IDAHO WATER RESOURCE BOARD

AMENDED AGENDA
MEETING NO. 2-11 OF THE
IDAHO WATER RESOURCE BOARD

March 11, 2011, at 8:30 a.m.

Idaho Water Center, Conference Rooms C and D
322 E. Front St. 6th Floor
Boise Idaho

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1. Roll Call
2. Agenda and Approval of Minutes 1-11
3. Public Comment – The Board will allocate a period of time (not to exceed 30 minutes) for the public to address the Board on subjects not specifically shown as an agenda item.
4. IWRB Financial Program
   a. Status Report
   b. Loan Request – Boise City Canal Company
   c. Water Transactions – Pole Creek
   d. ESPA Managed Recharge Program Update
5. Planning Activities
   a. ESPA CAMP
   b. Rathdrum Prairie CAMP
   c. Treasure Valley CAMP
   d. State Water Plan Update
6. Water Storage Studies
7. Establishment of the Upper Snake River Advisory Committee
8. Policy Direction on Snake River Minimum Streamflows
9. Other Items Board Members May Wish to Present
10. Next Meeting 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 let Diana Ball, Administrative Assistant, know in advance so arrangements can be made. The phone number is (208) 287-4800 or email diana.ball@idwr.idaho.gov.

IDAHO WATER RESOURCE BOARD

In Preparation for Meeting No. 2-11

March 10, 2011 at approximately 9:30 a.m.
immediately following the Executive Session to be held at 8:30 a.m.

Idaho Water Center, Conference Rooms C and D
322 E. Front St. 6th Floor
Boise Idaho

1. **EXECUTIVE SESSION –** The Board will meet in Executive Session at 8:30 a.m. pursuant to Idaho Code Section 67-2345(1) (f) to communicate with legal counsel regarding pending litigation. **Executive Session is closed to the public.**
2. Director's Report
3. IWRB Housekeeping Items
4. Financial Action Items
   a. Loan Request – Boise City Canal Company (**See Tab 4b in the Board Book**)
   b. Water Transactions – Pole Creek (**See Tab 4c in the Board Book**)
5. ESPA Monitoring Network Presentation – Rick Raymondi, IDWR
6. ESPA Storage Change Study Presentation – Mike McVay, IDWR
7. ESPA Managed Recharge Policy Discussion
8. ESPA CAMP (**See Tab 5a in the Board Book**)
9. Rathdrum Prairie CAMP (**See Tab 5b in the Board Book**)
10. Treasure Valley CAMP (**See Tab 5c in the Board Book**)
11. Bull Trout Designation Impacts

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MEMO

To: Idaho Water Resource Board
From: Brian W. Patton
Subject: Water Resource Projects Funding Program Status Report
Date: February 28, 2011

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

Revolving Development Account (main fund)

Committed but not disbursed	
Loans for water projects	$2,127,925
Water storage studies	$878,162
Total committed but not disbursed	$3,006,087
Loan principal outstanding	10,085,111
Uncommitted balance	2,039,352
Estimated revenues next 12 months	1,810,000
Commitments from revenues next 12 months	0
Estimated uncommitted funds over next 12 months	3,849,352

Rev. Dev. Acct. ESPA Sub-Account

Committed but not disbursed		
CREP	2,419,581	
Aquifer recharge	566,883	
Bell Rapids	361,620	
Palisades storage	10,000	
Black Canyon Exchange	317,485	
Loan for water project	250,000	
ESPA CAMP	100,000	
Total committed but not disbursed		$4,025,569
Loan principal outstanding		486,555
Uncommitted balance		27,367
Estimated revenues next 12 months		172,000
Commitments from revenues over next 12 months		0
Estimated uncommitted funds over next 12 months		199,367

Rev. Dev. Acct. Bell Rapids Sub-Account

Committed but not disbursed (finance costs)	$177,410
Estimated revenues next 12 months *(1)*	2,000
Commitments from revenues over next 12 months	2,000
Estimated uncommitted funds over next 12 months	0

Rev. Dev. Acct. Dworshak Hydropower (2)		
Committed but not disbursed (repair fund, etc.)		$1,243,196
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
Rev. Dev. Acct. Pristine Springs Sub-Account		
Committed but not disbursed		
Repair fund	$857,680	
ESPA CAMP	2,465,579	
Total committed but not disbursed		$3,323,259
Loan principal outstanding		8,652,165
Uncommitted balance		0
Estimated revenues next 12 months		1,732,000
Commitments from revenues over next 12 months		1,732,000
Estimated uncommitted funds over next 12 months		0
Rev. Dev. Acct. Upper Salmon/CBWTP Sub-Account		
Committed but not disbursed		$1,996,348
(Upper Salmon flow enhancement projects)		
Estimated revenues next 12 months *(4)*		30,000
Commitments from revenues over next 12 months		30,000
Estimated uncommitted funds over next 12 months		0
Water Management Account		
Committed but not disbursed:		$112,374
Loan principal outstanding		13,672
Uncommitted balance		2,082
Estimated revenues next 12 months		2,000
Commitments from revenues over next 12 months		0
Estimated uncommitted funds over next 12 months		$4,082
Total committed but not disbursed		**$13,884,243**
Total loan principal outstanding		**19,237,503**
Total uncommitted balance		**2,068,801**
Total estimated uncommitted funds over next 12 months		**4,052,801**

(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 $1,712,203.
(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.

Summary of Financial Action Items:

The IWRB will be considering funding for the following loan request:

Applicant	Project	Request	Recommendation
Boise City Canal Company	Repair section of buried canal	$15,000 loan	$15,000 loan from Revolving Development Account

The IWRB will be considering action on the following Upper Salmon Water Transaction Project:

Project	Project Description	Project Costs	Recommendation
Pole Creek	1-year extension of existing project that has been active for last 5 years	Up to $32,130	Up to $32,130 if funds are received as expected from BPA

Rental Pool Annual Reports and IWRB Surcharge

The Annual Reports for 2010 operations for the Boise (WD63) Rental Pool, the Payette (WD65) Rental Pool, and the Upper Snake (WD01) Rental Pool have been received. The IWRB's surcharge received from these three major rental pools totaled **$248,155** for 2010. These funds have been deposited into the IWRB's Revolving Development Account. The report numbers are summarized here. If any of you would like further information please let us know.

Rental Pool	AF rented in-basin	AF rented out-of-basin*	Return to spaceholder	Water District administrative fee	IWRB surcharge
Boise (WD63)	3,389	15,400	$220,596	$13,120	$22,495
Payette (WD65)	5,221	163,215	$857,680	$168,435	$83,844
Upper Snake (WD01)	66,339	253,066	$945,357	$255,524	$141,816

*Note – the Boise numbers do not include release of BOR uncontracted space while the Payette and Upper Snake numbers do include the release of uncontracted space.

The following is a list of potential loans:

Potential Applicant	Potential Project	Preliminary Loan Amount	Comment
Lake Reservoir Company	Automate Payette Lake outlet gates	$500,000	Waiting on outcome of federal (BOR) grant request
Marysville Canal Company	Phase 3 of gravity pressure pipeline project	$1,000,000	Waiting on outcome of federal (NRCS) grant request; IWRB has financed Phases 1 & 2 with $1.725M in loans
Weiser Irrigation District	Automate canal system	$100,000	Waiting on outcome of federal (BOR) grant request
Portneuf Irrigation Company	Pipe canal	$1,000,000	Waiting on outcome of federal (NRCS) grant request
Jughandle Estates Homeowners Association	Community water supply	$800,000	Forming LID and building project with interim financing. Once LID is complete and costs are known, may do this a Revolving loan or a as a stand-alone bond.

In addition we are still on track for a late spring bond issuance for the Bear River Canals Bond Pool. The bond size would be $2.2 million in order to match $2,462,540 in federal stimulus grant funds for improvements to five Bear River-area canals.

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IDAHO WATER RESOURCE BOARD
Sources and Applications of Funds
as of January 31, 2011
REVOLVING DEVELOPMENT ACCOUNT

Original Appropriation (1969)	$500,000.00
Legislative Audits	($37,814.45)
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	$4,832,124.72
Interest Earned State Treasury (Transferred)	$1,508,714.63
Filing Fee Balance	$47,640.20
Bond Fees	$1,474,173.20
Protest Fees	($175.00)
Series 2000 (Caldwell/New York) Pooled Bond Issuers fees	$43,657.93
Water Supply Bank Receipts	$2,473,977.75
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	($921,838.18)
Weiser Galloway Study - US Army Corps of Engineers	($88,000.00)

Bell Rapids Water Rights Sub-Account		
Legislative Appropriation 2005, HB392		$21,300,000.00
Interest Earned State Treasury		$689,050.42
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, etc.)		($6,240.10)
Commitments		
Ongoing Bell Rapids Finance Costs (trustee fees, etc.)		$177,409.86
Committed for alternative finance payment		$0.00
Total Commitments		$177,409.86
Balance Bell Rapids Water Rights Sub-Account		**($0.00)**
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		$14,193.49
Loan Interest		$779,431.25
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		$1,686,387.63
Appraisal		($15,000.00)
Insurance		($10,475.00)
Recharge District Assessment		($3,003.00)
Property Taxes and other fee assessments (Jerome County)		($5,598.99)
Rental Payments		$723,634.32
Pristine Springs Hydropower Projects		
Net power sales revenues		$153,688.79
Pristine Springs Committed Funds		
ESPA CAMP	2,465,578.88	
Repair/Replacement Fund	$857,679.61	
TOTAL COMMITTED FUNDS	$3,323,258.49	
Loans Outstanding		
North Snake and Magic Valley Ground Water Districts	$8,652,165.33	
Total Loans Outstanding	$8,652,165.33	
Balance Pristine Springs Sub-Account		**$0.00**
Upper Salmon/CBWTP Sub-Account		
Water Transaction Projects Payment Advances from CBWTP		$1,934,932.78
PCSRF Funds for Administration of Non-Diversion Easements on Lemhi River		$161,079.26
Interest Earned State Treasury		$50,254.52
Transfer to Water Supply Bank		($22,236.94)
Payments for Water Acquisition		($127,681.42)
Committed Funds		
Administration of Non-Diversion Easements on Lemhi River	$160,329.68	
Alturas Lake Creek (Breckenridge)	$2,089.45	
Beaver Creek (DOT LLP)	$21,685.86	
Big Hat Creek	$363.45	
Big Timber Tyler (Leadore Land Partners)	$474,057.61	
Fourth of July Creek (Vanderbilt)	$18,649.34	
Iron Creek (Phillips)	$240,597.33	

Lower Eighteenmile Creek (Ellsworth Angus Ranch)	$7,742.85		
Lower Lemhi M Olson (Mark Olson)	$11,064.19		
Lower Lemhi Thomas (Robert Thomas)	$2,932.03		
P-9 Bowles (River Valley Ranch)	$305,993.87		
P-9 Charlton (Sydney Dowton)	$20,253.83		
P-9 Dowton (Jim Dowton Ranch)	$242,705.27		
P-9 Elzinga (Elzinga)	$300,206.57		
Whitefish (Leadore Land Partners)	$187,676.85		
Total Committed Funds	$1,996,348.20		
Balance CBWTP Sub-Account		**$0.00**	
Eastern Snake Plain Sub-Account			
Legislative Appropriation 2005, HB392		$7,200,000.00	
Legislative Appropriation 2005, HB392, CREP Program		$3,000,000.00	
Interest Earned State Treasury		$1,816,461.21	
Loan Interest		$124,900.48	
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		($3,506,711.14)	
Reimbursement from BOR for Palisades Reservoir		$2,381.12	
W-Canal Project Costs		($326,834.11)	
Black Canyon Exchange Project Costs		($35,840.00)	
2008 Recharge Conveyance Costs		($14,580.00)	
2009 Recharge Conveyance Costs		($355,253.00)	
2010 Recharge Conveyance Costs		($210,906.82)	
Pristine Springs Cost Project Costs		($6,863.91)	
Loans and Other Commitments			
Commitment - ESPA Comprehensive Aquifer Management Plan - CDR Contract		$100,000.00	
Commitment - North Snake & Magic Valley GWD Loan - Mitigation Pipeline		$250,000.00	
Commitment - Remainder of Bell Rapids Water Rights Purchase (1)		$361,620.00	
Commitment - CREP Program (HB392, 2005)		$2,419,580.50	
Commitment - Recharge Conveyance		$159,764.73	
Commitment - Additional recharge projects preliminary development		$350,000.00	
Commitment - Palasades Storage O&M		$10,000.00	
Commitment - Black Canyon Exchange Project (fund with ongoing revenues)		$317,484.95	
Commitment - W-Canal Aquifer and Recharge Conveyance		$57,118.36	
Total Loans and Other Commitments		$4,025,568.54	
Loans Outstanding:			
American Falls-Aberdeen GWD (CREP)	$129,836.46		
Bingham GWD (CREP)	$89,042.17		
Bonneville Jefferson GWD (CREP)	$75,932.93		
Magic Valley GWD (CREP)	$124,102.03		
North Snake GWD (CREP)	$67,641.06		
TOTAL ESP LOANS OUTSTANDING	$486,554.65		
Uncommitted Balance Eastern Snake Plain Sub-Account		**$27,367.14**	
Dworshak Hydropower Project			
Dworshak Project Revenues			
Power Sales & Other	$4,866,892.87		
Interest Earned State Treasury	413,047.04		
Total Dworshak Project Revenues		$5,279,939.91	
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	$1,222,636.07		
Powerplant Repairs	$58,488.80		
Capital Improvements	$318,366.79		
FERC Payments	$35,956.16		
Total Dworshak Project Expenses		($2,324,540.63)	
Dworshak Project Committed Funds			
Emergency Repair/Future Replacement Fund	$1,213,195.00		
FERC Fee Payment Fund	$30,001.49		
Total Dworshak Project Committed Funds		$1,243,196.49	
Excess Dworshak Funds into Main Revolving Development Account			$1,712,202.79
TOTAL			**$15,130,550.21**

Loans Outstanding:	Amount Loaned	Principal Outstanding
Aberdeen-Springfield Canal Company (WRB-491; Diversion structure)	$329,761	$240,942.00
Bee Line Water Association	$157,500	$24,126.15
Big Wood Canal Company (23-Jan-09; Thorn Creek Flume)	$90,000	$58,234.31
Boise City Canal Company (WRB-492)...18th St Canal Rehab	$82,362	$41,216.39
Boise City Canal Company (WRB-492)...Grove St Canal Rehab	$110,618	$62,125.33
Bonnie Laura Water Corporation (14-Jul-06; Well repairs)	$71,000	$52,584.38
Caribou Acres Water Company	$88,769	$16,652.87
Carlin Bay Property Owners Association.	$115,609	$18,996.89
Challis Irrigation Company (28-Nov-07; river gate replacement)	$50,000	$39,679.15
Chaparral Water Association	$90,154	$28,072.20
Cloverdale Ridge Water Corp. (irrigation system rehab 25-sep-09)	106,400.00	$106,400.00
Conant Creek Canal Company	$239,615	$57,994.54
Cougar Ridge Water & Sewer District	$15,000	$0.00
Country Club Subdivision Water Association (18-May-07, Well Project).	$102,000	$85,697.44

Cub River Irrigation Company	$35,000	$4,280.22	
Cub River Irrigation Company (18-Nov-05; Pipeline project)	$1,000,000	$913,742.93	
Cub River Irrigation Company	$500,000	$479,874.10	
Dalton Water Association (14-Mar-08; Water main replacement)	$375,088	$155,836.20	
Deep Creek Property Owners Association	$25,115	$8,953.36	
Enterprise Irrigation District (14-Jul-06; Pipeline project)	$37,270	$27,962.68	
Enterprise Irrigation District (North Lateral Pipeline)	$105,420	$68,572.64	
Evergreen Terrace Water Association (water study; 25-sep-09)	15,000.00	$11,321.62	
Firth, City of	$112,888	$63,508.50	
Garden Valley Ranchettes Homeowners Association (25-Jan-05)	2,716.00	$2,198.76	
Genesee, City of (Storage tank, 22-Jan-10)	250,000.00	$250,000.00	
Georgetown, City of	$278,500	$134,933.77	
Harbor View Water & Sewer District (Combined Loans)	$602,819	$286,143.24	
Harpster Water District	$9,000	$6,541.63	
Howe Water District (5-Aug-05)	$10,000	$2,140.17	
Hoyt Bluff Water Association (Rathdrum Prairie Well)	$273,029	$102,075.82	
Jefferson Irrigation Company (well deepenings)	$110,780	$10,046.16	
Jefferson Irrigation Company (well deepenings)	$207,016	$116,155.38	
Jefferson Irrigation Company (9-May-2008 Well Replacement)	$81,000	$78,389.25	
Kulleyspell Estates Property Owners Assoc	$219,510	$16,799.01	
Last Chance Canal Company (WRB-497)	$500,000	$271,521.48	
Lakeview Water District	$45,146	$10,409.37	
Lava Hot Springs, City of	$347,510	$235,847.14	
Lindsay Lateral Association (22-Aug-03)	$9,600	$20,483.28	
Live-More Lake Community (9-Jun-04)	$42,000	$23,854.31	
Lower Payette Ditch Company (2-Apr-04; Diversion dam replacement	$875,000	$634,583.72	
Marsh Center Irrigation Company (13-May-05; Hawkins Dam)	$236,141	$190,292.59	
Marysville Irrigation Company (18-May-07, Pipeline Project Phase 1)	$625,000	$467,024.71	
Marysville Irrigation Company (9-May-08, Pipeline Project Phase 2)	$1,100,000	$879,649.35	
Meander Point Subdivsion Homeowners Association (7-Sep-07; comn	$330,000	$121,157.71	
Meridian Heights Water & Sewer Association (18-May-07)	$350,000	$335,939.89	
McGuire Estates Water Users Association (4-Mar-05)	$60,851	$45,948.73	
Monument Ridge Homeowners Association (20-Mar-09; irrigation syst	$360,000	$205,732.00	
Mores Creek Rim Ranches Water District	$221,400	$109,514.24	
New Hope Water Corporation	$42,000	$71,851.00	
New Plymouth Water Users Association	$7,450	$846.92	
Oakley Valley Water Company	$138,331	$57,589.11	
PPRT Water System	$70,972	$46,459.70	
Packsaddle Water Corporation	$49,600	$6,495.13	
Picabo Livestock Co (Picabo town water system new well)	$38,000	$9,276.67	
Pinehurst Water District (14-mar-08; Water Storage tank)	$160,000	112,619.43	
Point Springs Grazing Association	$9,768	$1,114.72	
Powder Valley-Shadowbrook Homeowners Assoc.	$201,500	$10,522.95	
Preston Riverdale & Mink Creek Canal Co	$400,000	$35,486.16	
Preston-Whitney Irrigation Company (29-May-09; Fairview Lateral Pipe	$800,000	$800,000.00	
Producers Irrigation Company (17-Mar-06; well replacements)	$185,000	$94,249.70	
Ranch Subdivision Property Owners Assoc	$24,834	$18,430.79	
Riverside Independent Water District	$350,000	$243,353.19	
Robertson Ditch Co	$30,000	$7,333.20	
Shilo Ranch Estates Homeowners Association	$25,456	$1,310.12	
Skin Creek Water Association	$188,258	$133,463.21	
Sourdough Point Owners Association (23-Jan-07; water supply & treat	$750,000	$443,095.95	
Spirit Bend Water Association	$92,000	$70,581.59	
Thunder Canyon Owners Association (6-Feb-04)	$92,416	$63,476.69	
Twenty-Mile Creek Water Association	$104,933	$16,412.15	
Twin Lakes Canal Company - Winder Lateral Pipeline Project (13-Jul-0	$500,000	$425,448.20	
Twin Lakes Canal Company (2-Apr-04)	$90,000	$64,090.95	
Twin Lakes-Rathdrum Fld Cont Dist (24-Oct-02; Twin Lakes Dam)	$399,988	$119,400.59	
Whitney-Nashville Water Company	$225,000	$108,047.71	
TOTAL LOANS OUTSTANDING			**$10,085,111.44**
Loans and Other Funding Obligations:			
Senate Bill 1511 - Teton Replacement and Minidoka Enlargement Studies		$878,161.82	
Weiser-Galloway Study (28-May-10)		$12,000.00	
Big Wood Canal Company (23-Jan-09; Thorn Creek Flume)		$18,651.03	
Canyon Creek Canal Company (14-Mar-08; Pipeline project)		$133,599.00	
Chaparral Water Association (21-Jan-11; Well deepening & imprevement)		$68,000.00	
Clearwater Water District - pilot plant (13-jul-07)		$80,000.00	
Dover, City of (23-Jul-10; Water Intake project)		$194,063.00	
Evergreen Terrace Water Association (water study; 25-sep-09)		$3,678.38	
Garden Valley Ranchettes Homeowners Association (25-Jan-05)		$8,183.69	
King Hill Irrigation District (24-Sep-10; Pipeline replacement		$300,000.00	
Kulleyspell estates Property Owners Association (water line replacements; 25-sep-09)		$500,000.00	
Jefferson Irrigation Company (9-May-2008; Well replacement)		$2,610.75	
Lindsay Lateral Association		$19,800.00	
North Snake & Magic Valley GWD Loan - Mitigation Pipeline		$250,000.00	
Meridian Heights Water & Sewer Association (18-May-07)		$14,060.11	
Monument Ridge Homeowners Association (20-Mar-09; irrigation system rehab)		$0.00	
New Hope Water Corporation (23-Jan-19; Well Project)		$84,347.88	
Preston-Whitney Irrigation Company (29-May-09; Fairview Lateral Pipeline)		$0.00	
Sourdough Point Owners Association (23-Jan-07; water supply & treatment)		$225,431.47	
South Liberty Irrigation Company (28-May-10; Pipeline project)		$200,000.00	
Woodland heights Subdivision No. 2 Water Association, Inc (16-Nov-10; wtr sytm improv.)		$13,500.00	
TOTAL LOANS AND OTHER FUNDING OBLIGATIONS			**$3,006,087.13**
Uncommitted Funds			**$2,039,351.64**
TOTAL			**$15,130,550.21**

(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, 2011
WATER MANAGEMENT ACCOUNT

Original Appropriation (1978)	$1,000,000.00
Legislative Audits	($3,145.45)
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	$118,813.74
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
TOTAL	**$4,503,328.55**

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
Bonners 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	$6,501.12
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	
TOTAL GRANTS DISBURSED		**($1,631,756.33)**
IWRB Expenditures		
Lemhi River Water Right Appraisals	$31,000.00	
Expenditures Directed by Legislature		
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	
TOTAL IWRB AND LEGISLATIVE DIRECTED EXPENDITURES		**($2,732,017.19)**
WATER RESOURCE BOARD RECHARGE PROJECTS		**($11,426.88)**
CURRENT ACCOUNT BALANCE		**$128,128.15**
Committed Funds:		
Grants Obligated		
Cottonwood Point Water & Sewer Association	$998.88	
Preston - Whintey Irrigation Company	$7,500.00	
Water District No. 1 (Blackfoot Equalizing Reservoir Automation)	$35,000.00	
Legislative Directed Obligations		
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	
TOTAL GRANTS & LOANS OBLIGATED & UNDISBURSED		**$112,374.43**

Loans Outstanding:	Amount Loaned	Principal Outstanding	
Arco, City of	$7,500	$0.00	
Butte City, City of	$7,425	$2,915.85	
Roberts, City of	$23,750	$5,095.22	
Victor, City of	$23,750	$5,660.70	
TOTAL LOANS OUTSTANDING			**$13,671.77**
Uncommitted Funds			**$2,081.95**
CURRENT ACCOUNT BALANCE			**$128,128.15**

MEMO

To: Idaho Water Resource Board

From: Daniel Nelson, Staff Hydrologist

Date: February 25, 2011

Subject: Boise City Canal Company – Rehabilitation of an Enclosed Section of the Boise City Canal

Action Item: $15,000 loan request

1.0 INTRODUCTION

The Boise City Canal Company is requesting a $15,000 loan to rehabilitate an enclosed section of their canal. The current structure is a concrete box culvert installed prior to 1912 that is leaking and potentially could cause property damage to a residence. The project entails accessing approximately 60 feet of the underground structure, remove debris, chip out and plug cracks in cement, and apply an airless application Xypex sealant. Boise City Canal Company services 470 water users and provides water for irrigation to 1,176 acres.

2.0 BACKGROUND

The Boise City Canal Company is one of the earliest canal companies in the Treasure Valley. Boise City Canal Company supplies a majority of the surface water to downtown area of the City of Boise. Large sections of the Boise City Canal were buried in the early 1900's to allow development over the top of the canal. Therefore, the Boise City Canal travels under several subdivisions and businesses in downtown Boise. Please refer the pictures of the system to show how the underground portion of this canal is constructed.

In 2003, a loan request was made by the Boise City Canal Company to rehabilitate a large portion of their buried canal system. This loan was approved by the Board and distributed under two phases creating two separate loans. The first phase or 2003 loan for $89,865 has an annual payment of $11,922 and will be paid in full in May of 2014. The second phase or 2004 loan for $111,947 has an annual payment of $14,852 and will be paid in full in June of 2015. Both loans are current. The total outstanding balance is $114,709.

3.0 PROPOSED PROJECT

The proposed project would access approximately 60 feet of the underground structure, remove debris, chip out and plug cracks in cement, and apply an airless application Xypex sealant. They have received initial bids of just under $13,719 without any contingency costs. When a minimal contingency of 8.5% is included, the estimated project costs are as follows:

Description	Project Costs
Xypex Concentrate Sealant	$585
Xypex Modified Sealant	$420
Xypex Patch/Plug	$1,120
Deneef Injectable Grout	$600
Equipment (Washer, Sprayer, Generator)	$350
Installation Labor, Insurance, and Labor Tax	$8,854
Overhead	$1,789
Contingency	$1,282
TOTAL	**$15,000**

4.0 BENEFITS

Whereas the Boise City Canal travels underneath subdivisions and businesses, the need to avoid leakage of this system is imperative to avoid potential property damage to local residences. The 60 foot span to be rehabilitated actually travels underneath the corner of a private residence. This span of the canal is currently leaking and needs to be repaired to avoid damage to residences in this area.

5.0 FINANCIAL ANALYSIS

The Boise City Canal Company is requesting funding in the amount of $15,000. Table 1 below describes the estimated payment options for the $15,000 loan at an interest rate of 5.5%:

Table 1. Estimated Payment Options

Term	Estimated Annual Payment - Revolving Account Loan	Before Cost per Acre / Year	After Cost per Acre / Year
5 years	$3,513	$5.06	$5.72
10 years	$1,990	$5.06	$5.44
15 years	$1,494	$5.06	$5.34
20 years	$1,255	$5.06	$5.30

Note: The before costs per acre include the existing loan payments of $11,922 and $14,852 per year. The existing loans will be paid in full in 2014 and 2015, respectively. They have approximately 4 years left to pay on these loans.

Table 2. Financial Ratios

PLEASE NOTE: Boise City Canal Company operates as a non-profit organization. Therefore, the numbers provided below appear to be skewed due to the fact their annual expenses often exceed their annual revenues. A Money Market Account is used to remove excess funds and add deficient funds to maintain a zero balance on their operational books. Please notice that cost per acre foot of water delivered is extremely strong.

Indicator	Before Project	5-year term 5.5%	10-year term 5.5%	15-year term 5.5%	20-year term 5.5%
Revenues/Expenses Strong: greater than 1.20 Average: 1.0 – 1.2 Weak: less than 1.0	0.99 (Weak)	0.99 (Weak)	0.99 (Weak)	0.99 (Weak)	0.99 (Weak)
Debt Service Coverage Ratio Strong: 1.20 or greater Average: 1.0 – 1.20 Weak: less than 1.0	N/A	0.65 (Weak)	0.39 (Weak)	0.18 (Weak)	0.03 (Weak)
Cash Reserves/Annual Expenses Strong: greater than 1.0 Average: 0.5 – 1.0 Weak: less than 0.5	0.16 (Weak)	0.18 (Weak)	0.17 (Weak)	0.17 (Weak)	0.17 (Weak)
Cost per acre foot delivered. Strong: less than $10.00 Average: $10.00 - $20.00 Weak: more than $20.00	$5.06 (Strong)	$5.72 (Strong)	$5.44 (Strong)	$5.34 (Strong)	$5.30 (Strong)
Overall Rating	Average	Average -	Average-	Average-	Average-

6.0 WATER RIGHTS

Boise City Canal Company water right is as follows:

Water Right	Water Right Type	Priority Date	Source	Amount
63-20041	Decree / Snake River Basin Adjudication Recommendation	6/1/1866	Boise River	36.37 cfs / 46.44 afa

Please Note: This water right is one of the earliest water rights on the Boise River System and one of the most valuable. The volume shown under Amount is for Aesthetic Storage. Also note, Boise City Canal Company originally had 2 water rights; these two water rights were combined in the Snake River Adjudication process. The diversion rates and volumes have not changed.

Contract No.	Reservoir	Amount	Comment
059D101472	Lucky Peak Reservoir	70 af	Originally 1,000 af were owned, but 300 af was sold in 2004 with approval of the IWRB.

7.0 SECURITY

The IWRB will hold Boise City Canal Company water rights and associated delivery structures for this loan if approved.

8.0 CONCLUSION AND RECOMMENDATION

This loan will be used to rehabilitate a 60-foot portion of the Boise City Canal that is currently leaking. This stretch of the buried canal runs underneath a subdivision creating a potential for property damage to the local residences.

Staff recommends approval of the Boise City Canal Company's Revolving Development Account loan in the amount of $15,000, with conditions as specified in the attached resolution.

Boise City Canal Company
Project Area

BOISE CITY CANAL COMPANY
CANAL REHABILITATION PROJECT

PHASE 1 – 18TH Street Site

These are photos from the 2003 and 2004 loans files. They show how the buried canal is constructed and the design of the system at the location of project area for this loan.

BEFORE THE IDAHO WATER RESOURCE BOARD

IN THE MATTER OF THE	)	A RESOLUTION TO MAKE
BOISE CITY CANAL COMPANY	)	A FUNDING COMMITMENT
_____	)	

WHEREAS, the Boise City Canal Company (Company) has submitted an application to the Idaho Water Resource Board (IWRB) requesting a loan in the amount of $15,000; and

WHEREAS, the Company currently provides irrigation water to 470 water users irrigating 1,176 acres within and near Boise, Idaho; and

WHEREAS, the Company is requesting funding to rehabilitate a 60 foot section of their buried canal system; and

WHEREAS, the proposed project will repair leakage from the buried canal, and prevent potential damage or injury to local residences; and

WHEREAS, the Company is a qualified applicant and the proposed project qualifies for a loan from the Revolving Development Account; and

WHEREAS, the proposed project is in the public interest, and is in compliance with the State Water Plan.

NOW THEREFORE BE IT RESOLVED that the IWRB approves a loan not to exceed $15,000 from the Revolving Development Account at 5.5 % interest with a _____year repayment term and provides authority to the Director of the Idaho Department of Water Resources, to enter into contracts with the District on behalf of the IWRB.

BE IT FURTHER RESOLVED that this resolution and the approval of the loan is subject to the following conditions:

1) The Company shall comply with all appropriate Federal, State, and Local rules and requirements including Association bylaws that may apply to the proposed project and the borrowing of funds.

2) The Company shall provide adequate security to the Board for this loan.

3) The Company shall establish a reserve account in the amount equal to one annual payment within one year of the completion of project construction.

DATED this 11th day of March, 2011.

_____
TERRY T. UHLING, Chairman
Idaho Water Resource Board

ATTEST _____
BOB GRAHAM, Secretary

IDAHO WATER RESOURCE BOARD
322 East Front Street, Statehouse Mail
Boise, Idaho 83720
Tel: (208) 287-4800
FAX: (208) 287-6700

APPLICATION FOR FINANCIAL ASSISTANCE FOR NON-DOMESTIC SYSTEM CONSTRUCTION PROJECT

Answer the following questions and provide the requested material as directed. All pertinent information provided. Additional information may be requested by the Idaho Water Resource Board (IWRB) depending on the scope of the project and amount of funding requested. For larger funding amounts an L.I.D. may be required.

Incomplete documents will be returned and no further action taken will be taken by IWRB staff. All paperwork must be in twenty eight (28) working days prior to the next bi-monthly Board meeting.

Board meeting agendas can be found at: http://www.idwr.idaho.gov/waterboard/

I. Prepare and attach a "Loan Feasibility Study".

The Loan Feasibility Study requirements are outlined in the Water Project Loan Program Guidelines. The guidelines can be found at: http://www.idwr.idaho.gov/waterboard/Financial%20program/financial.htm. You can also obtain a copy by contacting IWRB staff.

II. General Information:

A. Type of organization: (Check box)

- ☐ Irrigation District
- ☒ Canal/Irrigation Company
- ☐ Lateral Association
- ☐ Flood Control District
- ☐ Homeowners Association
- ☐ Water User's Association
- ☐ Municipality
- ☐ Reservoir Company
- ☐ Other

Explain: _____

Boise City Canal Company	Ben Hepler, Manager
Organization name	Name and title of Contact Person
P.O. Box 2157 / 1655 Fairview, Suite 208	208-387-3526
PO Box/Street Address	Contact telephone number
Boise, Ada, Idaho 83701	boiseccc@qwestoffice.net
City, County, State, Zip Code	e-mail address

Project location legal description W 13 ft of lot11, Lots 12&13, Blk 2, Highland Park Addition
1715 RESSEGUIE

B. Is your organization registered with the Idaho Secretary of State's office? Yes ☒ No ☐

C. Purpose of this loan application.

- ☐ New Project
- ☒ Rehabilitation or replacement of existing facility
- ☐ DEQ requirement
- ☐ Other: _____

D. Briefly describe the project:

Seal a leaking portion of underground canal structure.

III. WATER SYSTEM:

A. Source of water:

- ☒ Stream
- ☐ Reservoir
- ☐ Groundwater
- ☐ Other

B. Water Right Numbers:

Water Right	Stage	Priority Date	Source	Amount
63 - 20041	Decreed	June 1,1866	Boise River	36.37 cfs

Note: Stage refers to how the water right was issued. (License, Decree, or Permit)

C. If irrigation/lateral system:

Number of acres served: 1,176 acres
Number of shareholders served 470
Water provided annually (acre-feet) 6,802 a.f.

D. If flood control system, drainage system, groundwater recharge, or other type of system:

Number of acres within District or service area: _____
Number of people within District or service area: _____

E. If an Association/Municipality the number of residences served by the system:

Number of residences served: _____
Number of hookups possible: _____

IV. USER RATES:

A. How des your organization charge users rates?

- ☐ Per acre
- ☒ Per share
- ☐ Per hook up
- ☐ Tax assessment

Explain what a share is: One share entitles the holder to3/4 miners inch of water per acre.

- ☐ Other, explain _____

B. Current rate? $ $95.00 per share
(Share, hook-up, month, year, etc.)

C. When was the last rate change? October, 2010 (month/year)

D. Does your organization measure water use? Yes ☐ No ☐
If yes, explain how: With a 10 foot submerged orifice at the head gate.

E. Does you organization have a regular assessment for a reserve fund? Yes ☐ No ☒
If yes, explain how it is assessed:
All excess funds are held in a money market account. No direct assessment for a reserve fund.

F. Does your organization have an assessment for some future special need? Yes ☐ No ☒
If yes, explain for what purpose and how it is assessed:
See paragraph E above.

V. PROPOSED METHOD FOR REVENUE FOR REPAYMENT OF LOAN

How will you plan to assess for the annual loan payments?

Check revenue sources below:

☐ Tax Levies
☐ Capital Improvement Reserve Account or Sinking Fund
☒ User Fees and Tap/Hookup Fees
☐ Other (explain) _____

Will an increase in assessment be required? Yes ☐ No ☒
When will new assessments start and how long will they last?

VI. SECUREMENT OF LOAN

List all land, buildings, waterworks, reserve funds, and equipment with estimated value that will be used as collateral for the loan:

Property	Estimated Value
See attached balance sheet.	

For property Securement, attach a legal description of the property being offered along with a map referencing the property.

VII. FINANCIAL INFORMATION:

A. Attach a copy of each of the last 3 year's financial statement. **(Copies must be attached)**

B. Reserve fund (current) $22,615

C. Cash on hand $589

D. Outstanding indebtedness:

To Whom	Annual Payment	Amt. Outstanding	Years Left
IWRB loan WRB-491 phase 1	$11,922.14	$41,699.11	4 years
IWRB loan WRB-491 phase 2	$14,851.71	$63,453.88	5 years

E. What other sources of funding have been explored to fund the project? (example: NRCS, USDA Rural Development, Banks, Local Government, etc.)

None

VIII. ORGANIZATION APPROVAL:

Is a vote of the shareholders, members, etc. required for loan acquisition? Yes ☐ No ☒

If yes, a record of the vote must be attached.

BOARD Approval is all that is necessary. SEE attached minute entry.

Amount of funds requested: $15,000.00

By signing this document you verify that all information provided is correct and the document is filled out to the best of your ability.

Authorized signature& date: Benjamin M. Hepler 2/24/11
MANAGER

MINUTES OF THE BOARD OF DIRECTORS OF
BOISE CITY CANAL COMPANY
February 15, 2011

A meeting of the Board of Directors of Boise City Canal Company was held on February 15, 2011 at 7:00 p.m. in the conference room of the Main Street Plaza, Boise, Idaho 83702. Board members present were Alan Winkle, Elynn Claflin, Maria Minicucci and Scott Rhead. Scott Chapman was absent. Staff members Ben Hepler, James Coey and Joan Ballard were present. Joan Ballard acted as recording secretary.

Company President Alan Winkle called the meeting to order. The minutes from the December 14, 2010 were reviewed. Elynn Claflin made a motion to accept the minutes. Scott Rhead seconded. Motion carried.

ELECTION OF OFFICERS - Alan Winkle, President; Scott Chapman, Vice President; and Elynn Claflin, Secretary/Treasurer, all have indicated they are willing to serve another year in their respective positions. Scott Rhead made a motion to retain the present officers of the Board of Directors for the year 2011. Maria Mimicucci seconded. Motion carried.

Elynn Claflin made a motion to move to executive session. Scott Rhead seconded. Motion carried. Following a general discussion on pending legal matters, the board returned to the agenda items.

IWRB LOAN APPLICATION - Ben reported on progress with the loan application. He will submit feasibility study and application as soon as possible. Scott Rhead made a motion for the company to file the required Application and Feasability Study with IWRB to obtain a loan in the amount of $15,000. The proceeds are to be used for canal rehabilitation at 1715 Resseguie St. Elynn Claflin seconded the motion. Motion carried.

IDAHO WATER ENGINEERING PROPOSAL - Ben received information on the proposal and spent time with Dave Tuthill and others talking about the proposed sites. There would be 4 sites besides the headgate for a cost of $5,750. There would be one behind the court house on 3rd St., one at 14th and Bannock which would get us through downtown where the bulk of storm drains are, one at Catalpa - South of Catalpa Street right-of-way, one at 4015 Whitehead, and the headgate.

Scott Rhead brought a proposal from United Water where they would agree to participate on the study with the idea that they would have first right to negotiate. They would be willing to

Boise City Canal Company
2011 Budget
Summary

	2010 Budget	2010 Actual	Variance	2011 Budget
Income				
Assessments	$ 105,210	$ 104,558	$ (652)	$ 111,055
Leases	$ 36,000	$ 36,000	$ -	$ 39,200
Interest Income	$ 900	$ 1,138	$ 238	$ 900
Fees / Transfers	$ 900	$ 840	$ (60)	$ 900
Lateral Repair Reimbursement	$ 500	$ -	$ (500)	$ 500
Stock Purchase	$ 500	$ 250	$ (250)	$ 500
Miscellaneous Income	$ 600	$ 1,000	$ 400	$ 600
Operating Income	**$ 144,610**	**$ 143,786**	$ (824)	**$ 153,655**
				$ -
Total Income	**$ 144,610**	**$ 143,786**	$ (824)	**$ 153,655**
Expenses				
Bank Charges	$ 100	$ 60	$ 40	$ 100
Canal Repairs	$ 18,500	$ 15,010	$ 3,490	$ 16,500
Education & Training	$ 260	$ 170	$ 90	$ 260
IDWR Loan Payments	$ 26,774	$ 26,774	$ -	$ 26,774
Insurance (Liability, Auto, & Workmen's Comp	$ 3,900	$ 3,562	$ 338	$ 4,200
Lateral Repairs	$ 3,000	$ 4,315	$ (1,315)	$ 6,000
Maps and Records	$ 200	$ 16	$ 184	$ 200
Office Expense	$ 2,500	$ 1,802	$ 698	$ 2,500
Payroll	$ 57,480	$ 57,478	$ 2	$ 58,630
Payroll Taxes	$ 4,955	$ 5,362	$ (407)	$ 5,510
Professional Services	$ 10,800	$ 16,863	$ (6,063)	$ 17,000
Rent	$ 3,608	$ 3,408	$ 200	$ 3,600
Taxes (other than payroll)	$ 75	$ 97	$ (22)	$ 100
Telephone & Internet	$ 2,655	$ 2,603	$ 52	$ 2,585
Travel Expense / Mileage	$ 6,500	$ 5,549	$ 951	$ 6,500
Water Storage Contract - Lucky Peak	$ 2,220	$ 1,833	$ 387	$ 2,220
Watermaster Assessment (Dist. 63)	$ 400	$ 334	$ 66	$ 400
Miscellaneous	$ 535	$ 565	$ (30)	$ 545
Total Operating Expense	$ 144,462	$ 145,801	$ (1,339)	$ 153,624

Boise City Canal Company
2009 - 2010 Budget
Summary

		2009 Budget	2009 Actual	2009 Variance	2010 Budget
Income					
	Assessments	$ 99,535	$ 98,978	$ (557)	$ 105,210
	Leases	$ 34,000	$ 34,000	$ -	$ 36,000
	Interest Income	$ 2,500	$ 967	$ (1,533)	$ 900
	Fees / Transfers	$ 1,200	$ 970	$ (230)	$ 900
	Lateral Repair Reimbursement	$ 1,500	$ 363	$ (1,137)	$ 500
	Stock Purchase	$ 600	$ 550	$ (50)	$ 500
	Miscellaneous Income	$ 500	$ 486	$ (14)	$ 500
	Operating Income	**$ 139,835**	**$ 136,314**	$ (3,521)	**$ 144,510**
	Automation Project Reim.				$ -
	Total Income	**$ 139,835**	**$ 136,314**	$ (3,521)	**$ 144,510**
Expenses					
	Bank Charges	$ 100	$ 62	$ 38	$ 100
	Canal Repairs	$ 17,000	$ 16,520	$ 480	$ 18,500
	Education & Training	$ 525	$ 170	$ 355	$ 260
	IDWR Loan Payments	$ 26,774	$ 26,774	$ -	$ 26,774
	Insurance (Liability, Auto, & Workmen's Comp	$ 4,180	$ 3,648	$ 532	$ 3,900
	Lateral Repairs	$ 2,000	$ 2,355	$ (355)	$ 3,000
	Maps and Records	$ 500	$ -	$ 500	$ 200
	Office Expense	$ 2,500	$ 2,153	$ 347	$ 2,500
	Payroll	$ 56,351	$ 56,353	$ (2)	$ 57,480
	Payroll Taxes	$ 4,752	$ 4,861	$ (109)	$ 4,955
	Professional Services	$ 8,500	$ 11,161	$ (2,661)	$ 10,800
	Rent	$ 3,704	$ 3,580	$ 124	$ 3,608
	Taxes (other than payroll)	$ 100	$ 66	$ 34	$ 75
	Telephone & Internet	$ 2,486	$ 2,633	$ (147)	$ 2,655
	Travel Expense / Mileage	$ 6,000	$ 7,417	$ (1,417)	$ 6,500
	Water Storage Contract - Lucky Peak	$ 2,358	$ 1,595	$ 763	$ 2,220
	Watermaster Assessment (Dist. 63)	$ 400	$ 360	$ 40	$ 400
	Miscellaneous	$ 500	$ 676	$ (176)	$ 535
	Total Operating Expense	$ 138,730	$ 140,384	$ (1,654)	$ 144,462
	Automation Project			$ -	$ -
	Total Expenditures	**$ 138,730**	**$ 140,384**	$ (1,654)	**$ 144,462**

Boise City Canal Company
2008 - 2009 Budget
Summary

	2008 Budget	2008 Actual	Variance	2009 Budget
Income				
Assessments	$ 94,720	$ 94,510		$ 99,535
Leases	$ 32,000	$ 32,000		$ 34,000
Interest Income	$ 2,500	$ 1,441		$ 1,500
Fees / Transfers	$ 1,200	$ 800		$ 1,200
Lateral Repair Reimbursement	$ 1,500	$ 200		$ 1,500
Stock Purchase	$ 600	$ 350		$ 600
Miscellaneous Income	$ 500	$ 135		$ 500
Operating Income	**$ 133,020**	**$ 129,436**		$ 138,835
Automation Project Reim.	$ 10,500	$ 10,117		$ -
Total Income	**$ 143,520**	**$ 139,553**		**$ 138,835**
Expenses				
Bank Charges	$ 100	$ 75	$ 25	$ 100
Canal Repairs	$ 17,000	$ 13,893	$ 3,107	$ 17,000
Education & Training	$ 350	$ 505	$ (155)	$ 525
IDWR Loan Payments	$ 26,774	$ 26,774	$ -	$ 26,774
Insurance (Liability, Auto, & Workmen's Comp	$ 3,465	$ 4,067	$ (602)	$ 4,180
Lateral Repairs	$ 3,000	$ 966	$ 2,034	$ 2,000
Maps and Records	$ 500	$ -	$ 500	$ 500
Office Expense	$ 2,500	$ 2,129	$ 371	$ 2,500
Payroll	$ 54,979	$ 56,278	$ (1,299)	$ 56,351
Payroll Taxes	$ 4,675	$ 4,747	$ (72)	$ 4,750
Professional Services	$ 6,800	$ 9,006	$ (2,206)	$ 8,500
Rent	$ 3,318	$ 3,514	$ (196)	$ 3,704
Taxes (other than payroll)	$ 100	$ 59	$ 41	$ 100
Telephone & Internet	$ 1,980	$ 2,361	$ (381)	$ 2,486
Travel Expense / Mileage	$ 3,500	$ 5,800	$ (2,300)	$ 6,000
Water Storage Contract - Lucky Peak	$ 2,393	$ 2,302	$ 91	$ 2,358
Watermaster Assessment (Dist. 63)	$ 450	$ 336	$ 114	$ 400
Miscellaneous	$ 700	$ 877	$ (177)	$ 500
Total Operating Expense	$ 132,584	$ 133,689	$ (1,105)	$ 138,728
Automation Project	$ 4,046	$ 3,450	$ 596	$ -
Total Expenditures	**$ 136,630**	**$ 137,139**	$ (509)	**$ 138,728**

Memorandum

To: Idaho Water Resource Board

From: Morgan Case

Date: March 10, 2011

Re: Water Transactions Program – Pole Creek 2011

Action Item: Attached is a resolution authorizing the Board to enter into a one-year minimum flow agreement for Pole Creek with Salmon Falls Land and Livestock Company (SFLL), to enter into a one-year lease extension on a diesel generator, and to compensate SFLL up to $32,130 from the Columbia Basin Water Transaction Program.

Pole Creek is a tributary to the Salmon River near the headwaters in the Sawtooth Valley. Pole Creek has the potential to provide high quality habitat for threatened Chinook salmon and bull trout. There is one active diversion on Pole Creek that can seasonally dewater a 2 mile reach of the creek. Salmon Falls Land and Livestock Company has irrigation and hydropower rights that can divert up to 22 cfs at that diversion (see attached map).

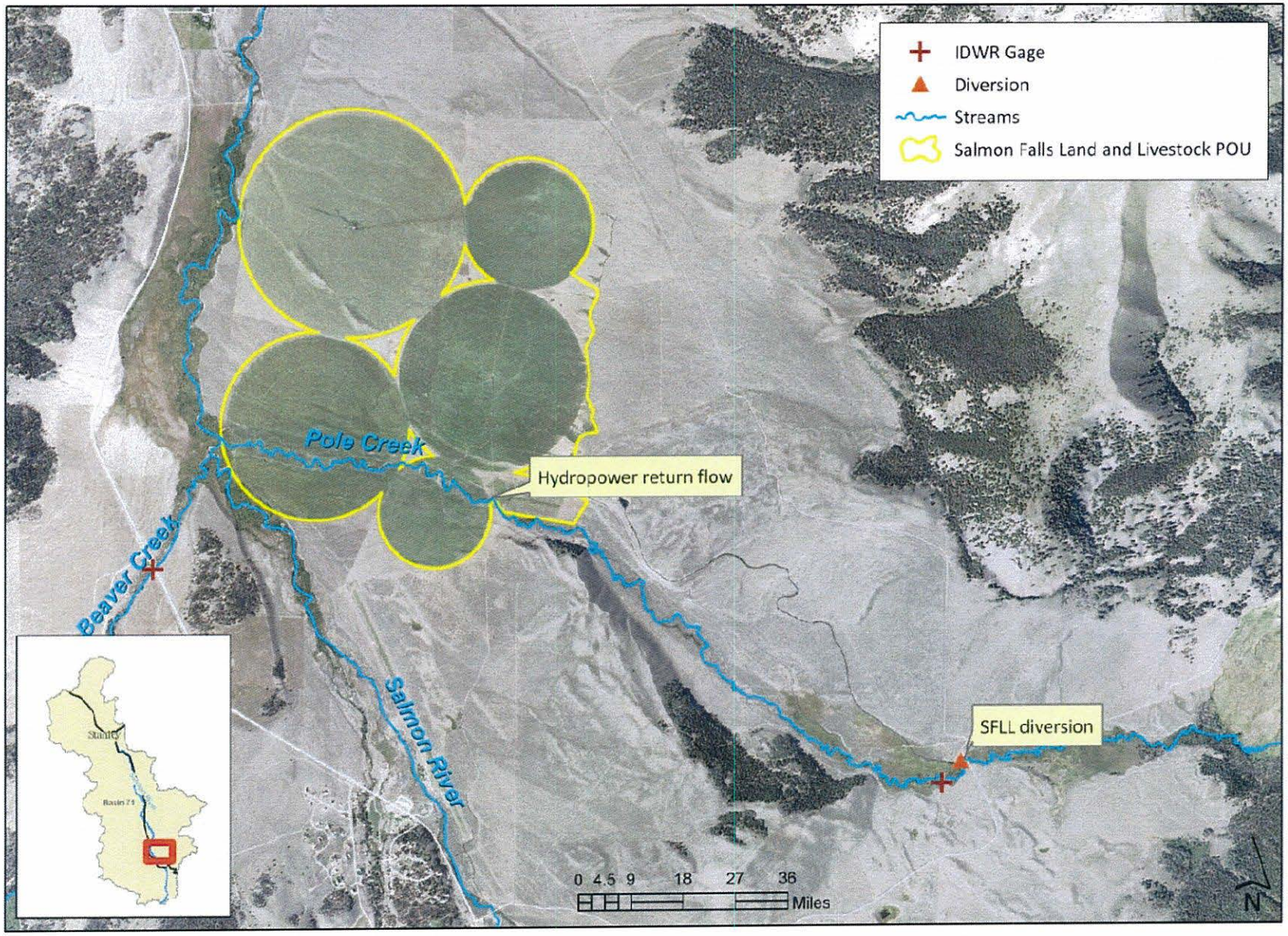
For the past 5 years, the Board had a transaction on Pole Creek that maintained a minimum stream flow of 5 cfs in Pole Creek. When flows dropped below 5 cfs, SFLL would turn off the hydropower plant, leave 5 cfs instream, and run a Board-owned diesel generator (purchased using US Fish and Wildlife grant) to turn their pivots.

Salmon Falls Land and Livestock Company is currently working with the Sawtooth National Recreation Area (SNRA) to develop a flow and habitat restoration plan that will allow authorization of their ditch on Federal land. Board staff has been participating in the process in case water transactions can play a role. That flow and habitat restoration plan should be complete by 2012.

In the meantime, SFLL has expressed interest in renewing their minimum flow agreement with the Board. Staff propose a one-year minimum flow agreement to maintain 6cfs, as measured at the IDWR gage in Pole Creek. Compensation will be $428.40 per day for each day that the diesel generator is run. (The generator has a capacity of 5.1 gallons/hour and fuel diesel is approximately $3.50/gallon delivered.) Total compensation shall not exceed $32,130. The transactions would require a one-year extension of the generator lease.

Bonneville Power Administration funding is available through the Columbia Basin Water Transactions Program.

Pole Creek - Salmon Falls Land and Livestock Irrigation



BEFORE THE IDAHO WATER RESOURCE BOARD

IN THE MATTER OF THE POLE CREEK SALMON FALLS LAND & LIVESTOCK WATER TRANSACTION	)))	A RESOLUTION TO MAKE A FUNDING COMMITMENT

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

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

WHEREAS, staff has developed a one-year minimum flow agreement for Pole Creek to reconnect stream flow for anadromous and resident fish; and

WHEREAS, the water user will maintain a flow if 6 cfs in Pole Creek, as measured at the Idaho Department of Water Resources Gage, through the 2011 irrigation season; and

WHEREAS, the Board will compensate Salmon Falls Land and Livestock for every day that it is necessary to run a diesel generator to power the pivot irrigation system; and

WHEREAS, funds are available from the Bonneville Power Administration through the Columbia Basin Water Transaction Program; and

WHEREAS, the Pole Creek transaction is 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 Salmon Falls Land and Livestock Co. and/or subsequent owners for a minimum flow agreement in Pole Creek in the amount of thirty-two thousand one hundred thirty dollars and no cents ($32,130.00).

NOW THEREFORE BE IT FURTHER RESOLVED that the IWRB authorizes the Chairman to enter into a one-year, no-cost lease with Salmon Falls Land and Livestock Co. for the use of the Board-owned diesel generator.

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 thirty-two thousand one hundred thirty dollars and no cents ($32,130.00).

DATED this 11th day of March, 2011.

_____
TERRY T. UHLING, Chairman
Idaho Water Resource Board

ATTEST: _____
BOB GRAHAM, Secretary

MEMO

To: Idaho Water Resource Board

From: Bill Quinn, Recharge Coordinator

Subject: **2011 Recharge Program Update**

Date: March 1, 2011

Recharge contracts with canal companies are being finalized for this year's recharge program. At this time, the early season recharge program is expected to be similar to last year's program with five to ten canal companies or irrigation districts participating. Likely participants are Aberdeen-Springfield Canal Company, American Falls Reservoir District No. 2, Big Wood Canal Company, Fremont-Madison I.D., Idaho I.D., Snake River Valley I.D. and Southwest I.D. To the extent possible, the 2011 early season recharge plan is to equally divide recharge above and below American Falls, consistent with the Eastern Snake Plain Comprehensive Management Plan.

Because of limited funding, 2011 recharge contracts will have to be more closely managed than in past years in order to prevent budget over-runs. New provisions have been inserted into to 2011 contract that specify well-defined volume and dollar "not to exceed" limits and conditions that apply reasonable payment penalties in order to encourage timely reporting. Approximately $217,000 remains in the recharge conveyance budget.

Southwest I.D. reported that it was expecting to start its recharge program on February 28th. To date, no other recharge has been reported.

Annual Board-Sponsored ESPA Recharge and Yearly Totals, 2008 - 2010

Year	ASCC	AFRD2	BWCC	FMID	Grt Fdr	IID	NSCC	SRVID	SWID	Total	above AF	below AF	% above AF	% below AF
2008	0	0	0	4,860	0	0	0	0	0	4,860	4,860	0	100	0
2009	18,563	38,698	0	37,317	20,944	1,004	6,519	0	1,491	124,536	77,828	46,708	62	38
2010	5,322	2,002	157	49,466	0	0	0	1,125	3,436	61,508	55,913	5,595	91	9
Total	23,885	40,700	157	91,643	20,944	1,004	6,519	1,125	4,927	190,904	138,601	52,303	73	27
% of 2008-2010 total	12.5	21.3	0.08	48	10.9	0.5	3.4	0.6	2.5					

All figures except percentages in acre-feet

ASCC – Aberdeen-Springfield
AFRD2 – American Falls Reservoir Dist. No. 2
BWCC – Big Wood Canal Co
FMID - Fremont-Madison I.D.
Grt Fdr – Great Feeder canals
IID – Idaho I.D.
NSCC - North Side C.C.
SRVID - Snake River Valley I.D.
SWID - Southwest I.D.

Speech to

Idaho Annual Water Quality Workshop

February 9, 2011

My remarks today will cover some technical information, some history, and some views on the current status of efforts to address problems on the Eastern Snake Plain Aquifer. I need to add that these are my personal views and observations. I asked one of our experts in the Department to take a look at the technical part of my discussion to make sure I was reasonably on target, but I have not sought or received any advice on what to say.

I will refer to the Eastern Snake Plain Aquifer by its acronym, the ESPA. CAMP means the ESPA Comprehensive Aquifer Management Plan. The term "upper Snake" refers to the Snake River basin served from diversions from the Snake River and its tributaries above Milner Dam near Burley. It is largely coterminous with the ESPA.

For some basics, the ESPA covers 10,800 square miles from near St Anthony in the Northeast to King Hill in the Southwest. The aquifer consists mainly of fractured basalt. At one time the caldera now underlying Yellowstone National Park passed under the area. Several volcanic eruptions spewed lava onto the plain which today contains many voids and fractures. The ESPA is estimated to store hundreds of millions of acre-feet of water. However most of that water is deep in the aquifer, below a level where it affects spring discharge or would be economical to extract. In addition, the aquifer is more like a leaky bucket than a bathtub. At several locations from near Aston in the north to Thousand Springs in the Southwest, the ESPA discharges water to the Snake River. These River reaches are called *gaining reaches.* Other segments of the river are at least at times during the year *losing reaches*, meaning they discharge water into the aquifer.

Simplified to the most basic elements, the aquifer is a function of three things:

1. What goes in, or net recharge

2. How much the aquifer stores, or ground water elevations

3. What goes out, or discharge from springs.

The first of these three elements or net recharge is also a function of three things:

1. Naturally occurring recharge from precipitation on the plain and streams flowing on or near the plain;

2. Percolation associated with irrigation from surface sources;

3. Withdrawals from the aquifer primarily associated with ground water pumping.

People may be inclined to count withdrawals from wells as discharge from the aquifer. I include withdrawals from wells as part of net recharge because it helps me understand the dynamics of the ESPA by putting all of mankind's influence on the aquifer in the same part of the equation. Incidental recharge from surface diversion and use is a positive, and withdrawals are a negative, but to me they are different sides of the same coin.

Much has been discussed about whether the aquifer is in equilibrium. The more I learn, the more I believe this is not a helpful concept. There are two answers to the question, and they are probably equally true, depending on one's point of view:

1. The ESPA is in equilibrium.

2. The ESPA is not, never has been, and will never be in equilibrium.

If we believe equilibrium means that net recharge into the aquifer will equal discharge from the aquifer over time, the ESPA is in equilibrium. It can't be anything else, because it is a self-regulating leaky bucket.

If we believe equilibrium means that discharge from the aquifer and water levels within the aquifer will remain constant, the ESPA is not and never will be in equilibrium, because it changes constantly. Ground water levels and discharge from the aquifer continuously adjust in response to changes in net recharge. This has always been the case.

The springs are especially sensitive to aquifer levels. The only variable that affects spring discharge is the water pressure at each spring. That pressure depends entirely on the hydraulic head or depth of water above the spring. A slight change in water levels can have a dramatic impact on spring discharge.

Mankind has impacted the waters of Idaho in phases. The first significant human impact in the upper Snake was the development of irrigation by diversions from the Snake River and its tributaries. Starting in the 1880s, enterprising settlers developed canals and diversion facilities. The elevation of the River in this part of the State was reasonably near that of the surrounding plain and diversions could be developed with comparative ease. Milner Dam completed by private parties in 1905. Milner is near where the River starts to become incised into a deep canyon and it lifts the River some 73 feet so water can flow by gravity into canals.

Common to other western rivers, the plentiful spring flows of the Snake River last for a relatively short time. In the early years, with relatively few irrigated acres and with farmers growing mostly small grains which mature early in the season, there was enough water. However, it was not too many years until more land had been developed than the River could supply in July and August, especially in drought years. More water later in the season was

needed to support the expanding irrigated acreage as well as crops which required water the entire irrigation season.

With the Bureau of Reclamation's appearance on the scene in 1902, an era of storage dams ensued. Reclamation completed Minidoka Dam in 1906. It constructed Jackson Lake Dam in Wyoming in phases by1913. This storage was proven inadequate in 1919 as a drought dried up the Snake River at Blackfoot and farmers fought over rights to water, and fought too about how much of the water in the River was storage and how much was natural flow. American Falls was built in 1923, and was expected to substantially alleviate water shortages. The drought of the 1930s once again proved that Mother Nature isn't so easy to tame. As a result, Palisades was constructed in 1957. Reclamation predicted that Palisades' storage on top of existing storage would alleviate most water shortages to surface canals. However, there were cautions. Construction was held up for several years while Reclamation negotiated changes in water management practices with irrigation water users. Studies revealed changes were needed so there would be enough storable water to make Palisades a viable storage facility. In addition, Reclamation was careful to assure that Palisades' storage was contracted to water users with reasonably reliable preexisting natural flow or storage rights. It cautioned that Palisades' storage should be used strictly as a supplemental supply. The storage accruing in good years needed to be preserved for use in dry years. Reclamation's caution to save Palisades' storage for use only in drought conditions was based on the obvious fact that water shortages can't be predicted in advance. It is tempting to use more water in the good years but the day of reckoning ultimately arrives and rewards or penalizes actions taken in previous years. This means that the reservoirs fill and water spills past Milner Dam in a series of good years. What to do with this temporal surplus can be debated at great length. Some of the potential uses include recharge, hydropower generation, and allowing large flows to periodically scour the middle Snake River of silts and vegetation that contribute to water quality problems.

The development of irrigation from surface water supplies was characterized by the need for collective action. A single farmer, no matter how wealthy, didn't have the resources to build a storage dam or canal. Farmers had to cooperate in order to amass the resources required for these large scale developments. It ultimately proved to be beyond the capacity or willingness of private enterprise to develop storage dams, and that role was ceded to the federal government.

In about 1950, around the time construction of Palisades was started, a new phase of development began in earnest. Pump technology had been developed to a point where by the end of World War II it was cost effective to pump large volumes of water from deep wells. Idaho Power was in the game as it planned construction of its Hells Canyon Complex. The newly installed generating capacity from Hells Canyon would provide the Company with significant amounts of surplus power. The Company was in pitched battle against federal generated power and fought to retain exclusive rights to market power within its service area.

The private development of ground water from the ESPA thus served two purposes—it provided the Company an expanded market and facilitated the private development of water resources. In the decade of the 1940s water right filings to pump ground water from the ESPA averaged some 6,700 acres per year. From 1950 to 1980, filings were made to irrigate an additional 895,000 acres, an average of about 31,000 acres per year. Filings to irrigate an additional 340,000 acres were made in the years between 1980 and 1993, when a moratorium was established. Today records of the Idaho Water Resources Department indicate that about one million acres are being served by ground water pumping from the ESPA. The acreage irrigated with surface water supplies is also about one million acres.

The development of ground water did not require the collective action that was essential for surface water development. Individual entrepreneurs with a moderate amount of capital could file for a water right and develop wells. During much of this period the conventional wisdom was that the ESPA was inexhaustible—it could never be depleted by pumping.

During the time ground water development was expanding, aquiculture interests established several fish hatcheries to take advantage of the clean cold water emanating from springs. Today Idaho leads the nation in water use for aquaculture. According to the USGS, Idaho's daily use for aquaculture is over 7,600 acre-feet per day—an impressive 28% of the total national use. The water supplied by Thousand Springs is also used extensively for irrigation.

Since the River was first developed for irrigation the ESPA has changed dramatically. Between 1900 and 1930 the discharge at Thousand Springs rose from about 4,200 cubic feet per second to about 5,900. These dramatic increases resulted from the diversion and application of large volumes of irrigation water from surface diversions. A good part of the water applied to fields percolated into the aquifer. In addition, canals and reservoirs leak. Minidoka Dam leaked a lot of water in the early years.

Some key concepts need to be kept in mind in evaluating the changes in spring discharge:

1. Changes to the aquifer are not immediately realized at the springs along the River. It can take several decades to fully realize an impact located some distance from the River.

2. Irrigation diversions and use are not static. Farmers react to continuously changing prices of crop commodities and farm inputs. Surface water users must contend with a variable water supply.

3. Irrigation practices have changed significantly over time as surface water users have changed from gravity irrigation to center pivots and other efficient methods. Many changes are undertaken in response to droughts. A key point is that once changes are made they tend to remain in place.

4. Over the hundred plus years since facilities were first developed, the clays and silts transported through the canals and stored in the reservoirs have tended to seal fractures and reduce recharge to the aquifer at some locations.

As a result of the numerous changes that have taken place, less water is being recharged incidentally from the application of irrigation water.

Flows at Thousand Springs peaked in the mid 1950s at over 6,500 cubic feet per second. Discharge subsequently declined by about 1,000 cubic feet per second from the mid 1950s peak. During the entire time there were periods of increasing discharge and periods of declining discharge. However, each peak before 1955 was higher than the previous one, and each peak after 1955 was lower than the previous one. Likewise, each trough after 1955 was lower than the previous one.

The Twin Falls Canal Company irrigates about 150,000 acres and contracted for about 245,000 acre-feet of storage in Jackson and American Falls Reservoirs. The other lower valley canals all secured significantly more storage. However, it was well understood that the Company needed a limited volumes of storage to augment its 1900 natural flow rights. Upriver at Blackfoot and above, a 1900 right is a relatively junior right that is curtailed every year for an extended period. However, there are substantial gains in the River between Blackfoot and Milner Dam that always provide water to meet or partially meet the 1900 right. In the early 1980s The Company became concerned that the declines in natural flows that always occurred in July and August appeared to be deepening. The Company addressed its concerns with the Department and some actions were taken.

In 1993 a delivery call was initiated for delivery of water by Alvin and Tim Musser. The brothers diverted spring water at the Curran Tunnel under an 1892 priority water right. Ultimately the Supreme Court ruled that the State has an obligation to deliver water to this senior right by regulating water rights in priority, meaning curtailing pumping from the ESPA, the source of Musser's water. The Idaho Water Resources Department's first response was to initiate negotiated rulemaking on conjunctive management of surface and ground water within the State. Final rules were published in October 1994 but remained largely unchallenged until August 2005 after several water calls had been made.

In 2000 expectations were jarred as a severe drought struck the State. Former IDWR Director Karl Dreher described the 2-year, 3-year, 4-year, and 5-year moving averages of unregulated natural flow at the Heise gage on the Snake River as the worst on record. Users already concerned about spring discharge and aquifer levels became alarmed as the drought exacerbated the declines. Users in the Thousand Spring area initiated water calls in 2003. Calls by other major users were made in 2005.

The water calls resulted in administrative hearings before the Director of the Idaho Water Resources Department or an appointed hearing officer. Many hearings have been held. The interface of ground and surface water is complex. Final orders addressing delivery calls

require findings with respect to model accuracy and application, timing of impacts from pumping, and application of Idaho law. Once a matter has run its course through the administrative process, the Director's final order is appealed to the courts, first to the District Court in Twin Falls, which handles Idaho's Snake River Basin Adjudication, then to the Idaho Supreme Court. The Idaho Supreme Court's first rulings on specific call related findings by the director are anticipated this spring. It is anticipated that the process will go on for several additional years before final certainty is achieved.

By my count at least five major attempts have been made to negotiate a solution to the conflicts on the ESPA. Two of these involved a paid mediator; one involved the Director of Water Resources and the Attorney General's Office; another attempt was undertaken by two water users involved in the disputes; and legislators made an early attempt. Other attempts have been made by various individuals. Negotiations have frankly been hampered by lack of certainty. Each side has retained the belief that their prospects before the courts are better than through negotiations. Said another way, both sides have believed that the other side isn't putting enough on the table.

This is a good time to reflect. In my experience attempting to resolve water problems I have come to two conclusions:

1. I don't do hypnosis. I can't make somebody think the way I want. The stakes are relatively high and people on the ESPA have had a long time to decide what they think. The old Jedi mind trick might have worked for Obi Wan Kenobi, but it doesn't work for me.

2. It is tempting but unproductive to attempt to think for someone else. It's easy for each side to say that the other side should be willing to put more on the table. At the end of the day, everybody gets to think for themselves.

The most significant attempt to resolve the conflicts through negotiation has been the ESPA Comprehensive Aquifer Management Plan, or CAMP. The impetus for CAMP began in 2006 with a Senate Resolution requesting the Idaho Water Resources Board to prepare and submit a plan for the ESPA. Considerable groundwork was done by the Water Resources Board and CDR Associates from Boulder, Colorado, who the Board had hired to facilitate development of a plan. In March 2007 the Board appointed an Advisory Committee. In April 2007, shortly after his inauguration, Governor Otter brought water users together in a water summit to discuss potential solutions.

The CAMP Committee met several times and considered many possible means to address the aquifer problems. It submitted a draft plan to the Board in late 2008. After receiving public comments, the Board formally adopted the ESPA Comprehensive Aquifer Management Plan in January 2009. House Bill 264 was initiated by the legislature to approve the plan and it was enacted by the legislature and approved by Governor Otter on April 29, 2009.

The plan called for several actions intended to improve the aquifer. Specific actions fell into four categories:

1. Ground water to surface water conversion

2. Managed aquifer recharge

3. Demand Reduction

4. Weather modification

Recharge is a good example of the trade-offs that were addressed. Phase One of CAMP calls for an average recharge of 100,000 acre-feet per year, at five general locations. Water used for recharge is not available to generate hydropower except in high water events. The Implementation Committee attempted to strike a balance to encourage recharge without violating critical needs for instream flows.

The most important issue in developing the plan was funding, and it was addressed at the end of the process. It called for funding of $7 million per year, $4 million from water users on the plain and $3 million from the State. Of the $4 million to be paid annually by water users:

- Ground water users would pay $2 million, or $2.00 per acre;
- Surface water uses would pay $1 million, or $1.00 per year
- Spring users would pay $200,000
- Municipalities would pay $700,000
- Commercial and industrial users not in water districts would pay $150,000

In addition, Idaho Power agreed to fund initial weather modification activities and favorably consider helping out on specific projects that may improve water quality in the middle Snake. Federal grant funds would be pursued opportunistically.

During consideration of the plan by the legislature a simmering conflict came to light. Water users on the Great Feeder Canal, which diverts water from the Snake River near Ririe, disagreed with the CAMP decision to assess all surface water users. Their position was and is that they contribute significant volumes of water to the aquifer through incidental recharge. They see themselves as part of the solution, not part of the problem. Why, they reasoned, should they be called on to solve a problem they were not responsible for? They preferred not to participate at all in funding CAMP, but would consider it if it could be guaranteed that they would be reimbursed for the incidental recharge attributable to their operation. The Advisory Committee addressed the Great Feeder's concerns but agreement could not be reached and the final plan did not address the issue. The Great Feeder people felt they were being steamrolled by the other participants and actively lobbied the legislature against imposing CAMP funding on them. They found sympathetic ears in the legislature and language was included in the legislation approving the plan as follows:

> The CAMP implementation plan shall include measures that recognize the benefits of incidental recharge, and that will encourage water users and canal managers to continue their historic surface water diversion practices.

With legislative approval of the plan the Advisory Committee was re-chartered as the *Implementation Committee* and a charge was given to resolve the conflicts over funding. I could go into great detail about the efforts that were made, but it is probably sufficient to say that agreement has not been achieved.

I'd like to now to view the problem from a longer perspective. The problems with the ESPA are a classic example of the tragedy of the commons:

1. Everybody benefits from the aquifer.

2. No single action created the problem, and no single action will solve it. In fact, no singe action has more than an insignificant affect on the ESPA.

3. Problems on the ESPA affect different areas differently. Some areas have seen serious declines in aquifer levels or spring discharge, and others have not.

4. It's nice to talk about being altruistic, but especially when money is involved it seems very difficult to take out of peoples' thinking process how a specific action impacts them financially. Surface water users analyze CAMP from the perspective: "How does it impact me, my neighbors, and my canal?" Ground water users analyze CAMP or an identified improvement project from the perspective: "Does it reduce my exposure to a water call?"

5. It's nice to want absolute answers, but the reality is, the aquifer always has been and always will be in a state of flux. The aquifer may go down due to external factors when we undertake actions to improve conditions. Likewise, the aquifer may go up when we do nothing.

I wish it were different, but it appears to me that at least in the short run, water is a zero sum game. If I get it, you don't, and if you get it, I don't. Much the same can be said about the funding available for CAMP. I think it can't be avoided that funding participants will want to know how much of the CAMP pot of money will be spent in their area or on their problem. At this stage there is uncertainty about where money will be spent. No matter how we slice it, we can't have a comprehensive plan *and* at the same time guarantee each geographic area that at least as much funding will be spent in each area as it puts into CAMP.

I conclude there are only two possible means to address problems on the ESPA:

1. Secure a giant pool of money from an outside source. Accountability should be based more on how much money is spent than on which area is benefited or whether specific projects are solving the problem. The reason goes back to the fact that we are dealing with a tragedy of the commons. If no single action or set of actions caused the problem, we can only conclude that no single action or set of action will

unilaterally solve the problem. We can only chip away at the problem with the expectation that many actions taken over an extended time period will be beneficial. I understand that decision makers are disposed to tie projects to specific performance standards, but as I said earlier, external factors make it impossible to guarantee results, especially in the short term.

2. Provide the opportunity for individual groups of users to come together to undertake projects. This should avoid geographic conflicts and the political challenge of convincing everybody to participate in funding.

To me the ideal solution is the giant pool of money. It largely avoids conflicts over who gets the benefits by bringing outside money into the equation. However, I don't see either the state or federal government coming to our aid in today's economy. The fault is not that of the Congress or the Idaho Legislature, but is a sign of the times in which we live. I do think it is possible for local groups to come together and I think the time is ripe for them to do so. Enough of the water call related issues have been addressed by the Courts that I believe both sides should understand that they aren't going to see their wildest dreams realized. I hope they understand that fact.

Earlier I argued that it is not helpful to considering whether the aquifer is in equilibrium. People may ask, if equilibrium is not a proper standard, how should we approach the issue? Another concept that is floating about is sustainability, and I think it is somewhat more helpful. The first question to address in considering sustainability is; sustainable for what? People talk of the Snake River as a *working river*. The Snake River doesn't and can't sustain all of the functions that people would like. It sacrifices some values in order to sustain Idaho's agricultural economy. Like it or not, I think the ESPA is a *working aquifer*. For more than a century it has been subjected to influences of human activities. It will never go back to its natural condition without changes that I can't envision. It would be ideal if we could sustain the aquifer to maximize all of the uses that people value, but I don't think that is possible. We have to choose the uses we want to sustain. For example, the aquiculture industry has been impacted by declines in spring discharge, as have surface water users below American Falls. Certain areas have experienced serious declines in aquifer levels. Other ground water users would argue that their pump lifts have not been severely affected. It frankly makes sense to me that we consider measures that will improve conditions for the groups most impacted.

I don't support local solutions because I believe they are the single best approach, but because I believe from experience that a broad based comprehensive solution is beyond the collective will and capacity of water users on the plain under the current economic and political situation. I want to emphasize that I am not blaming any individual or group for this failure. I tend to be a lot more comfortable with the Sunday comics than English literature, but in this case a quote from each seems to apply. As Cassius said to Brutus in Shakespeare's Julius Caesar: "The fault, dear Brutus, is not in our stars, but in ourselves..." And, as Pogo said: "We have met the enemy and he is us."

Memorandum

To: Idaho Water Resource Board

From: Helen Harrington

Date: February 28, 2011

Re: Rathdrum Prairie Comprehensive Aquifer Management Plan Status

Action Items

1. Consider appointing replacement member to the RP CAMP advisory committee.
2. Consider resolution accepting draft RP CAMP for public review and comment.

Status Report

At the January 2011 IWRB meeting, the recommended RP CAMP was transmitted to the Board from the RP CAMP Advisory Committee. Since that time, no additional comments or suggested changes from Board members or the advisory committee have been received. At the January meeting, the Board directed staff to coordinate with the advisory committee to identify potential projects and costs associated with implementing the recommended plan.

On February 25, the advisory committee held a meeting to focus on developing projects. The committee brainstormed on issues and ideas, which will be expanded by staff into a list of potential projects and estimated costs. The advisory committee and staff will refine the list over the next few weeks and cost estimates will be added.

Staff suggests that the Board move forward with considering the draft plan for public comment. Once the project list and overall cost of implementation is developed, staff will present the list and costs to the advisory committee for inclusion in the recommended plan. To avoid delay and maintain momentum, staff suggested that the draft CAMP be accepted for public comment at this time in advance of the costs being finalized and integrated into the document.

Advisory Committee Member Replacement Request

Advisory Committee member Chris Beck has requested that the IWRB consider a replacement. Mr. Beck's term on the Board of Health for the Panhandle Health District will end in March 2011. Mr. Beck has requested that Mr. Dale Peck be appointed to replace him. Mr. Peck is the environmental director of the Panhandle Health District and has attended almost all advisory committee meetings since the committee has been meeting.

Staff Recommendation:

Mr. Peck has provided valuable input to the committee during the development of the plan. Staff recommends Mr. Peck be appointed to the RP CAMP Advisory Committee to replace Mr. Beck.

Consideration of Acceptance of Recommended RP CAMP

As requested by the RP CAMP Advisory Committee, the Recommended RP CAMP should be considered for acceptance and presents it for public review and comment as required by Idaho Code 42-1734A and 42-1734B prior to being considered by the Board for adoption.

A resolution is attached for consideration.

BEFORE THE IDAHO WATER RESOURCE BOARD

IN THE MATTER OF THE DRAFT RATHDRUM PRAIRIE COMPREHENSIVE AQUIFER MANAGEMENT PLAN	)))	RESOLUTION

WHEREAS, the Idaho Water Resource Board (IWRB), pursuant to its planning authorities in Article XV, Section 7 of the Idaho Constitution, and the Idaho Code 42-1734A and 42-1779, has completed the proposed Draft Comprehensive Aquifer Management Plan for the Rathdrum Prairie Aquifer as required by House Bill No. 428 passed and approved by the 2008 Idaho Legislature; and

WHEREAS, the Board is directed to conduct statewide comprehensive aquifer planning and management; and

WHEREAS, the Board has sought and received public participation and comment throughout the planning process.

NOW, THEREFORE, BE IT RESOLVED that the IWRB hereby accepts the attached proposed Draft Rathdrum Prairie Comprehensive Aquifer Management Plan and directed that it be sent for public review and comment as required by Idaho Code 42-1734A and 42-1779 prior to being considered by the Board for adoption.

DATED this 11th day of March, 2011.

_____

TERRY T. UHLING, Chairman
Idaho Water Resource Board

ATTEST _____
BOB GRAHAM, Secretary

Memorandum

To: Idaho Water Resource Board

From: L. Neeley Miller

Date: March 1, 2011

Re: Treasure Valley Comprehensive Aquifer Management Plan (TV CAMP)

Status Report and Background

At the two-day TV CAMP meeting held on February 3rd and 4th the Advisory Committee established a drafting group to develop the CAMP plan. The drafting subgroup consists of Rex Barrie (Boise River Watermaster WD #63), Russ Dane (Keller Williams Realty), Matt Howard (Bureau of Reclamation), Chris Jones (Trout Unlimited), Brian Patton (IDWR), Kathy Peter (former Director Of USGS Idaho Water Science Program), Rick Ward (Idaho Dept of Fish and Game), and Paul Woods (Boise City Public Works Dept). The Drafting Group has met several times and has completed a preliminary draft TV CAMP outline. This outline is continuing to evolve. The attached preliminary draft reflects the general structure and concepts, but it will continue to be revised as the document is finalized.

Additionally, the Advisory Committee established another subgroup to take examine concepts related to Reasonably Anticipated Future Needs (RAFN) water rights. The RAFN working group consists of Michael Fuss (Nampa Public Works Director), Scott Rhead (Director Engineering for United Water), Mike Eicheta (City of Eagle Public Works Director), Jayson Ronk (VP of Idaho Assn of Commerce & Industry), Warren Stewart (Engineering Manager, City of Meridian Public Works Dept), Doug Amick (City of Greenleaf Public Works Director), Gary Shoemaker (City of Caldwell Water Dept), Bill Larson (Treasure Valley Partnership), Russ Dane (Keller Williams Realty), and John Thornton (N. Ada City GW users; N. Ada Co Foothills Assoc). The RAFN group will present their recommendations to the full Advisory Committee at the next meeting.

The TV CAMP Advisory Committee anticipates having a draft plan ready for Board review by early summer. Staff and the drafting group would appreciate feedback from the Board on the attached outline.

TV CAMP ADVISORY COMMITTEE	
MEMBER	**AFFILIATION**
Abramovich, Ron	NRCS
Adamson, Brent	Boise County Assessor
Amick, Doug	City of Greenleaf Public Works Director
Anderson Jamie	Boise County Commissioner
Atkinson, Michelle	Micron Technology, Inc.
Barrie , Rex	Boise River Watermaster WD #63
Batt, Gayle (Vern Case)	Wilder Irrigation District
Berggren, Ellen	Army Corps of Engineers
Bowling, Jon	Idaho Power Company
Burnell, Barry	Idaho Dept of Environmental Quality
Dane, Russ	Keller Williams Realty
Decker, Kevin	Idaho Wildlife Federation, Treasurer
Deveau, Paul	Boise Project Board of Control
Dixon, Dave	Owner, Greenleaf Farms Inc.
Duspiva, Gary	Canyon County P&Z Commission
Echeita, Mike	City of Eagle Public Works Director
Funkhouser, Allen	Drainage District # 2
Fuss, Michael	Nampa Public Works Director
Goodson, Stephen	Governor's Office
Howard, Matt	Bureau of Reclamation
Jones, Chris	VP Ted Trueblood Chapter, Trout Unlimited
Larson, Bill	Treasure Valley Partnership
Leatherman, Megan	Ada County
McKee, Lynn	Vice Chair, Ada Cty. SWCD
Nelson, Greg	Farm Bureau member, former mayor of Kuna
Patton , Brian	Idaho Department of Water Resources
Peter, Kathy	Unaffiliated, former Dir. Of USGS Idaho Water Science Program
Pline, Clinton	Board, Nampa-Meridian Irrigation District
Prigge, John	Sorrento Lactalis, Wastewater Treatment Manager
Rhead, Scott	Director Engineering for United Water
Ronk, Jayson	VP of Idaho Assn of Commerce & Industry
Schmillen, Bob	City of Middleton Public Works Director
Shoemaker, Gary	City of Caldwell Water Dept.
Stewart, Lon	Sierra Club
Stewart, Warren	Engineering Manager, City of Meridian Public Works Dept
Telford, Craig	Mayor of Parma
Thornton, John	N. Ada Cty. GW users; N. Ada Co Foothills Assoc; Member of N. Ada Cty. Tech. Working Group
Ward, Rick	Idaho Dept of Fish and Game
Woods, Paul	Boise City Public Works Dept.
Yerton, Janice	Water System Operator, Kuna
Zirschky, Mark	Pioneer Irrigation District

1. Executive Summary (concise description of challenges ahead and recommended actions)

a. This is important because . . .

b. The following actions needed to meet these future challenges include . . .
   i. (synthesize Actions)

2. Introduction

a. Creation of TV CAMP by legislature/IWRB
b. Goals of TV CAMP

3. Background

a. Introduction
   i. Surface water and ground water both supply water to the Treasure Valley
   ii. Recognizing the interconnection (do not have a clear understanding timing/extent/location)
   iii. Recognizing the contribution of surface water to ground water

b. Ground water system
   i. Regional setting
   ii. Hydrogeology
   iii. TVAS recharge
   iv. TVAS discharge
   v. Water levels
   vi. Ground water areas of concern
   vii. Water quality
   viii. Well construction
   ix. Ground water flow direction

c. Surface water system
   i. Primary source of water for TV
   ii. Watershed – description, drainage area 2650 square miles, tributaries, etc.
      1. Fisheries/biological flows
      2. Recreation
      3. Aesthetics values
   iii. Reservoir system
      1. Operated cooperatively by USBR and ACOE
      2. Capacity - ~1maf – space to irrigation entities and limited DCMI;
      3. Irrigation for ~225,000 acres
      4. Flood control
      5. 152,000 af of space to maintain winter flows in the Boise River downstream of Lucky Peak
      6. Hydropower
   iv. Canal/drain system – miles, acres served, etc.
      1. Canal, lateral, and drain system
   v. Flows
      1. 30-year average -- ~2maf flow past Lucky Peak into valley; ~1maf flows out of valley.

2. Variability
    a. Historical annual: 658,000 in 1977 to 3,500,000 af in 1997.
        i. Insert hydrograph (30 year average, volume, carryover storage)
    b. Average seasonal: ~700 cfs low summer flows to ~20,000 cfs peak spring flows (?)
        i. Determine average summer natural flow
        ii. Determine average peak flows in spring
        iii. Determine average winter flows
        iv. Incorporate into summary hydrograph (unmodified by reservoir storage)

vi. Rental Pool and Water Supply Bank
1. Water Bank
    a. History
    b. Activity
2. Rental Pool
    a. History
    b. Activity
    c. Flow Augmentation /Nez Perce Term Sheet (~40kaf)

d. <u>Water Use</u>
i. Ground water (TVHP)
ii. Surface water
iii. Charts/maps (historical use pattern maps, population changes over time)

e. <u>Water Management and Administration</u>
i. Water Organizations/jurisdictions
1. Responsibilities of major entities [IDWR, District #63, Irrigation districts/canal companies/lateral associations, Boise Project Board of Control, Municipal providers, Bureau of Reclamation (ACOE not included in water management and administration) self-supplied DCMI]
2. State law associated with requiring the continued use of irrigation water for landscaping

ii. Flows regulated to Star
1. Fully appropriated during irrigation season
2. Winter maintenance flows - paraphrase language from decree

iii. Below Star demand typically met by return flows
1. Water available for appropriation below Star

iv. Stewart (senior) and Bryan (flood) decree rights and step down priorities carried over into SRBA decrees.
1. Step-down priority system. (see Water Master Report)

v. Ground water rights not currently administered
1. No current umbrella organization for municipal ground water providers
2. See language from 1994 Ground Water District Legislation (2452?) – disorganization of various entities and bringing them into an organized group.

vi. Finalization of SRBA in TV will allow for administration of both surface and ground water rights in the future if necessary.

f. Conclusion/wrap-up/transition into next section

4. Future Challenges to Providing for Reliable Sources of Water and Avoiding Conflict Over Water Resources

a. Fragmented ground water user community
    i. Challenges with funding, setting priorities, and creation of a ground water district
    ii. Need a mechanism for coordination within the ground water community
b. Increased variability of surface water supply
    i. Increased variability means drought periods will increase in frequency and severity from historical norms; wetter years will provide no additional benefit because of limited storage capacity and instead will increase releases for flood control.
    ii. Seasonal variability: low flows reduced by average ~300 cfs and peak flows (or total volume?)increased by average ~4,000 cfs
    iii. Change in hydrograph due to earlier runoff due to warmer temperatures in early spring.
c. Limited additional supply from ground water
    i. ~40kaf (from C. Petrich) Number needs to be considered more fully
    ii. Limited to areas where can handle stress
    iii. Cannot rely on ground water as a silver bullet for the TV
d. Management of interconnected surface and ground water sources
    i. Interconnection known
    ii. Timing, extent, location not well understood
e. Increased population and economic growth triggering transition from ag to DCMI use
    i. 650 KAF could change from Ag to DCMI (WRIME)
    ii. 80-170kaf, etc. (CAMP ranges: WRIME, IDWR2001/BOR, IDWR/BOR+ undocumented demand)
    iii. Geographic variations (higher in basin more difficult, lower in basin not as big of an issue), trends associated with geography of recent water right applications
    iv. hydrographs
f. Ability of water infrastructure to meet existing and future needs
    i. Aging and deteriorating systems (broad discussion)
        1. Agricultural, municipal
    ii. Funding issue – who pays
    iii. Modernization
g. Maintaining Quality of Life
    i. Aesthetics
    ii. Recreational needs
    iii. Property values, economic development, socio-economic values
h. Limited understanding of the system hydrology
    i. Difficulties associated with planning, management, forecasting, etc.
    ii. Lack of data, weaknesses in the model(s)
i. Meeting Environmental Needs
    i. Biological concerns

5. Actions Needed to Provide Reliable Sources of Water and Avoid Conflict Over Water Resources

a. Additional storage

1. Continue the study of the feasibility of potential surface water storage projects
    a. Support the completion of the Corps feasibility study
    b. Other federal or state/local efforts
    c. If the studies lead to a viable project, the project should be developed for multiple uses (e.g. DCMI, instream uses)
    d. Implement enhanced cloud seeding program in conjunction with additional storage

2. Managed Recharge is a viable option for meeting future demand, and IDWR should investigate recharge options.
3. Support the exchange of Reclamation's flow augmentation space in Lucky Peak (excluding stream flow maintenance) with replacement water supply consistent with the Nez Perce term sheet.

b. Demand Reduction ("water conservation")
   i. Encourage conservation and efficient use of groundwater in all cases.
   ii. Encourage conservation and efficient use of surface water, where a viable/sensible opportunity exists taking into consideration the benefits of incidental recharge. Including encouraging the retrofitting neighborhoods with pressurized irrigation (2.9) (4.1) (2.2.2)
   iii. Encourage and support wastewater/gray water reuse (2.2.3)
   iv. Use education to encourage conservation (2.6)
   v. Encourage or support incentives for conservation (2.1) (2.4) (2.5)
   vi. Develop guidelines for conservation programs (2.1)
      1. Consider conservation requirements for new water appropriations for DCMI uses

c. Conversion of Water Use from Agriculture to DCMI
   i. Continue to support the use of surface water on those lands that convert from agriculture to DCMI utilizing the existing irrigation entities.
   ii. Support voluntary cooperative arrangements between irrigation entities and municipal providers to deliver surface water recognizing the long-term challenges associated with maintaining HOA-owned systems.
   iii. Encourage the use of Water Marketing to meet new DCMI needs including the use of rental pool and water supply bank (3.3) (3.2)

d. Reasonably Anticipated Future Needs (RAFN)

e. Ensuring viability of Water Delivery Infrastructure
   i. Support voluntary arrangements between irrigation entities and municipalities to ensure long-term maintenance of new residential irrigation systems.
   ii. Ensure easements/access to canals for maintenance in face of growth.
   iii. Continue to support considerations of security, both in terms of infrastructure and on water quality.
   iv. Support the rehabilitation and modernization of water delivery infrastructure.
   v. Explore opportunities to minimize fish entrainment in the canal system.

f. Enhance Water Planning and Management
   i. Improve ground water models and technical tools to meet administrative purpose and to facilitate decision making. [Modeling efforts (1.2)(1.4)(1.5)(1.6)(1.7)]
   ii. Support water supply modeling and stream flow monitoring
   iii. Update demand studies periodically (1.3)
   iv. Support drought planning (12.1) specific to the Treasure Valley
   v. Create a mechanism for coordination within the ground water community (e.g. creation of ground water district, or a hybrid ground water district incorporating all users including self-supplied domestic)

6. **TV CAMP Implementation – develop with full committee after other sections are developed.**
    a. Envision use as template for future partnerships?
    b. Annual meetings
        i. TV CAMP?
    c. Education and Public Outreach?
    d. Coordination between land use and water planning (7.3)
    e. Tech committee meet annually to address adequacy of monitoring, measuring and modeling (see 1.1)

MEMO

To: Idaho Water Resource Board
From: Helen Harrington
Subject: State Water Plan Revision Status
Date: March 1, 2011

The revision process for the State Water Plan is continuing. Staff and the Office of the Attorney General are evaluating the degree to which the State Water Plan revision process can resolve outstanding issues surrounding water planning and management. Some of the issues under discussion include:

- Minimum stream flow water rights on the Snake River (mainstem)
- Management issues related to new water appropriations in the Salmon River basin
- Water flow issues related to the Owyhee Initiative

Staff and subcommittee members are continuing to consider revisions based on the comments received during the initial revision phase of the Snake River Basin policies. The revision process has been complicated due to the amount of changes which have occurred since the adoption of the current State Water Plan in 1996.

Memorandum

To: Idaho Water Resource Board

From: Cynthia Bridge Clark CBC

Date: March 11, 2011

Re: Status of Ongoing Storage Water Studies

Lower Boise River Interim Feasibility Study

- Results of the *Water Storage Screening Analysis* were presented at the IWRB work session on September 23, 2010. The top three ranked sites included raising Arrowrock, Alexander Flats, and Twin Springs (additional information can be accessed at http://www.nww.usace.army.mil/boise/brifs/default.asp).

- The Interim Feasibility Study agreement calls for more in-depth analysis of a short list of sites, however, Federal match funding has not been secured to continue the study. The IWRB recommended the top three ranked sites be evaluated further once Federal funding becomes available.

- Staff from the Corps and IDWR continues to provide information about the screening analysis to the public and to groups such as the Treasure Valley CAMP advisory committee. However, ongoing study activities are suspended while the Corps seeks additional Federal funding.

- **No action is required by the IWRB at this time.**

Henrys Fork Basin Study

- The Bureau of Reclamation and the State of Idaho, in collaboration with a stakeholder working group, are conducting a study on water resources in the Henrys Fork River basin to develop alternatives to improve water supply conditions in the Eastern Snake Plain aquifer and Upper Snake River basin. The study will identify opportunities for development of water supplies and improvement of water management while sustaining environmental quality.

- Ongoing study activities include the following:

  - Reclamation is drafting a water needs assessment for the Henrys Fork Watershed to support the Basin Study.
  - A working list of surface water storage alternatives has been developed to identify new potential storage sites and to document sites investigated in previous studies. Reclamation continues to compile information specific to each site for comparison purposes and to assist with the selection of a reduced number of sites appropriate for reconnaissance level evaluation. There are currently 26 storage sites on the alternatives list.

- Reclamation is compiling information about potential conservation and water management alternatives which support the study objectives and provide for development of water supply and improvement of water management.

- Stakeholder meetings continue in conjunction with the Henry's Fork Watershed Council (Council) monthly meetings in Rexburg, Idaho. Each meeting includes updates from Reclamation staff on study activities, informational presentations on existing and potential water development projects, and an opportunity for comment and discussion from stakeholders.

  - At the January meeting, presentations were given on water marketing, the State of Idaho's Water Supply Bank, the Water District 1 Rental Pool, and the Eastern Snake Plain Managed Aquifer Recharge Program. Reclamation also provided an overview of the ongoing evaluation of surface water storage alternatives and requested feedback from the stakeholder workgroup.
  - The next meeting, scheduled for March 15, 2011, will focus on existing and potential water management and conservation strategies. Reclamation staff also anticipates a discussion of the water needs assessment for the Henrys Fork watershed, as well as a discussion of updates to the surface water storage alternative evaluation.
  - Subsequent meetings will focus on selection of specific storage sites and other alternatives to move forward for reconnaissance level evaluation.

- The study is expected to be completed by September 2012.

- **No action is required by the IWRB at this time.**

Weiser-Galloway Project

- A cost-share agreement between the IWRB and the U.S. Army Corps of Engineers (Corps) was executed on June 3, 2010 to initiate the *Weiser-Galloway Gap Analysis, Economic Evaluation and Risk-Based Cost Analysis Project* (Weiser-Galloway Project). The project involves a reexamination of specific components of the previously identified Galloway Dam and Reservoir site based on current conditions, and is intended to be used by decision makers in determining whether to move forward with a full feasibility level study.

- Total costs associated with the Weiser-Galloway project were estimated to be $200,000 to be shared equally by the Corps and the IWRB. Up to $100,000 of federal funding is committed through the Corps Planning Assistance to States (PAS) program, and the IWRB committed up to $100,000 from the revolving development account with an option to perform in-kind work to offset the IWRB's cash contribution. The project is both on time and significantly under budget. The final study findings are in the process of being published.

- Members of the project development team, including staff from the U.S. Army Corps of Engineers, the IDWR, and Senior Advisor Jack Peterson will be prepared to present results of the study at a future meeting as directed by the IWRB.

- **No action is required by the IWRB at this time.**

IDAHO
Water Resource Board

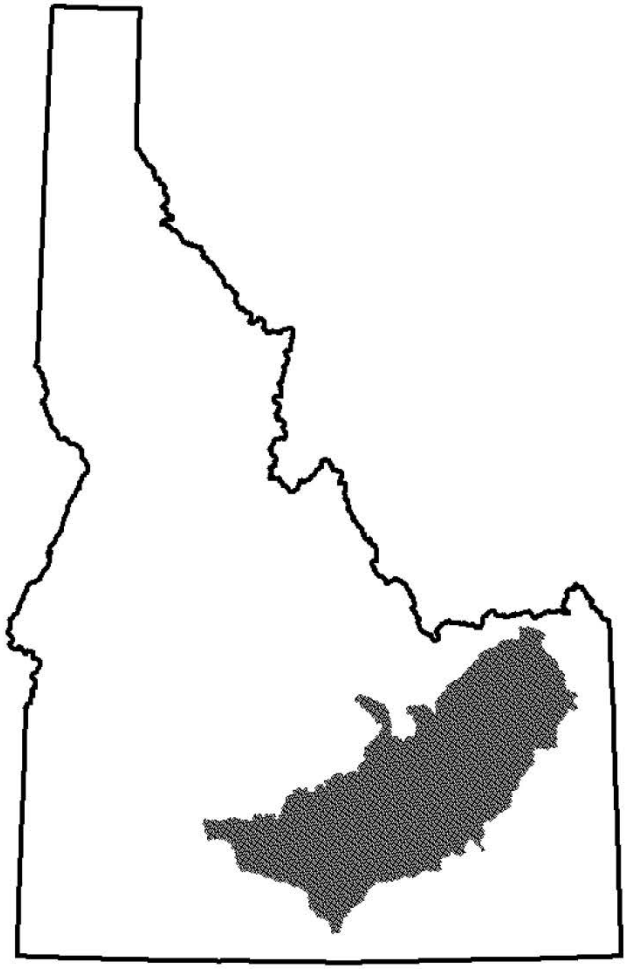
ESPA Monitoring Program

Presented by: Rick Raymondi

Date: March 10, 2011

ESPA Monitoring Program

- History
- Goals
- Participants
- Components
- Monitoring Locations
- Funding Requirements



Title 42, Chapter 6, Section 42-620, Idaho Code (2005) required ESPA water districts to include the Department's costs for:

- Monitoring conditions of the ESPA
- Updating the ESPA ground water model

Title 42, Chapter 17, Section 42-1779 & 1780, Idaho Code (2008) established the aquifer planning and management effort and created the fund in state treasury for:

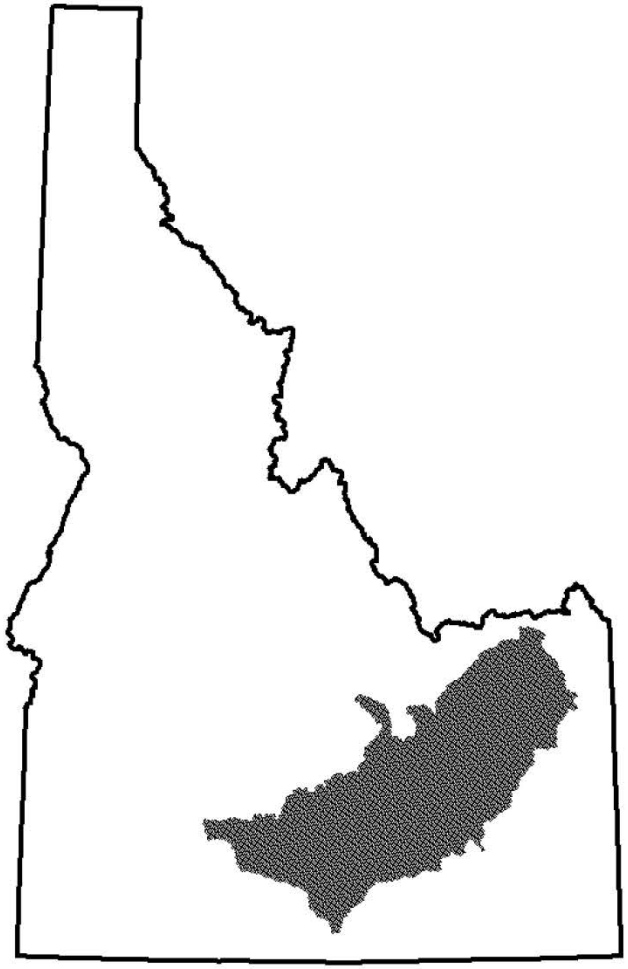
- Technical studies
- Hydrologic monitoring and measurements

Goals

- To expand the surface and ground water monitoring networks throughout the ESPA

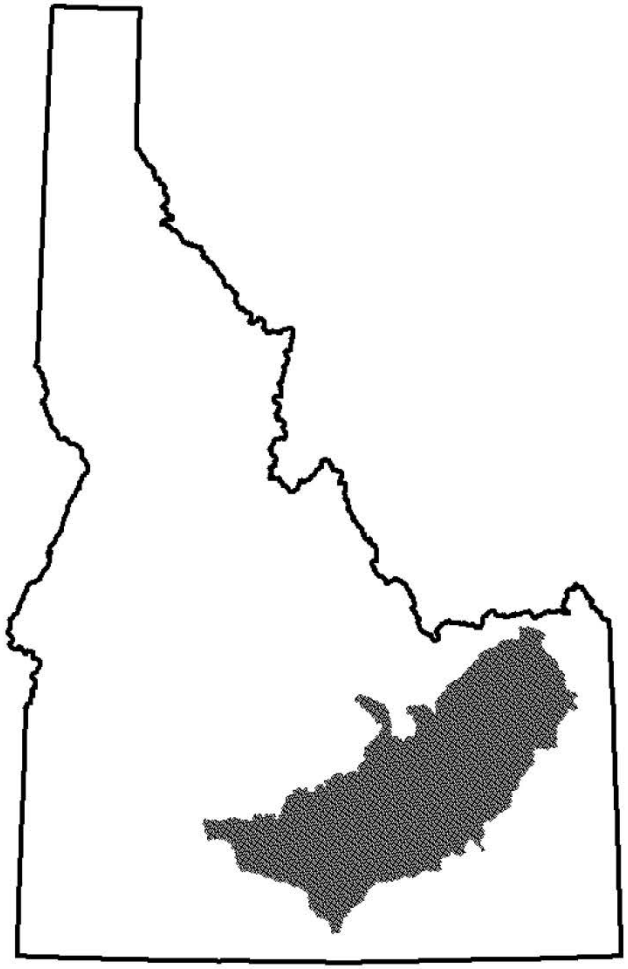
- To provide additional data to update and improve the calibration of the ESPA ground water model

- To modernize and adjust the model to improve the accuracy of simulations and predictions



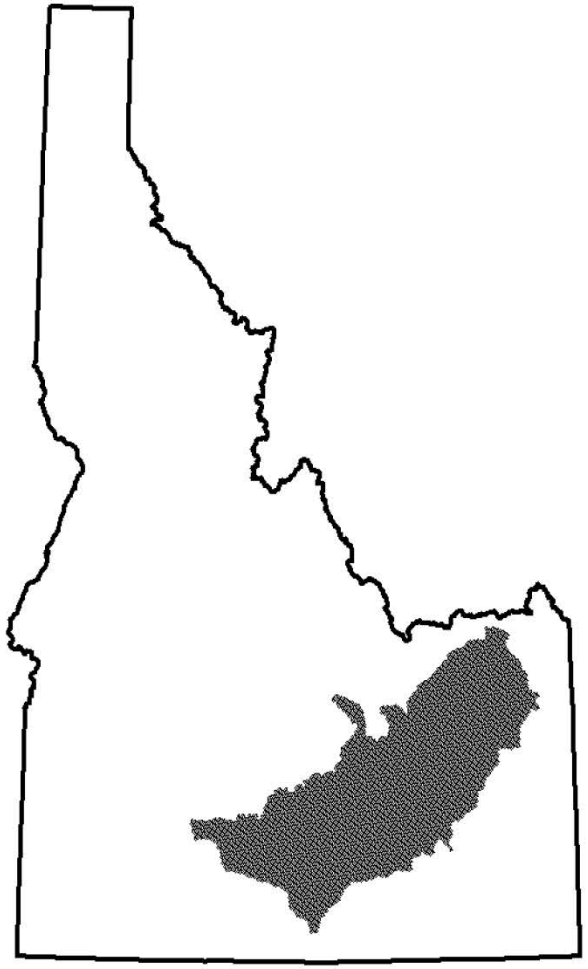
ESPA MONITORING COMPONENTS

- Irrigation return flows
- Spring and creek flows
- Hatchery discharges
- River flows
    - Snake River
    - Portneuf River
- Irrigation diversions
- Ground water level measurements



Data Acquisition

- IDWR
- A-S Canal Co. and the Shoshone-Bannock Tribes
- Idaho Power Company
- NSCC, TFCC, MID, and BID
- USGS, USBR, NRCS, BLM, and BIA
- Idaho DEQ and other state agencies
- Water District 01
- City of Pocatello
- City of Twin Falls
- IWRRI
- National Fish Hatchery
- Rangen, Inc.
- Numerous spring users, private landowners, and other private interests

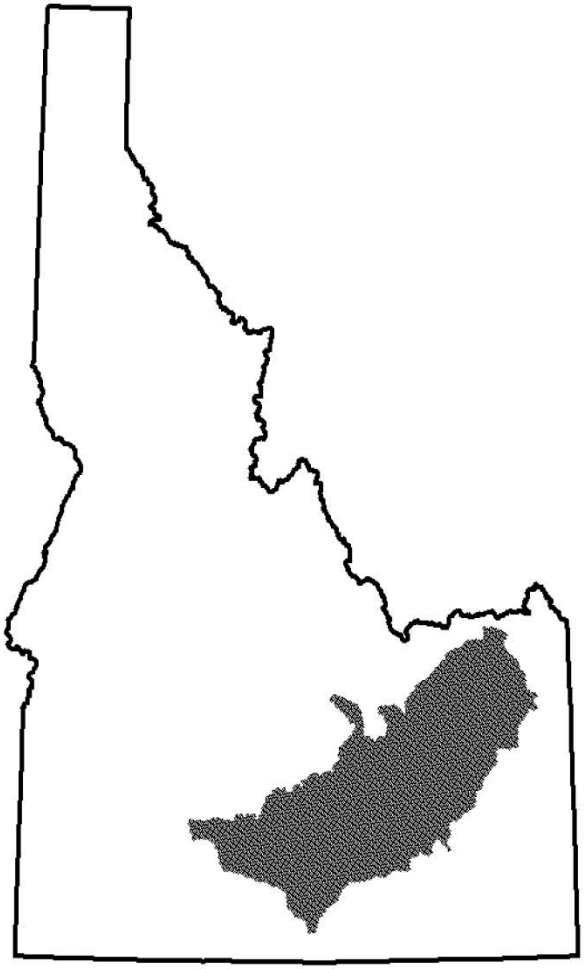


Spring and Creek flows

- 18 new installations
- 3 upgrades
- 4 in development

Data Characteristics

- continuous recording (15-minute intervals)
- radio telemetry
- processing IDWR data (Aquarius)
- flows published as daily averages
- real-time links to Idaho Power & USGS sites



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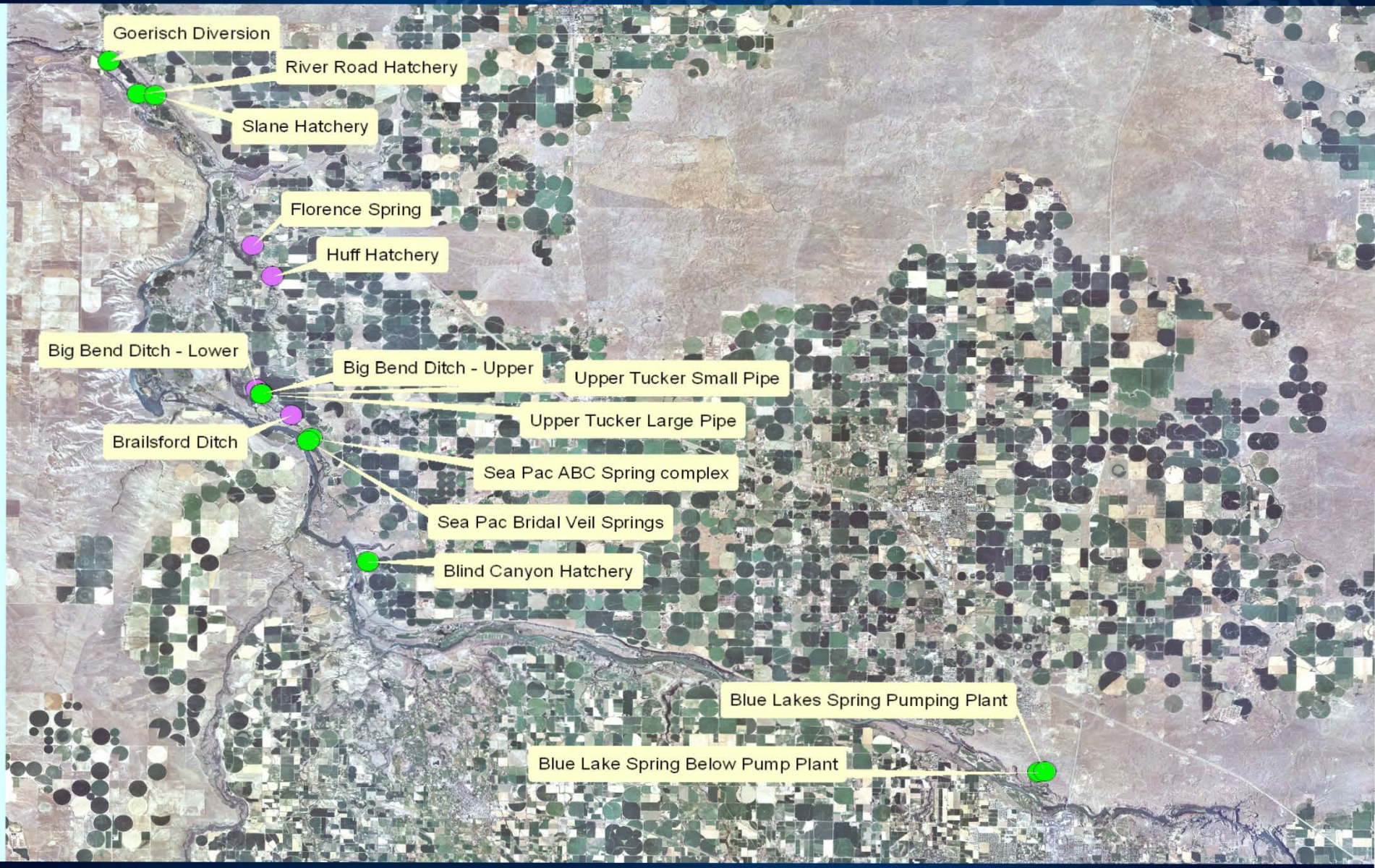

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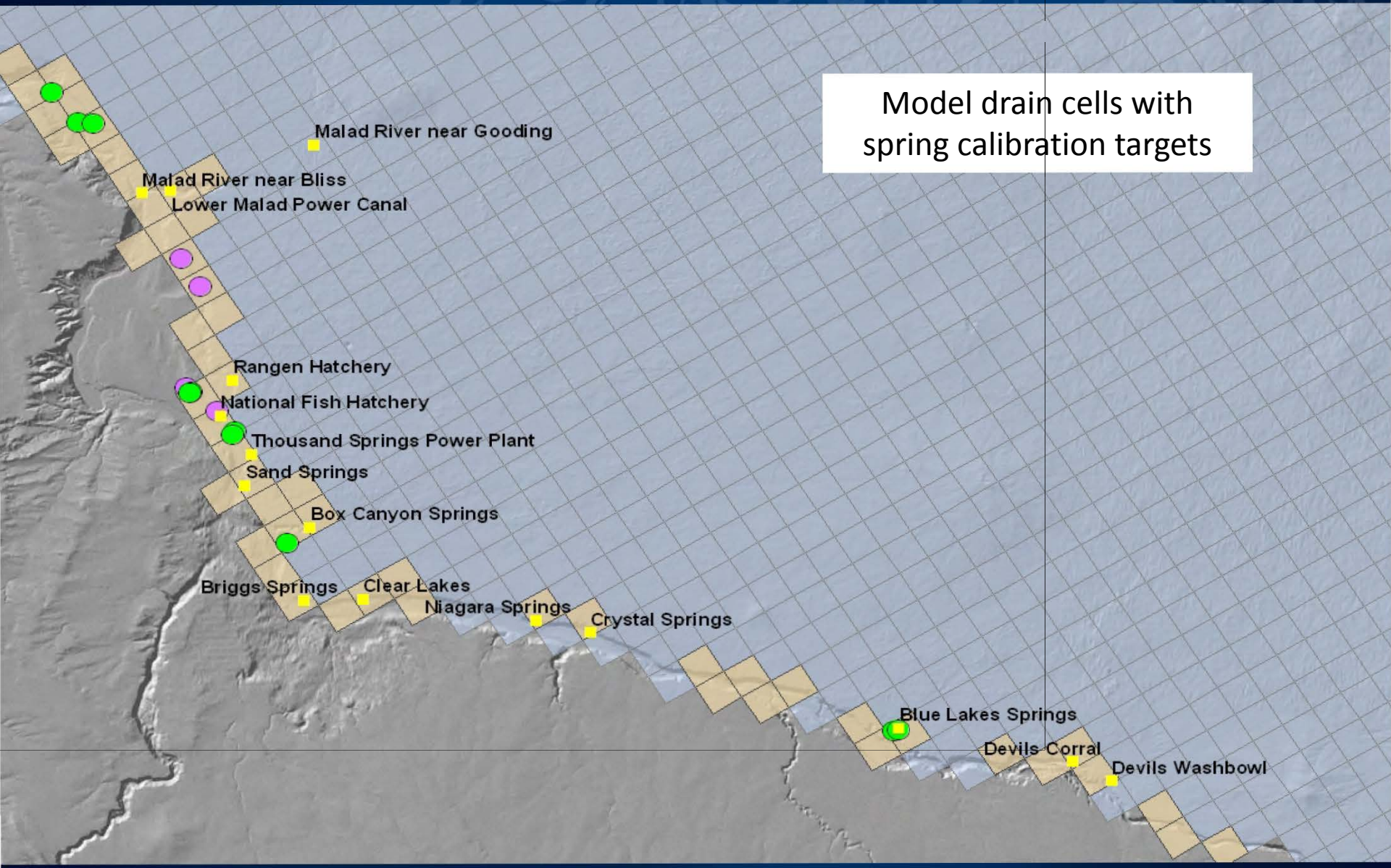

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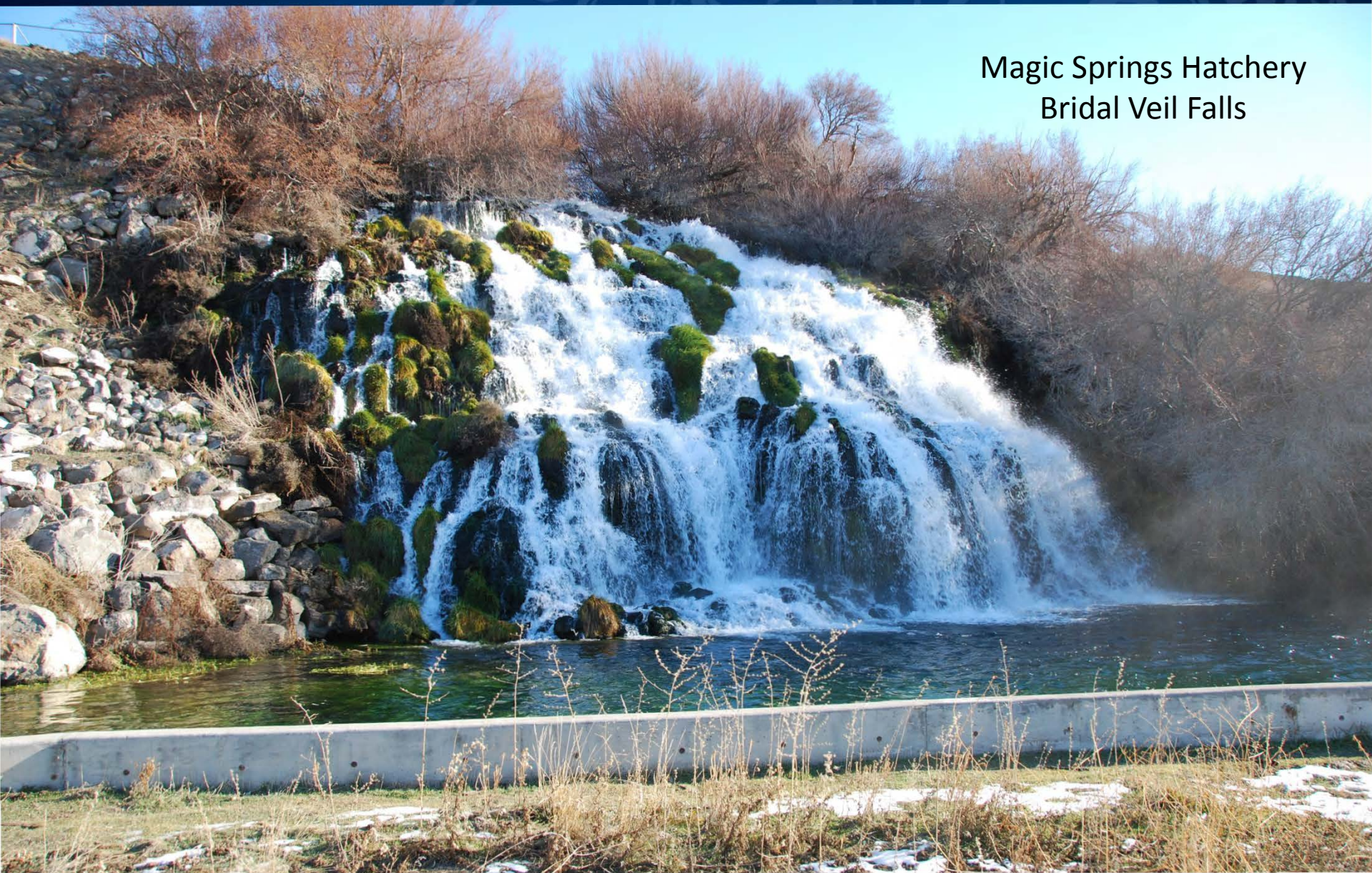

Magic Springs Hatchery
Bridal Veil Falls

River Road Hatchery

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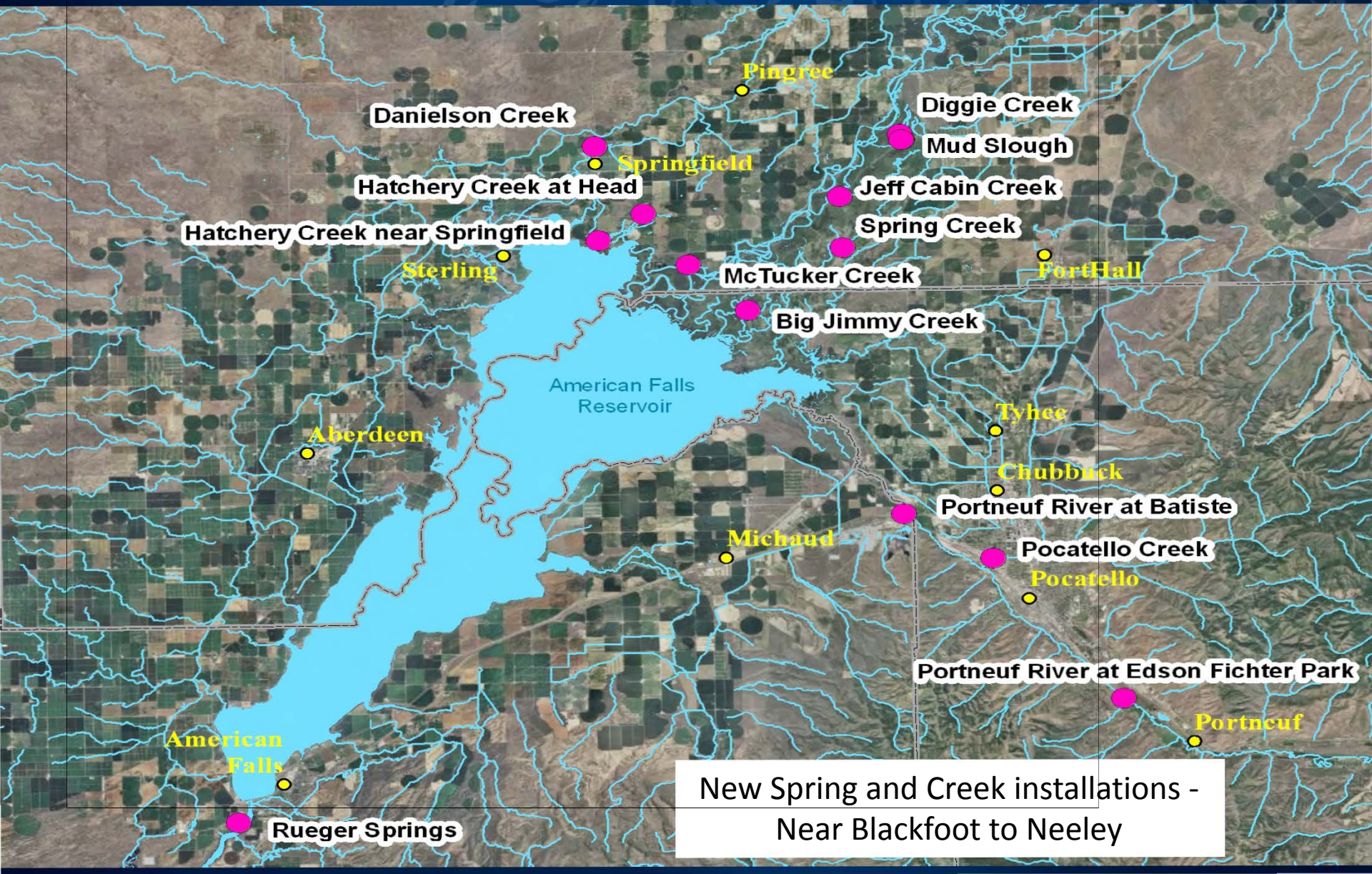
Water Resource Board

River Road Hatchery ultrasonic clamp-on flow meter

IDAHO
Water Resource Board

IDAHO
Water Resource Board



New Spring and Creek installations - Near Blackfoot to Neeley

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Spring Creek monitoring
Fort Hall Bottoms

IDAHO
Water Resource Board

Spring Creek monitoring
Shoshone-Bannock Tribes

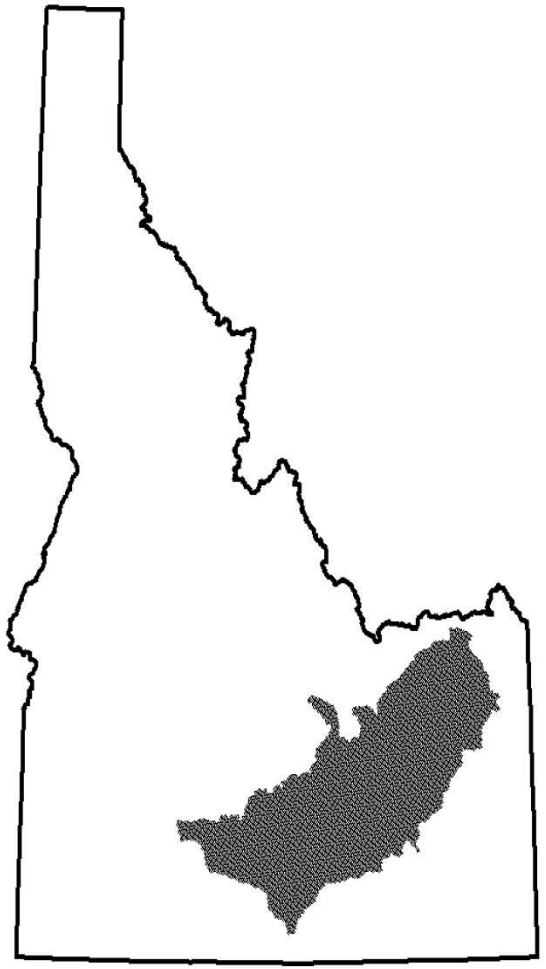
IDAHO
Water Resource Board

IDAHO
Water Resource Board

Hatchery Creek near Springfield
Idaho Power Co. installation

Additional USGS Stream Flow Measurements

- South Fork Menan Gage
- Snake River at Idaho Falls, at Blackfoot, Neeley, and Minidoka
- Spring Creek

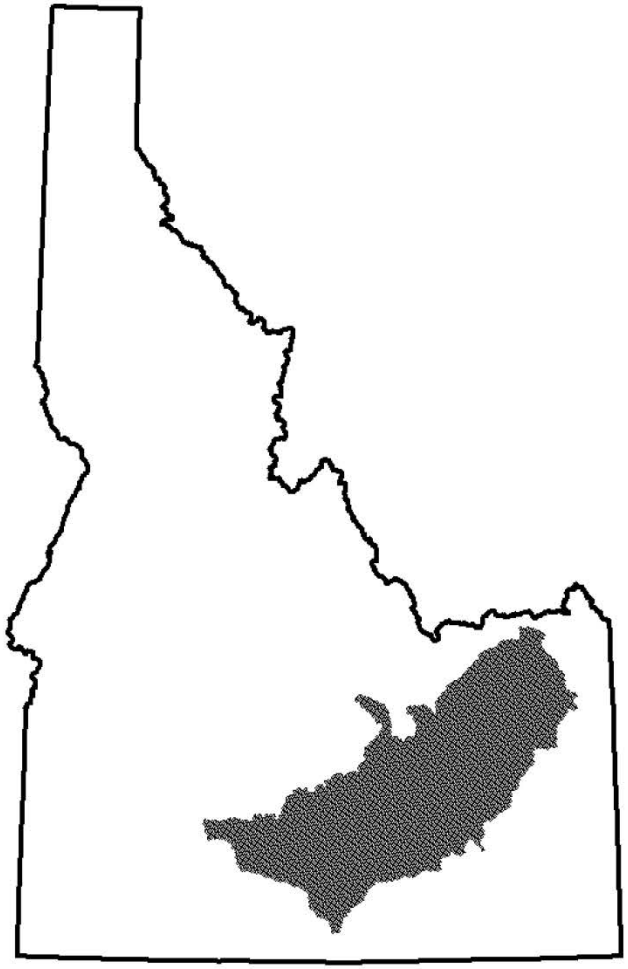


IRRIGATION RETURN FLOWS

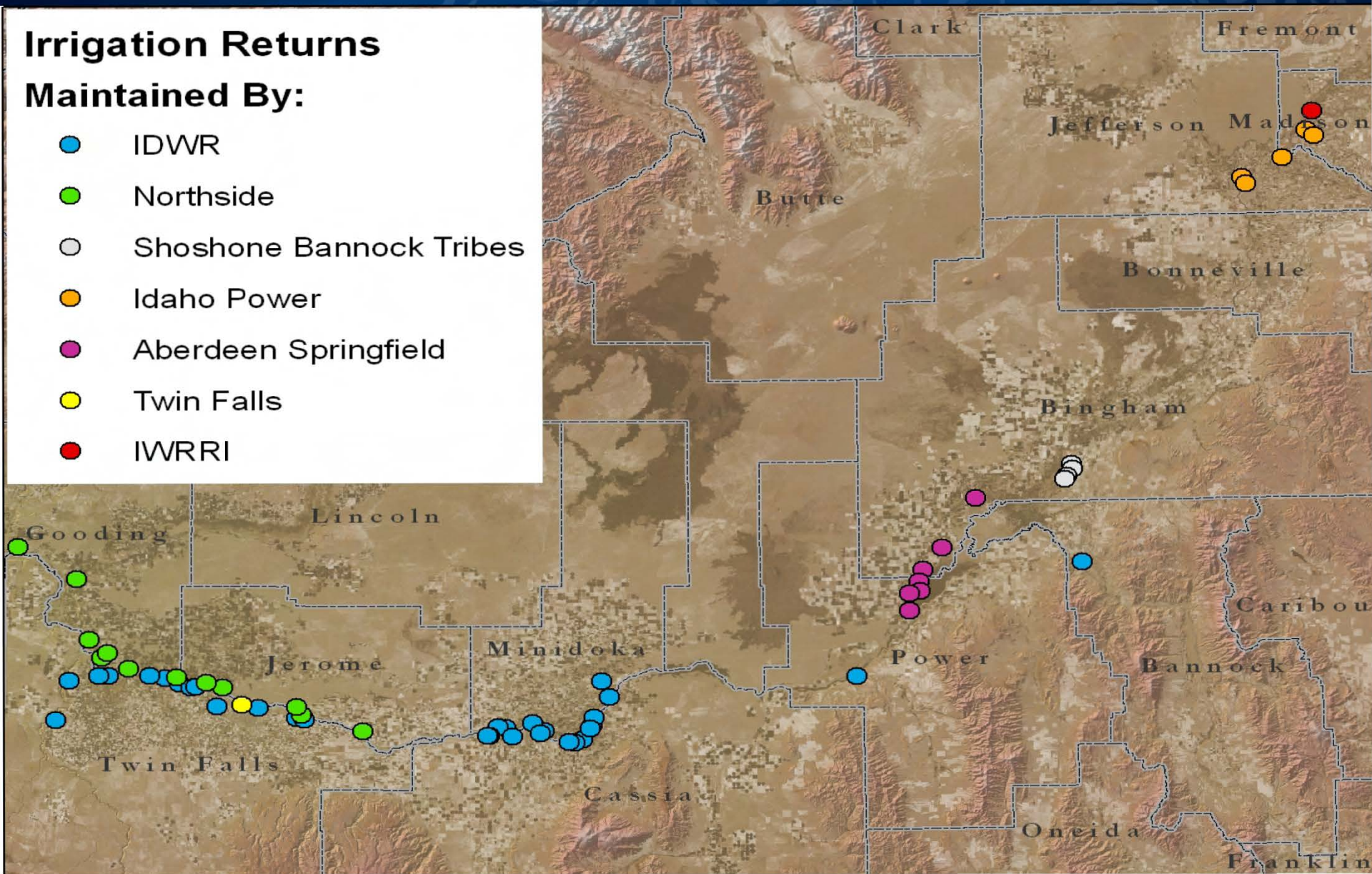
- 2006 - 44 identified/34 measured
- 2011 – 83 identified/58 measured/3 in development/12 in negotiation

DATA CHARACTERISTICS

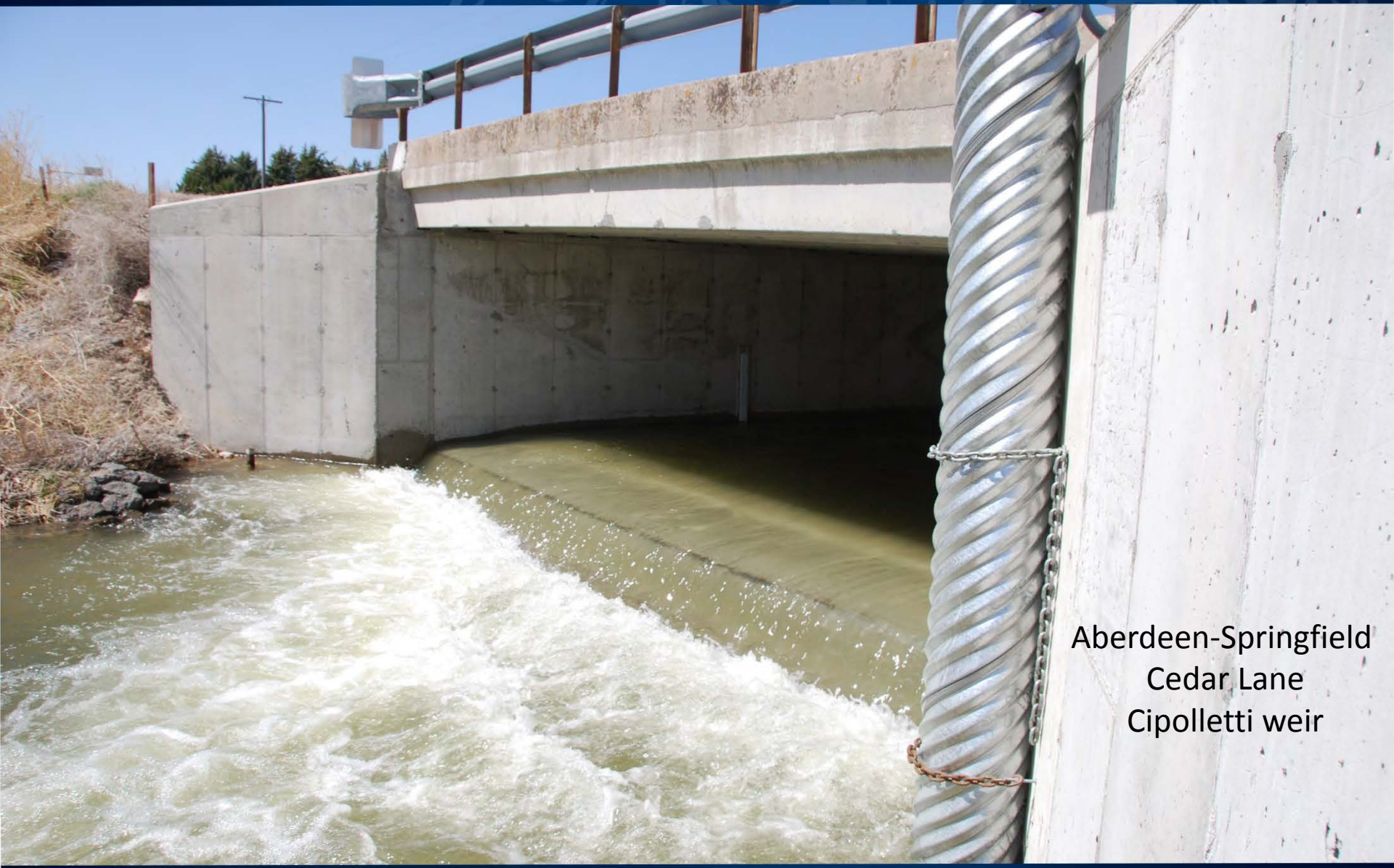
- continuous monitoring (15-min intervals)
- seasonal
- data processing (Aquarius)
- flows published as daily averages
- real time link to Shoshone-Bannock Tribes and Idaho Power sites



IDAHO
Water Resource Board



IDAHO
Water Resource Board



Aberdeen-Springfield
Cedar Lane
Cipolletti weir

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Water Resource Board

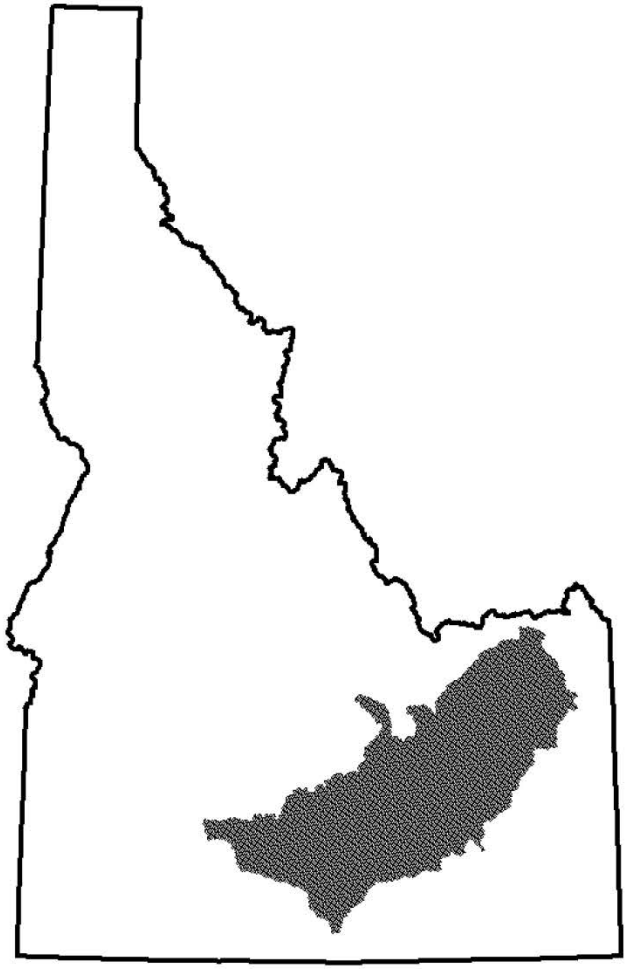
Ground Water Levels

- Hand measurements
  - bimonthly
  - quarterly
  - semi-annual
  - annual
- Sentinel wells

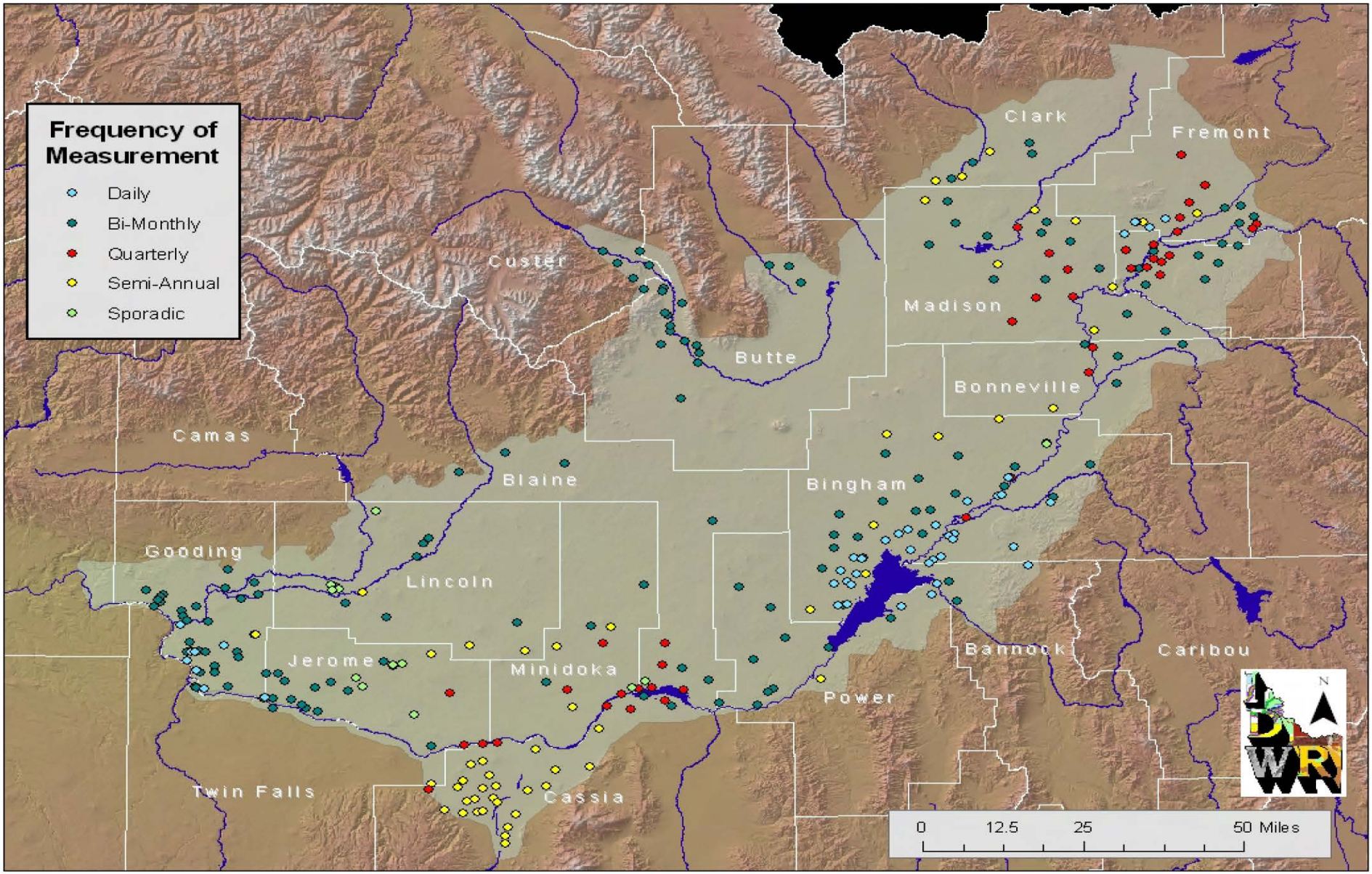
~ 43 wells with continuous recorders

- Synoptic measurements

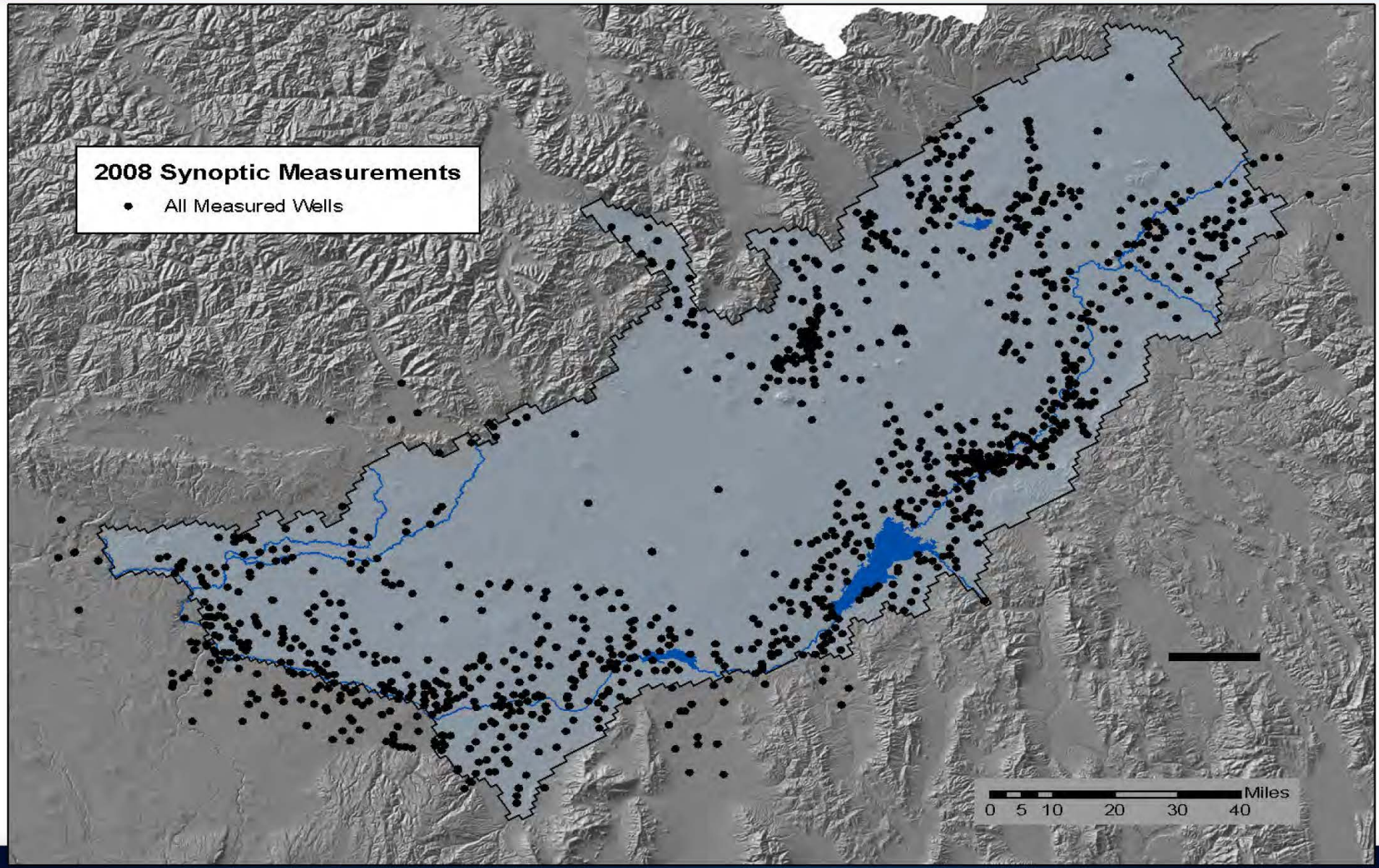
~ 1000 wells measured in 1980, 2001, 2002, 2008, 2013



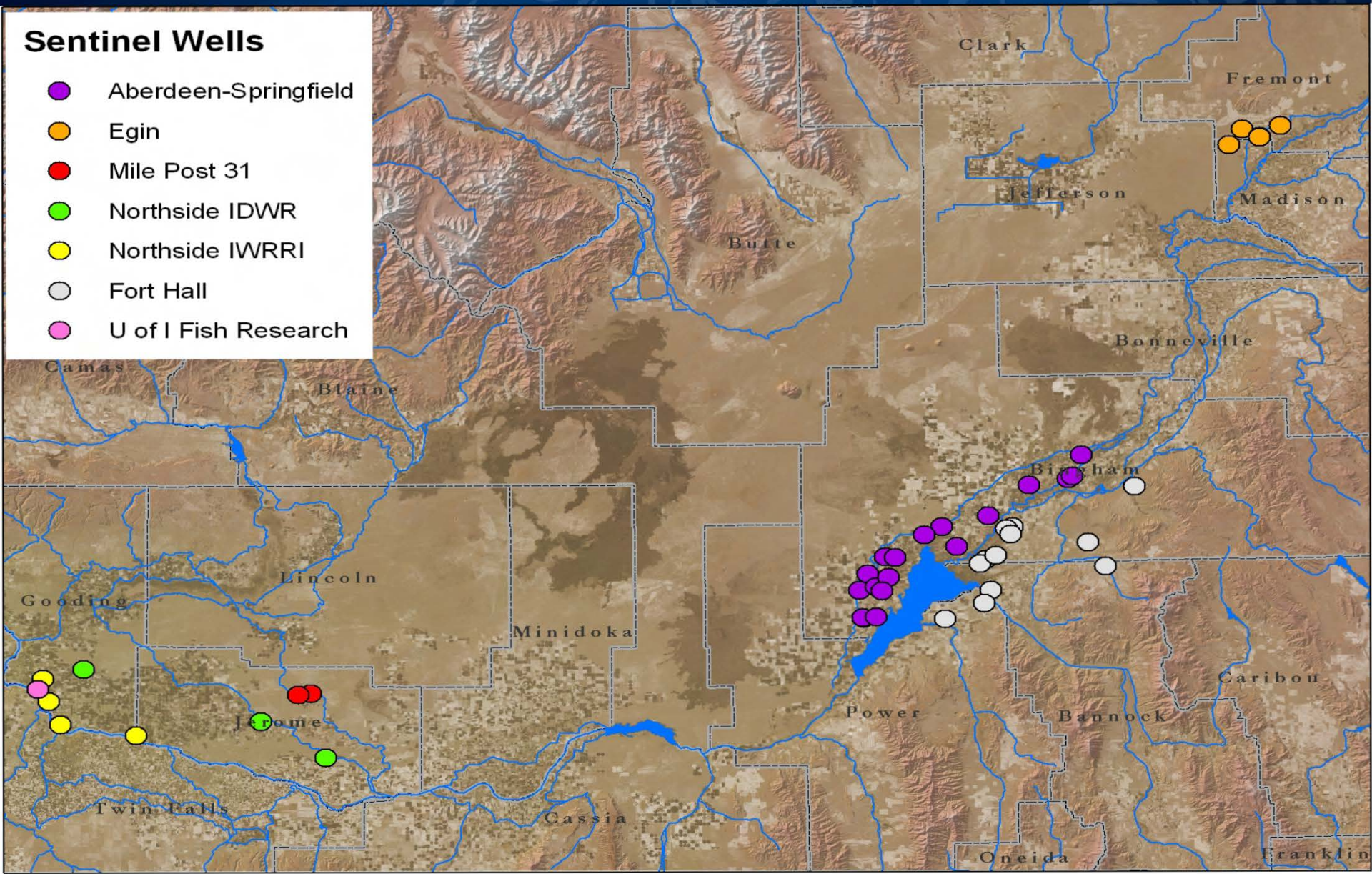
IDAHO
Water Resource Board



IDAHO
Water Resource Board



IDAHO
Water Resource Board



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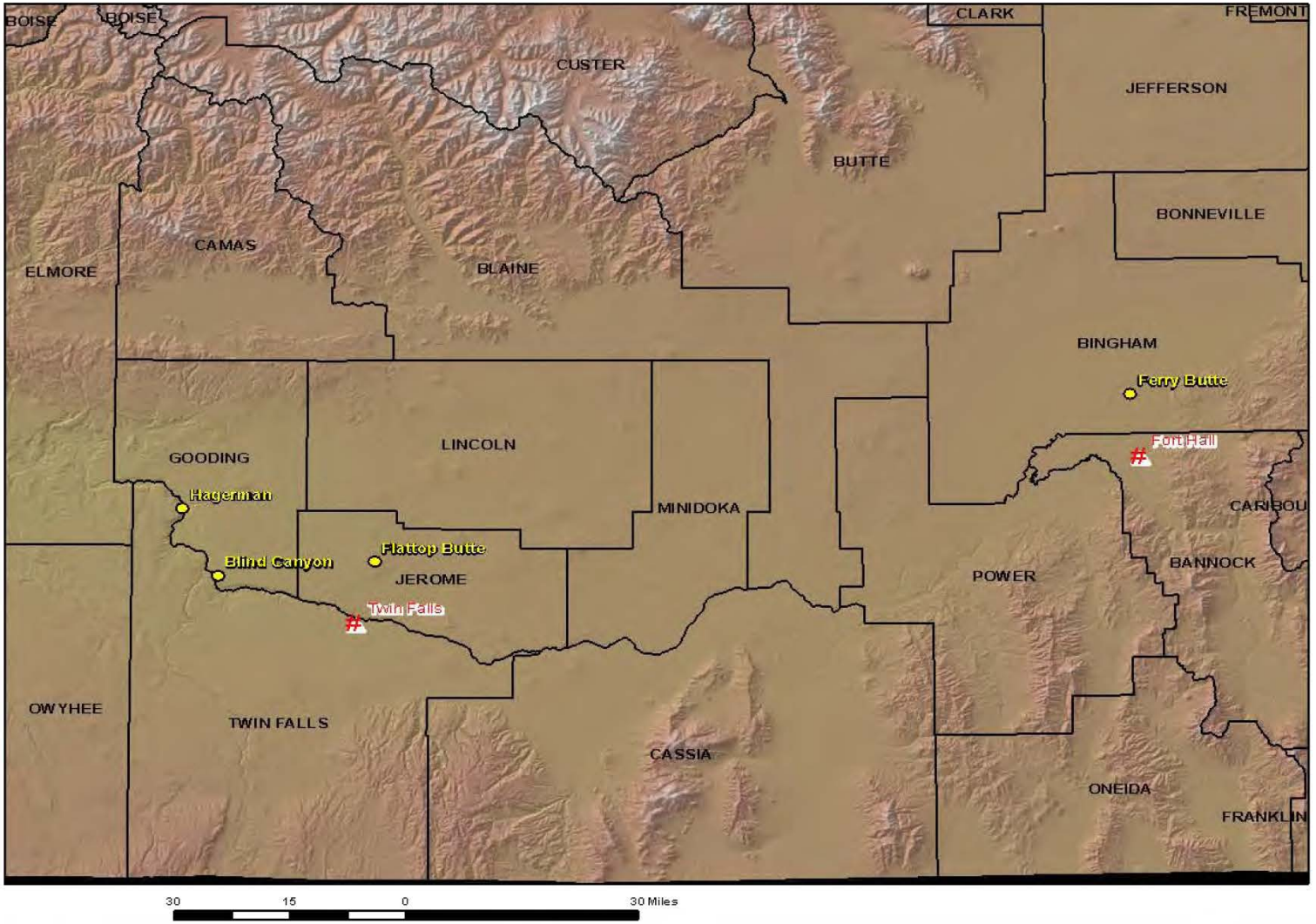
Water Resource Board

Telemetry Relay Stations



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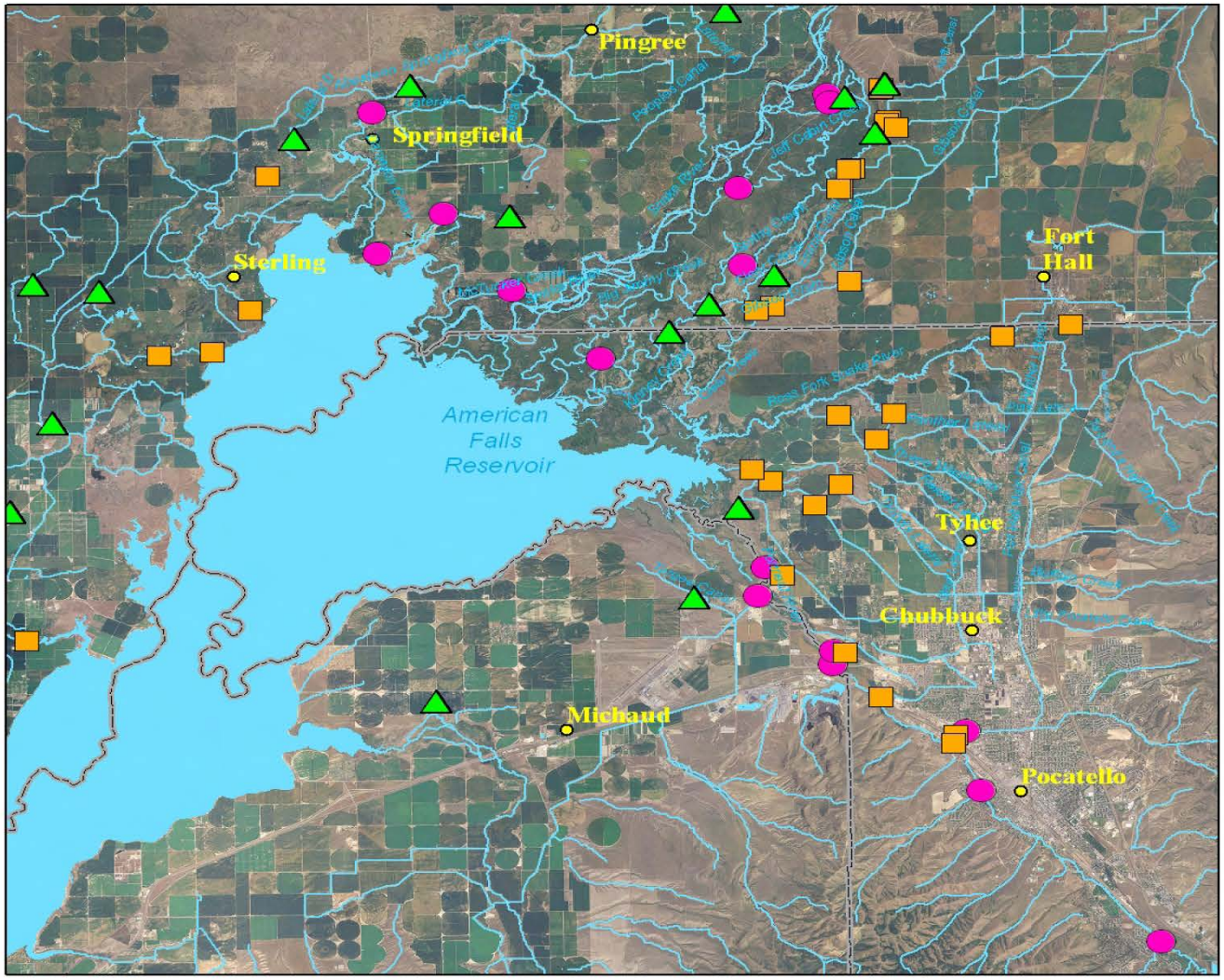
Water Resource Board

Flat Top Butte
near Jerome

IDAHO
Water Resource Board

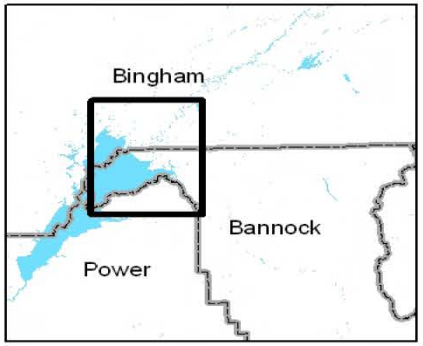
Ferry Butte near
Fort Hall

IDAHO
Water Resource Board



Fort Hall Bottoms

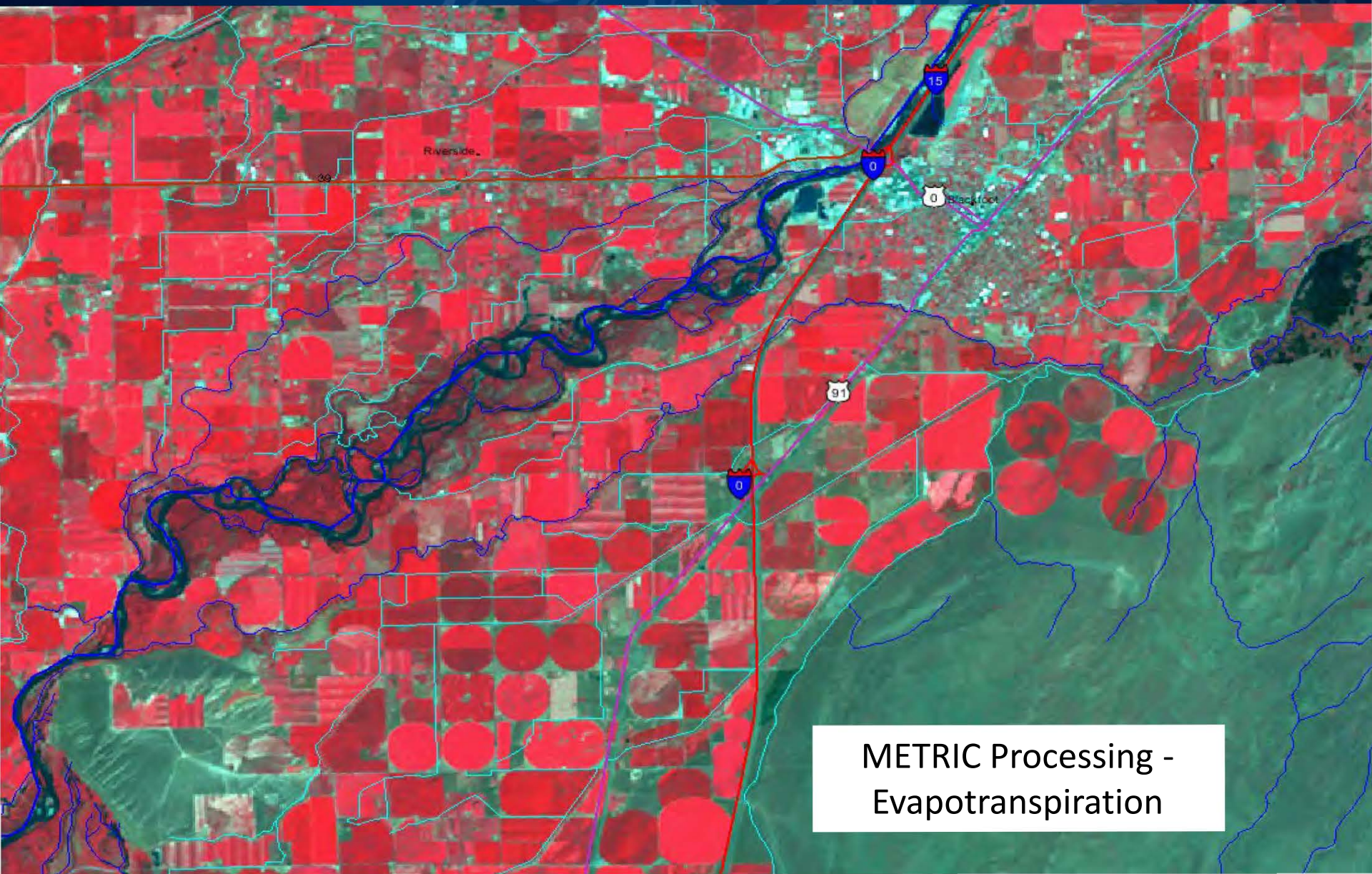
- Sentinel Wells
- Return Flow Gages
- Spring and Stream Gage Sites
- Counties



0 0.5 1 2 3 4 Miles

forthallbottoms4c.mxd Apr2010

IDAHO
Water Resource Board

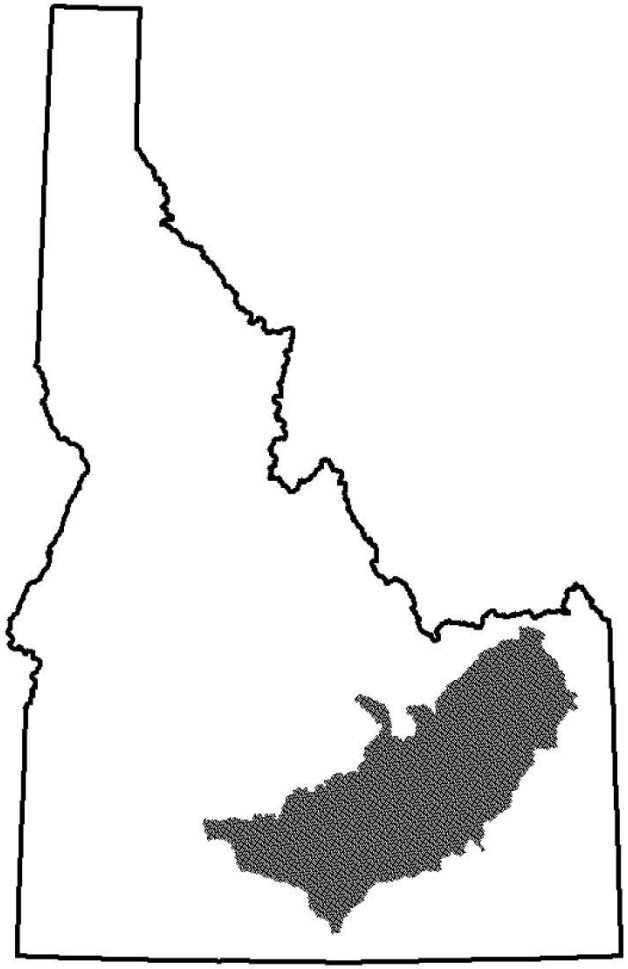


METRIC Processing - Evapotranspiration

ESPA DATABASE

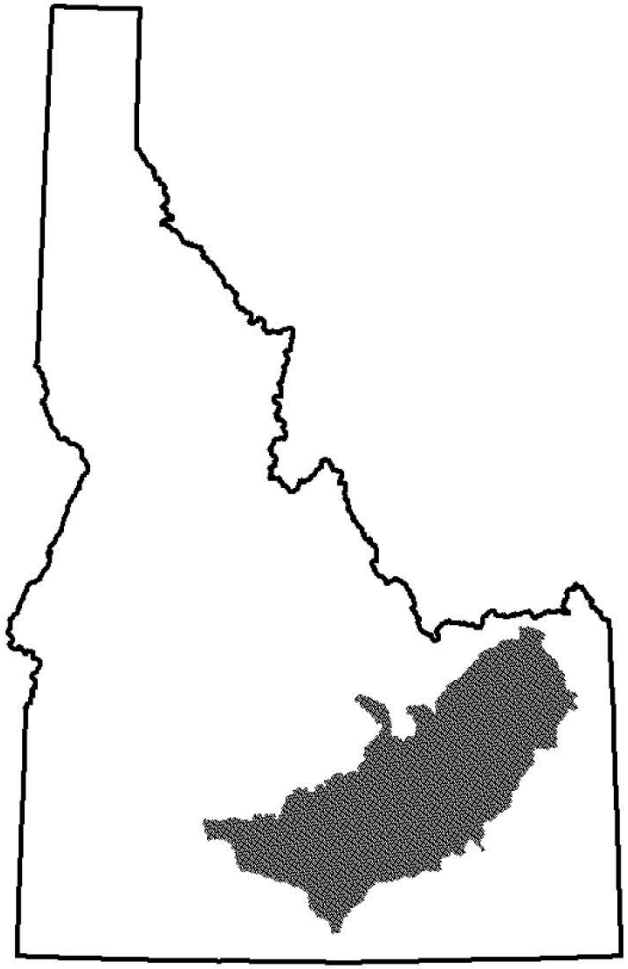
Data and information obtained from monitoring and measurements made within the ESPA ground water model boundary (ESPAM version 2.0).

This database will be a prototype for and a geographical subset of the IDWR hydrologic database.

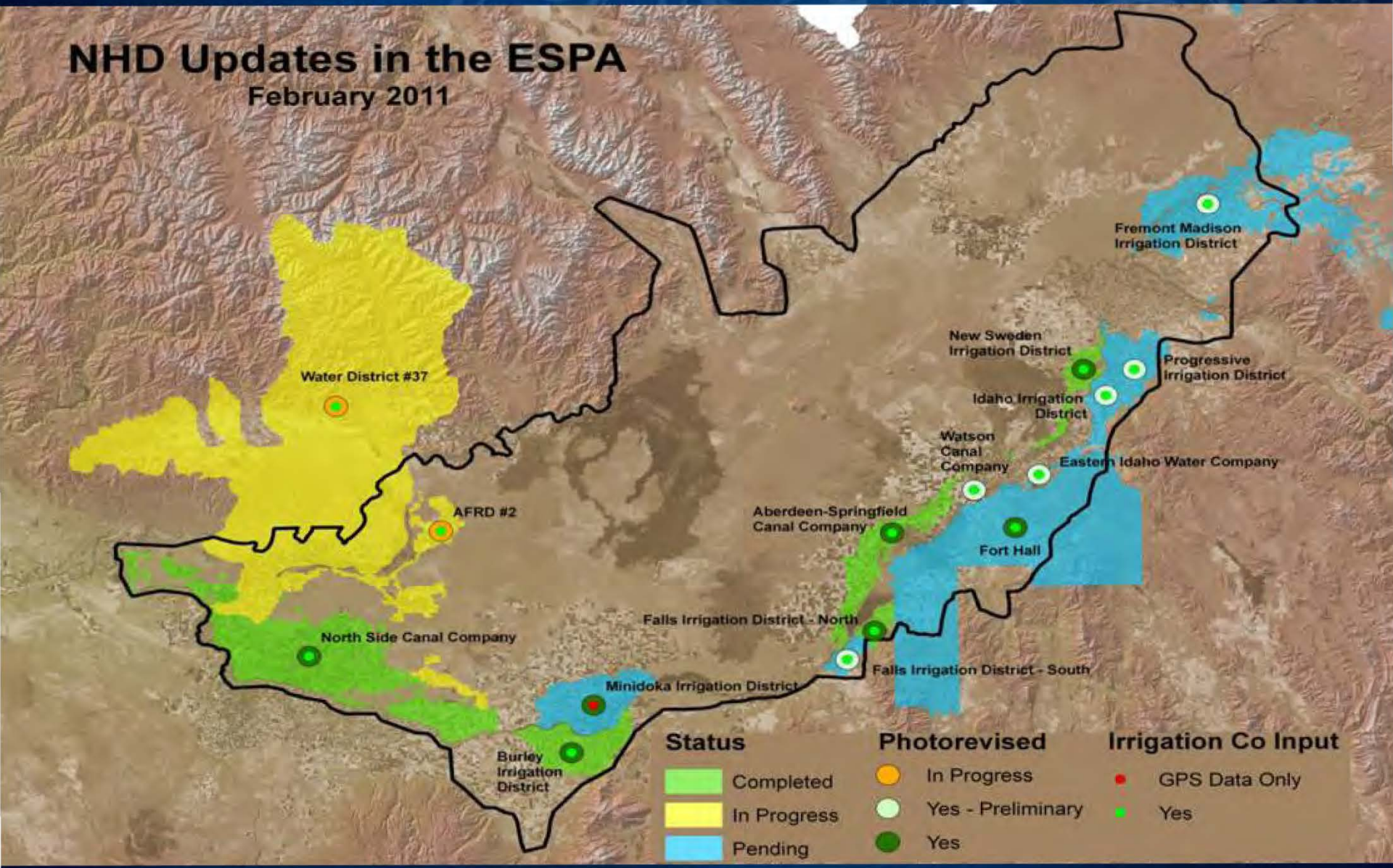


Database Design

- SQL Server
- Ability to query via internet mapping applications
- Future integration with other IDWR databases

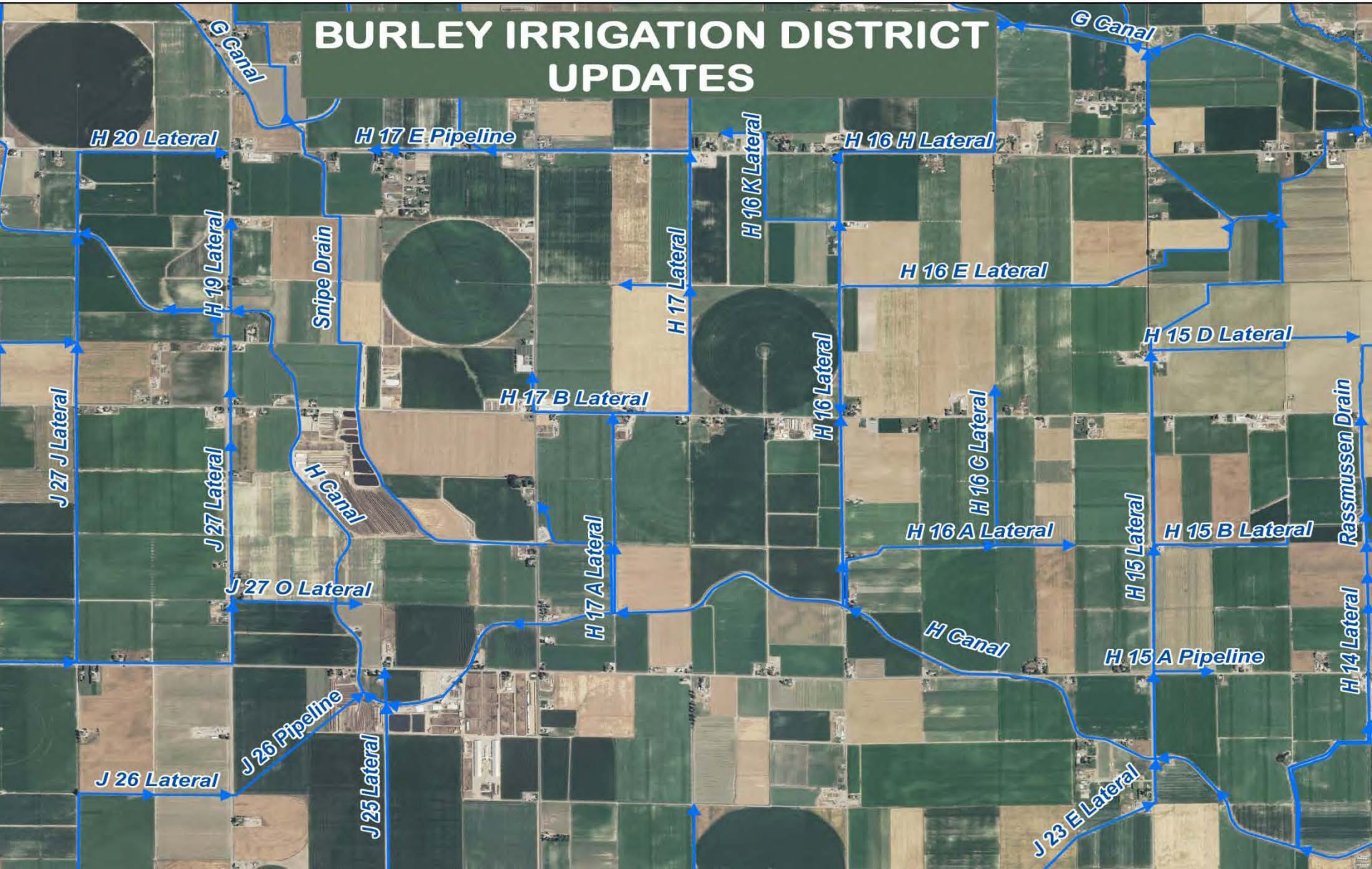


IDAHO
Water Resource Board



IDAHO
Water Resource Board

BURLEY IRRIGATION DISTRICT UPDATES



ESPA Monitoring and ESPA Model Development and Maintenance Contracts			
FY	ESPA Operations and Monitoring Expenses	ESPAM Development and Maintenance Contracts	Total ESPA and ESPAM Expenses w/o labor
2008	$247,603.97	$306,041.04	$553,645.01
2009	$295,165.84	$39,429.48	$334,595.32
2010	$206,955.09	$245,006.43	$451,961.52
2011	$210,084.00	$380,690.88	$590,774.88
2012	$213,051.72	$269,983.16	$483,034.88
2013	$275,560.75	$259,817.79	$535,378.54
2014	$162,230.54	$270,210.50	$432,441.04

Total ESPA Fund Operating Expenses to date: **$1,120,000.00**

Total ESPA Fund Budget: **$2,823,000.00**

FY	Subtotal ESPA Expenses	Labor (2 FTE)	Total ESPA Monitoring Expenses
2014	$432,000.00	$143,000.00	$575,000.00

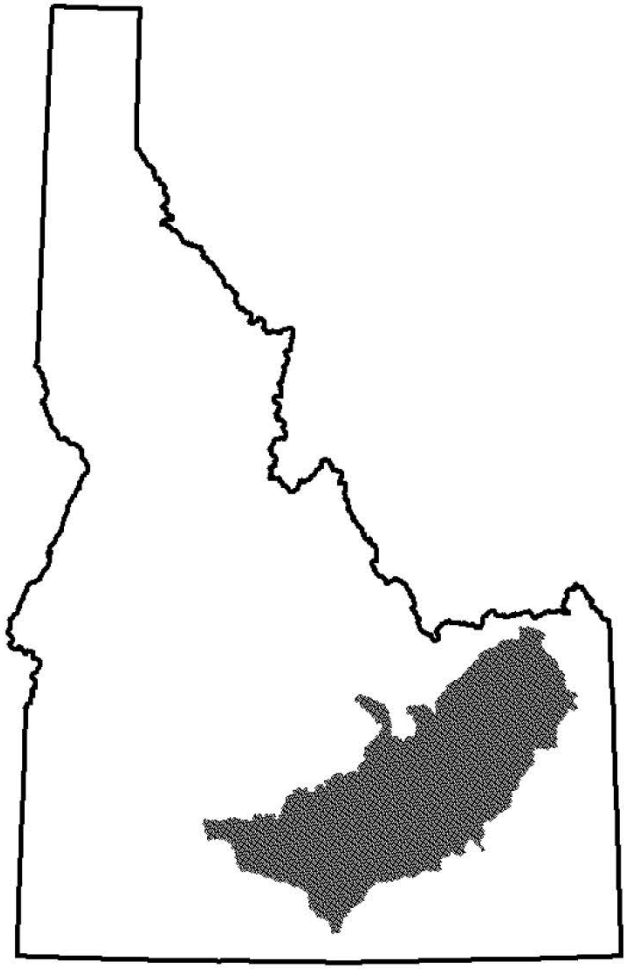
ESPA Aquifer Planning and Mgmt. Fund Ends: **2014**

IDWR Participants - monitoring

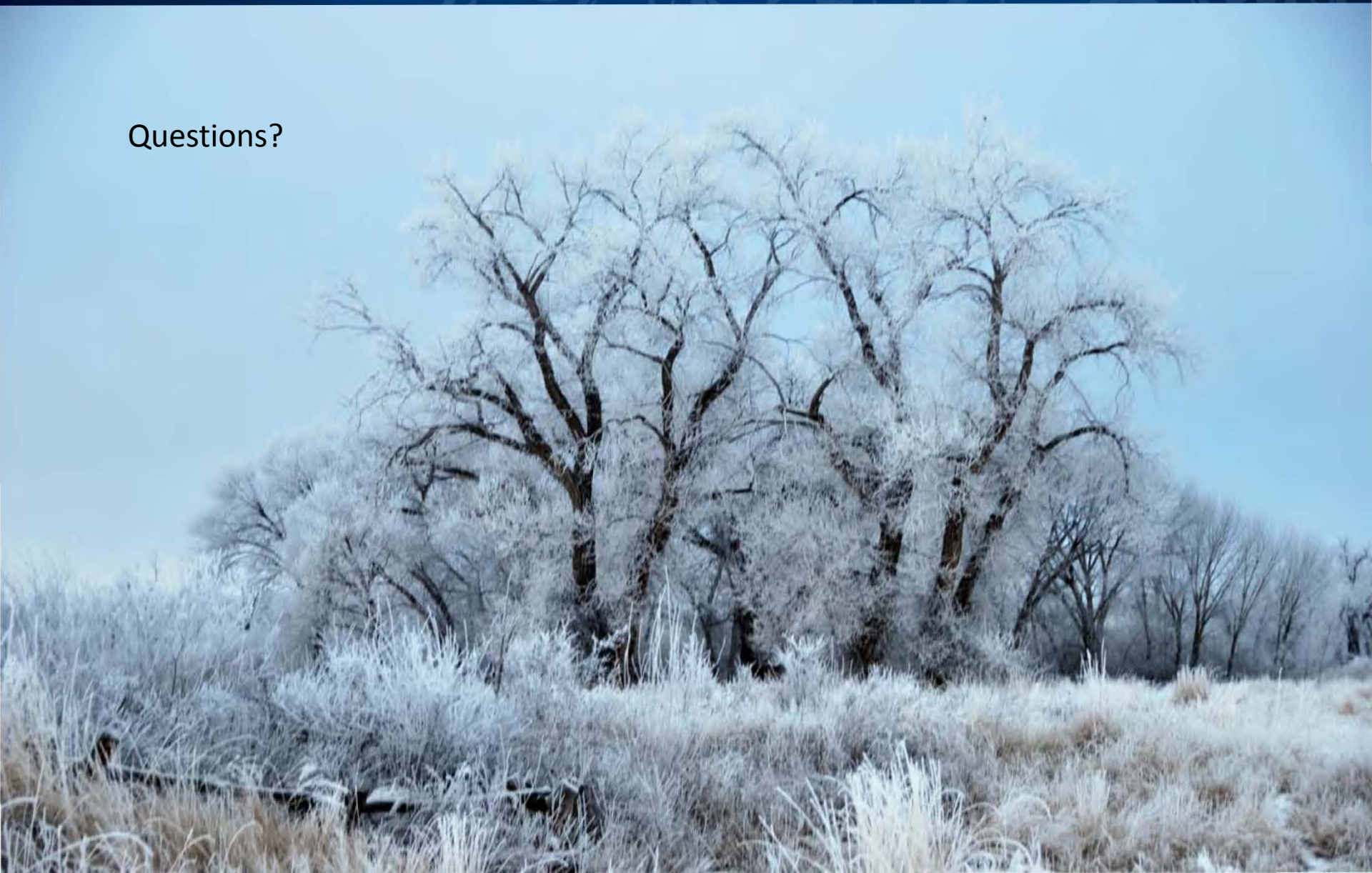
- Michelle Richman
- Stuart VanGreuningen
- Matt Weaver
- Corbin Knowles
- Sudhir Goyal
- Liz Cresto
- Jennifer Cuhaciyan
- Lin Campbell
- Eastern Regional Office

IDWR Participants – modeling

- Allan Wylie
- Mike McVay
- Jennifer Sukow
- Bill Kramber
- Margie Wilkins
- Linda Davis
- Sean Vincent



Questions?



ESPA Water Level Changes and Estimated Volume of Water

Mike McVay

03/10/2011

Synoptic Water-Level Measurements

- Data from four synoptic water level measurements (mass measurements) have been used to estimate changes in aquifer storage.
- Synoptic measurement events measure a large number of wells over a short period of time (approximately 8 weeks).
- Synoptic events in 1980, 2001, 2002 and 2008. Events are scheduled to occur every 5 years.

Aquifer Water Balance

Inflow – Outflow = ΔStorage

ESPA Inflows = Incidental recharge from SW irrigation, Canal Seepage, Perched River Seepage, Tributary Underflow, Precipitation.

ESPA Outflows = Evapotranspiration, Spring Discharge, Well Pumping

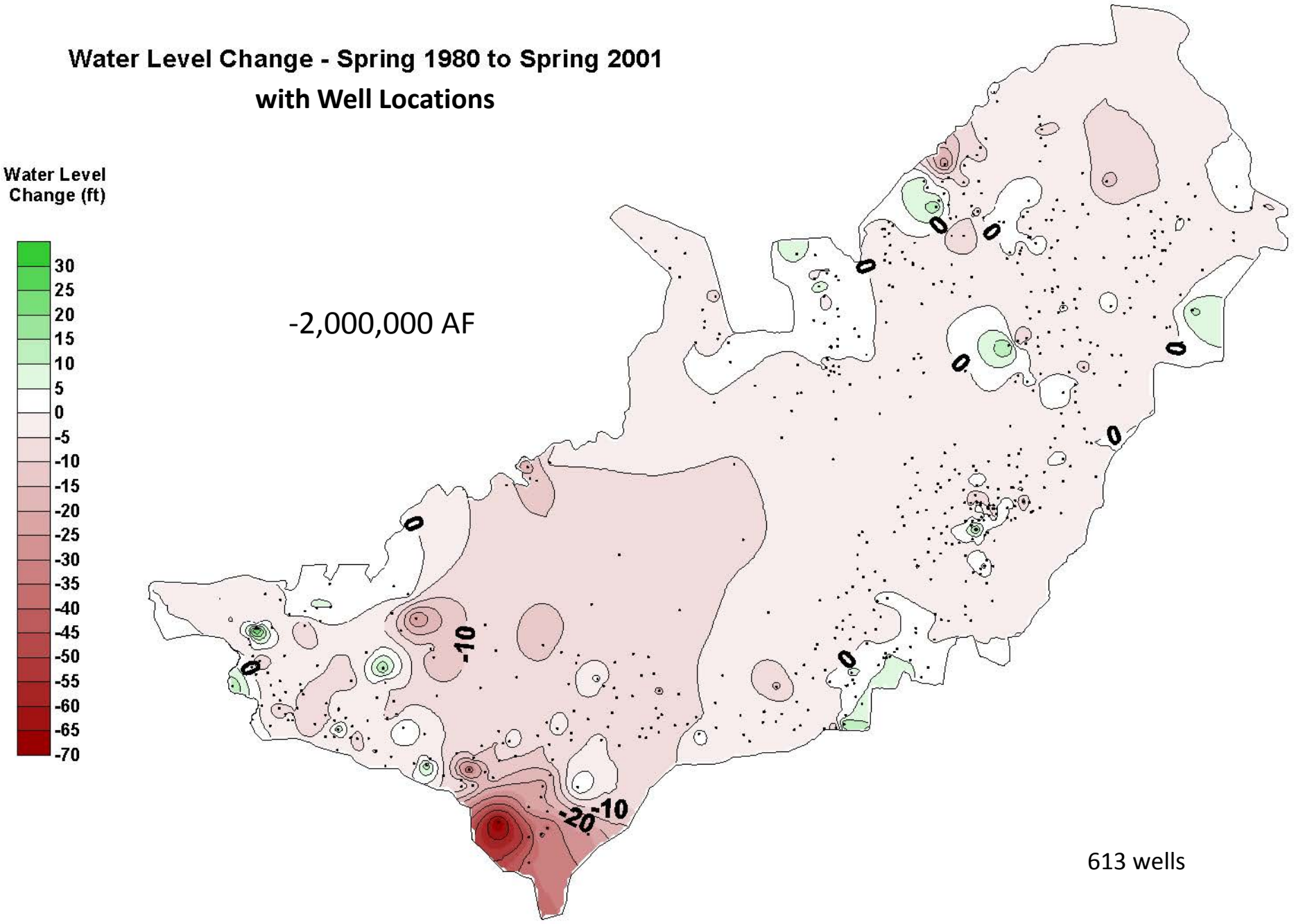
We spend a lot of time and effort attempting to estimate these parameters. However, we can calculate change in storage more directly using synoptic measurements. We can then compare to earlier estimates of aquifer storage and generate an aquifer "history."

Using Synoptic Water-Level Data to Estimate Changes in Aquifer Storage

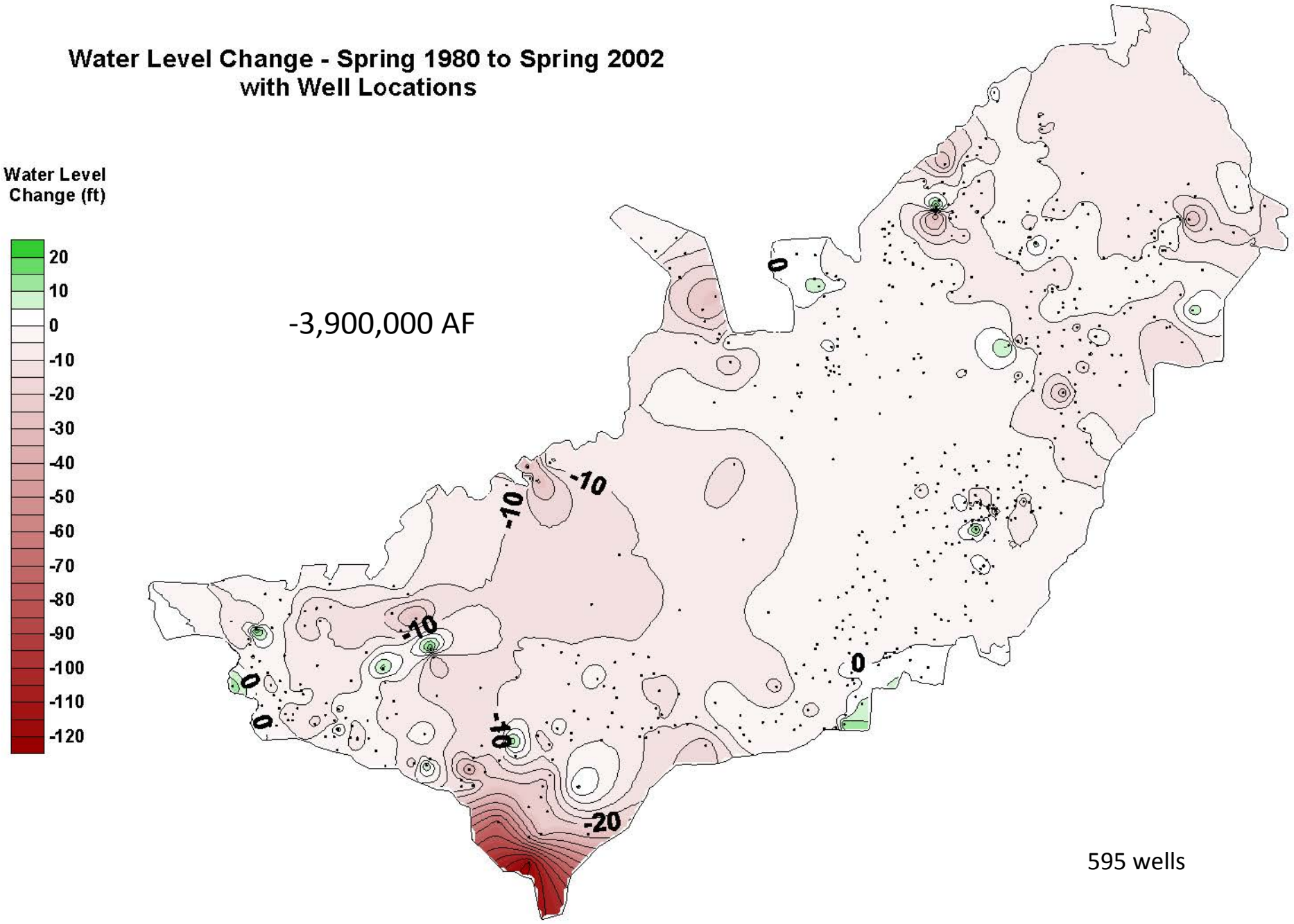
The volume of changes in storage were calculated as follows:

1. Synoptic water level data was differenced to get water-level changes at discrete points.
2. Change point data was interpolated to create water-level change maps.
3. The water-level-changes were multiplied with the average calibrated Sy value from ESPAM1.1 (0.07) and the area to calculate volume of water.

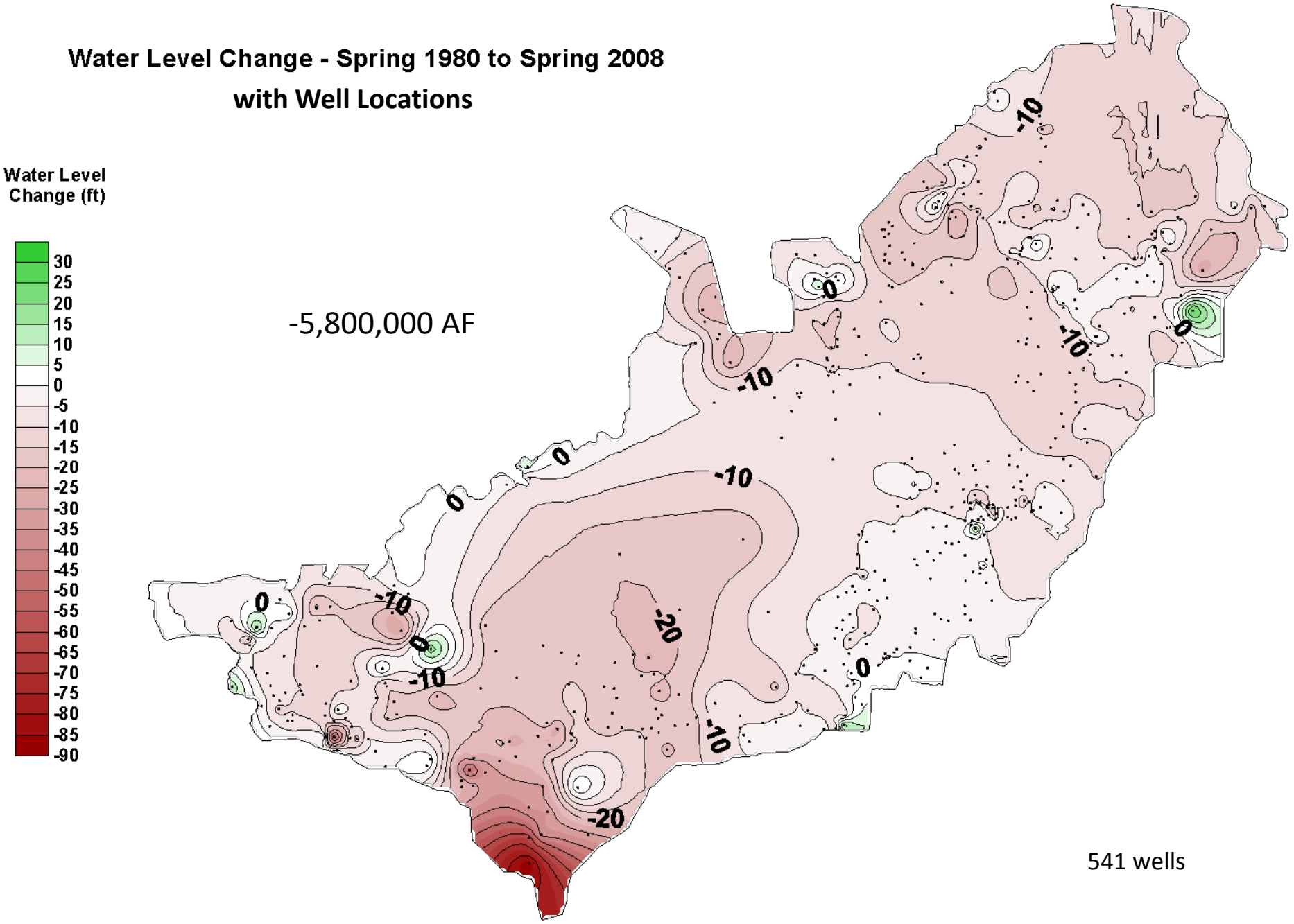
Water Level Change - Spring 1980 to Spring 2001 with Well Locations



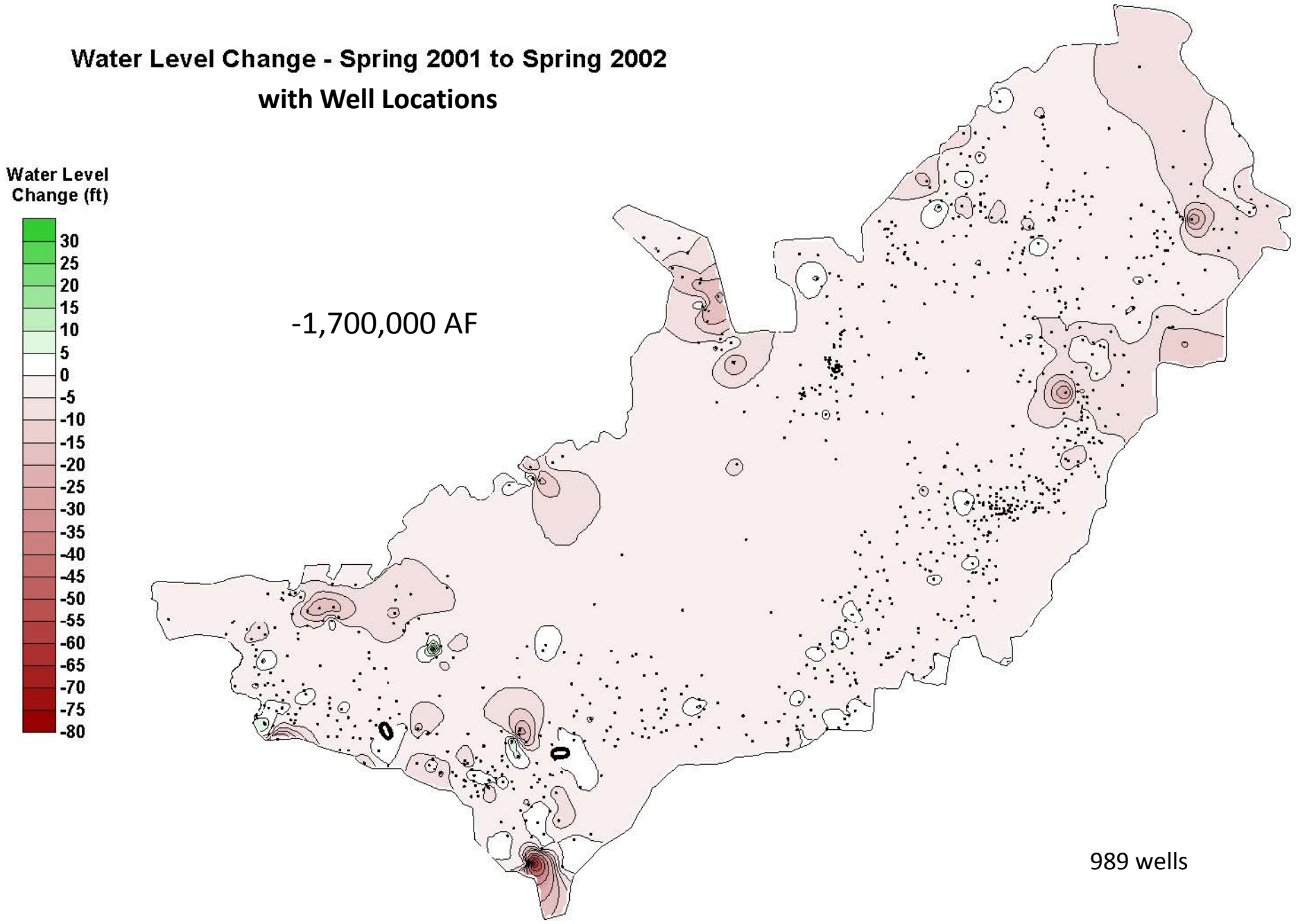
Water Level Change - Spring 1980 to Spring 2002 with Well Locations



Water Level Change - Spring 1980 to Spring 2008 with Well Locations



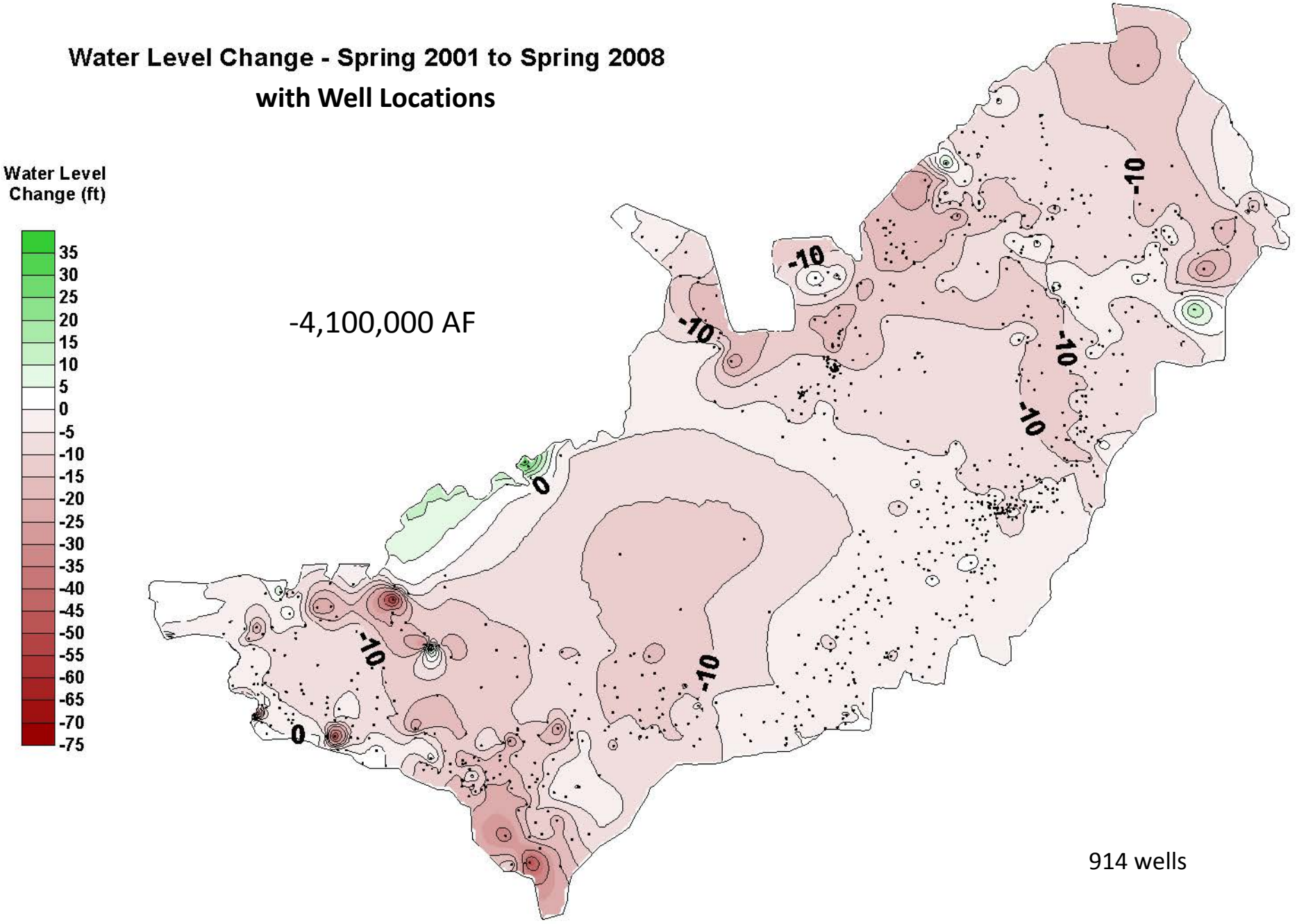
Water Level Change - Spring 2001 to Spring 2002 with Well Locations



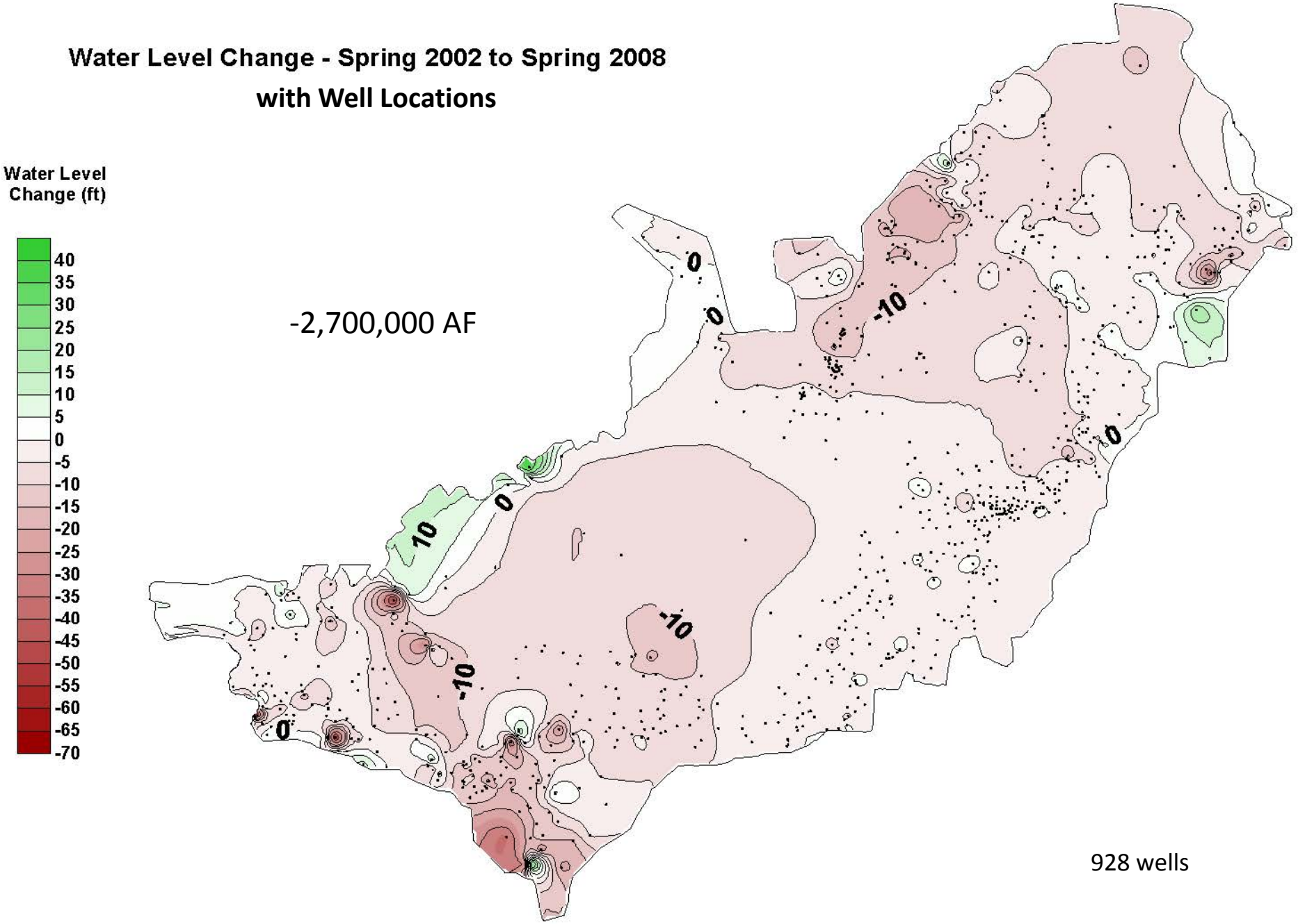
-1,700,000 AF

989 wells

Water Level Change - Spring 2001 to Spring 2008 with Well Locations

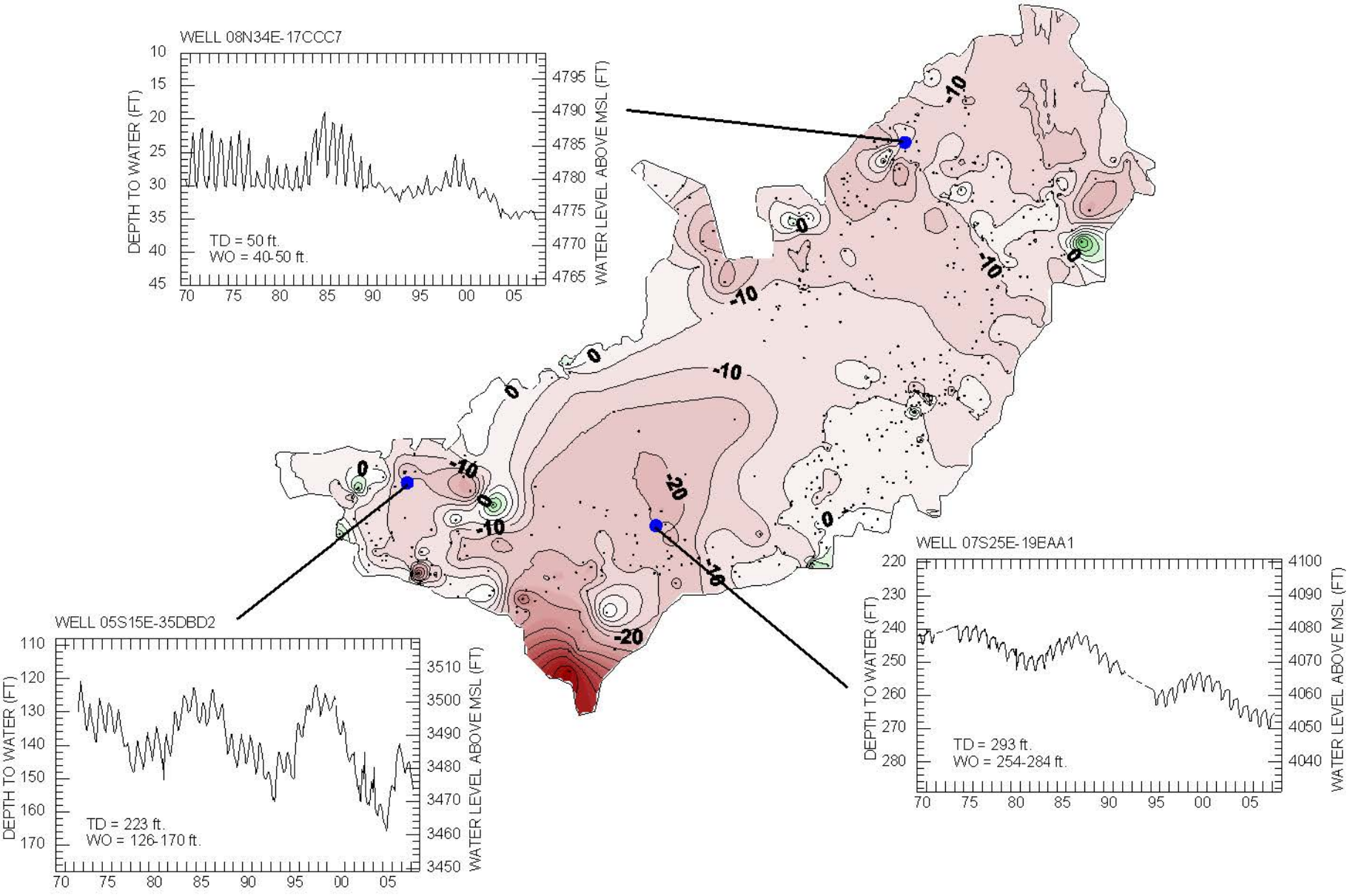


Water Level Change - Spring 2002 to Spring 2008 with Well Locations

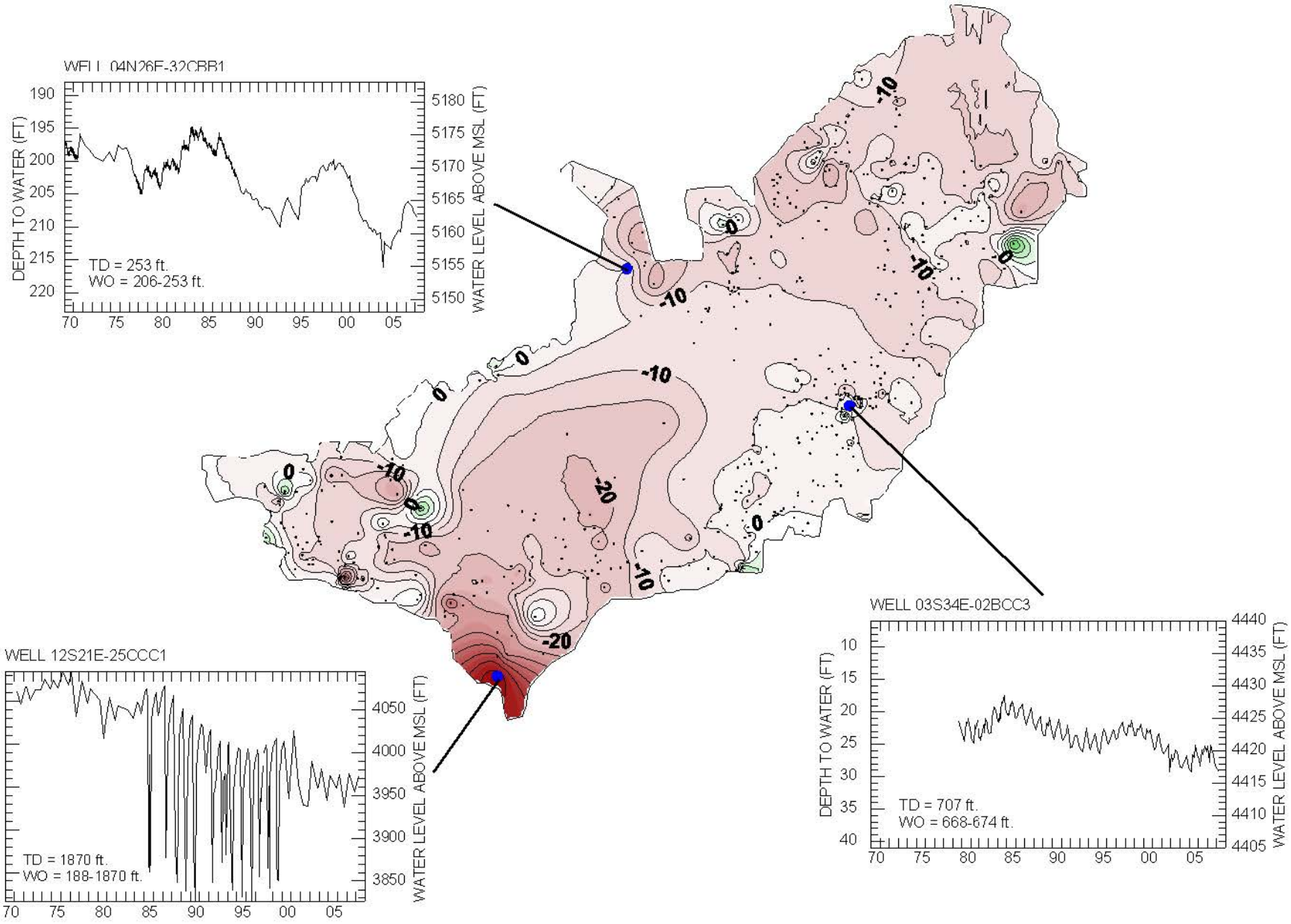


Are these change maps snapshots that capture the trend in regional water-level changes over time, or do they represent discrete phenomena (measurement error, pumping, etc.)?

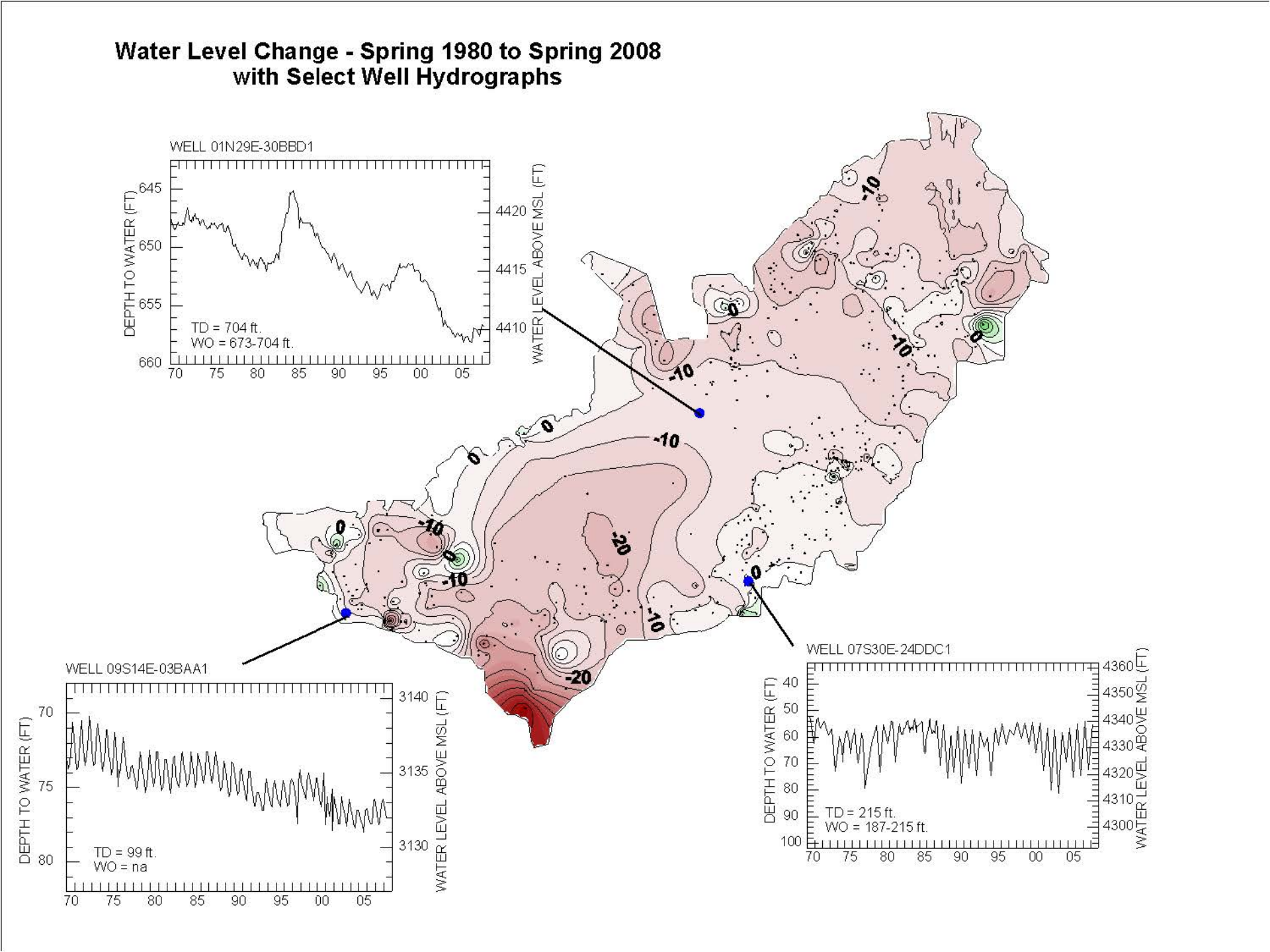
Water Level Change - Spring 1980 to Spring 2008
with Select Well Hydrographs



Water Level Change - Spring 1980 to Spring 2008
with Select Well Hydrographs



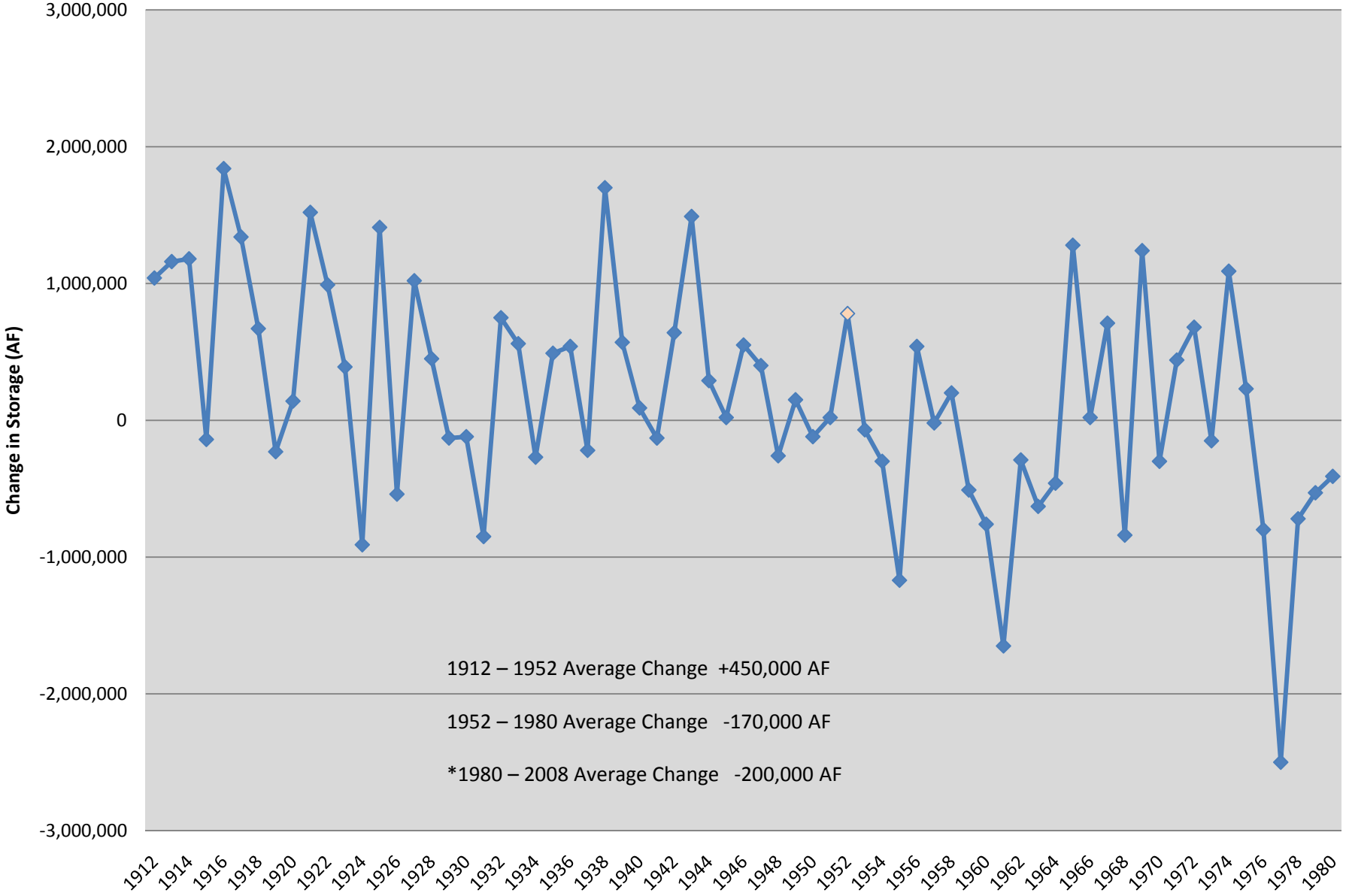
Water Level Change - Spring 1980 to Spring 2008
with Select Well Hydrographs



Important Considerations

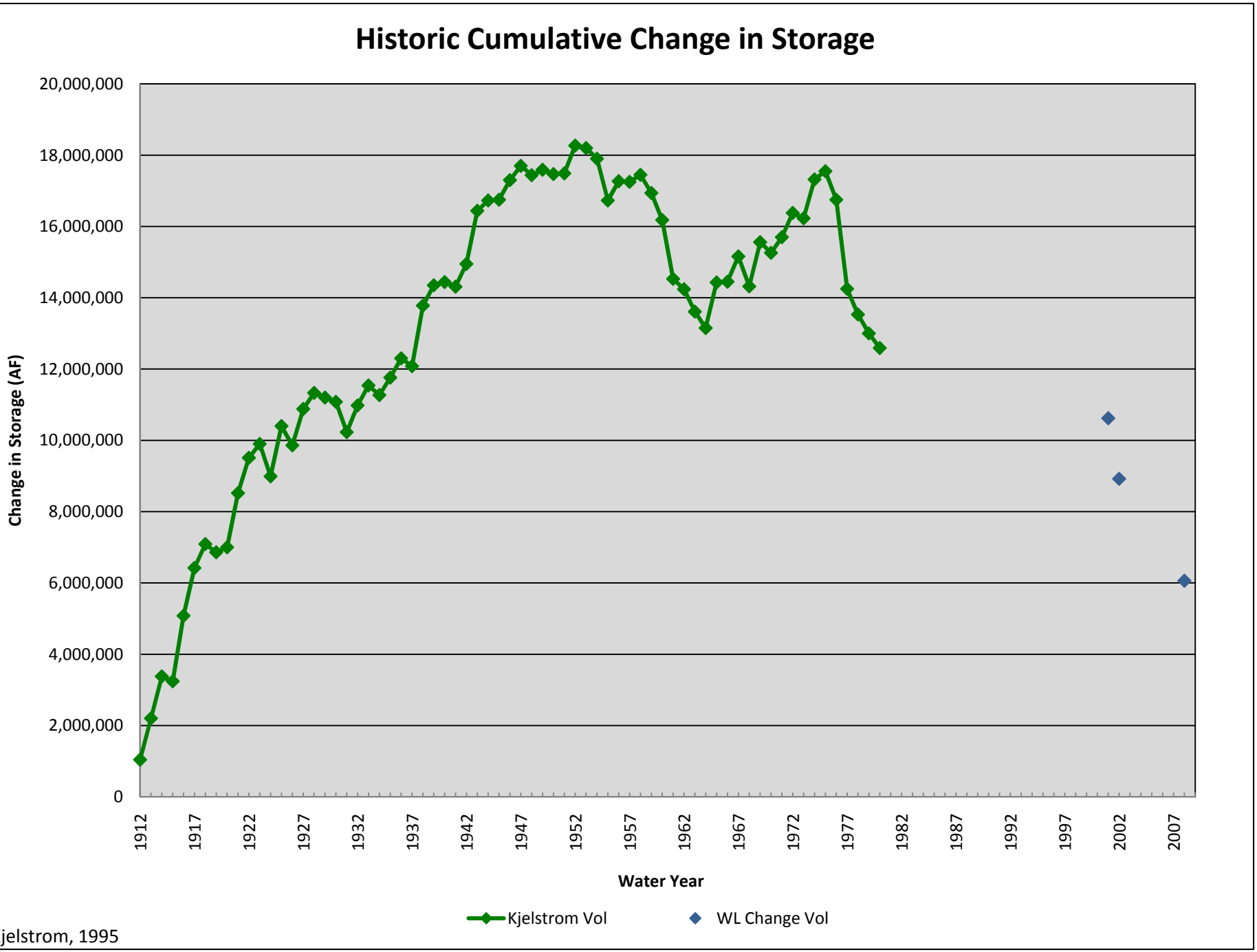
- The change maps appear to capture the trend in regional water-level changes over time.
- Approximately 2,000,000 AF of water was removed from storage between 2001 and 2002, and approximately 6,000,000 AF between 1980 and 2008.
- Are these change-in-storage values reasonable?

Historic Annual Change in Storage



Kjelstrom, 1995

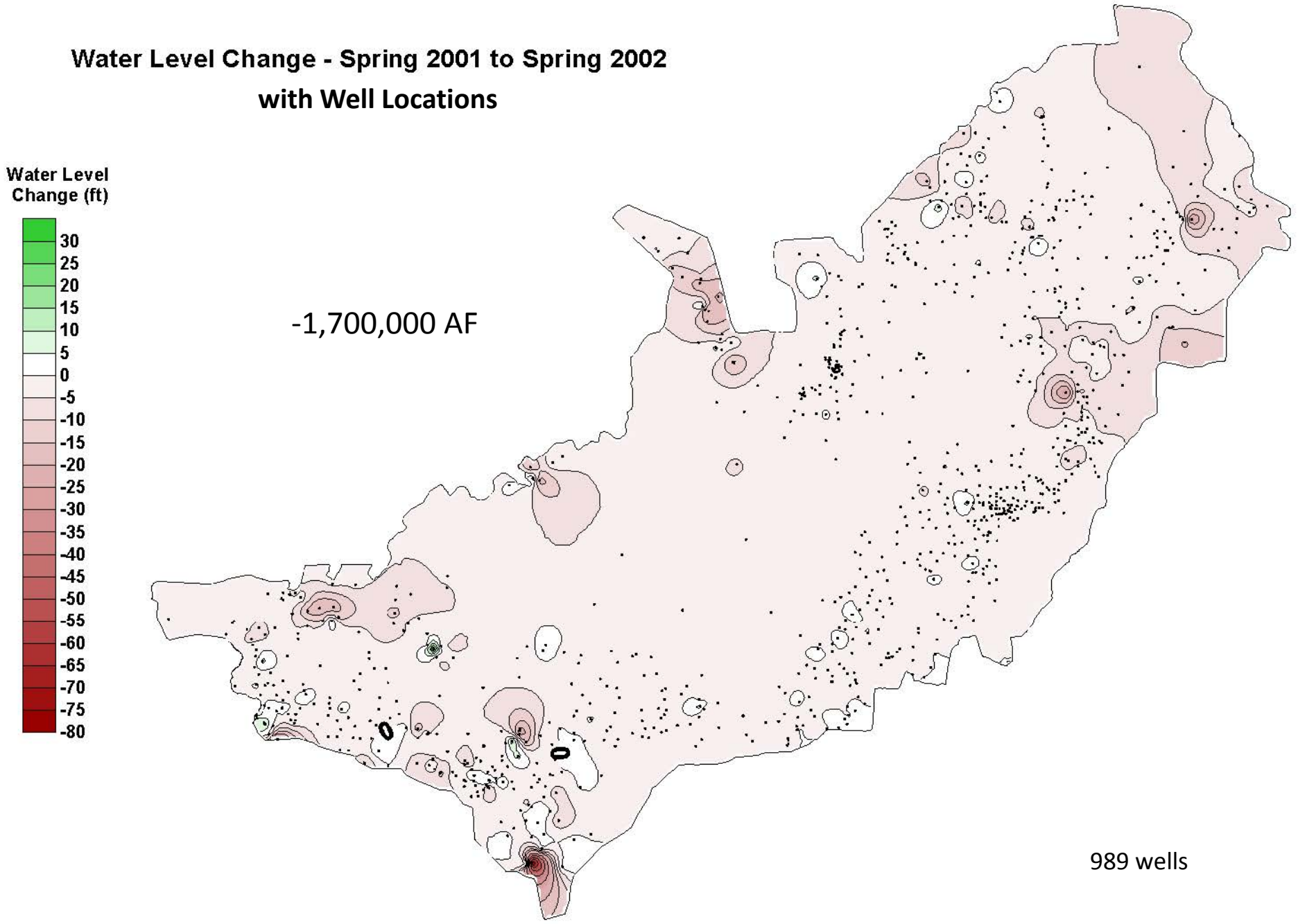
* Linear average based on Change maps



Kjelstrom, 1995

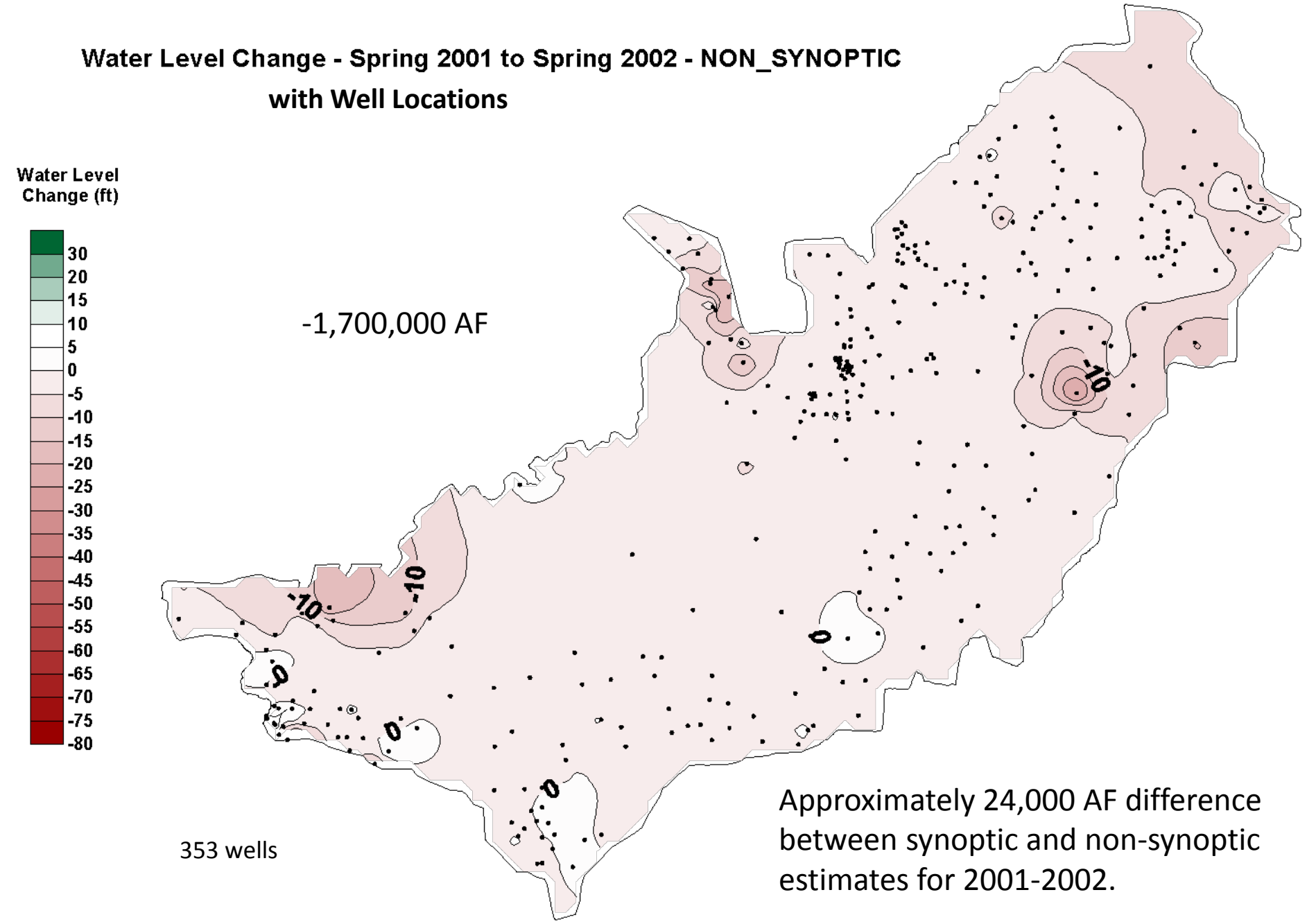
The comparison with Kjelstrom indicates that the change-in-storage volumes are within the range of historical changes, and the cumulative change seems to make sense. However, there is a large data gap between the Kjelstrom estimates and the synoptic estimates. Let's try to estimate storage changes with typical spring-time measurements (non-synoptic).

Water Level Change - Spring 2001 to Spring 2002 with Well Locations

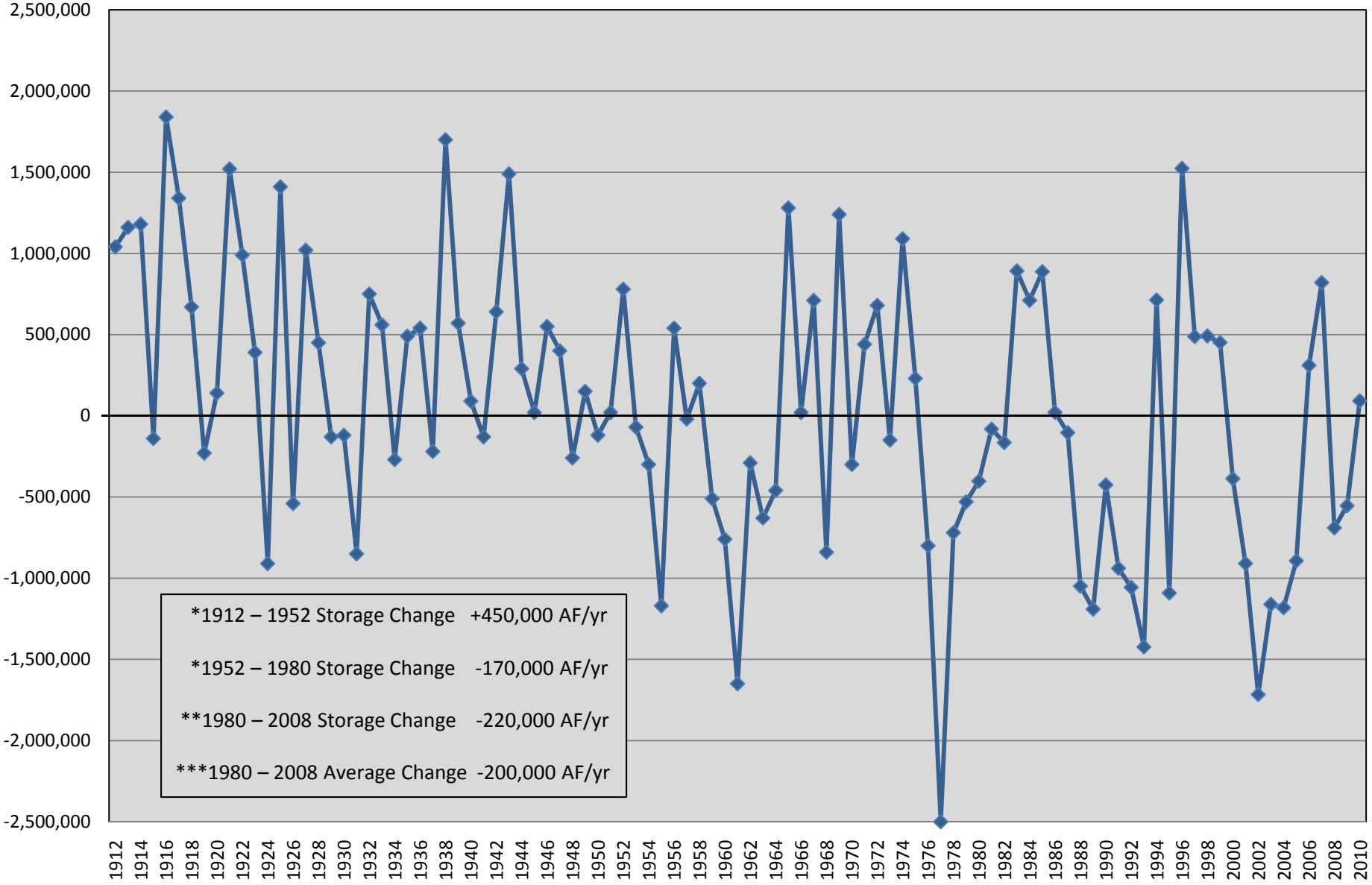


-1,700,000 AF

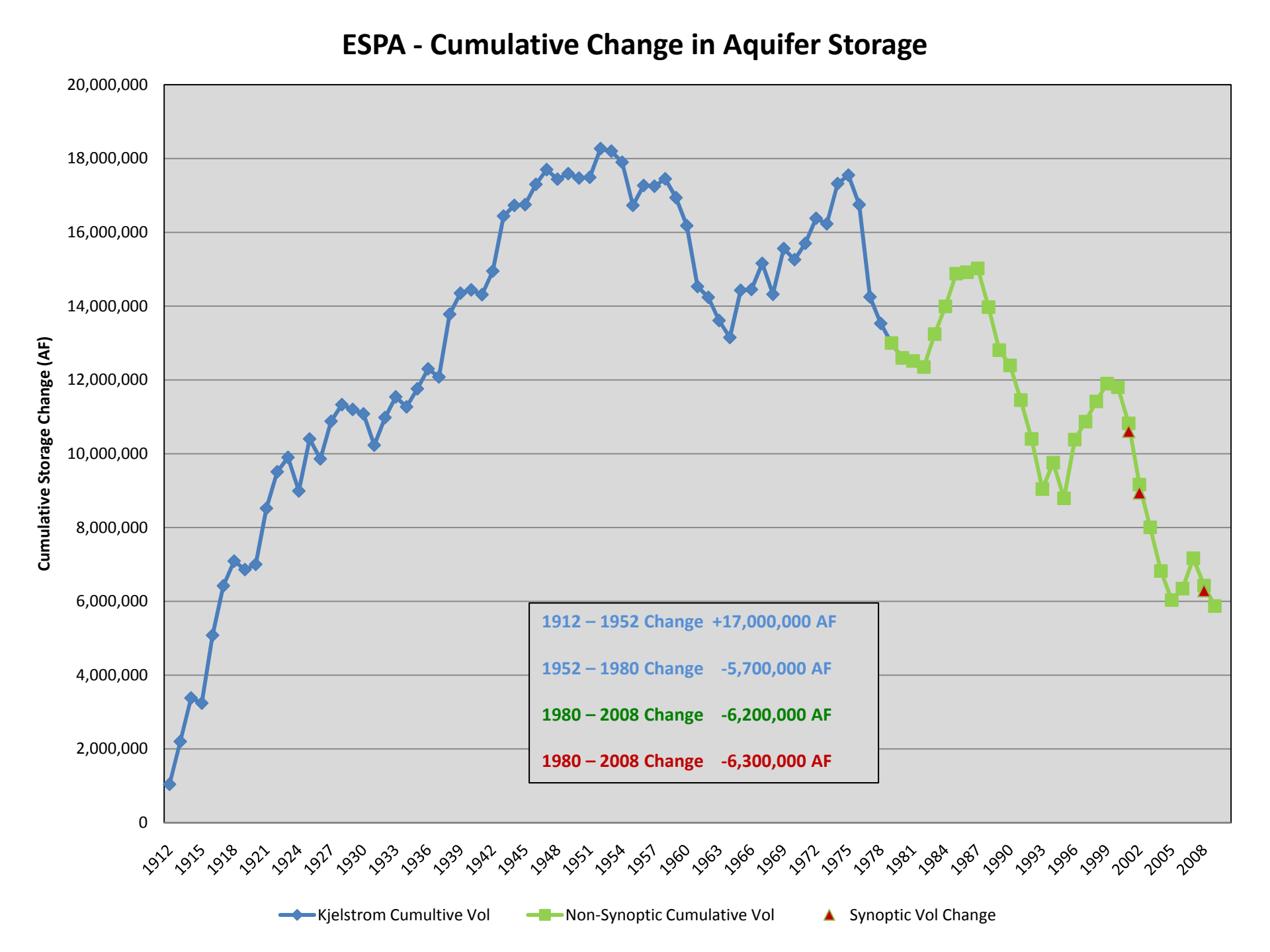
989 wells


Water Level Change - Spring 2001 to Spring 2002 - NON_SYNOPTIC
with Well Locations
Water Level Change (ft)
30
20
15
10
5
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-55
-60
-65
-70
-75
-80
-1,700,000 AF
-10
-10
-10
0
0
0
0
353 wells
Approximately 24,000 AF difference between synoptic and non-synoptic estimates for 2001-2002.

Annual Storage Change

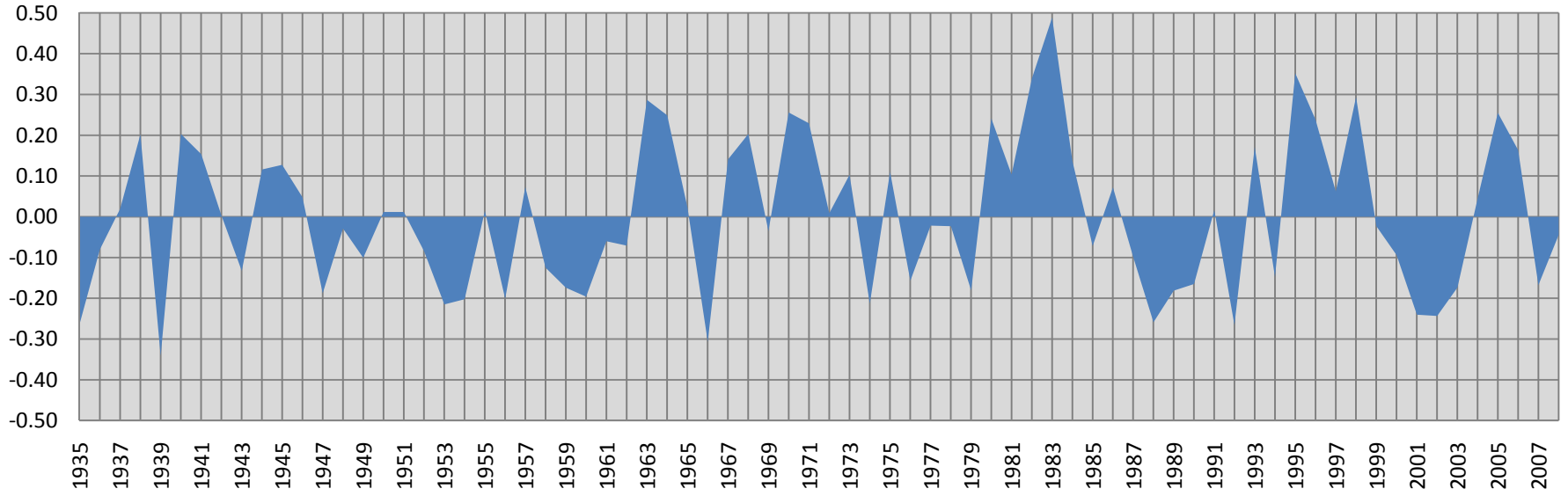


*1912 – 1980 Storage changes, and 1952 – 1980 Storage changes from Kjelstrom, 1995. **1980 – 2008 Storage changes based on non-synoptic spring water level measurements. ***1980 – 2008 Average Change based on Synoptic Measurement difference.

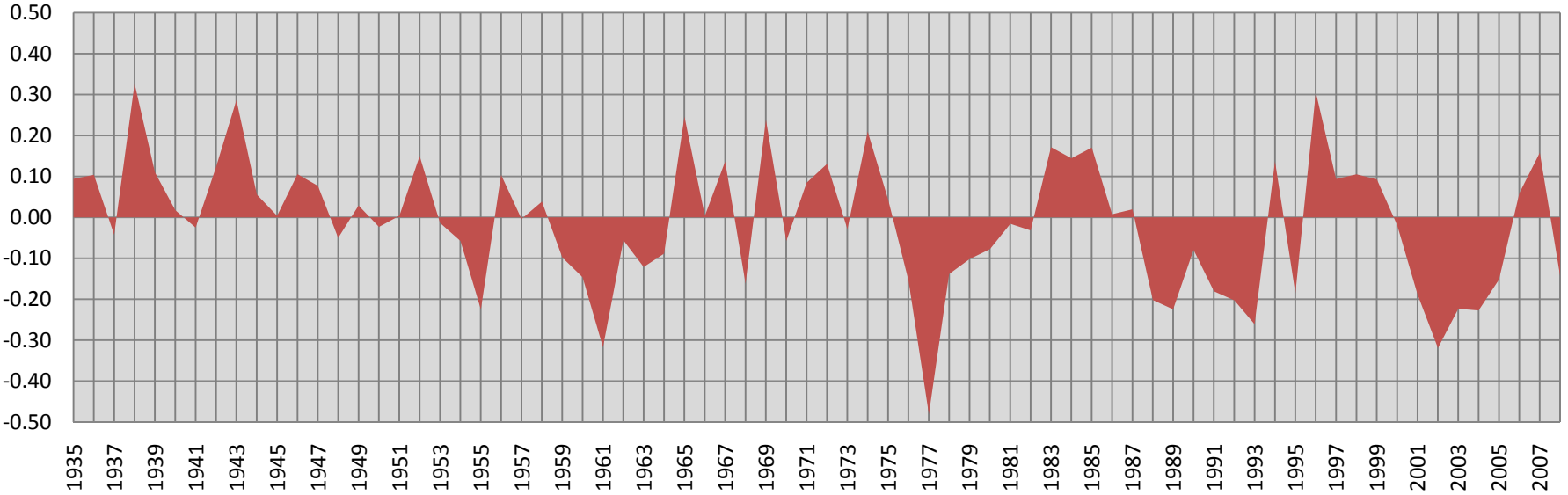

ESPA - Cumulative Change in Aquifer Storage
Cumulative Storage Change (AF)
20,000,000
18,000,000
16,000,000
14,000,000
12,000,000
10,000,000
8,000,000
6,000,000
4,000,000
2,000,000
0
1912 – 1952 Change +17,000,000 AF
1952 – 1980 Change -5,700,000 AF
1980 – 2008 Change -6,200,000 AF
1980 – 2008 Change -6,300,000 AF
1912 1915 1918 1921 1924 1927 1930 1933 1936 1939 1942 1945 1948 1951 1954 1957 1960 1963 1966 1969 1972 1975 1978 1981 1984 1987 1990 1993 1996 1999 2002 2005 2008
Kjelstrom Cumultive Vol
Non-Synoptic Cumulative Vol
Synoptic Vol Change

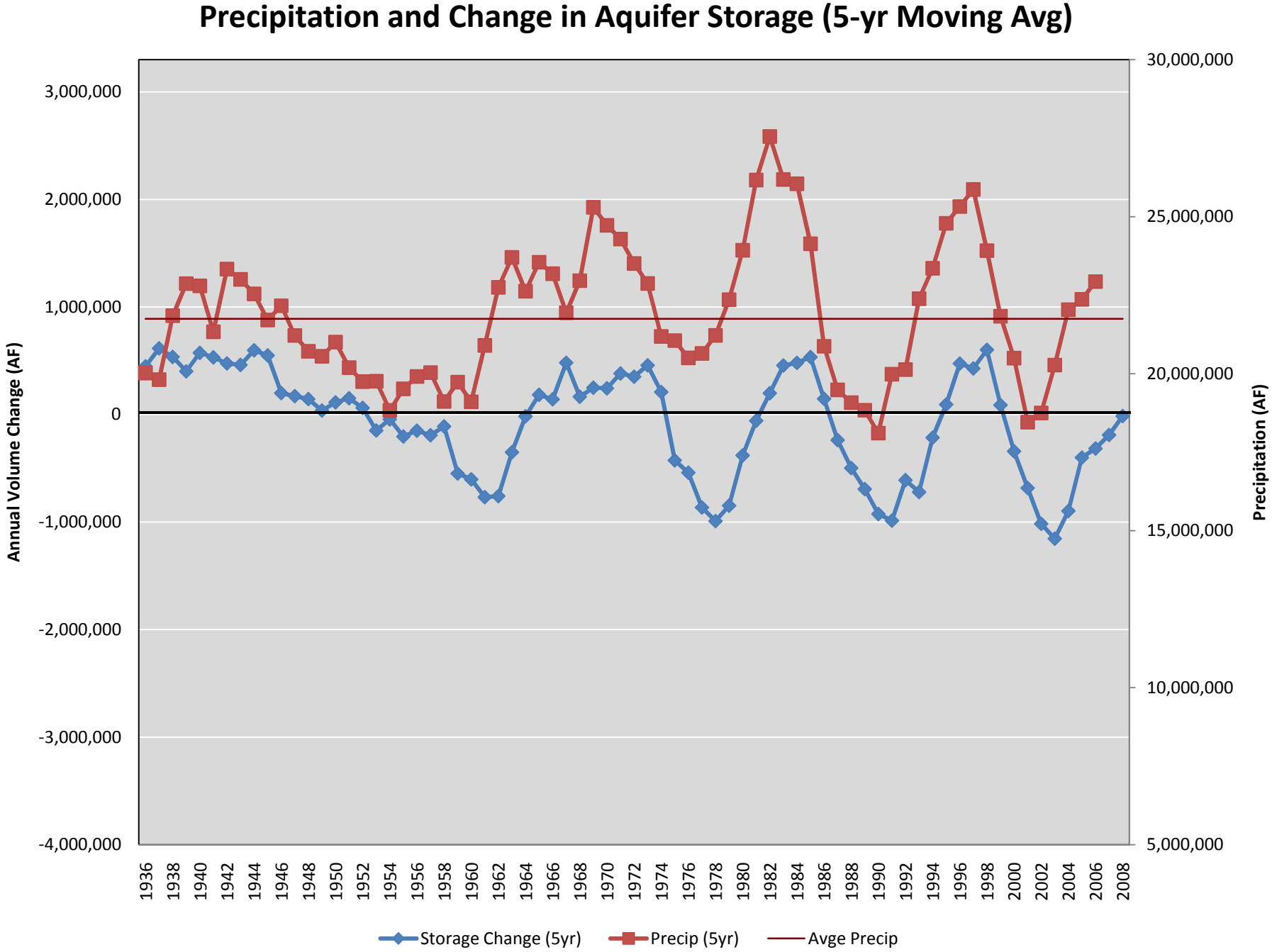
The non-synoptic storage changes appear reasonable, and the cumulative storage change graph is illustrating the aggregate of aquifer stresses over time. How can we use this information?

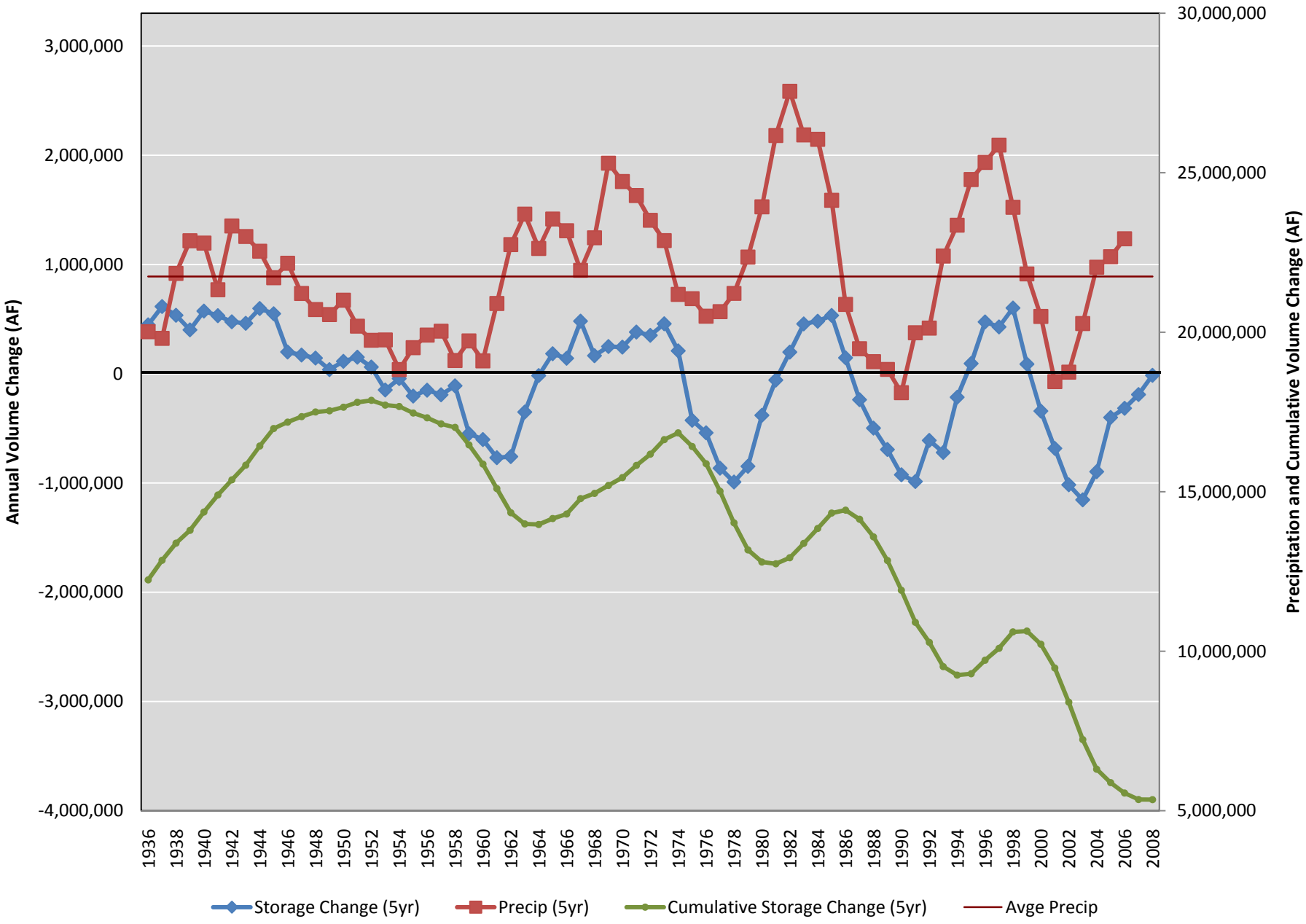
Normalized Precipitation Departure from Mean



Normalized Annual Storage Change




Precipitation and Change in Aquifer Storage (5-yr Moving Avg)
Annual Volume Change (AF)
Precipitation (AF)
3,000,000
2,000,000
1,000,000
0
-1,000,000
-2,000,000
-3,000,000
-4,000,000
30,000,000
25,000,000
20,000,000
15,000,000
10,000,000
5,000,000
1936
1938
1940
1942
1944
1946
1948
1950
1952
1954
1956
1958
1960
1962
1964
1966
1968
1970
1972
1974
1976
1978
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
Storage Change (5yr)
Precip (5yr)
Avge Precip


Precipitation and Change in Aquifer Storage (5-yr Moving Avg)
Annual Volume Change (AF)
Precipitation and Cumulative Volume Change (AF)
3,000,000
2,000,000
1,000,000
0
-1,000,000
-2,000,000
-3,000,000
-4,000,000
30,000,000
25,000,000
20,000,000
15,000,000
10,000,000
5,000,000
1936 1938 1940 1942 1944 1946 1948 1950 1952 1954 1956 1958 1960 1962 1964 1966 1968 1970 1972 1974 1976 1978 1980 1982 1984 1986 1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008
Storage Change (5yr)
Precip (5yr)
Cumulative Storage Change (5yr)
Avge Precip

Important Points to Remember

- Water-level measurements allow a simple method to estimate changes in aquifer storage.
- Although synoptic measurements provide more robust estimates, non-synoptic estimates appear reasonable.
- Estimated changes in aquifer storage using water-level measurements, used in combination with earlier estimates, provides a practical description of aquifer history.
- There is a direct relationship between precipitation and aquifer storage changes.
- There is a time lag between changes in precipitation and changes in storage.
- Short-term precipitation related changes are superimposed on a downward trend of approximately 200,000 AF/year.
- The trend is a combination of climatic and anthropogenic effects.

Discussion.

IDAHO
Water Resource Board

HISTORY OF MANAGED RECHARGE on the EASTERN SNAKE PLAIN

Presented to Idaho Water Resource Board
March 2011

Photo: Recharge at LSRARD recharge site, Lincoln County, April 2009

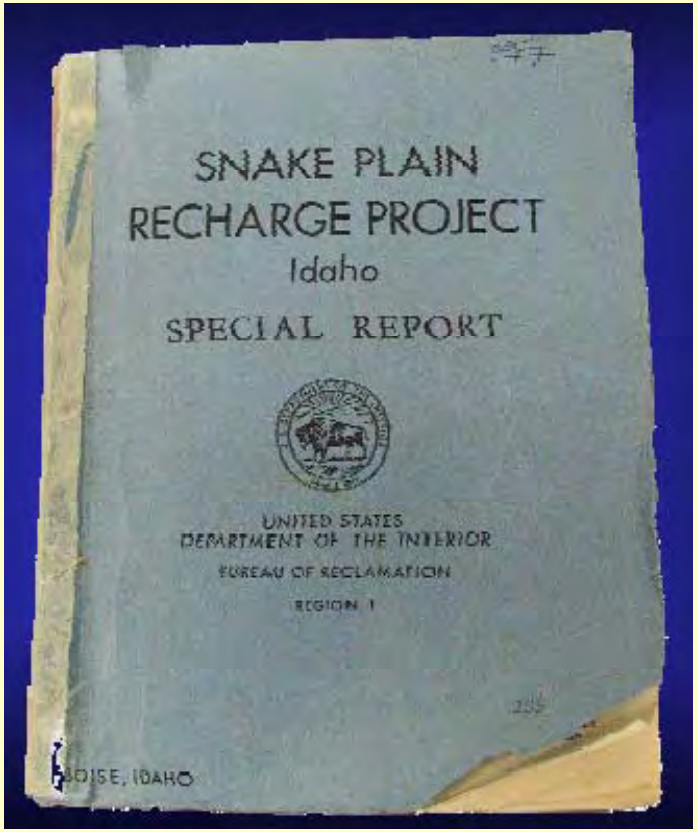
Topics

Chronologically:

- ESPA recharge reports, studies, investigations
- Legislative actions and resolutions directing and funding the Board to support ESPA recharge

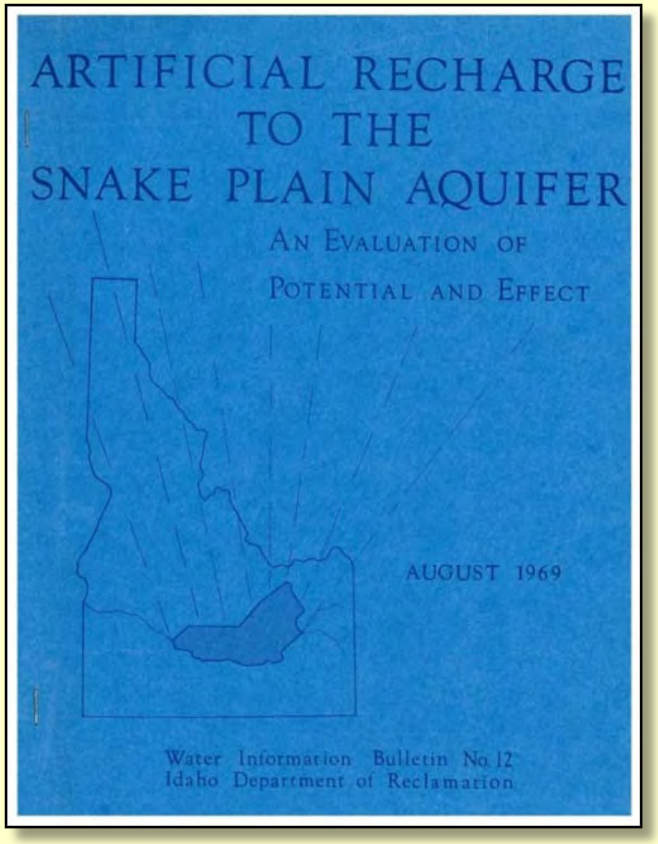
1962 – U.S. Bureau of Reclamation issues report on possible recharge project

- U.S. Bureau of Reclamation (BOR) investigated benefits of aquifer recharge storage
- Presented a plan to recharge water far up-gradient in the Henrys Fork area, to maximize water retention time.
- USGS recommended injection well systems due to low permeability of soils on the Eastern Snake Plain
- BOR recognized the difficulty to assess water users in undertaking a large-scale recharge project



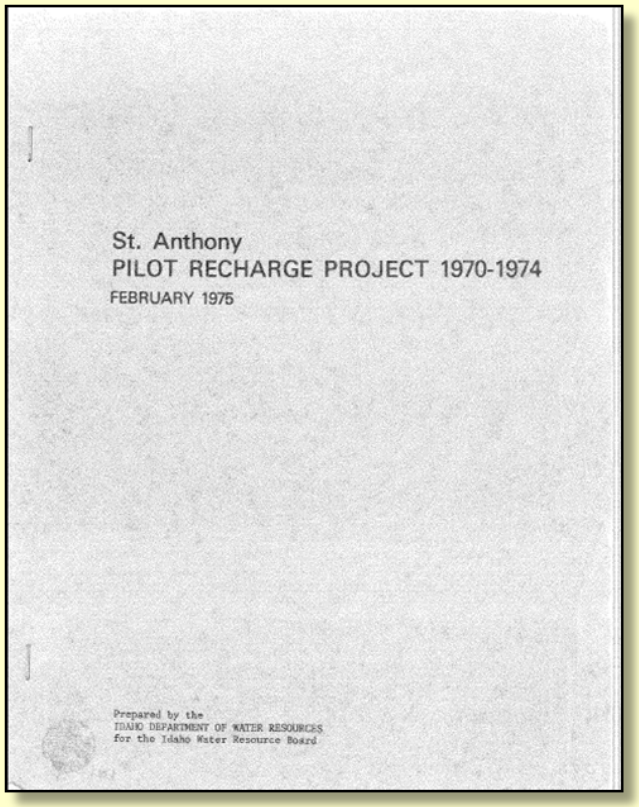
1969 – Idaho Department of Reclamation (IDWR) Study

- Developed steady-state model recharging 3.7 million AF (MAF) over 10 years at four ESP sites.
- Results indicated water level rises of less than 1 ft. to greater than 5 ft., 21 months after recharge stopped,
- If 62,000 AF recharged for 3 months every other year for 10 years, 3.3 MAF would go into aquifer storage and 0.4 MAF would flow from springs.



1970-1974 – Idaho Water Resource Board (Board) undertakes pilot recharge project at St. Anthony

- Investigated the feasibility of implementing a recharge project proposed by USBOR in 1962
- 20,000 – 23,000 AF diverted into Egin Lakes area between 1972 and 1974, under a temporary “research” water right permit
- Seepage rates were approximately ½ foot/day, therefore requiring large land areas for a large-scale project


St. Anthony
PILOT RECHARGE PROJECT 1970-1974
FEBRUARY 1975

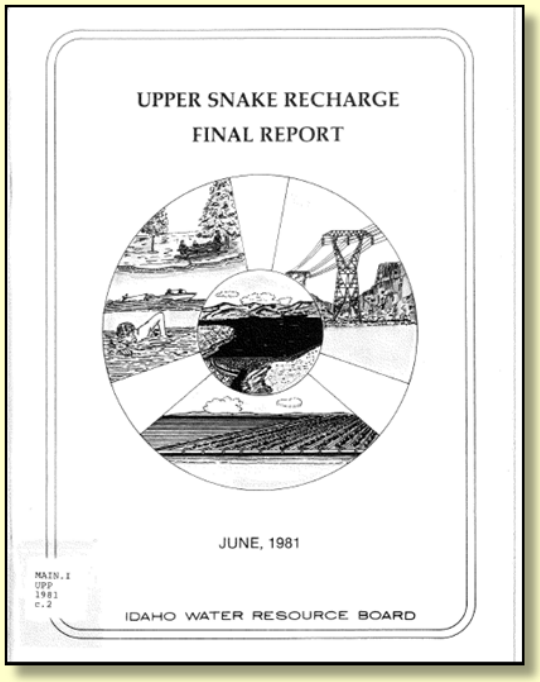
Prepared by the
IDAHO DEPARTMENT OF WATER RESOURCES
for the Idaho Water Resource Board

1978 – Legislation authorizing formation of the Lower Snake River Aquifer Recharge District (LSRARD)

- Initial plan proposed by LSRARD was to develop recharge basins at numerous locations along North Side, Milner-Gooding, and Big Wood canal systems in Jerome, Lincoln and Gooding Counties
- LSRARD was granted water right permits for recharge purposes with a 1980 priority date
- LSRARD's small assessment base, primarily the Hagerman Valley, has limited its effectiveness

1981 – Water Board Upper Snake Recharge Report

- Estimated costs for developing Egin Lakes site into a large-scale recharge project –
  - $579,000 (1980 dollars) for a 400 cfs project
  - $12 .1 million (1980 dollars) for a 2,000 cfs project



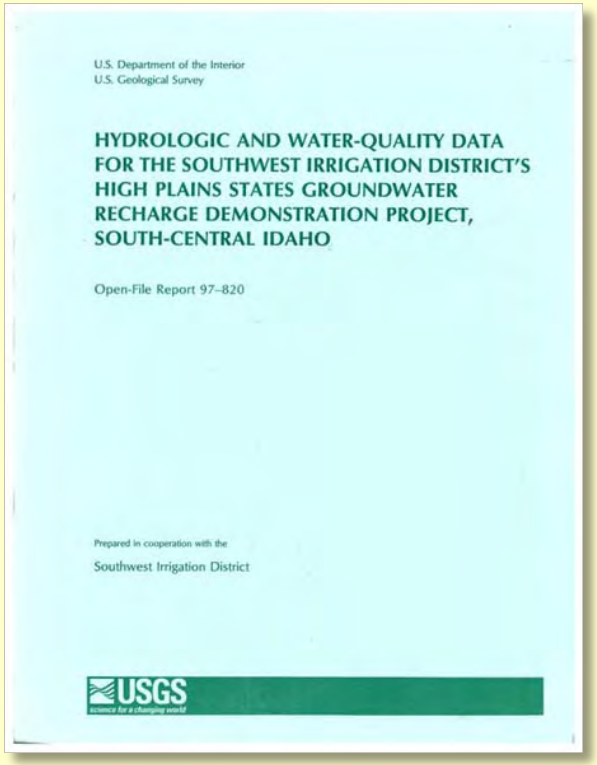
- Recognized potential conflicts with hydropower water rights

- Idaho Falls-Blackfoot area sites not considered due to short return time of water to the Snake River

- Thousand Springs area not considered due to creation of a recharge district for that area (LSRARD)

1992-1997 - Southwest Irrigation District – High Plains Ground Water Recharge Demonstration Project

- Joint project between Southwest Irrigation District and federal government (USBOR and USGS)
- Project consisted of 13 injection wells located between Murtaugh and Oakley
- Water supply from the Upper Snake Rental Pool and minor flood waters on the Oakley Fan
- $3.53 million cost, 75% by the federal government and 25% by Southwest
- 23,154 AF recharged over 5 years
- Project was turned over to Southwest after 1997
- SWID is currently participating in the Board's recharge program using some of the original wells


U.S. Department of the Interior
U.S. Geological Survey

HYDROLOGIC AND WATER-QUALITY DATA FOR THE SOUTHWEST IRRIGATION DISTRICT'S HIGH PLAINS STATES GROUNDWATER RECHARGE DEMONSTRATION PROJECT, SOUTH-CENTRAL IDAHO

Open-File Report 97–820

Prepared in cooperation with the
Southwest Irrigation District

USGS

1995-2000: Water Board & WD 1 recharge program

- 1995: Legislature (SB 1260) authorized and funded ($945,000) the Board to operate a recharge program which was delegated to WD 1
- Funds were used pay delivery costs ($0.25/a-f) and to lease water from rental pool ($2.95/a-f) plus fees paid to rental pool, WD 1 & Water Board
- Natural flow diversions for recharge were made under the irrigation rights of participating canals
- Considered recharge if delivered before irrigation deliveries. Much of this recharge occurred as “incidental” canal loss during canal filling

WD 1 Records	Natural Flow a-f	Storage a-f	Total a-f
1995	66,585	113,522	180,107
1996	135,687	33,314	169,001
1997	214,780	-	214,780
1998	189,696	10,991	200,687
1999	137,162	15,361	152,523
2000	66,278	3,361	69,639
6-year total	810,188	176,549	986,737

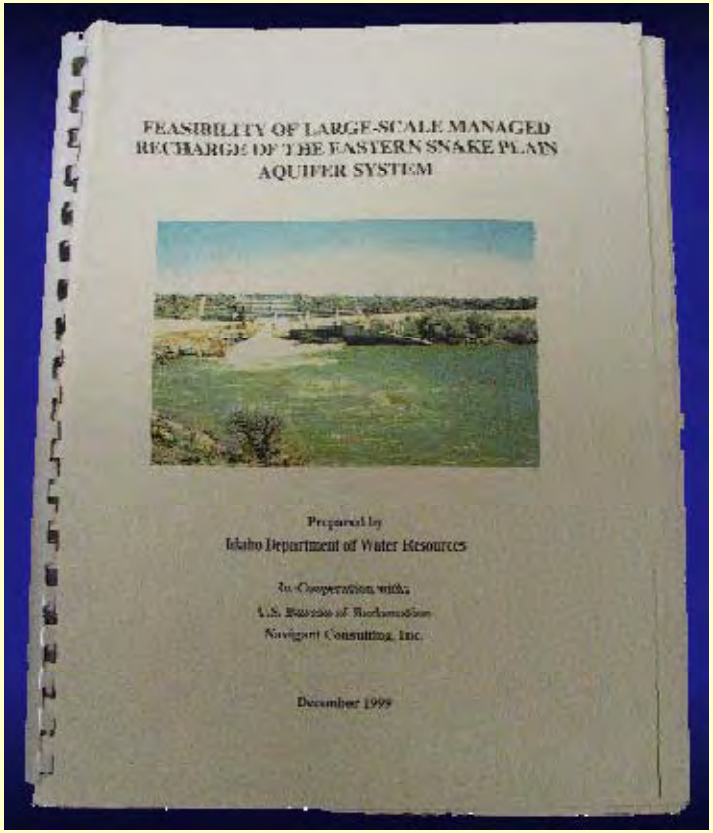
1999 – Water Board acquires recharge water rights from Lower Snake River Recharge District

- Due to inability to make full beneficial use it its water right permits for recharge, the LSRARD conveyed water rights 01-7054 and 37-7842 to the Board in 1999

- In order to capture occasional flood flows for recharge in excess of the diversion limits of the two LSRARD rights, the Board applied for 20 additional water rights from the Snake River. Applications have not been acted on due to protests

1999 – IDWR issues managed recharge feasibility report

- Evaluated the feasibility of implementing large-scale managed recharge at several Eastern Snake Plain sites.
- Various scenarios evaluated for different parts of the ESPA in regard to ground water levels and spring discharge responses.
- Report generally over-estimated infiltration rates and under-estimated construction costs.
- Report still used as a starting point for current site evaluations.



2001 – Legislature appropriated $60,000 to Board for Sugarloaf recharge site

- SB 1239 authorized construction of diversion works to the Sugarloaf basin
- Site located on North Side Canal system
- Based on un-tested assumptions, the 1999 Recharge Feasibility Report estimated the Sugarloaf basin could recharge 400 cfs
- After construction, actual recharge rate was much less
- Site proved unsatisfactory for large-scale managed recharge

2005 – Legislature authorized and directed Board to sponsor and fund managed recharge programs and projects

- HCR 28 expressed the need for managed recharge to the ESPA and directed the Idaho Water Resource Board to pursue implementation of managed recharge
- HB 373, among other directives, authorized and directed Board to "take all actions necessary … to plan, finance, acquire, establish, operate and maintain a program or projects to enhance water supplies and reduce demand for water through the financing of *water rights acquisitions and managed recharge projects* ..."
- HB 392 appropriated $7.2 million to the Water Board's Revolving Development Fund to be used for the purposes stated in HCR 28 and HB 373

2001 - 2007

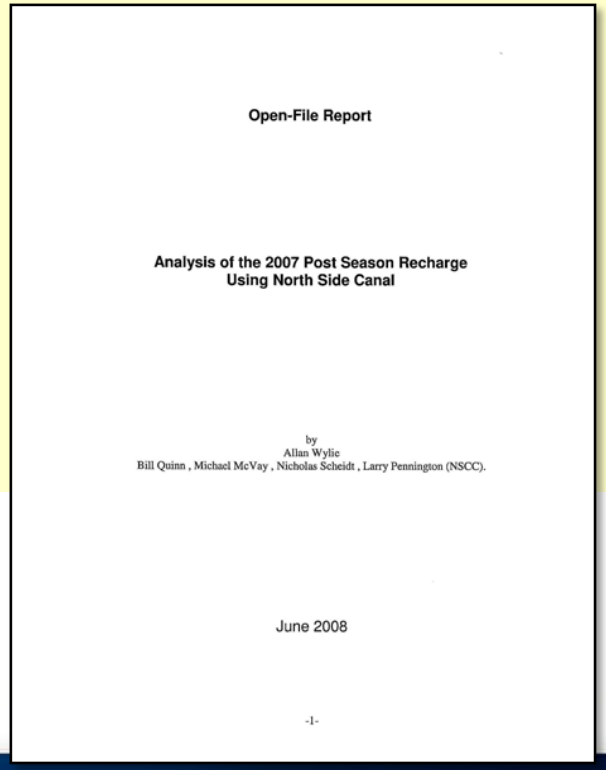
- 2001 – 2005: low water years; insufficient flows for recharge
- 2006: natural flows in Snake and Wood River systems diverted for recharge, estimated at 48,000 to 51,000 a-f. Board requests canals to voluntarily carry recharge water
- 2007: low water year; insufficient flows for recharge

W Canal Project: 2006-2008

- Board-sponsored project pursuant to HCR 28 and HB 373
- Natural basin, ~ 60 acres, located on State land, ~ 2 miles northeast of Wendell
- Project cost, approximately $367,000
- Water delivery through North Side Canal Company's "W-Canal"
- Project goal: to construct a low-cost, managed aquifer recharge facility to capture excess natural flows, providing long-term storage in the aquifer
- Site characterization and testing indicated site did not have sufficiently porous soils for good infiltration; bedrock was not sufficiently fractured for injection wells to be feasible
- Close-proximity to City of Wendell municipal wells and several domestic wells resulted in a difficult permitting process
- Unlikely the W Canal could supply large volumes of recharge water
- What we learned: for going forward with future managed recharge projects, testing indicated the project design could work well at other ESP sites with better recharge-favorable characteristics. More remote = less stringent permitting

2007 – North Side Canal Post season mitigation recharge

- Idaho Ground Water Appropriators and Idaho Dairymen Assoc. propose diverting 29,500 AF of rented storage water through NSCC canal system to mitigate for declines in flows at Blue Lakes and Clear Lake Spgs
- 27,360 AF diverted before freezing ended recharge in late November
- Balance of 29,500 AF recharged the following spring
- Recharge resulted in measurable increases on spring flows and ground water levels



Open-File Report

Analysis of the 2007 Post Season Recharge
Using North Side Canal

by
Allan Wylie
Bill Quinn , Michael McVay , Nicholas Scheidt , Larry Pennington (NSCC).

June 2008

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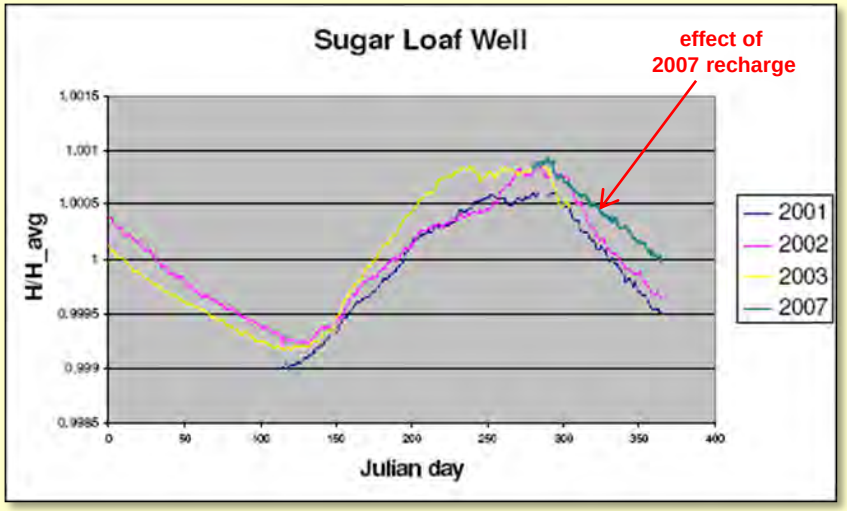
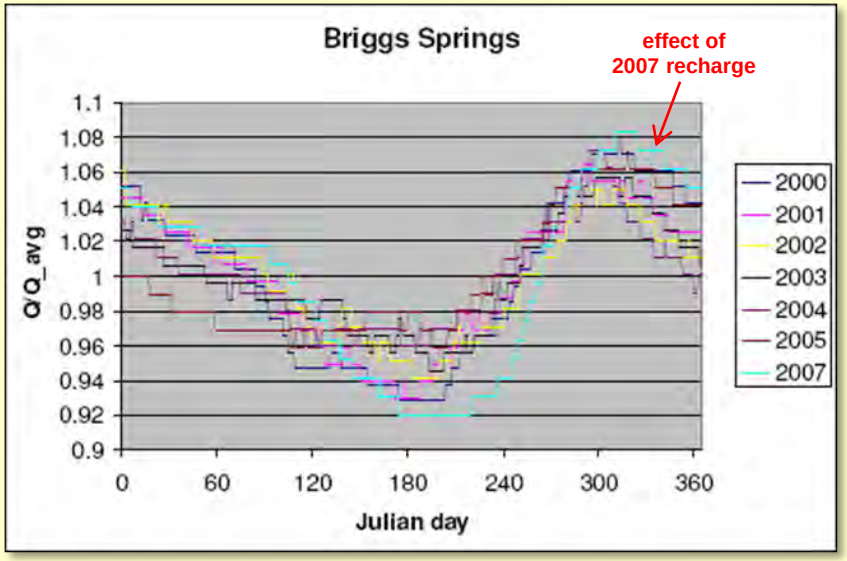
Impacts of 2007 mitigation recharge

- Ground water levels increased



- Spring flows increased



2009 – ESPA CAMP

- HB 264: ESPA CAMP, as part of State Water Plan, unanimously approved by the Legislature and signed into law by the governor on April 23rd
- Major component of ESPA CAMP: goal of 100,000 a-f annual average recharge
- 2009 -2010 average recharge: 93,000 a-f

2009 – 2010 administrative actions

- In licensing Milner hydro-generation rights, IDWR Director clarifies relative priorities of recharge vs. hydro-generation at Milner Dam
- Clarifies that hydro-generation at Milner Dam is subordinated to recharge
- Affirmed in administrative hearing in 2010
- Currently on appeal to District Court

Recent recharge activities: Board's recharge program (as authorized by HB 373 and funded by HB 392)

- **2007**: Board commits $150,000 to pay recharge water delivery fees to canal companies, plus $350,000 for preliminary development of additional recharge projects

- **2008**: Insufficient natural flows for early season recharge. Fremont-Madison Irrigation District recharged 4,860 AF in late season at Egin Lakes. Board payment was $14,580

- **2009**: 124,536 AF recharged from Snake River. Board payments total $277,418 for delivery fees. No recharge from Wood Rivers due to insufficient flows. Unspent W Canal Project funds re-authorized for recharge fees

- **2010**: 61,508 AF recharged from Snake and Wood Rivers
  Board payments total $184,524

- **2011**: Expectation to continue program through 2011, approximately $217,000 remaining in recharge conveyance budget

Conclusions:

Pros:

- Legislative directive to Board to implement managed recharge programs through HCR 28 and HB 373 and funded through HB 392
- Recharge aligned with State Water Plan - ESPA CAMP goals
- HCR 28, HB 373, HB 392 and HB 264 recharge directives are being met
- Over 190,000 a-f of Board-sponsored managed ESPA recharge from Snake and Wood Rivers since 2008

Cons:

- Limited private participation
- Relationship between recharge actions and specific improvements are not 1:1
- Willing locations do not necessarily match ideal locations
- Budget ?

IDAHO
Water Resource Board

Recharge at Mile Post 31 Site, Jerome County
June 2010