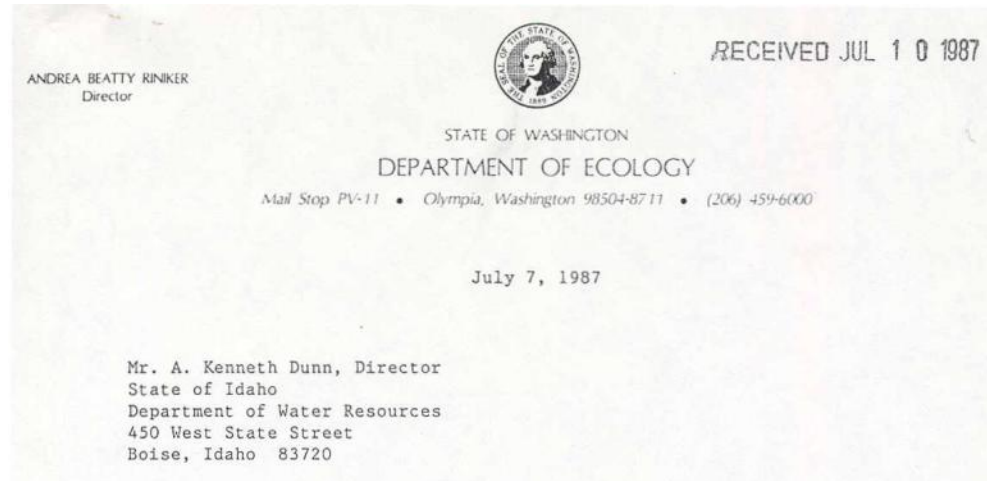


A. KENNETH DUNN  
Director

AKD:alw

cc: Water Board Members  
Governor's Office  
Clearwater RC&D  
U.S.G.S  
City of Moscow  
City of Pullman  
University of Idaho  
Washington State University

## WDOE Response to IDWR Letter - 1987



**The Department of Ecology has a great deal of interest. I concur that a meeting between the two agencies should take place to initiate the plan.**

action program that would allow beneficial management and development of the Pullman/Moscow aquifer. I concur that a meeting between the two agencies should take place to initiate the plan.

**I would suggest that a representative from each of the two cities and universities . . . attend the meeting.**

Please contact Hedia Adelsman, our Water Resources Program Manager in Olympia, telephone (206) 459-6056 or George Krill, telephone (206) 459-6119 to set up the meeting agenda, place and time.

Sincerely,

Andrea Beatty Riniker  
Director

cc: Hedia Adelsman  
John Arnquist  
U.S. Geological Survey  
City of Moscow, Idaho  
City of Pullman, Washington  
Washington State University  
University of Idaho  
Clearwater RC&D

# Resolution of Understanding (PMWRC, IDWR, WDOE) - 1989

RESOLUTION OF UNDERSTANDING  
between  
PULLMAN-MOSCOW WATER RESOURCES COMMITTEE  
IDAHO DEPARTMENT OF WATER RESOURCES  
WASHINGTON DEPARTMENT OF ECOLOGY  
1989

1. PMWRC will pursue and administer funding to conduct and promote studies and research relative to improving knowledge of the water resources of the basin.
2. PMWRC will prepare a management plan for the basin in cooperation with the two state agency parties (IDWR and WDE), which will address both water quantity and water quality concerns.

WHEREAS, the representatives of the University, Whitman County, and management

WHEREAS, the Idaho Department of Ecology have the authority to regulate water to participate

WHEREAS, there are quality ground water resources within the basin; and

WHEREAS, a ground water management plan developed and implemented in concert with public need rules and regulations resources in the

WHEREAS, the plan implementing such

WHEREAS, the purpose of this Understanding is

NOW, THEREFORE the following:

The Idaho Department of Water Resources (IDWR) and Washington Department of Ecology (WDE) agree to commit sufficient staff time to assist in the completion of such tasks as may be appropriate. IDWR and WDE further agree to pursue the implementation of a coordinated Washington-Idaho ground water management plan for the Pullman-Moscow basin in accordance with their respective state law policies.

The Pullman-Moscow Water Resources Committee (PMWRC) agrees to work with the state agencies and to serve as the forum for input from local governments, interest groups and private citizens.

Specific obligations of the Committee are as follows:

IDWR and WDE further agree to pursue the implementation of a coordinated Washington - Idaho ground water management Plan for the Pullman - Moscow basin in accordance with their respective state law policies.

The Pullman - Moscow Water Resources Committee (PMWRC) agrees to work with the state agencies and to serve as the forum for input from local governments, interest groups and private citizens.

management  
outline the  
the party  
d schedule

the water  
management

parties and accomplishment of the filing requirements and approvals as may be necessary. This Resolution shall remain in effect until the completion of the ground water management plan or until any party to the agreement terminates its participation by all parties, giving notice to the committee members.

all parties,  
g and notice  
tee members.

5-30-89  
Date

5-30-89  
Date

/s/ John Henley 5-30-89  
Whitman County Date

/s/ Nancy Johansen 5-30-89  
Latah County Date

/s/ Fred Olsen 5-30-89  
Washington Department Date  
of Ecology

/s/ Wayne Haas 5-30-89  
Idaho Water Resources Date

# ***Ground Water Management Plan***

Pullman-Moscow  
Water Resources  
Committee

*September 1992*

# Palouse Basin Aquifer Committee

*"To ensure a long-term, quality water supply for the Palouse Basin region"  
A Committee (now known as PBAC) was formed in 1967 because of declining groundwater levels in our municipal wells. The Palouse groundwater basin is the sole source of water for over 60,000 residents of [Pullman, Washington](#) and [Moscow, Idaho](#) and outlying areas in both [Whitman County \(Washington\)](#) and [Latah County \(Idaho\)](#). Also included among our groundwater users are [Washington State University](#) and the [University of Idaho](#). We are a multi-jurisdictional, cooperative group with the mission of ensuring a safe and sustainable supply of water for the future".*

# **Palouse Basin Aquifer Committee**

12 Representatives – 2 from each of the 6 entities

**City of Moscow**

**City of Pullman**

**Latah County**

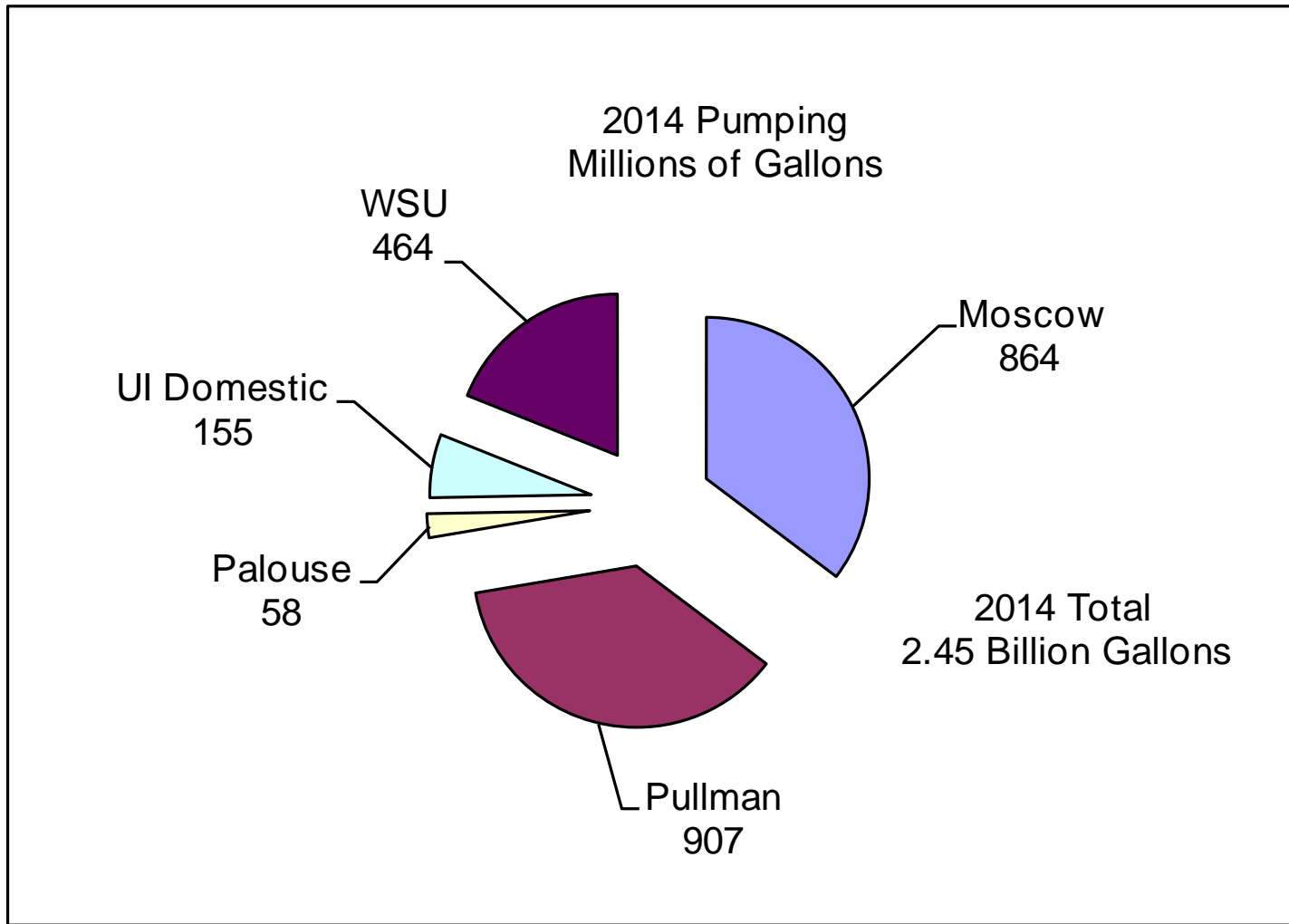
**Whitman County**

**University of Idaho**

**Washington State University**

**Ex-Officio Members: IDWR and WA Ecology**

**Executive Manager: Steve Robischon**



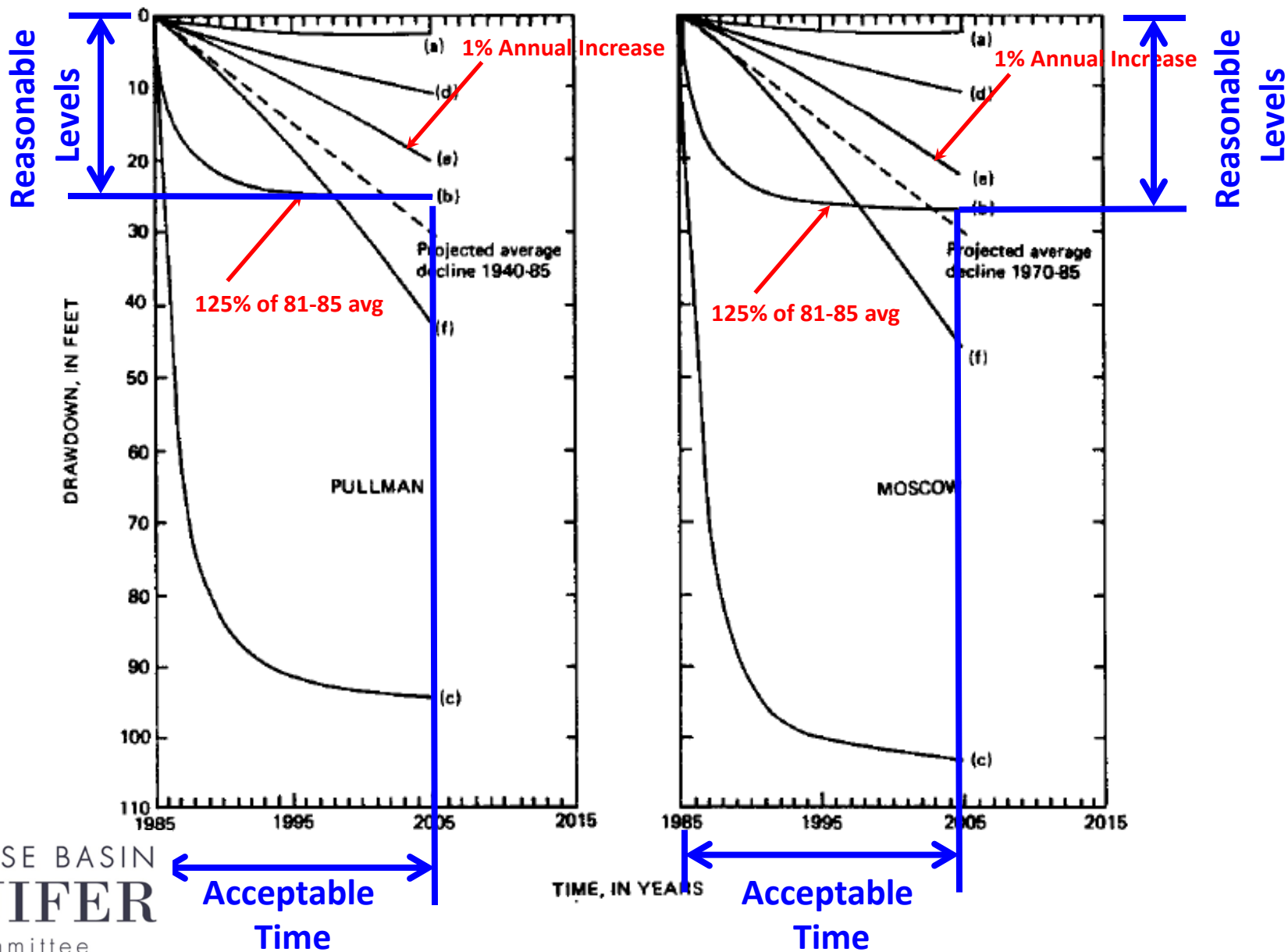
**The role of the COMMITTEE is to encourage entities to implement the PLAN**

**. . . provide a forum for the exchange of successful and effective management policies, strategies, and techniques**

**. . . gather, maintain and evaluate a data base of well locations, water consumption and water levels . . .**

**To further refine the MODEL, the COMMITTEE will continue to acquire, maintain, and upgrade information as it relates to the ground water system.**

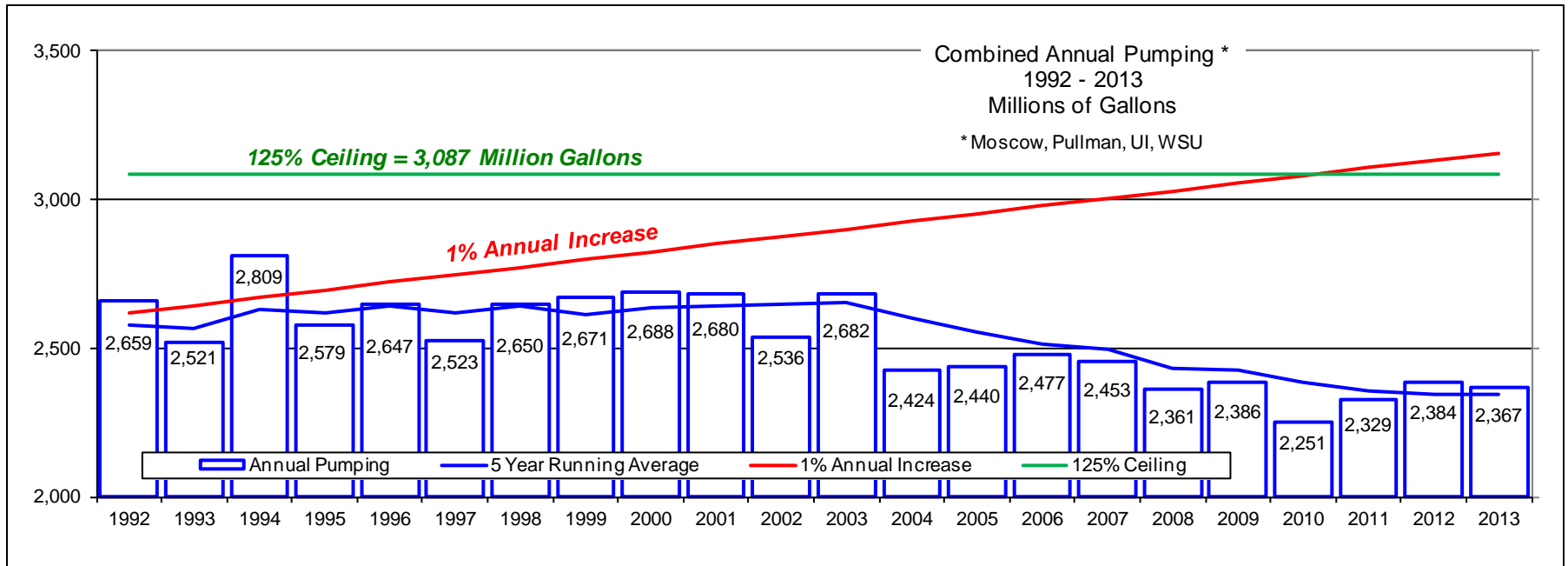
# Lum, Smoot, Ralston Model - 1989



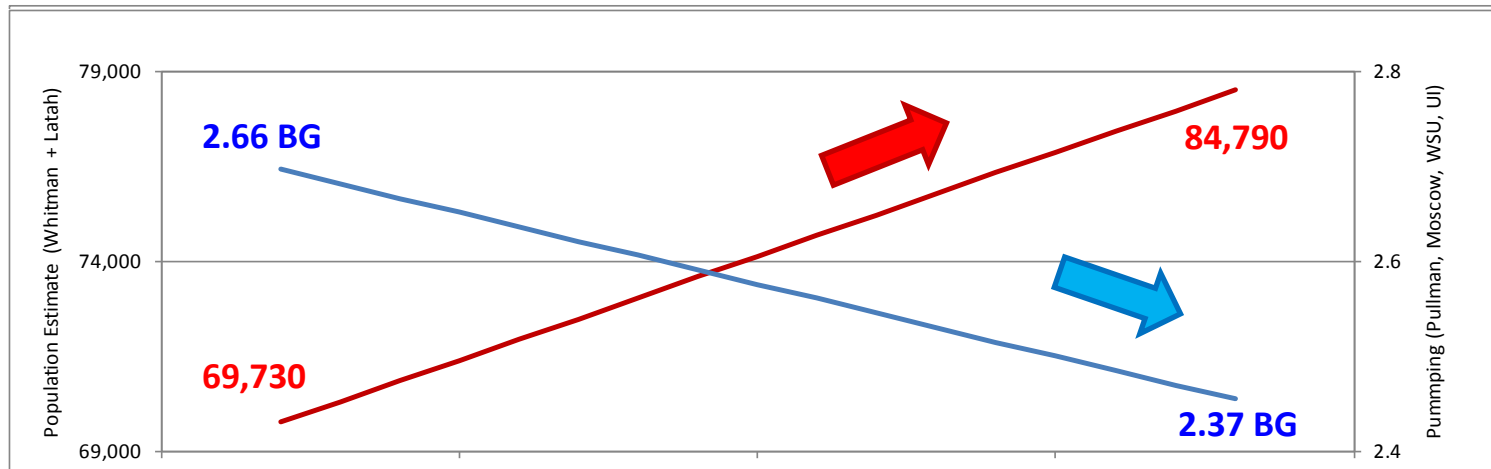
- GOAL -

- TO PROVIDE FOR FUTURE BENEFICIAL USE OF THE BASIN GROUND WATER WITHOUT DEPLETING THE BASIN AQUIFERS WHILE PROTECTING THE QUALITY OF THE WATER.

The primary goal is to insure that a stable ground water level is maintained in the BASIN aquifers. The COMMITTEE adopts the standard that the two universities and the two cities shall attempt to limit their annual aquifer pumping increases to one percent (1.0%) of their pumping volume based on a five (5) year moving average starting with 1986. At no time shall the accumulated total pumping exceed 125% of the 1981-1985 average for the two universities and the two cities. These initial limits on pumping rates are based upon historical data and water levels predicted by the MODEL. An estimate of the dispersed county pumping will be made based on an average per capita use for all county residences within the BASIN boundaries. Latah and Whitman counties will attempt to limit pumping increases from the BASIN aquifers to 125% of the estimated 1990 pumping levels. Further refinement of the MODEL will be necessary to establish acceptable limits on long term pumping rates which will confirm a stable water level for future users. The COMMITTEE will update the MODEL periodically and



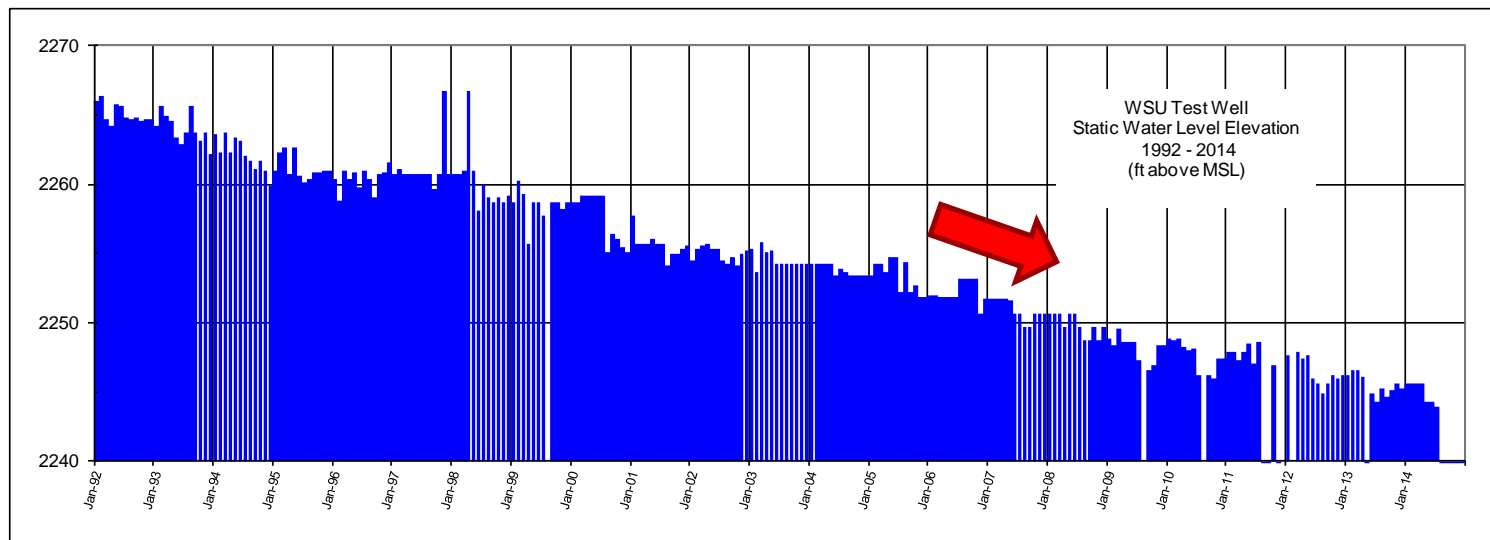
## Trends: 1992 - 2014



Population  22%

Pumping  11%

Water Levels  21 ft



## Ground Water Management Plan – Chapter 6 - 2011 Mission and Goals

- **Mission: To ensure a long-term, quality water supply for the Palouse Basin region.**
- **Consistent with the Palouse Basin Groundwater Management Plan, develop and Implement a balanced basin wide Water Supply and Use Program by 2025.**
- **Create and maintain an action plan for aquifer system sustainability, enhancement and/or alternate water supply development.**
- **Direct research and implement pilot projects necessary to understand the basin hydrogeology in a manner sufficient to support the Water Supply and Use Program and the affiliated supply projects.**
- **Encourage and facilitate entities in meeting their specific pumping, conservation, efficient use, water recycling and other goals.**
- **Educate entities and the public on the state of the basin water supply and the status of PBAC's mission and goals.**
- **Maintain harmonious and effective working relationships across the state line to fairly meet the needs of all entities.**

# Aquifer Studies

## Palouse Ground Water Basin Framework Project Final Report



Prepared by:



121 S. Jackson St.

Moscow, ID 83843

Web Site: [www.terragraphics.com](http://www.terragraphics.com)

And

**Ralston Hydrologic Services**

1122 E. B St.

Moscow, ID 83843

January 31, 2011

# Aquifer Studies

## Palouse Ground Water Basin Framework Project Final Report

id	title	author	publish_yea	file_location	recommend	author_conc	comments	description	reviewer	reviewer_ds	Add New Field
51	Ground Water Supply at Moscow, Idaho	Laney F.B., V.R.D. Kirkham	1923	Framework Project Disk 1\ 1923_L	Well barrier. T	In brief, this re		This study anal	Robin Nimmer	11/18/2009	
433	The "Palouse Soil" Problem	Byran, Kirk	1926	2013_Additions_Disc_24		Very complex,		An attempt to i	Steve Robischon	3/6/2014	
204	The Geology and Economic Resources in a Portion of Latah County	Johnson, M.M., and C.F. M	1929	Framework Project Disk 1\ 1929_Jc	The recommen	None		This is a summ	Dale Ralston	1/20/2010	
52	A Study of the Pullman Artesian Basin	DeMotte, H., and W.F. Mil	1933	Framework Project Disk 1\ 1933_D	It is recommen	The data obtai		For the Pullma	Robin Nimmer	11/19/2009	
53	Contributions to the Geology of Latah County	Tullis, E.L.	1944	Framework Project Disk 1\ 1944_Ti	None	None	This is the initi	This report pre	Robin Nimmer	12/8/2009	
328	(Water levels and artesian pressure in US in 1943)	Eakin, T.E.	1946	Framework Project Disk 14\Less pr			Water levels ar				
404	Pertinent Information on Ground Water Supply in the Moscow-Pu	Packer	1955	Disc 15\1955_Packer_Pertinent_In		(From summar	From PBAC file	A water balanc	Steve Robischon	2/1/2012	
154	Clay Deposits of North Idaho	Hubbard, C.R.	1956	Framework Project Disk 14\Less pr	None						
158	Idaho Law of Water Rights	Hutchins, W.A.	1956	Framework Project Disk 14\Less pr							
54	Supplemental Water Supply for Moscow, Idaho: Interim Report PH	EBASCO Services	1958	Framework Project Disk 1\ 1958_El	The following i	1) There is a lin	This is the first	This report des	Robin Nimmer	11/19/2009	
125	Outline of the Geology of Idaho	Ross, C.P., and J.D. Forrest	1958	Framework Project Disk 1\ 1958_R	None	None		This report is a	Chayan Lahiri	1/25/2010	
55	A Water Balance Study of Two Small Watersheds	Bloomsburg, G.L.	1959	Framework Project Disk 1\ 1959_B	To determine v	None		The author con	Robin Nimmer	11/19/2009	
56	Geologic Investigation of the Moscow Ground Water Basin Employ	Crosby III, J.W., and R.E. Ca	1960	Framework Project Disk 1\ 1960_C	None	The use of high	This is one of a	Based on the fi	Robin Nimmer	12/14/2009	
57	Ground-Water Problems in the Vicinity of Moscow, Latah County,	Stevens, P.R.	1960	Framework Project Disk 1\ 1960_Sl	The author rec	None	Plate 13 (map c	This report des	Robin Nimmer	11/24/2009	
329	Ground-Water Investigations In Idaho		1961	Framework Project Disk 14\Less pr							
118	Water and Mineral Resources of the Palouse	Jones, R.W.	1961	Framework Project Disk 1\ 1961_Jc	None	None		The article brie	Chayan Lahiri	1/11/2010	
434	Flowing Artesian Wells in Washington State	Molenaar, Dee	1961	2013_Additions_Disc_24				Location and g	Steve Robischon	3/6/2014	
119	Stratigra										
211	Storage										
58	Ground										
212	Significa										
197	A Compr										
375	Moscow										
189	Topogra										
126	Stratigra										
103	Ground-										
59	Water Dating Techniques As Applied to the Pullman-Moscow Grou	Crosby III, J.W., and R.M. C	1965	Framework Project Disk 1\ 1965_C	Future studies: As applied to ti			This report des	Robin Nimmer	11/24/2009	
215	Contributions to the Geohydrology of Moscow Basin, Latah County	Ross, S.H.	1965	Framework Project Disk 1\ 1965_R	The factors aff	None	Missing page 8	This report des	Chayan Lahiri	1/6/2010	
196	Supplemental Geophysical Studies for the City of Moscow, Idaho	Cavin, R.C., and J.W. Crosby	1966	Framework Project Disk 1\ 1966_C	New wells sho	The specific fir	This is a contin	This report is a	Dale Ralston	1/20/2010	
397	Supplemental Seismic Studies for the City of Moscow, Idaho	Cavin, R.E. Crosby, J.W.	1966	Disc 15\1966_Cavin_Crosby_Suppl	(From Conclusi	(From Conclusi		(From Preface)	Steve Robischon	1/31/2012	
198	Ground-Water Research in the Pullman-Moscow Basin	Crosby III, J.W.	1966	Framework Project Disk 1\ 1966_C	None	The hydrogeol	This paper pres	This is a summ	Dale Ralston	1/27/2010	
330	A Study of Ground Water Movement in Landslides	Jones, W.V.	1966	Framework Project Disk 14\Less pr							
60	Interpretation of Short Term Water Level Fluctuations in the Mosc	Sokol, S.	1966	Framework Project Disk 1\ 1966_Sl	None	At least 5 aquif	Conclusions sta	The purpose of	Robin Nimmer	12/14/2009	
367	Borehole Geophysical Examination of Moscow City Well No. 6	Crosby III, J. W., and R.L. Fe	1967	Framework Project Disk 14\Collect	None	The value of th		The report des	Chayan Lahiri	4/9/2010	
368	Borehole Geophysical Examination of Well 14/45-5D3	Crosby III, J. W., and R.L. Fe	1967	Framework Project Disk 14\Collect	None	None		The report des	Chayan Lahiri	4/9/2010	
185	Factors Effecting Ground-Water Recharge in the Moscow Basin, Lai	Lin, C.L.	1967	Framework Project Disk 1\ 1967_Li	Investigation o	Recharge of qu	This thesis is ar	This study focu	Dale Ralston	1/18/2010	
199	Ground-Water Hydrology of the Pullman-Moscow Basin, Washing	Crosby III, J.W.	1968	Framework Project Disk 1\ 1968_C	None	The C14 metho		This paper desi	Dale Ralston	1/27/2010	
61	Feasibility of Artificial Recharge of a Small Ground Water Basin by	Jones, R.W., S.H. Ross, and	1968	Framework Project Disk 1\ 1968_Jc	None	Our proposed	This is a signific	Noting the like	Robin Nimmer	11/30/2009	
288	Geomorphology of the Palouse Hills, Southeastern Washington	Ringe, L.D.	1968	Framework Project Disk 1\ 1968_R	None	There seems to	Conclusions tal	The paper desc	Chayan Lahiri	3/2/2010	
191	Comments on Jones & Ross Report "How Long Will the Water Last"	Bloomsburg, G.L.	1969	Framework Project Disk 1\ 1969_B	None	The author sho		This is a brief n	Dale Ralston	1/27/2010	
216	Data of Ground Water Investigation of Moscow Basin	Jones, R.W., and S.H. Ross	1969	Framework Project Disk 1\ 1969_Jc	None	1.Mathematica		This report is a	Chayan Lahiri	1/6/2010	

Record:

23 of 394

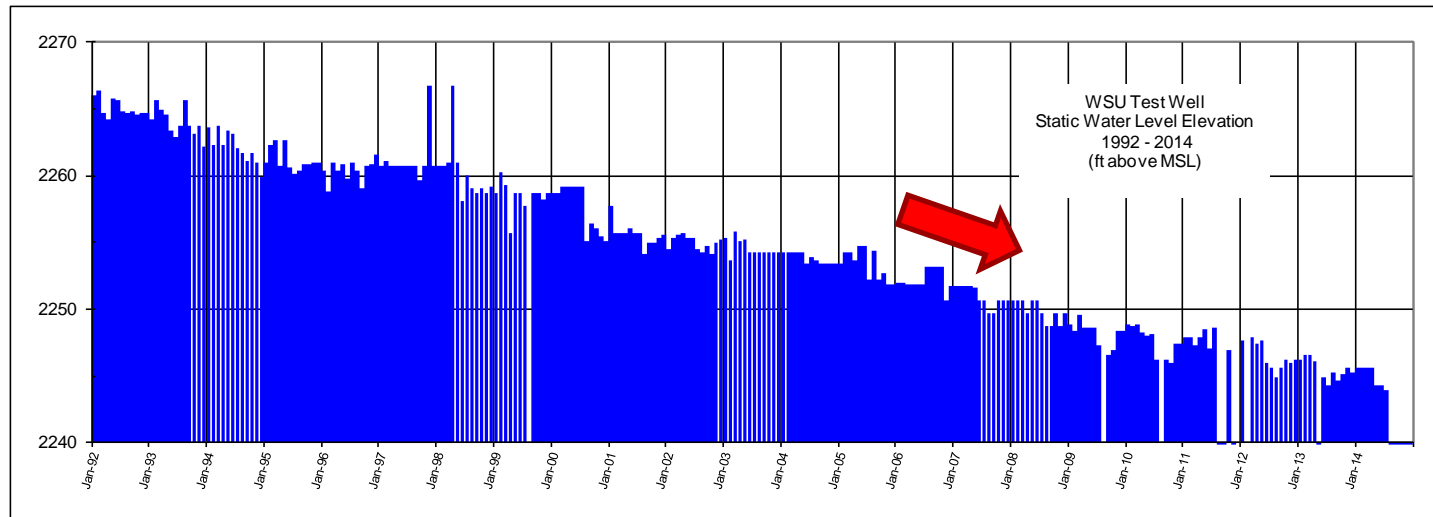
## Ground Water Management Plan – Chapter 6 - 2011 Mission and Goals

- **Mission: To ensure a long-term, quality water supply for the Palouse Basin region.**

- **Consistent with the Palouse Basin Groundwater Management Plan, develop and Implement a balanced basin wide Water Supply and Use Program by 2025.**

- **Create and maintain an action plan for aquifer system sustainability, enhancement and/or alternate water supply development.**

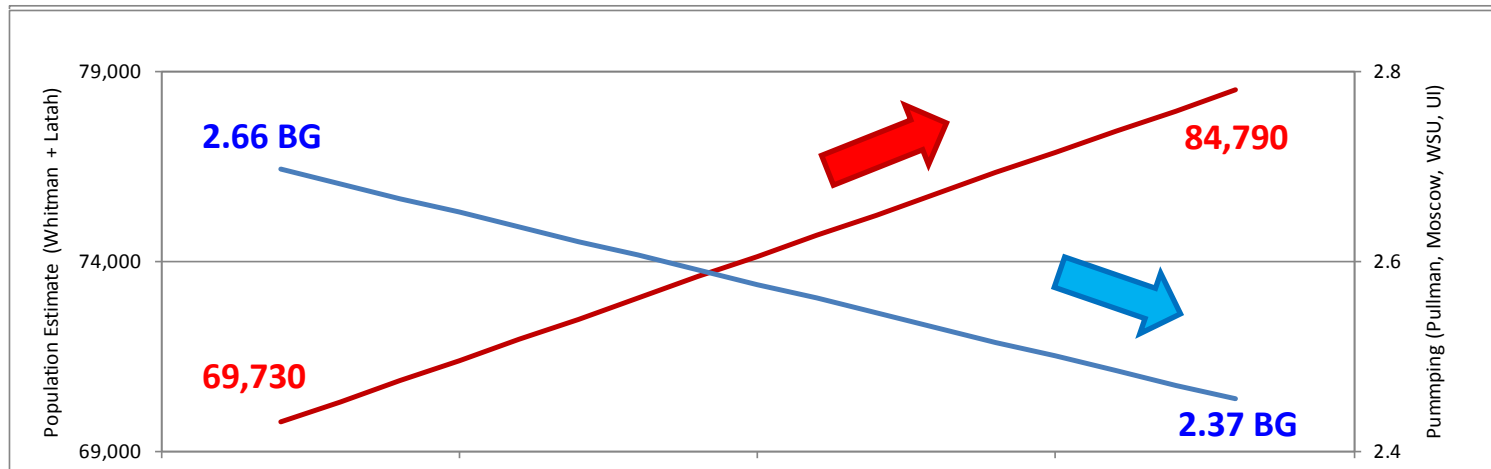
- **Direct research and implement pilot projects necessary to understand the basin hydrogeology in a manner sufficient to support the Water Supply and Use Program and the affiliated supply projects.**



# What to Do?

- **Use Less**
  - Inside
  - Outside
- **Reuse Some**
- **Find More**
- **Communicate**

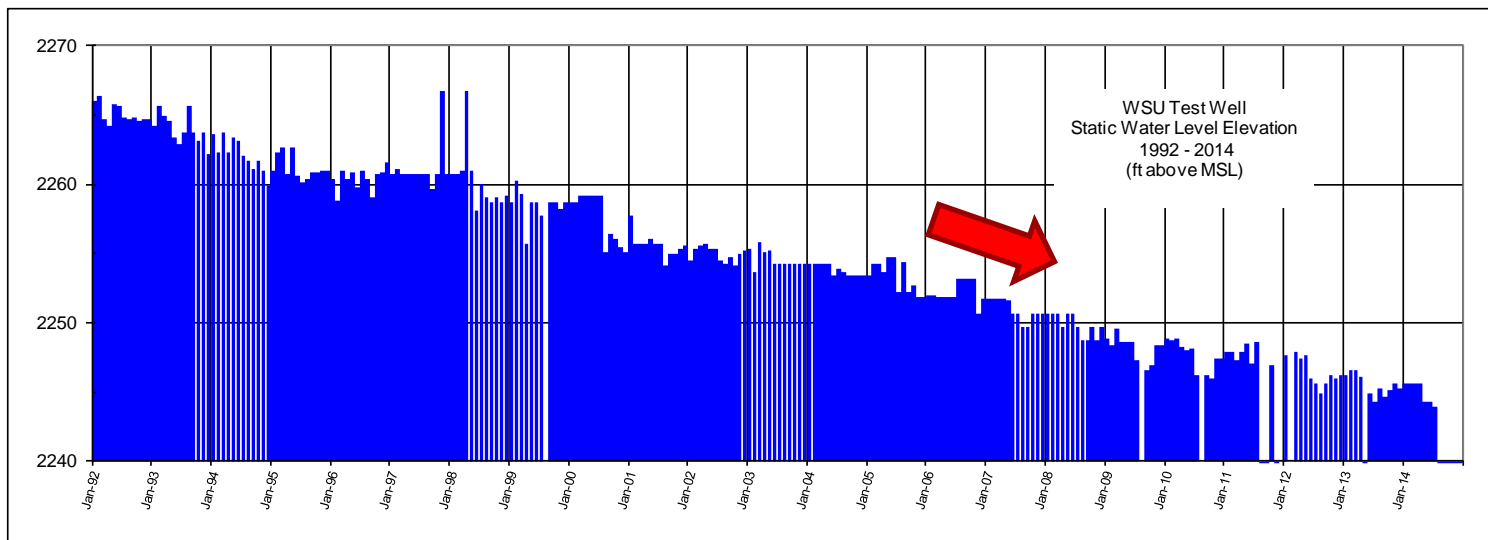
## Trends: 1992 - 2013



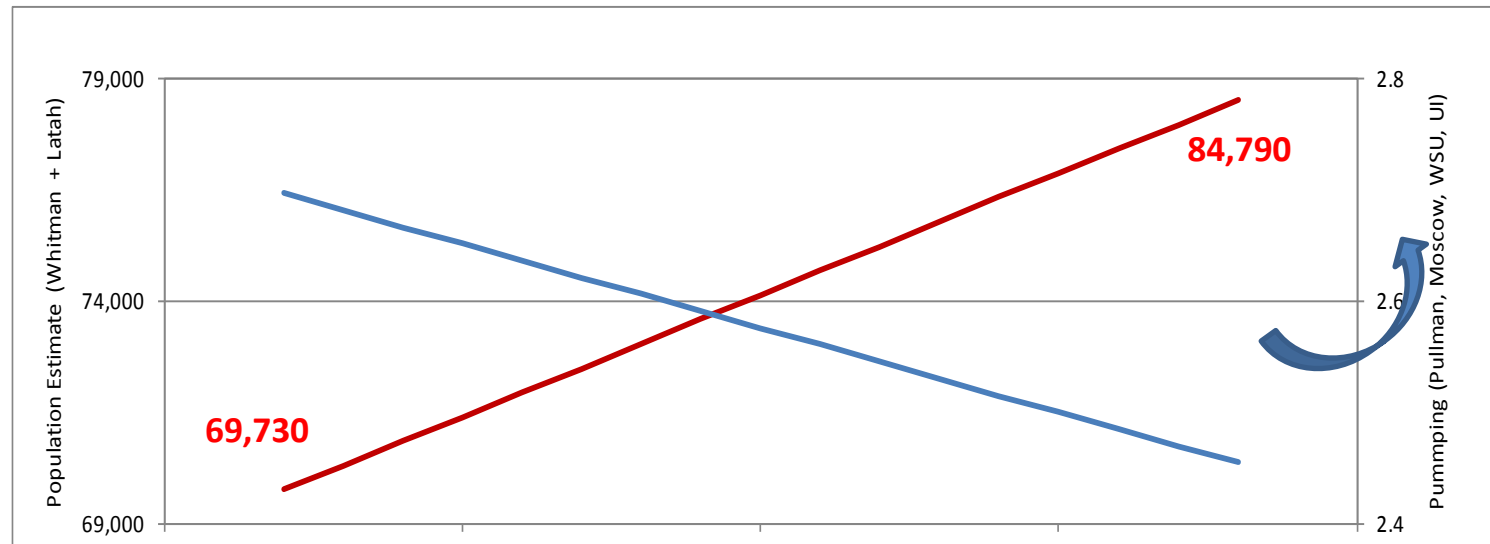
Population  22%

Pumping  11%

Water Levels  21 ft



# Use Less, But . . .



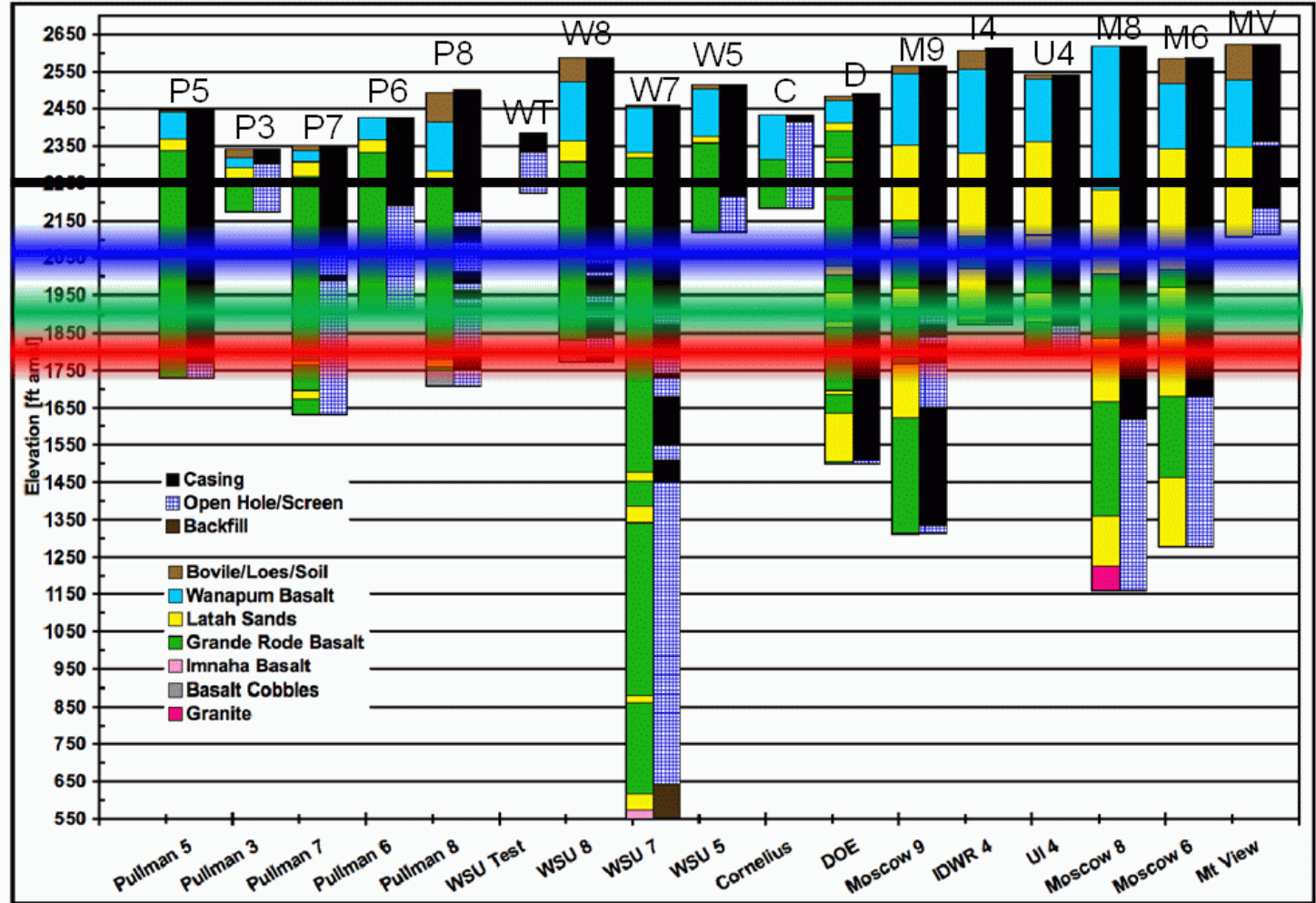
# Model Studies – WoW Systems Model

Current Level

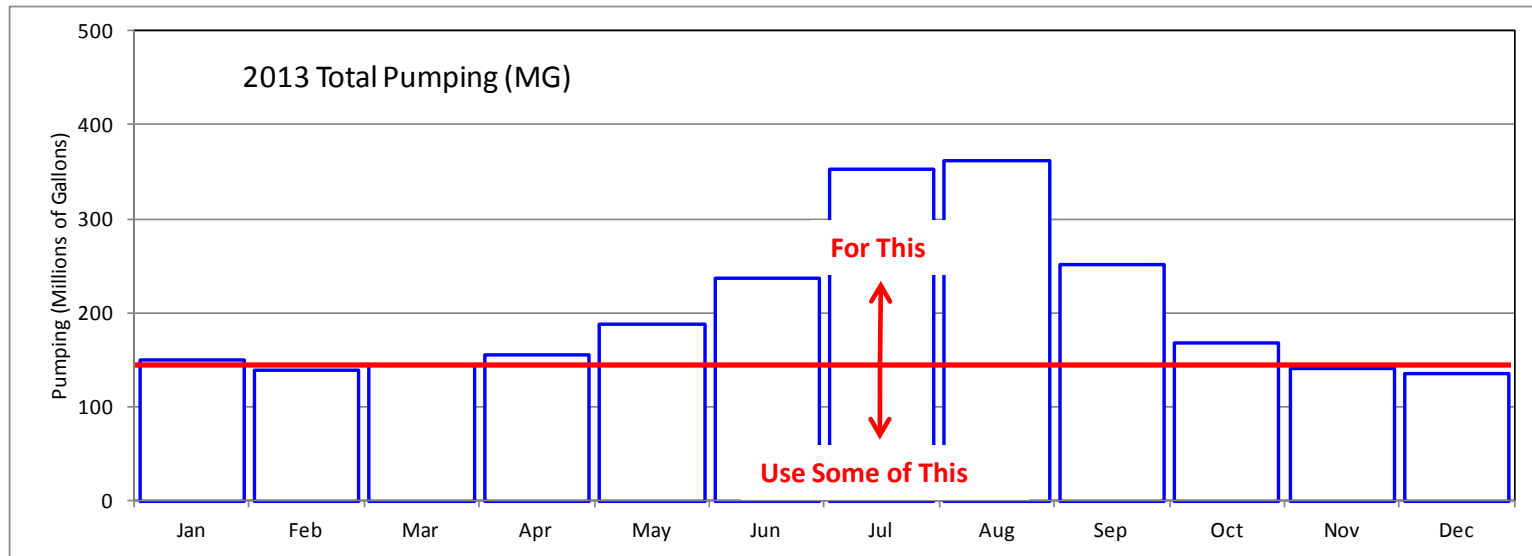
No Growth

1.2% Growth

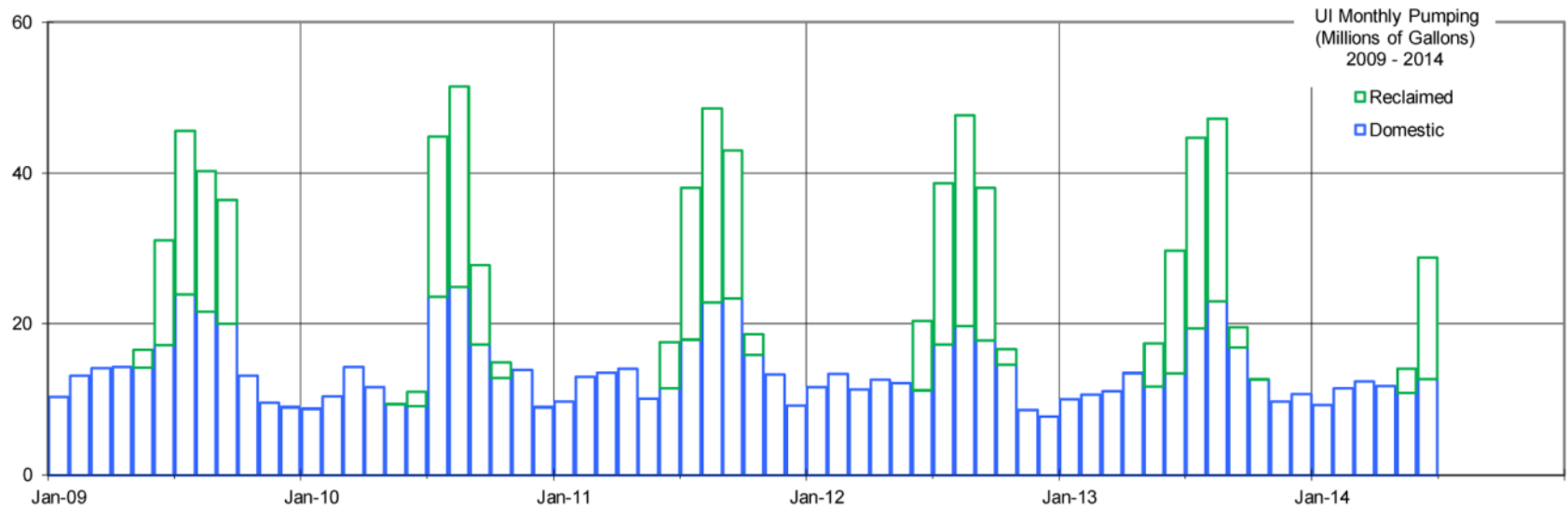
1.9% Growth



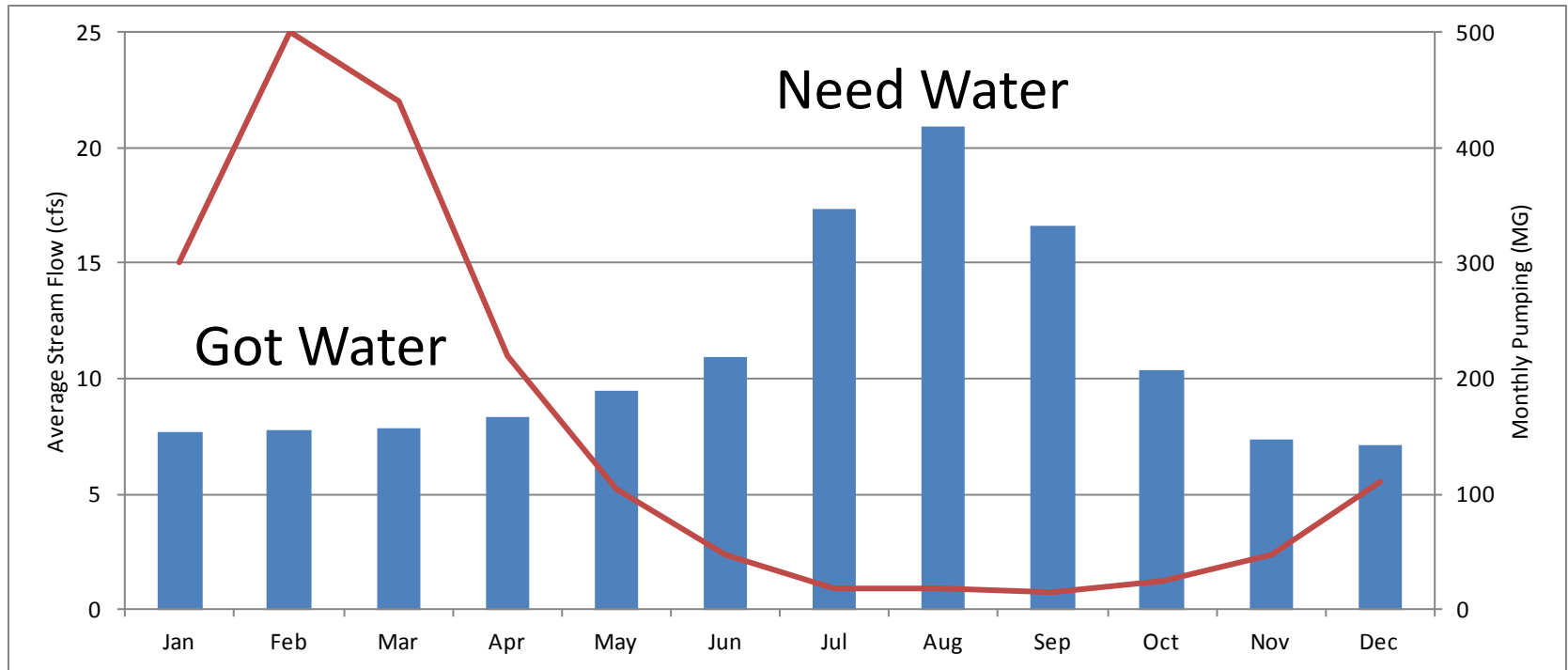
# Reuse Some



# University of Idaho Monthly Water Use



# Find More Surface Water, But . . .

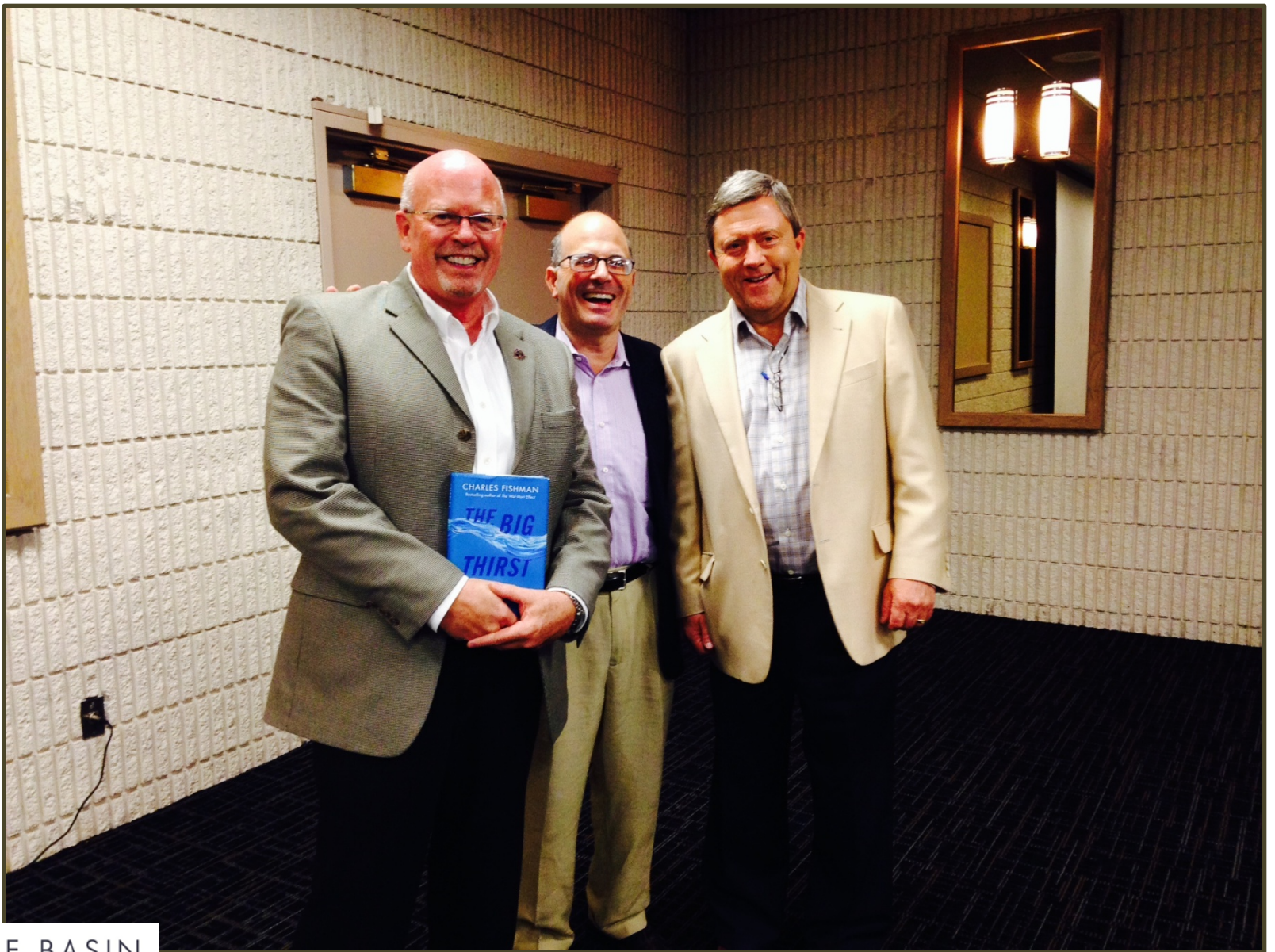


# Communicate.....



*Celebrating* **10** *Years*

PALOUSE BASIN  
**AQUIFER**  
committee



PALOUSE BASIN  
**AQUIFER**  
committee

# What's next?

- **Use Less**
  - Inside
  - Outside
- **Reuse Some**
- **Find More**
- **Communicate**

# Find More....

**Create and maintain an action plan for aquifer system sustainability, enhancement and/or alternate water supply development.**

Water Supply Study (circa 2015)

- using today's metrics, science and legal framework
- create a menu of water supply alternatives

# Palouse Basin Aquifer Committee

## Water Supply Alternatives Project RFQ

Issued March 9, 2015

PALOUSE BASIN  
**AQUIFER**  
committee

ADVERTISEMENT FOR  
REQUEST FOR QUALIFICATIONS (RFQ)  
ARCHITECTURAL CONSULTING SERVICES

107290

PBAC GROUND WATER BASIN, WATER SUPPLY  
ALTERNATIVES PROJECT,  
University of Idaho, Moscow, Idaho

UI PN: CP150064

OWNER: THE REGENTS UNIVERSITY OF IDAHO March 9, 2015

ISSUED BY: Utilities & Engineering Services  
875 Perimeter Drive/P.O. Box 442281  
University of Idaho  
Moscow, Idaho 83844-2281

PROJECT  
MANAGER: Eugene P. Gussenhoven  
Facilities  
875 Perimeter Drive/P.O. Box 442281  
University of Idaho  
Moscow, Idaho 83844-2281

Qualifications statements by qualified firms interested in providing consulting services to assist the Palouse Aquifer Basin Committee in the investigation, programming, and development of Water Supply and Demand Management Alternatives supporting the Palouse Ground Water Management Plan will be received at Utilities & Engineering Services, University of Idaho, Moscow, Idaho 83844-2281 until close of business at 5:00 p.m., Monday, April 6, 2015.

Request for Qualifications (RFQ) materials may be obtained at:

Utilities & Engineering Services  
875 Perimeter Drive/P.O. Box 442281  
University of Idaho, Moscow, Idaho 83844-2281  
(208) 885-6246

or

<http://www.uidaho.edu/facilities>

on, or after, March 9, 2015.

**DESCRIPTION OF WORK:** The University of Idaho is seeking qualifications statements from interested Consulting firms to compile existing studies and information on alternative water supplies and provide a methodology for reasonable and effective comparison of various alternatives with the goal of assisting decision makers in determining the most promising alternatives, considering life cycle cost, as well as non-economic criteria such as public acceptability, ease of implementation, environmental permitting, overall benefit, etc. The project will also identify any existing data gaps precluding comparison.

**ESTIMATED COST:** Estimate value Budgetary Assumptions are based upon a total project cost of \$100-150K to include all Professional fees, contingency and soft costs. Initial Regent's Authorization is for the Planning and Design Phases only and is limited to \$150K in expenditures. Additional authorization for future Phases will be sought upon conclusion of the Conclusion of the project.

**MISCELLANEOUS:** Firms interested in responding to this RFQ are hereby advised that Idaho law prohibits persons and firms from practicing or offering to practice planning consulting services in the State of Idaho without being properly licensed. Persons or firms considering responding to this RFQ are advised to contact the State of Idaho, Bureau of Occupational Licenses, regarding Idaho licensing requirements.

Signed: /s/Ron Smith  
Ron Smith, VP, Finance and Administration  
UNIVERSITY OF IDAHO  
Moscow Idaho

# Palouse Basin Aquifer Committee

## Water Supply Alternatives Project RFQ

Issued March 9, 2015

PALOUSE BASIN  
**AQUIFER**  
committee

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Ron Smith, VP, Finance and Administration  
UNIVERSITY OF IDAHO  
Moscow Idaho

# Palouse Basin Aquifer Committee

## **Water Supply Alternatives Project**

RFQ

Issued March 9, 2015

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“Consulting firms to compile exiting studies and information on alternative water supplies and provide methodology for reasonable and effective comparison of various alternatives with the goal of assisting decision makers in determining the most promising alternatives, considering life cycle cost, as well as non-economic criteria such as public acceptability, ease of implementation, environmental permitting, overall benefit, etc. The project will also identify any existing data gaps precluding comparison.”

# Palouse Basin Aquifer Committee

## Water Supply Alternatives Project RFQ

Issued March 9, 2015

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Ron Smith, VP, Finance and Administration  
UNIVERSITY OF IDAHO  
Moscow Idaho

# Palouse Basin Aquifer Committee

## **Water Supply Alternatives Project**

RFQ

Issued March 9, 2015

### Estimated Cost:

“Estimated value Budgetary Assumptions are based upon a total project cost of \$100-150K to include all professional fees, contingency and soft costs. Initial Regents’ Authorization is for planning and design phases only and is limited to \$150K in expenditures. Additional authorization for future Phases will be sought upon conclusion of the Conclusion of the project.”

## PBAC Budget Details

Research Contributions 2005-2014 = 10 \* \$80,000 = \$800,000

Estimated Expenditures 2005-2014 = \$465,000

WA Ecology Contributions = \$500,000 \*

IDWR Contributions = \$350,000 \*

Total research investment in Basin = \$1,315,000 \*

Current Research Budget Balance = \$443,000

# Palouse Basin Aquifer Committee

## **Water Supply Alternatives Project**

### Funding Options:

- Fully funded from PBAC
- Potential cost-share with IDWR
- Fully funded from IDWR
- Other combinations
- Future studies funding

# Thank You!

MATERIALS FOR THIS SECTION MAY BE PROVIDED AT THE MEETING.



# AMENDED

## AGENDA

### IDAHO WATER RESOURCE BOARD MEETING NO. 3-15

March 20, 2015 at 7:30 am

Idaho Water Center  
Conference Rooms 602 B,C,D  
322 East Front Street, Boise, Idaho 83720

**C.L. "Butch" Otter**  
Governor

**Roger W. Chase**  
Chairman  
Pocatello  
District 4

**Jeff Raybould**  
Vice-Chairman  
St. Anthony  
At Large

**Vince Alberdi**  
Secretary  
Kimberly  
At Large

**Peter Van Der Meulen**  
Hailey  
At Large

**Charles "Chuck"  
Cuddy**  
Orofino  
At Large

**Albert Barker**  
Boise  
District 2

**John "Bert" Stevenson**  
Rupert  
District 3

**Dale Van Stone**  
Hope  
District 1

- 
1. Roll Call
  2. Executive Session – Board will meet pursuant to Idaho Code § 67-2345 (1) subsection (f), for the purpose of communicating with legal counsel regarding legal ramifications of and legal options for pending litigation, or controversies not yet being litigated but imminently likely to be litigated. Executive Session is closed to the public. Topics: Managed Recharge Permit Applications, North Idaho Adjudication  
*Following adjournment of Executive Session -- meeting reopens to the public*
  3. Agenda and Approval of Minutes 1-15, 2-15
  4. Snake River at Murphy Minimum Flows
  5. Public Comment
  6. Committee Assignments
  7. Legislative Update
  8. Water Supply Update
  9. Water Supply Bank Annual Report
  10. Upper Salmon Basin Water Transaction Projects
  11. Storage Studies Update
  12. ESPA Recharge
  13. North Idaho Future Water Demand Update
  14. IDWR Director's Report
  15. Other Non-Action Items for Discussion
  16. Next Meetings and Adjourn
- 

#### Americans with Disabilities

The meeting will be held in facilities that meet the accessibility requirements of the Americans with Disabilities Act. If you require special accommodations to attend, participate in, or understand the meeting, please make advance arrangements by contacting Department staff by email [Mandi.Pearson@idwr.idaho.gov](mailto:Mandi.Pearson@idwr.idaho.gov) or by phone at (208) 287-4800.



# IDAHO WATER RESOURCE BOARD

## MEETING MINUTES 1-15

**C.L. "Butch" Otter**  
Governor

Idaho Water Center  
Conference Rooms 602 B,C,D  
322 East Front Street, Boise, Idaho 83702

**Roger W. Chase**  
Chairman  
Pocatello  
District 4

January 22, 2015  
**Work Session**

Chairman Roger Chase called the meeting to order at approximately 1:30 pm. All Board members were present.

**Jeff Raybould**  
Vice-Chairman  
St. Anthony  
At Large

During the Work Session the following items were discussed:

- Recharge Proposal by the Eastern Idaho Water Rights Coalition
- Financial Status Report by Brian Patton
- Project and Program Tracking and Reporting by Cynthia Bridge Clark
- North Idaho Future Demand by Neeley Miller and Mark Solomon
- Sustainability Policy by Neeley Miller
- Sustainability of the ESPA by Brian Patton
- ESPA Recharge by Cynthia Bridge Clark and Brian Patton
- Water Transactions by Morgan Case and Sarah Lien
- Water Supply Bank by Remington Buyer

**Vince Alberdi**  
Secretary  
Kimberly  
At Large

**Peter Van Der Meulen**  
Hailey  
At Large

No action was taken by the Board during the Work Session.

**Charles "Chuck" Cuddy**  
Orofino  
At Large

January 23, 2015  
**IWRB Meeting**

**Albert Barker**  
Boise  
District 2

At 8:00 am the Chairman called the meeting to order. Mr. Albert Barker was absent during roll call, but joined the meeting shortly after the meeting started. All other Board members were present.

**John "Bert" Stevenson**  
Rupert  
District 3

### **Agenda Item No. 1, Roll Call**

#### *Board Members Present*

**Dale Van Stone**  
Hope  
District 1

Roger Chase, Chairman  
Jeff Raybould  
Vince Alberdi  
Albert Barker

Peter Van Der Meulen, Vice-Chairman  
Chuck Cuddy  
Bert Stevenson  
Dale Van Stone

### *Staff Members Present*

Gary Spackman, IDWR Director  
Cynthia Bridge Clark, Section Manager  
Morgan Case, Biologist  
Mandi Pearson, Admin. Assistant  
Clive Strong, Deputy Attorney General  
John Homan, Deputy Attorney General

Brian Patton, Bureau Chief  
Neeley Miller, Senior Planner  
Remington Buyer, Water Supply Bank Coordinator  
Ann Vonde, Deputy Attorney General  
Harriet Hensley, Deputy Attorney General  
Garrick Baxter, Deputy Attorney General

### *Guests Present*

Jeff Frank, Pinehurst Water District  
Peter Anderson, Trout Unlimited  
Brandt Bullock, IDWU Association  
Dave Tuthill, Idaho Water Engineering  
Liz Paul, Idaho Rivers United  
Jerry Rigby, Rigby Andrus & Rigby  
Hal Anderson, Idaho Water Engineering  
Jon Bowling, Idaho Power  
Bruce Sandoval, NRCS  
Bruce Smith, Moore Smith Buxton & Turcke

Walt Poole, Idaho Fish and Game  
Bill Block, JUB  
Mayor Rebecca Casper, City of Idaho Falls  
Stan Clark, Eastern ID Water Rights Coalition  
Ron Carlson, Recharge Development Corp  
John J. Williams, Bonneville Power Administration  
Marie Kellner, Idaho Conservation League  
Manuel Rauhut, HDR  
Dan Murdock, NRCS

### **Agenda Item No. 2, Executive Session**

Before resolving into executive session, Mr. Alberdi moved to amend the agenda for the executive session to include the Owyhee wild and scenic river litigation. The motion to amend was approved and then the Board by roll call vote moved to resolve into executive session for the purpose of communicating with legal counsel regarding the legal ramifications of and legal options for resolving pending litigation related to ESPA conjunctive management and Owyhee wild and scenic river litigation. After receiving a briefing from legal counsel on the two matters noticed for executive session, Mr. Barker requested that all staff and legal counsel be excused from the executive session. Ms. Hensley, legal counsel for the Board, asked about the nature of the proposed discussion and was advised that the subject matter related to the above described matters. After staff was excused, Mr. Barker briefed the Board on concerns he had heard regarding the relationship between the Director of the Idaho Department of Water Resources and the Bureau of Reclamation. The Board took no action on this matter nor did the information relate to any deliberation toward any decision before the Board. The chairman advised the Board that he and Mr. Barker would discuss the matter with the Director and the executive session was adjourned.

After the meeting the Chairman determined that the discussion regarding the relationship between the Director and the Bureau of Reclamation did not fall within the purposes for which the executive session had been convened. He self-reported the violation of the Open Meeting Law to the Attorney General and advised the Board members of his action.

The Chairman requested that the above summary of the executive session be included in the minutes of the Board meeting for purposes of curing the open meeting violation.

### **Agenda Item No. 3, Agenda and Approval of Minutes**

Mr. Stevenson made a motion that the minutes for meetings 11-14, 12-14, and 13-14 be approved as printed. Mr. Alberdi seconded the motion. Voice Vote. All were in favor. Motion passed.

#### **Agenda Item No. 4, Public Comment**

Chairman Chase opened up the meeting for public comment. Ms. Liz Paul of Idaho Rivers United discussed reducing water demand in the State of Idaho. She suggested that the Board could define minimum standards for acceptable water use by sector. Mr. Barker asked Ms. Paul if she suggested any policies that other states have adopted regarding this issue. Ms. Paul discussed policies that south-eastern states and the state of California have adopted.

Mayor Rebecca Casper from the City of Idaho Falls spoke to the Board regarding the Upper Valley proposal discussed during the Work Session on behalf of many cities in the upper ESPA. Mayor Casper endorsed the proposal and discussed the vulnerability of cities in the upper ESPA. She stated that the proposal represents a start to resolving water issues in the aquifer. She reminded the Board that recharge should occur in both the Upper and Lower Valleys. Mayor Casper stated that she feels she has the responsibility to lead the cities in this discussion. She urged the Board to collaborate with the cities. Chairman Chase thanked the Mayor for her comments and commented that staff would take a look at the proposal and it would be discussed at the next Board meeting.

#### **Agenda Item No. 5, Board Elections**

Mr. Van Der Meulen thanked the Board for the opportunity to serve as the Vice-Chairman for the last two years. He stated that due to his health he would decline any position on the Board other than as a member. There was discussion among the parties regarding protocol of the elections.

Mr. Raybould nominated Roger Chase for Chairman. Mr. Barker seconded. Mr. Raybould moved for a unanimous ballot for Mr. Chase for the position of Chairman. Voice vote. All were in favor. Mr. Chase was elected Chairman.

Mr. Stevenson nominated Jeff Raybould for Vice-Chairman. Mr. Barker seconded. Chairman Chase moved for a unanimous ballot for Mr. Raybould. Voice Vote. All were in favor. Mr. Raybould was elected Vice-Chairman.

Mr. Barker nominated Vince Alberdi for Secretary. Mr. Cuddy seconded. Mr. Raybould moved for a unanimous ballot for Mr. Alberdi. Voice Vote. All were in favor. Mr. Alberdi was elected Secretary.

#### **Agenda Item No. 6, Legislative Update**

Mr. Garrick Baxter provided a brief legislative update. The Department is not proposing any legislation this year. The Department does have some pending rule changes that the Department and Board have participated in. The Department proposed a one word change in the Underground Injection Control rules. The rule is making its way through the legislature. The Director has also proposed to repeal Rule 50 regarding the area of common ground water. That has not been approved in legislature yet. There was discussion among the parties regarding the procedure with the rule change.

Mr. Baxter discussed recharge legislation regarding credits for aquifer recharge. The Idaho Water Users Association restarted a committee to examine this issue, but the Idaho Water Users Legislative Committee voted to wait on this issue.

Mr. Baxter also discussed the Bear River Adjudication and other adjudications around the state. He also discussed current activities surrounding the Rangen call and IGWA mitigation requirements.

#### **Agenda Item No. 7, Water Transactions- Carmen Creek Reconnect**

Ms. Morgan Case discussed a funding resolution for a water transaction on Carmen Creek. The transaction would restore up to 4 cfs in Carmen Creek during the irrigation season. Funds would come from the Columbia Basin Water Transactions Program. The cost would be \$392,200 to enter into twenty-year agreements.

Mr. Raybould moved to adopt the resolution in the matter of the Carmen Creek Water Transaction. Mr. Barker seconded the motion.

Roll Call Vote: Mr. Cuddy: Aye; Mr. Alberdi: Aye; Mr. Stevenson: Aye; Mr. Raybould: Aye; Mr. Van Der Meulen: Aye; Mr. Van Stone: Aye; Mr. Barker: Aye; Chairman Chase: Aye. Motion passed.

Mr. Brian Patton stated that he received positive feedback from Representative Merrill Beyeler about the Water Transactions Program in the Lemhi River basin.

#### **Agenda Item No. 8, Regional Conservation Partnership Program**

Mr. Brian Patton provided an update on the Regional Conservation Partnership Program (RCPP). Board staff collaborated with other entities to develop a full RCPP proposal focused on ESPA stabilization. The proposal was funded by NRCS for \$1 million over two years, which is below the amount requested in the proposal. Staff is currently working with the NRCS to determine how to prioritize projects such as pivot enhancements and the end gun removal program. The Upper Salmon Basin Watershed Program also submitted a proposal for RCPP funds, but did not receive funding.

Mr. Patton pointed out that an NRCS representative was present at the meeting. There was discussion among the parties about projects enrolled in the Conservation Reserve Enhancement Program.

#### **Agenda Item No. 9, Storage Studies Update**

Ms. Cynthia Bridge Clark provided an update on the status of storage water studies. A number of activities are ongoing with the Weiser-Galloway Project, including the Operational Analysis and the reservoir size optimization study. IDWR staff is reviewing the Federal Energy Regulatory Commission (FERC) preliminary permit requirements and preparing a project schedule/timeline and a plan for stakeholder coordination. Staff hopes to initiate the Economics Analysis of flow augmentation and the Evaluation of Weiser River Trail impacts and relocation options.

Ms. Clark provided a status update on the Lower Boise River Feasibility Study. Reservoir modeling of the Arrowrock Dam raise is ongoing. Initial analyses of structural considerations and costs have been conducted and will be expanded through the feasibility study. The Environmental Impact Statement is ongoing and staff is coordinating with the US Army Corps of Engineers (Corps) to quantify water supply needs. Staff would like to continue coordination with Elmore County representatives to identify options for addressing water supply needs in the Elmore County and Mountain Home area. There was discussion among the parties regarding the new Commander with the Corps.

Ms. Clark stated that staff and the US Bureau of Reclamation continue to draft an agreement to coordinate on activities related to the Island Park Enlargement Project. A contract for evaluation of the Island Park Reservoir Enlargement Project Land and Real Estate Assessment is being drafted.

#### **Agenda Item No. 10, ESPA Recharge**

Ms. Clark discussed a resolution before the Board to approve funds for recharge infrastructure improvements. This would allow for analysis and construction of a wall to allow winter recharge flows to bypass the Milepost 28 hydropower plant turnout. There was discussion among the parties regarding the operation of the power plant under winter conditions, design of the bypass, cost of the project, the analysis and construction of the project, and the timeline for the project.

Mr. Barker moved to approve the resolution to provide funding for this project. Mr. Cuddy seconded the motion.

Roll Call Vote: Mr. Cuddy: Aye; Mr. Alberdi: Aye; Mr. Stevenson: Aye; Mr. Raybould: Aye; Mr. Van Der Meulen: Aye; Mr. Van Stone: Aye; Mr. Barker: Aye; Chairman Chase: Aye. Motion passed.

Mr. Neal Farmer discussed current recharge activities. Recharge diversions started on October 27, 2014 with Twin Falls Canal Company and American Falls Reservoir District No. 2. Total recharge to date is about 32,000 acre-feet. He discussed upcoming recharge activities and infrastructure modifications. Recharge above American Falls is a potential this spring. Contracts are in place with a

number of irrigation districts/canal companies and will automatically renew on a yearly basis. There was discussion among the parties regarding the proposed cost of the engineering study to allow winter flows to Wilson Lake through Northside Canal Company. Mr. Farmer discussed direct pump-to-injection well activities and QA/QC flow rate measurement activities. Mr. Farmer reviewed photos showing recharge activities. There was discussion among the parties regarding expectations for spring recharge, alternate locations, North Idaho studies, and sustainability.

#### **Agenda Item No. 11, Pinehurst Water District Loan Request**

Ms. Clark discussed a loan request from Pinehurst Water District in the amount of \$100,000 to purchase a generator to supply power for the water system in times of power outage. The project also includes construction of a building to house the generator in close proximity to the storage tanks. Staff recommends approval of the loan at 3.5% interest for 10 years. There was discussion among the parties regarding user fees and power outages.

Mr. Stevenson moved to approve the resolution to provide funding for this project. Mr. Alberdi seconded the motion.

Roll Call Vote: Mr. Cuddy: Aye; Mr. Alberdi: Aye; Mr. Stevenson: Aye; Mr. Raybould: Absent; Mr. Van Der Meulen: Aye; Mr. Van Stone: Aye; Mr. Barker: Aye; Chairman Chase: Aye. Motion passed.

#### **Agenda Item No. 12, Water Supply Bank**

Mr. Buyer discussed the interim Ground Water Rental Policy for the Wood River Valley. He proposed a one-year interim policy that includes 6 zones, requires stream depletion analyses for rental transactions that cross transaction zones, and limits new rental agreements to one year durations. There was discussion among the parties regarding input from the Modeling Technical Advisory Committee (MTAC) and a sunset clause in the resolution.

Mr. Barker moved to approve the resolution regarding the Interim Ground Water Rental Policy for the Wood River Valley with the understanding that the Water Supply Bank (Bank) will implement six ground water transaction zones, conditional upon the following items: staff will consult with MTAC, report back to the Water Supply Bank Committee within 2 business days of the MTAC meeting, the Water Supply Bank Committee will report back to the Board regarding the issue, and the interim policy will sunset on January 23, 2016. Mr. Alberdi seconded the motion. Voice Vote. All were in favor. Motion passed.

Mr. Buyer next discussed the management of water rights leased to the Bank that are subject to curtailment. The Water Supply Bank Committee recommended a proposal that the Bank not rent any water rights leased to the Bank that are subject to curtailment based on their location within a curtailment order.

Mr. Alberdi moved to approve the resolution in the matter of water rights leased to the Bank that are subject to curtailment. Mr. Barker seconded the motion. Voice Vote. All were in favor. Motion passed.

Mr. Buyer discussed the management of water rights leased to the Bank for an indefinite length of time. Bank staff would like to convert indefinite lease contracts to fixed term contracts. Upon approval, staff will contact all owners of indefinitely leased water rights to provide an opportunity to remain in the Bank and have contracts updated to fixed duration terms. There was discussion among the parties regarding legal ramifications of this action, contracts with specific circumstances that merit indefinite leases,

Mr. Alberdi moved to approve the resolution in the matter of indefinite leases subject to the addition of a clause that allows the Bank to retain specific water rights indefinitely. Mr. Van Stone seconded the motion. Voice Vote. All were in favor. Motion passed.

Mr. Buyer discussed filing fees for applications proposing to lease water rights to the Bank. The Bank has updated the lease application form to clarify when a water right qualifies for the joint filing fee of \$500.

Mr. Alberdi moved to approve the resolution in the matter of the joint filing fee. Mr. Barker seconded the motion.

Roll Call Vote: Mr. Cuddy: Aye; Mr. Alberdi: Aye; Mr. Stevenson: Aye; Mr. Raybould: Absent; Mr. Van Der Meulen: Aye; Mr. Van Stone: Aye; Mr. Barker: Aye; Chairman Chase: Aye. Motion passed.

### **Agenda Item No. 13, Public Information Support**

Ms. Clark discussed a proposed funding resolution for \$55,000 to execute a contract for public information and media relations services for Board programs and activities. These services may include items such as press releases, website content development, and development of educational materials, as well as community relations.

Mr. Van Stone moved to adopt the resolution in the matter of Public Information and Media Relation Services with a correction in the last paragraph to state “up to \$55,000”. Mr. Cuddy seconded the motion. There was discussion regarding an individual identified to provide these services.

Roll Call Vote: Mr. Cuddy: Aye; Mr. Alberdi: Aye; Mr. Stevenson: Aye; Mr. Raybould: Absent; Mr. Van Der Meulen: Aye; Mr. Van Stone: Aye; Mr. Barker: Aye; Chairman Chase: Aye. Motion passed.

### **Agenda Item No. 14, Aqua Life Lease and Magic Springs Project Update**

Mr. Patton provided an update on the Aqua Life Hatchery Lease and the Magic Springs Pipeline. A long term lease arrangement with Idaho Ground Water Appropriators has been executed. Mr. Patton provided a map and photos of the Magic Springs pipeline construction. There was discussion among the parties regarding the pipeline size and lease revenue.

### **Agenda Item No. 15, IDWR Director’s Report**

Director Spackman apologized for being absent during some of the meeting. He discussed the Rangen call and curtailment date, as well as the stay issued by Judge Wildman. Director Spackman also discussed the Board’s activities and accomplishments during the last year, especially the payment structure for recharge activities. There was discussion among the parties regarding the presentation to Joint Finance and Appropriations Committee (JFAC) in early February.

### **Agenda Item No. 12, Other Non-Action Items for Discussion**

There was discussion among the parties regarding the Upper Valley proposal by the cities and future needs in Eastern Idaho.

### **Agenda Item No. 13, Next Meetings and Adjourn**

The next Board meeting is currently scheduled for March 19 - 20 2015 in Boise. A presentation to JFAC is scheduled for February 4<sup>th</sup>, as well as confirmation hearings for Board members beginning new terms. Annual reports to the House Resource Committee and Senate Resource Committee will be scheduled for the same week. A teleconference meeting will be scheduled sometime in the next couple of weeks to discuss the Upper Valley payment structure and the proposal from the cities. A Water Resource Planning Committee meeting will also be scheduled in the near future. Mr. Raybould made a motion to Adjourn, and Mr. Cuddy seconded the motion. Voice Vote. All were in favor. Motion Carried.

The IWRB Meeting 1-15 adjourned at approximately 12:00 pm.

Respectfully submitted this \_\_\_\_\_ day of March, 2015.

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Vince Alberdi, Secretary

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Mandi Pearson, Administrative Assistant II

## Board Actions:

1. Mr. Alberdi moved to amend the agenda for the executive session to include the Owyhee wild and scenic river litigation. The motion to amend was approved and then the Board by roll call vote moved to resolve into executive session for the purpose of communicating with legal counsel regarding the legal ramifications of and legal options for resolving pending litigation related to ESPA conjunctive management and Owyhee wild and scenic river litigation.
2. Mr. Stevenson made a motion that the minutes for meetings 11-14, 12-14, and 13-14 be approved as printed. Mr. Alberdi seconded the motion. Voice Vote. All were in favor. Motion passed.
3. Mr. Raybould nominated Roger Chase for Chairman. Mr. Barker seconded. Mr. Raybould moved for a unanimous ballot for Mr. Chase for the position of Chairman. Voice vote. All were in favor. Mr. Chase was elected Chairman.
4. Mr. Stevenson nominated Jeff Raybould for Vice-Chairman. Mr. Barker seconded. Chairman Chase moved for a unanimous ballot for Mr. Raybould. Voice Vote. All were in favor. Mr. Raybould was elected Vice-Chairman.
5. Mr. Barker nominated Vince Alberdi for Secretary. Mr. Cuddy seconded. Mr. Raybould moved for a unanimous ballot for Mr. Alberdi. Voice Vote. All were in favor. Mr. Alberdi was elected Secretary.
6. Mr. Raybould moved to adopt the resolution in the matter of the Carmen Creek Water Transaction. Mr. Barker seconded the motion. Roll Call Vote. 8 Ayes. Motion passed.
7. Mr. Barker moved to approve the resolution to provide funding for the recharge infrastructure improvements. Mr. Cuddy seconded the motion. Roll Call Vote. 8 Ayes. Motion passed.
8. Mr. Stevenson moved to approve the resolution to provide funding for the Pinehurst Water District loan request. Mr. Alberdi seconded the motion. Roll Call Vote. 7 Ayes, 1 Absent. Motion passed.
9. Mr. Barker moved to approve the resolution regarding the Interim Ground Water Rental Policy for the Wood River Valley with the understanding that the Water Supply Bank (Bank) will implement six ground water transaction zones, conditional upon the following items: staff will consult with MTAC, report back to the Water Supply Bank Committee within 2 business days of the MTAC meeting, the Water Supply Bank Committee will report back to the Board regarding the issue, and the interim policy will sunset on January 23, 2016. Mr. Alberdi seconded the motion. Voice Vote. All were in favor. Motion passed.
10. Mr. Alberdi moved to approve the resolution in the matter of water rights leased to the Bank that are subject to curtailment. Mr. Barker seconded the motion. Voice Vote. All were in favor. Motion passed.
11. Mr. Alberdi moved to approve the resolution in the matter of indefinite leases subject to the addition of a clause that allows the Bank to retain specific water rights indefinitely. Mr. Van Stone seconded the motion. Voice Vote. All were in favor. Motion passed.

12. Mr. Alberdi moved to approve the resolution in the matter of the joint filing fee. Mr. Barker seconded the motion. Roll Call Vote. 7 Ayes, 1 Absent. Motion passed.
13. Mr. Van Stone moved to adopt the resolution in the matter of Public Information and Media Relation Services with a correction in the last paragraph to state “up to \$55,000”. Mr. Cuddy seconded the motion. Roll Call Vote. 7 Ayes, 1 Absent. Motion passed.



# IDAHO WATER RESOURCE BOARD

## MEETING MINUTES 2-15

**C.L. "Butch" Otter**  
Governor

Idaho Water Center  
Conference Room 648A  
322 East Front Street, Boise, Idaho 83702

**Roger W. Chase**  
Chairman  
Pocatello  
District 4

**February 13, 2015**

**Jeff Raybould**  
Vice-Chairman  
St. Anthony  
At Large

At 8:00 am the Chairman called the meeting to order. Mr. Bert Stevenson was absent during roll call, but did join the meeting after roll call was taken. All other Board members were present.

### Agenda Item No. 1, Roll Call

#### *Board Members Present*

**Vince Alberdi**  
Secretary  
Kimberly  
At Large

Roger Chase, Chairman  
Jeff Raybould, Vice-Chairman  
Vince Alberdi, Secretary  
Dale Van Stone

Peter Van Der Meulen  
Chuck Cuddy  
Albert Barker

**Peter Van Der Meulen**  
Hailey  
At Large

#### *Staff Members Present*

**Charles "Chuck"  
Cuddy**  
Orofino  
At Large

Gary Spackman, IDWR Director  
Brian Patton, Bureau Chief  
Cynthia Bridge Clark, Section Manager  
Neeley Miller, Senior Planner  
Remington Buyer, Water Supply Bank Coordinator  
Mandi Pearson, Admin. Assistant

**Albert Barker**  
Boise  
District 2

#### *Guests Present*

**John "Bert" Stevenson**  
Rupert  
District 3

Peter Anderson  
Brian Smith  
Steve Hannula  
Hal Anderson

**Dale Van Stone**  
Hope  
District 1

### Agenda Item No. 2, Recharge

Mr. Patton provided an update to recharge activities this year. The IWRB is initiating efforts to utilize the winter-time spill at Milner for recharge, with promising results to date. Staff is proposing a payment structure to incentivize additional recharge deliveries in the basin above American Falls Reservoir. Mr. Patton discussed the differences in the aquifer between the Lower Valley and the Upper Valley. There was discussion among the parties regarding water availability. Mr. Patton discussed the proposed payment structure, which includes a base rate determined by the 5-year aquifer retention zone and a delivery

incentive to the base rate. The “Incentive for Delivery” is intended to encourage canals to match their delivery capacity to an uncertain and intermittent water supply. There was discussion among the parties regarding the specifics of the payment structure, distribution of water to participating water entities, a minimum retention rate for the payment structure, funding for recharge activities, a timeline for recharge activities, and winter water savings contracts.

Mr. Alberdi moved to adopt the resolution in the matter a payment schedule for delivery of water for managed recharge subject to a change of the bottom tier to read 15-20%. Mr. Barker seconded the motion.

Roll Call Vote: Mr. Cuddy: Aye; Mr. Alberdi: Aye; Mr. Stevenson: Aye; Mr. Raybould: Aye; Mr. Van Der Meulen: Aye; Mr. Van Stone: Aye; Mr. Barker: Aye; Chairman Chase: Aye. Motion passed.

### **Agenda Item No. 3, Report from MTAC on interim rental policy in the Wood River Valley**

Mr. Patton reminded the Board of the interim policy that was approved at the last meeting regarding groundwater in the Wood River Valley, subject to staff consulting with the Wood River Valley Model Technical Advisory Committee (MTAC).

Mr. Buyer discussed the meeting with members of the MTAC. Some concerns expressed by MTAC members were related to the interim nature of the policy, the zone north of Hailey, and data being available to the public. All of these concerns were addressed by staff. The conversation was well received by MTAC members and no immediate recommendations to repeal or revise the interim policy were received. The Bank will now move forward with implementing the interim ground water rental policy for 2015. The effectiveness of the policy will be tracked throughout 2015 and performance measurements will be reported as required to the Water Supply Bank committee and the Board. There was discussion among the parties regarding the number of ground water and surface water rentals this year.

### **Agenda Item No. 4, Adjourn**

Mr. Raybould made a motion to Adjourn, and Mr. Van Der Meulen seconded the motion. Voice Vote. All were in favor. Motion Carried.

The IWRB Meeting 2-15 adjourned at approximately 8:45 am.

Respectfully submitted this \_\_\_\_\_ day of March, 2015.

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Vince Alberdi, Secretary

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Mandi Pearson, Administrative Assistant II

Board Actions:

1. Mr. Alberdi moved to adopt the resolution in the matter a payment schedule for delivery of water for managed recharge subject to a change of the bottom tier to read 15-20%. Mr. Barker seconded the motion. Roll Call Vote. 8 Ayes. Motion passed.

## IWRB COMMITTEES AND MEMBERSHIP 2015

<p><b>Financial Programs</b></p> <p><u>Purpose:</u> Develops policy and direction for the IWRB's financial programs including loans, grants, revenue bonds, and project expenditures. Develops guidance for standard interest rates and terms for loans. Oversees revenue generating features of IWRB's programs. Recommends loan approvals to full Board.</p> <p><b>Vince Alberdi, Chair</b>  <b>Al Barker</b>  <b>Dale Van Stone</b>  <b>Roger Chase</b></p>	<p><b>Water Storage Projects</b></p> <p><u>Purpose:</u> Develops policy and direction for Idaho's efforts to increase water storage capacity, including surface storage and underground storage. Oversees studies of potential storage projects, and considers future steps for potential storage projects. Oversees IWRB's operational managed recharge program on ESPA, and investigations of managed recharge in Treasure Valley and other areas.</p> <p><b>Chuck Cuddy, Chair</b>                      <b>Pete Van Der Meulen</b>  <b>Bert Stevenson</b>  <b>Jeff Raybould</b></p>
<p><b>Water Resource Planning</b></p> <p><u>Purpose:</u> Develops policy and direction for the IWRB's planning programs, including State Water Plan, Basin Plans, and CAMPs. Oversees progress and completion of State Water Plan, Basin Plans, and CAMPs. Oversees plan implementation progress. Makes recommendations about new planning efforts and approaches.</p> <p><b>Jeff Raybould, Chair</b>                      <b>Bert Stevenson</b>  <b>Al Barker</b>                                      <b>Pete Van Der Meulen</b>  <b>Chuck Cuddy</b></p>	<p><b>Streamflow Enhancement and Minimum Streamflow</b></p> <p><u>Purpose:</u> Develops policy and direction for the Upper Salmon Streamflow Enhancement (Water Transactions) Program together with program partners, including review of project proposals. Develops policy and direction for the IWRB's minimum streamflow program, including development of new MSF water rights and protection and administration of existing MSF water rights.</p> <p><b>Pete Van Der Meulen, Chair</b>                      <b>Vince Alberdi</b>  <b>Roger Chase</b>                                      <b>Chuck Cuddy</b>  <b>Dale Van Stone</b></p>
<p><b>Water Supply Bank and Mitigation Bank</b></p> <p><u>Purpose:</u> Develops policy and direction for the Water Bank. Recommends changes, and oversees operations. Oversees operation of rental pools in cooperation with local committees appointed by IWRB. Reviews proposed changes to rental pool procedures. Makes recommendations about establishment of new rental pools. Develops framework for potential mitigation credit bank</p> <p><b>Al Barker, Chair</b>                                      <b>Vince Alberdi</b>  <b>Dale Van Stone</b>                                      <b>Roger Chase</b></p>	<p><b>Upper Snake River Advisory Committee</b></p> <p><u>Purpose:</u> A committee chaired by a Water Board member to discuss Upper Snake Basin reservoir, river, and recharge operations with relevant parties that make up the committee.</p> <p><b>Roger Chase, Chair</b>  <b>Pete Van Der Meulen</b></p> <hr/> <p><b>Aquifer Stabilization Committee</b></p> <p><u>Purpose:</u> Develops policy and direction to determine Board support and participation in aquifer stabilization activities in the ESPA, Big Wood, Treasure Valley and other areas. Reviews project proposals and monitors program effectiveness.</p> <p><b>Bert Stevenson, Chair</b>                                      <b>Al Barker</b>  <b>Jeff Raybould</b>    <b>Roger Chase</b>  <b>Vince Alberdi</b></p>

**IDAHO DEPARTMENT OF WATER RESOURCES**  
**LEGISLATIVE UPDATE (2015)**  
Updated March 20, 2015

<b>RS/Bill</b>	<b>TITLE</b>	<b>I.C.</b>	<b>STATEMENT OF PURPOSE/ SUMMARY</b>	<b>STATUS</b>
23509 <a href="#">HCR8</a>	Natural Resource Issues Study		<ul style="list-style-type: none"> <li>Provides legislation to authorize the Legislative Council to continue an interim committee to undertake studies of natural resource issues, particularly the water resources of the state.</li> </ul>	<ul style="list-style-type: none"> <li>2/12/15 Introduced, read 1<sup>st</sup> time, referred to JRA for Printing</li> <li>2/13/15 Reported printed and referred to H Res&amp;Con Committee</li> <li>2/18/15 Reported out of Committee with Do Pass recommendation, Filed for second reading</li> <li>2/19/15 Read 2<sup>nd</sup> time; Filed for 3<sup>rd</sup> reading</li> <li>2/24/15 Read 3<sup>rd</sup> time in full – Adopted 66-0-4; Title apvd – to Senate</li> <li>2/25/15 Introduced, read 1<sup>st</sup> time; Referred to S Res&amp;Env</li> </ul>
<b>RS/Bill</b>	<b>TITLE</b>	<b>I.C.</b>	<b>STATEMENT OF PURPOSE/ SUMMARY</b>	<b>STATUS</b>
23379 <a href="#">HB51</a>	Dredge Mining	47-1317A	<ul style="list-style-type: none"> <li>Adds new section to Idaho Code related to small scale suction dredge mining.</li> </ul>	<ul style="list-style-type: none"> <li>1/28/15 Introduced, read 1<sup>st</sup> time, referred to JRA for printing</li> <li>1/29/15 Reported printed and referred to H Res&amp;Con</li> <li>2/12/15 Reported out of Committee, recommend place on General Orders</li> <li>2/26/15 Take bill off General Orders; Referred to H Res&amp;Con</li> <li>3/11/15 Renumbered and introduced as HB255</li> </ul>
<b>RS/Bill</b>	<b>TITLE</b>	<b>I.C.</b>	<b>STATEMENT OF PURPOSE/ SUMMARY</b>	<b>STATUS</b>
23634 <a href="#">HCR10</a>	Rejecting IDWR Rulemaking – Rule 50	57-5291	<ul style="list-style-type: none"> <li>Provides legislation for rejecting administrative rule change of Rule 50 (37.03.11.050).</li> </ul>	<ul style="list-style-type: none"> <li>2/18/15 Introduced, read 1<sup>st</sup> time, referred to JRA for printing</li> <li>2/19/15 Reported Printed; Filed for 2<sup>nd</sup> reading</li> <li>2/20/15 Read 2<sup>nd</sup> time; Filed for 3<sup>rd</sup> reading</li> </ul>

				<ul style="list-style-type: none"> <li>• 2/24/15 Read 3<sup>rd</sup> time in full – Adopted 67-0-3; Titled apvd – to Senate</li> <li>• 2/25/15 Introduced, read 1<sup>st</sup> time; Referred to S Res&amp;Env</li> <li>• 3/9/15 Reported out of Committee with Do Pass recommendation; To 10<sup>th</sup> Order; held one legislative day</li> <li>• 3/11/15 Read in full – Adopted – Voice Vote; Titled apvd – to House</li> <li>• 3/12/15 Returned from Senate Passed; to JRA for Enrolling; Reported Enrolled; Signed by Speaker; Transmitted to Senate</li> <li>• 3/13/15 Received from House enrolled/signed by Speaker; Signed by President; Returned to House 3/16/15 Returned signed by the President; Ordered transmitted to Sec. of State</li> <li>• 3/17/15 Delivered to Secretary of State at 10:15 a.m. on March 16, 2015</li> </ul>
RS/Bill	TITLE	I.C.	STATEMENT OF PURPOSE/ SUMMARY	STATUS
23451C1 <a href="#">HB94</a>	Trespass Exception	6-202	<ul style="list-style-type: none"> <li>• Exempts persons and irrigation organizations from an action for trespass pursuant to Idaho Code 6-202.</li> </ul>	<ul style="list-style-type: none"> <li>• 2/6/15 Introduced, read 1<sup>st</sup> time, referred to JRA for printing</li> <li>• 2/9/15 Reported printed and referred to H Res&amp;Con</li> <li>• 2/18/15 Reported out of Committee with Do Pass recommendation; Filed for 2<sup>nd</sup> reading</li> <li>• 2/19/15 Read 2<sup>nd</sup> time; Filed for 3<sup>rd</sup> reading</li> <li>• 2/23/15 Read 3<sup>rd</sup> time in full – Passed 60-10-0; Titled apvd to Senate</li> <li>• 2/24/15 Rec'd from House passed; Filed for 1<sup>st</sup> reading; Introduced, read 1<sup>st</sup> time, referred to S Res&amp;Env Committee</li> <li>• 3/5/15 Reported out of Committee with Do Pass Recommendation; Filed for 2<sup>nd</sup> reading</li> <li>• 3/6/15 Read 2<sup>nd</sup> time; Filed for 3<sup>rd</sup></li> </ul>

				reading • 3/12/15 Retained on calendar • 3/18/15 Referred to 14 <sup>th</sup> Order for amendment
<b>RS/Bill</b>	<b>TITLE</b>	<b>I.C.</b>	<b>STATEMENT OF PURPOSE/ SUMMARY</b>	<b>STATUS</b>
23526 <a href="#">HB166</a>	Authorization for Irrigation Districts to Incur Debt	43-322	<ul style="list-style-type: none"> <li>Amend existing law to provide an alternative for irrigation districts to obtain approval to incur debt for mitigation and recharge purposes through a judicial examination process.</li> </ul>	<ul style="list-style-type: none"> <li>2/18/15 Introduced, read 1<sup>st</sup> time, referred to JRA for printing</li> <li>2/19/15 Reported printed and referred to H Res&amp;Con</li> <li>2/26/15 Reported out of Committee with Do Pass recommendation; Filed for 2<sup>nd</sup> reading</li> <li>2/27/15 Read 2<sup>nd</sup> time; Filed for 3<sup>rd</sup> reading</li> <li>3/3/15 Read 3<sup>rd</sup> time in full – Passed 63-7-0; Titled apvd to Senate</li> <li>3/4/15 Received from House passed; Filed for 1<sup>st</sup> reading; Introduced, read 1<sup>st</sup> time; Referred to S Res&amp;Env</li> <li>3/9/15 Presented by Rep. Wood &amp; SRes &amp;Env committee meeting</li> <li>3/10/15 Reported out of Committee with Do Pass recommendation; Filed for 2<sup>nd</sup> reading</li> <li>3/11/15 Read 2<sup>nd</sup> time; Filed for 3<sup>rd</sup> reading</li> <li>3/17/15 Read 3<sup>rd</sup> time in full – Passed 34-0-1; Titled apvd – to House</li> <li>3/18/15 Returned from Senate Passed; to JRA for enrolling</li> <li>3/19/15 Reported enrolled; Signed by Speaker; Transmitted to Senate</li> <li>3/20/15 Received from the House enrolled/signed by Speaker; Signed by President; Returned to House</li> </ul>
<b>RS/Bill</b>	<b>TITLE</b>	<b>I.C.</b>	<b>STATEMENT OF PURPOSE/ SUMMARY</b>	<b>STATUS</b>
23832	IDWR	67-3519	<ul style="list-style-type: none"> <li>Provides legislation to appropriate \$20,683,200 to IDWR for fiscal year 2016 and caps</li> </ul>	<ul style="list-style-type: none"> <li>3/16/15 Introduced, read 1<sup>st</sup> time,</li> </ul>

<a href="#">HB273</a>	Appropriation	42-1406B(1)	<p>the number of authorized full time equivalent positions at 152. The amount includes funding for increased employer's share of health insurance costs, rent increases, stream gage contract increases, accounts for reduction in statewide cost allocation. Provides \$257,700 from the General Fund for the replacement of four vehicles, 50 desktop computers, 15 laptop computers, two network switches, five conference room projectors, a video teleconferencing camera, and five workstations. Also provides for funding for a 3% merit-based increase in employee compensation for permanent employees to be distributed at the discretion of the director.</p> <ul style="list-style-type: none"> <li>• Provides legislation to commence the Palouse Basin adjudication and for the transfer of \$716,000 from the Revolving Development Fund to the Aquifer Planning and Management Fund to further the ESPAM Plan.</li> <li>• Provides \$10,000 from the General Fund for additional equipment, \$110,800 to use water-user assessments to pay an IDWR employee as watermaster for water district 02 for the administration of water rights and water deliveries.</li> <li>• Provides \$175,000 one-time from the General Fund to contract a study to modernize the department's business processes and applications, funding to convert a part-time flood plain management position to full-time and provides the appropriation for 4.24 positions and related operating expenditures from the Aquifer Planning and Management fund for aquifer monitoring, measurement, and modeling and frees up funding to fill unfunded vacant positions to manage the Water Sustainability Initiative approved last session.</li> <li>• Provides \$146,000 one-time to pay vacancy costs of the law library and 3<sup>rd</sup> year law school subleased from the Department.</li> </ul>	<p>referred to JRA for printing</p> <ul style="list-style-type: none"> <li>• 3/17/15 Reported printed; Filed for 2<sup>nd</sup> reading</li> <li>• 3/18/15 Read 2<sup>nd</sup> time; Filed for 3<sup>rd</sup> reading; Read 3 times – Passed 46-24-0; Titled apvd – to Senate</li> </ul>
RS/Bill	TITLE	I.C.	STATEMENT OF PURPOSE/ SUMMARY	STATUS
23716C2 <a href="#">HB255</a>	Dredge Mining	18-70 42-17 42-3802 47-1313	<ul style="list-style-type: none"> <li>• Renumbered submission of HB51.</li> <li>• Adds new section to Idaho Code related to small scale suction dredge mining.</li> </ul>	<ul style="list-style-type: none"> <li>• 3/11/15 Introduced, read 1<sup>st</sup> time, referred to JRA for printing</li> <li>• 3/12/15 Reported printed and referred to H Res&amp; Con Committee</li> <li>• 3/18/15 Reported out of Committee with Do Pass Recommendation; Filed for 2<sup>nd</sup> reading</li> <li>• 3/19/15 Read 2<sup>nd</sup> time; Filed for 3<sup>rd</sup> reading</li> <li>• 3/20/15 U.C. to hold place on 3<sup>rd</sup> reading calendar until Monday, 3/23/15</li> </ul>
RS/Bill	TITLE	I.C.	STATEMENT OF PURPOSE/ SUMMARY	STATUS
23470C1 <a href="#">SB1099</a>	Land Lien on Unpaid	42-1301, 42-1303	<ul style="list-style-type: none"> <li>• Amends existing laws to clarify definitions of lateral water users' associations and provides a lien upon the water users' lands for unpaid assessments for the operation and</li> </ul>	<ul style="list-style-type: none"> <li>• 2/16/15 Introduced, read 1<sup>st</sup> time, referred to JRA for printing</li> </ul>

	Assessments		maintenance of laterals and ditches.	<ul style="list-style-type: none"> <li>• 2/17/15 Reported printed and referred to S Res&amp;Env</li> <li>• 2/24/15 Reported out of Committee with Do Pass recommendation; Filed for 2<sup>nd</sup> reading</li> <li>• 2/25/15 Read 2<sup>nd</sup> time; Filed for 3<sup>rd</sup> reading</li> <li>• 2/26/15 Read 3<sup>rd</sup> time in full – Passed 33-1-0; Titled apvd to House</li> <li>• 2/27/15 Rec'd from Senate passed; Filed for 1<sup>st</sup> reading; Read 1<sup>st</sup> time, referred to H Res&amp;Con Committee</li> <li>• 3/6/15 Reported out of Committee with Do Pass recommendation; Filed for 2<sup>nd</sup> reading</li> <li>• 3/9/15 Read 2<sup>nd</sup> time; Filed for 3<sup>rd</sup> reading</li> <li>• 3/11/15 Read 3<sup>rd</sup> time in full – Passed 64-4-2; Titled apvd – to Senate</li> <li>• 3/12/15 Returned from House passed; referred to enrolling</li> <li>• 3/16/15 Received from Senate; Signed by Speaker; Returned to Senate</li> <li>• 3/17/15 Received from Senate; Signed by Speaker; Returned to Senate</li> <li>• 3/17/15 Reported signed by the Speaker &amp; ordered delivered to Governor</li> <li>• 3/18/15 Reported delivered to Governor on 3/17/15</li> </ul>
RS/Bill	TITLE	I.C.	STATEMENT OF PURPOSE/ SUMMARY	STATUS
23631 <a href="#">SB1100</a>	Cloud Seeding	42-605 42-612	<ul style="list-style-type: none"> <li>• Provides legislation to allow water users in a water district to authorize the watermaster to participate in weather modification projects involving cloud seeding, in order to enhance water supplies.</li> </ul>	<ul style="list-style-type: none"> <li>• 2/16/15 Introduced, read 1<sup>st</sup> time, referred to JR for printing</li> <li>• 2/17/15 Reported printed and referred to S Res&amp;Env Committee</li> <li>• 2/26/15 Reported out of Committee with Do Pass recommendation; Filed for 2<sup>nd</sup> reading</li> <li>• 2/27/15 Read 2<sup>nd</sup> time; Filed for 3<sup>rd</sup></li> </ul>

				reading • 3/3/15 Read 3 <sup>rd</sup> time in full – Passed 33-0-1; Title apvd to House • Received from Senate; Filed for 1 <sup>st</sup> reading; Read 1 <sup>st</sup> time; Referred to • 3/9/15 Presented by Norm Semanko at HRes&Con committee meeting • 3/10/15 Reported out of Committee with Do Pass recommendation; Filed for 2 <sup>nd</sup> reading • 3/11/15 Read 2 <sup>nd</sup> time; Filed for 3 <sup>rd</sup> reading • 3/12/15 Read 3 <sup>rd</sup> time in full – Passed 66-0-4; Titled apvd – to Senate • 3/13/15 Returned from House passed; referred to enrolling • 3/16/15 Reported enrolled; signed by President; to House for signature of Speaker • 3/17/15 Received from Senate; Signed by Speaker; Returned to Senate • 3/18/15 Reported signed by the Speaker & ordered delivered to Governor • 3/19/15 Reported delivered to Governor on 3/18/15
RS	TITLE	I.C.	STATEMENT OF PURPOSE/ SUMMARY	STATUS
	Bear River Basin Adjudication		<ul style="list-style-type: none"> <li>Provides authority to the SRBA Court and the Idaho Department of Water Resources to adjudicate the water rights of the Bear River Basin.</li> <li>Promotes better administration between the states as required by the Bear River Compact.</li> </ul>	<ul style="list-style-type: none"> <li>IDWR does not anticipate legislation will be introduced this year.</li> </ul>
RS	TITLE	I.C.	STATEMENT OF PURPOSE/ SUMMARY	STATUS
<a href="#">23637</a>	Managed Recharge		<ul style="list-style-type: none"> <li>Provides legislation to provide Director to develop rules for managed recharge</li> </ul>	<ul style="list-style-type: none"> <li>2/16/15 Presented by IGWA (Tominaga) at the S Res&amp;Con committee meeting</li> </ul>
IDAPA – RULEMAKING				
TITLE	RULES	STATEMENT OF PURPOSE/SUMMARY		STATUS

Rules for Minimum Standards for the Construction and Use of Injection Wells	<a href="#">37.03.03</a>	<ul style="list-style-type: none"> <li>To the update definition of the Department’s Rule for “injection well” to match that found in I.C. § 42-3902, which was amended during the 2014 legislative session.</li> </ul>	<ul style="list-style-type: none"> <li>1/21/15 Presented by IDWR at the H Res&amp;Con committee meeting; Docket Apvd by Committee</li> <li>2/20/15 Presented by IDWR at the S Res&amp;Con committee meeting; Docket Apvd by Committee</li> </ul>
TITLE	RULES	STATEMENT OF PURPOSE/SUMMARY	STATUS
Rules for Conjunctive Management of Surface and Ground Water Resources	<a href="#">37.03.11.050</a> 37.03.11.020.07	<ul style="list-style-type: none"> <li>To repeal Rule 50 and the reference to it in Rule 20, as it does not reflect current technical information and is no longer necessary.</li> </ul>	<ul style="list-style-type: none"> <li>2/9/15 Presented by IDWR at H Res&amp;Con committee meeting; Docket Rejected by Committee.</li> <li>2/11/15 Presented by IDWR at S Res&amp;Con committee meeting; Docket Rejected by Committee.</li> </ul>



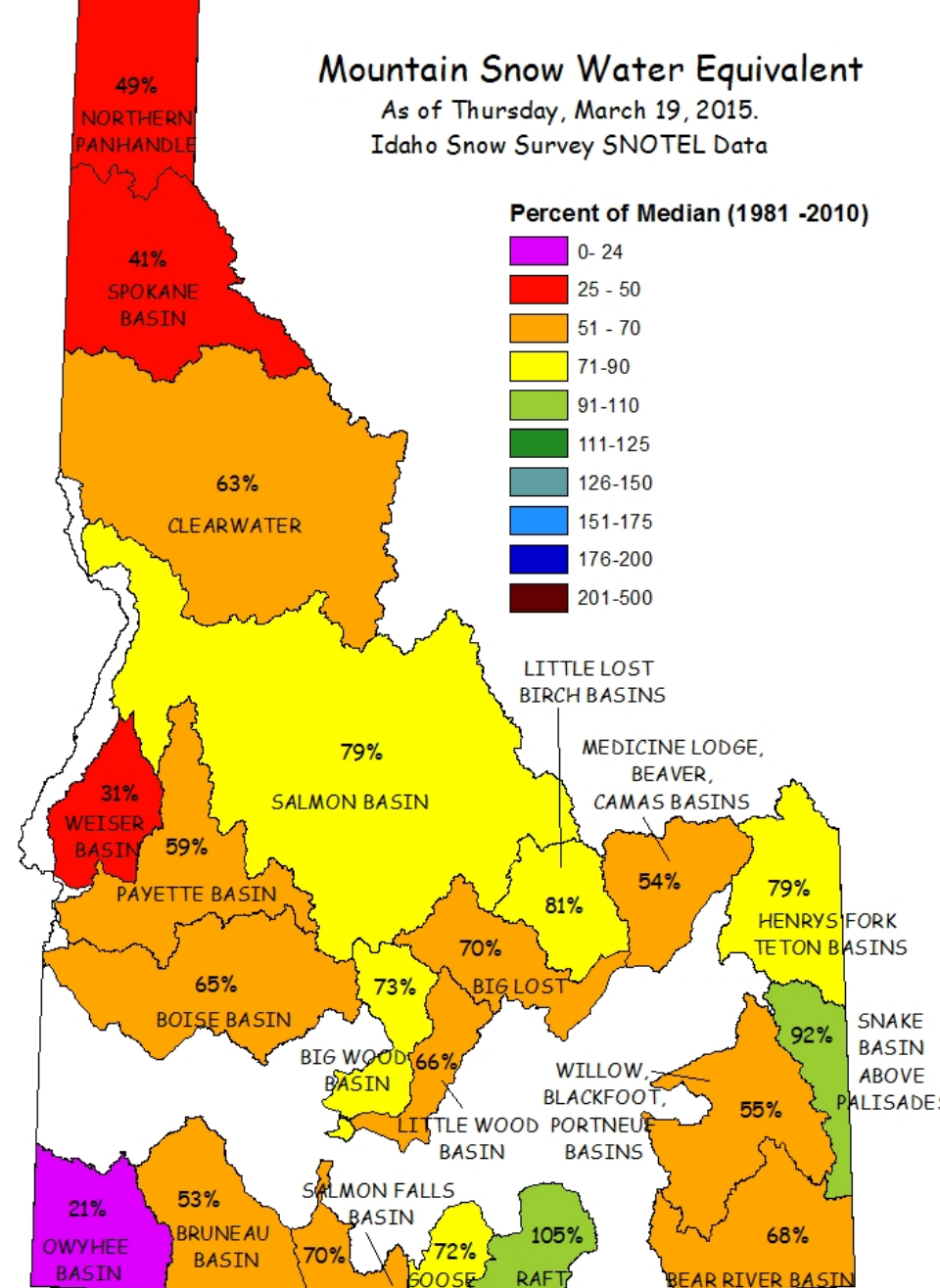
## Idaho Water Supply

Presented by Liz Cresto

March 20, 2015



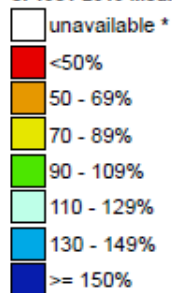
Current Snowpack  
21% - 92% of median.



# Westwide SNOTEL Current Snow Water Equivalent (SWE) % of Normal

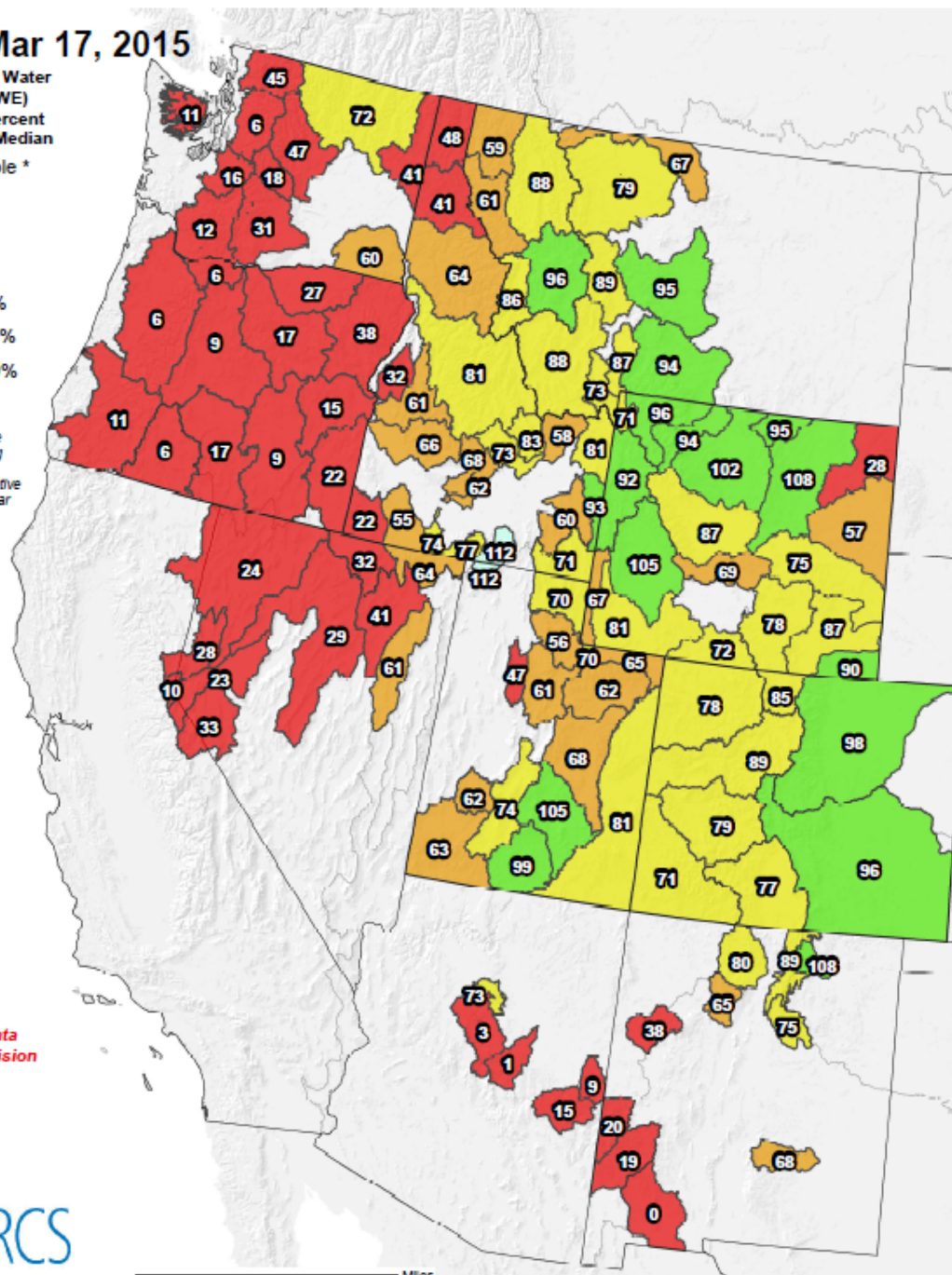
Mar 17, 2015

Current Snow Water Equivalent (SWE)  
Basin-wide Percent  
of 1981-2010 Median



\* Data unavailable  
at time of posting  
or measurement  
is not representative  
at this time of year

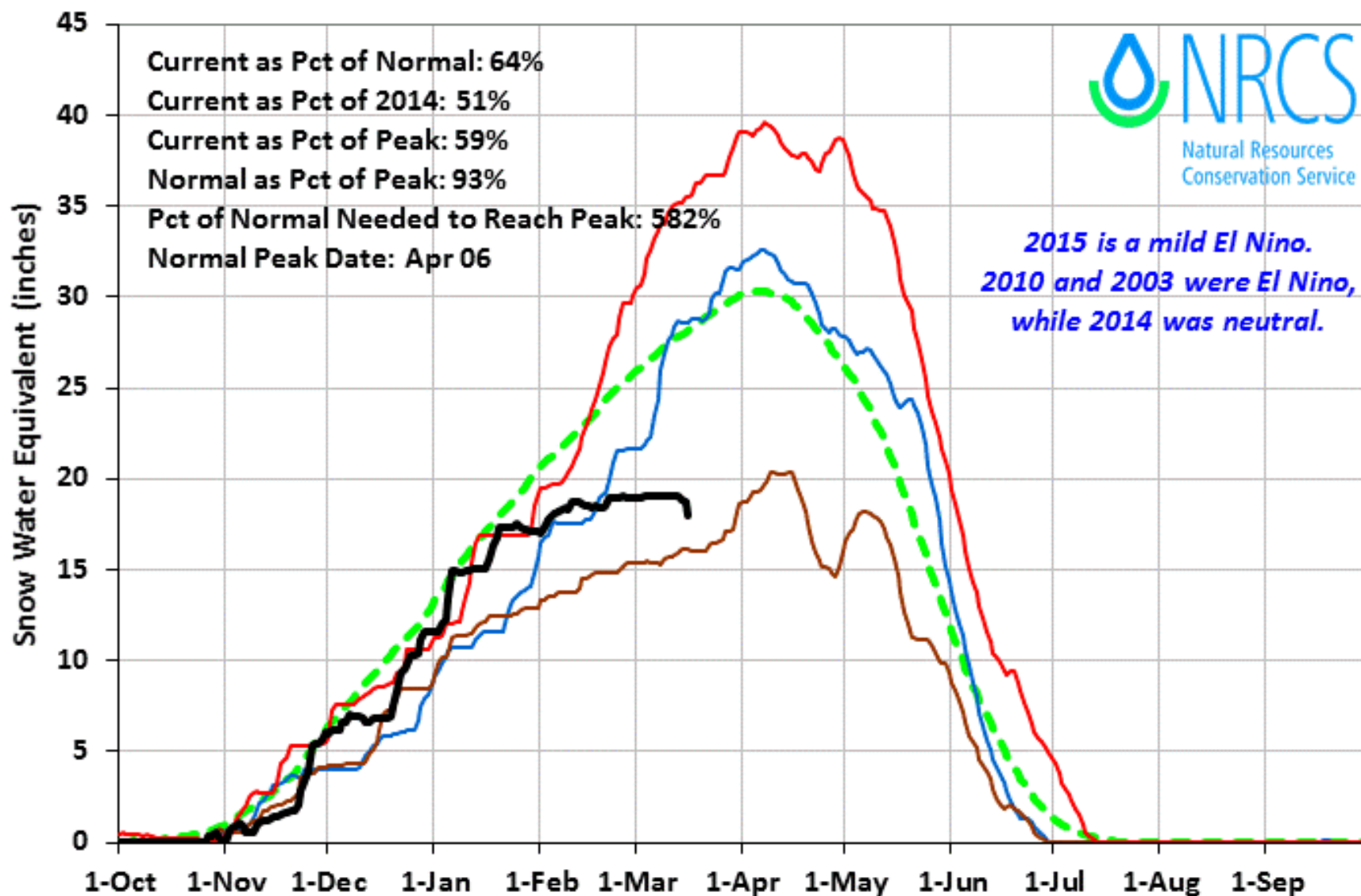
Provisional data  
subject to revision



## Clearwater Basin 2015 Snowpack Comparison Graph (15 sites)

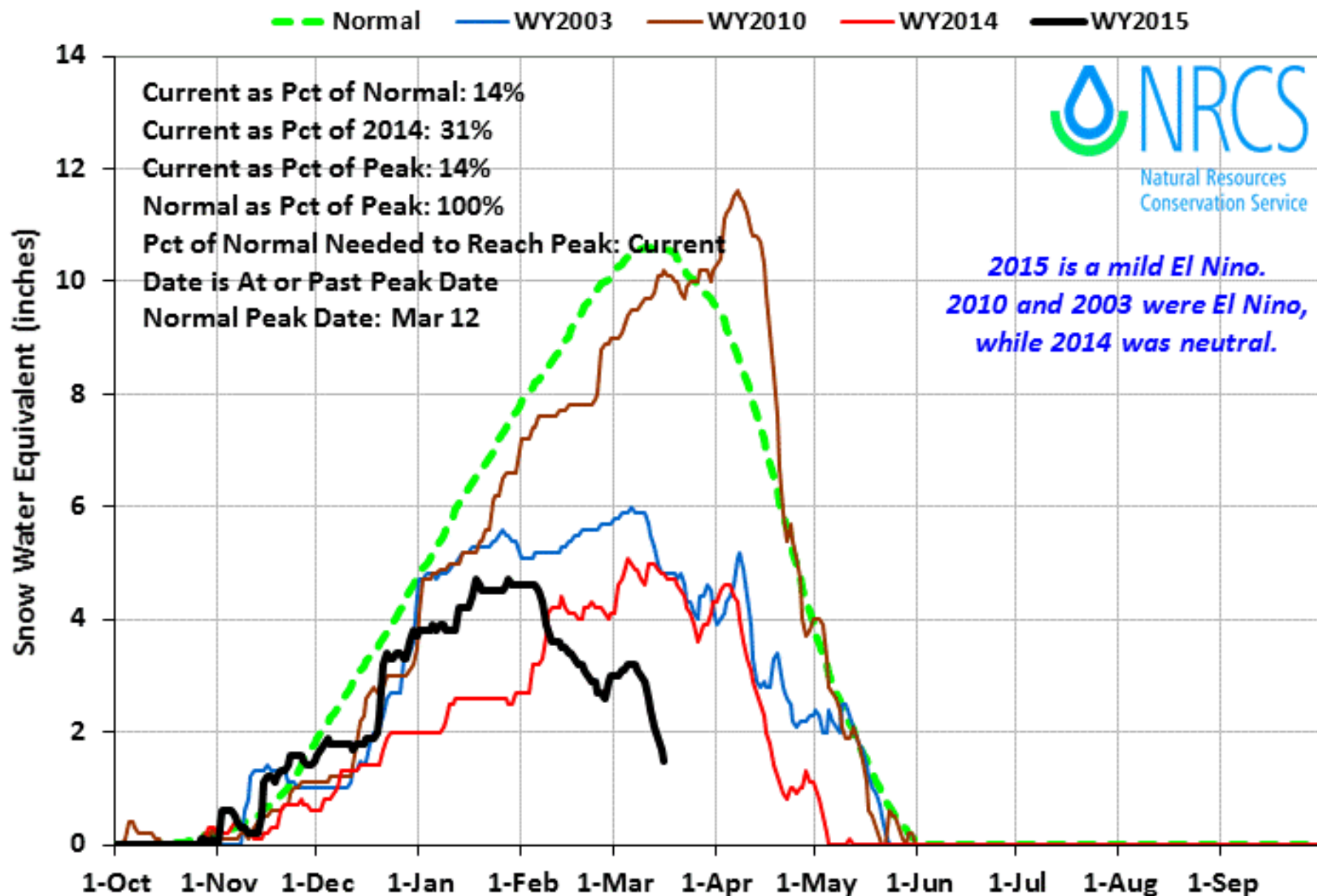
*Based on Provisional SNOTEL data as of Mar 16, 2015*

Normal WY2003 WY2010 WY2014 WY2015



## Owyhee Basin 2015 Snowpack Comparison Graph (7 sites)

*Based on Provisional SNOTEL data as of Mar 16, 2015*



## Bruneau Basin 2015 Snowpack Comparison Graph (5 sites)

*Based on Provisional SNOTEL data as of Mar 16, 2015*

Normal WY2003 WY2010 WY2014 WY2015

Current as Pct of Normal: 58%

Current as Pct of 2014: 83%

Current as Pct of Peak: 56%

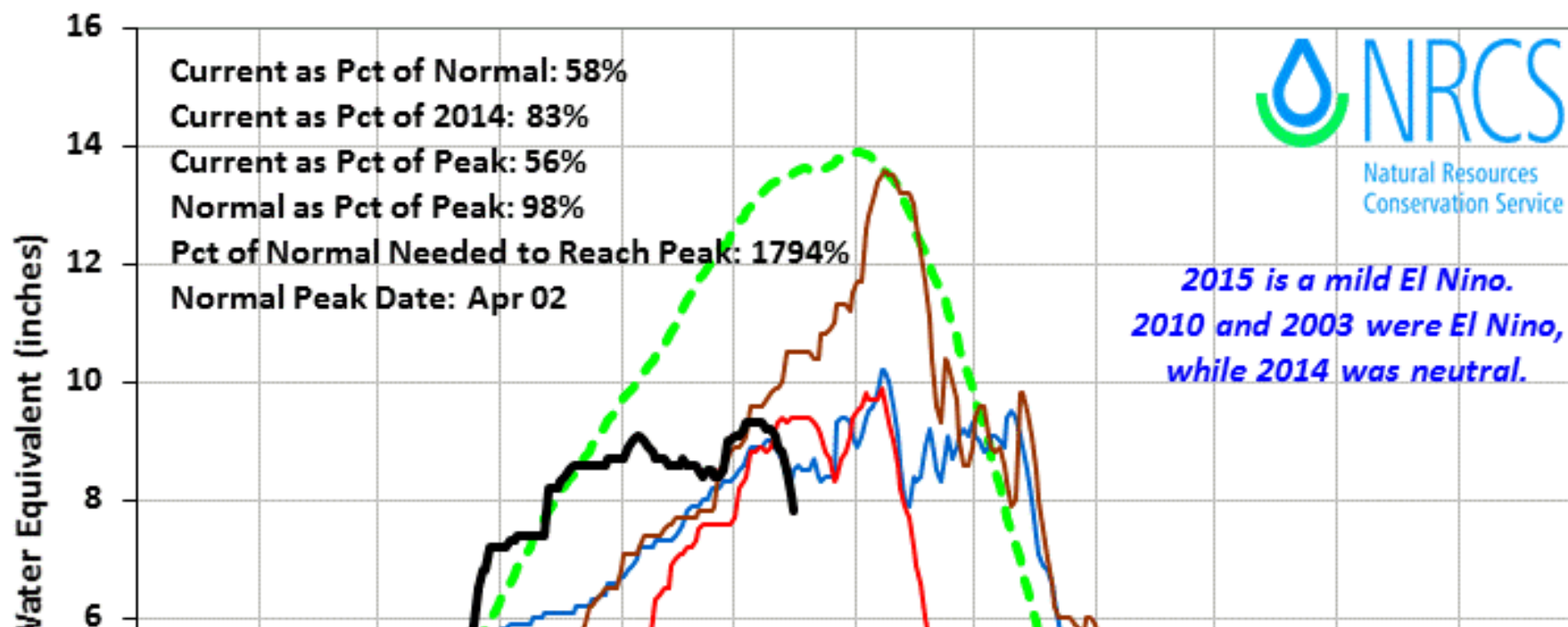
Normal as Pct of Peak: 98%

Pct of Normal Needed to Reach Peak: 1794%

Normal Peak Date: Apr 02



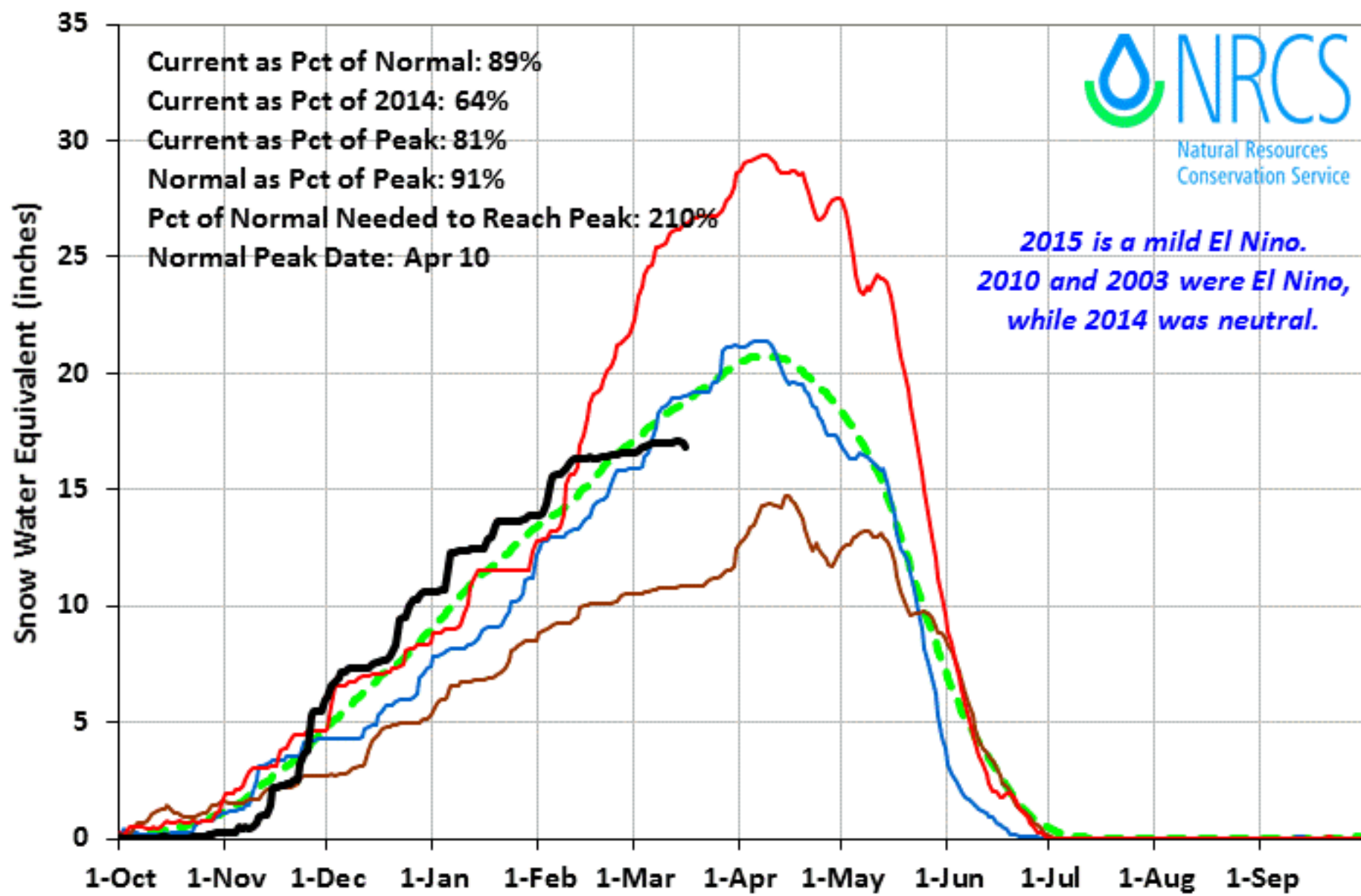
*2015 is a mild El Nino.  
2010 and 2003 were El Nino,  
while 2014 was neutral.*



## Snake Basin above Palisades 2015 Snowpack Comparison Graph (18 sites)

*Based on Provisional SNOTEL data as of Mar 16, 2015*

Normal WY2003 WY2010 WY2014 WY2015

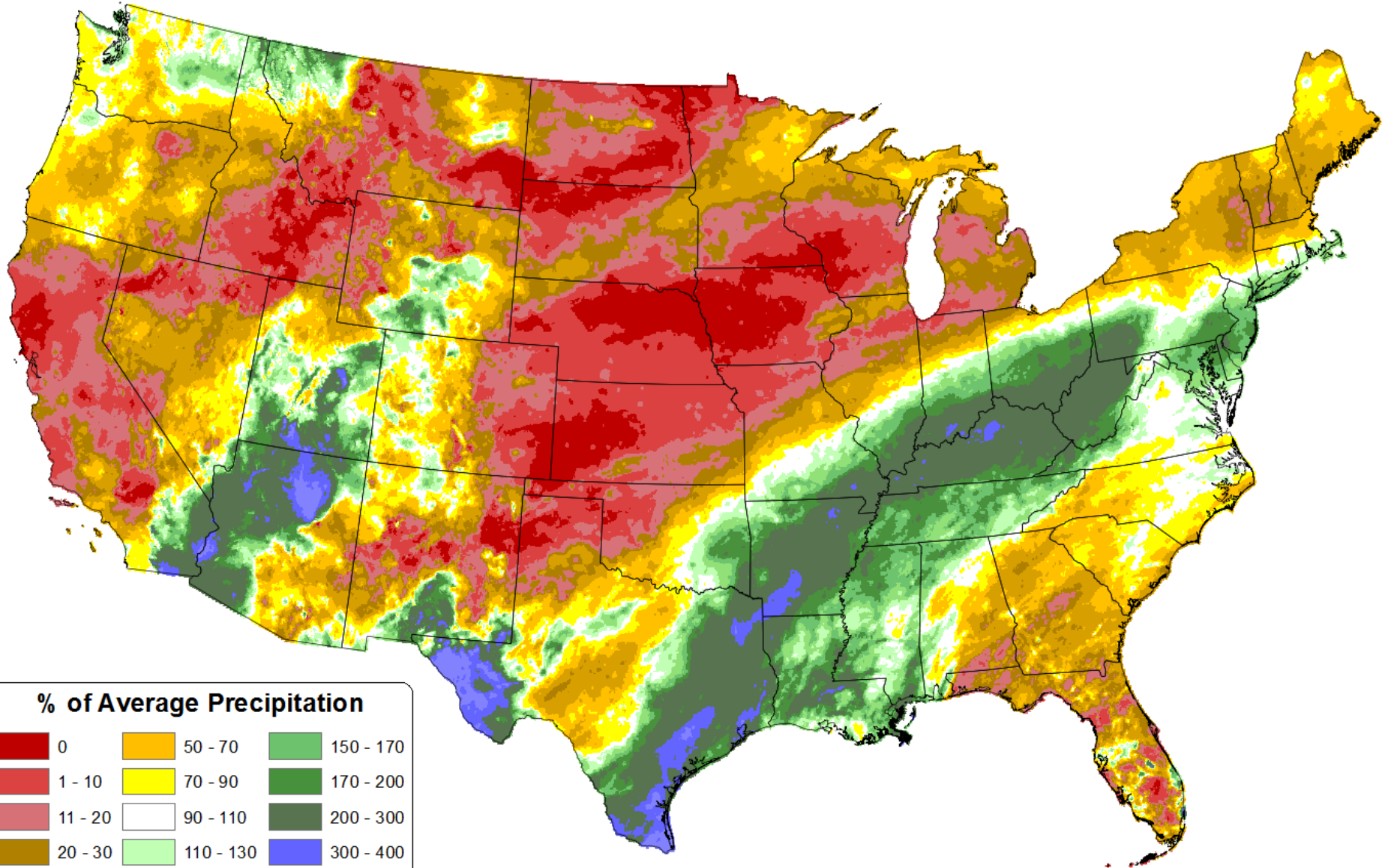


# Total Precipitation Anomaly: 01 March 2015 - 17 March 2015

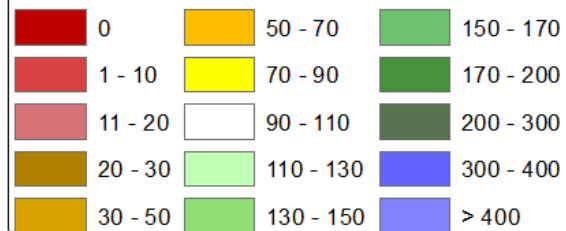
Period ending 7 AM EST 17 Mar 2015

Base period: 1981-2010

(Map created 18 Mar 2015)



## % of Average Precipitation

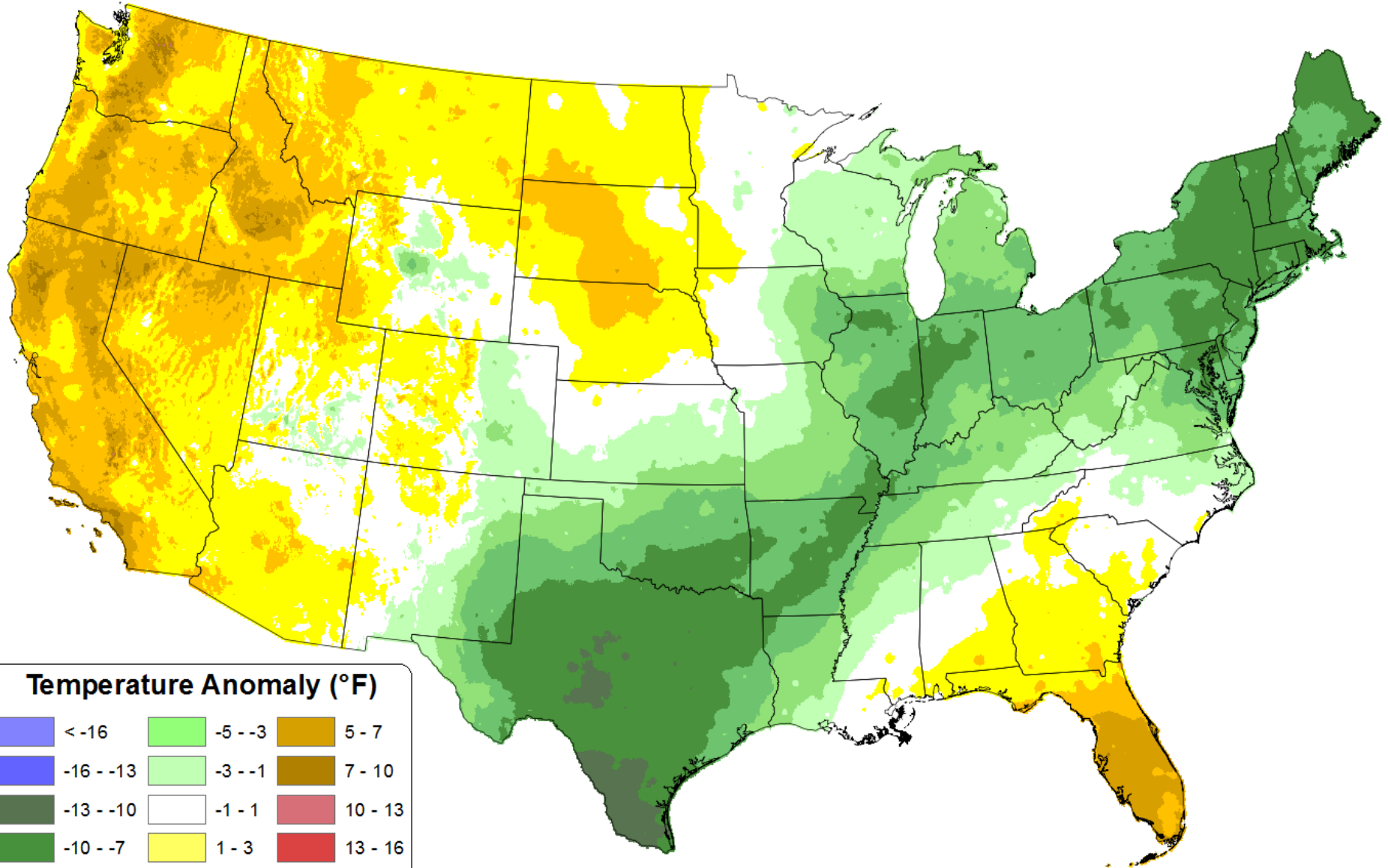


# Daily Mean Temperature Anomaly: 01 March 2015 - 17 March 2015

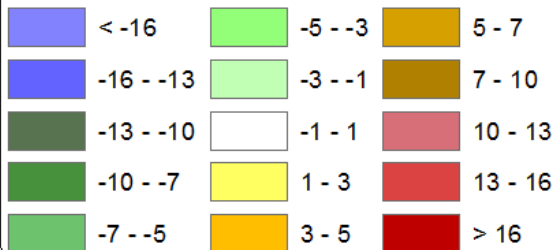
Period ending 7 AM EST 17 Mar 2015

Base period: 1981-2010

(Map created 18 Mar 2015)

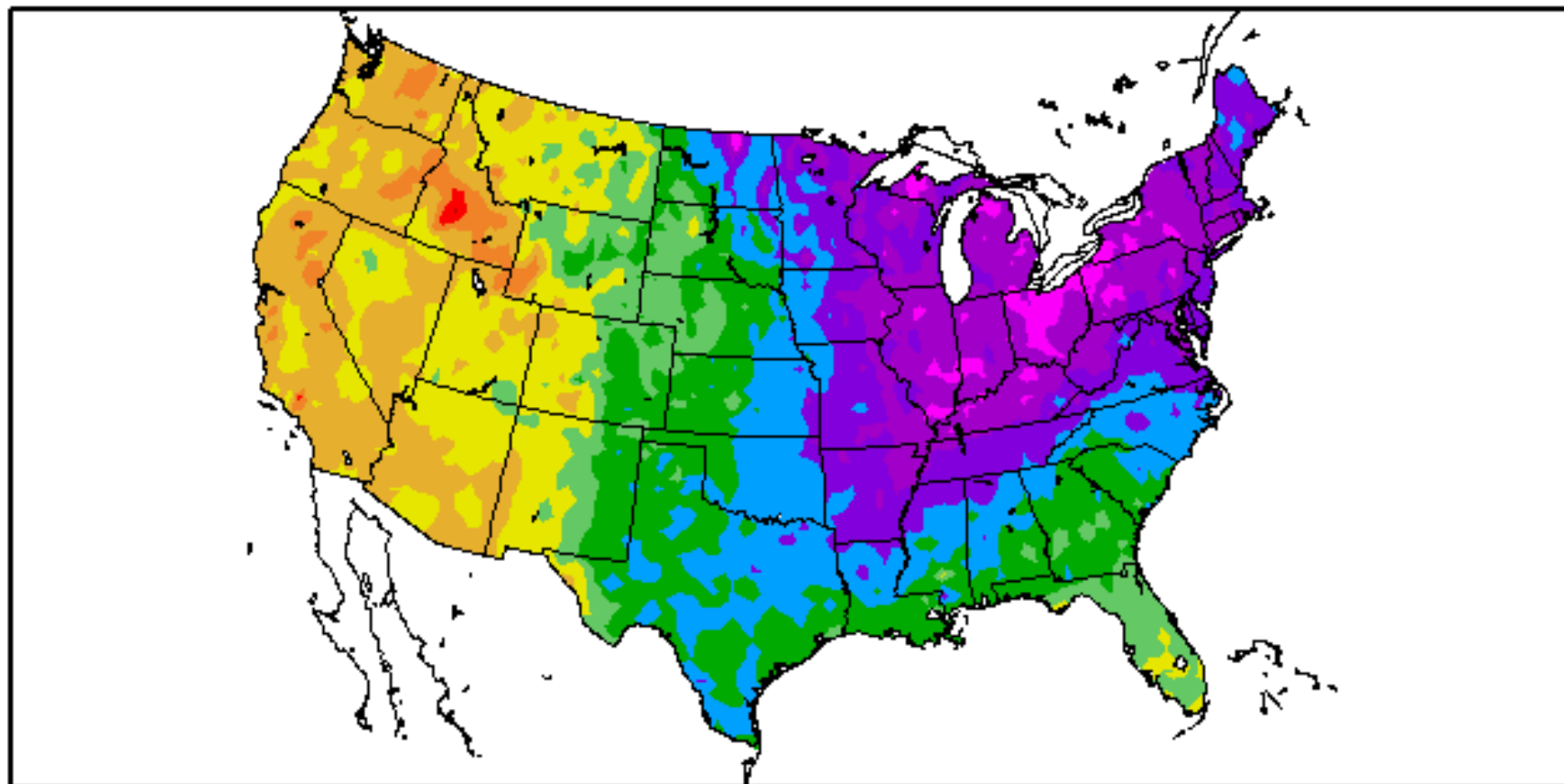


## Temperature Anomaly (°F)



# Departure from Normal Temperature (F)

2/10/2015 – 3/11/2015



# SNOTEL Yesterday's Minimum Temperature Records

Mar 12, 2015

*NOTE: Until further notice, record calculations are based on period of record through water year 2012; water years 2013 and 2014 are not analyzed.*

## Yesterday's Minimum Temperature Records

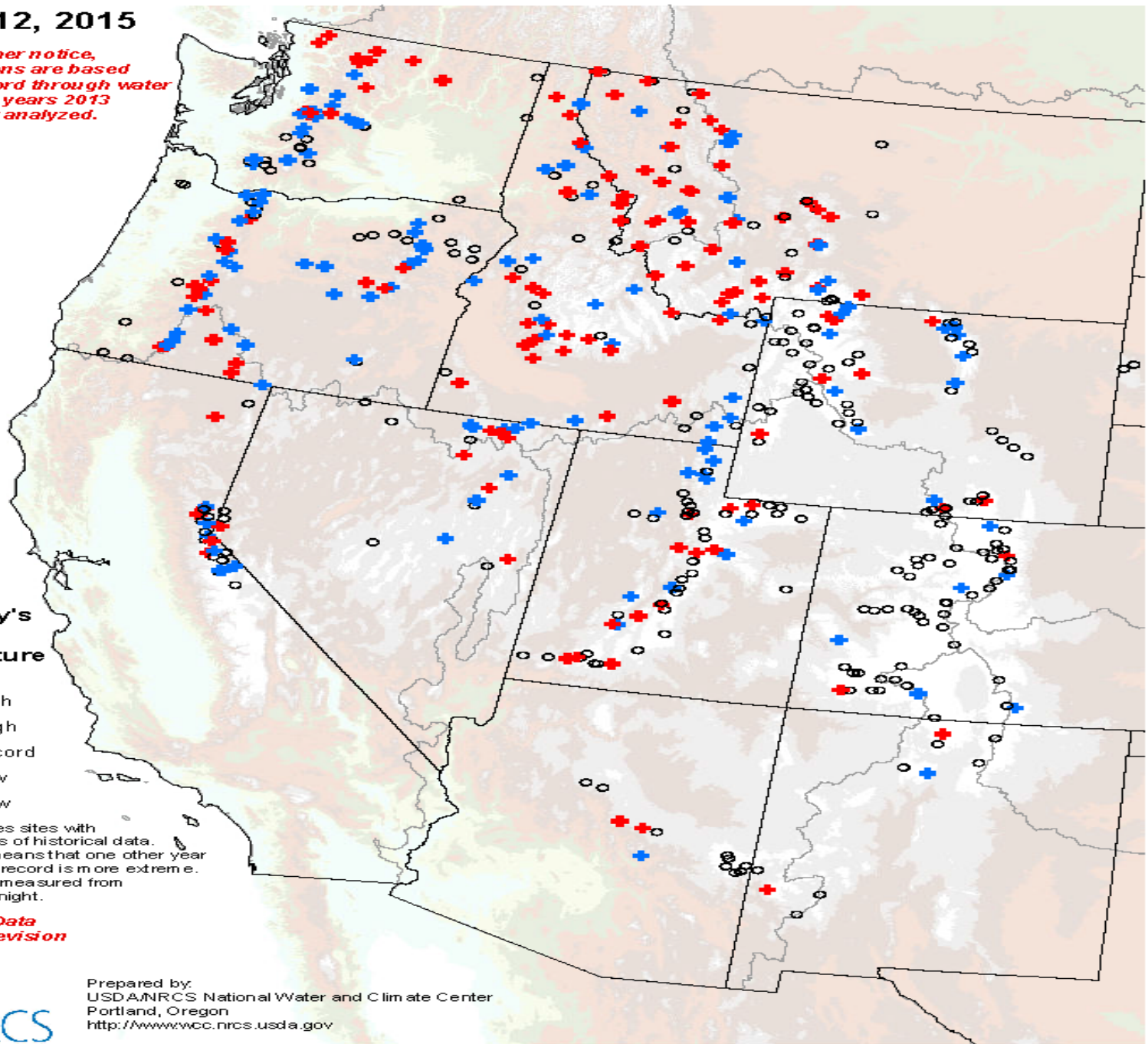
- + New High
- + Near High
- o Non Record
- New Low
- Near Low

Analysis includes sites with at least 15 years of historical data. "Near" record means that one other year of the period of record is more extreme. Temperature is measured from midnight to midnight.

*Provisional Data  
Subject to Revision*



Prepared by:  
USDA/NRCS National Water and Climate Center  
Portland, Oregon  
<http://www.wcc.nrcs.usda.gov>

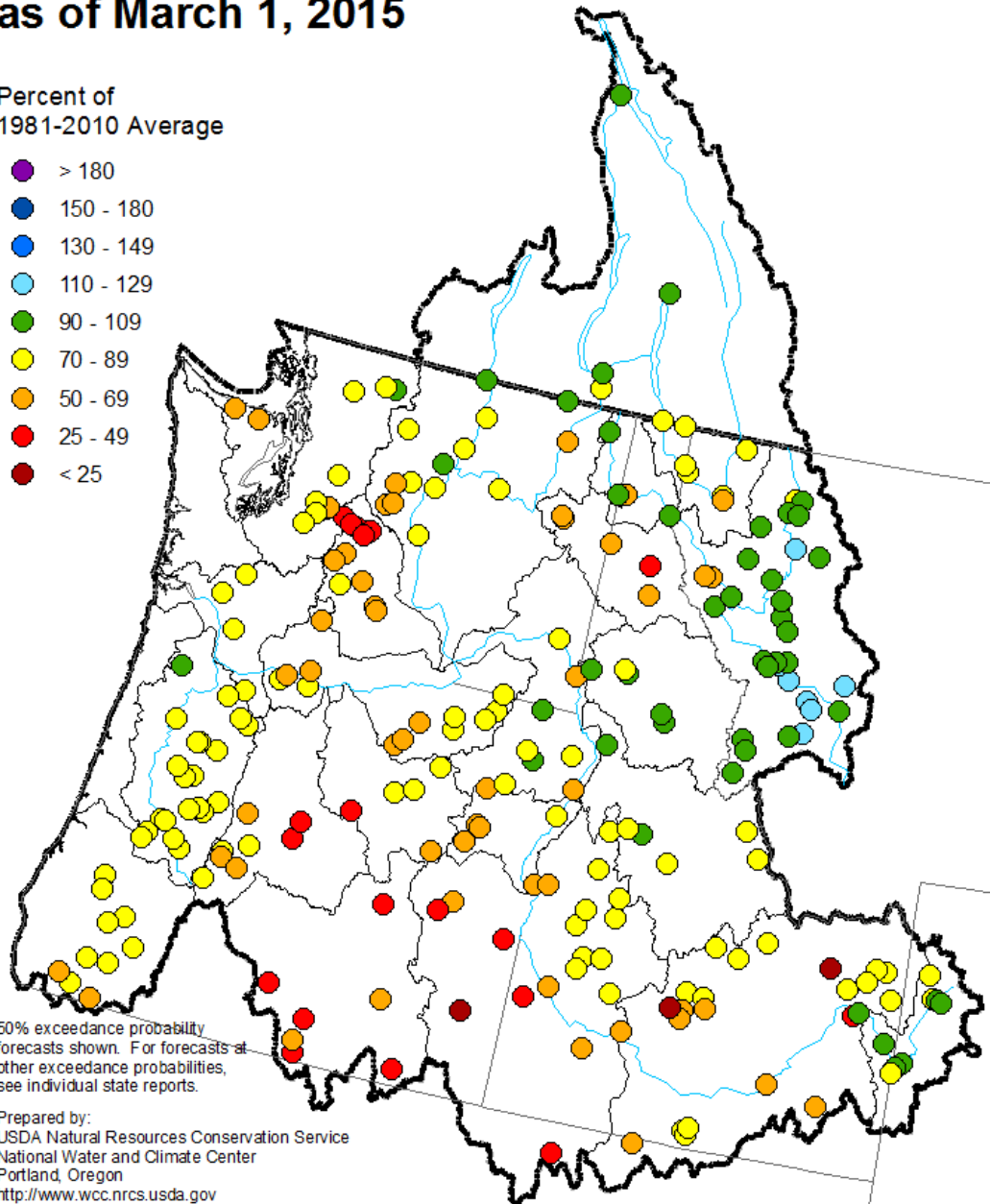


# Columbia River and Pacific Coastal Basins

## Spring and Summer Streamflow Forecasts as of March 1, 2015

Percent of  
1981-2010 Average

- > 180
- 150 - 180
- 130 - 149
- 110 - 129
- 90 - 109
- 70 - 89
- 50 - 69
- 25 - 49
- < 25

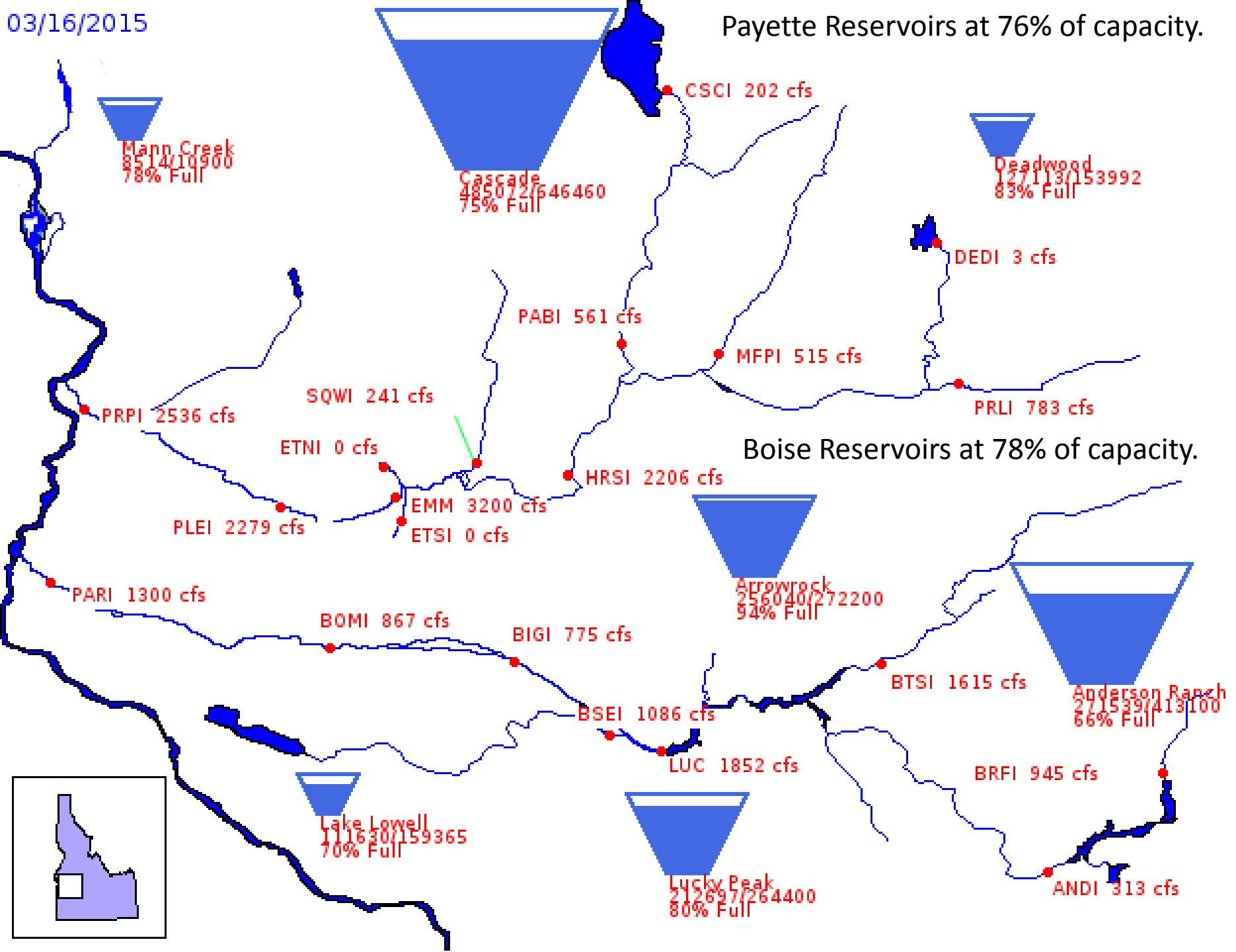


50% exceedance probability  
forecasts shown. For forecasts at  
other exceedance probabilities,  
see individual state reports.

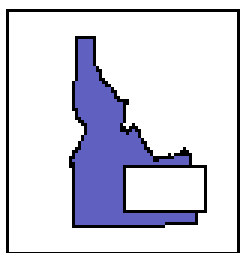
Prepared by:  
USDA Natural Resources Conservation Service  
National Water and Climate Center  
Portland, Oregon  
<http://www.wcc.nrcs.usda.gov>  
Created: 6 Mar 2015 10:49

03/16/2015

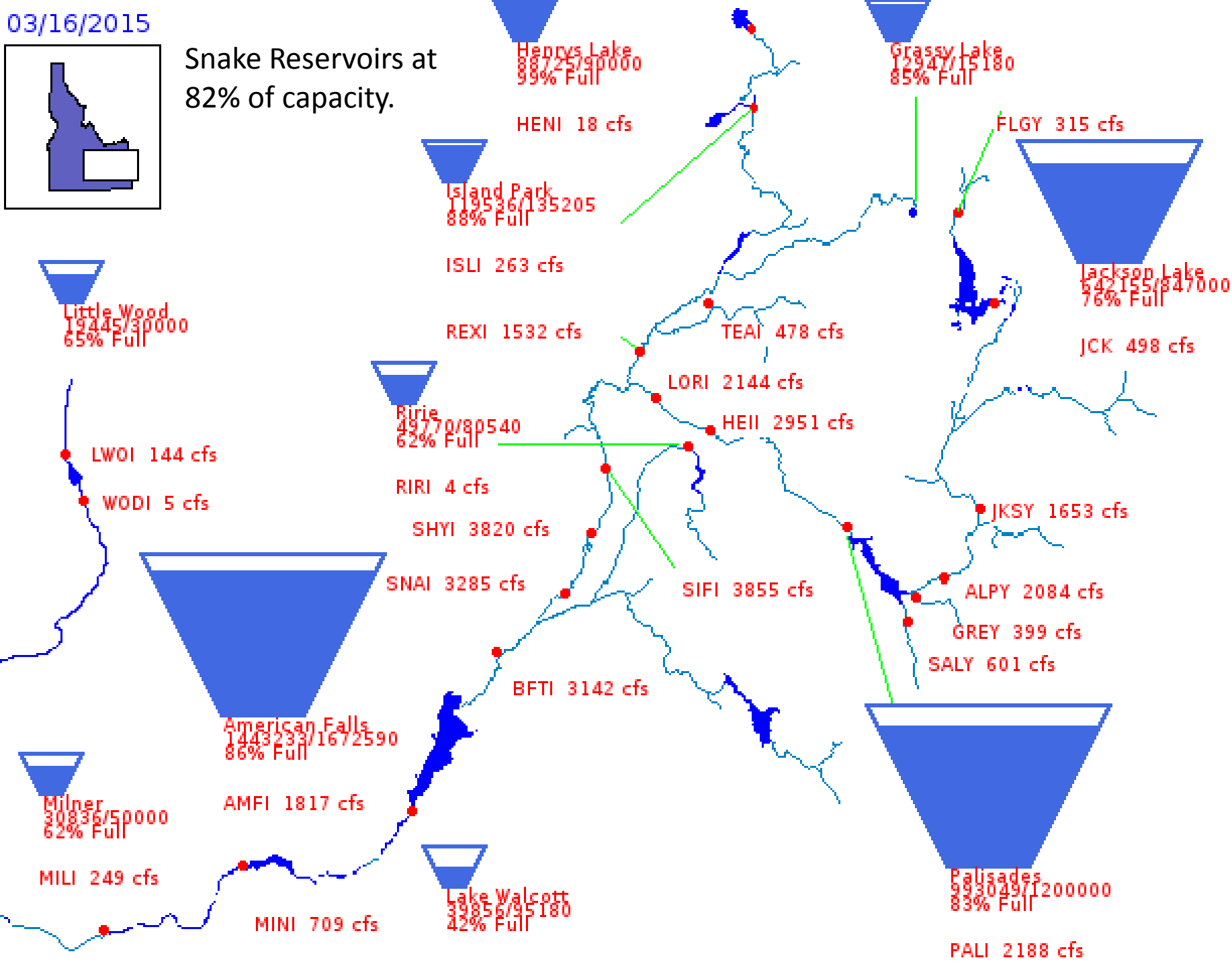
Payette Reservoirs at 76% of capacity.



03/16/2015

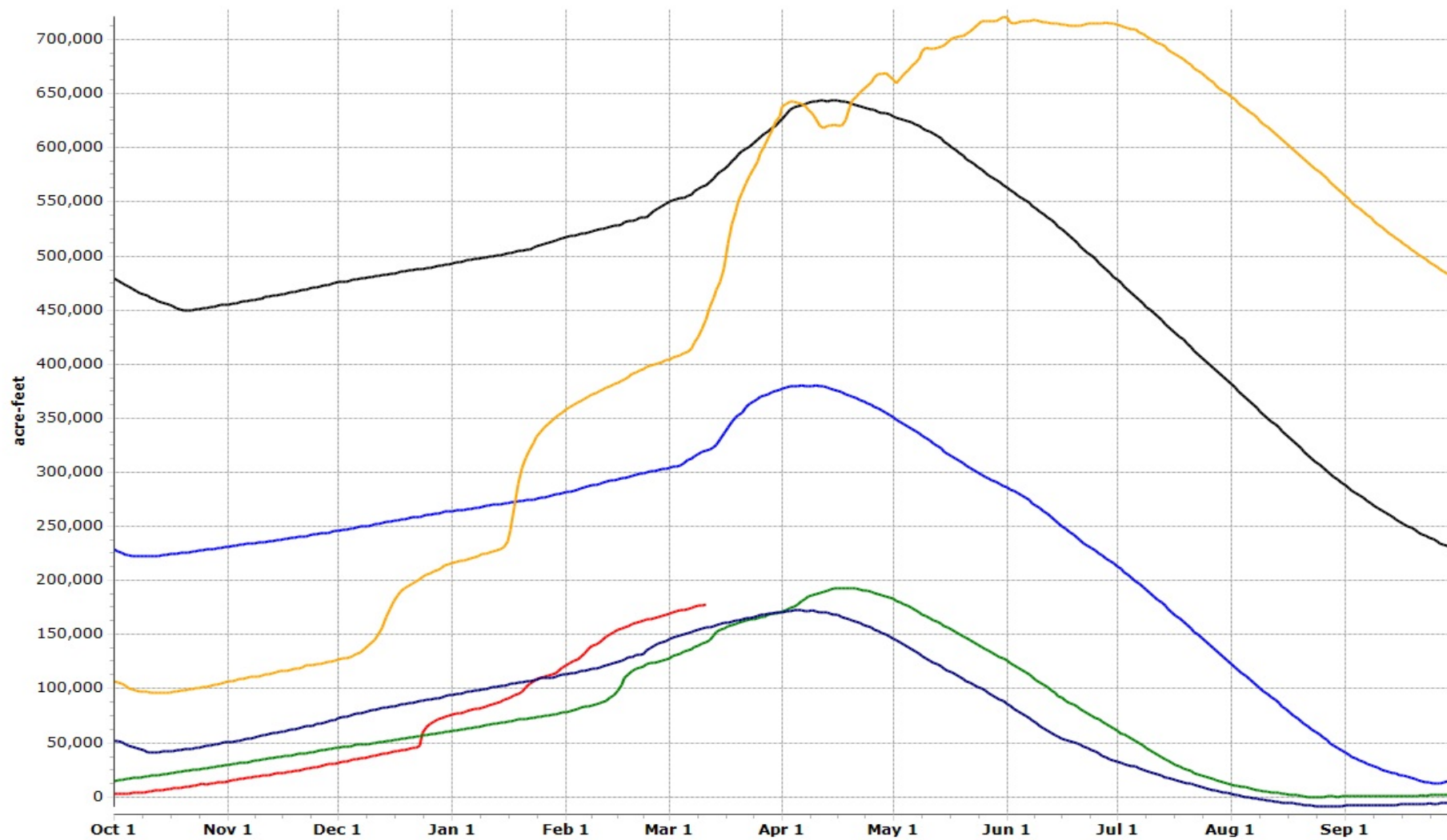


Snake Reservoirs at  
82% of capacity.



## Owyhee Reservoir Storage (capacity - 715,000 ac-ft)

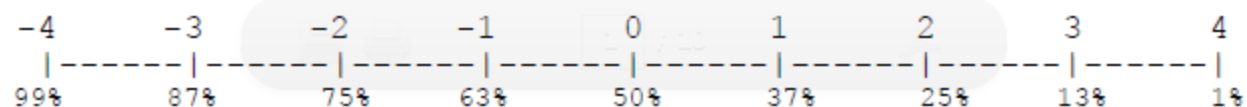
2015 2014 2013 2012 2011 1992

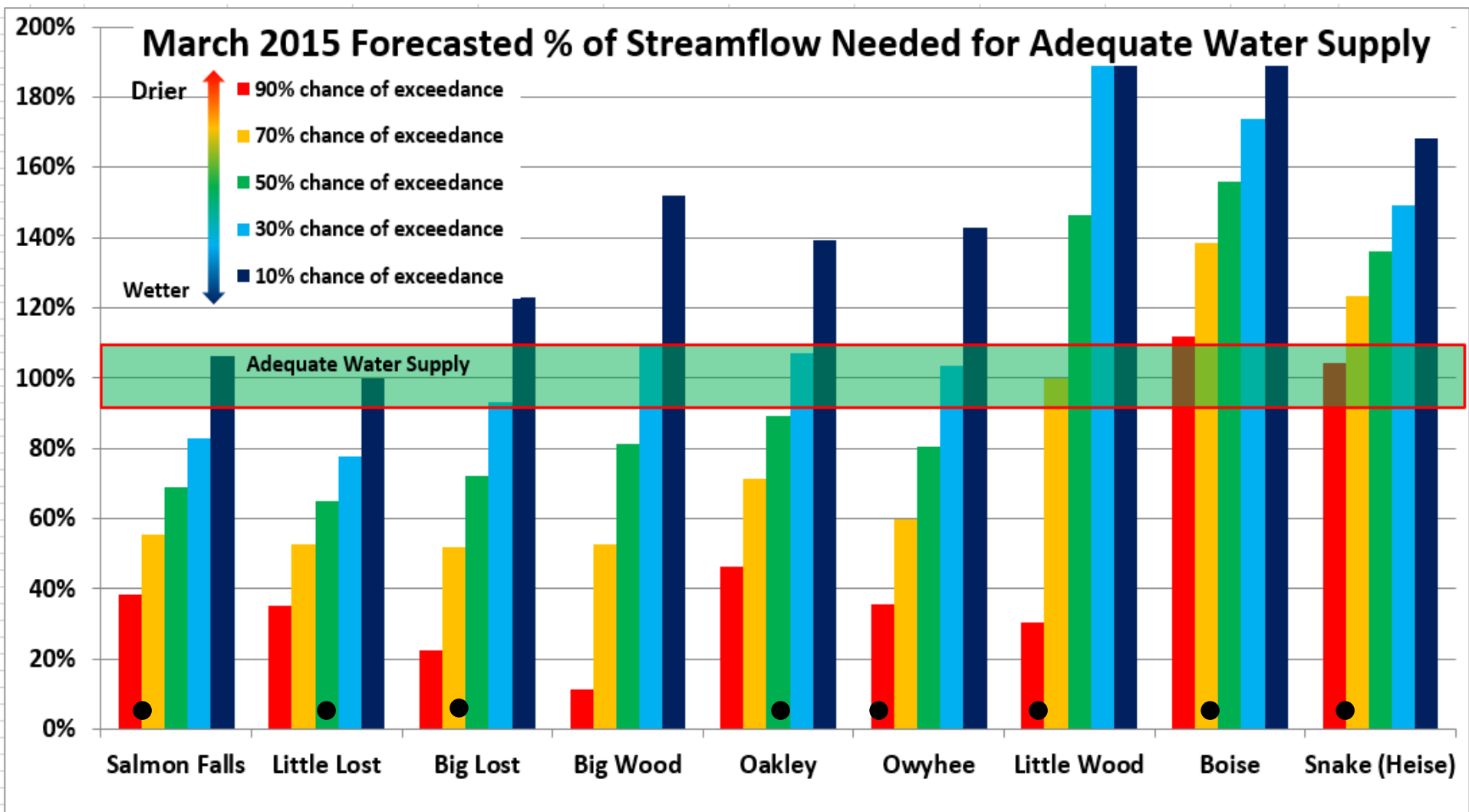


# IDAHO SURFACE WATER SUPPLY INDEX (SWSI) March 1, 2015

<i>BASIN or REGION</i>	<i>SWSI Value</i>	<i>Most Recent Year With Similar SWSI Value</i>	<i>Agricultural Water Supply Shortage May Occur When SWSI is Less Than</i>
Northern Panhandle	Not Available	---	---
Spokane	-3.3	2005	NA
Clearwater	1.0	2006	NA
Salmon	-0.3	2002	NA
Weiser	-1.9	2004	NA
Payette	-1.4	2014	NA
Boise	1.0	2009	-1.5
Big Wood	-0.2	2010	0.1
Little Wood	-0.6	2008	-1.3
Big Lost	-0.2	2008	0.6
Little Lost	-1.7	2014	1.3
Teton	-0.5	2005	-3.9
Henrys Fork	-0.1	2010	-3.4
Snake (Heise)	1.1	2014	-1.5
Oakley	-0.9	2013	0.4
Salmon Falls	-1.8	2004	-0.8
Bruneau	-0.7	2013	NA
Owyhee	-3.3	2003	-3.2
Bear River	-0.5	2014	-3.7

**SWSI SCALE, PERCENT CHANCE OF EXCEEDANCE, AND INTERPRETATION**

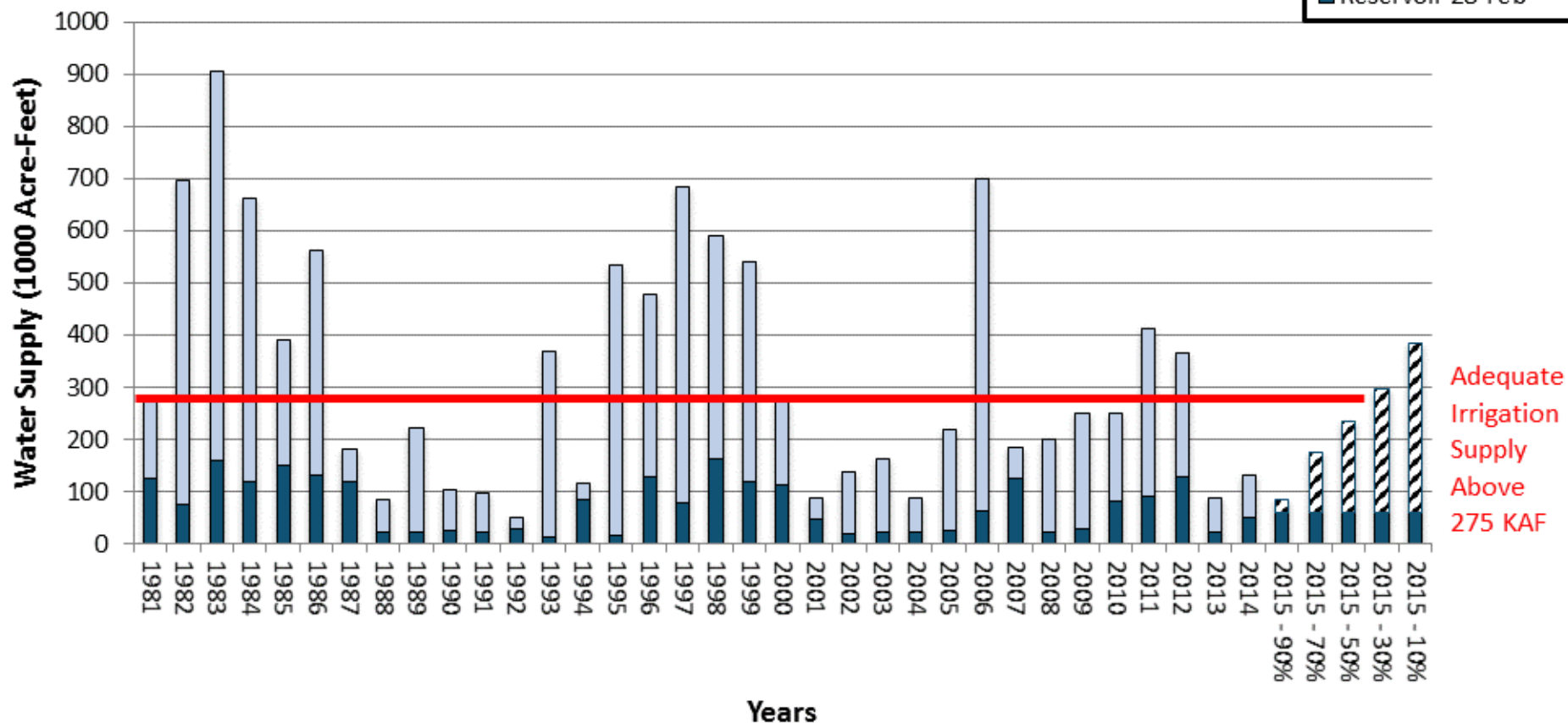
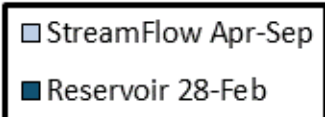




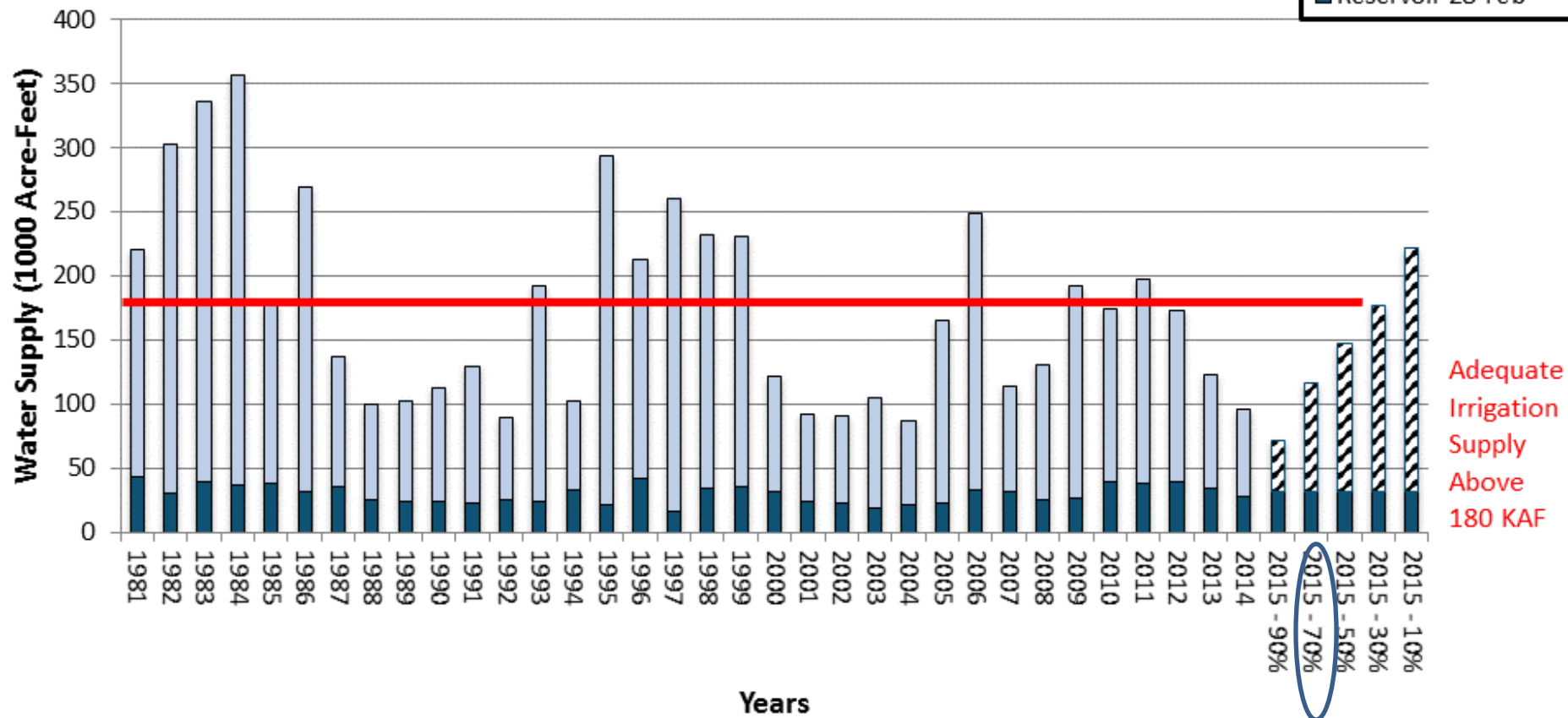
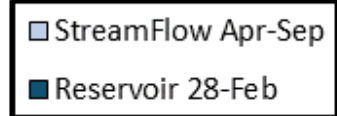
Thanks to the NRCS for providing this graph!

● March 19, 50% exceedance forecast

# Mar 1 Historic and Forecasted Surface Water Supply Big Wood River Basin



# Mar 1 Historic and Forecasted Surface Water Supply Big Lost River Basin

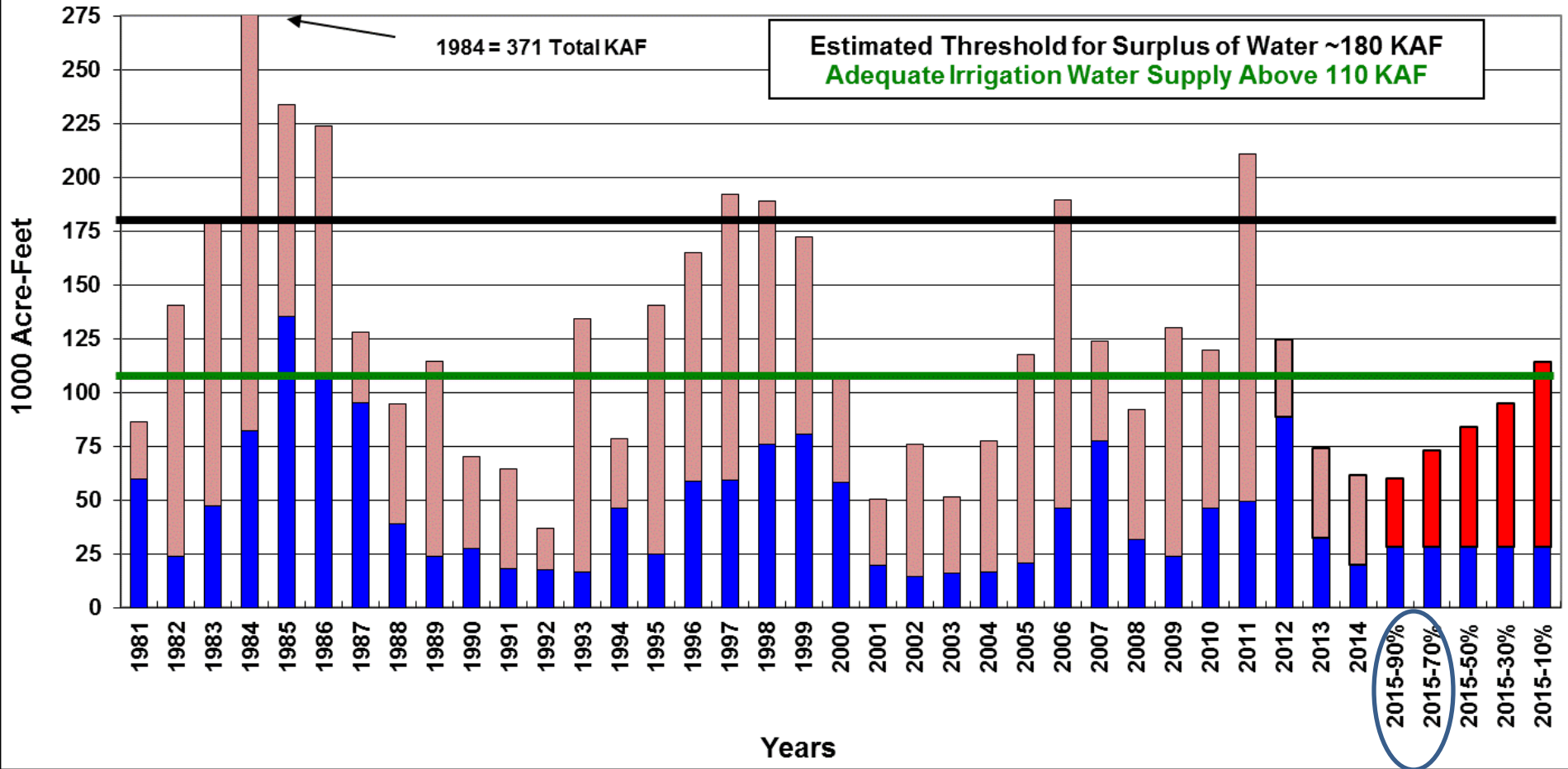


# **March 1 Surface Water Supply Index (SWSI) Salmon Falls Creek near San Jacinto & Salmon Falls Reservoir**



Streamflow Mar-Sep

Reservoir 28-Feb

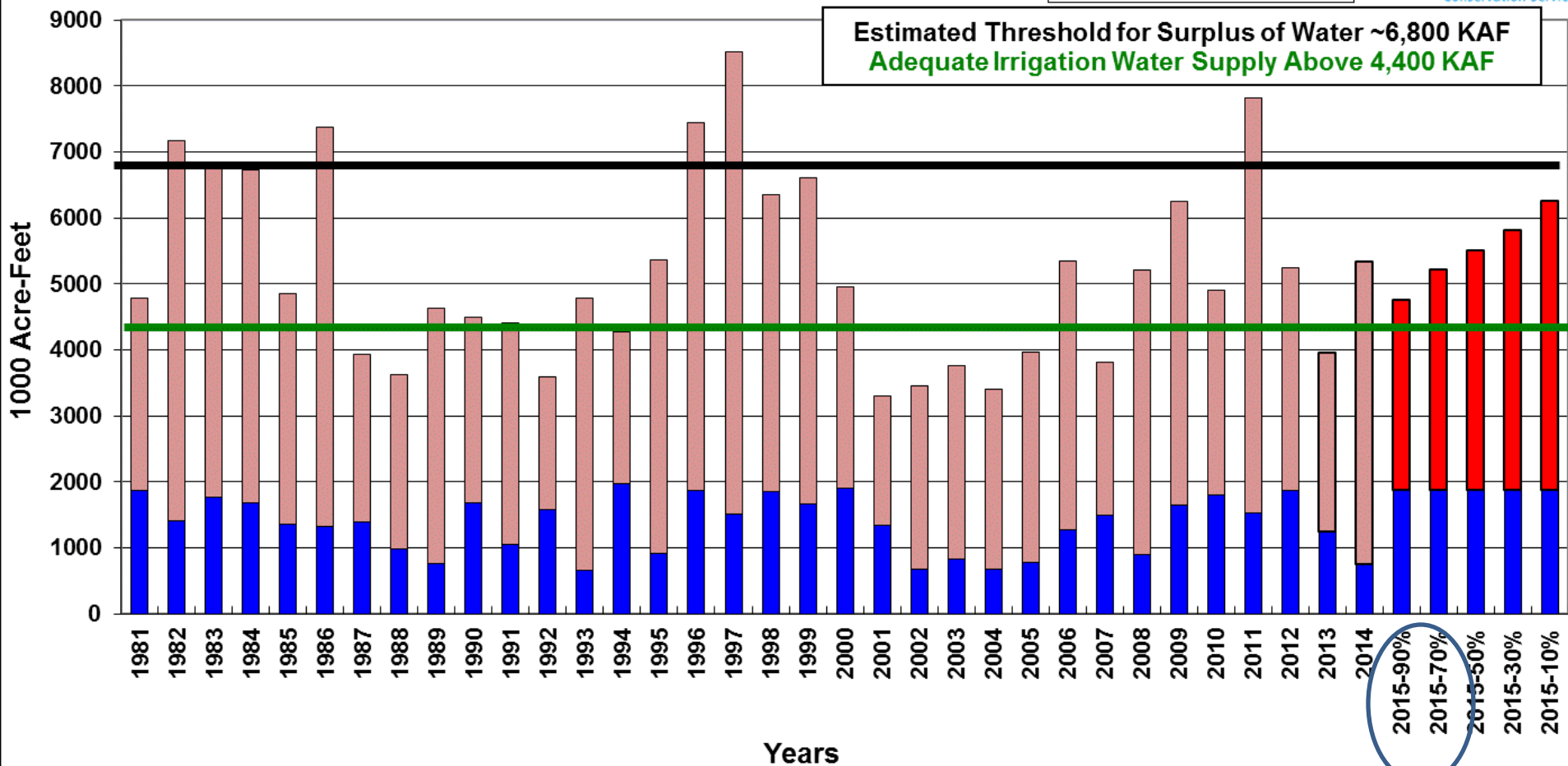


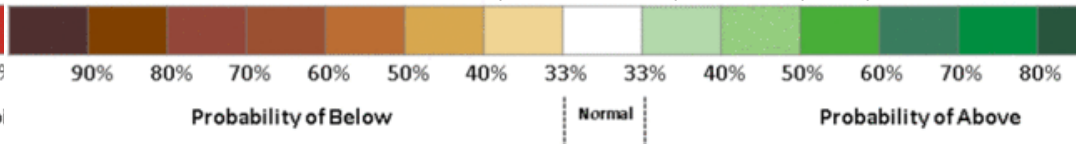
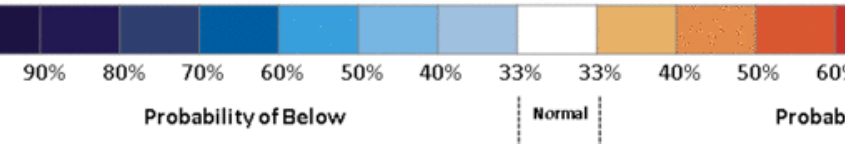
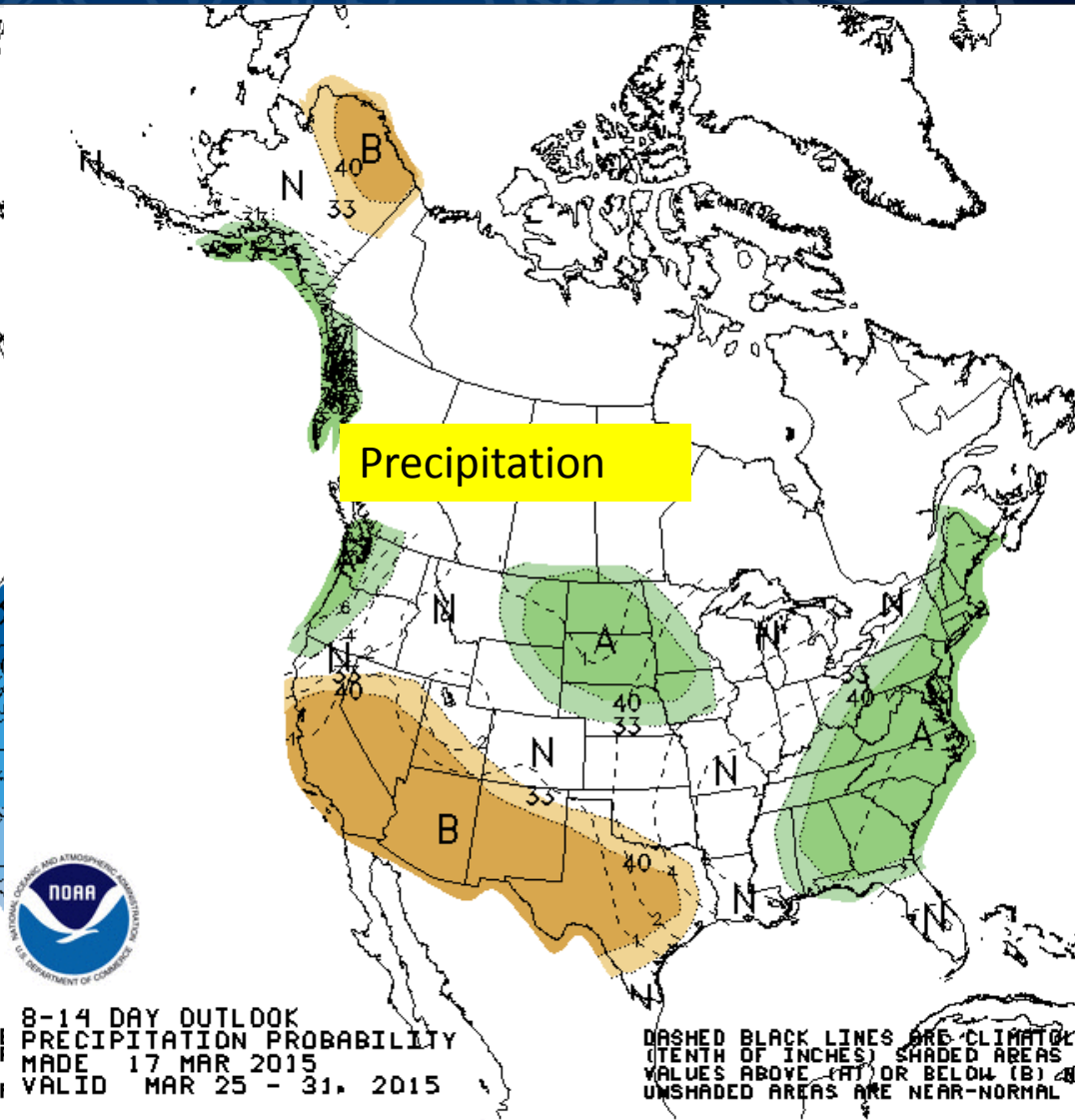
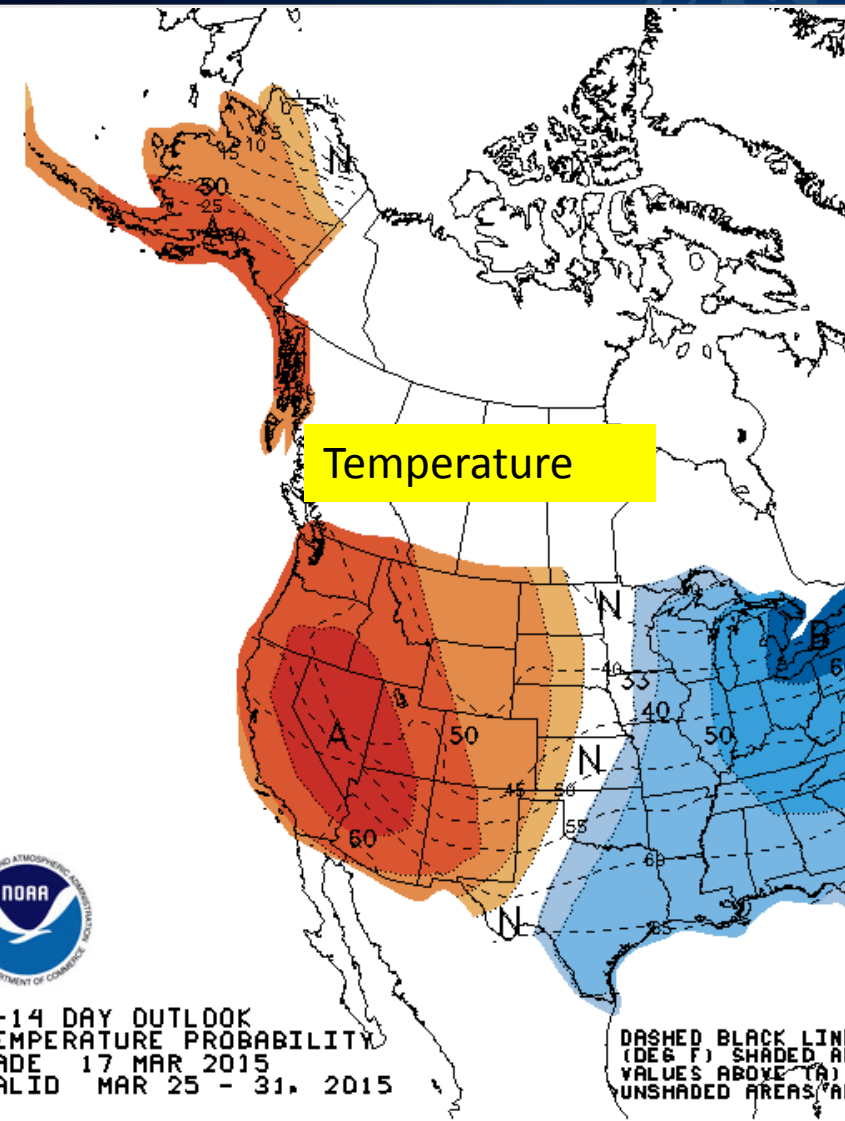
# **March 1 Surface Water Supply Index (SWSI)** **Snake River near Heise & Jackson and Palisades Reservoirs**

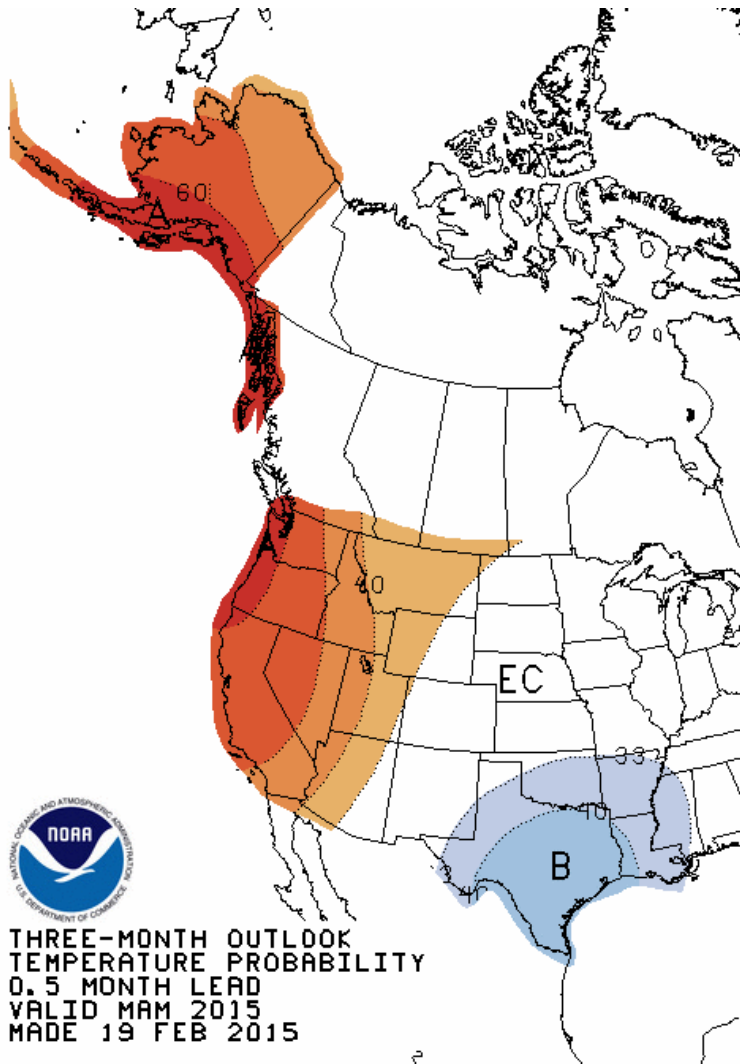
Streamflow Apr-Sep  
 Reservoir 28-Feb



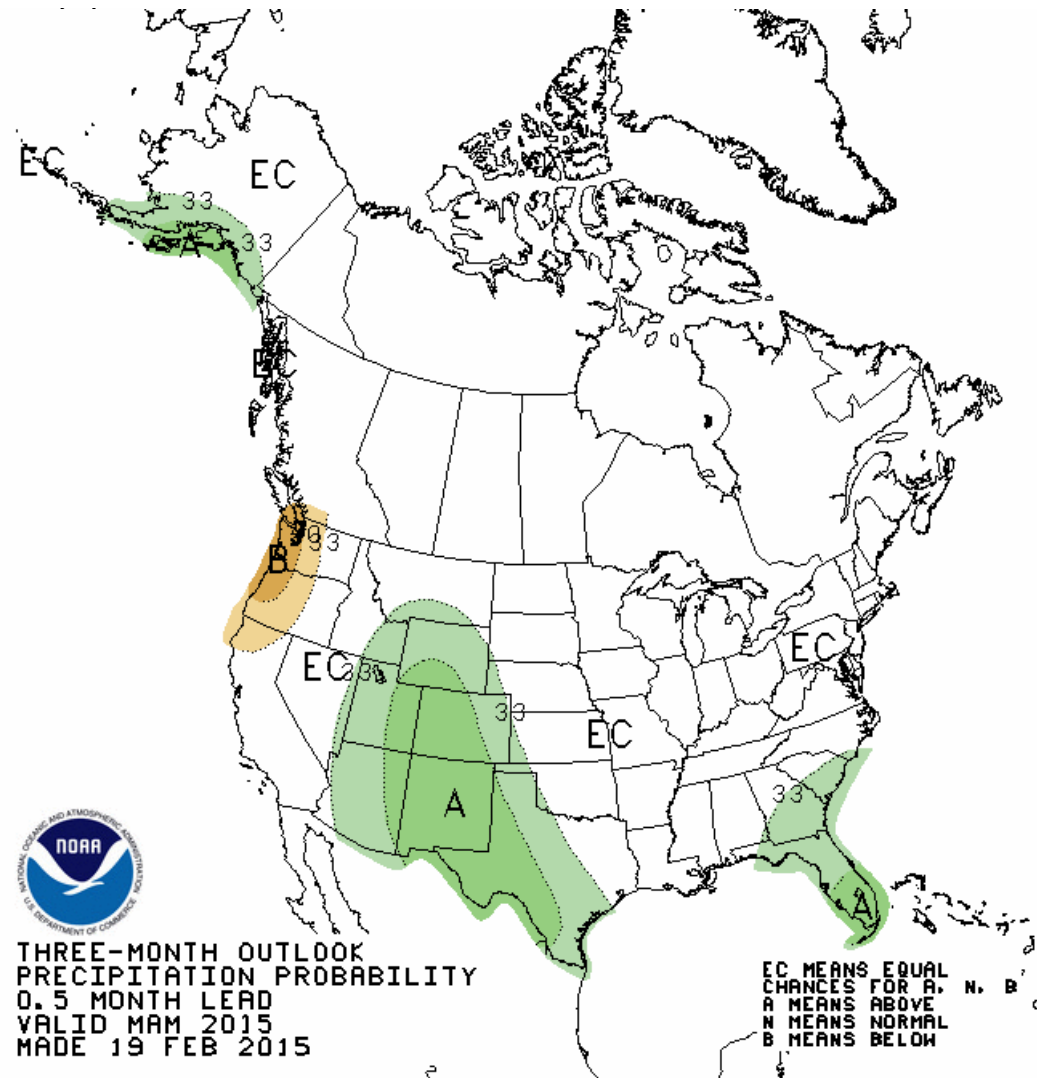
**Estimated Threshold for Surplus of Water ~6,800 KAF**  
**Adequate Irrigation Water Supply Above 4,400 KAF**







Temperature



Precipitation

**Photo taken  
by Ray Gadd  
March 11,  
2015 looking  
east over Big  
Wood River  
valley  
illustrating  
lack of snow  
on south  
facing slopes.**

## **Questions?**

More Information:

[Liz.cresto@idwr.idaho.gov](mailto:Liz.cresto@idwr.idaho.gov)

208-287-4833

<http://www.idwr.idaho.gov/WaterInformation/WaterSupply/supply.htm>

BEFORE THE IDAHO WATER RESOURCE BOARD

IN THE MATTER OF THE SWAN FALLS                    )  
AGREEMENT MINIMUM FLOWS                    )                    A RESOLUTION

WHEREAS, as a result of the Swan Falls Settlement, the minimum streamflow at the Murphy Gaging Station, just downstream of Swan Falls Dam, was increased to an average daily flow of 3,900 cfs between April 1<sup>st</sup> and October 31<sup>st</sup> of every year, and 5,600 cfs between November 1<sup>st</sup> and March 31<sup>st</sup> of every year; and

WHEREAS, the Idaho Water Resource Board (IWRB) holds decreed minimum streamflow water rights at the Murphy Gage; and

WHEREAS, Idaho Power Company holds decreed hydropower water rights for its mid Snake River hydropower facilities in the amount of 3,900 cfs between April 1<sup>st</sup> and October 31<sup>st</sup> and 5,600 cfs between November 1<sup>st</sup> and March 31<sup>st</sup> measured at the Murphy Gage; and

WHEREAS, the IWRB's and Idaho Power Company's water rights provided that the average daily flow is to be based on the actual flow conditions, which means that the average daily flow at the Murphy Gage is to be adjusted to account for any fluctuations resulting from the operation of the Idaho Power Company's hydropower facilities; and

WHEREAS, the State of Idaho, by and through the Governor, hold hydropower water rights in trust for the benefit of Idaho Power Company and the people of Idaho; and

WHEREAS, the hydropower water rights held in trust by the State of Idaho are subordinated to water rights diverting trust water within the area shown on Appendix A of IDAPA 37.03.08.030; provided, however, these water rights are subject to curtailment if the average daily flow at the Murphy Gage fall below 3,900 cfs between April 1<sup>st</sup> and October 31<sup>st</sup> and 5,600 cfs between November 1<sup>st</sup> and March 31<sup>st</sup> measured at the Murphy Gage; and

WHEREAS, the Director of the Idaho Department of Water Resources on October 27, 2014 issued the "Final Order Regarding the Measuring and Reporting the 'Average Daily Flow' as Measured at the Murphy Gaging Station" and

WHEREAS, the adjusted average daily flow at the Murphy Gage is beginning to approach the 3,900 cfs minimum flow; and

WHEREAS, the IWRB also holds 5,000 acre-feet of storage space in the U.S. Bureau of Reclamation's Palisades Reservoir through Contract No. 14-06-100-1836; and

WHEREAS, because of the hydrologic complexities of the Snake River system, curtailment is not a satisfactory means of maintaining the Murphy minimum flow; and

WHEREAS, the IWRB desires to establish an interim plan to maintain the Murphy minimum flow while a long term adaptive management plan is developed for maintaining the Murphy minimum flow; and

WHEREAS, due to the uncertainty of whether the river flows will drop below the Murphy adjusted average daily flow, the uncertainty of when and how long that may occur, the IWRB intends to establish a "Debit System" in cooperation with the Idaho Power Company to keep a running accounting of short fall in the adjusted average daily flow at the Murphy Gage; and

Whereas, the IWRB agrees to make available to Idaho Power water accruing to the IWRB's storage space, if necessary, as an offset against debits accruing to Idaho Power Company on an acre-foot for acre-foot basis; provided, however, the IWRB's obligation to provide storage water shall be limited to storage water accruing to its storage space.

NOW, THEREFORE BE IT RESOLVED, that, the Idaho Water Resource Board hereby establishes a "Debit System" to make its Palisades storage water available to augment flows at the Murphy Gage in the event the adjusted average daily flow at the Murphy Gage drops below the Murphy minimum flows.

NOW, THEREFORE BE IT FURTHER RESOLVED, in the event river flows drop below the Murphy minimum flows, the Idaho Power Company shall be entitled to call for delivery of storage water from the IWRB's Palisades storage space, in a volume equivalent to the shortfall at the Murphy Gage, on a schedule determined by the Idaho Power Company, until the volume of the shortfall is replaced or the IWRB storage water is fully utilized.

NOW, THEREFORE BE IT FURTHER RESOLVED that the costs and administrative fees for delivery of the Palisades storage water to the Murphy Gage shall be borne by the IWRB; and

NOW, THEREFORE BE IT FURTHER RESOLVED, the IWRB intends to engage the water right holders diverting Trust Water and develop a mechanism whereby in the future the costs of and fees for delivery of the Palisades storage water to the Murphy Gage will be borne by the water right holders diverting Trust Water.

DATED this 20th day of March, 2015.

ATTEST:

---

ROGER CHASE, Chairman

---

VINCE ALBERDI, Secretary



# Status Report

## Alternate Gage below Swan Falls Dam

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Presented to the Idaho Water Resource Board by Sean Vincent

March 20, 2015



## Background

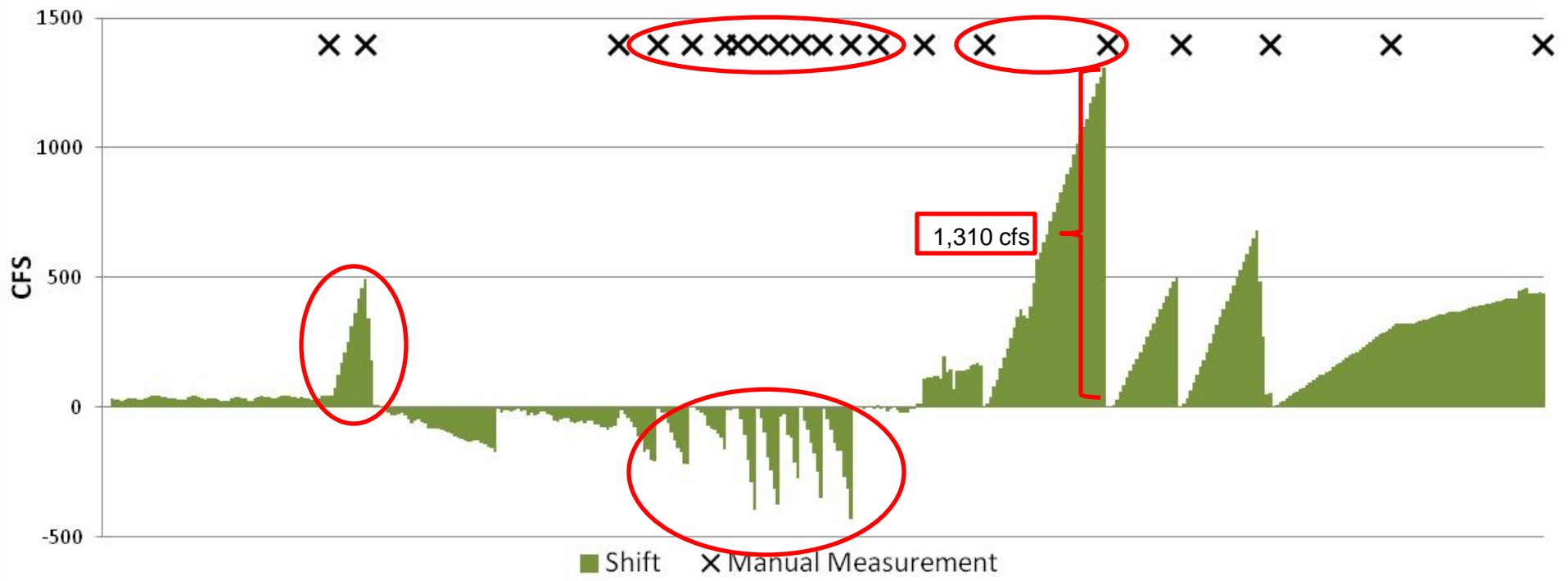
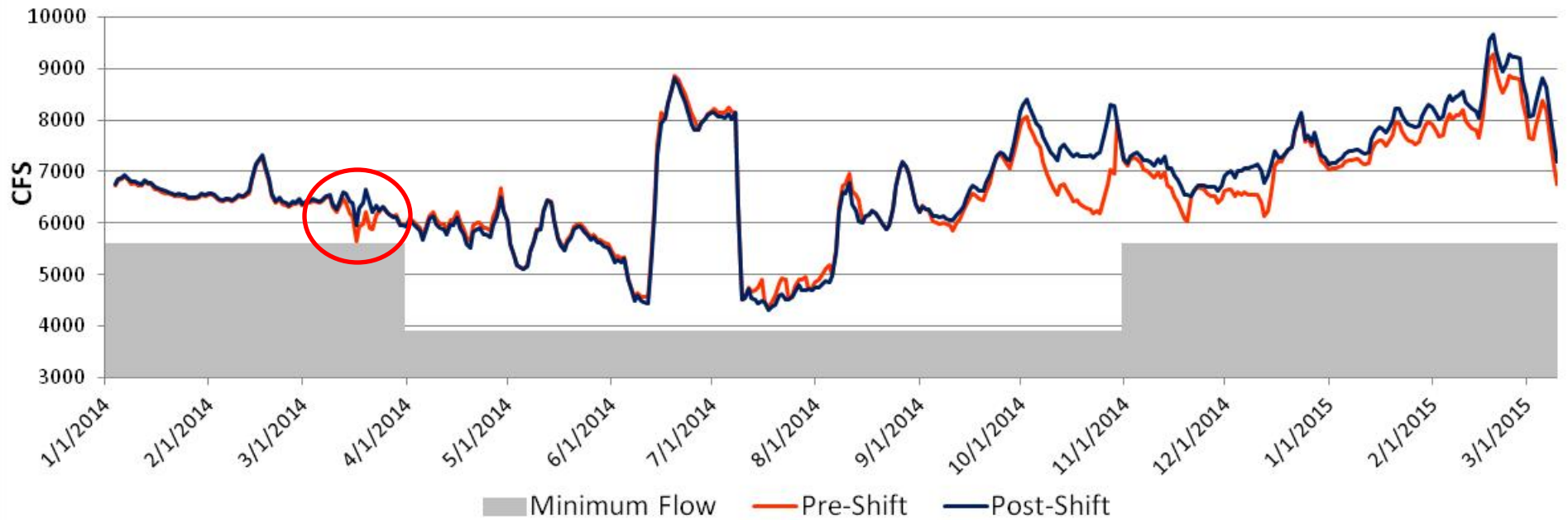
- Near Murphy gage = point of compliance
- *Adjusted Average Daily Flow (AADF)* = metric
- Minimum AADF at near Murphy = 3,900 cfs (4/1 – 10/31)  
and 5,600 cfs (11/1 – 3/31)
- Low flow period = mid-June through mid-August
- Also approach non-irrigation minimum during late March

## Near Murphy Gage

- 4.2 miles downstream from Swan Falls dam
- No significant inflows/outflows between dam and gage
- River stage control is a shallow riffle which is ~ 600 ft wide @ 4,000 cfs
- Growth of aquatic vegetation causes large negative shifts during low flow period (actual flow < gaged flow)
- Operated by Idaho Power since 2001



### 3-day Average AADF



## Alternate Site

- Physical characteristics make site less prone to large shifts → more accurate gage data
  - 0.8 miles downstream from Swan Falls dam
  - Stage control is channel constriction
  - Width of constriction @ 4,000 cfs ~ 100 ft
- Improve accuracy further by installing an Acoustic Doppler Velocity Meter (ADVM)
- USGS will operate



Alternate Gage Site

## Alternate Gage Status

- Permits for installation of river stage measurement equipment issued → USGS will install next week
- Permitting in progress for installation of ADVN
- Plan to run near Murphy and Alternate gages in parallel indefinitely

# Questions?



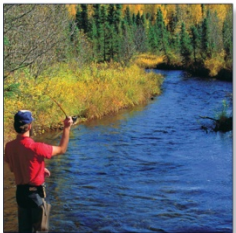


## Water Supply Bank 2014 Report



Remington Buyer  
Water Supply Bank Coordinator  
March 20, 2015





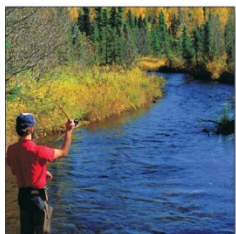
## Annual Report for 2014 for the Board's Water Supply Bank

### Macro level trends

- Explosive growth is continuing:
  - More applications processed in 2014 than ever before,
  - More water rented in 2014 than ever before,
  - More revenue generated in 2014 than ever before,
  - More warrants payouts in 2014 than ever before

### Data details and trends

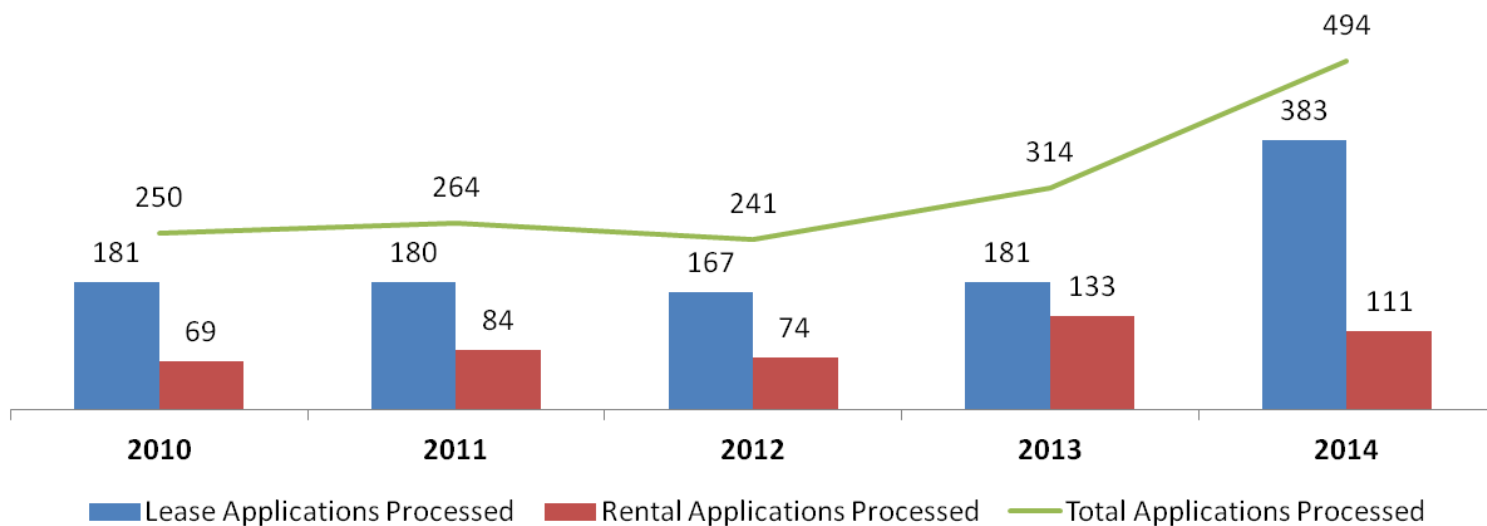
- Application processing efficiencies are improving:
  - Increasingly complex lease/rental transactions are being proposed,
- Revenue growth from leases is outpacing revenue growth from rentals,
- Revenue growth is marginally outpacing growth in operational costs,
  - The negative operational balance of the Bank is slowly shrinking,
- Attention is merited to reconsider the rental rate for water

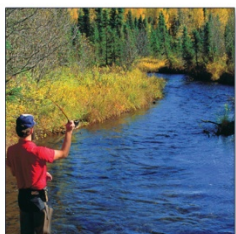


## Annual Report for 2014 for the Board's Water Supply Bank

**Increased productivity: more applications processed in 2014 than ever before**

Applications Processed Annually

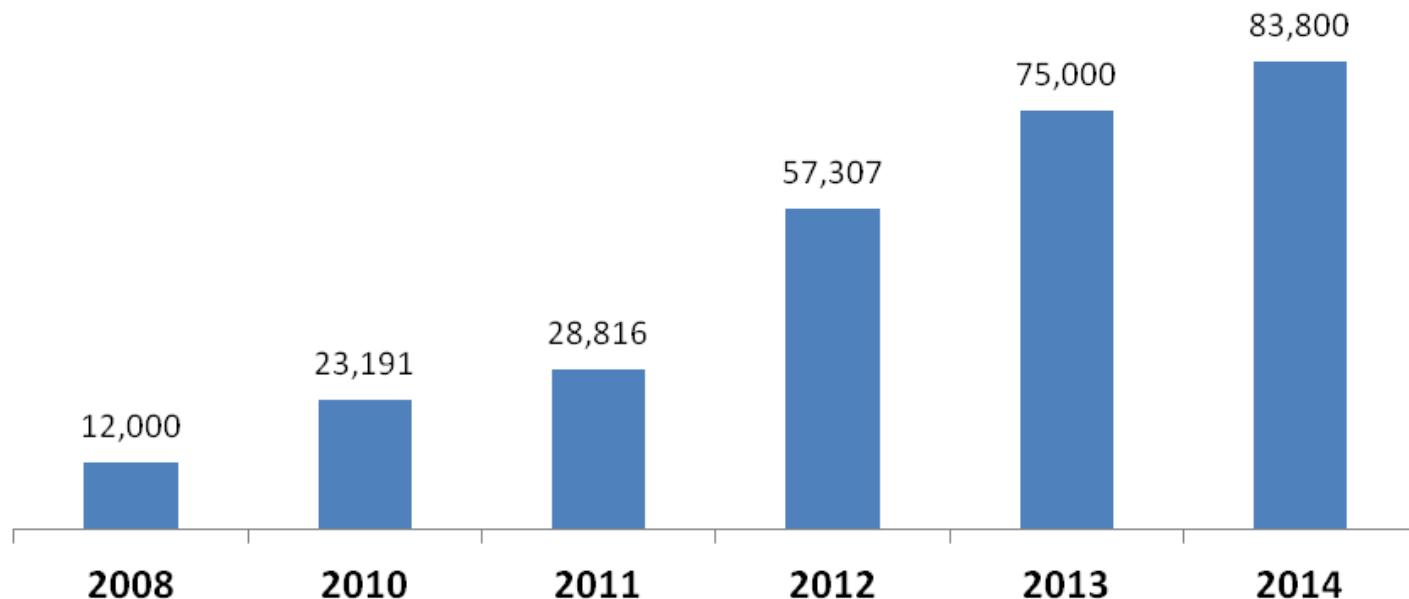


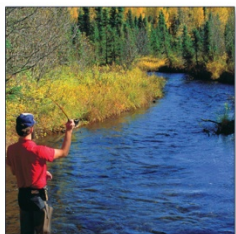


## Annual Report for 2014 for the Board's Water Supply Bank

**Increased utility: more water rented in 2014 than ever before**

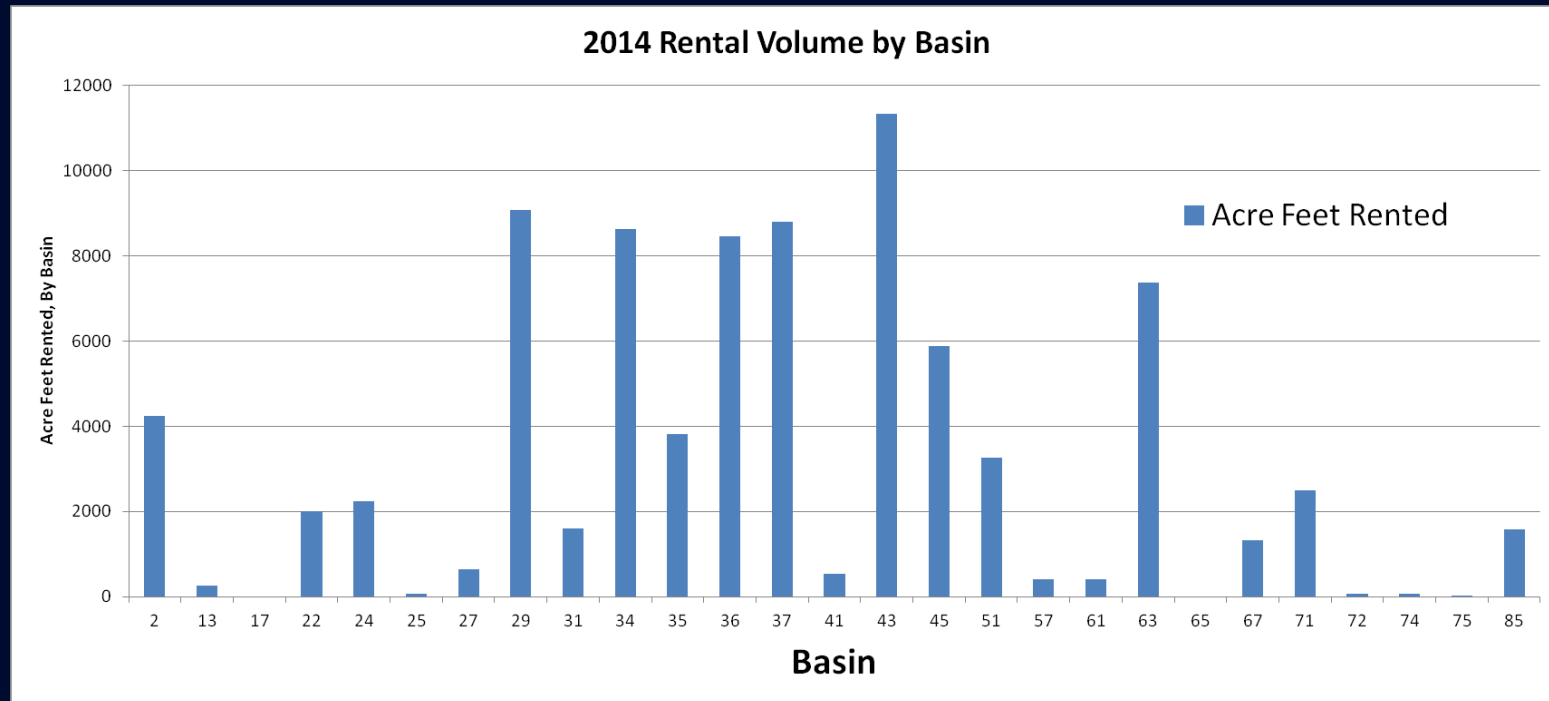
**Rented Volume by Year**  
(AF)

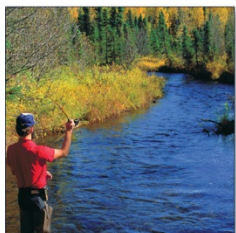




## Annual Report for 2014 for the Board's Water Supply Bank

**Stable utility: water rented per basin changed little in 2014**

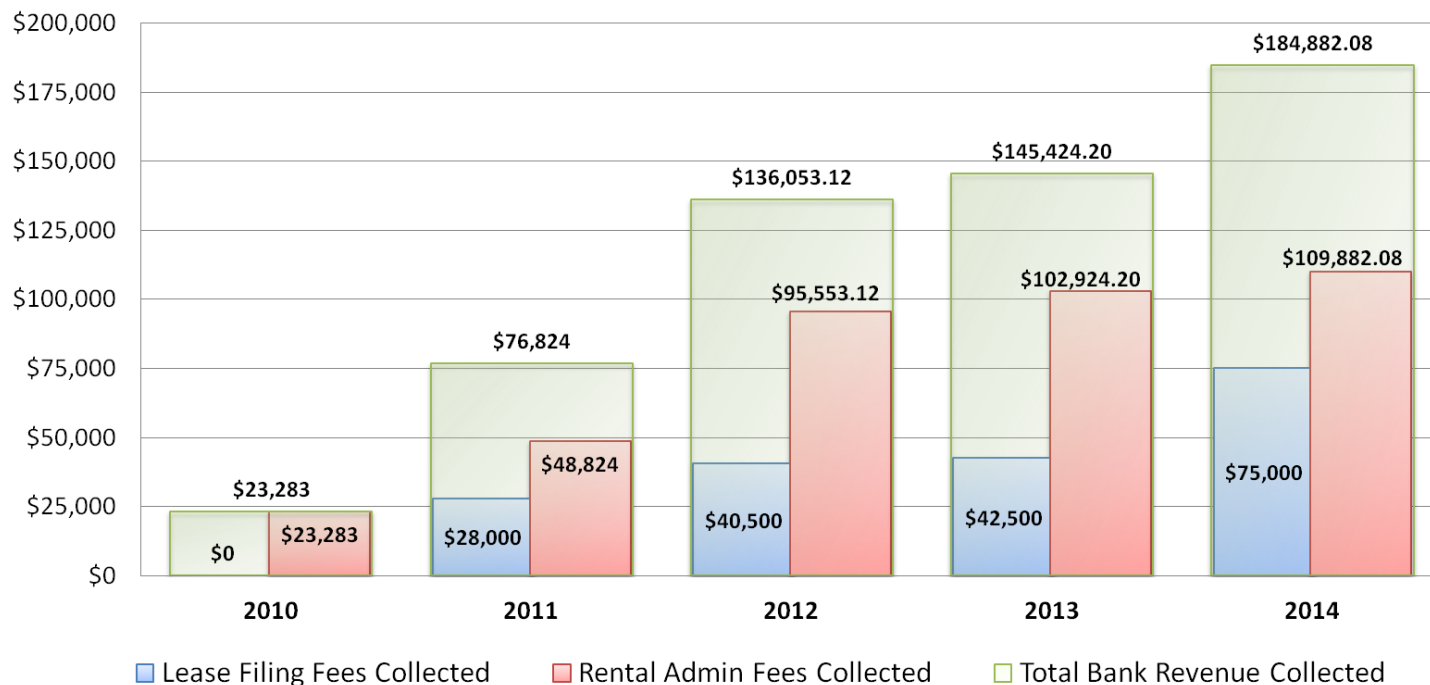


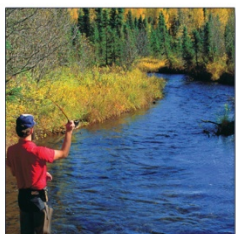


## Annual Report for 2014 for the Board's Water Supply Bank

**Increased revenue: lease and rental fee collections higher than ever**

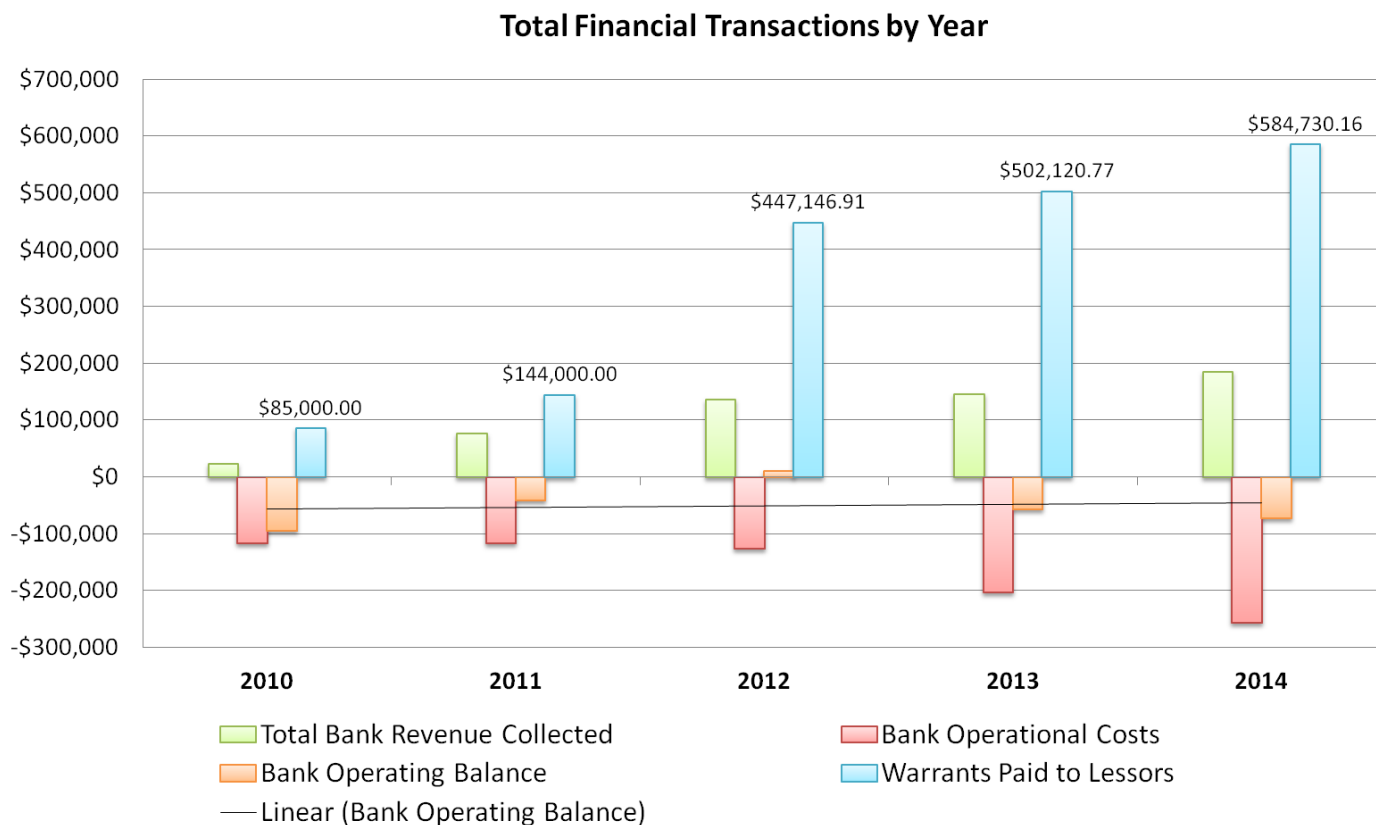
Annual Lease, Rental and Aggregate Bank Revenue

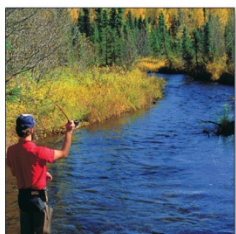




## Annual Report for 2014 for the Board's Water Supply Bank

**Increased payouts: more paid out in warrants in 2014 than ever before**

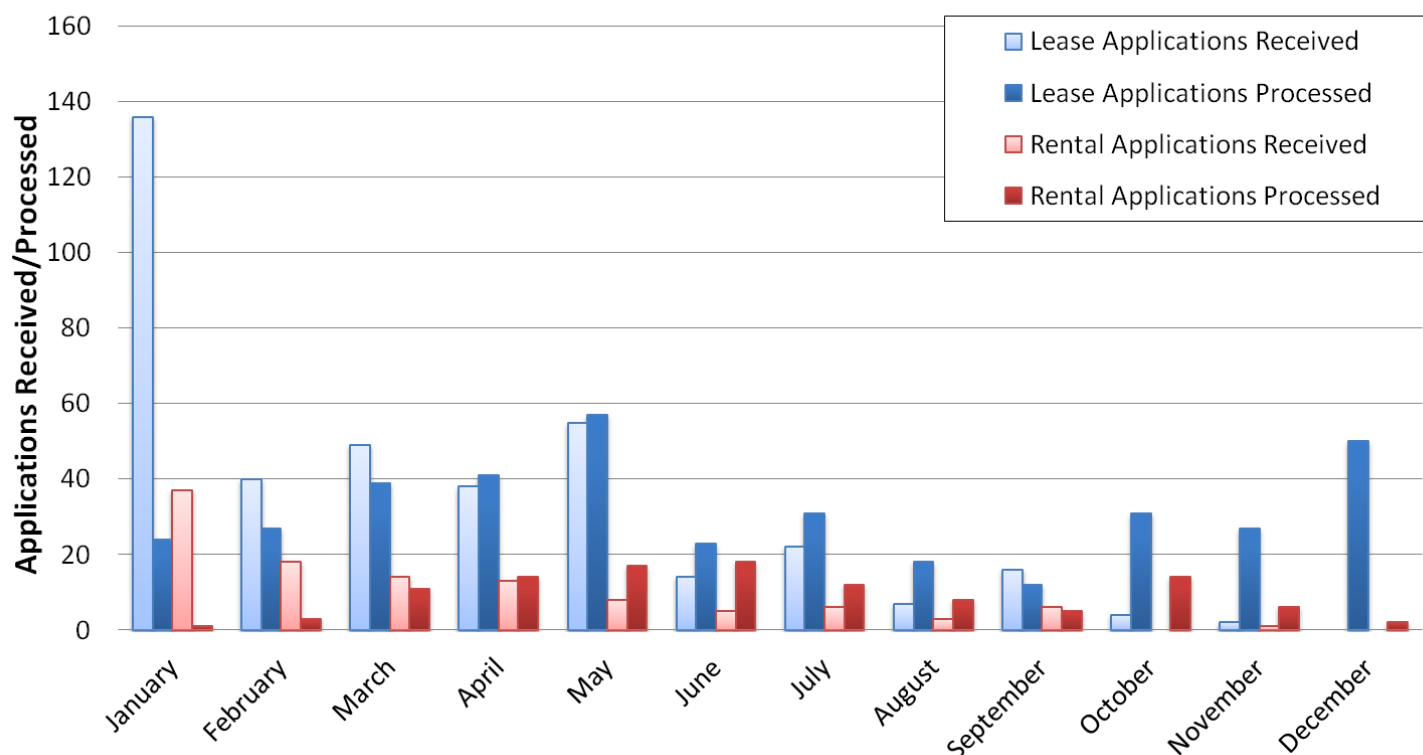


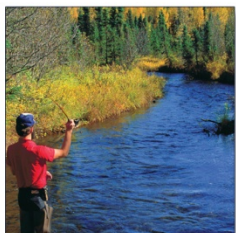


## Annual Report for 2014 for the Board's Water Supply Bank

**Improved processing: applications are being executed earlier in the year**

2014 Water Supply Bank Activity by Month

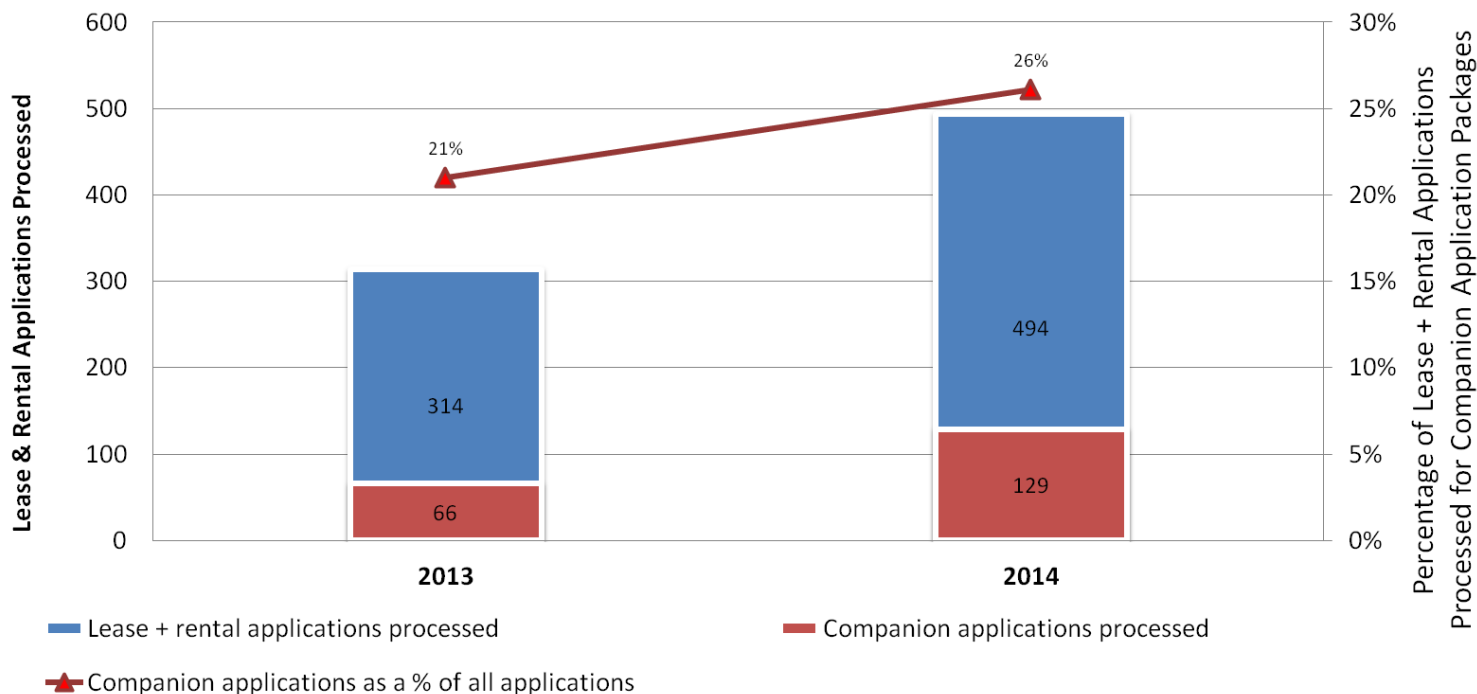


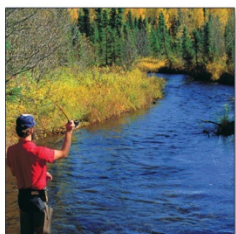


## Annual Report for 2014 for the Board's Water Supply Bank

**Increased complexity: companion lease/rental transactions are increasing**

Companion Applications as a share of Lease & Rental Applications

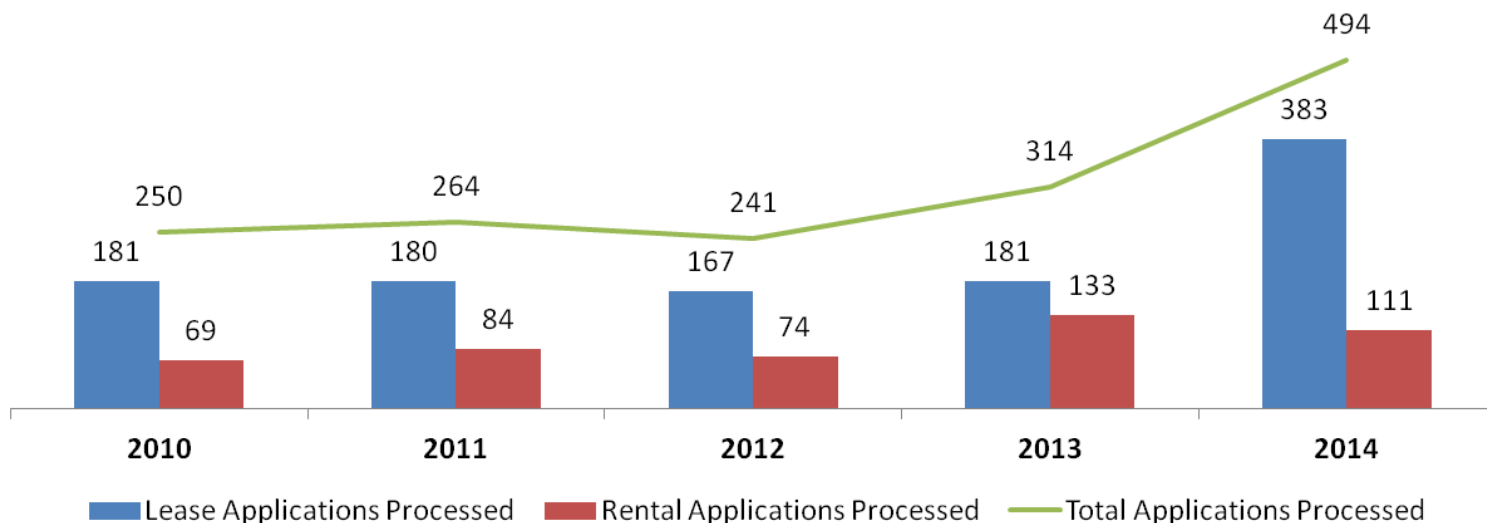


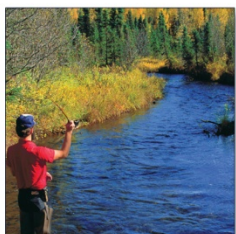


## Annual Report for 2014 for the Board's Water Supply Bank

**Increased productivity: companion applications drove up activity in 2014**

Applications Processed Annually

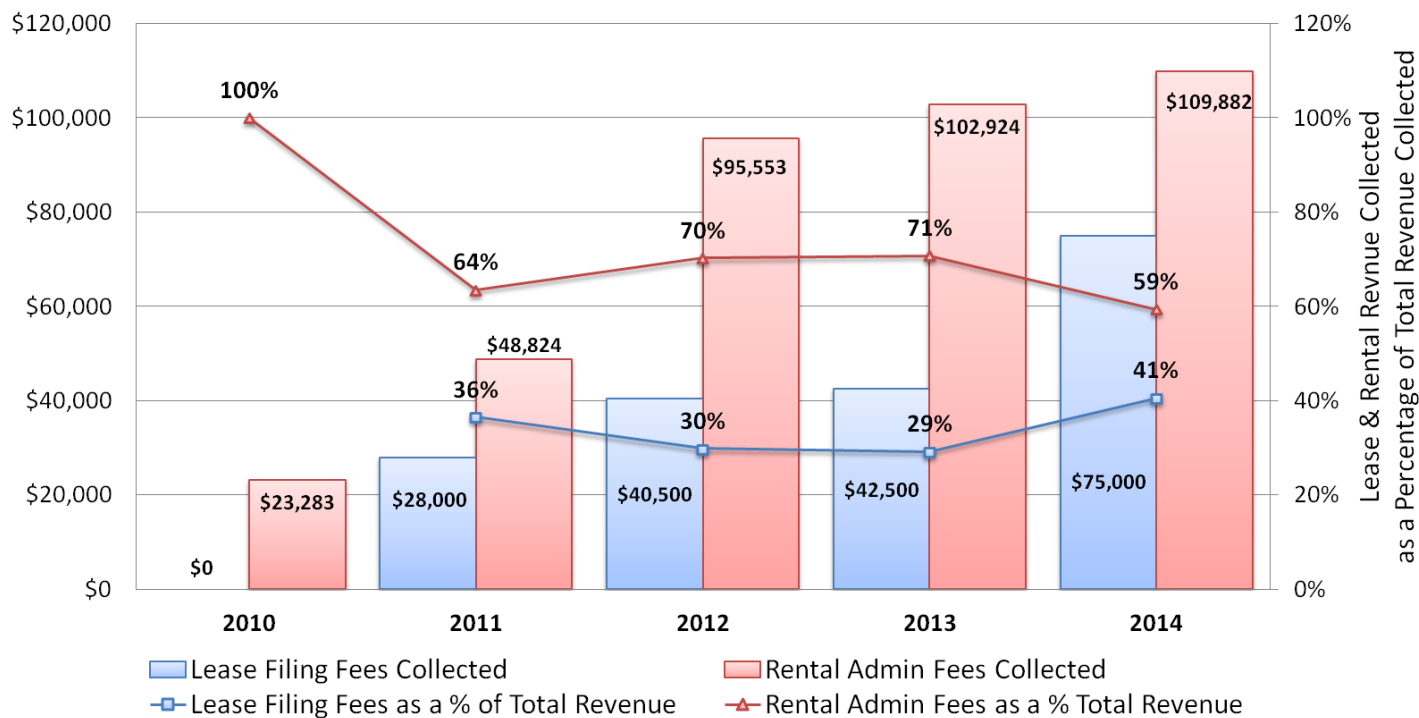


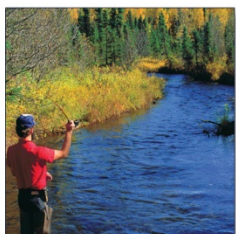


## Annual Report for 2014 for the Board's Water Supply Bank

**Increasing revenue being generated from lease applications**

Annual Lease & Rental Revenue Comparisons

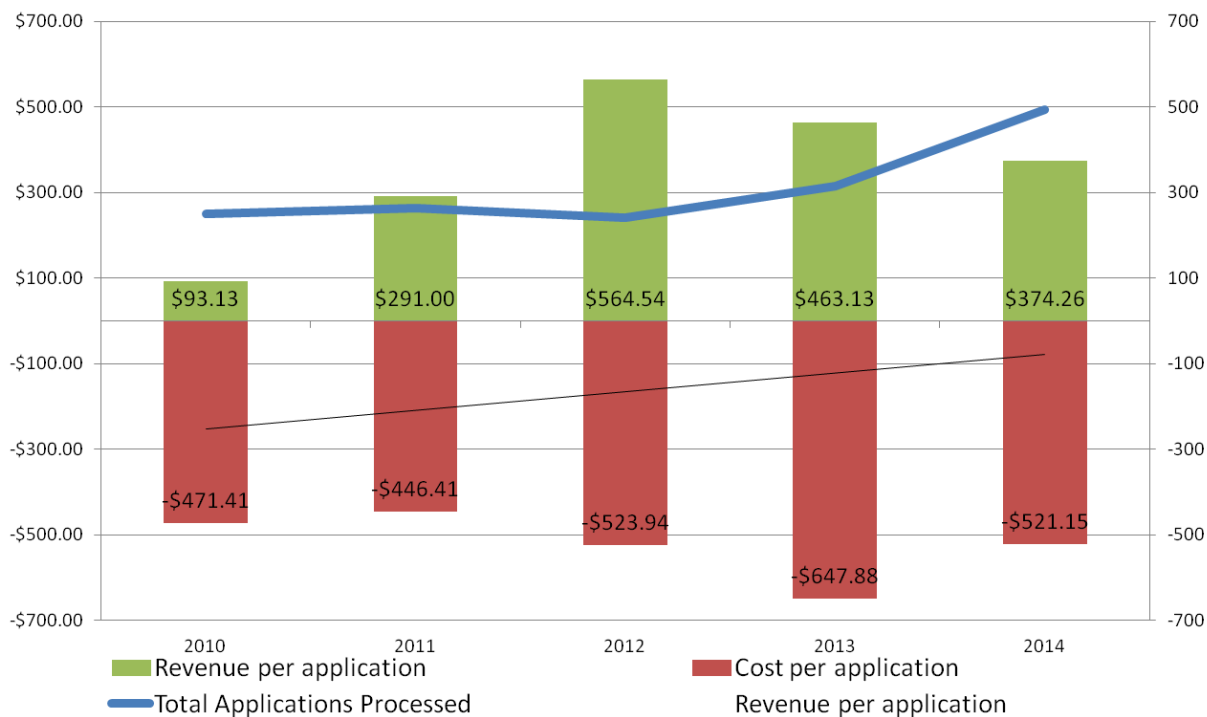


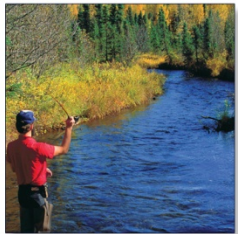


## Annual Report for 2014 for the Board's Water Supply Bank

**Revenue per application growing marginally faster than costs per application**

Change in cost and revenue per application processed 2010-2014





## Annual Report for 2014 for the Board's Water Supply Bank



# Memorandum

To: Idaho Water Resource Board  
From: Remington Buyer  
Date: March 11, 2015  
Re: 2014 Annual Report for the Board's Bank



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**Action Item:** None.

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The Board's Bank continued to grow in 2014, generating more revenue for the Bank than ever before, and resulting in the largest payout ever of rental fee warrants to water right holders. In total, one hundred and eighty-five thousand dollars of revenue was generated for the Bank and five hundred and eighty-five thousand dollars of rental fee warrants were paid out to water right holders. In addition to increasing revenues, the Board's Bank was successful in advancing the date for providing approvals for leases and rentals earlier in the year, pushing back the majority of approvals from summer into late spring.

In spite of the growth in revenue and advances in administrative activities, the Bank still fell short of breaking even in terms of operational expenses and there is still much work that can be done to improve future processing efficiencies.

The 2014 annual report of the Board's Bank is included with this briefing memo. A presentation on details from 2014 will be delivered to the Board by the Water Supply Bank Coordinator during the Board meeting on March 20<sup>th</sup>, 2014.



# **Water Supply Bank**

2014 Report for the Board's Water Supply Bank

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## Executive Summary

The Water Supply Bank is a water exchange market that enables natural flow water rights and storage allocations to be temporarily repurposed for beneficial uses. Regional rental pools broker exchanges of storage allocations while natural flow surface water and ground water rights are transacted through the Board's Bank. This report summarizes water right exchanges from 2014 through the Board's Bank.

Presently, 835 water rights are leased into the Board's Bank, representing approximately 250,000 acre feet of water on approximately 75,000 irrigable acres. These numbers are approximate because not all water rights leased into the Bank are for irrigation, and of those that are for irrigation, many natural flow surface water rights don't have a decreed or licensed volume, making a determination of an estimated leased volume difficult.

In spite of the difficulty involved in applying administrative and conditional limitations on the use of water authorized under a water right, both the popularity and performance of the Water Supply Bank continued to increase in 2014. More applications were processed in 2014 than ever before, resulting in higher revenue for both the Bank and water right holders; over half a million dollars was generated and paid out to water right holders who had water rights rented from the Bank in 2014.

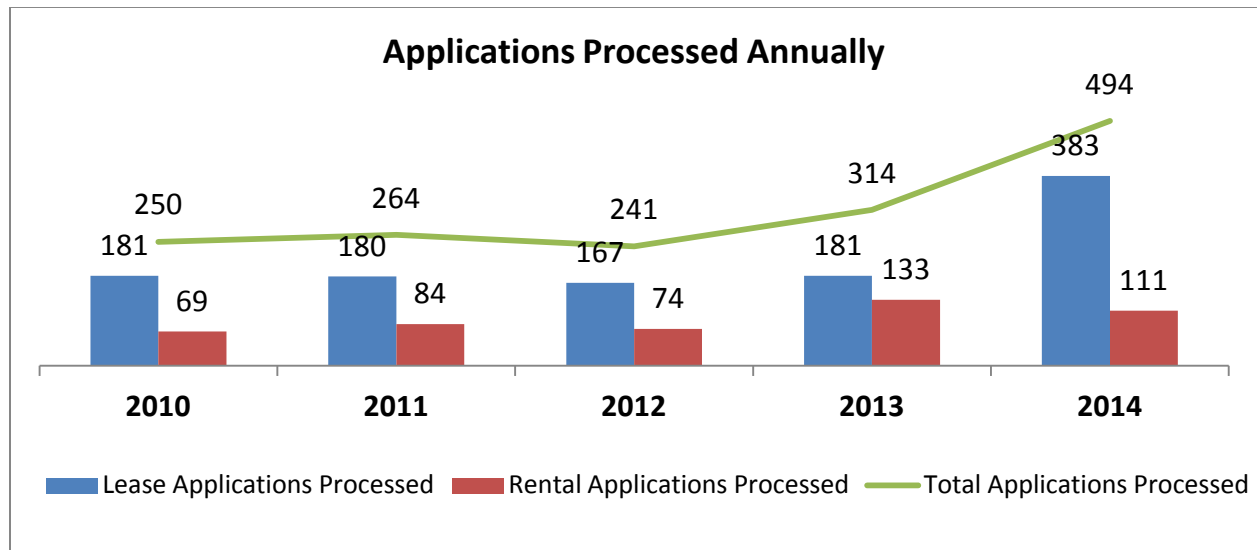
Improved administrative processing enabled the Board's Bank to process more lease and rental applications earlier in the year, resulting in more timely approval of applications. The Bank successfully cleared all rentals and almost all leases during December 2014, enabling the Bank to build on the momentum from 2014 and shift the processing of application approvals to early spring in 2015.

## 2014 Accomplishments

New lease proposal and rental request application forms were issued in 2014, resulting in better information gathering and faster application processing. Policy questions, provided to the staff of the Board's Bank through procedural guidance by the Idaho Water Resource Board, clarified how the Bank should consider rental requests for ground water rights in the Eastern Snake Plain Aquifer, as well as the Wood River Valley. Through more proactive data collection and clarity on how the Bank may consider the rental of ground water rights, the Bank is poised to further improve administration processing of applications in 2015.

## 2014 Activity Summary

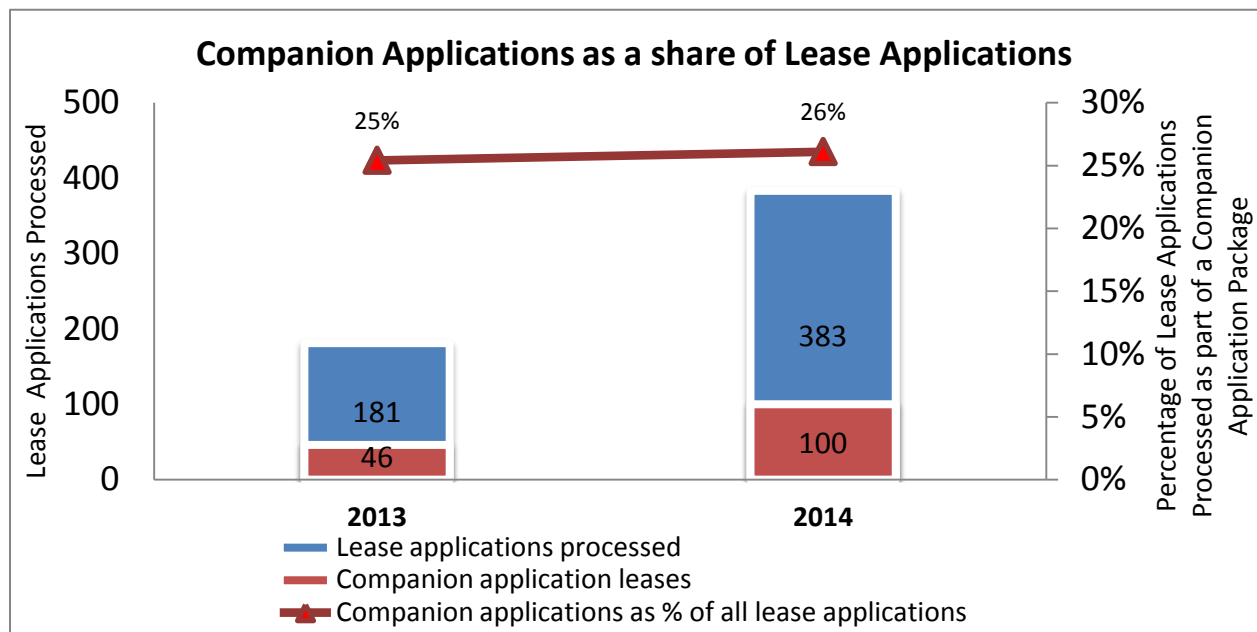
As evidenced by the graph below, the demand to lease water into the Bank continued to increase in 2014, even as the total number of rental requests remained steady. 180 more applications were processed in 2014 than in 2013, an increase of more than 50%.



*Chart 1. Total applications processed, 2010 - 2014*

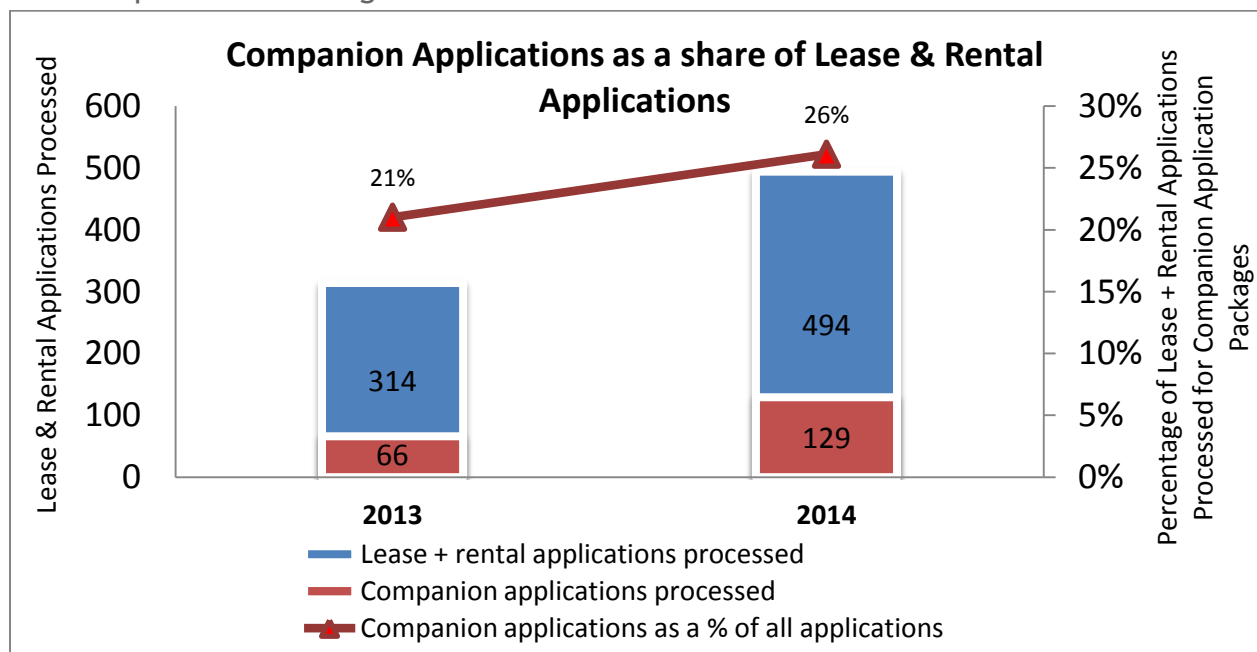
A notable reason for the marked increase in lease applications can be attributed to the rise in the number of companion applications processed by the Bank in 2014. Companion applications are combined lease-rental applications which are submitted together, affording an opportunity for lessors to specify a renter for their water rights. In 2014, 100 of the 383 water rights leased into the Water Supply Bank were leased in as part of a companion rental application package.

That approximately one in four lease proposals to the Water Supply Bank was submitted in conjunction with a rental application matches similar numbers witnessed in 2013. During 2013, 46 of 181 lease applications processed were submitted as part of a companion rental application. Thus, though largely steady, trends in 2014 indicate a growing number of leases being submitted to the Bank are for companion applications. The data is represented in chart 2.



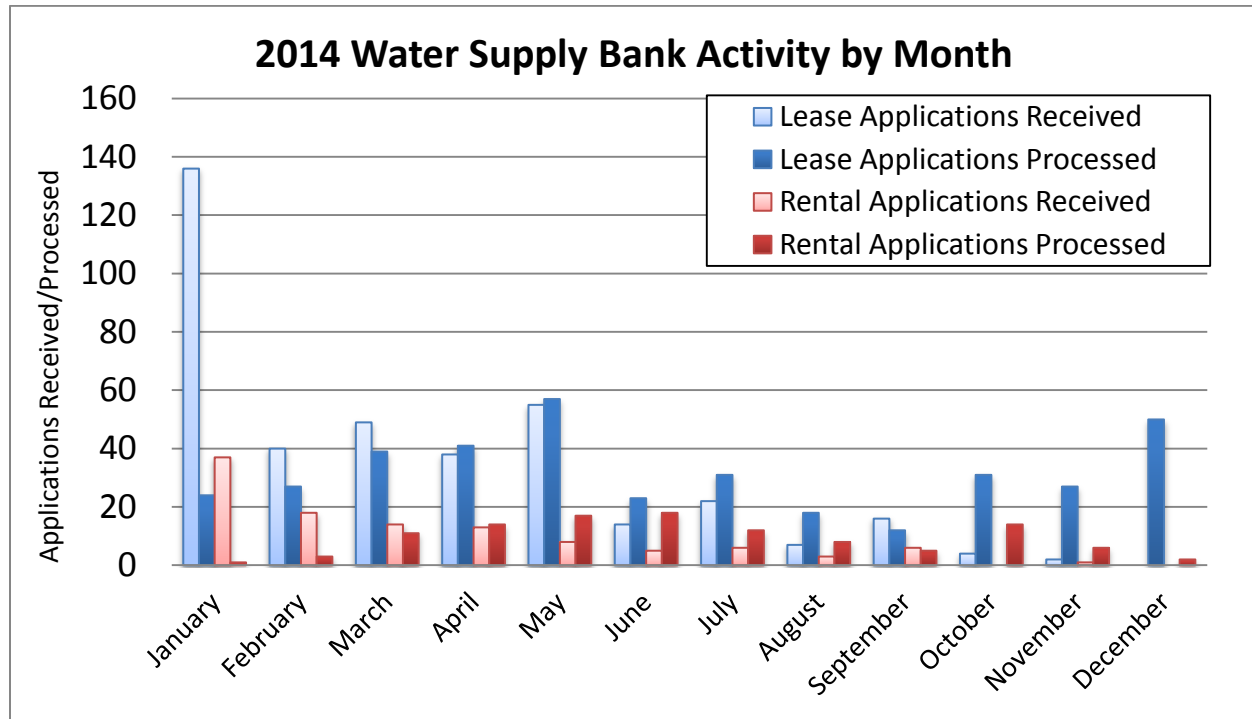
*Chart 2. Companion applications as a percentage of lease applications 2013 and 2014*

What is notable in comparing 2013 and 2014 companion applications is that while the number of lease applications processed in association with companion applications is increasing slowly, the number of companion applications being processed overall is increasing more quickly. Of all applications processed in 2013, just over one in five was a companion application, however this increased to one in four in 2014. Chart 3 below captures the changes in the data.



*Chart 3. Companion applications as a percentage of all applications 2013 and 2014*

In spite of the fact that the Board's Bank processed more water right applications than ever before, administrative staff were successful in processing the majority of applications earlier in the year. Whereas the greatest number of lease and rental applications successfully processed in 2013 occurred in early and mid summer, during June and July, the Bank successfully pushed the timeline back further into spring during 2014, processing the greatest number of leases in May, and a relatively equal number of rental applications in April, May and June.



*Chart 4. Companion applications as a percentage of lease applications 2013 and 2014*

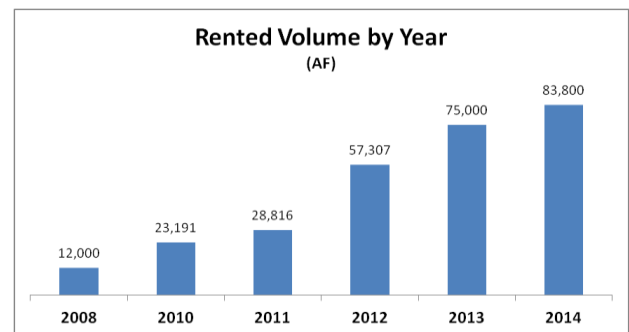
The above chart plots the number of applications received by month, as well as the number of applications processed monthly. The number of applications received in January is large because it includes all lease applications received during 2013 that were submitted for processing in 2014; Bank staff did not address 2014 applications until January 2014 so that they could instead focus on addressing all 2013 applications before the end of that year. The same trend can be witnessed above in the number of lease applications processed during December 2014.

What is notable from the chart above is that the number of rental applications received monthly surged during the winter and stayed strong through the spring and summer before dropping off in the fall. In anticipation of a similar trend in 2015, the Bank is poised to further push processing of lease and rental approvals into early spring, with the goal of processing a majority of rental requests by early summer. Applications processing data are available in table 1.

Month	Lease Applications Received	Lease Applications Pending	Lease Applications Processed	Rental Applications Received	Rental Applications Pending	Rental Applications Processed	Total Applications Received	Total Applications Processed	Lease App Percentage Processed	Rental App Percentage Processed
January	136	136	24	37	37	1	173	25	96%	4%
February	40	152	27	18	54	3	206	30	90%	10%
March	49	174	39	14	65	11	239	50	78%	22%
April	38	173	41	13	67	14	240	55	75%	25%
May	55	187	57	8	61	17	248	74	77%	23%
June	14	144	23	5	49	18	193	41	56%	44%
July	22	143	31	6	37	12	180	43	72%	28%
August	7	119	18	3	28	8	147	26	69%	31%
September	16	117	12	6	26	5	143	17	71%	29%
October	4	109	31	0	21	14	130	45	69%	31%
November	2	80	27	1	8	6	88	33	82%	18%
December	0	53	50	0	2	2	55	52	96%	4%
Sum	383	3	380	111	0	111	3	491	77%	23%

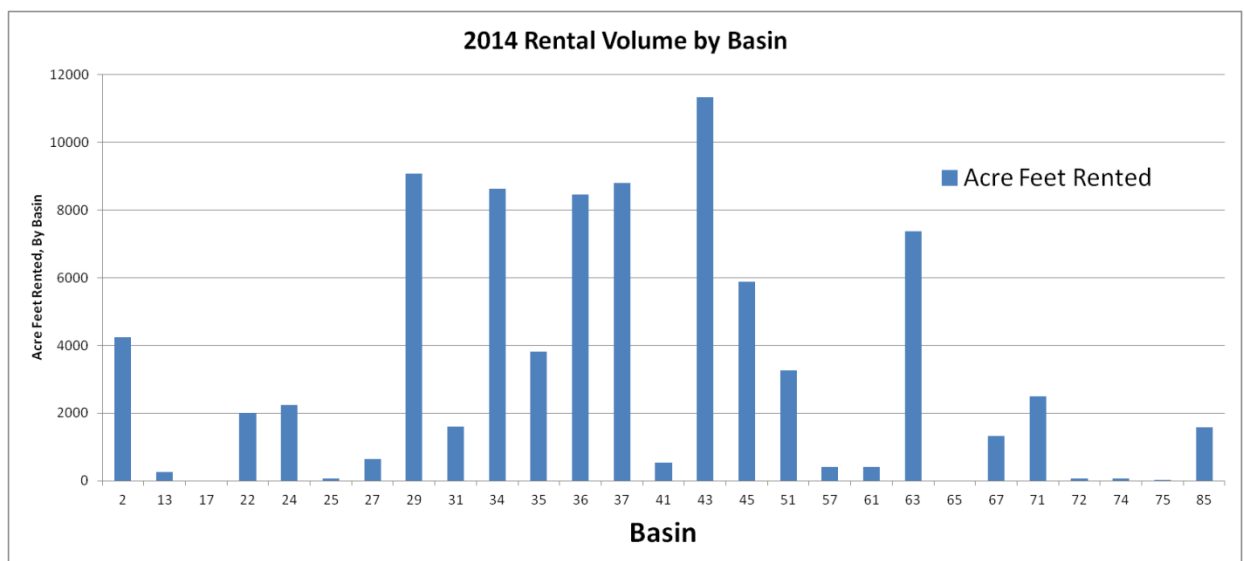
**Table 1. Applications processed in 2014**

Though the total number of water right leases was vastly larger than the number of rental requests received in 2014, the volume of water rented from the Bank remained strong. Rental fees were levied on more than 80,000 acre feet of water in 2014.



**Chart 5. Annual rental volumes**

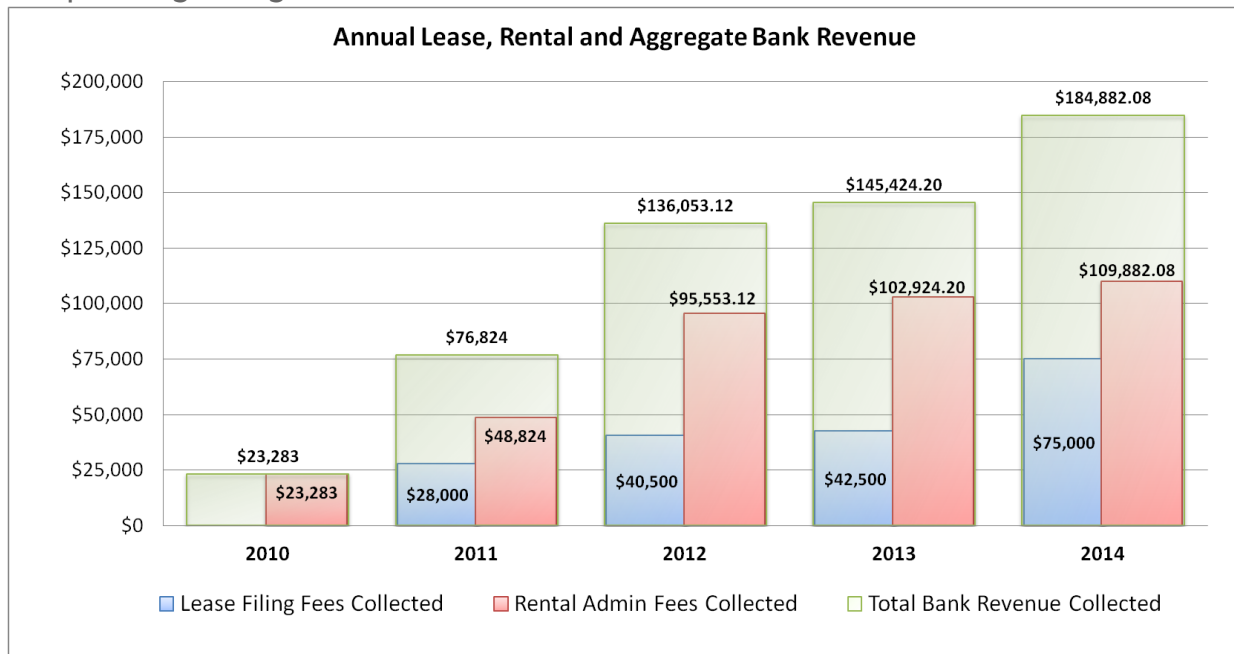
The lion's share of water rented from the Bank in 2014 occurred in a handful of basins, the six most active being: Basins 29 (Blackfoot River), 34 (Big Lost River), 36 (Magic Valley, ESPA), 37 (Big/Little Wood Rivers) 43 (Raft River) and 63 (Boise River).



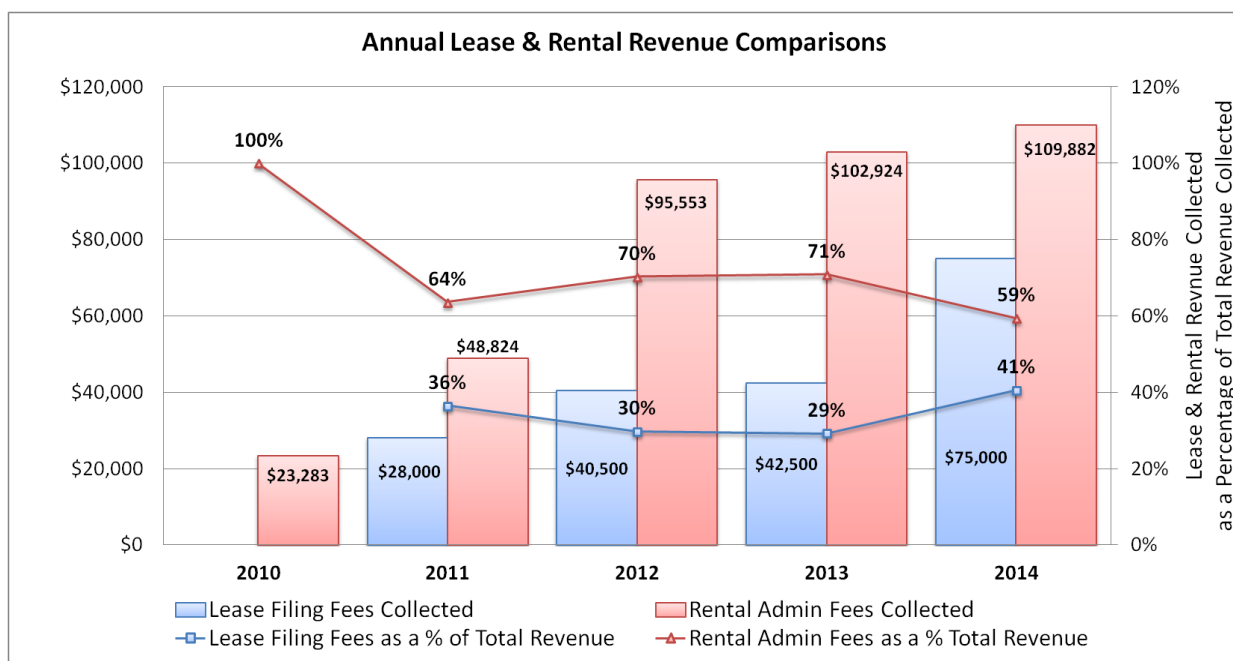
**Chart 6. Annual rental volumes, by Basin**

## 2014 Financial Summary

The fiscal health of the Board's Bank continued to improve in 2014, though it still fell short of breaking even or generating revenue. One hundred and eighty-five thousand dollars were generated last year, primarily through rental administrative fees, but as evidenced by charts seven and eight below, lease application filing fees continue to comprise a growing source of revenue for the Board's Bank.

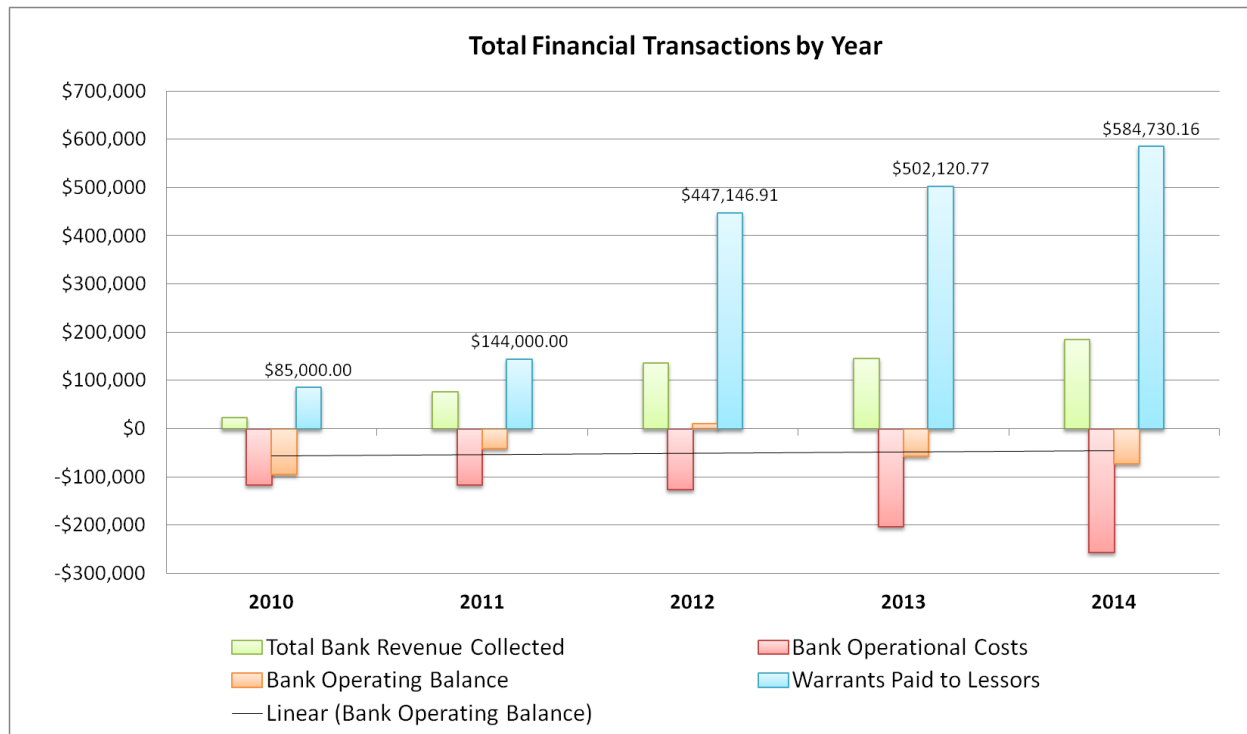


**Chart 7. Annual revenue from lease application filing fees and rental admin fees**



**Chart 8. Annual revenue from leases and rentals as a percentage of total revenue**

Bank revenue increased in 2014, as did the total revenue generated and paid out to water right holders. Five hundred and eighty-five thousand dollars were paid out to water right holders who had water rights rented through the Bank in 2014, the largest payout for water right rentals ever.



**Chart 9. Bank revenue, operational costs and warrant payouts to water right holders**

The 2014 operational expenses for the Bank, comprised of salary and operational expenditures, amounted to \$257,445.76. Accounting for Bank revenue of \$184,882.08, the operational balance of the Board's Bank was negative \$72,563.57. Though this is a significant sum, the trend over past five years shows that revenue is increasing faster than expenditures, resulting in an improving operational balance. The Bank anticipates that operational expenditures will continue toward positive health in 2015. Detailed financial information is provided in table 2 below.

Year	Rental Fees Collected	Rental Admin Fees Collected	Lease Filing Fees Collected	Total Bank Revenue Collected	Warrants Paid to Lessors	Bank Operational Costs	Bank Operating Balance
2010	\$108,283.00	\$23,283	\$0	\$23,283	\$85,000.00	-\$117,852.00	-\$94,569.00
2011	\$192,824.00	\$48,824	\$28,000	\$76,824	\$144,000.00	-\$117,852.00	-\$41,028.00
2012	\$542,700.03	\$95,553.12	\$40,500	\$136,053.12	\$447,146.91	-\$126,270.00	\$9,783.12
2013	\$605,044.97	\$102,924.20	\$42,500	\$145,424.20	\$502,120.77	-\$203,435.00	-\$58,010.80
2014	\$694,612.24	\$109,882.08	\$75,000	\$184,882.08	\$584,730.16	-\$257,445.65	-\$72,563.57

**Table 2. Bank revenue, expenditures, operating balance and warrant payouts**

# Memorandum



To: Idaho Water Resource Board  
From: Morgan Case  
Date: March 20, 2015  
Re: Water Transactions Program – 2015-2017 Morgan Creek Transaction

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The 2004 Snake River Water Rights (“Nez Perce”) Agreement commits the state to providing incentives for improving fish habitat which includes improving or protecting flow conditions to augment stream flows. Morgan Creek, a tributary to the Salmon River near Challis, is important for the spawning, migration and rearing of ESA-listed steelhead and bull trout. It also supports the rearing of ESA-listed juvenile Chinook salmon. Morgan Creek typically becomes dewatered below the lowest two diversions (SMC 2-4 and SMC 1) during the irrigation season, blocking access to those fish species. For the past nine years, the IWRB has held agreements not to divert with the two water users on those diversions from Morgan Creek. Rather than divert from Morgan Creek, they left at least 2 cfs in the creek during the low flow periods to maintain adequate flows in Morgan Creek to the confluence with the Salmon River. The water was instead pumped out of a Salmon River ditch that carries existing Salmon River water rights appurtenant to the same ground. In return, the irrigators were compensated based on the cost of pumping water from the Salmon River ditch.

While the agreements have sustained a minimum flow over the past 9 years, the approach to flow restoration over that time has changed. Instead of addressing only flow limitations, Board staff works with Upper Salmon Basin partners to develop transactions that can complement projects addressing all limiting factors, while maintaining the local economy. Morgan Creek has been on a back burner the last 5 years, while work has focused on the Lemhi and Pahsimeroi River Basins. Staff proposes taking a fresh look at the opportunity for meaningful flow restoration in Morgan Creek over the next 3 years. In the mean time, it is important to secure the gains that have already been made.

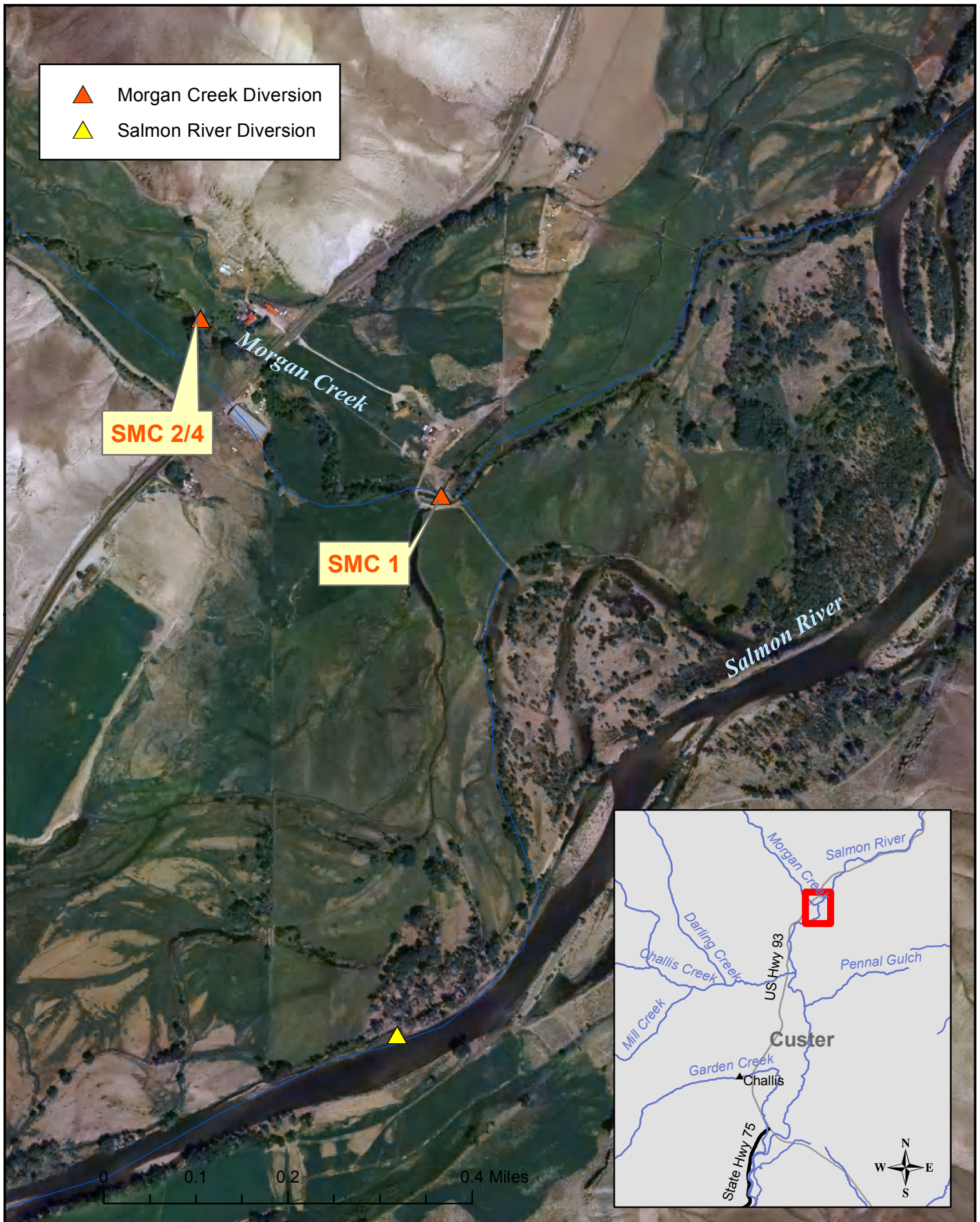
The water users have expressed a willingness to develop another long-term flow restoration transaction and have agreed to enter into a three-year agreement not to divert while those discussions are underway. The proposed one-year agreement would be an extension of the same terms and pricing structure of the previous 5-year agreement. The Morgan Creek water users will be compensated only when they are required to pump to maintain the 2 cfs flow. The maximum payment is based upon an annual five percent increase from the 2014 payment, with the total not to exceed \$26,467.76.

On March 13, 2015, the IWRB Streamflow Enhancement and Minimum Streamflow Committee reviewed this transaction and will make a recommendation to the full Board.

## **Action Item:**

Consideration of the attached funding resolution for \$26,467.76 to enter into a three-year minimum flow agreement to maintain 2 cfs in Morgan Creek, tributary to the Salmon River. Funds will come through the Columbia Basin Water Transactions Program.

# Morgan Creek 2015-2017 Water Transaction



BEFORE THE IDAHO WATER RESOURCE BOARD

IN THE MATTER OF THE )  
2015-17 MORGAN CREEK WATER )  
TRANSACTION CONTRACTS )  
\_\_\_\_\_ )

A RESOLUTION TO MAKE  
A FUNDING COMMITMENT

WHEREAS, steelhead, bull trout, and juvenile Chinook salmon habitat in Morgan Creek is limited by low flow in the lower reaches of Morgan Creek; and

WHEREAS, Morgan Creek provides steelhead, bull trout, and juvenile Chinook salmon habitat and the 2004 Snake River Water Rights (“Nez Perce”) Agreement commits the state to providing incentives for improving fish habitat which includes improving or protecting flow conditions to augment stream flows; and

WHEREAS, it is in the interest of the State of Idaho to reconnect Morgan Creek to encourage recovery of ESA-listed steelhead, bull trout, and Chinook Salmon; and

WHEREAS, staff has developed a series of agreements not to divert water from Morgan Creek at the SMC-2/4 and SMC-1 diversions to improve stream flow for anadromous and resident fish; and

WHEREAS, staff has now negotiated three-year agreements with the Morgan Creek water users not to divert water at the SMC2/4 and SMC 1 diversions; and

WHEREAS, a proposal for \$26,467.76 has been submitted to the Columbia Basin Water Transactions Program to be used to fund said agreements; and

WHEREAS, instead of diverting from Morgan Creek, the water users have agreed to pump from Salmon River sources that are not flow-limited and the funds paid under these agreements will approximate the power expenses incurred, by changing the points of diversion; and

WHEREAS, the Morgan Creek transactions are in the public interest and in compliance with the State Water Plan.

NOW THEREFORE BE IT RESOLVED that the IWRB authorizes the Chairman to enter into contracts with Ronald Jones and Donna Hughes, or their successors, for agreements not to divert out of Morgan Creek using an amount not to exceed \$26,467.76.

NOW THEREFORE BE IT FURTHER RESOLVED that this resolution is subject to the condition that the IWRB receives the requested funding from the Bonneville Power Administration through the Columbia Basin Water Transaction Program in the amount of \$26,467.76.

DATED this 20th day of March 2015.

\_\_\_\_\_  
ROGER CHASE, Chairman  
Idaho Water Resource Board

ATTEST: \_\_\_\_\_  
VINCE ALBERDI, Secretary

# Memorandum



To: Idaho Water Resource Board  
From: Morgan Case  
Date: March 20, 2015  
Re: Water Transactions Program – 2015 Bohannon Creek

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Bohannon Creek is a Lower Lemhi River tributary with ideal habitat for spawning and rearing Chinook salmon and steelhead that is seasonally dewatered due to irrigation withdrawals. The 2004 Snake River Water Rights ("Nez Perce") Agreement commits the state to provide incentives for improving fish habitat which includes improving or protecting flow conditions to augment stream flows.

During the early portion of the irrigation season, Bohannon Creek typically becomes dewatered below the lowest diversion, Bohannon Creek 3 (BHC3), potentially blocking fish passage and placing fertilized steelhead eggs (redds) at risk of drying up during the critical incubation period. Last spring, Idaho Department of Fish and Game staff observed steelhead redds (spawning nests) in Bohannon Creek, the majority of which were downstream of BHC3. The BHC3 diversion was not on at the time, but the water users were planning to turn on, potentially dewatering the stream and drying up the incubating eggs.

In order to prevent that from occurring, Idaho Department of Fish and Game (IDFG), IWRB staff, and the Governor's Office of Species Conservation (OSC) worked with Bohannon Creek irrigators to maintain flows in the lower reaches. IDFG and OSC repaired an underperforming pump that diverts Lemhi River water to the same ground that BHC3 irrigates. IWRB staff also developed a one-year transaction to compensate water users for spilling up to 2 cfs in lower Bohannon Creek through participation in the Idaho Water Transaction Program. Maintaining a target flow of 2 cubic feet per second below the Bohannon Creek 3 facilitated the incubation of steelhead eggs in the lowest reach of Bohannon Creek.

The long-term plan to address flow limitations on lower Bohannon Creek is to eliminate the BHC3 diversion and have the water users divert from a Lemhi River ditch. IDFG has secured funding to make the infrastructure changes to accomplish the source switch, and NRCS engineers are working on the irrigation system design. In order to prevent steelhead redd dewatering in the interim, staff proposes another set of agreements to maintain a minimum flow of 2 cfs below the BHC3 diversion from April 1 to June 30, 2015. Compensation would be \$80.65/24-hr cfs, the same rate the IWRB currently pays for subordination to the Lemhi River minimum stream flow water right. The compensation would cover the Lemhi River pumping costs and some loss in production. The total compensation would not exceed \$14,668.

The transaction would also require the Watermaster of Water District 74C to visit the BHC3 diversion daily during that period, which is above and beyond his typical watermaster duties. The Water District has requested \$600 to compensate the watermaster for his additional duties.

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## **Action Item:**

Consideration of the attached funding resolution for \$15,268 to enter into two one-year minimum flow agreements to reconnect Bohannon Creek, tributary to the Lemhi River with Dale Jolley and Eagle Valley Ranch LLC. Funds will come through the Idaho Fish Accord Water Transactions Program.

BEFORE THE IDAHO WATER RESOURCE BOARD

IN THE MATTER OF THE )  
2015 BOHANNON CREEK )  
WATER TRANSACTION )  
CONTRACT )

A RESOLUTION TO MAKE  
A FUNDING COMMITMENT

WHEREAS, steelhead and juvenile Chinook salmon habitat in Bohannon Creek is limited by low flow in the lower reaches of Bohannon Creek; and

WHEREAS, Bohannon Creek provides steelhead and juvenile Chinook salmon habitat and the 2004 Snake River Water Rights ("Nez Perce") Agreement commits the state to providing incentives for improving fish habitat which includes improving or protecting flow conditions to augment stream flows; and

WHEREAS, it is in the interest of the State of Idaho to protect flows in Bohannon Creek to encourage recovery of ESA-listed steelhead and Chinook Salmon; and

WHEREAS, staff has now negotiated a short-term agreement with the Bohannon Creek water users not to divert water at the BC3 diversion to maintain target flows of 2 cubic feet per second and facilitate the incubation of steelhead eggs; and

WHEREAS, administration of the short-term agreements has increased the burden on the watermaster of WD 74C; and

WHEREAS, a request for \$600 has been submitted to the Idaho Fish Accord Water Transaction Program to be used to compensate Water District 74C for the increased administrative duties; and

WHEREAS, a proposal for \$15,268 has been submitted to the Idaho Fish Accord Water Transactions Program to be used to fund said agreements; and

WHEREAS, the Bohannon Creek transactions are in the public interest and in compliance with the State Water Plan.

NOW THEREFORE BE IT RESOLVED that the IWRB authorizes the Chairman to enter into contracts with E Dale Jolley and Eagle Valley Ranch LLC, or their successors, for agreements not to divert out of Bohannon Creek using an amount not to exceed \$14,668 (\$7,334 per party.)

NOW THEREFORE BE IT RESOLVED that the IWRB authorizes the Chairman to enter into contract with Water District 74C for administration of agreements not to divert out of Bohannon Creek using an amount not to exceed \$600.

NOW THEREFORE BE IT FURTHER RESOLVED that this resolution is subject to the condition that the IWRB receives the requested funding from the Bonneville Power Administration through the Idaho Fish Accord Water Transaction Program in an amount of up to \$15,268.

DATED this 20th day of March 2015.

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ROGER CHASE, Chairman  
Idaho Water Resource Board

ATTEST: \_\_\_\_\_  
VINCE ALBERDI, Secretary

# Memorandum



To: IWRB - Streamflow Enhancement and Minimum Streamflow Committee

From: Morgan Case

Date: March 13, 2015

Re: Water Transactions Program – Bohannon Creek Long Term

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Bohannon Creek is a Lower Lemhi River tributary with ideal habitat for spawning and rearing Chinook salmon and steelhead that is seasonally dewatered due to irrigation withdrawals. The 2004 Snake River Water Rights (“Nez Perce”) Agreement commits the state to provide incentives for improving fish habitat which includes improving or protecting flow conditions to augment stream flows. The State has also committed to the reconnection of 10 Lemhi River tributaries. The following transaction would result in a tributary reconnect of Bohannon Creek.

During the early portion of the irrigation season, Bohannon Creek typically becomes dewatered below the lowest diversion, Bohannon Creek 3 (BHC3), potentially blocking fish passage and placing fertilized steelhead eggs (redds) at risk of drying up during the critical incubation period. Last spring, Idaho Department of Fish and Game (IDFG) staff observed steelhead redds (spawning nests) in Bohannon Creek, the majority of which were downstream of BHC3. The BHC3 diversion was not on at the time, but the water users were planning to turn on, potentially dewatering the stream and drying up the incubating eggs.

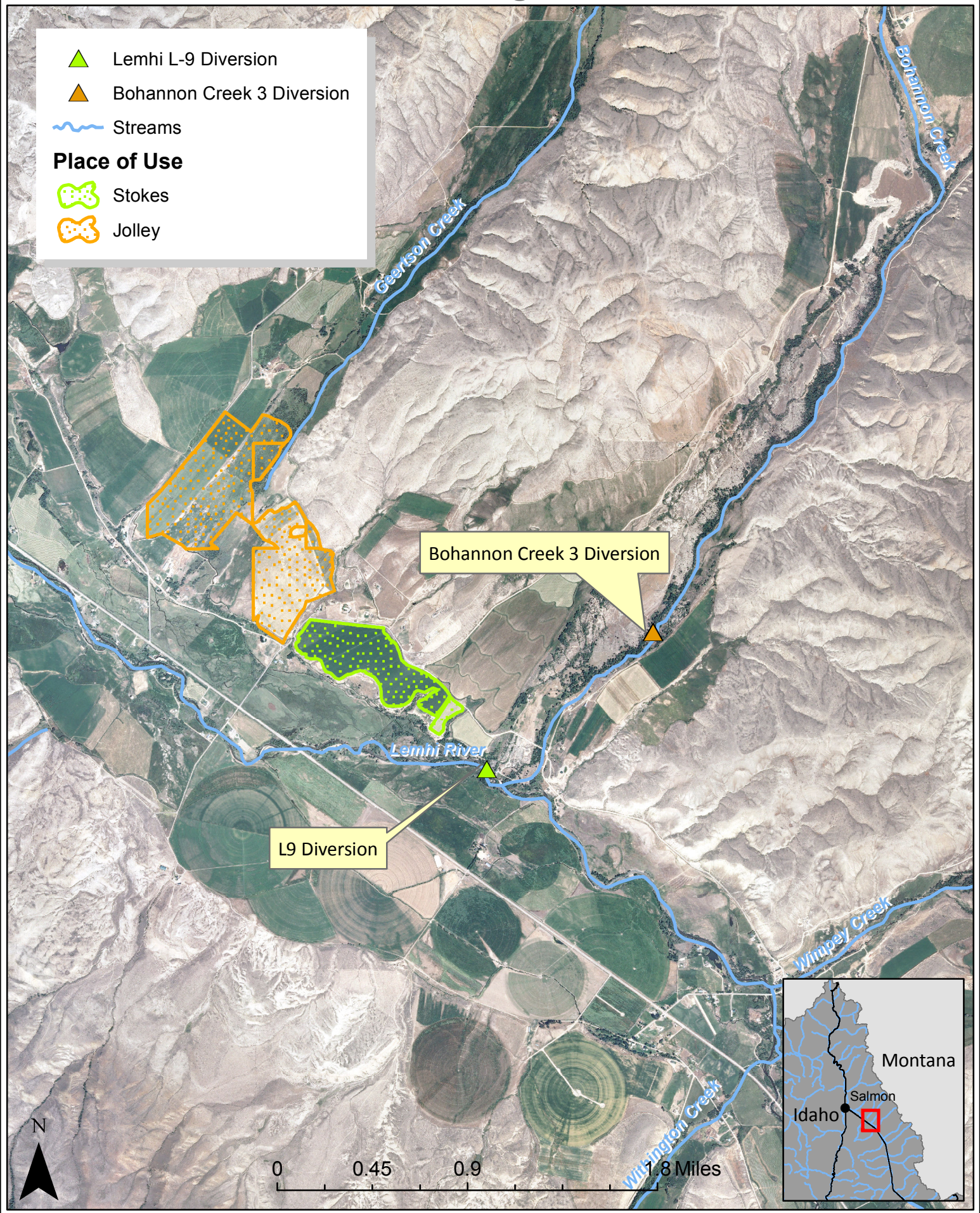
The Board negotiated a minimum flow agreement with BHC3 water users in 2014 to protect the incubating eggs. Another one-year agreement for 2015 to maintain 2 cfs has been negotiated and may be approved by the Board at the March meeting.

The long-term plan to address flow limitations on lower Bohannon Creek is to eliminate the BHC3 diversion and have the water users divert from a Lemhi River ditch. Moving the point of diversion would increase flows in lower Bohannon Creek by up to 12 cfs. IDFG has secured funding to make the infrastructure changes to accomplish the source switch, and NRCS engineers completed the irrigation system design. Board staff calculated pumping cost estimates for Dale Jolley and Betty Stokes with a five percent annual increase for increased power rates to cover twenty-year agreements not to divert. The total transaction cost for conversion of the BHC3 diversion to the Lemhi River is \$1,023,177.34. Funding for the project is available from the Idaho Fish Accord Water Transactions Program.

## **Action Item:**

Consideration of the attached funding resolution for \$1,023,177.34 to enter into two twenty-year agreements not to divert from the Bohannon Creek 3 diversion to reconnect Bohannon Creek, tributary to the Lemhi River with Dale Jolley and Betty Stokes. Funds will come through the Idaho Fish Accord Water Transactions Program.

# Bohannon Creek Long Term Transaction



BEFORE THE IDAHO WATER RESOURCE BOARD

IN THE MATTER OF THE BOHANNON )  
CREEK WATER TRANSACTIONS )  
\_\_\_\_\_)

A RESOLUTION TO MAKE  
A FUNDING COMMITMENT

WHEREAS, Chinook salmon and steelhead habitat in the Bohannon Creek basin is limited by seasonally disconnected stream reaches; and

WHEREAS, Bohannon Creek has been identified as a high priority stream for flow restoration efforts, to provide high quality habitat for anadromous Chinook salmon and steelhead and resident bull trout, and the 2004 Snake River Water Rights Agreement (Also known as the Nez Perce Agreement) commits the state to providing incentives for improving fish habitat, which includes improving or protecting flow conditions to augment stream flows, and

WHEREAS, it is in the interest of the State of Idaho to reconnect of Bohannon Creek to encourage recovery of ESA-listed Chinook salmon, steelhead, and bull trout; and

WHEREAS, staff has developed two twenty-year agreements not to divert up to 12 cfs of water from the Bohannon Creek 3 Diversion to reconnect stream flow for anadromous and resident fish; and

WHEREAS, the water users will change the point of diversion to divert from the Lemhi River and the funds paid under the agreement will approximate the power expenses incurred, over a 20-year period, by changing the points of diversion; and

WHEREAS, funds are available from the Bonneville Power Administration through the Idaho Fish Accord Water Transaction Program; and

WHEREAS, staff anticipates the funds being placed into the Idaho Water Resource Board (IWRB) Revolving Development Account for annual payment to the water right owners; and

WHEREAS, the Bohannon Creek transactions are in the public interest and consistent with the State Water Plan.

NOW THEREFORE BE IT RESOLVED that the IWRB authorizes the Chairman to enter into contracts with Dale Jolley and Betty Stokes or subsequent owners for agreements not to divert out of the Bohannon Creek 3 diversion in the amount of one million twenty-three thousand one hundred seventy-seven dollars and thirty-four cents (\$1,023,177.34) over a twenty-year period.

NOW THEREFORE BE IT FURTHER RESOLVED that this resolution is subject to the condition that the IWRB receives the requested funding from the Bonneville Power Administration through the Idaho Fish Accord Water Transaction Program in the amount of one million twenty-three thousand one hundred seventy-seven dollars and thirty-four cents

(\$1,023,177.34).

DATED this the 20th day of March, 2015.

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ROGER CHASE, Chairman  
Idaho Water Resource Board

ATTEST: \_\_\_\_\_

VINCE ALBERDI, Secretary

# Memorandum



To: Idaho Water Resource Board  
From: Morgan Case  
Date: March 20, 2015  
Re: Water Transactions Program – 2015-2017 Rental Hat Creek

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The 2004 Snake River Water Rights (“Nez Perce”) Agreement commits the state to providing incentives for improving fish habitat which includes improving or protecting flow conditions to augment stream flows. The Hat Creek Basin supports the spawning, migration and rearing of ESA-listed resident bull trout. Big Hat Creek, a tributary of Hat Creek, and Hat Creek provide thermal refuge and rearing habitat for juvenile bull trout. The only diversion on Big Hat Creek can dewater the stream, thereby blocking the movement of bull trout and decreasing rearing habitat. The lower section of Hat Creek provides thermal refuge for adult Chinook salmon, and flows left instream from the higher, colder reaches of the Hat Creek basin may provide the necessary cooler temperatures for Chinook spawning habitat.

Erik Storlie and Tamara Kaiser have the only water rights from Big Hat Creek (75-2137 and 75-4199 - 1.23 cfs irrigating 43.6 acres). From 2004 to 2008, the Board rented 0.52 cfs from the Storlie-Kaisers for delivery to a minimum stream flow downstream for \$1850 or \$71.15 per acre. In 2009, the irrigators leased their water rights into the Idaho Water Supply Bank for an indefinite period of time. In 2010, the Board passed a resolution to make a funding commitment to cover the fees associated with a five year rental of Water Rights Nos. 72-2137 and 72-4199 for delivery to minimum stream flow on Hat Creek, but declined to approve funding for water right owner compensation.

The Storlie-Kaisers want to continue to keep their water instream and would like to lease an additional water right (Hat Creek 75-4200 - 1.28 cfs irrigating 24.7 acres) to the Idaho Water Supply Bank for delivery to a minimum stream flow downstream. The water right owners are interested in more long-term options, so staff is exploring the possibility of a purchase or long-term rental of all three water rights (75-2137, 75-4199, and 75-4200), with the exception of the portion used to water 4.6 acres near their cabin. While the risk of resumption of use is small if the rights are only rented from the current owners, a change in property ownership could result in resumption of use. A purchase would permanently protect the flows in Big Hat Creek and Hat Creek and potentially affect the value of the property.

At the September 2014 Board meeting, the Board instructed staff to pursue funding for an appraisal to purchase the Big Hat and Hat Creek water rights. Funding is not currently available from the Columbia Basin Water Transactions Program (CBWTP), but it may be available in FY 2016 or FY 2017. In the interim, the water right owners have agreed to donate the water rights to the board from rental to the Hat Creek minimum stream flow. Funding is available through the CBWTP to cover three years of lease application and rental fees. Total transaction costs would be \$1887.05.

## **Action Item:**

Consideration of the attached funding resolution for \$1,887.05 to enter into a three-year lease/rental agreement for water rights from Big Hat Creek and Hat Creek, tributary to the Salmon River. Funds will come through the Columbia Basin Water Transactions Program.

BEFORE THE IDAHO WATER RESOURCE BOARD

IN THE MATTER OF THE	)	A RESOLUTION TO MAKE
2015-17 HAT CREEK WATER	)	A FUNDING COMMITMENT
TRANSACTION CONTRACTS	)	
_____	)	

WHEREAS, bull trout and juvenile Chinook salmon habitat in Hat Creek is limited by low flow in the lower reaches of Morgan Creek; and

WHEREAS, Hat Creek provides bull trout and juvenile Chinook salmon habitat and the 2004 Snake River Water Rights (“Nez Perce”) Agreement commits the state to providing incentives for improving fish habitat which includes improving or protecting flow conditions to augment stream flows; and

WHEREAS, it is in the interest of the State of Idaho to increase flow in Hat Creek to encourage recovery of ESA-listed bull trout and Chinook Salmon; and

WHEREAS, staff has developed a 3-year lease/rental agreement to leave water in Big Hat Creek and Hat Creek to improve stream flow for anadromous and resident fish; and

WHEREAS, Erik Storlie and Tamara Kaiser have agreed to donate a portion of their water rights to the Board for deliver to the Hat Creek minimum stream flow water right; and

WHEREAS, a proposal for \$1,887.05 has been submitted to the Columbia Basin Water Transactions Program to be used to fund the lease and rental of said water rights; and

WHEREAS, the Hat Creek transaction is the public interest and in compliance with the State Water Plan.

NOW THEREFORE BE IT RESOLVED that the IWRB authorizes the Chairman to rent a portion of water right nos. 75-2137, 75-4199, and the entirety of water right no. 75-4200 for the purpose of increasing flows in Big Hat Creek and Hat Creek.

NOW THEREFORE BE IT FURTHER RESOLVED that the Board will pay up to \$750 in lease application fees and \$1,137.05 in Water Supply Bank rental fees to facilitate this transaction.

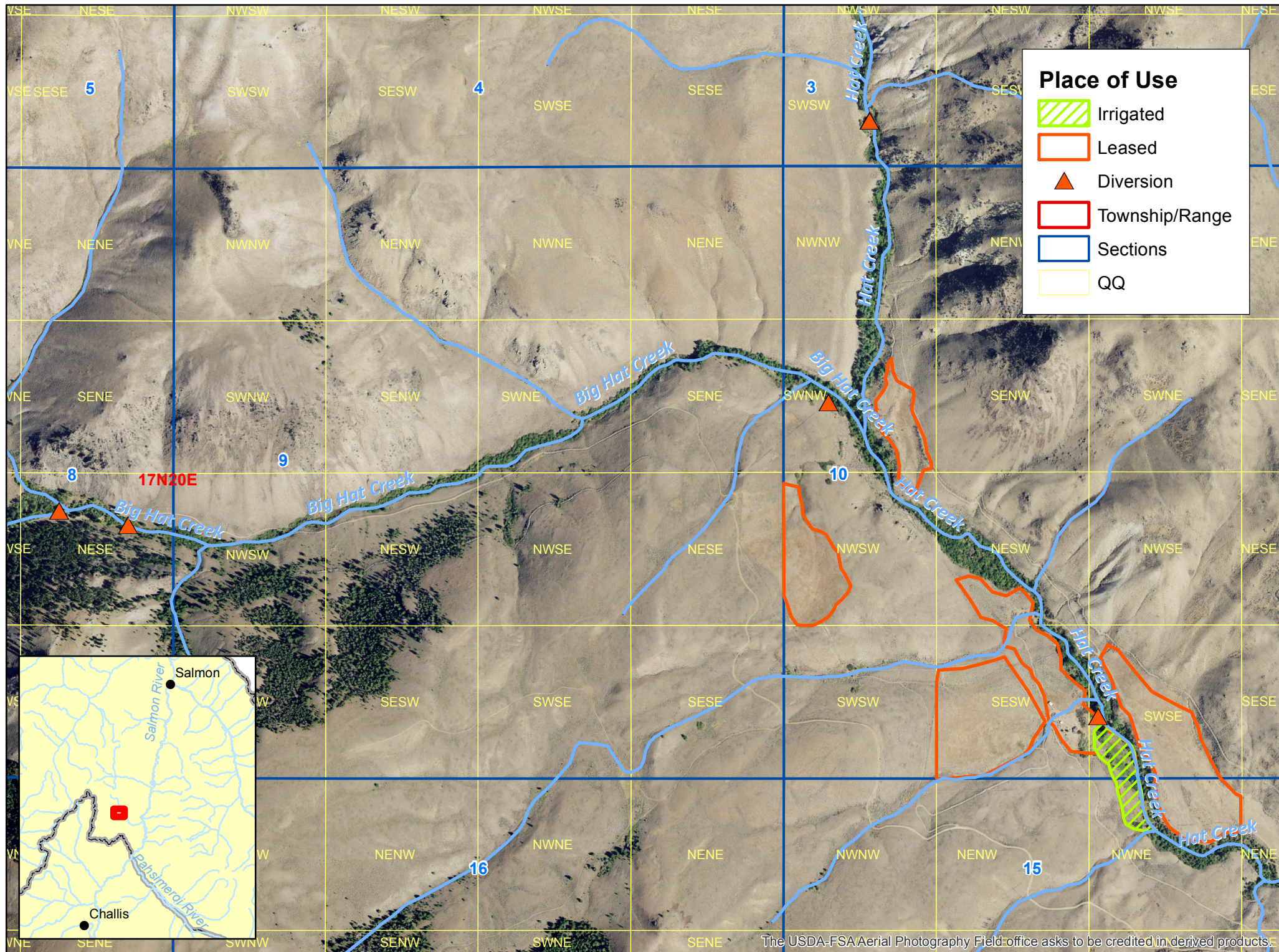
NOW THEREFORE BE IT FURTHER RESOLVED that this resolution is subject to the condition that the IWRB receives the requested funding from the Bonneville Power Administration through the Columbia Basin Water Transaction Program in the amount of \$1,887.05.

DATED this 20th day of March 2015.

\_\_\_\_\_  
ROGER CHASE, Chairman  
Idaho Water Resource Board

ATTEST: \_\_\_\_\_  
VINCE ALBERDI, Secretary

# Big Hat/Hat Creek Rental 2015



# Memorandum



To: Idaho Water Resource Board  
From: Morgan Case  
Date: March 20, 2015  
Re: Water Transactions Program – Beaver Creek Rental Fee Adjustment

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At the November 2014 meeting, the Board approved a resolution authorizing the expenditure of funds for a 20-year lease of water rights from Beaver Creek and the Salmon River. The expenditure was authorized for a landowner payment of \$111,280 and a rental fee payment of \$23,759. Staff calculated the rental fee by multiplying the rented volume shown on the 2005 rental agreement by ten percent of the standard rental rate. The volume listed on the 2005 rental agreement was the consumptive use volume (2.5 AF/acre). Water Supply Bank staff informed Transaction staff that the current Water Supply Bank procedures call for rental fees to be calculated using the headgate volume (3.5 AF/acre).

Corrected calculations for the 20-year Beaver Creek and Salmon River rental are \$111,280 to the landowner (\$20/acre/year) and rental fees of \$36,887.42.

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## **Action Item:**

Consideration of the attached funding resolution for \$148,167.42 to enter into a twenty-year rental agreement for water rights from Beaver Creek and the Salmon River. There is funding available through the Columbia Basin Water Transaction Program to cover the corrected costs of the twenty-year rental from Beaver Creek.

BEFORE THE IDAHO WATER RESOURCE BOARD

IN THE MATTER OF THE	)	A RESOLUTION TO MAKE
BEAVER CREEK RENTAL	)	A FUNDING COMMITMENT
FOR THE WATER TRANSACTION	)	
AGREEMENT	)	
_____	)	

WHEREAS, Chinook salmon, steelhead, and bull trout habitat in the Upper Salmon River basin is limited by seasonally disconnected tributaries; and

WHEREAS, Beaver Creek has been identified as a high priority stream for flow restoration efforts, to provide high quality habitat for anadromous Chinook salmon and steelhead and resident bull trout, and the 2004 Snake River Water Rights Agreement (Also known as the Nez Perce Agreement) commits the state to providing incentives for improving fish habitat which includes improving or protecting flow conditions to augment stream flows, and

WHEREAS, it is in the interest of the State of Idaho to maintain the reconnection of Beaver Creek to encourage recovery of ESA-listed Chinook salmon, steelhead, and bull trout; and

WHEREAS, the Idaho Water Resource Board (Board) has contracted with DOT LLP to rent their water rights from Beaver Creek and Salmon River for instream purposes since 2004; and

WHEREAS, there is funding available to secure 20-year lease and rental agreements with DOT LLP, or its successors, to protect 9.88 cfs instream in Beaver Creek and the Salmon River, and

WHEREAS, the Board will compensate DOT LLP or its successors, \$20 per acre per irrigation season for said rental for an annual payment of \$5564 for 278.2 acres and a 20-year total of \$111,280; and

WHEREAS, the lease and rental fees for said agreement will not exceed \$36,887.42, and

WHEREAS, a proposal for \$148,167.42 has been submitted to the Columbia Basin Water Transactions Program to be used to fund said lease/rental agreement; and

WHEREAS, staff anticipates the funds being placed in the Idaho Water Resource Board (IWRB) Revolving Development Account for annual payment to the water right owners; and

WHEREAS, the Beaver Creek transaction is in the public interest and is in compliance with the State Water Plan.

WHEREAS, this resolution supercedes the Beaver Creek funding resolution approved by the Idaho Water Resource Board at the November 5, 2014 meeting; and

NOW THEREFORE BE IT RESOLVED that the IWRB authorizes the Chairman to enter into a lease/rental agreement for water rights 71- 2091C, 71-2091D, 71-7008, 71-7009, 71-7083, 71-10665A, and 71-10665B for delivery to minimum stream flow 72-16668, using an amount not to exceed \$148,167.42.

NOW THEREFORE BE IT FURTHER RESOLVED that this resolution is subject to the condition that the IWRB receives the requested funding from the Bonneville Power Administration through the Columbia Basin Water Transaction Program in the amount of \$148,167.42.

DATED this 20th day of March, 2015.

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Roger Chase, Chairman  
Idaho Water Resource Board

ATTEST: \_\_\_\_\_  
VINCE ALBERDI, Secretary

# Memorandum

To: Idaho Water Resource Board  
From: Cynthia Bridge Clark  
Date: March 9, 2015  
Re: Status of Storage Water Studies



The following is a status report on the surface water storage studies initiated by the Idaho Water Resource Board (IWRB). This memorandum describes activities and progress since the last IWRB meeting in January 2015.

## **Weiser-Galloway Project**

- **Operations Analysis:** The analysis includes evaluation of different operation scenarios that include optimization of hydropower, flood reduction, recreation, and additional water supply for the basin and for anadromous fish recovery efforts. The US Army Corps of Engineers (Corps) is currently completing the evaluation of potential hydropower integration from the Galloway project with the Northwest power grid. Results from the study are expected spring 2015. Additional results from the reservoir optimization study will be integrated with the operational analysis to provide consistent information between the two reports (see below).
- **Galloway reservoir size optimization study:** A Planning Assistance to States cost-share agreement has been executed between the IWRB and the Corps to optimize the project size, develop a conceptual design layout, and revise construction costs. The study will use the models, hydrologic data, operational constraints, water demands, and total benefits developed in the Operations Analysis. It will also leverage the project expertise of the technical study team who performed the Operations Analysis to provide a more refined project design. The study is scheduled to be completed at the end of the calendar year.
- **Evaluation of Weiser River Trail impacts and relocation options:** The project as proposed would inundate 15 miles of the Weiser River Trail (WRT). This analysis will identify potential relocation options to better understand impacts, and mitigation or enhancement opportunities to the WRT. The analysis will include coordination with WRT stakeholders. A study scope is defined and the contract is being finalized.
- **Federal Energy Regulatory Commission (FERC) preliminary permit:** IDWR staff is developing a plan to compile a pre-application document (PAD) during preliminary permit period. This includes a project schedule/timeline and a plan for stakeholder coordination. This proposal will be put before the Storage Committee and IWRB at a later date. Staff will be filing a regularly scheduled progress report to FERC at the end of March.

**REQUIRED ACTIONS:** No action is required by the IWRB at this time.

## **Boise River Feasibility Study**

- **Evaluation of the selected water supply and flood risk reduction measures** is ongoing. This includes the Arrowrock Dam raise, managed aquifer recharge, upgraded irrigation headgates, replacement of push-up dams, bridge upgrades, controlled flooding of pits/ponds, temporary conveyance of water in the floodplain, flow split structure, and other non-structural measures.

- Reservoir modeling and refill frequency of the Arrowrock Dam raise has been completed to help determine an optimum size of a potential raise. Corresponding cost engineering, real estate impacts analysis and Environmental Impacts Study (EIS) activities are ongoing.
- The Corps held an interagency meeting in February with Federal and State agencies affected by the proposed project to discuss how land use would change and the steps necessary steps to make those changes. Staff is preparing a letter requesting the initiation of the Lands, Easements, Right-of-Way, Relocations, and Dredging (LERRD) Process with the Corps. This will initiate a real estate evaluation on lands affected by the project.
- IDWR staff is coordinating with the Corps to quantify water supply needs.
- The study is on schedule to complete draft feasibility study report and EIS for public review in the fall 2015.

**REQUIRED ACTIONS:** No action is required by the IWRB at this time.

<b>Island Park Reservoir Enlargement Project</b>
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- IDWR staff is preparing of issue a Request for Proposal to complete an assessment of potential impacts to land and real estate resulting from a raise of the Island Park Reservoir.
- Activities associated with the assessment will be coordinated with the US Bureau of Reclamation (Reclamation) and other stakeholders.
- Staff is in the process of developing a project website and informational materials. Staff will regularly coordinate with stakeholders through the Henry's Fork Watershed Council going forward.

**REQUIRED ACTIONS:** No action is required by the IWRB at this time.



## ESPA Managed Recharge Update

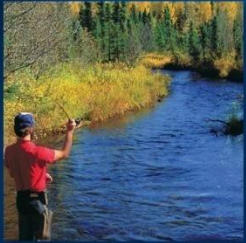
Idaho Water Resource Board

Wesley Hipke  
March 19, 2014



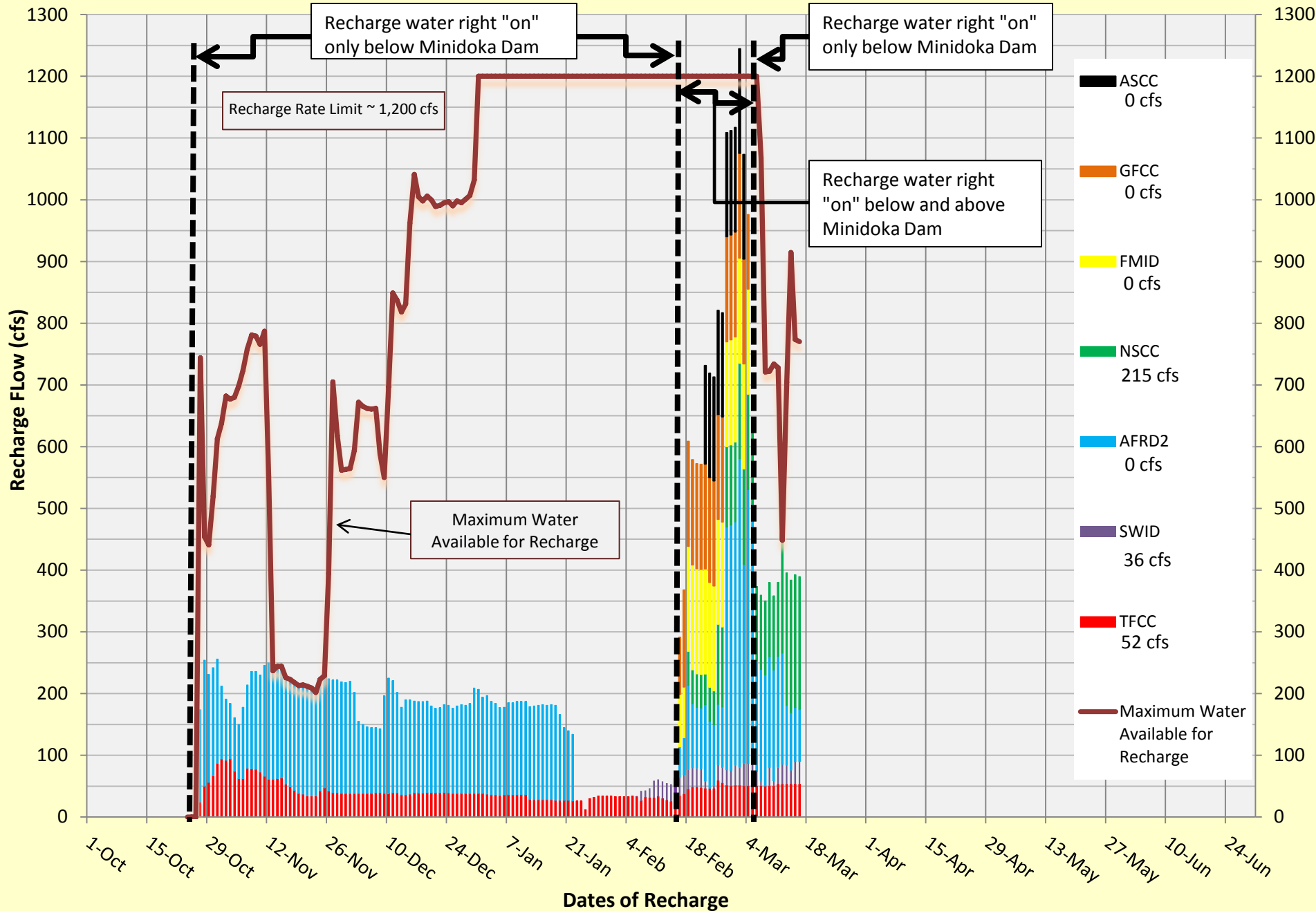
## ESPA Managed Recharge Update

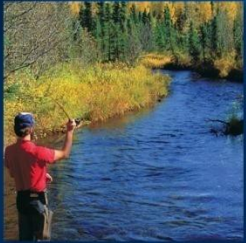
- **Summary of the Managed Recharge**
  - Upper Valley
  - Lower Valley
- **Goals, Limitations, & Results**
- **Infrastructure Projects**
  - Lower Valley
  - Upper Valley
- **Monitoring Program**



NSCC routing 600 cfs of IWRB's recharge, Feb. 18<sup>th</sup>, 2015

# Total Water Board Recharge Diversions During 2014 - 2015 Season





## ESPA Managed Recharge Summary

ESPA Area	Canal System	5-Year Retention Time (%)	Median Recharge Rate (cfs)	Days Recharged	Volume Recharged (Acre-feet)	Conveyance Costs (\$)
Upper Valley	Aberdeen-Springfield Canal Company	~26	169	10	3,328	\$23,294
	Great Feeder Canal Company	~18	170	17	5,454	\$43,629
	Fremont Madison Irrigation District	~44	170	17	5,389	\$43,113
	Upper Valley Total				14,171	\$110,036
Lower Valley	American Falls Reservoir District No. 2 (Milner-Gooding Canal)	~40	152	117	37,510	\$227,916
	Northside Canal Company	~40	130	27	6,784	\$22,056
	Southwest Irrigation District	~55	28	39	1,882	\$7,109
	Twin Falls Canal Company	~50	38	141	11,978	\$90,090
	Lower Valley Total				58,154	\$347,171
TOTAL					72,325	\$457,207

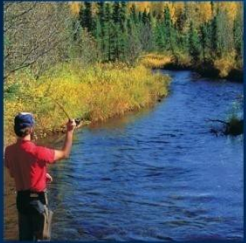
## ESPA Recharge Summary – Upper Valley

### • Recharge Summary

- Recharge Right in Priority: Feb 16 – Mar 4
- Median Recharge Rate = 509 cfs
- Total Recharged = 14,171 af

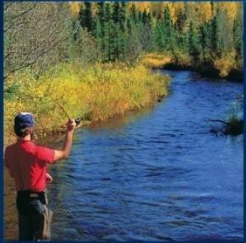
### • Issues

- Limited by water right at Minidoka – 2,700 cfs
- Flood Control – Palisades winter water contracts – USBR Waivers
  - Work with USBR to develop a streamlined process
- Limited Duration (17 DAYS)
- Spring Capacity / Non-Irrigation Season= ~1,500 cfs
- Irrigation Season Capacity = ???



## ESPA Recharge Summary – Upper Valley

- Aberdeen Springfield Canal Co.
- Enterprize Canal Co.
- Farmers Friend Irrigation Co.
- Fremont-Madison I.D.
- Great Feeder Canal Co.
- Idaho I.D.
- New Sweden I.D.
- Peoples Canal & Irrigation Co.
- Progressive I.D.
- Riverside Canal Co.
- Snake River Valley I.D.



ASCC recharge in canal and Hilton spill on February 26th.

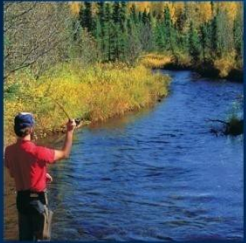
## ESPA Recharge Summary – Lower Valley

### • Recharge Summary

- Recharge Right in Priority: Oct 24 – ??
- Median Recharge Rate = 348 cfs
- Total Recharged (as of Mar 16<sup>th</sup>) = 58,154 af

### • Issues

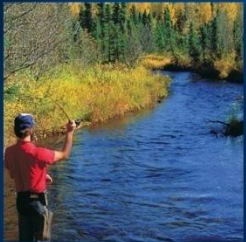
- Winter Season Capacity = ~200 cfs
- Spring Season Capacity = ~500 cfs
- Irrigation Season Capacity = ~450 cfs



## ESPA Recharge Summary – Lower Valley

### • Contracts in Place (5-year)

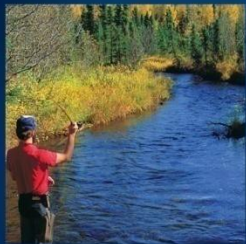
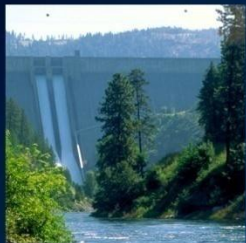
- American Falls Reservoir #2
- Northside Canal Co.
- Twin Falls Canal Co.
- Southwest I.D.

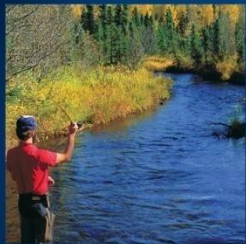
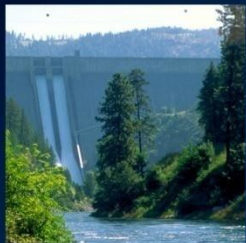


Mile Post 31 recharge basin on March 5<sup>th</sup>, 2015.

## ESPA Managed Recharge – Progress

Fall - Spring	Below American Falls	Above American Falls	Total
2009-2010	18,981	60,912	79,893
2010-2011	25,349	36,239	61,587
2011-2012	91,112	74,335	165,446
2012-2013	21,129	0	21,129
2013-2014	10,585	0	10,585
<b>Average</b>	<b>33,431</b>	<b>34,297</b>	<b>67,728</b>
<b>2014 - 2015</b>	<b>58,154</b>	<b>14,171</b>	<b>72,325</b>



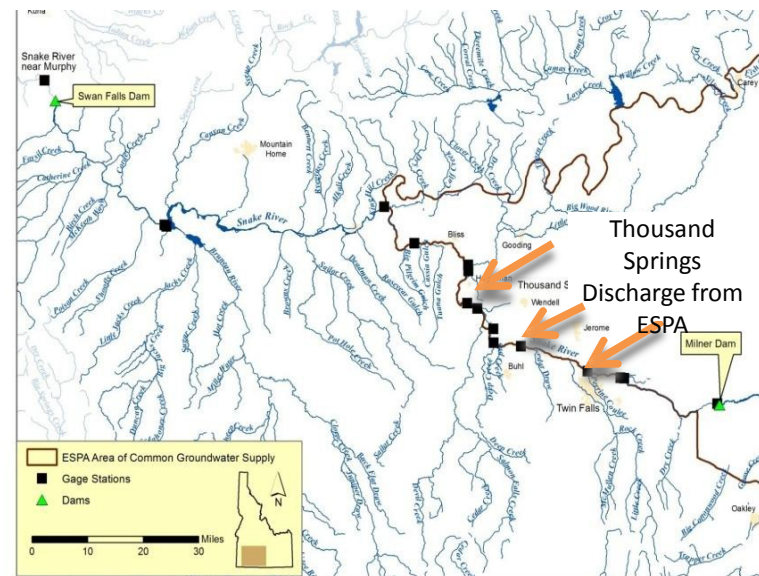


## ESPA Managed Recharge Goals

### • Stabilization of ESPA is essential to:

- Prevent further GW vs. SW user conflicts on Eastern Snake Plain
- Meet State's Swan Falls Agreement obligations to maintain minimum flows at Murphy Gage

When flow is zero at Milner, flow at Swan Falls Dam is made up almost entirely of spring flows from the ESPA



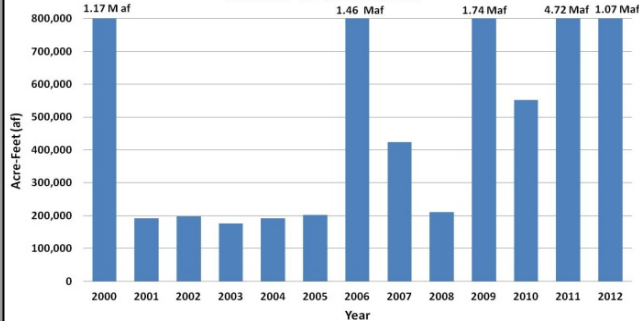
# Water Available for Recharge 2000 - 2012

## Eastern Snake Plain

- Area of Common Groundwater Supply
- Counties
- Streams

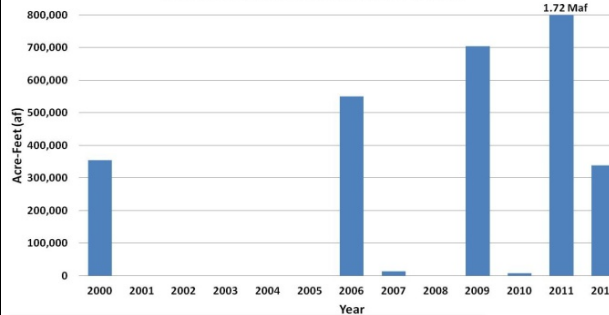


### Milner to Minidoka



Total Available for Recharge 2000-2012  
**12.31 Maf**

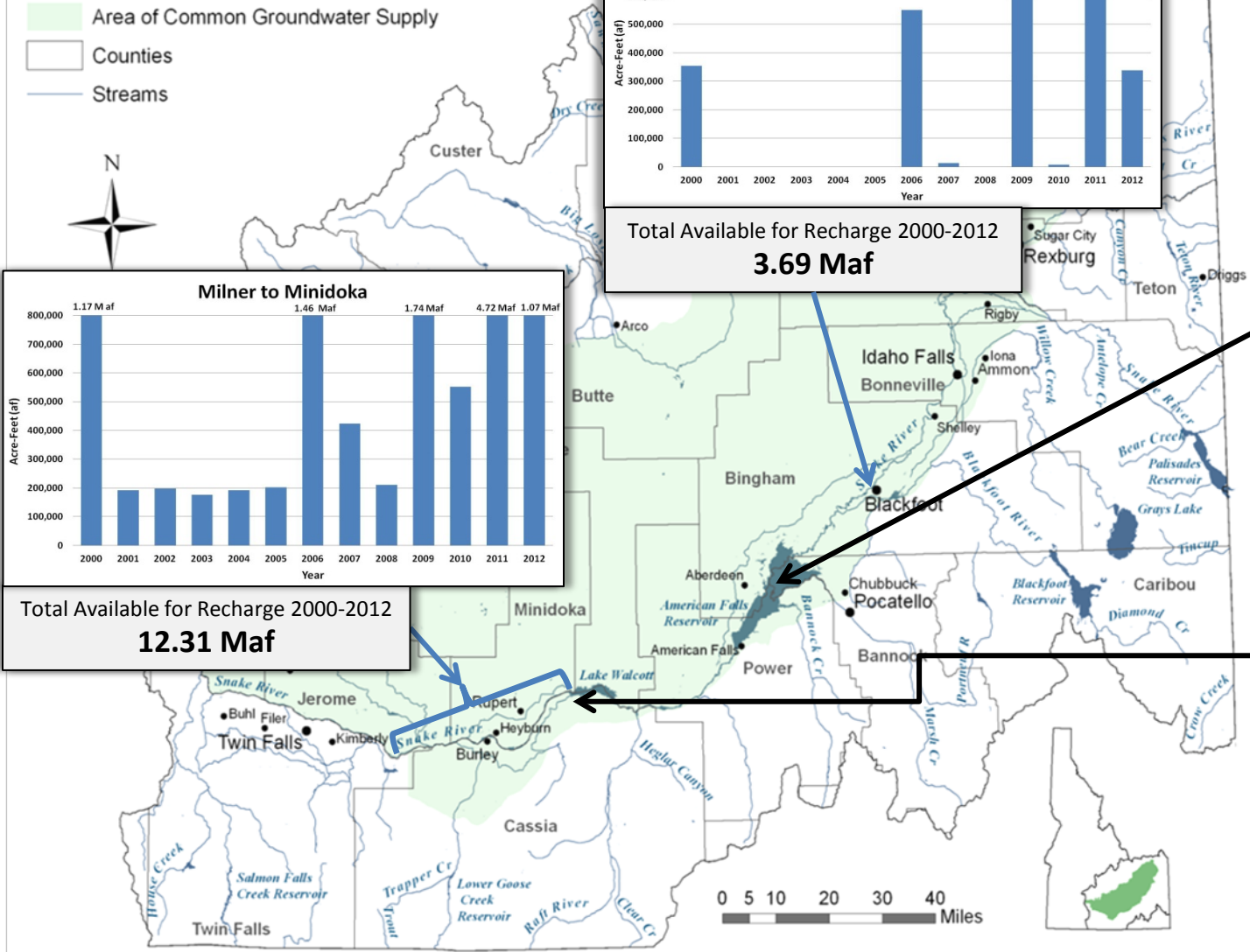
### Above America Falls Reservoir

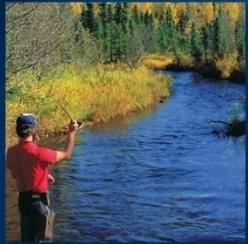


Total Available for Recharge 2000-2012  
**3.69 Maf**

American Falls Reservoir:  
1.6 million AF  
1921 priority

Unsubordinated  
hydropower rights  
at Minidoka Dam:  
2,700 cfs  
1909/1912 priority





## Managed Recharge Strategy - Summary

- Utilize winter-time flows that spill past Milner Dam every year
  - Flow below reservoir system – no interference with storage
- When available - spring run-off flows for recharge in the Upper and Lower Valleys (about 50% of years in Upper Valley)
- Develop independent dedicated, winter-capable recharge facilities – Lower Valley
- Utilize winter-time Little Wood River water supplies for recharge

## ESPA Managed Recharge 2014-2015

IWRB Recharge Water Right (1980 priority) = ~ 1,200 cfs

### Lower Valley

### Upper Valley

**Available Water**

~260,000 af

~16,800 af

**% Available Water Recharged**

22%

84%

**Recharge Capacity**

~200-500 cfs

~1,500 cfs

**Retention in Aquifer (5yr)**

avg ~45%

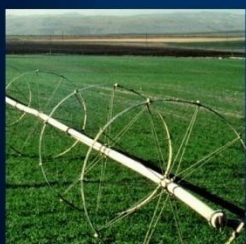
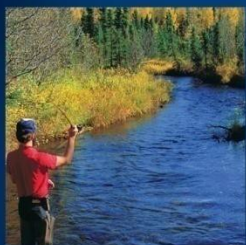
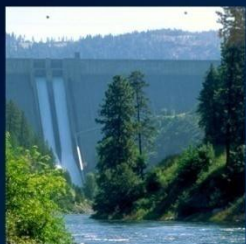
avg ~24%

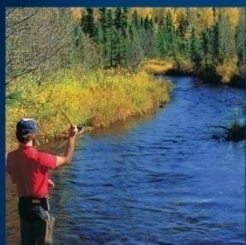
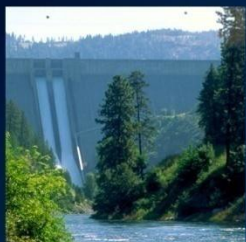


NSCC - Wilson Lake. Infiltration test, Mar. 15<sup>th</sup>, 2015



ASCC - Main Headgate, Feb. 26<sup>th</sup>, 2015





## ESPA Managed Recharge 2014-2015

IWRB Recharge Water Right (1980 priority) ~ 1,200 cfs

	Available Water (AW)	% AW Recharged	Recharge Capacity	Aquifer Retention (5 yr)
Upper Valley	~16,800 af	84%	~1,500 cfs	~24%
Lower Valley	~260,000 af	22%	~200-500 cfs	~45%
	Very Poor	Poor	Good	Very Good

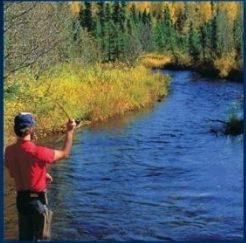
## ESPA Recharge – Infrastructure Projects

### Lower Valley Capacity Projects

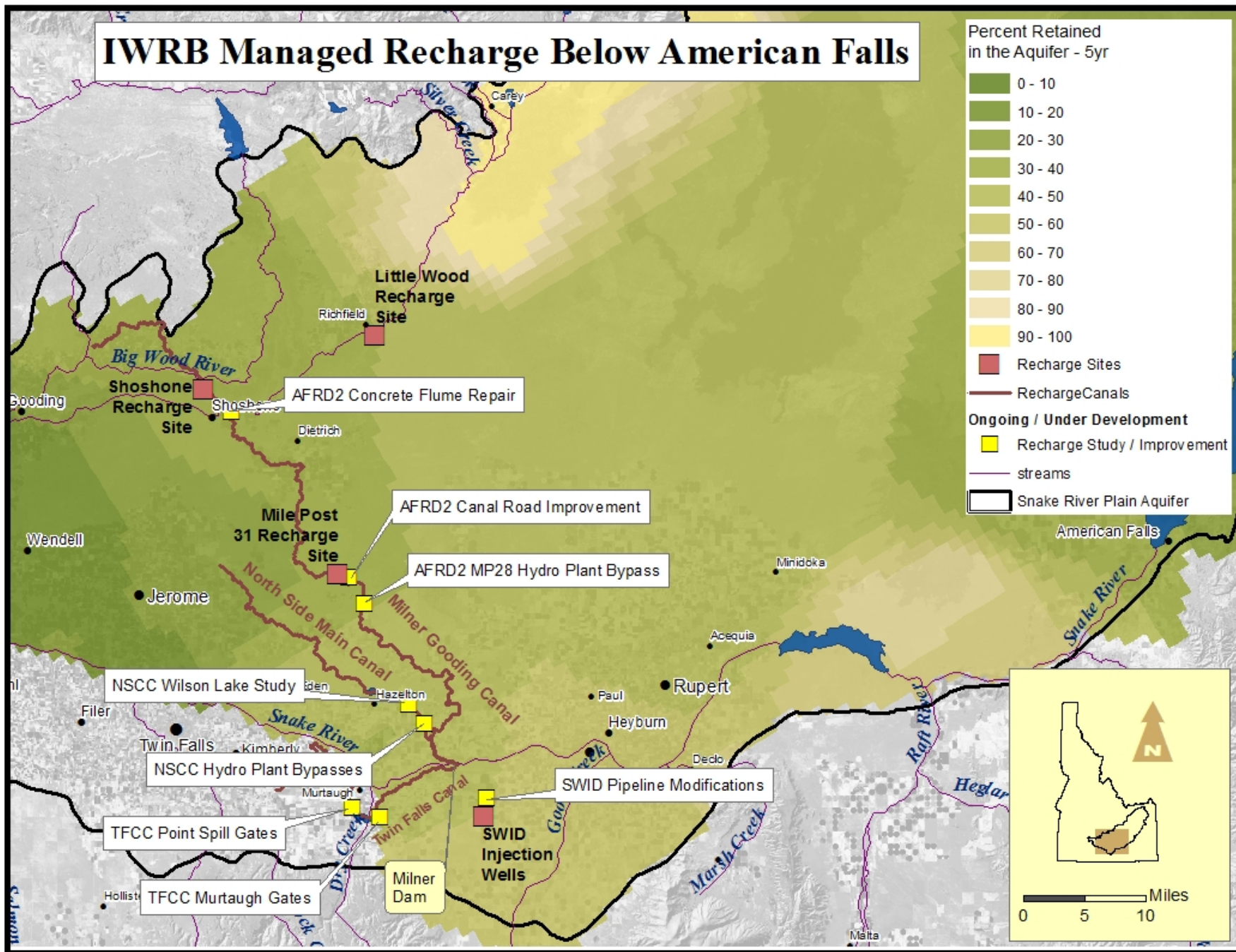
- Need additional capacity (diversion & infiltration) to take advantage of water supply and good aquifer retention

### Upper Valley Capacity Projects

- Significant capacity exist
- Off site capacity can be expanded for years that have flood release during irrigation season



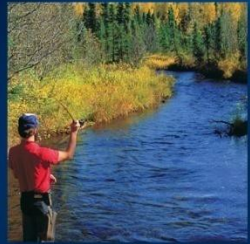
# IWRB Managed Recharge Below American Falls



## Lower Valley – Infrastructure Projects

- **AFRD2**

- Winter-capable road along Milner-Gooding Canal
- MP 28 Hydro-Plant modifications required to divert winter-time flow to recharge sites
- Engineering study on concrete flume, improvements need to deliver winter-time flow to recharge sites



AFRD2 – MP31 road work, 2015



AFRD2 – Concrete flume

## Lower Valley – Infrastructure Projects

- **NSCC**

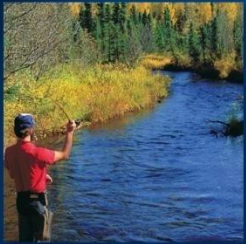
- Engineering study to determine winter capability of canal – 3 Hydro Plants
- Engineering study to determine infiltration capacity of Wilson Lake

- **SWID**

- Engineering study to determine requirements for making the pipeline winter-capable for delivery to injection wells

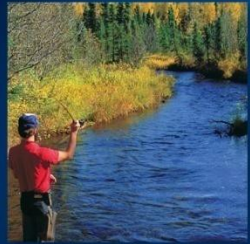
- **TFCC**

- Engineering study to determine winter capability of recharging at Murtaugh Lake



## Development of New Recharge Sites

- **Milner Reservoir Well Testing**
  - Obtaining data to determine viability of potential injection wells in the Milner Reservoir area.
- **SWID Injection Well expansion**
  - SWID working with NRCS to expand their recharge capacity



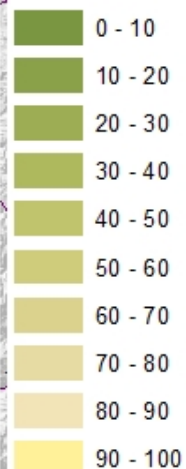
SWID Injection Well, Feb 18<sup>th</sup>, 2015)



SWID Milner Pump Station D, Feb 18<sup>th</sup>, 2015)

# IWRB Managed Recharge Above American Falls

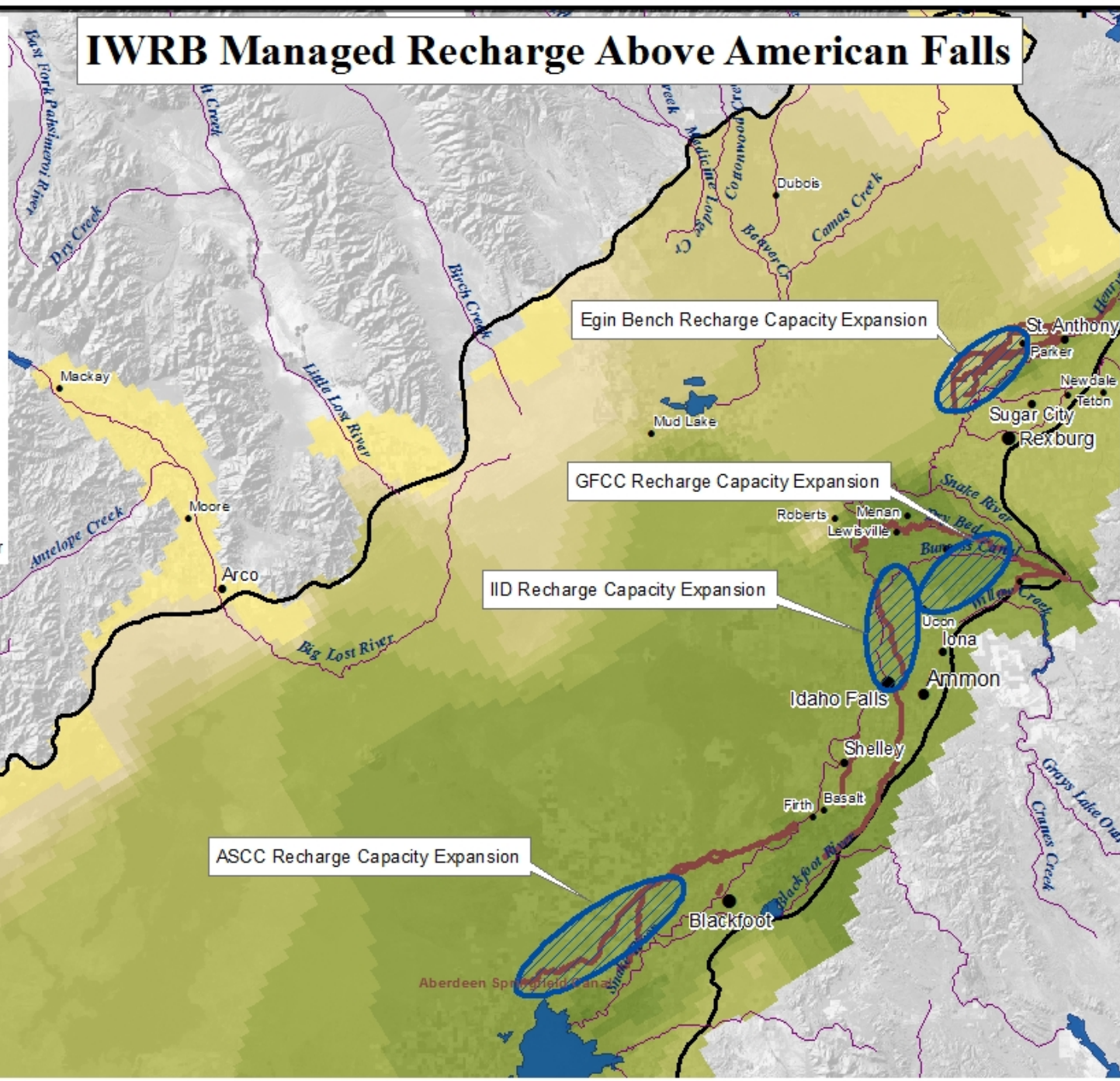
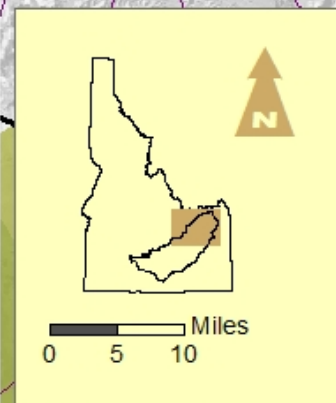
Percent Retained in the Aquifer - 5yr



Recharge Canals

streams

Snake River Plain Aquifer



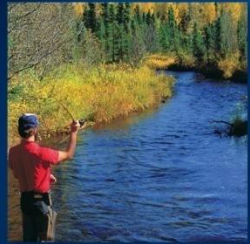
## Upper Valley – Infrastructure Projects

- **GFCC**

- Project to improve recharge conveyance and capacity

- **Other Projects**

- Develop potential infrastructure improvements to develop off-site capacity at strategic locations



Great Feeder Canal



Egin Canal

## ESPA Recharge – Monitoring Program

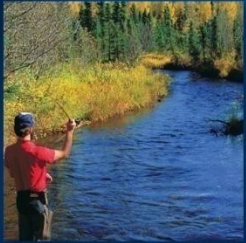
- **QA/QC Program**

- Recharge Flow Measurements
  - Cooperative Effort with:

TFCC	Water District 01
NSCC	Idaho Power
AFRD2	IDWR Staff

- **Water Level Monitoring**

- **Dye Testing**



IDWR and NSCC staff measuring flows at the inlet to Wilson Lake on March 11<sup>th</sup>.

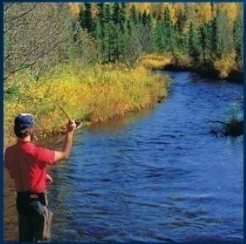


LSRARD and Idaho Power assisting IDWR staff with borehole camera Milner Reservoir test well.

## ESPA Recharge – Monitoring Update

### • Water Quality Program

- Essentially no detection of bacteria in monitoring wells at recharge sites
- Contract with Idaho Bureau of Labs
- Existing wells at MP31 and Shoshone site rehabilitated as monitor wells
- Working with IDEQ on the Water Quality Program

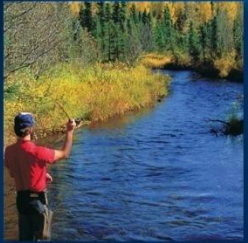


IBL staff collecting water quality samples – MP31.



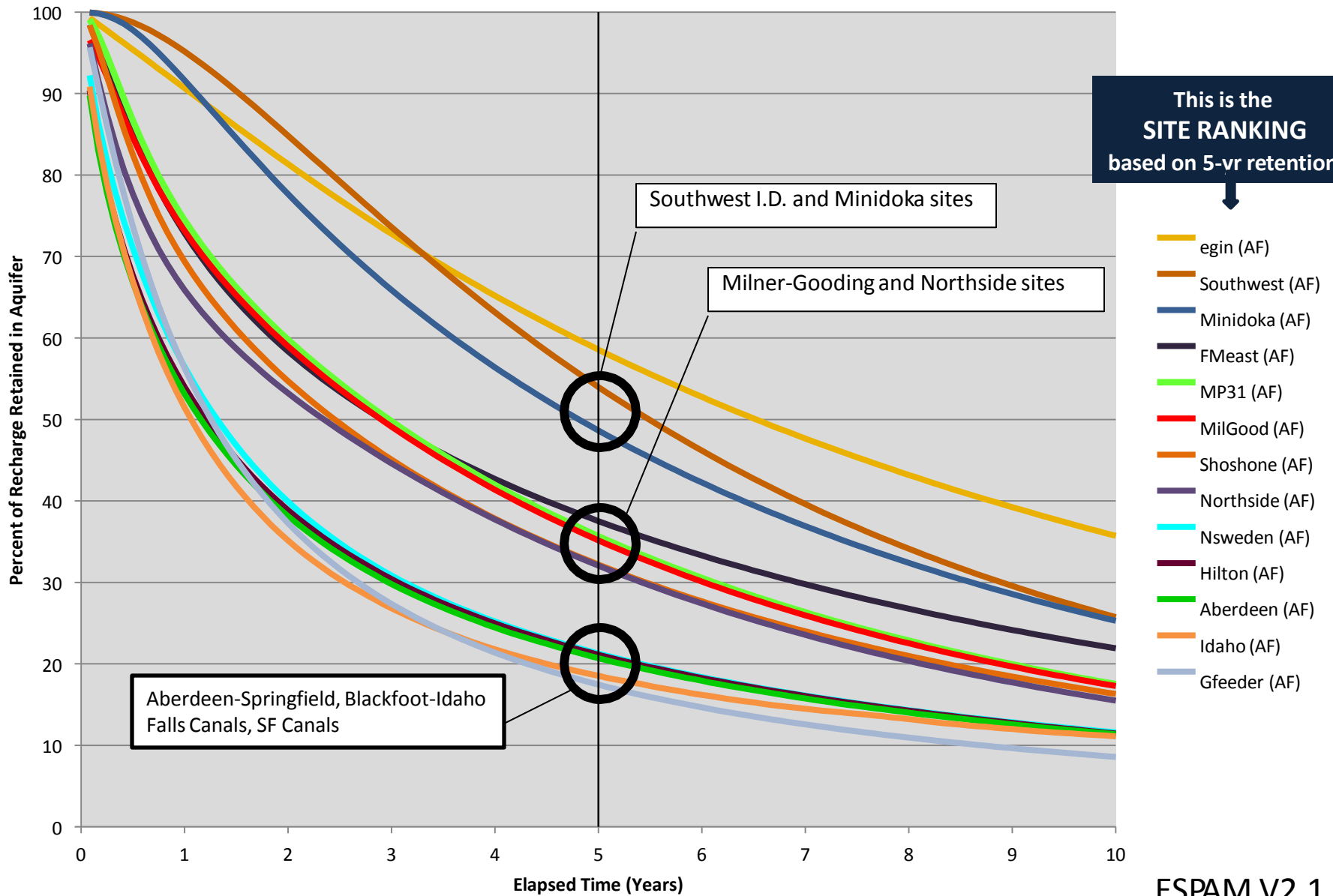
IBL staff collecting water quality samples – Shoshone.

## Questions and Discussion



Mile Post 31 recharge basin on April 8<sup>th</sup>, 2013.

# Retention of Recharged Water within the Aquifer



Great Feeder Canal Company  
Proposal to the Idaho Department of Water Resources Board  
March, 2015

Overview: Managed aquifer recharge is a key component of efforts to stabilize and recover the ESPA in order to assist in resolving current and future water conflicts and to maintain the Swan Falls Minimum Flows. The Great Feeder Canal Company (GFCC) and its component canals have participated in managed recharge conducted by the Idaho Water Resource Board (the Board) numerous times. The GFCC is nearing the time when its main headgate on the South Fork of the Snake River must be replaced. The GFCC and its main headgate provides numerous public benefits to residents of the area including providing the means to accomplish aquifer recharge. The GFCC seeks a \$500,000.00 matching grant to replace the aging structure at its head, and will also work with the Board to secure additional funding for the development of managed recharge sites.

A. GFCC will, if the grant money is approved;

1. Construct a new headgate structure that will enhance and provide the necessary capability to continue to do managed recharge as part of the safety enhancements and other public benefits achieved by the replacement of the GFCC headgate;
2. In cooperation with the Board, seek multiple funding sources for the purpose of developing off-channel recharge basins in areas of deep groundwater. This is estimated to cost between \$75,000.00 and \$100,000.00.
3. With the advice and consent of the Board, develop a method of groundwater level and quality monitoring at the off-channel recharge basins, anticipating that additional costs may arise if other state, federal, or municipal agencies become involved in the development of such basins; and
4. Deliver managed recharge water for the Board, provided that:
  - a. the Board's recharge water right is in priority at the GFCC headgate; and
  - b. the Board issues a Notice to Proceed to the GFCC.

B. In exchange for the above, the GFCC will be paid the same rate as other entities conducting managed recharge in the area for recharge completed within the next twenty (20) years, minus a 15% holdback as an offset for any loans provided under this agreement.

C. Prior to the Board providing the funding herein, the GFCC will establish an account containing \$500,000.00, dedicated solely for the purpose of reconstructing the GFCC headgate, including the control enhancements to facilitate rapid reaction to issues pertaining to aquifer recharge. The GFCC

will be given a reasonable timeframe to complete construction of the GFCC headgate and will simultaneously work with the Board to complete managed recharge sites with funding identified for that purpose. The GFCC will seek advice and review of the Board prior to developing final plans and commencing construction on the GFCC headgate that would require expenditures of the \$500,000.00 matching grant money. The construction costs -- up to \$1,000,000.00 -- will be paid for with equal shares: half provided by GFCC and half coming from the \$500,000.00 matching grant. Any funds provided by the Board not utilized to effect the purposes of this agreement will be returned to the Board.

- D. Nothing herein shall prevent the GFCC from being eligible for consideration of grants or loans that may be provided to water users in the future. Nothing herein shall prevent the GFCC from soliciting other stakeholders to participate in providing the GFCC funds under this agreement.

Agreed and accepted to this \_\_\_\_ day of March, 2015

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Roger Chase, Chairman, IDWR Board

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Bruce Grover, President, GFCC

# MEMORANDUM



**To:** Idaho Water Resource Board  
**From:** Wesley Hipke, Cynthia Bridge Clark , Mike McVay, Randy Broesch  
**Subject:** Review of the Coalition of Cities Recharge Development Proposal  
**Date:** March 6, 2015

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During the January 2015 Idaho Water Resource Board's (IWRB) meeting, a group of cities (Coalition) on the Eastern Snake River Plain (ESP) presented a proposal for IWRB's consideration. The proposal was titled "Request for Idaho Water Resource Board Support to Aid Eastern Idaho Water Rights Coalition with Recharge Development for the Upper Snake River Plain Aquifer" (Proposal) dated January 20, 2015. This memorandum provides a brief summary and review of the proposal.

## **Executive Summary**

The Proposal submitted by the Coalition for a request of approximately \$600,000 from the IWRB was reviewed by IDWR staff. The technical team assembled to review the Proposal has a diverse range of perspectives and expertise to provide a comprehensive review. The review provided in this memorandum provides the IWRB with a comprehensive evaluation and recommendations concerning the Proposal. This executive summary provides a brief synopsis of the results from the team's review.

The Coalition has legitimate issues concerning municipal water supplies in the ESP. However, it is unclear if the analyses outlined in this proposal will provide comprehensive solutions to those issues. In addition, several points would need to be addressed before further consideration, including the following:

- Does the proposal meet IWRB's goals for aquifer stabilization
- The needs, goals and objectives of the Coalition would need to be clearly defined
- Will the analyses identified in the proposal address and provide comprehensive strategies to meet the Coalition's goals and objectives?
- Determining key success factors and level of risk associated with proposed solution
- Need for additional structure/information

Staff recommends meeting directly with the city Mayors and their senior staff in the coalition to better understand the objectives of the Coalition and challenges facing members of the Coalition. IWRB staff would like to present to the Coalition the latest data and information available from the most recent work in the ESPA as well as opportunities to coordinate with the IWRB. IWRB staff can also assist the Coalition in assessing their current situations and future needs to distinguish the key issues and develop strategies to address their specific problems.

## **Proposal Summary**

The cities represented by the Coalition are concerned about existing and future water supply. In recent years water supply has become more of an issue in the ESP. The cities generally own junior water rights that are vulnerable to water calls by senior surface water rights. The cities seek to expand water supplies to meet growth and new demands for water in incorporated areas, and areas served by city services. The strategy detailed in the Proposal includes the creation of private aquifer-storage credits through managed recharge. The proposal also states:

*“A coalition of cities and municipal providers is proposing to undertake a number of immediate actions in partnership with the Idaho Water Resource Board (IWRB). However, before these actions can be implemented a comprehensive recharge study of the processes, potential projects and hydrologic effects are needed.”*

The comprehensive recharge study of the processes, potential projects, and hydrologic effects discussed in the proposal were split into five tasks:

1. Potential Recharge Site Reconnaissance and Inventory: \$73,000
2. Recharge Simulation and Modeling: \$28,000
3. Pilot Recharge Effort: \$40,000
4. Preliminary Engineering for High Value Sites: \$331,000
5. Final Report: \$125,000

The total request from the IWRB to complete the study is \$597,000.

## **Proposal Review**

The review of the proposal was conducted by evaluating each task separately and providing a summary of the proposal in its entirety. In reviewing the proposal, the staff considered the following factors:

- Necessary information/details to evaluate the value of the proposed actions/tasks in achieving IWRB’s goals,
- The value of the action/task in relationship to achieving the proposal’s goals, and
- Alignment with the IWRB’s goal to develop a program to stabilize the Eastern Snake Plain Aquifer.

### **Task 1 - Potential Recharge Site Reconnaissance and Inventory**

The Coalition is seeking the resources to conduct a reconnaissance level investigation on new and existing recharge sites above American Falls. The cost associated with this task is \$73,000. As part of the investigation potential and existing recharge sites will be evaluated and ranked. The proposal states that consultants for the Coalition have already initiated the process of reviewing and evaluating the available information and data for the identification of potential recharge sites. Recharge strategies will be evaluated in a manner that is acceptable and beneficial to all participants. The Coalition anticipates that the evaluation and ranking process will include the seeking of comments and information from various interest groups especially those that may be concerned about environmental, fish and wildlife, access and easements, water quality and water rights impacts. The Coalition anticipates that the Water District 1 (WD 01) distribution and accounting processes will be a vital part of this work effort. As a part of a reconnaissance level study, the cities will partner with the Recharge Development Corporation in seeking needed assistance from WD 01 in developing competent processes and strategies through the development of additional pilot recharge studies. The proposed budget for these efforts is estimated to be \$247,000.

Staff review: A number of issues must be addressed before this task can be evaluated:

- This task includes “reconnaissance level investigative work on both new and existing recharge sites above American Falls that will include evaluation of site suitability, accessibility and availability. The proposal states that the Coalition consultants have already conducted a literature review. It is unclear what else would be included in this investigation. In reviewing the proposal, the actual value that would be gained from conducting this investigation is not well defined.
- The proposal further states that potential and existing sites will be evaluated and ranked, “...perhaps ranked by some yet-to-be determined criteria”. While it is understood that ranking criteria will be developed during the study process, clarification of the methodology and key factors influencing site prioritization is important ensure that sites will be evaluated to meet the goals and objectives of the Coalition and are consistent with the IWRB’s aquifer stabilization efforts.
- Redundancy/duplication of work: The Idaho Department of Water Resources (IDWR) is responsible for monitoring and measurement of groundwater levels and returns flow in the Eastern Snake Plain Aquifer (ESPA) as well as administration of water rights. IDWR has evaluated a tremendous amount of data in developing a conceptual model of the ESPA. This conceptual model has been incorporated into a numerical groundwater flow model - Eastern Snake Plain Aquifer Model (ESPAM). IDWR is the lead in development of updates, maintenance and use of the model and regularly uses ESPAM to evaluate how recharge and other strategies would impact the ESPA. It is unclear whether the proposed evaluation of new and proposed sites would duplicate work that IDWR has already completed. The Proposal also does not state what new data/information would be provided from the proposed comprehensive study.
- This task also includes the development of “competent processes and strategies through the development of additional pilot recharge studies” with the assistance from WD 01. Clarification of the definition and purpose of these processes and strategies is required to determine the benefit of this portion of the task. The proposal does not state what data or information will be obtained from the pilot projects and it is unclear how additional pilot recharge studies will further the development of those processes and strategies (e.g. are these processes related to measurement and monitoring, operations, choosing recharge sites, ect... ).
- The proposal states that software owned by the Recharge Development Corporation will be used to evaluate site-specific recharge. The results of the proposed analyses must be reproducible and validated by IDWR and others. If the IWRB funds all or part of the proposed studies, the IWRB must have access to the results of the analysis and the tools used to perform the work. In addition, the strategy under consideration is to develop recharge sites in conjunction with a mitigation credit system. The legal and technical components of this proposal will require review and approval by IDWR. Therefore, inclusion of a proprietary tool may not be appropriate for this analysis.
- A projected timeline with key milestones and overall length of the task should be included in the proposal.
- The proposed budget for these efforts is \$247,000. It is unclear if this is the proposed budget for Task 1 or for the pilot projects mentioned in the previous bullet. An itemized budget is required to assess the value of the work and product being provided.

## Task 2 – Recharge Simulation and Modeling

The Coalition is seeking the resources to conduct groundwater modeling scenarios using the current Eastern Snake Plain Aquifer Model (ESPAM) to determine the short-term and long-term effects of developing recharge projects for sites that have previously been identified and sites that may be proposed as a result of these studies. The cost requested from IWRB for running these modeling scenarios is \$28,000.

Staff review: Additional details should be provided to further evaluate this task:

- Considering the extensive groundwater modeling work and predictive scenarios that have been conducted by IDWR, the proposal should include additional information concerning how these modeling scenarios would differ from the previous work completed by IDWR and what value they would provide IWRB and the Coalition.
- A more detailed breakdown of the estimated cost, including amount of work and number of model scenarios anticipated, is necessary assess the value of this task. The proposal does not specify the number of scenarios to be conducted and states that more scenarios could be added depending on new recharge sites proposed by this study. It would assist the review of the proposal to know the amount of work/number of model scenarios that were used to determine the budget for this task.
- To evaluate the modeling work outlined in the proposal, general parameters, variables, duration of predictive scenarios (stress periods and times steps), and any other factors that would be altered in the modeling scenarios should be provided. The proposal states that the modeling will include tracking of actual recharge over time. It is difficult to assess the value of the predictive scenarios without a better description of how the Coalition or their consultants propose to develop and incorporate data into the scenarios.
- The proposal states that partnering cities will develop data to be used in estimating and evaluating the hydrologic effects of recharge from selected managed recharge sites. It is unclear how many sites this data will be collected from and if this data will be incorporated into the groundwater flow model. If the data is incorporated into the model, it is important to know whether the model will also be calibrated to account for the new data.
- The proposal states that modeling will be conducted using the ESPAM model under “multiple contexts”. It would be useful to know what the multiple contexts are so the value of this work could be assessed.
- Per the proposal, results of the proposed modeling will allow the cities to evaluate conclusions from analog modeling conducted in the 1960’s. It is unclear what value this adds to this proposal or to IWRB’s goal for stabilizing the ESPA, especially considering the ESPAM’s legal standing.
- The proposal does not define what is meant by “credits” or how credits would be tracked to benefit individual cities. In addition, a general explanation of the modeling methodology to be used to track credits is necessary to understand to scope of work proposed.
- A projected timeline with key milestones, overall length of the task, and the relationship to the timing of other task should be included.
- A detail budget is necessary to determine the value added for the requested \$28,000. The proposal states that the money is to complete “work associated with this inventory”, however, it is unclear what is being inventoried and how the modeling scenarios would assist in an inventory.

### Task 3 – Pilot Recharge Effort

The Coalition believes that the best path forward to establishing an effective recharge program is to implement a pilot recharge project(s). The Coalition is proposing to evaluate “systematic limitations that could affect the feasibility and construction of various sized dedicated recharge facilities”. The cost assigned to IWRB for this task is \$40,000.

Staff review: Additional details are required to evaluate the value of this task:

- The proposal does not provide any details on how the coalition plans to evaluate the “systemic limitations” that could affect the feasibility and size of dedicated recharge facilities in the Upper Valley of the ESPA. These details are essential in determining the value of this task, especially considering the wide dynamics and conditions of the Upper Valley ESPA system.
- A breakdown of the number of projected pilot projects, the criteria for choosing pilot project locations, projected construction cost, permitting cost, monitoring to be conducted, methodology for tracking credits, and the parameters that will be used to evaluate the results would be necessary to determine the value of this task.
- The pilot projects will likely require the delivery of surface water to known recharge sites by partnering with specific canal companies and irrigation districts. More specifics would be required to determine what new data/information would be provided and how the work described would differ from recharge operations that are occurring or have occurred in the past.
- A projected timeline with key milestones, overall length of the task, and the relationship to the timing of other task should be included.
- A detailed breakdown of the estimated cost for this task would be required to provide an evaluation of this task. The breakdown should include how much money will be supplied from other sources and what the requested \$40,000 from the IWRB would be used for under this task.

#### Task 4 – Preliminary Engineering for High Value Sites

The proposal states: “Past studies and subsequent recharge efforts conducted by the USGS, the IDWR and WD 01 have revealed that there are high-value recharge sites that could be supplied from the North Fork, and between Beaver Dick Park and American Falls. In the development of recharge facilities, expansion of the existing canals as surface delivery systems for delivering water to the aquifer has long been recognized and remains an important first step in establishing dedicated recharge facilities above American Falls.” The Coalition is seeking funding to do needed engineering and limited site improvement within Fremont Madison Irrigation District, the New Sweden Irrigation District, and the Aberdeen Springfield Canal Company and potentially a recharge opportunity for the City of Idaho Falls. The cost requested from IWRB for this task is \$331,000.

Staff review: Additional details are required to evaluate the value of this task:

- Based on information provided in the proposal, it is unclear how the potential “high-value recharge sites” were evaluated and/or ranked and whether these sites will address the objectives of the Coalition. IDWR staff assumes these sites will be re-assessed based on revised criteria developed through the studies described in this proposal. It is premature to propose engineering until modeling and site evaluation has been completed.
- Details related to the task budget, projected timeline with key milestones, overall length of the task, and the relationship to the timing of other task should be included.

#### Task 5 – Final Report

It is stated in the proposal that the final report is “critical in getting the associated cities to make commitments for future project funding”, and that documentation of the actual development of recharge facilities and the establishment of aquifer storage credits likely will have long-term scientific, historic, and legal implications. The Coalition is requesting \$125,000 from IWRB for this task.

Staff review: To ensure transparency and good stewardship of public funds, the documentation of work funded by the IWRB is a requirement. A more detailed accounting of the \$125,000 budget developed for this task should be provided. The description of the content of the final report includes a number of things that were not outlined in the previous tasks, such as:

- A review of elements like the bias that exist in the current IDWR permit processing procedures
- Groundwater deliveries
- Credit tracking

A detailed budget and breakdown of report content will allow the IWRB to assess the comprehensiveness and potential application of the final report and proposed deliverables.

### **Proposal Summary**

The Coalition has legitimate issues concerning municipal water supplies in the ESP. However, it is unclear if the analyses outlined in this proposal will provide comprehensive solutions to those issues. In addition, several points that should be addressed for further consideration by the IWRB include:

- Are the needs, goals and objectives of the Coalition clearly defined?
- Will the analyses identified in the proposal address and provide comprehensive strategies to meet the Coalition's goals and objectives?
- Determining key success factors and level of risk associated with proposed solution
- Need for additional structure/information
- Does the proposal meet IWRB's goals for aquifer stabilization
- Financial commitment of the Coalition

The following portion of this section addresses these issues in more detail.

As stated, the Coalition's proposal is intended to address the cities concerns related to current and future water supply. The proposal suggests the creation of private aquifer-storage credits through managed recharge would provide a solution to these issues. The tasks associated with this proposal are not directly aligned with the creation of private aquifer-storage credits in the State of Idaho and the development of private recharge credits would require significant additions to Idaho statutes and/or rules. There is not significant information provide in the proposal to indicate how the requested \$597,000 (from the IWRB) would achieve the Coalition's desired goal of private aquifer-storage credits. The amount requested for this proposal seems significant, especially considering that arguably the information provided would not lead to a solution for the Coalition's water supply concerns.

There are also concerns that the success of the proposal is dependent on key factors outside of the Coalition's controls besides the establishment of private aquifer storage-credits. Acquiring access to recharge sites outside of areas controlled by Coalition members can be expensive and/or require a significant permitting process that can increase cost dramatically. The proposal implies that long-term commitments and funding have not been obtained for bringing recharge facilities on-line. Without these key factors in place, significant work and money could be spent without the necessary commitments or funding to complete the projects. The proposal anticipates that WD 01 will play an integral part in the success of the Coalitions plan, however, from the submitted proposal it is not clear that the Coalition has the support of WD 01. It does not appear that the Coalition has conducted any type of risk analysis to determine what the key factors to success are, the potential cost, and potential alternatives. A risk analysis of different solutions can be beneficial in determining the best path forward and collaborating opportunities.

Concerning the level of detail provided in the proposal, significantly more information is required to evaluate if/how each task will address the Coalition's objectives, and whether the potential solutions are consistent with IWRB's goals and priorities. Necessary detail includes clear and concise goals, defined methodologies, timelines with milestones, and clearly defined deliverables. Based on information provided it is difficult to determine how some of the studies, analyses and pilot projects differ from work already completed or is currently being conducted by IDWR. A significant amount of field, technical and administrative analyses of the ESPA has been completed over the last several decades by IDWR, IWRB and others. This work continues in the form of monitoring, measurement, modeling and recharge capacity development across the ESPA. Therefore, it is important that the Proposal contain sufficient information to avoid duplication of work.

Based on the information provided in the proposal it is unclear whether these tasks are consistent with the IWRB's goal of stabilizing the ESPA. The lack of structure in the proposal also raises concerns about the dedication of IDWR staff and WD 01's resources without well-defined objectives. It is important to determine the roll and level of participation expected from IDWR and IWRB staff.

It is clear the Cities in the ESPA have legitimate concerns and are committed in developing solutions to their problems. Considering the amount of the funding request, almost \$600,000 from the IWRB, it would be helpful to know whether the Coalition is willing to support the effort with matching funds and/or in-kind services. This detail will help inform the IWRB concerning the willingness of stakeholders to participate in developing regional solutions.

### **Conclusions/Recommendations**

The IWRB is sensitive to the water supply issues facing all water users on the ESP. While the IWRB focus is on efforts to stabilize the aquifer, it is also supportive of partnerships that help address specific stakeholder problems. A significant amount of additional information is required to adequately review and respond to this proposal. Staff recommends meeting directly with Coalition members, specifically city Mayors and their senior staff, to better understand the objectives of the Coalition and challenges facing members of the Coalition. IWRB staff would like to present to the Coalition the latest data and information available from the most recent work in the ESPA as well as opportunities to coordinate with the IWRB. IWRB staff can also assist the Coalition in assessing their current situations and future needs to distinguish the key issues and develop strategies to address their specific problems. Documenting the cities current and projected water demands, distributions, and supplies can be a key step to assessing potential solutions and justifying future expenditures.

# Memorandum

To: Idaho Water Resource Board

From: Wesley Hipke, Brian Patton, Cynthia Bridge Clark, Neal Farmer

Date: March 9, 2015

Re: ESPA Managed Recharge Status Report



## Progress/Status of ESPA Managed Recharge

### Summary:

ESPA Recharge from October 27<sup>th</sup>, 2014 to March 9<sup>th</sup>, 2015

ESPA Area	Canal System	5-Year Retention Time <sup>1</sup> (%)	Median Recharge Rate (cfs)	Days Recharged	Volume Recharged <sup>2</sup> (Acre-feet)	Conveyance Costs <sup>2</sup> (\$)
Upper Valley	Aberdeen-Springfield Canal Company	~26	169	10	3,328	\$23,294
	Great Feeder Canal Company	~18	170	17	5,732	\$45,859
	Fremont Madison Irrigation District	~44	170	17	5,389	\$43,113
	Upper Valley Total			14,449	\$112,266	
Lower Valley	American Falls Reservoir District No. 2 (Milner-Gooding Canal)	~40	153	110	35,719	\$210,005
	Northside Canal Company	~40	127	20	4,175	\$12,526
	Southwest Irrigation District	~55	28	25	1,495	\$5,171
	Twin Falls Canal Company	~50	38	127	11,248	\$79,872
	Lower Valley Total			52,637	\$307,574	
TOTAL					67,086	\$419,840

<sup>1</sup> 5-year retention rate determined by the ESPAM2.1 groundwater model.

<sup>2</sup> Recharge Volumes and Conveyance cost are preliminary and subject to change upon verification of volumes delivered for recharge and confirmation of the number of days delivered.

**Goal:** Develop a managed recharge program in the ESPA capable of recharging 250,000 acre-feet per year to stabilize the Eastern Snake Plain Aquifer. The metric of success for this goal is sustaining aquifer volumes and spring discharges in the ESPA.

**Problem:** The Eastern Snake Plain Aquifer is currently losing approximately 200,000 acre-feet per year from aquifer storage. The total loss from storage since 1952 is 12 million acre-feet. This has resulted in declining aquifer levels and spring flows from the aquifer, in turn leading to conjunctive administration water delivery calls and uncertainty as to whether the Swan falls Agreement minimum flows can be maintained.

**Water Availability (natural flow) for Recharge:** The available water supply for recharge occurs as winter-time flows (November-March) and as spring run-off flows (March-April). The Snake River winter-time flows are usually a minimum of 500 cfs and are available for diversion from the Milner Pool. During this recharge season from October 27<sup>th</sup> to March 6<sup>th</sup> over 290,000 af have flowed past Milner. Above American Falls Reservoir, opportunities for recharge are limited to spring run-off flows. These conditions only exist approximately 50% of the years and can be very sporadic. There is also some winter-time flow in the Little Wood River. (Median annual volumes: Snake River at Milner = 500,000 af, Snake River above American Falls = 6,000 af, and Wood River system = 10,000 af).

**Strategy:**

1. Maximize diversion of flows spilling past Milner during non-irrigation season, including winter-time and spring-time diversions, which are available for recharge under the IWRB's current recharge water right and will provide a "base-load" for recharge. During the current recharge season (October 27<sup>th</sup>, 2014 to March 6<sup>th</sup>, 2015), over 280,000 acre-feet (af) flowed past Milner. The IWRB is pursuing various strategies to maximize non-irrigation season recharge:
  - a. Non-irrigation season delivery agreements with canals that divert from Milner were developed to include the winter period.
  - b. Infrastructure modifications are required to facilitate winter recharge delivery and increase recharge capacity. Various studies to assess necessary modifications are in progress or complete. Some modifications will be completed this year.
  - c. Evaluation of development potential of dedicated, winter-operational recharge facilities that divert from the Milner Pool independent of canal companies (direct pump-to-injection wells) in ongoing.
2. Develop a winter-operational facility to utilize the Little Wood River water supplies. LSRARD approved \$25,000 at the last LSRARD Board meeting to fund an engineering evaluation and a cost estimate for work needed to divert water out of the Little Wood River into the Milner Gooding Canal down to the Shoshone/LSRARD recharge basin. LSRARD president and the engineers completed an onsite visit on Friday March 6<sup>th</sup>.
3. Maximize opportunities for diverting springtime releases for the delivery of recharge above American Falls Reservoir that do not interfere with filling the reservoir system. Natural flow for recharge in the upper valley will likely only be available during some spring run-off periods. The avenues that are being pursued include:
  - a. Executed agreements for the delivery of water for recharge during specific springtime releases.
  - b. Investigation of infrastructure modifications that are required to deliver recharge water during the non-irrigation season, in winter conditions.
  - c. Investigation of infrastructure modifications to improve spring-time recharge capabilities and potentially develop off canal recharge sites for flood control release after the irrigation season has begun.

4. Continue current opportunistic recharge efforts throughout the basin and manage adaptively to address changing circumstances.

#### **IWRB Funds for ESPA Recharge:**

IWRB has the following funds available for Recharge:

- \$5,000,000/year - from Cigarette Tax for “statewide aquifer stabilization” (beginning July 2015)
- \$4,000,000 – ESPA infrastructure engineering studies and improvements
- \$1,215,432 – ESPA conveyance cost for 2015
- \$337,597 – Revolving Development fund for recharge project preliminary development

The following table summarizes the maximum funds allocated by executed contracts (Contract Maximum), funds paid out (Accrued) and funds allocated to proposed contracts (Proposed). For recharge conveyance, the contract maximum funds are greater than the \$1.2 million available for conveyance of recharge. The contract maximum funds are larger than available funds to provide flexibility in maximizing the volume of water that could be delivered for recharge. Projected conveyance cost for the winter 2014 – spring 2015 recharge season is less than \$700,000.

<b>Funds currently allocated for 2015</b>		
<b>Type</b>	<b>Contract Maximum</b>	<b>Accrued (as of Mar. 4<sup>th</sup>)</b>
Infrastructure Improvements	\$247,000	\$0
Engineering & Recharge Studies	\$457,827	\$199,406
Recharge Conveyance	\$2,170,000	\$377,955
Operation and Maintenance	\$100,000	\$0
<b>TOTAL</b>	<b>\$2,974,827</b>	<b>\$577,361</b>

#### **New Action Items:**

1. Great Feeder diversion turnout improvements: The Idaho Water Resource Board (IWRB) may assist with infrastructure improvements and modifications necessary to facilitate spring – flood control recharge delivery opportunities.
2. AFRD2 concrete flume improvements: AFRD2 has delivered recharge water during the non-irrigation season in accordance with a 5-year delivery agreement with the IWRB under the incentivized payment plan. An engineering study was completed to evaluate potential improvements to the concrete flume portion of the Milner-Gooding canal that would allow winter recharge water to be delivered to the Shoshone recharge site.

The results of the engineering study need to be discussed with AFRD2 to determine the best options moving forward that would work for AFRD2 and support IWRB’s strategy to increase recharge deliver capacity in the Lower Valley ESPA.

3. TFCC winter-time infrastructure improvements: TFCC has delivered recharge water during the non-irrigation season in accordance with a 5-year delivery agreement with the IWRB under the incentivized payment plan. An engineering study is in progress to evaluate necessary infrastructure modifications to facilitate diversion of recharge water over the winter.

The results of the engineering study need to be discussed with TFCC to determine the best options moving forward that would work for TFCC and support IWRB's strategy to increase recharge deliver capacity in the Lower Valley ESPA.

4. Upper Valley ESPA, assessing infrastructure improvements: Numerous entities have expressed interest in conveying IWRB's recharge water when it is in priority in the Upper Valley. If flood control water is released after the irrigation season as begun, water can only be delivered for recharge in off-canal sites. IWRB is interested in conducting a high-level preliminary analysis of infrastructure improvements that could improve or develop off-canal sites.

### **Summary of ESPA Recharge Delivery Operations:**

#### **Upper Valley ESPA Recharge**

The payment structure for entities to convey the IWRB's recharge water for the Upper Valley is outlined below:

- 1) **Base Rate** – determined by 5-year aquifer retention zone in which the contracted canal companies or irrigation district is located using ESPAM2.1:
  - Greater than 40% retained in aquifer at 5 years      \$5.00/AF delivered
  - 20% to 40% retained in aquifer at 5 years      \$4.00/AF delivered
  - 15% to Less than 20% retained in aquifer at 5 years      \$3.00/AF delivered
- 2) **Added Incentive for Delivery** - percentage of days a canal delivers for recharge during the period when recharge right is "on" and IWRB issues a Notice to Proceed:
  - Greater than 75%      \$3.00/AF delivered
  - 50% to less than 75%      \$2.00/AF delivered
  - 25% less than 50%      \$1.00/AF delivered

A limited amount of water became available for recharge above American Falls from February 16<sup>th</sup> to March 4<sup>th</sup>. Due to the limited duration, volume of water available and changing operational conditions only three entities delivered recharge water for IWRB. However, eleven entities in total expressed interest and executed or were in the process of developing contracts with the IWRB.

Entities that delivered recharge water under the IWRB's water right in the 2015 spring portion of the recharge season include:

- **Aberdeen-Springfield Canal Company (ASCC)** started recharge deliveries on February 22<sup>nd</sup>, after receiving a waiver from the USBR concerning their winter savings agreement for Palisades Reservoir. Ceased recharge activities on March 3<sup>rd</sup>.
- **Great Feeder Canal Company (GFCC)** started recharge deliveries on February 16<sup>th</sup>, and ceased recharge activities on March 4<sup>th</sup>.
- **Fremont Madison Irrigation District (FMID)** started recharge deliveries on February 16<sup>th</sup>, and ceased recharge activities on March 4<sup>th</sup>.

### **Lower Valley ESPA Recharge**

The payment structure for entities to convey the IWRB's recharge water for the Lower Valley is outlined in the following table.

<b>Lower Valley ESPA Payment Structure</b>		
<b>Number of Days Recharge Water Delivered *</b>	<b>Payment Rate per AF Delivered</b>	New incentivized payment structure has been put in place to encourage canals to divert recharge water as long as possible during the non-irrigation season.  * Number of days between when recharge permit turns on in fall and when it turns off following spring.
1-to-25 days	\$3/AF	
26-to-50 days	\$5/AF	
51-to-80 days	\$7/AF	
81-to-120 days	\$10/AF	
More than 120 days	\$14/AF	

During the 2014-2015 recharge season, the following entities have diverted IWRB's recharge water in the Lower Valley:

- **Twin Falls Canal Company (TFCC)** signed a 5-year conveyance contract and began recharge deliveries on October 27<sup>th</sup>, 2014. They have recharge continuously and plan to continue recharging until the start of the irrigation season as long as the IWRB's recharge water right is in priority.
- **American Falls Reservoir District 2 (ARFD2)** signed a 5-year conveyance contract and began recharge diversions on October 27<sup>th</sup>, 2014 through their Milner-Gooding canal. AFRD2 has diverted water to through their canal to the MP31 site, and the Shoshone site for recharge. During this time, the Milner-Gooding canal suspended recharge activities for a couple of periods due to canal maintenance. Until the irrigation season begins, they plan to divert recharge water to the MP31 site.
- **Southwest Irrigation District (SWID)** signed a 5-year conveyance contract and started diverting water for recharge to their injection wells on February 6<sup>th</sup>, 2015. They also plan to continue recharge until the irrigation season begins.
- **Northside Canal Company (NSCC)** signed a 5-year conveyance contract and began diversions for recharge on February 18<sup>th</sup>, 2015. An engineering study began in late February to assess potential infrastructure modification for winter recharge and conduct an infiltration test on Wilson Lake. NSCC plans to continue diverting recharge water until the start of irrigation season.
- **Big Wood Canal Company (BWCC)** signed a 5-year conveyance contract, however, they have not diverted recharge water during this recharge season.

### **Monitoring and Measurement Program for ESPA Recharge**

Development of a monitoring and measurement program is underway to address regulatory requirements and assess impacts of recharge activities. Monitoring activities include quality control of data collection, measurement of ground water levels, recharge diversions and water quality, specifically:

- Quality assurance and control of recharge flow measurements have been completed with assistance by TFCC, AFRD2, Idaho Power and IDWR staff.
- Water quality sampling at MP31 has been improved by installing pumps into two monitor wells. Most recent test results using the pumps show no bacteria in the samples collected from the wells.
- Pressure transducers have been installed at the MP31 headgate to develop a flow rating curve, and installed into the floor of the basin to record pool levels. Transducer data shows that the basin drains in 4 days after the gates are shut.
- A water quality measurement agreement has been signed with the Idaho Bureau of Labs.

#### **Summary of ESPA Recharge Improvement Activities:**

The following tables provide a summary of the current infrastructure modifications and improvement activities initiated by the IWRB to improve recharge capacity.

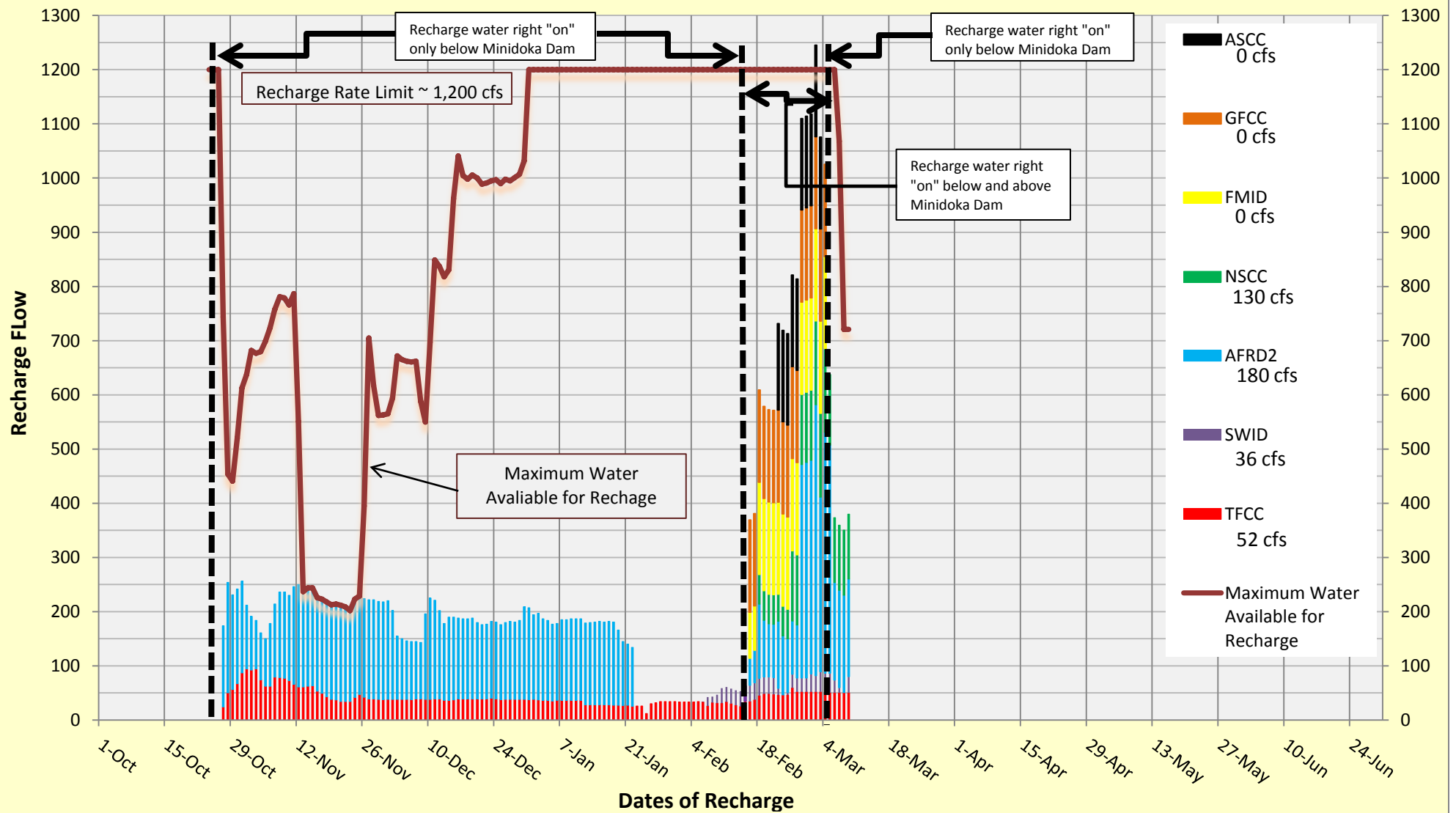
<b>Infrastructure Modification Activity Summary</b>			
<b>Location</b>	<b>Activity *</b>	<b>Cost</b>	<b>Status</b>
<b>American Falls Reservoir District No. 2</b>	Mile Post 28 Hydro-Power Plant has experiences complications from winter recharge flows. Construction of a wall across turnout to plant recommended	\$60,000	Construction to begin next fall after the irrigation season
	Winter-capable road along Milner-Gooding Canal	\$177,000	~50% complete, work ongoing
	Engineering study for replacement of deteriorated concrete flume at Shoshone	\$18,571	Complete
	Evaluation and implementation of project(s) to have the concrete flume to the Shoshone Recharge Site be able to deliver recharge water over the winter (would increase recharge capacity by ~250 cfs)	Estimated-\$600,000 to \$1.2 M (dependant on solution)	Evaluation complete in March. Begin negotiations with AFRD2 to determine best path forward.
<b>Twin Falls Canal Company</b>	Engineering study to identify necessary improvements to allow for winter recharge	\$20,000	Complete
<b>Southwest Irrigation District</b>	Engineering study for making West Cassia Pipeline winter-capable	\$50,000	Can be executed under IWRB authorization to support engineering work. In progress.
	Execute actions required to make West Cassia winter-capable	To be determined	To be determined
<b>Northside Canal Company</b>	Engineering study to allow winter flows to Wilson Lake (4 existing system hydropower plants will require modifications) and determine infiltration capability of Wilson Lake	\$122,000	Engineering study in progress, Wilson Lake leakage test completed at 130 cfs.

<b>Great Feeder Canal Company</b>	Proposal being prepared for recharge conveyance and capacity improvements in their system.	To be determined	Proposal to be submitted to IWRB
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\*The IWRB has offered to help pay for infrastructure modifications needed for winter recharge deliveries. Standard clause inserted in agreements through which IWRB funds infrastructure modifications: If the canal system fails to deliver a specified amount of recharge over the 5-year contract term, the IWRB's infrastructure investment becomes repayable to the IWRB at loan terms.

<b>Development of New Recharge Sites - Direct Pump-to-Injection Well Activities</b>	
<b>A&amp;B Pumping Plant Location</b>	<ul style="list-style-type: none"> <li>Water quality monitoring continues.</li> </ul>
<b>NSCC Pumping Plant</b>	<ul style="list-style-type: none"> <li>BOR permit received. Drilling completed on adjacent private land (Nightingale) to expedite the project.</li> </ul>
<b>Southwest Irrigation District Pumping Plant</b>	<ul style="list-style-type: none"> <li>IDWR reviewing injection well application. SWID wanted to wait until they had additional insurance coverage in place.</li> <li>Engineering study of SWID system to accommodate winter recharge anticipated.</li> </ul>
<b>Nightengale Private Property Site</b>	<ul style="list-style-type: none"> <li>Test injection well completed down to 506 foot depth.</li> <li>Test injection planned for spring 2015.</li> </ul>
<b>US BOR Site Upstream from A&amp;B Pump Plant</b>	<ul style="list-style-type: none"> <li>Drilling permit received by BOR on March 4<sup>th</sup>.</li> <li>IDWR is processing a permit for an injection well test.</li> </ul>
<b>3<sup>rd</sup> Site – BOR Land</b>	<ul style="list-style-type: none"> <li>Potential test well site identified - located on north side of reservoir downstream of A&amp;B's pumping plant.</li> </ul>
<b>A&amp;B Test Well at Milner Pumping Plant</b>	<ul style="list-style-type: none"> <li>A&amp;B will evaluate test injection data from the BOR well to determine where to drill a test well at their Milner pumping plant.</li> </ul>
<b>State Land South of Richfield (Little Wood Recharge Site)</b>	<ul style="list-style-type: none"> <li>A permit to drill a test injection well on state land south of the city of Richfield is complete. LSRARD is assisting with the permit and drilling process. On hold until engineering report received for the 'Bifurcation' modification to divert Little Wood River water for recharge.</li> </ul>

## Total Water Board Recharge Diversions During 2014 - 2015 Season



Volume of water recharged in the ESPA from 10/27/2014 – 3/9/2015



NSCC routing 600 cfs Board recharge water through the X-cut bypass weir and gauge on February 18<sup>th</sup>.



Milner Gooding canal gates at the X-cut bypass showing 'coalition of cities' recharge water flowing to Gooding.



Southwest Irrigation District Milner reservoir pump station pumping Board recharge water at 27 cfs.



SWID injection well recharging water, measured flow 7,100 gpm (16 cfs).



NSCC, 55 cfs at bypass Feb 24th.



NSCC, 55 cfs entering Wilson Lake Feb 24th.



Wilson Lake Dam with recharge water on March 3<sup>rd</sup>, 2015.



Shoshone/LSRARD recharge basin on March 5<sup>th</sup>, 2015.



Idaho Bureau of Labs (IBL) staff collecting water quality samples at the Shoshone/LSRARD recharge basin on March 5, 2015.



IBL staff collecting water quality samples at MP31 gate on March 5, 2015.



IBL staff collecting water quality samples from a monitor well at MP31 on March 5<sup>th</sup>.



Mile Post 31 recharge basin on March 5<sup>th</sup>, 2015.



Gooding recharge channel spill water on Feb. 27<sup>th</sup> at 4 pm.



Ship rock island photos at MP31 basin showing the pool level on Nov. 12, 2014 verses March 5<sup>th</sup>, 2015.



LSRARD (Bob Lorkowski) and Idaho Power (Dave Blew) assisting IDWR staff with borehole camera efforts at a Milner Reservoir test well.



Recharge water flowing down the Milner Gooding cement flume and into the recharge basin. No water flowing past the main gate on down the canal.



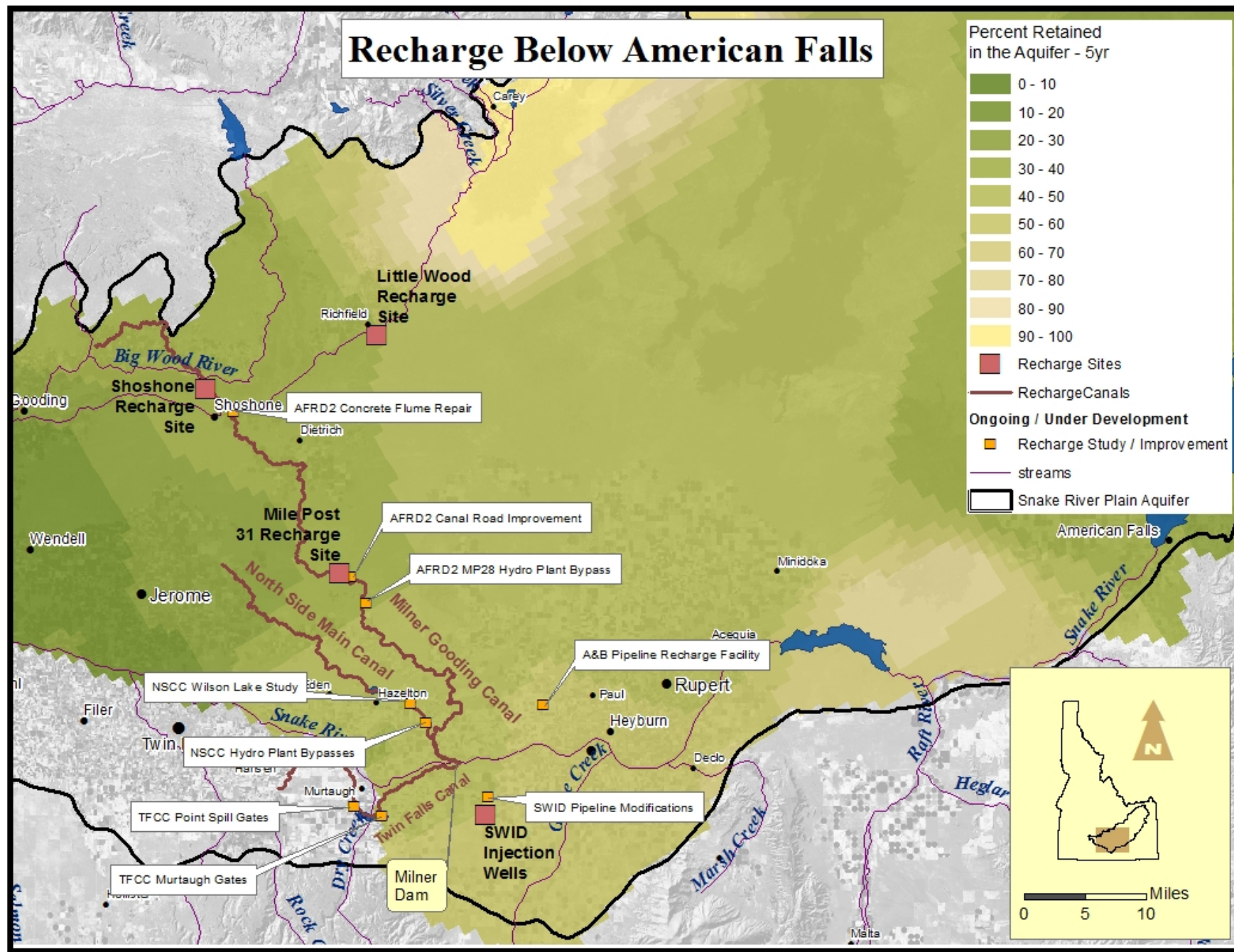
ASCC recharge in canal and Hilton spill on February 26th.



ASCC headgate feeding canal Feb 26th.



Gooding recharge channel spill water entering the Big Wood River.





## Memorandum

To: Idaho Water Resource Board

From: Neeley Miller, IDWR Planning & Projects Bureau

Date: March 9, 2015

RE: North Idaho Future Water Demand Update

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### Background for North Idaho Future Water Demand Study

House Bill 479 authorized the one-time appropriation in the amount of \$15 million to the Idaho Water Resource Board. Projects identified for the \$15 million included \$500,000 to conduct joint water need studies to determine extent of future water needs in coordination with Northern Idaho communities prior to any interstate water dispute with the State of Washington to ensure water availability for future economic development.

The Rathdrum Prairie Comprehensive Aquifer Management Plan (RP CAMP) identifies “studies necessary to support RAFN water right applications” as a critical action item for RP CAMP implementation. The Idaho Water Resources Research Institute (IWRRI) was asked by Rathdrum Prairie municipal water providers to develop a proposal to determine extent of future water needs to ensure availability for future economic development. IWRRI staff developed a proposal and shared it with IWRB and IDWR staff. Board staff determined that the proposal meets the Legislature’s intent included in HB 479. IDWR staff familiar with RAFN applications indicated the tasks identified in the proposal appear to be useful for obtaining necessary information for RAFN applications.

The Board passed a resolution at the July 2014 Board meeting approving the expenditure of a total of \$201,000 from the IWRB Secondary Aquifer Management Account for the Rathdrum Prairie Future Water Demand Study. The contract between IDWR and IWRRI was executed on September 8, 2014 and ends on May 30, 2015.

### Update

#### Task #1-4: Rathdrum Prairie Aquifer Future Water Demand Report

Work on Tasks 1-4 has been completed (Task #1 Service Area Mediation, Task #2 Update of Existing Demand Study, Task #3 30-year RPA Population Projection/Water Demand Projection, and Task #4 Water Rights Gap Analysis).

The Rathdrum Prairie Aquifer (RPA) Future Water Demand Report was delivered to IWRB staff, IDWR and RPA municipal water providers on schedule on 12/15/14. A stakeholder meeting was held to present the report the same day, attended by providers, IDWR, and consulting engineers. At the January Board meeting, Mark Solomon (IWRRI) provided the Board with a presentation on Rathdrum Prairie Aquifer Future Water Demand Report.

The RPA Future Water Demand report is posted on the University of Idaho Community Water Resource Center website and is available for download at: <http://www.uidaho.edu/cda/cwrc/rafn>

Several Rathdrum Prairie municipal water providers utilized the information developed in the report to submit applications for reasonably anticipated future needs (RAFN) water rights on the Rathdrum Prairie. These municipal providers include: North Kootenai Water and Sewer District (4 applications), Avondale Irrigation District

(1 application), Remington Water District (1 application), Greenferry Water District (1 application), and Hauser Lake Water Association (1 application).

As you are aware, the State of Washington adopted a new instream flow rule for the Spokane River on January 27, 2015. The rule went into effect on February 27, 2015. The above mentioned RAFN applications by Rathdrum Prairie municipal providers, if approved by IDWR, would have priority dates senior to the instream flow rule adopted by the State of Washington.

#### Task #5: Integrated Water Resource Management Plan:

The final task of this study is the development of an Integrated Water Resource Management Plan. The first work item for the IWRRM is complete with GIS files built for the current MWWTP service areas of the City of Coeur d'Alene, City of Post Falls, and Hayden Area Regional Sewer Board.

As part of the IWRM, IWRRI is meeting with municipal wastewater providers to determine Rathdrum Prairie areas that will not be served by the three major MWWT facilities. When disconnects between forecast water demand and wastewater treatment capacity are identified, one-on-one meeting with the appropriate governing boards are being scheduled to determine whether the wastewater obstacle to water resource use can be overcome. As with Task 1 (service area mediation), IWRRI is serving as the neutral third party for purposes of fostering discussion, and if appropriate, acting as mediator to achieve a long-term outcome.

A final scope of work for updating the 2008 RP Master Wastewater Plan is being negotiated with J-U-B Engineers.

#### **Rathdrum Prairie CAMP Advisory Committee**

The Rathdrum Prairie CAMP (RP CAMP) Advisory Committee meeting met at the public library in Coeur d'Alene, Idaho on February 24, 2015. The meeting was well attended, with approximately twenty-five people in attendance.

The following presentations were made:

- Rathdrum Prairie Future Demand Study – Dr. Mark Solomon, Idaho Water Resources Research Institute
- Rathdrum Prairie Groundwater Pumping Study – Dr. Dale Ralston, Ralston Hydrologic Services, Inc.
- Monitoring Update for the Rathdrum Prairie – Ken Neely, Idaho Department of Water Resources

During and following the presentations, committee members and the audience asked questions and discussed the implications of each topic.

The committee briefly discussed plans for 2015, including the potential timing for a Rathdrum Prairie CAMP Advisory Committee meeting later this year. Potential agenda items included: a follow-up presentation from Mark Solomon on the Integrated Water Resource Management Plan highlighting the need to plan for wastewater in relation to future water use on the RPA, consideration of potential RP CAMP updates, and potential for collaboration with the State of Washington on a bi-state modeling effort.