



AGENDA

IDAHO WATER RESOURCE BOARD

Work Session for Board Meeting No. 4-18

May 17, 2018

8:00 a.m.

Idaho Water Center

Conference Rooms B, C & D

322 E Front Street

BOISE

C.L. "Butch" Otter
Governor

Roger W. Chase
Chairman
Pocatello
District 4

Jeff Raybould
Vice-Chairman
St. Anthony
At Large

Vince Alberdi
Secretary
Kimberly
At Large

Peter Van Der Meulen
Hailey
At Large

Albert Barker
Boise
District 2

John "Bert" Stevenson
Rupert
District 3

Dale Van Stone
Hope
District 1

1. Roll Call
2. FY2019 Secondary Aquifer Fund Budget (See Board Meeting Tab #7)
3. Flood Management Grant Program* (See Board Meeting Tab #6)
4. Lower Lapwai Basin Rental Pool Proposal
5. Boise River Storage Feasibility Update
6. Bear River Update (See Board Meeting Tab #12)
7. Priest Lake Update (See Board Meeting Tab #9)
8. ESPA Recharge Update (See board Meeting Tab #8)
9. Raft River Pipeline Briefing
10. Elmore County Recharge Project Update
11. Lemhi River Issues
12. NRCS SNOTEL Analysis
13. Cooperative Cloud Seeding Update
14. Update on SF Clearwater Dredge Mining Issues

The Board will break for lunch at approximately 11:45 a.m.

*Action Item: A vote of recommendation regarding this item may be made at this meeting. Identifying an item as an action item on the agenda does not require a vote to be taken on the item.

Americans with Disabilities

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

Memorandum



To: Idaho Water Resource Board
From: Remington Buyer
Date: March 17, 2018
Re: Basin 85 Rental Pool Proposal

REQUIRED ACTION: None.

The Idaho Water Resource Board is responsible for the operation of the Water Supply Bank. Water Supply Bank operations include the leasing and renting of natural flow and storage water rights. By leasing water rights into the Water Supply Bank, water supplies are developed, which can then be approved for rental to water users, for new and supplemental water uses.

Pursuant to Idaho Code 42-1765 and Water Supply Bank Rule 40, the Board may appoint local committees to facilitate the lease and rental of stored water via rental pools. Presently, IWRB-authorized rental pools exist to facilitate the lease and rental of stored water within reservoir systems of the Upper Snake River, Boise River and Payette River basins.

Within the Lapwai Creek watershed of IDWR Administrative Basin 85, there is a desire by local water users to lease into the Bank storage water rights associated with Mann Lake, Waha Lake and Soldiers Meadow reservoirs, which are part of the Lewiston Orchards Project operated by the US Bureau of Reclamation on behalf of the Lewiston Orchards Irrigation District. The lease of these storage water rights is intended to satisfy water rentals for new and supplemental water use purposes within the Lapwai Creek drainage.

The IWRB will receive a presentation from representatives of the Lewiston Orchards Irrigation District, the US Bureau of Reclamation and the Nez Perce Tribe, outlining a proposed lease and rental of the Basin 85 storage water rights. It is anticipated that the parties will also propose that the IWRB consider authorizing a local committee to facilitate the lease and rental of storage water as part of a rental pool.

Attachment(s): N/A

LEWISTON ORCHARDS PROJECT Water Exchange and Title Transfer

2018 IWRB Presentation

A collaborative, consensus-based effort...



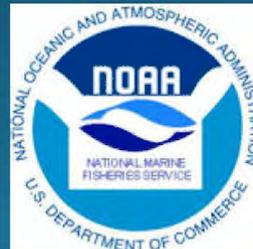
... with the support and involvement of many partners ...

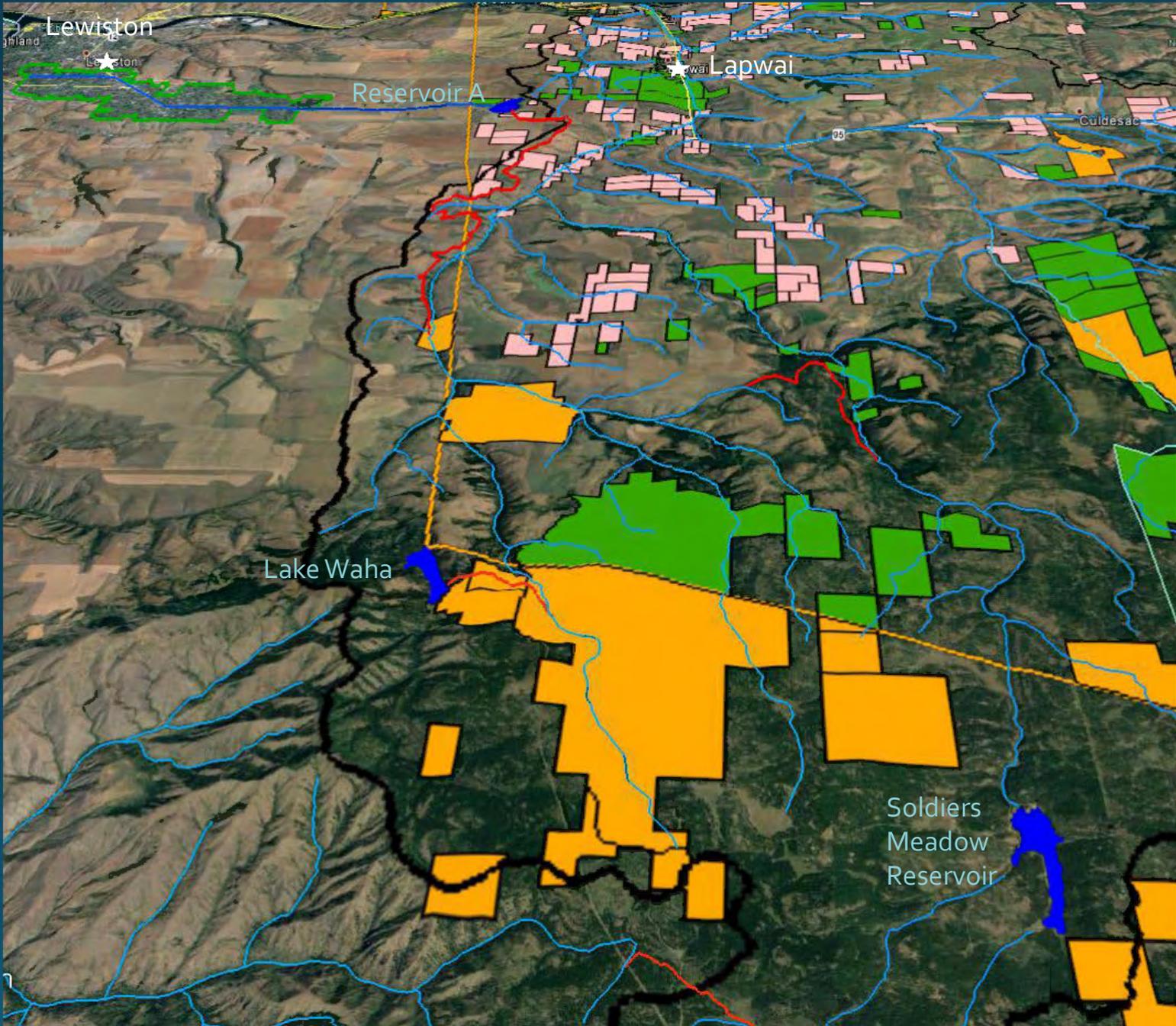
- **Active Participants**

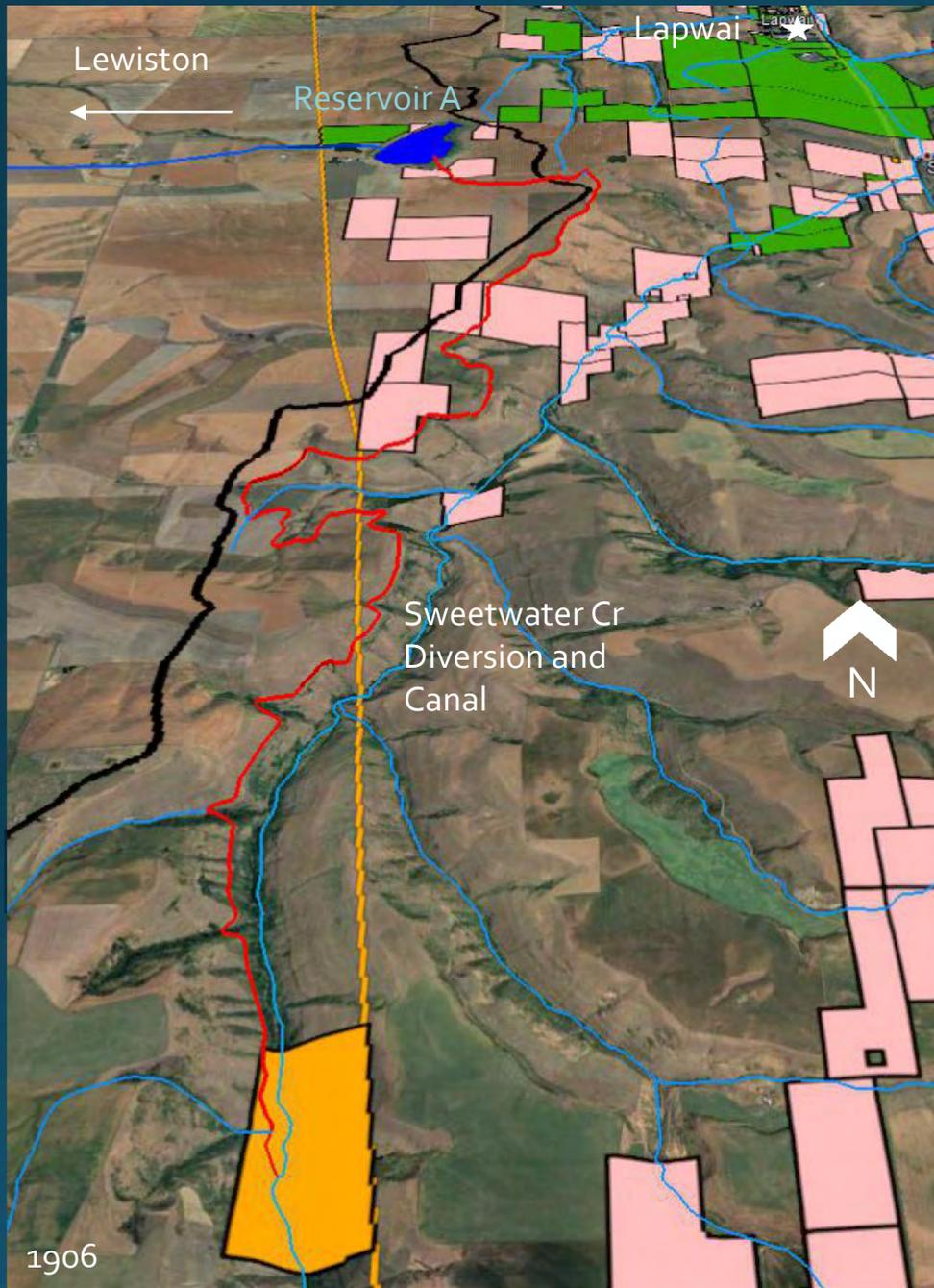
- Senator Crapo
- Senator Risch
- Congressman Labrador

- **Formal letters of support for concept**

- Governor Otter
- University of Idaho Waters of the West Program
- NOAA Fisheries Northwest Region
- Columbia River Inter-Tribal Fish Commission
- Trout Unlimited







RECLAMATION *Managing Water in the West*

Lewiston Orchards Project

NEZ PERCE COUNTY

NEZ PERCE RESERVATION

Idaho

Washington

Sweetwater Diversion

Webb Creek Diversion

West Fork Diversion Dam at Head of Lake Waha Feeder Canal

Captain John Diversion

Reservoir A

Sweetwater Canal

Webb Creek Canal

Lake Waha

West Fork Diversion

Webb Creek Diversion

Sweetwater Diversion

Captain John Diversion

Waha Feeder Canal

Sweetwater Canal

Captain John Canal

Pilot Water Exchange Well

Reservoir A

Soldiers Meadow Reservoir

Lake Waha

West Fork Diversion

Webb Creek Diversion

Sweetwater Diversion

Captain John Diversion

Waha Feeder Canal

Sweetwater Canal

Captain John Canal

Lake Waha Pump/Outlet Pipe

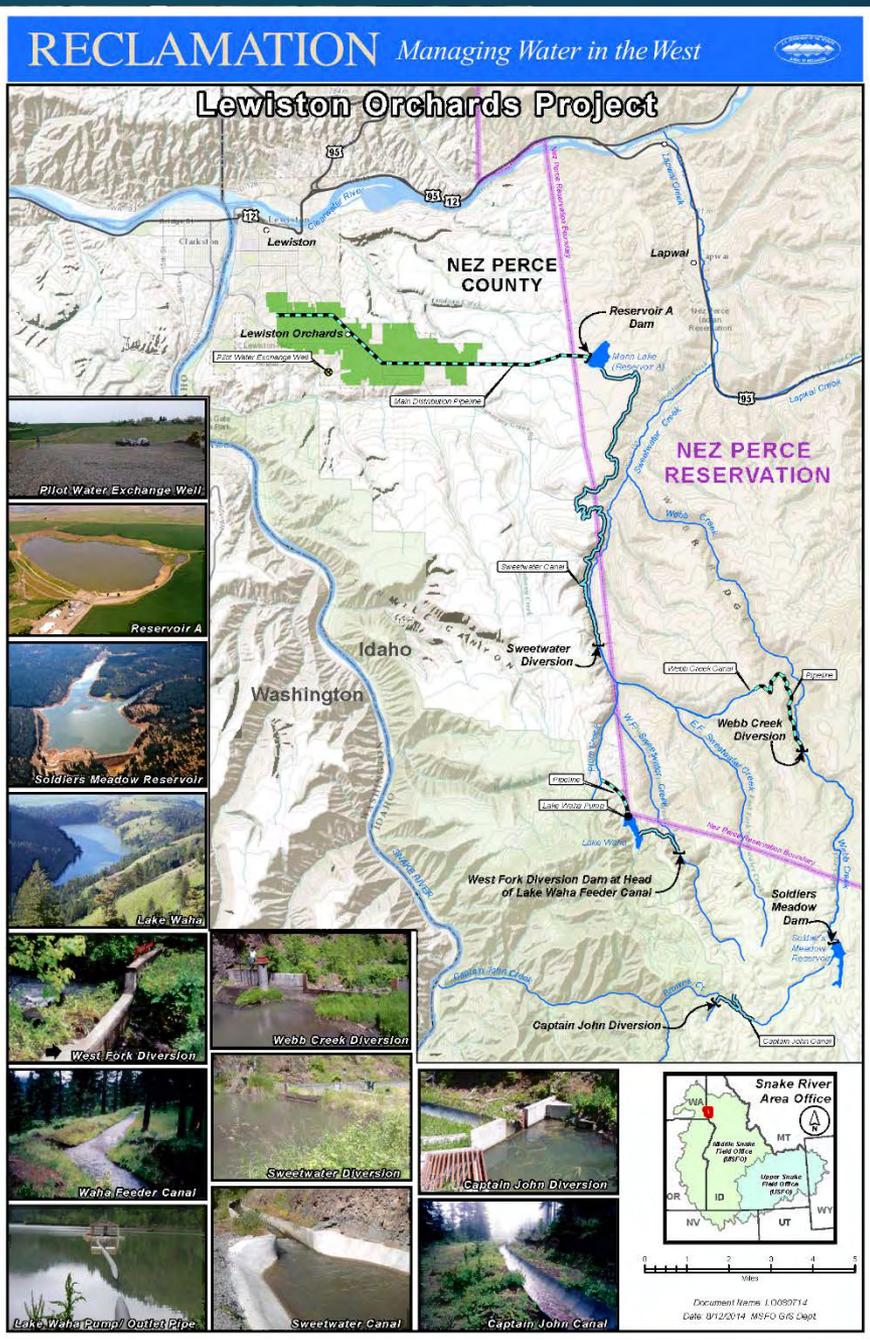
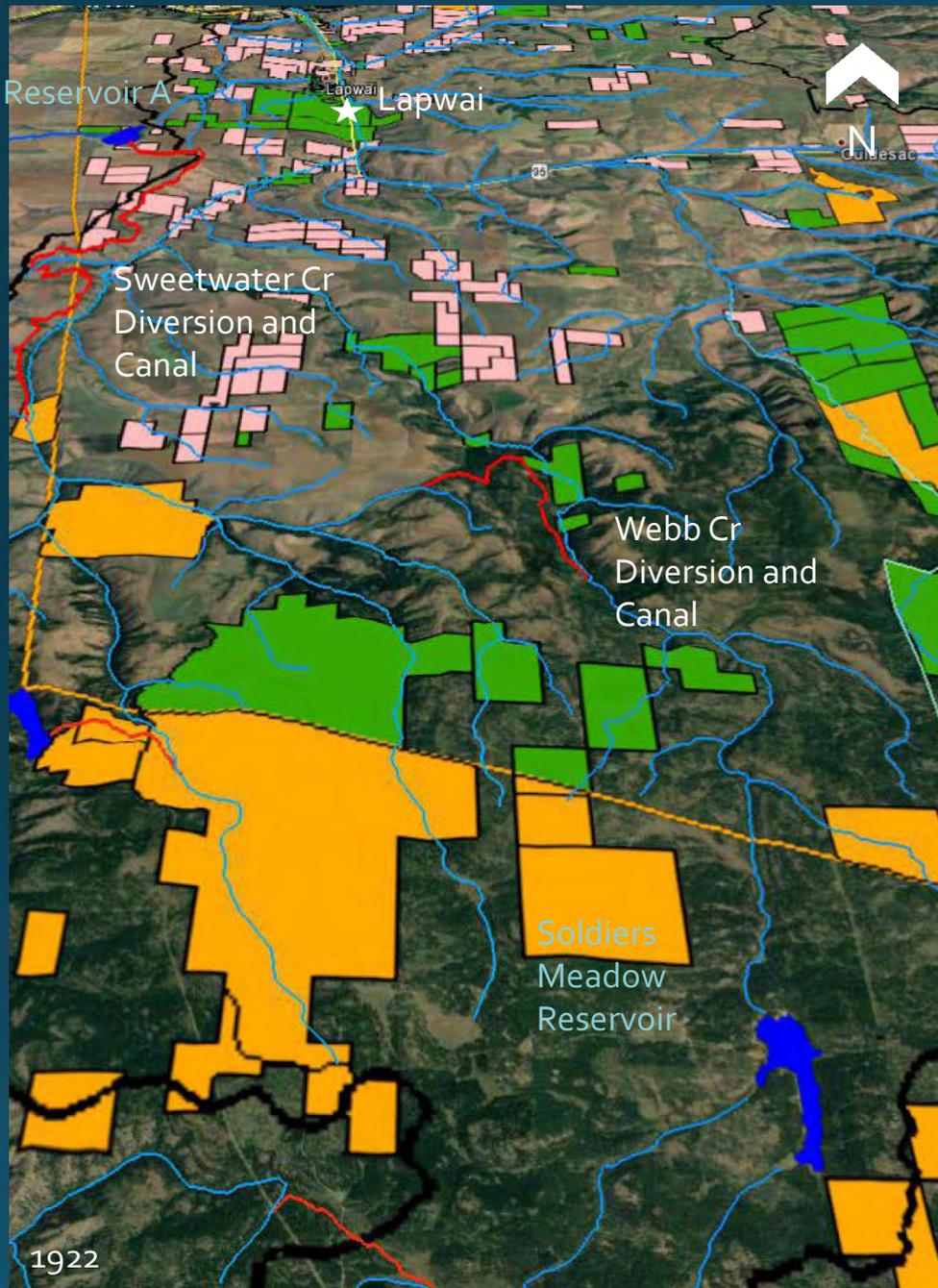
Sweetwater Canal

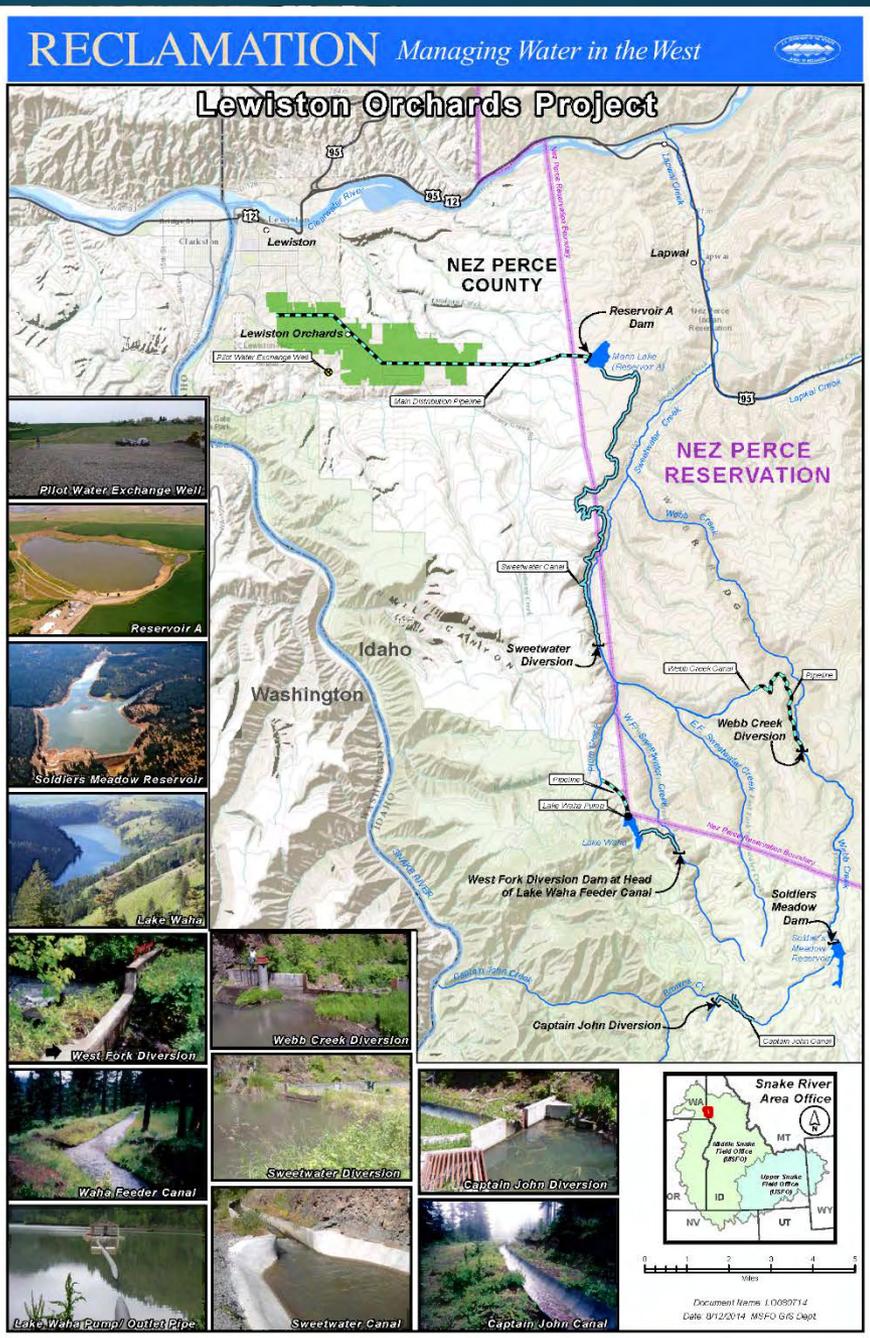
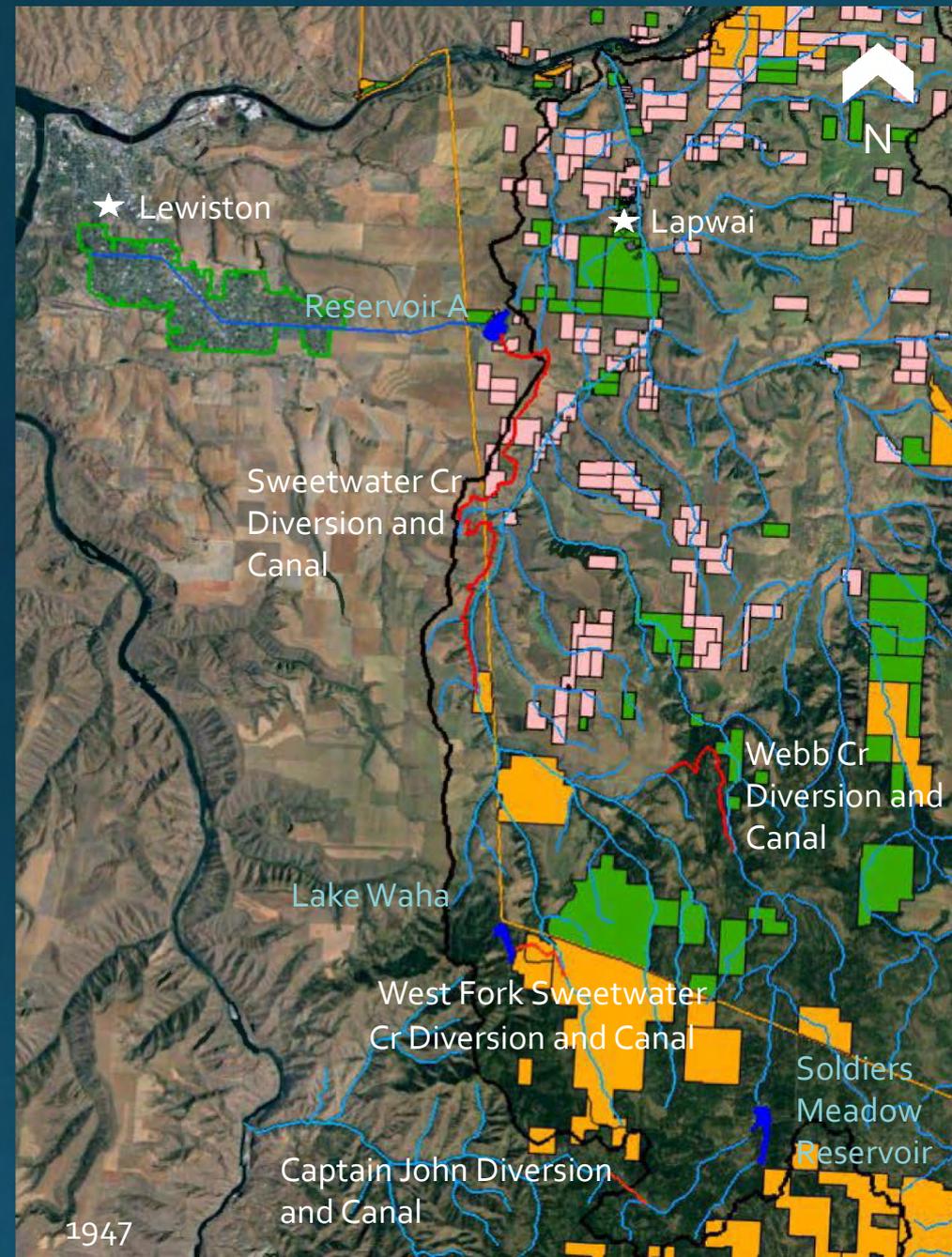
Captain John Canal

Snake River Area Office

0 1 2 3 4 5 Miles

Document Name: I 0090714
Date: 01/2/2014 MSFO GIS Dept





How did we get to where we are at now?

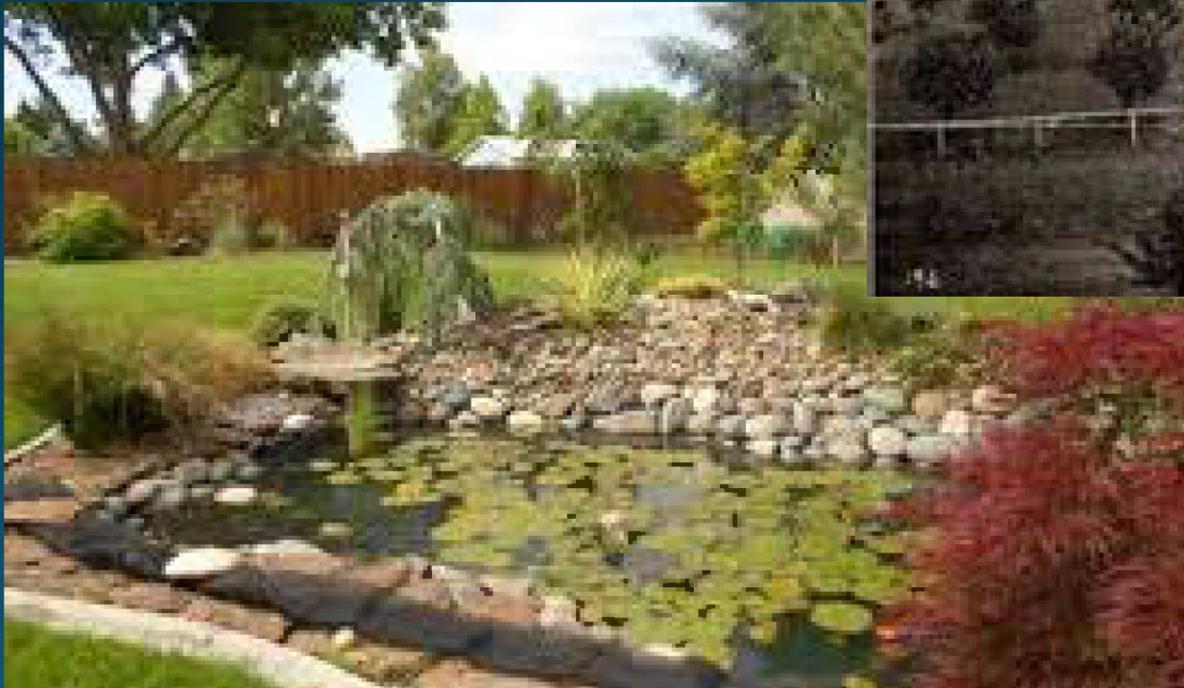
- 1972 LOID bond for pumping station fails
- 2003 LOP-Concept project removed from SRBA
- 2005 – 2010 series of Biological Assessments, Biological Opinions, and challenges to those by the Nez Perce Tribe
- 2008 – Jerry Klemm initiates meetings which leads to the Lower Clearwater Exchange Project.
- 2012 Appraisal Study looked at 33 alternatives and recommended 3 options: pumping station on the Snake River, pumping station on Clearwater River, or Tammany Well Field.
- 2013 Reclamation proposes a Pilot Well with bucket-for-bucket water exchange.
- 2014 LOID applies for new groundwater right of 8,500 acre feet.
- 2014 – 2017 Pilot Well is constructed
- 2017 irrigation season is first bucket-for-bucket water exchange.
- 2015 – 2017 Reclamation performs NEPA with a Final EA and Finding of No Significant Impact.

OBJECTIVES

Permanently solve 3 long-standing problems with existing Lewiston Orchards Project

- (1) Inadequate water quantities, quality, and reliability for Lewiston Orchards Irrigation District.
- (2) Adverse effects on the Nez Perce Tribe and its people, including impacts to natural resources and to cultural and religious water uses, resulting from predominant location of the LOP on the Nez Perce Reservation.
- (3) Adverse effects on ESA listed Snake River A-run steelhead from the existing LOP and its location on ESA-designated critical habitat.

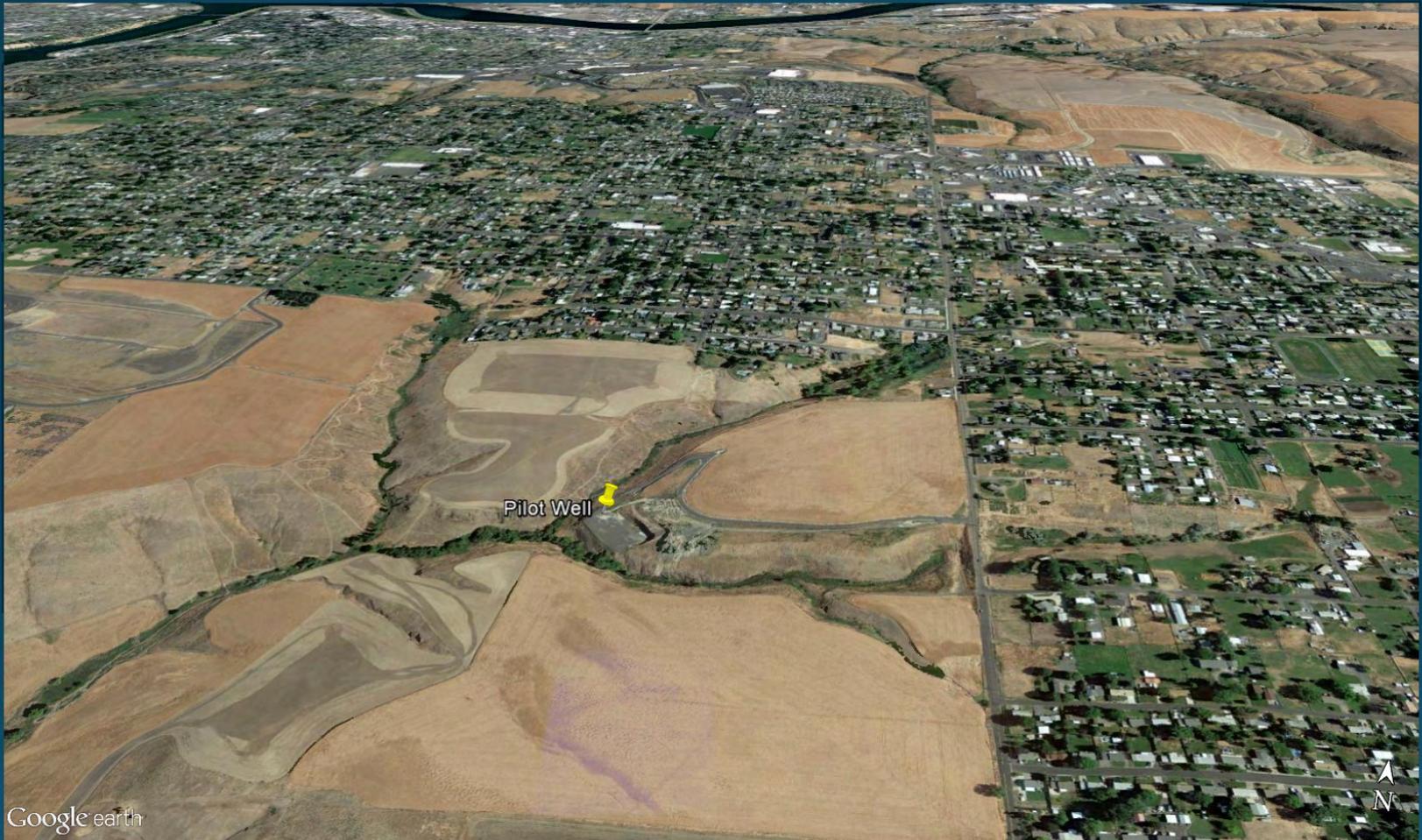
(1) Inadequate water quantities, quality, and reliability for Lewiston Orchards Irrigation District.



(1) Inadequate water quantities, quality, and reliability for Lewiston Orchards Irrigation District.

- Provides water to approximately 22,000 patrons in a 3,629-acre service area
- LOID has never delivered the water it is contracted with Reclamation
- 2010 Minimum flows established in Sweetwater and Webb Creeks reducing availability to patrons
- Since 2000 patrons have been placed on restrictions 6 times.
- Craig Mountain area is predicted to go from snow to rain events.
- Early runoff can not be captured as diversion right is from Feb-Oct
- 2015 Board authorized restrictions in May, education on water smart in June, light restrictions in June, hard restrictions July-October.
- 2014 LOID applies for a groundwater permit from IDWR

Pilot Well Construction



Pilot Well Construction



Pilot Well Construction



Pilot Well



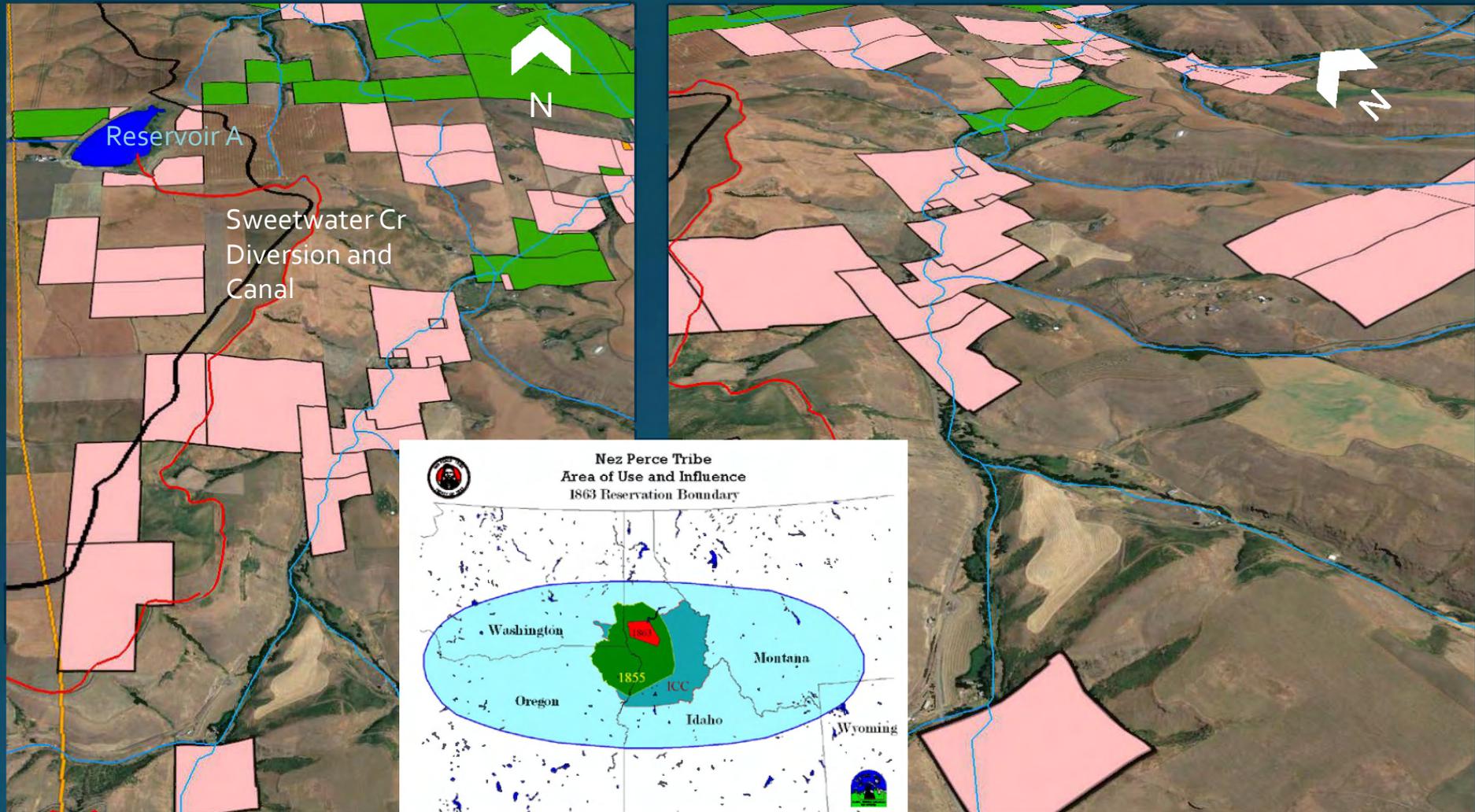
Pilot Well Construction



Pilot Well

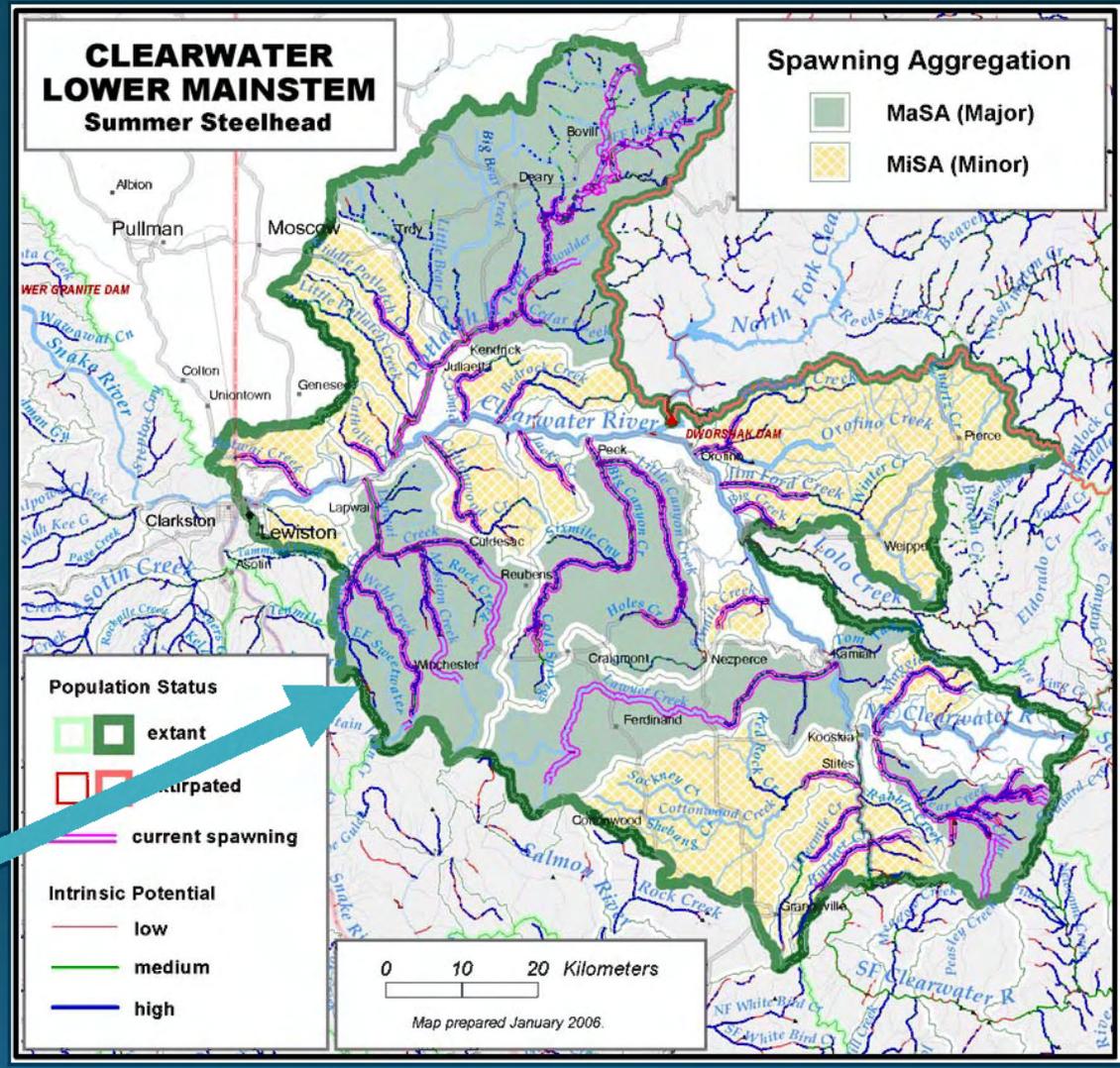
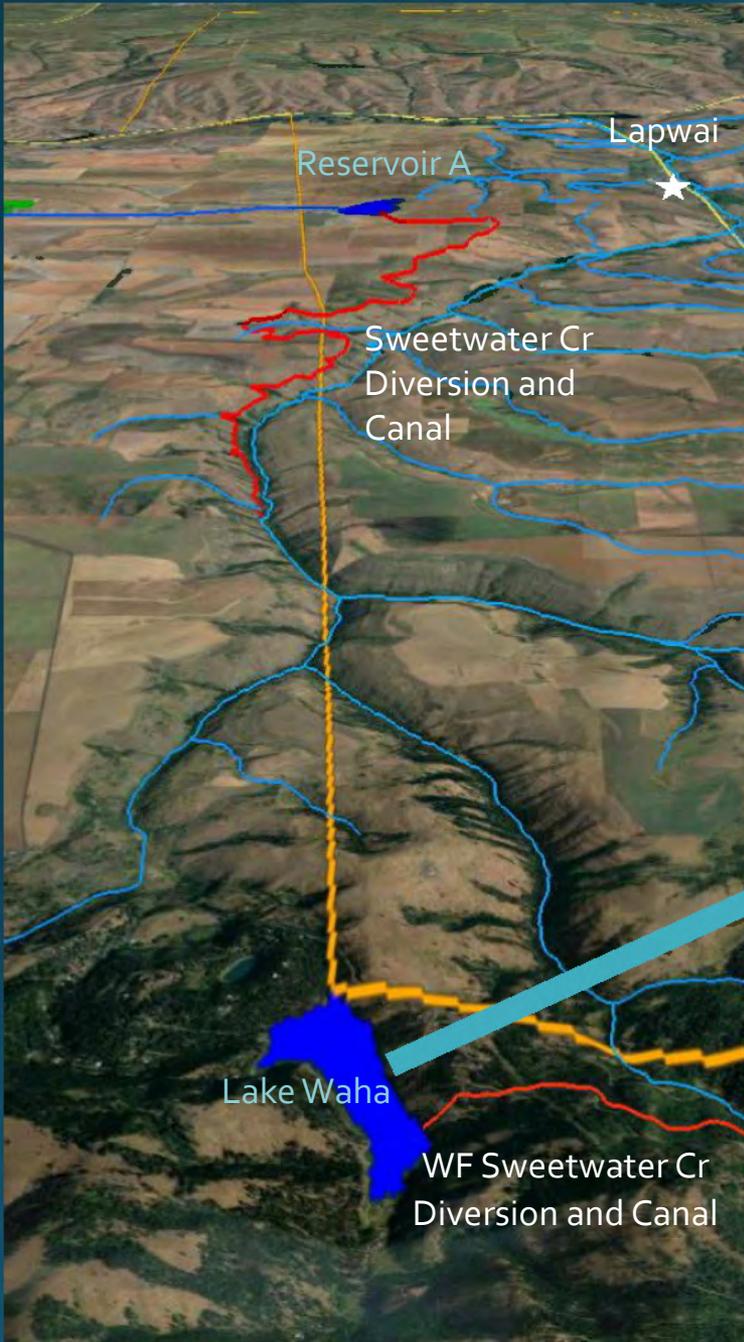


(2) Adverse effects on the Nez Perce Tribe and its people, including impacts to natural resources and to cultural and religious water uses, resulting from predominant location of the LOP on the Nez Perce Reservation.



(3) Adverse effects on ESA-listed Snake River steelhead from the existing LOP and its location on ESA-designated critical habitat.

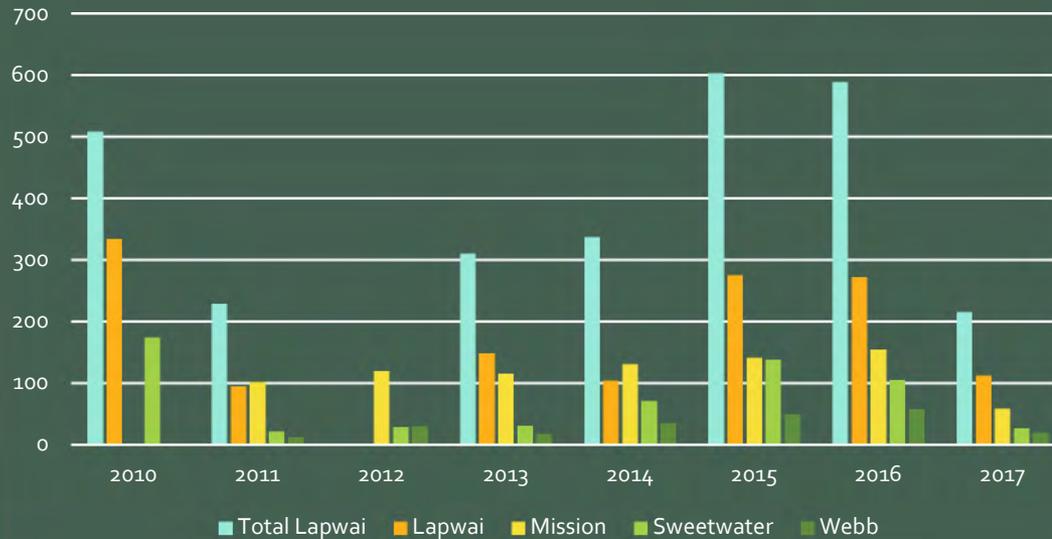




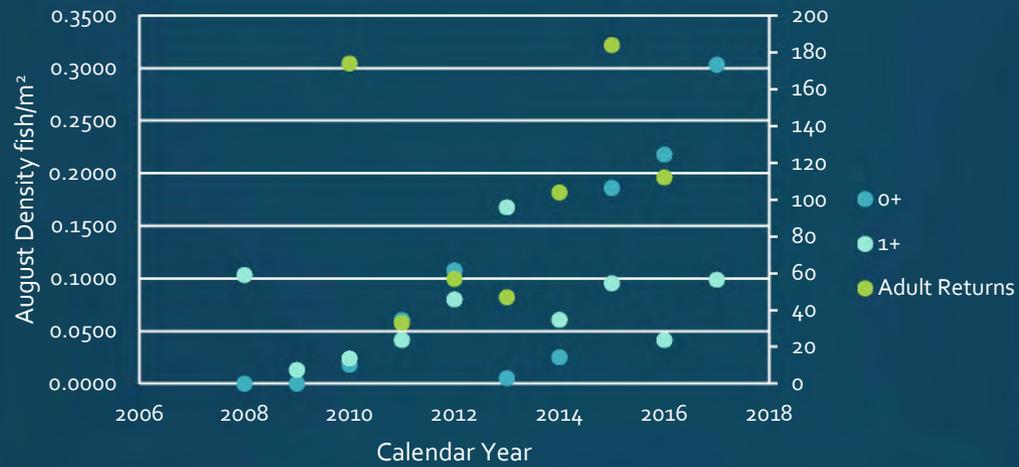
Adult Steelhead Returns to Lapwai Creek Watershed

Year	Lapwai	Mission	Sweetwater	Webb	Total Lapwai
2010	334		174		508
2011	94	101	21	12	228
2012		119	28	29	
2013	148	115	30	17	310
2014	103	130	70	34	337
2015	275	141	138	49	603
2016	272	154	105	57	588
2017	112	58	26	19	215

Adult Steelhead Return Estimate



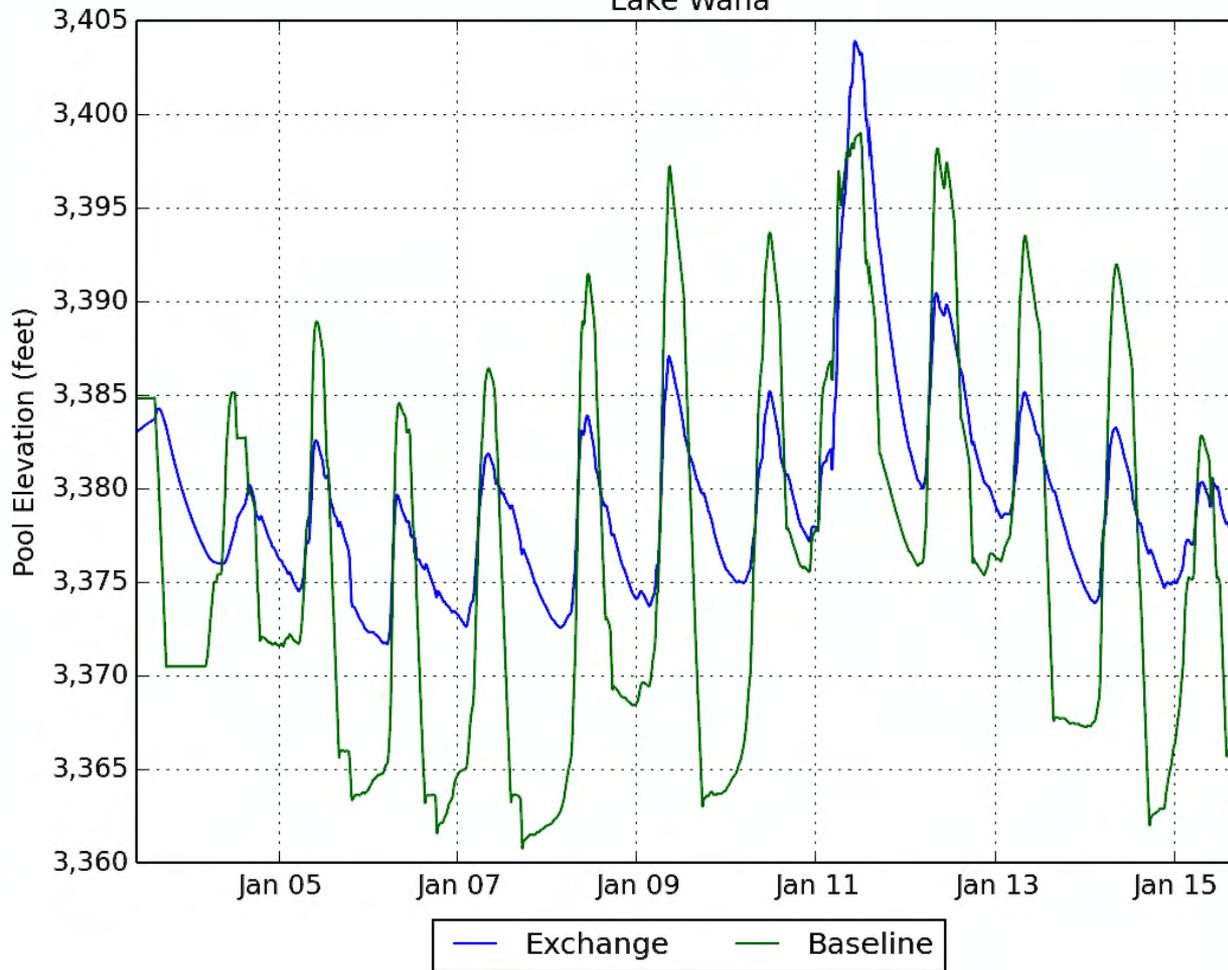
Sweetwater Below Diversion Steelhead Densities USM(2008-2012) and USU (2013-2017)



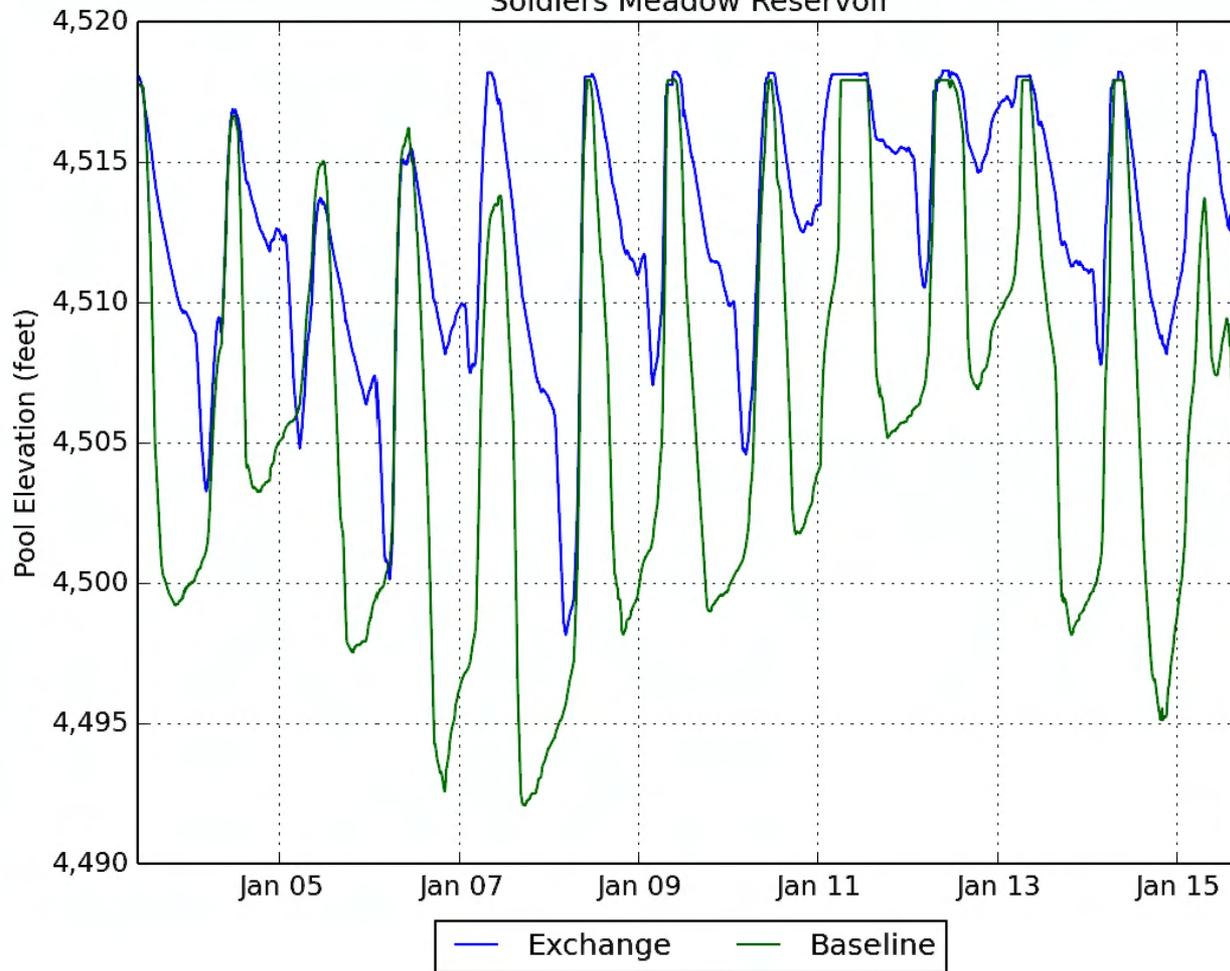
Webb Creek UWM Densities



Lake Waha



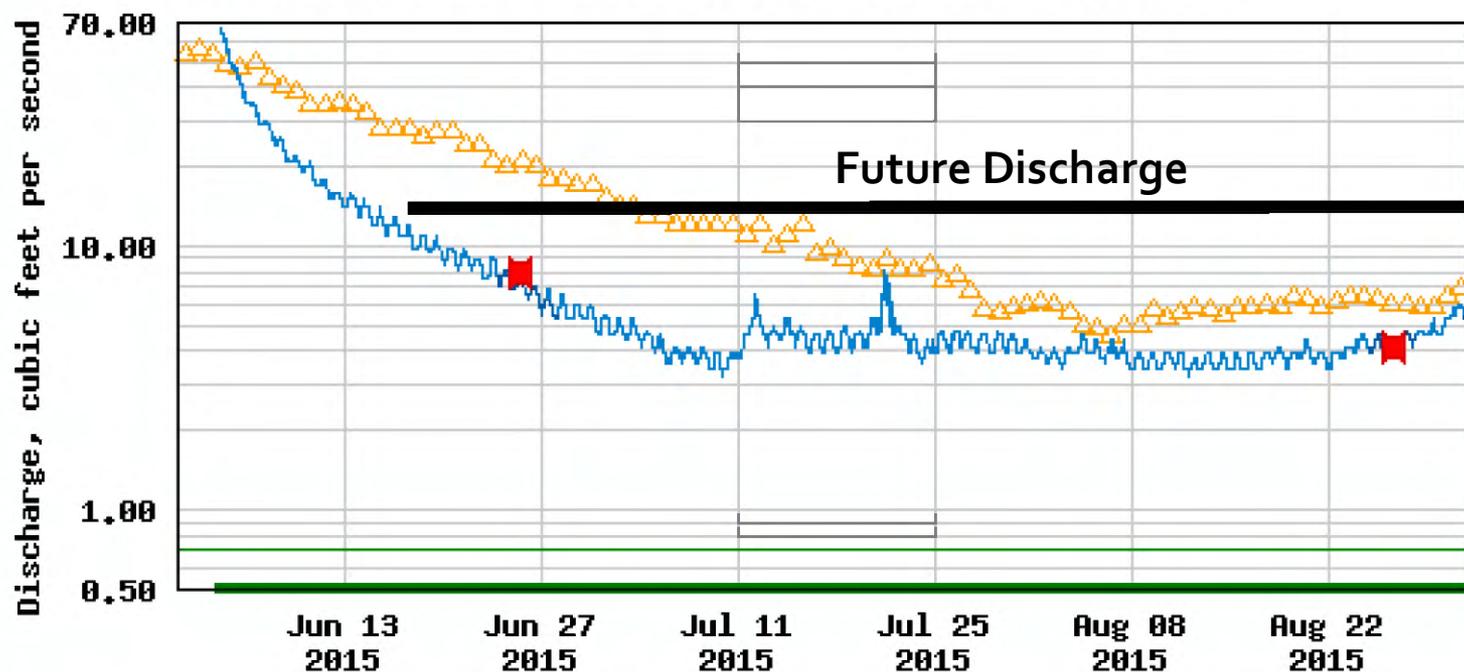
Soldiers Meadow Reservoir



2015 Flows

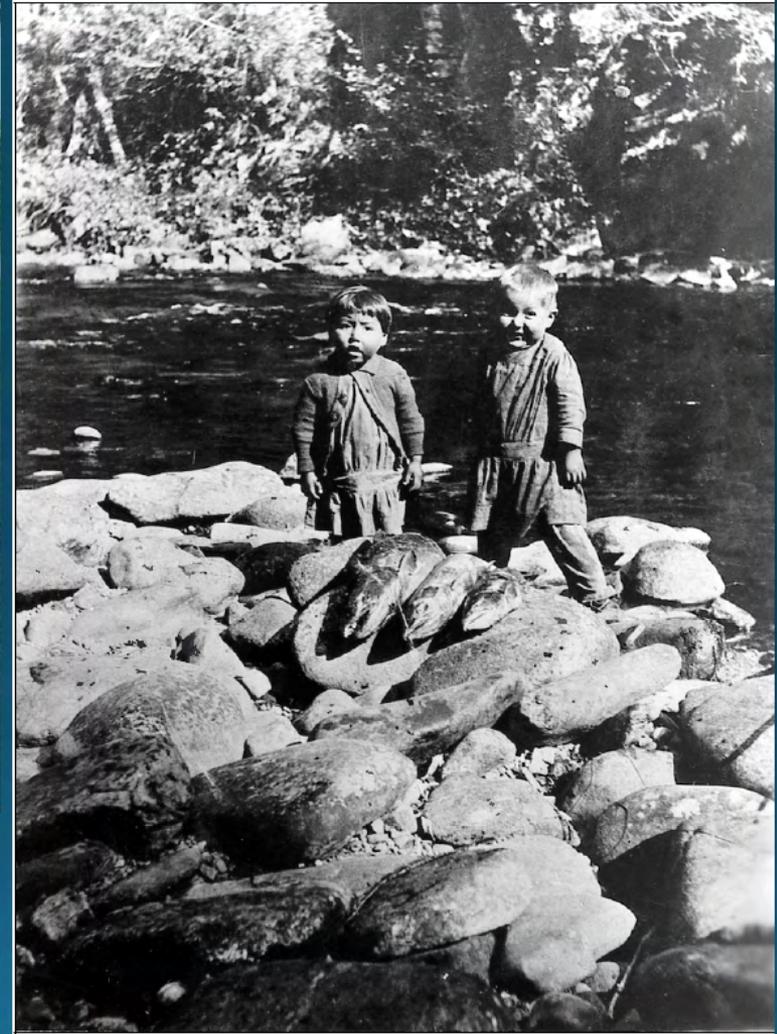


USGS 13342450 LAPWAI CREEK NR LAPWAI, ID



- △ Median daily statistic (39 years)
- Discharge
- Period of approved data
- Measured discharge
- Minimum for period of record 12/21/1990

Questions



Memorandum

To: Idaho Water Resource Board
From: Cynthia Bridge Clark, Emily Skoro
Date: May 4, 2018
Re: Boise River Storage Feasibility Study



REQUIRED ACTION: No action is required at this time.

Background

On October 24, 2017, the Idaho Water Resource Board (IWRB) passed a resolution to partner with the Bureau of Reclamation (Reclamation) to complete a feasibility study of new surface water storage options on the Boise River (Study). The study will incorporate results of previous studies, including analyses recently performed by the U.S. Corps of Engineers of a large raise of Arrowrock Dam. Reclamation will evaluate potential smaller raises of the existing dams on the Boise River including Anderson Ranch, Arrowrock and Lucky Peak Dams to provide additional water supply and flood control to the Treasure Valley.

The total study cost is estimated to be \$6 million. The IWRB, as the non-federal sponsor, has committed to funding fifty percent of the study costs up to \$3 million.

Status

- In March 2018, the Memorandum of Agreement was signed which formalized the working relationship between the IWRB and Reclamation.
- Reclamation initiated the feasibility study under the authority of Public Law 111-11, which authorized the study of projects to address water shortages in the Boise River system and sunsets in March 2019. The Water Infrastructure Improvements for the Nation Act (WIIN Act, P.L. 114-322) provides a second authority for the study, and potentially design and construction. The act states that continuing authority only applies to projects determined to be feasible before January 1, 2021. Additionally, projects can only receive Federal funds under the WIIN Act if recommended by the Secretary of the Interior and designated by name in Federal appropriations legislation. Reclamation received \$750,000 of WIIN Act funding in 2018 for the Study. Reclamation is continuing to pursue additional funding under the WIIN Act and through standard budget processes.
- The Board provided \$500,000 to Reclamation to cover costs for Phase I of the work through January 31, 2019. Phase I includes performance of initial screening of alternatives and development of a full plan of study.
- Current project activities include:
 - Development of a communications plan which includes identification and coordination with interested parties and stakeholders including special interest groups, businesses, irrigation districts, state and federal agencies, and municipalities. Reclamation and IWRB are each developing project websites to report the project objectives and status. Reclamation and IWRB are planning a public open house for late June.
 - Initiation of LIDAR data and orthoimagery collection by contractors.
 - Initiation of land, structure, infrastructure and real estate impact assessment by contractors.

- Scoping of technical analyses of Anderson Ranch, Arrowrock and Lucky Peak Dams. Analyses in 2018 will be performed by Reclamation's Technical Service Center in Denver, Colorado.
- Roland Springer, the Area Manager of Reclamation's Snake River Area Office, will provide an update on the progress of the study at the May IWRB meeting.

Current Schedule

- November 2017 - January 2019: Perform initial screening of alternatives and develop a Plan of Study
- February 2019 - September 2021: Perform analysis of alternatives
- October 2021 - September 2022: Perform formal environmental compliance activities
- October 2022 - March 2024: Undergo approval process of recommended alternative

Memorandum

To: Idaho Water Resource Board
From: Cynthia Bridge Clark
Date: May 7, 2018
Re: Elmore County Recharge Project Update



REQUIRED ACTION: No action is required at this time.

Idaho Department of Water Resources analyses shows that the Mountain Home Aquifer is being over-drafted by at least 30,000 acre-feet annually. Elmore County is dependent on water supplies that are insufficient to support existing uses and future development. Specifically, groundwater pumping from the Mountain Home Plateau Aquifer exceeds annual natural recharge, resulting in chronic water level declines in the area of Cinder Cone Butte, Mountain Home Air Force Base, and the City of Mountain Home.

Elmore County, with a cost-share from the IWRB, completed a Water Supply Alternatives Study that was completed on February 28, 2017. The study estimated an average annual pumping deficit of 43,000 acre-feet per year from the Mountain Home Aquifer and recommended increasing aquifer recharge from Canyon Creek as one method to improve water supplies within Elmore County.

On October 24, 2017, the IWRB passed a resolution authorizing expenditures not to exceed \$140,000 from the Secondary Aquifer Fund for use by Elmore County to develop the Canyon Creek Recharge Project. The project includes infrastructure improvements to increase the capacity of an existing recharge site off Canyon Creek as well as development of a monitoring program. The Canyon Creek Recharge Project is intended to capture excess flow from Canyon Creek when it is available.

Representatives for Elmore County will provide an update to the IWRB on the development of the project on May 17, 2018.

Memorandum

To: Idaho Water Resource Board
From: Cynthia Bridge Clark
Date: May 7, 2018
Re: Raft River Pipeline Project Update



REQUIRED ACTION: No action is required at this time.

Representatives from Raft River Recharge Group (RRRG) will give a presentation to the IWRB on May 17, 2018 to discuss the Raft River Recharge Project (project) and efforts to deliver recharge water from the Snake River to the Raft River basin. The group will also discuss water right permit no. 01-10644 for ground water recharge, approved by the Idaho Department of Water Resources in March 2018.

The executive summary for a feasibility study of the project, developed by Brockway Engineers and J-U-B Engineers, is provided for reference.

Raft River Recharge Project

Executive Summary

Brockway Engineering

J-U-B Engineers

May 7, 2018

The Raft River aquifer in southern Idaho is a prolific groundwater source, utilized for irrigation of approximately 70,000 acres of highly-productive agricultural land. Although the basin was closed to new development in 1963, groundwater levels have been declining continuously, leading to increases in pumping costs, deepening of wells, and in some cases inability to obtain adequate water supply without significant new well development.

In the Snake River Basin Adjudication, approximately 6,800 acres or 10% of the irrigated acreage in the basin were decreed as “expansion acres,” which have been curtailed until basin withdrawals are in balance with recharge (IC 42-1416B). The Raft River basin is the only basin in Idaho subject to such curtailment. The Raft River aquifer also historically has been a significant contributor to the Eastern Snake Plain Aquifer water balance, but the underflow is believed to have declined to a fraction of historical levels.

The economic impact of curtailment eliminates the beneficial use of water for irrigation within the basin to the farmers directly affecting yearly operations. Curtailment also impacts local government because of reduced tax revenue resulting from converting acreage to dry grazing from irrigated farm land. The curtailed acreage is assessed at market land values of 10% of irrigated lands (Cassia County Assessor 2018).

A group of like-minded landowners in the lower Raft River basin who are members of Raft River Recharge Group, LLC (RRRG), commissioned an engineering study to evaluate the feasibility of conveying water from the Snake River to replace the current groundwater supply for the expansion acres and to conduct managed recharge when available. The objectives of this group are long-term aquifer restoration and mitigation of groundwater irrigated acreage, with no intent to develop new irrigated areas. The study included evaluation of the project from hydrologic and engineering standpoints, development a preliminary design for the project, and estimation of capital and annual costs.

Brockway Engineering conducted the feasibility study, water availability analysis, and prepared a groundwater recharge permit application for RRRG. This application has been approved and a permit issued by IDWR authorizing diversions from the Snake River, in priority, for ground water recharge in the Raft River basin. J-U-B Engineers will be providing engineering constructions services and permitting assistance to complete the pipeline. The following findings were made in the Brockway feasibility analysis.

1. The Raft River aquifer flows generally northward, under the Snake River and contributes to the Eastern Snake Plain Aquifer (ESPA). Total basin groundwater yield is estimated to be 141,000 acre-feet, all of which is now consumed by groundwater irrigation in the basin. At present, underflow leaving the basin to the ESPA is estimated to be less than half of historic levels based on the groundwater decline of 140 feet along Township 11S (Walker 1970).
2. Since the CGWA was established in 1966, groundwater levels have declined by 60 to 140 feet in the lower basin.
3. The Raft River Recharge Group participants are a group of like-minded individuals holding water rights which allow approximately 27,000 acres of irrigation from groundwater within the lower Raft River basin, of which about 10% are “expansion acres.” This represents approximately 30% of the total irrigation in the Raft River basin.
4. The feasibility of using pumped water from the Snake River for irrigation replacement and aquifer recharge was evaluated, and it was determined that a reasonable design flow for the system is 70 cfs.
5. The completed project will include an estimated 2,400-HP pumping station at the Snake River, a 1,800-HP in-line booster station, and approximately 25 miles of dual HDPE pipeline ranging in size from 24” to 36”.
6. No major engineering hurdles were identified that cannot be reasonably overcome with standard design approaches. The pipeline will be developed through phases (Figure 2). Phase 1 will deliver 50 CFS with a pumping station and a trunk line as shown on Figure 1. Phase 2 will add a booster station and a branch up Heglar Creek. Phase 3 and 4 will complete the pipeline at full capacity.
7. The pumping station will access the Snake River within the Minidoka Wildlife Refuge. The refuge is operated by the U.S. Fish and Wildlife Service (USFWS) and the backwater was withdrawn by Bureau of Reclamation (Reclamation) by executive order in 1910. Access for the suction lines will be secured through a right-of-way application, which will be processed and evaluated by USFWS and Reclamation pursuant to applicable federal right-of-way regulations and subject to National Environmental Policy Act environmental review.
8. With optimal utilization of the surface water, a total of 25,300 acre-feet per year could be pumped from the river and put to beneficial use in replacing groundwater pumping.
9. Feasible aquifer recharge areas were identified along the Raft River corridor, within high-infiltration areas at the mouth of Hegler Canyon, and within areas of basalt in the northwest portion of the study area. The estimated recharge capacity of all sites is 66 cfs or 19,700 acre-feet per year in the non-irrigation season – typically from November 1 through March 31.

10. The total net annual benefit to the aquifer under optimal irrigation water management and maximum recharge is estimated to be 45,000 acre-feet per year. This is 32% of the total basin groundwater yield, and represents mitigation of consumptive use on 19,600 acres at a rate of 2.3 ac-ft/acre.
11. An evaluation was made of the natural flow available in the Snake River to fill permit 01-10644. Physically, there is always enough water in the river to divert up to 70 cfs, but water right constraints will govern the allowable diversion at any particular time. Streamflow and Water District 1 records were used to determine available natural flow at the permit point of diversion on any given day. This analysis considers all prior water rights including the Bureau of Reclamation's unsubordinated hydropower rights at Minidoka Dam. The results of the analysis indicate that the availability models a binary pattern: there will usually either be more than enough to fill the right, or there will be zero flow available. The table below illustrates the results; for example, natural flow is available in 77% of the years, with a median annual volume of 2,994 acre-feet and a mean annual volume of 11,038 acre-feet. These figures include the wet years from 1994 to 2000 when little recharge was occurring. More recent data indicates less water availability.

Statistic	Irrig. Season	Off-season	Annual	Num. Days
Percent of years flow is available	73%	57%	77%	n/a
10-th percentile	0	0	0	0
25-th percentile	2	0	10	2
50-th percentile (median)	1995	159	2994	59
75-th percentile	9267	8331	20564	158
90-th percentile	17182	20654	35070	265
Mean	5737	5301	11038	93

12. A preliminary numerical groundwater model was developed using MODFLOW. The model was used to predict changes in groundwater levels and underflow to the ESPA at steady-state conditions. The figures in the table below represent predicted increases relative to prevailing groundwater level trends, not absolute increases.

Benefit	Irrig. Replacement Scenario	Recharge Scenario	Total (superposition)
Average water level increase	6.7 feet	4.5 feet	11.2 feet
Maximum water level increase	21.1 feet	21.8 feet	42.9 feet
Increase in underflow to ESPA	17,134 ac-ft/year	18,040 ac-ft/year	35,174 ac-ft/year

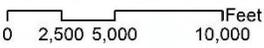
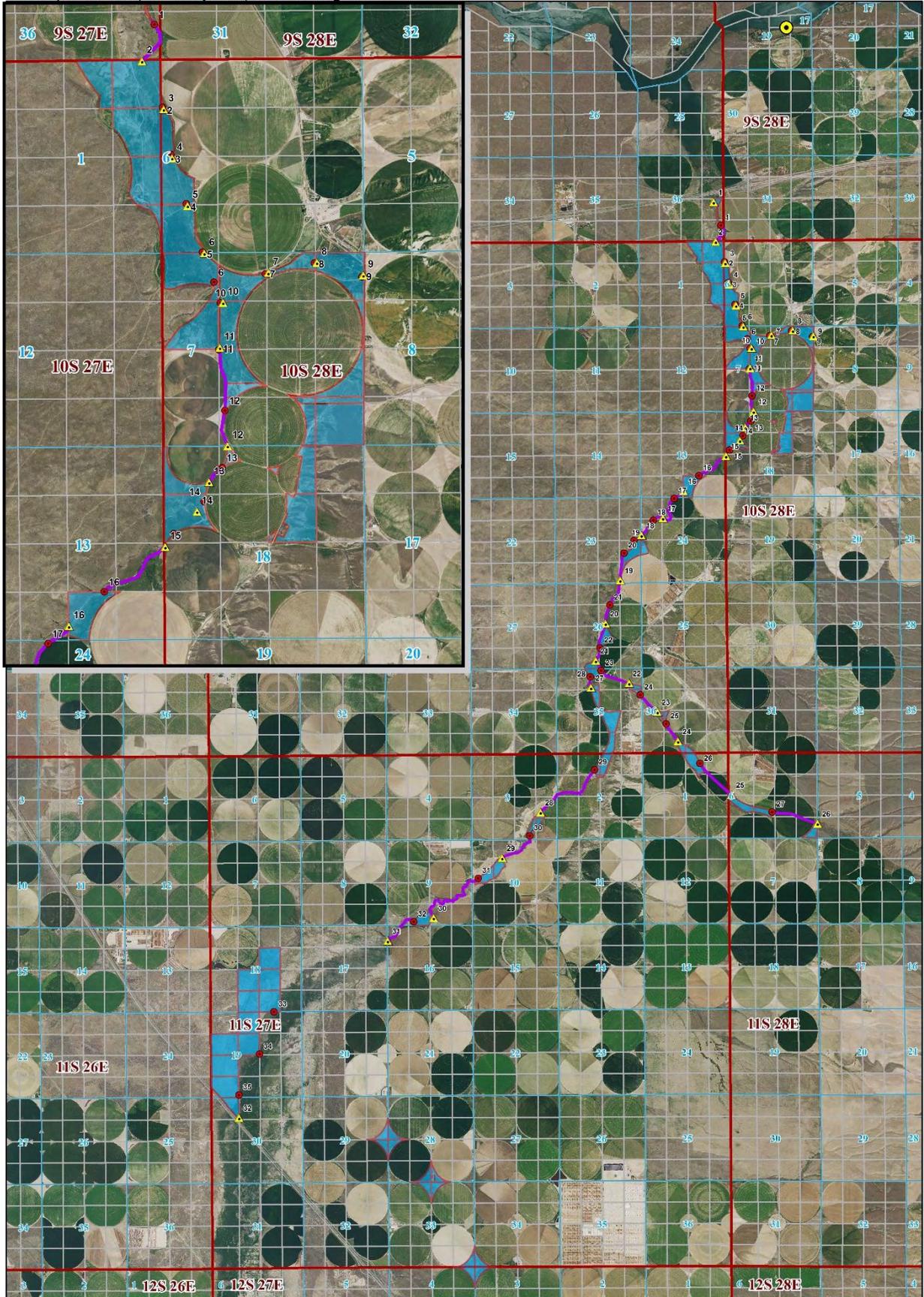
13. Major secondary benefits will arise from the recharge activity. These include restoration of riparian zones along the Raft River corridor and creations of significant new open-water features and associated wildlife habitat. Up to 215 acres of recharge basins appear to be feasible along the corridor.

14. Several alternatives exist for acquisition of water rights to allow the necessary diversion rate and volume for the project. In addition to the recently-approved permit 01-10644, acquisition of Upper Snake storage, acquisition of natural flow surface or groundwater rights, rental of storage through the rental pool or private leases, rental of rights through the Water Supply Bank, and potential usage of existing recharge rights held by the Idaho Water Resources Board.
15. Initial capital costs excluding water right acquisition were estimated to be \$18.78 million for the full project and \$15.05 million for the project without the secondary booster and east-west laterals.
16. Water right acquisition costs are highly uncertain. Assuming an initial acquisition of 9,000 acre-feet, the cost at \$1,500 per acre-foot would be \$13.5 million.
17. Annual operating costs were estimated as shown in the following table assuming a 2,400-HP pumping station at the Snake River, a 1,800-HP in-line booster station, and approximately 25 miles of dual HDPE pipeline ranging in size from 24” to 36” as evaluated in the feasibility study.

Type of cost	Full Project	Excluding East-West
Seasonal energy demand charge	\$57,000	\$45,000
Monthly energy demand charges	\$240,000	\$210,000
Energy usage charges	\$845,676	\$737,333
Total annual cost for surface water pumping	\$1,142,676	\$992,333
kWh savings from groundwater reduction	22677000	22677000
Cost savings at standard irrigation rate	\$680,310	\$680,310
NET ENERGY COST INCREASE	\$462,366	\$312,023

18. Annual costs will be incurred for water right rental above the amount available under a new appropriation and the initial acquisition. Estimated costs are \$484,700 for the full project and \$323,100 without the Phase 2 east-west system.
19. Capital replacement costs were estimated as follows

	Full Project	Excluding East-West
Assumed long-term rate of inflation	2.5%	2.5%
Assumed long-term return on funds	6%	6%
Project design life	40	40
Capital cost current dollars	\$18,000,397	\$14,418,917
Capital cost at end of design life	\$48,332,215	\$38,715,712
Annual payment required	\$312,300	\$250,163

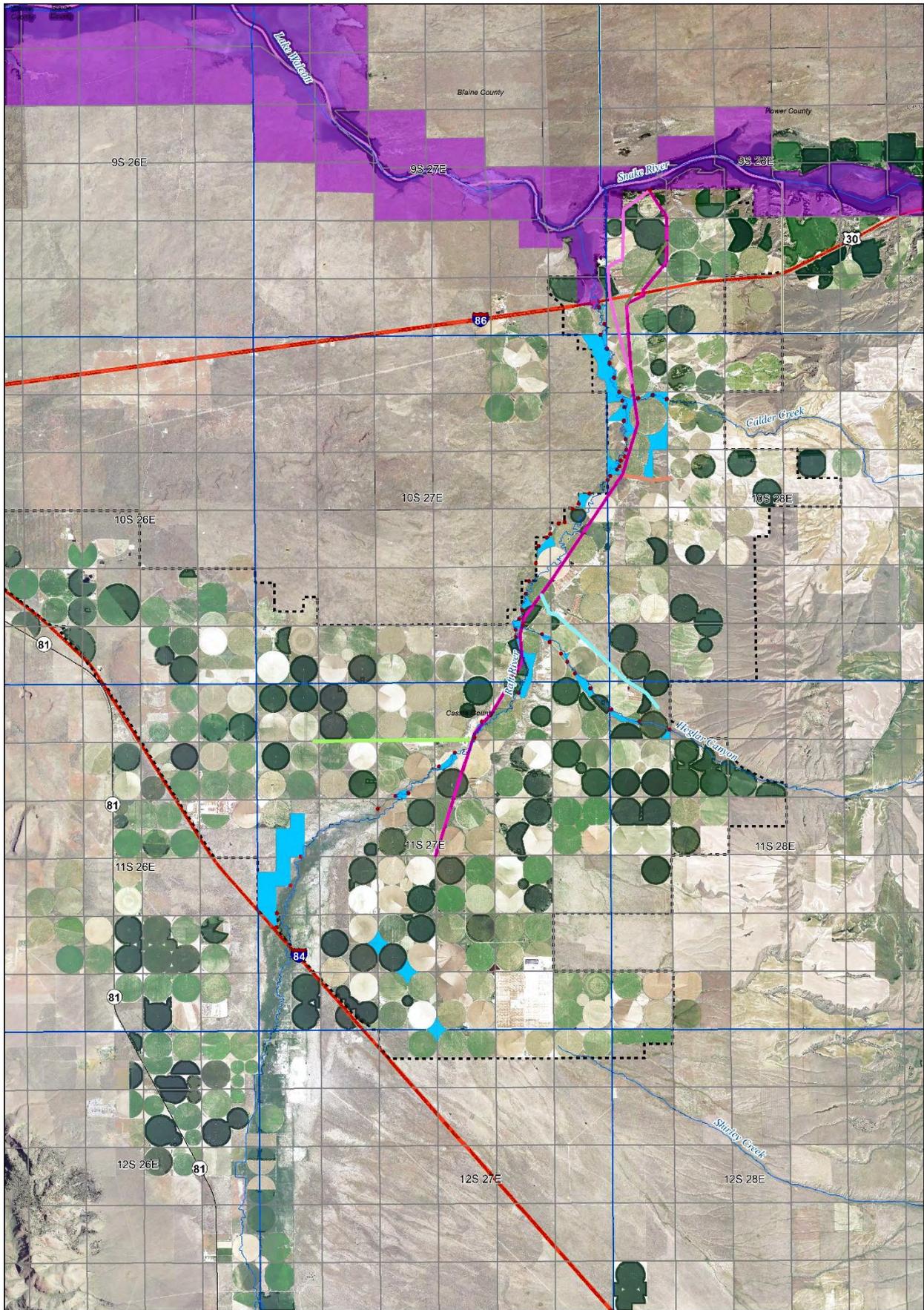


RAFT RIVER RECHARGE GROUP

PERMIT APPLICATION
NAIP 2015 AERIAL

-  POD
-  Reinjection
-  Rediversion
-  Total - 1,384.8 ac.





- FRERC WAR Permit POI
- FRERC WAR Permit POI
- Minnicka Wildlife Refuge
- Proposed Project Planning Area (59,420 acres)

Raft River Recharge Group Pipeline

Preliminary Map



J-U-B ENGINEERS, INC.



OR-EKJ IS COMBINES

Memorandum



To: Idaho Water Resource Board
From: Amy Cassel
Date: May 7, 2018
Re: Preserving General Provision High Flow Use in Lemhi River Basin

REQUIRED ACTION: No action is required at this time. The following information is provided for information only and an introduction to water issues in the Lemhi River Basin.

Background

The Lemhi River Basin (Basin 74) Water Users have extended their water supplies by diverting high flows exceeding the amount required to satisfy all existing water rights. This practice has been especially important in Basin 74 which lacks any surface water storage facilities. In the absence of storage facilities, water users divert high flows onto their place of use and the ground acts as a reservoir that saturates the root zone of the soil and has the effect of supplementing surface flows later in the irrigation season when natural flows decrease. While the amount of available high flow varies from year to year, water users generally divert up to their ditch capacity for as long as the high flow is available. The diversion of high flow ends when the surface water rights go into regulation and rights are administered by priority.

Basin 74 Water Users filed claims in the SRBA seeking to have high flow water use decreed as individual water rights. The SRBA Court held that the previous Lemhi Decree did not create water rights for high flow use and instead the Court decreed a Basin 74 General Provision that included a "high flow" provision allowing for the historic practice of high flow use to continue.

The use of high flow is limited to those times when there are flows in excess of the quantity of water needed to fully satisfy all existing rights. As flows diminish, General Provision High Flow water use is incrementally shut off to provide water to water right holders. As each new water right is issued in Basin 74, those new rights slowly reduce the quantity and duration of high flows available to water users each season and thus over time the General Provision High Flow water will be diminished. The Basin 74 Water Users would like to find a means to protect and preserve the General Provision high flows.

The goal of preserving the General Provision High Flow use may best be addressed in the State Water Plan. The State Water Plan, a policy document formulated and adopted by the IWRB, would require that IDWR comply with the document when reviewing new applications for water right permits in Basin 74.

Status

Representatives of the Lemhi water users will speak with the IWRB on May 17, 2018 about the high flow water use issues in the basin.

Attachment(s)

A White Paper drafted by Ann Vonde, February 27, 2017, is provided for reference. The subject of the paper is Preserving General Provision High Flow Use and Criteria for Eligibility for Salmon Wild and Scenic Subordination Set Aside.

WHITE PAPER

To: Basin 74 Water Users

From: Ann Y. Vonde, Deputy Attorney General

Date: February 27, 2017

Re: Preserving General Provision High Flow Use and Criteria for Eligibility for Salmon Wild and Scenic Subordination Set Aside

Statement of the Issues

On December 7, 2016 Deputy Attorneys General Clive Strong and Ann Vonde, along with the Idaho Water Resource Board (“IWRB”) Chairman Roger Chase, met with various Basin 74 Water Users in Salmon, Idaho to discuss several water-related issues. After hearing discussion at the meeting, our understanding of the issues are : (1) that the Basin 74 Water Users would like to preserve the historic practice of using high flows under the Basin 74 High Flow General Provision and, (2) that they would like to craft a solution that would ensure the subordination protections set forth in the Partial Decree for Federal Reserved Water Right 75-13316 and 77-11941 for the Salmon Wild and Scenic River (“Salmon Wild and Scenic Partial Decree”) are used in accordance with the goals and purposes of the Basin 74 Water Users.

Background on the Issues

1. General Provision High Flow Use

The Basin 74 Water Users have, for decades, extended their water supplies by diverting high flows exceeding the amount of water required to satisfy all existing water rights. This practice is especially important in Basin 74, which lacks surface water storage facilities. In the absence of storage facilities, irrigators divert high flows onto lands that are authorized as places of use under existing water rights. The ground acts as a reservoir that saturates the root zone of the soil and has the effect of augmenting or supplementing surface flows during the later portion of the irrigation season. While the amount of high flow water varies from year-to-year, the Basin 74 Water Users make an effort to divert as much high flow water as their ditches can accommodate. High flow water is shared collectively among the Basin 74 Water Users and distribution of high flow water is done informally.

The Basin 74 Water Users filed 294 claims in the SRBA seeking to have high flow water use decreed as individual water rights. The SRBA Court held, however, that the previous Lemhi Decree did not create water rights for high flow use and that, under the principle of res judicata, the SRBA Court was precluded from decreeing high flow water rights in the SRBA. Instead, the

SRBA Court decreed a Basin 74 General Provision that included a “high flow” provision allowing for the historic practice of high flow use to continue in the basin. The Basin 74 High Flow General Provision does not create a water right but explains how high flow use will be administered.

The use of high flow water is limited to those times when there are flows in excess of the quantity of water needed to fully satisfy all existing water rights. As flows diminish, General Provision High Flow use is incrementally shut off to provide water to water right holders. Each new water right issued in Basin 74 takes precedent over General Provision High Flow water use. Thus, each new water right issued in Basin 74 slowly reduces the quantity and duration of high flows available for use each season. Thus, over time General Provision High Flow water will be diminished.

The Basin 74 Water Users expressed concern at our meeting regarding this diminishment of historic high flow water use. The Basin 74 Water Users would like find a means for preserving the General Provision high flows.

2. Wild and Scenic River Agreement

In 2004, the SRBA Court issued the Salmon Wild and Scenic Partial Decree. It sets forth the United States’ instream flow water right for the Salmon River and includes several provisions that subordinate the right to future development. The subordination provision pertinent to the discussion here is found in Section 10.b.(6).(A) of the Salmon Wild and Scenic Partial Decree. It states that the water right will be subordinated to water rights acquired after the effective date of the Wild and Scenic Stipulation “with a total combined diversion of 150 cfs (including not more than 5,000 acres of irrigation with a maximum diversion rates of 0.02 cfs/acre).”¹ In this provision, the United States agreed to subordinate its water right to 150 cfs of future uses (100 cfs of irrigation and 50 cfs of other uses).² The purpose of Section 10.b.(6).(A) was to preserve an opportunity for future development in the Salmon River basin. Without the subordination protection of Section 10.b.(6).(A), new water rights could be called out by the Wild and Scenic right and would provide only a tentative water supply.

¹ For brevity only the 150 cfs provisions of Section 10.b.(6).(A) is discussed. However, the analysis laid out herein also applies to the 250 cfs subordination set aside found in Section 10.b.(6).(A).(ii)

² The 150 cfs is a “combined diversion rate.” The plain meaning of “combined diversion rate” is that is must include at least two separate categories of diversion rates that total 150 cfs. The parenthetical information “(including not more than 5,000 acres of irrigation with a maximum diversion rate of 0.02 cfs/acre)” makes clear that a portion of the “combined diversion rate” includes irrigation uses totaling 100 cfs, which is calculated by taking “5,000 acres . . . with a maximum diversion rate of 0.02 cfs/acre.” The remainder of the “combined diversion rate” is calculated by subtracting the 100 cfs of irrigation use from the 150 cfs total combined rate to come to 50 cfs for non-irrigation uses that are not “described in paragraphs (3) through (5)” of Section 10.a.

The Basin 74 Water Users recognize the importance of the Section 10.b.(6).(A) subordination set aside in ensuring a supply of water for future development in the Salmon Basin. They expressed interest in developing a means to ensure the limited supply of subordination water is used to support the goals of the local water users.

Discussion

The Basin 74 Water Users seek to shape future water use in Basin 74 in accordance with local needs and local objectives. The Basin 74 Water Users have expressed a desire to preserve historic General Provision High Flow use and to judiciously allocated the Wild and Scenic subordination set aside. Although factually and legally distinct, addressing these two issues in tandem provides an opportunity for the Basin 74 Water Users to holistically address future allocation of water in Basin 74.

1. Preserving General Provision High Flow Use

Addressing the number and types of new water rights that are approved in Basin 74 would reduce the incremental reduction of General Provision High Flow Use discussed above. The Basin 74 Water Users could consider limiting the issuance of new water rights in Basin 74 to those that are found to be eligible to enjoy the subordination protections of Section 10.b.(6).(A) of the Wild and Scenic Agreement. IDWR would issue new water right permits only up to the 100 cfs/5,000 acres (irrigation) and 50 cfs (industrial, commercial, and other) amounts set forth in Section 10.b.(6).(A). Once those amounts were used, new water rights would be junior to the Salmon Wild and Scenic water right and would be subject to curtailment.³ This would preserve the opportunity for some new water development in the basin, but would also effectively limit the amount of new development that could affect General Provision High Flow water use.

The goal of preserving General Provision High Flow use is best addressed in the State Water Plan. The State Water Plan is a policy document that is formulated and adopted by the IWRB. All state agencies must “exercise their duties in a manner consistent with the comprehensive state water plan. These duties include, but are not limited to the issuance of permits, [and] licenses.” I.C. § 42-1734B(4). Thus, when reviewing new applications for water right permits, IDWR would have to comply with the State Water Plan.

The IWRB may initiate changes to the State Water Plan on its own initiative. I.C. § 42-1734B(7). Using the State Water Plan process outlined in I.C. § 42-1734B, the Basin 74 Water Users would work with the IWRB to develop either changes to the Part A portion of the plan, or a new Lemhi River Part B component. The proposed changes would be presented to the local

³ Water rights enjoying subordination under Section 10.b.(A).(1)– (5) and Section 10.b.(C) Wild and Scenic Agreement would be excepted from this preclusion.

communities at public hearings and a public comment period is also provided. I.C. § 42-1734A(1). After adoption by the IWRB, changes to Part A would be presented to the Legislature for review and would become effective automatically unless amended or rejected by law within 60 days. Idaho Const. Art. XV § 7. A new Part B component would also be subject to review or amendment by the Legislature but would not become effective after 60 days. Idaho Const. Art. XV § 7, I.C. § 42-1734B(6).

Changes to Part A of the State Water Plan would likely be succinct. They would contain some historical or contextual background but would not provide an opportunity to discuss other issues. Changes to Part A could be drafted relatively quickly and have the advantage that they would become effective automatically after 60 days if the Legislature does not act on them. Developing a Part B plan is more involved and would include discussion of Basin 74 as a whole. Part B plans contain, among other things, descriptions of existing and planned uses, discussions of goals and objectives, protected and natural river designations, and descriptions of the water resource in genera. *See* I.C. § 42-1734A(2)–(7). Development of a Part B plan would require considerable time and effort on the part of IWRB staff and would take more time to develop and draft. In addition, Part B components do not become effective after 60 days but must be affirmatively acted on by the Legislature.

The Basin 74 Water Users could choose either the Part A or Part B addition to the State Water Plan. In considering Part A or Part B addition to the State Water Plan, the Basin 74 Water Users should consider how quickly they would like to see these changes implemented, how important they view the 60 day Legislative automatic approval timeframe, and whether they see benefits to having a broader or more narrow discussion of water use issues in Basin 74. Alternatively, they could consider making a change to Part A and then later adding a Part B component if they found it beneficial.

2. Allocation of the Section 10.b.(6).(A) Subordination Set Aside

If the amount of new development in Basin 74 is limited as discussed above, qualifying for the Section 10.b.(6).(A) subordination set aside will be required before a new water right may be issued. Therefore, the Basin 74 Water Users should develop criteria to further define and interpret the language of Section 10.b.(6).(A) to achieve local objectives for new development in the basin. Unlike the General Provision High flow issue, use of the Section 10.b.(6).(A) subordination set aside affects the entire Salmon River basin. These criteria should be developed with input from all affected water users.

The goal of Section 10.b.(6).(A) was to promote economic development in the Salmon Basin by providing a reliable water supply for *new* water uses. It was not contemplated that the subordination set aside of Section 10.b.(6).(A) would be used on lands already covered by existing water rights. The concept of conservation of water resources is firmly established in

Idaho water law. Irrigation water rights are normally limited to a diversion rate of 0.02 cfs of water per acre. Idaho Code Section 42-202(6) states: “no one shall be authorized to divert for irrigation purpose more than one (1) cubic foot of water per second of the normal flow for each fifty (50) acres of land to be so irrigated . . . unless it can be shown to the satisfaction of the department of water resources that a greater amount is necessary.” In addition, Section 10.b.(6).(A), makes clear that, to enjoy subordination, an irrigation right must have “a maximum diversion rate of 0.02 cfs/acre.”

The concept of using no more than 0.02 cfs of water per acre would provide a clear and simple criteria for determining who could enjoy subordination under Section 10.b.(6).(A). The Salmon Basin water users could consider imposing criteria such as the following:

- Any water right application with an irrigation purpose of use seeking a diversion rate of more than 0.02 cfs of water per acre cannot enjoy subordination under Section 10.b.(6).(A) of the Wild and Scenic Partial Decree.
- Any water right application listing a place of use that is already covered by water right(s) with a (combined) diversion rate of at least 0.02 cfs of water per acre is precluded from enjoying subordination under Section 10.b.(6).(A) of the Wild and Scenic Partial Decree.
- Any water right application with an irrigation purpose of use that is determined by IDWR to enjoy subordination under Section 10.b.(6).(A) of the Wild and Scenic Partial Decree under these criteria must be deducted from the 100 cfs portion of the subordination set aside.
- IDWR is not precluded from amending, dividing, or adjusting a new water right application to allow a portion of the new water right application to enjoy subordination under Section 10.b.(6).(A) of the Wild and Scenic Partial Decree, so long as the conservation of water resource criteria listed above are met and the right is conditioned to clearly indicate administration of the portions enjoying and not enjoying subordination.

These criteria would ensure that water users who are seeking to invest in new irrigation projects in the basin on lands that have not been irrigated before will enjoy subordination. It would also allow water users whose existing water rights do not provide a diversion rate of 0.02 cfs of water per acre to boost productivity by bringing the diversion rate on those acres up to 0.02 cfs of water per acre. Given the limited amount of subordination set aside water available it makes sense to husband the water by requiring conservation.

These criteria also help achieve the Basin 74 Water Users’ goal of preserving General Provision high flow use by preventing new water rights, whose purpose is to formalize their

historic general provision high flow use, from enjoying subordination under Section 10.b.(6).(A). Because high flow use is tied to existing water rights, a person seeking to formalize their high flow use by getting a water right will necessarily have existing water rights on the place of use. The new application would be additive to those existing water rights and, in most cases, would bring the total diversion rate for the place of use to more than 0.02 cfs of water per acre.

The 50 cfs portion of the subordination set aside is for any non-irrigation uses not “described in paragraphs (3) through (5) above.”⁴ Such uses could include future industrial, commercial, and other uses. Although not discussed at our meeting, future uses enjoying subordination under the 50 cfs portion of Section 10.b.(6).(A) could also have impacts on general provision high flow use. Therefore, the Salmon Basin water users should consider developing additional criteria to govern distribution of the 50 cfs portion of the subordination set aside. Further discussions on this issue need to occur before any recommendations can be made regarding specific criteria.

Criteria defining who can enjoy subordination under Section 10.b.(6).(A) could be memorialized either in the State Water Plan or in statute. As discussed above, the State Water Plan must be followed by IDWR when issuing new water right permits. Implementing the additional criteria in the State Water Plan would ensure that the local water users were informed and involved in the development of the changes through the public comment period. However, because this issue involves the whole Salmon Basin, the changes would need to be made in Part A of the State Water Plan rather than in a new Part B component that covered only the Lemhi River.

The criteria could also be memorialized in legislation. There is precedent for using the legislative process to memorialize water right approval criteria. For example, I.C. § 42-203C sets forth criteria that must be followed for the distribution of Swan Falls trust water. The legislative process would provide opportunity for local input, but would also be subject to legislative politics that could include other outside influences.

Conclusion

The Basin 74 Water Users have expressed an interest in preserving General Provision High Flow use and further defining what water rights will be eligible to enjoy subordination under Section 10.b.(6).(A) of the Wild and Scenic Agreement. The General Provision High Flow issue would be best addressed by an addition or change to the State Water Plan that describes the

⁴ Paragraphs 10.b.(3)–(5) provide subordination for water right claims filed in the SRBA as of the date of the Stipulation, applications and permits on filed with IDWR as of the date of the Stipulation, *de minimis* domestic uses, *de minimis* stockwater uses, and certain municipal uses. In addition, irrigation uses cannot enjoy subordination under the 50 cfs portion of the set aside because the 150 cfs is a combined diversion rate and irrigation is dealt with in the parenthetical setting forth the 100 cfs portion.

local importance of high flow water use and further defines the issuance of new water right permits in Basin 74. The Section 10.b.(6).(A) subordination set aside issue could be addressed by the development of eligibility criteria that could be described either within the State Water Plan or in statute.

This paper has been prepared at the request of the Basin 74 Water Users. Therefore, this document does not necessarily reflect the views of any state agency or official.

Memorandum



To: Idaho Water Resource Board

From: Cynthia Bridge Clark

Date: May 7, 2018

Re: Natural Resources Conservation Service SNOTEL Analysis and Snow Survey Improvements Update

REQUIRED ACTION: No action is required at this time.

Background

The Natural Resources Conservation Service (NRCS) has the authority to establish hydrometeorological stations, including Snow Telemetry (SNOTEL) sites, to collect and provide data and necessary interpretive analyses to other parties. On September 16, 2016, the Idaho Water Resource Board (IWRB) passed a resolution authorizing expenditure of up to \$200,000 from the IWRB Secondary Aquifer Planning, Management, and Implementation Fund for the development of new SNOTEL sites to support improved water resource monitoring and water supply forecasting. Data from existing and new SNOTEL sites is expected to provide a better understanding of snow melt and streamflow relationships and support improved water resource monitoring and predictive streamflow tools for Idaho's water users and managers.

The IWRB subsequently entered into a 5-year agreement with the NRCS to use the dedicated funds for the following:

- Analyses to determine locations for potential SNOTEL sites for 20 major watersheds in Idaho with an emphasis on data gaps and mid-elevation sites. The effort will include justification and prioritization of identified sites.
- Progress reports and coordination with the IWRB and other stakeholders to rank and select new sites.
- Necessary field investigations and acquisition of permits required to establish the new sites.
- Acquisition of instrumentation and installation of at least three new sites.

Status

The NRCS has completed an analysis of the major basins/watersheds to identify data gaps in the SNOTEL network and has begun development of ranking criteria and identification of metrics to select locations for additional SNOTEL sites.

Ron Abramovich, Water Supply Specialist with the NRCS, will lead a presentation of the results of the basin analysis and introduce site selection criteria for consideration by the IWRB.

Attachment(s)

A draft powerpoint presentation from the NRCS is provided for reference.

NRCS Snow Survey Network Analysis Project

Presented by:

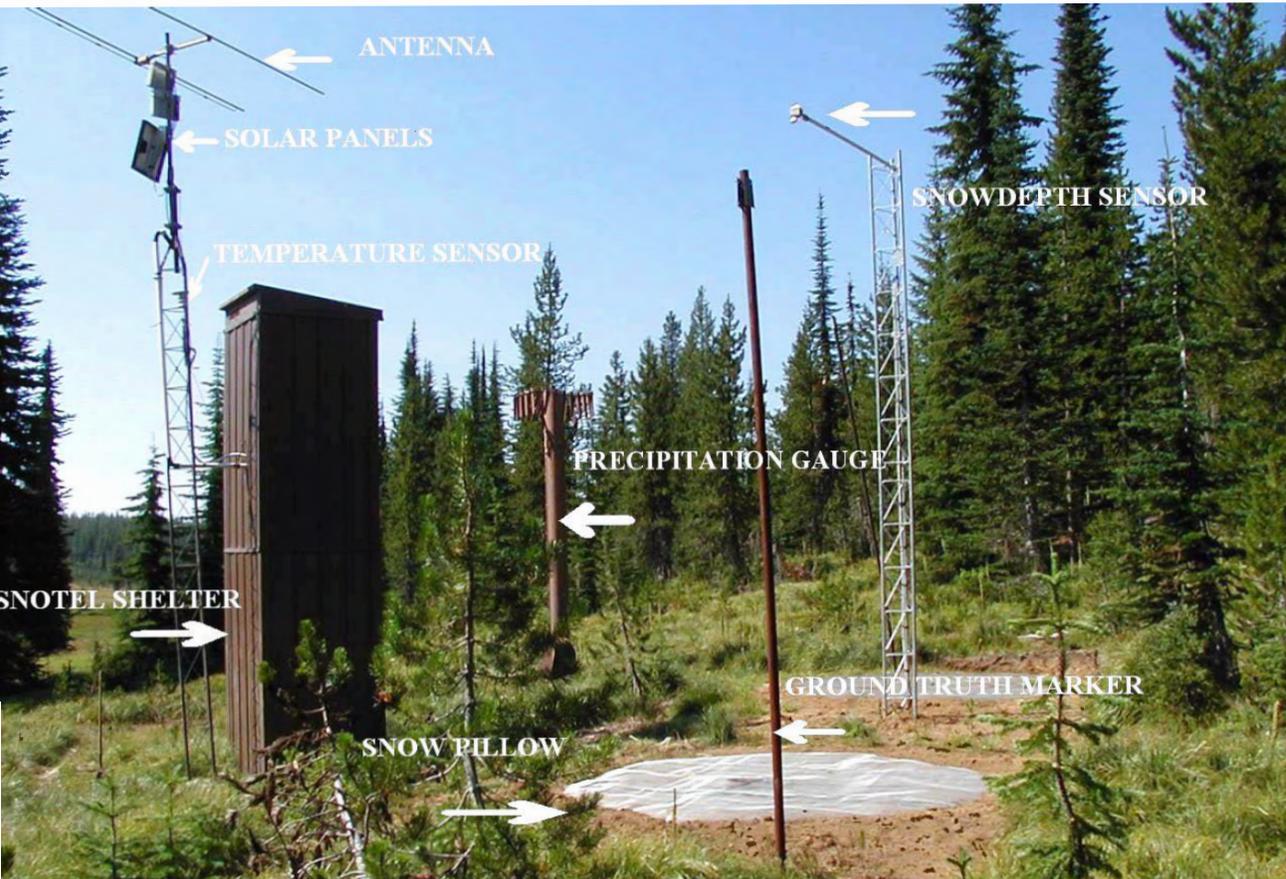
Ron Abramovich – NRCS, Idaho Snow Survey

Danny Tappa – NRCS, Idaho Snow Survey

Kara Ferguson – Consultant through IASCD

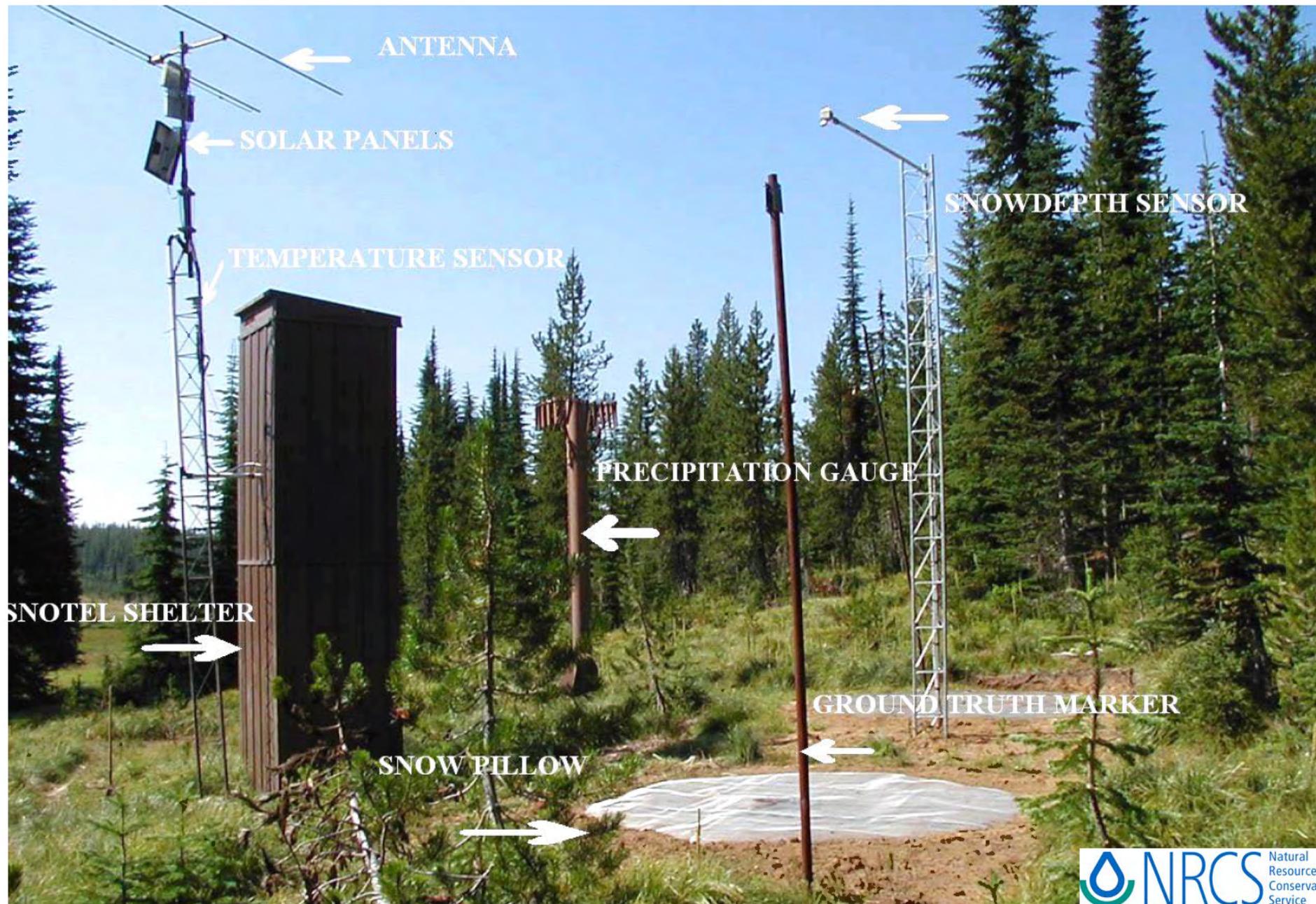
History and Summary of NRCS & IWRB Project

Typical SNOTEL SITE & Snow Course

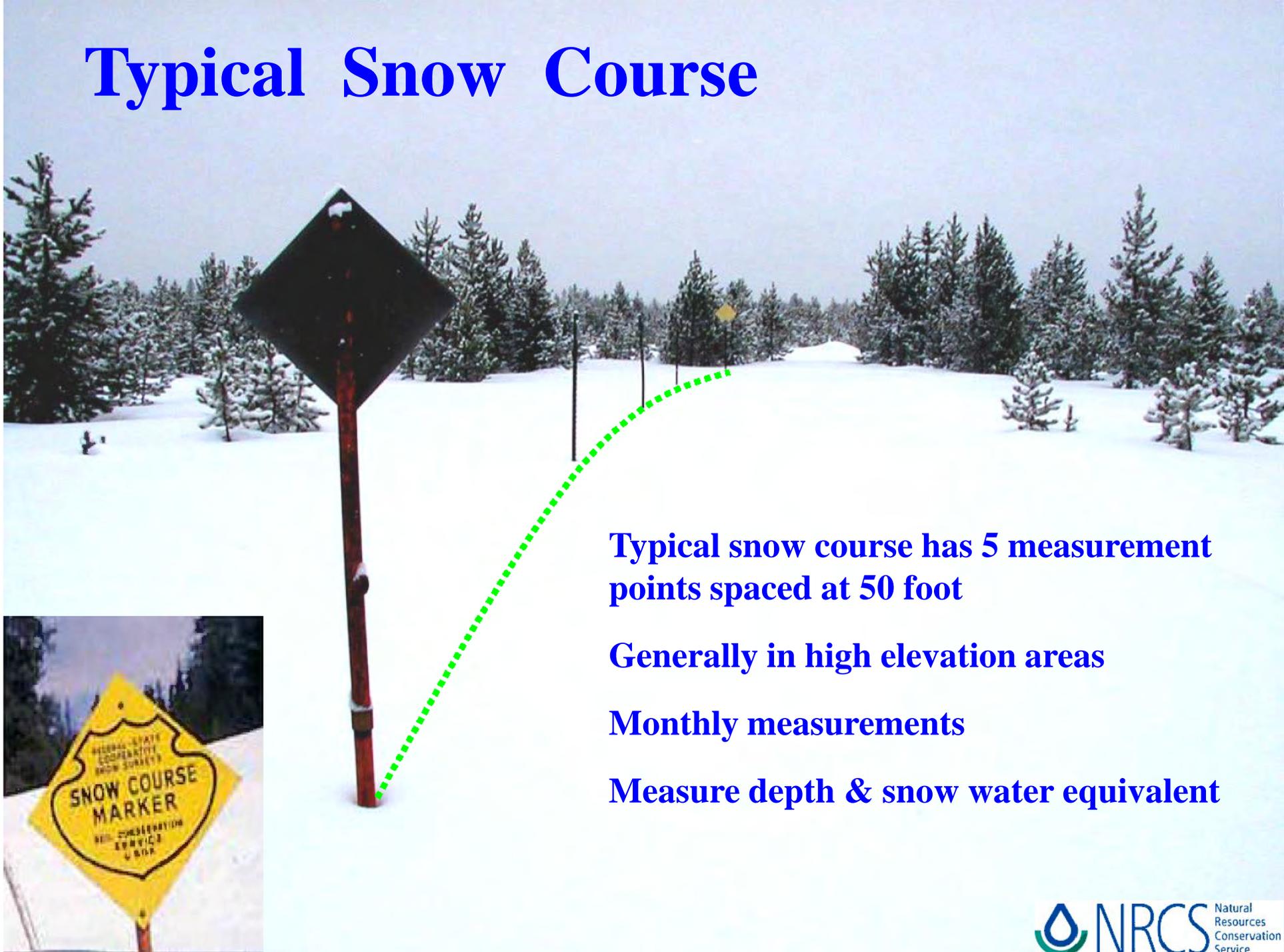


Typical SNOTEL Site: Crater Meadows, Clearwater Basin

New Slide



Typical Snow Course



Typical snow course has 5 measurement points spaced at 50 foot

Generally in high elevation areas

Monthly measurements

Measure depth & snow water equivalent



**STATEMENT OF WORK FOR THE
PROJECT AGREEMENT BETWEEN THE
U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE (NRCS)
AND THE SPONSOR:
IDAHO WATER RESOURCES BOARD (BOARD)**

I. AUTHORITIES: 26 Stat. 653; Sec. 8 Reorganization Plan No. IV of 1940, 54 Stat. 1234 (5 U.S.C. App.II); 5 FR 2421, 3 CFR 1938-1943 Comp. P. 1288 and the Soil Conservation and Domestic allotment Act of 1936, as amended, P.L. 74-46; and 7 CFR 612.2 part C which states **“On request and to the extent NRCS resources and any required cooperator contributions are available, establishes hydrometeorological stations to collect and provide data and necessary interpretive analyses to the requesting party. By written agreement NRCS may accept cooperators' funds, materials, equipment, and services for this purpose.”**

II. PURPOSE

To provide funding for the establishment of additional Snow Telemetry (SNOTEL) sites for the purposes of providing and improving water supply forecasts.

III. OBJECTIVES

The goal of this Cooperative Agreement is to provide better water resource monitoring and predictive streamflow tools for Idaho's water users and managers. NRCS has limited staff and capital to provide for location analysis, instrumentation, and installation of additional SNOTEL sites. Data provided by new sites will be instrumental in providing a better understanding of snow melt and streamflow relationships.

7 Code of Federal Regulation

CFR Part 612 - SNOW SURVEYS AND WATER SUPPLY FORECASTS

- [eCFR](#)
 - [§ 612.1 Purpose and scope.](#)
 - [§ 612.3 Data collected and forecasts.](#)
 - [§ 612.5 Dissemination of water supply forecasts and basic data.](#)
 - [§ 612.6 Application for water supply forecast service.](#)
- [Authorities \(U.S. Code\)](#)
 - [§ 612.2 Snow survey and water supply forecast activities.](#)
 - [§ 612.4 Eligible individuals or groups.](#)
 - [§ 612.7 Forecast user responsibility.](#)

§ 612.1 Purpose and scope.

This part sets forth Natural Resources Conservation Service (NRCS) policy and procedure for the administration of a cooperative snow survey and water supply forecast program. **The program provides agricultural water users and other water management groups in the western states area with water supply forecasts to enable them to plan for efficient water management.**

The program also provides the public and the scientific community with a data base that can be used to accurately determine the extent of the snow resource.

The western states area comprises Alaska, Arizona, California (east side of the Sierra Nevada mountain range only), Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

§ 612.2 Snow survey and water supply forecast activities.

To carry out the cooperative snow survey and water supply forecast program, NRCS:

- (a) Establishes, maintains, and operates manual and automated snow course and related hydro meteorological networks.** Planning for such networks is carried out in accordance with OMB Circular A-62.

- (b) Determines and provides information on the expected water supply,** including seasonal streamflow data. If pertinent and appropriate to the needs of cooperators and not otherwise available to them, may provide necessary interpretative analyses and forecasts required for operation of water-control structures and/or agricultural operations.

- (c) On request and to the extent NRCS resources and any required cooperator contributions are available, establishes hydrometeorological stations to collect and provide data and necessary interpretive analyses to the requesting party. By written agreement NRCS may accept cooperators' funds, materials, equipment, and services for this purpose.**

- (d) Develops and encourages use of new techniques and improving data collection and processing.**

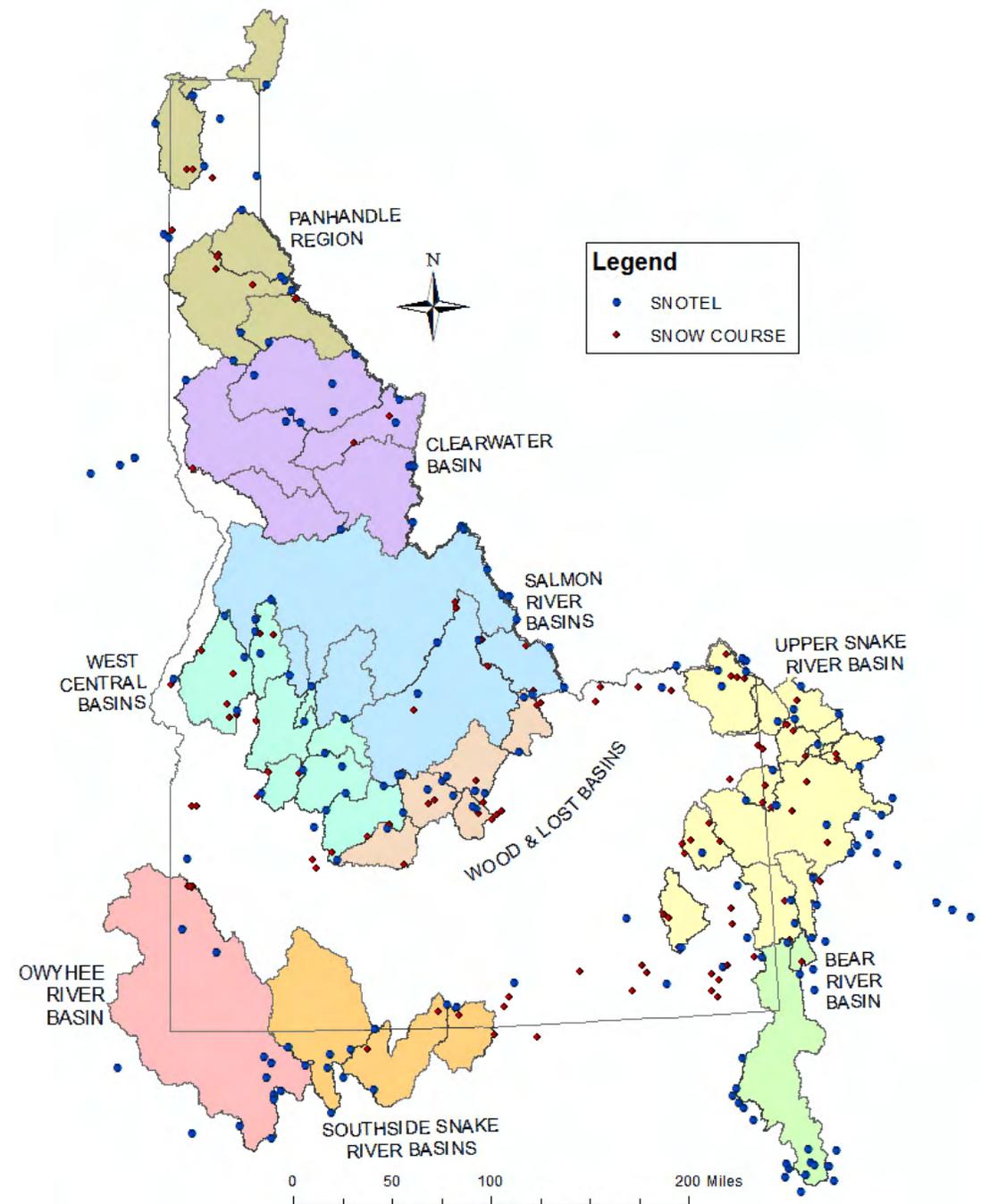
- (e) Cooperates with other federal, state, and local agencies, organizations, and Canadian provinces and agencies.**

Work Flow - Phases

- 1. Conduct basin analysis**
- 2. Determine basins with data gaps in network**
 - Initial analysis - greatest precipitation distribution by elevation zone
 - Other spatial gaps
- 3. Identify Snow Courses for potential conversion**
- 4. Determine and implement ranking criteria and metrics**
- 5. Provide list of ranked basins with detailed justification statements**

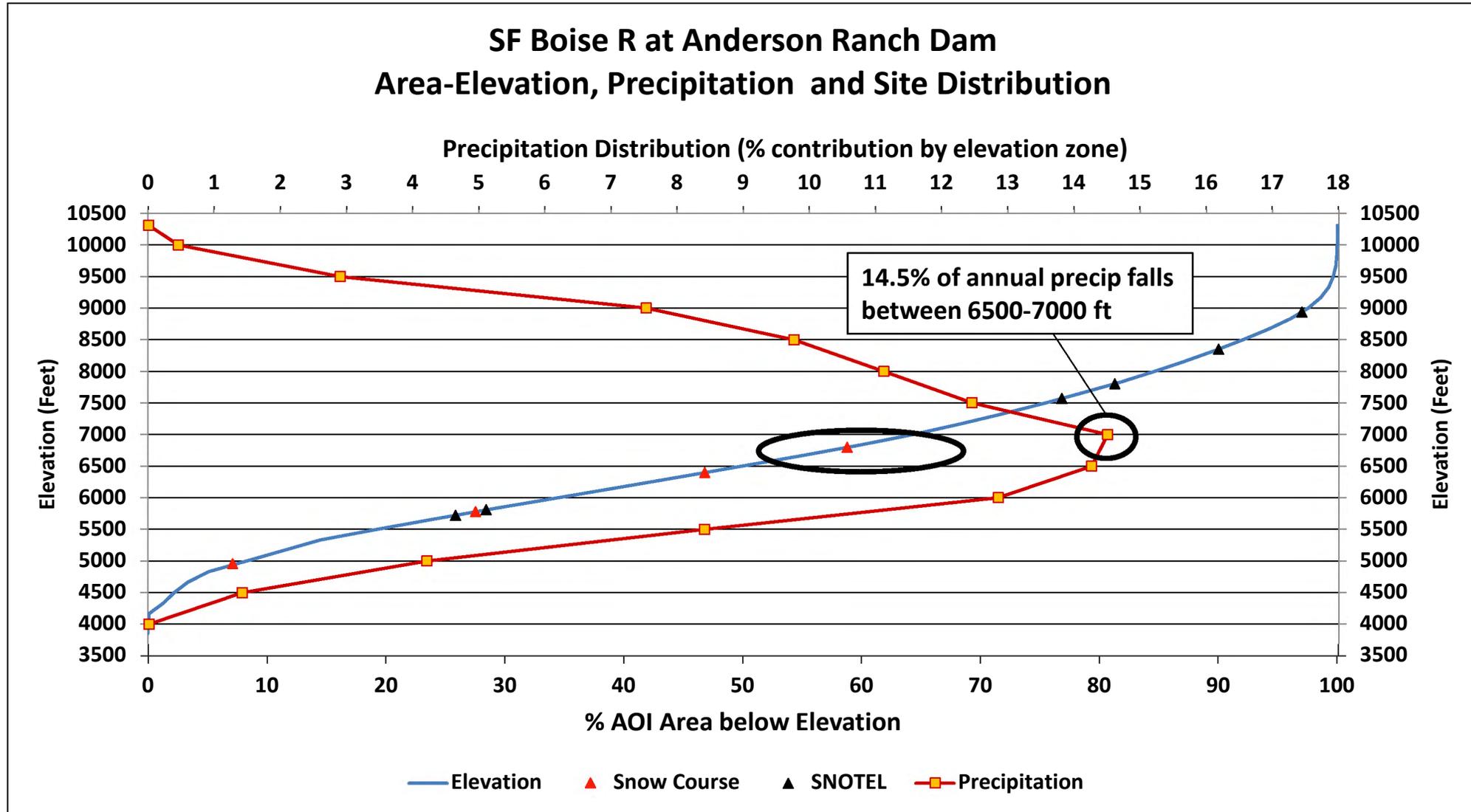
1. Basin Analysis

- Delineate basins based on 48 forecast points
- Area-elevation curve
- Precipitation distribution
- Basin summary
 - Compiled data



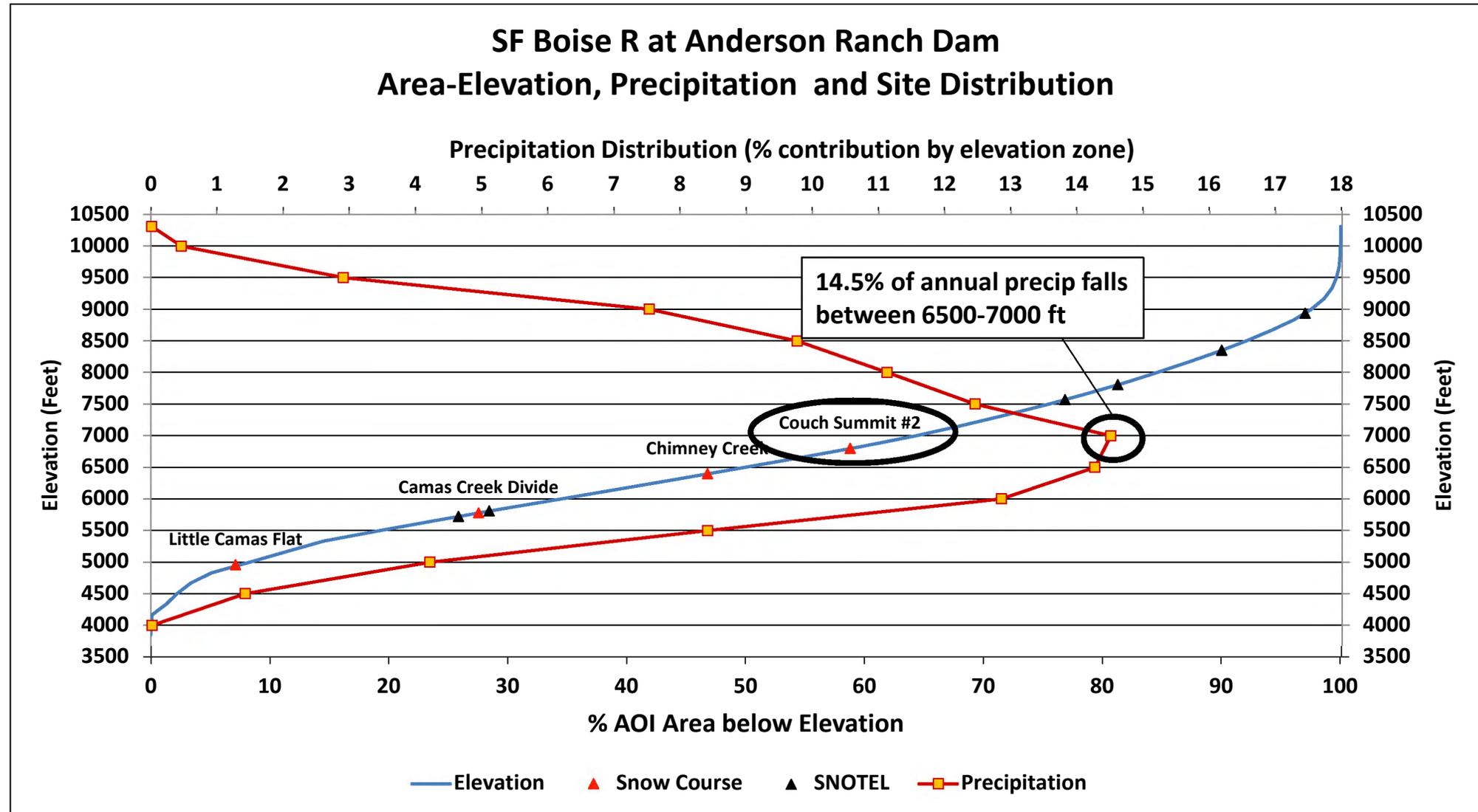
2. SNOTEL Network Data Gaps

Determined by lack of SNOTEL site within greatest precipitation contribution zone (500 ft)

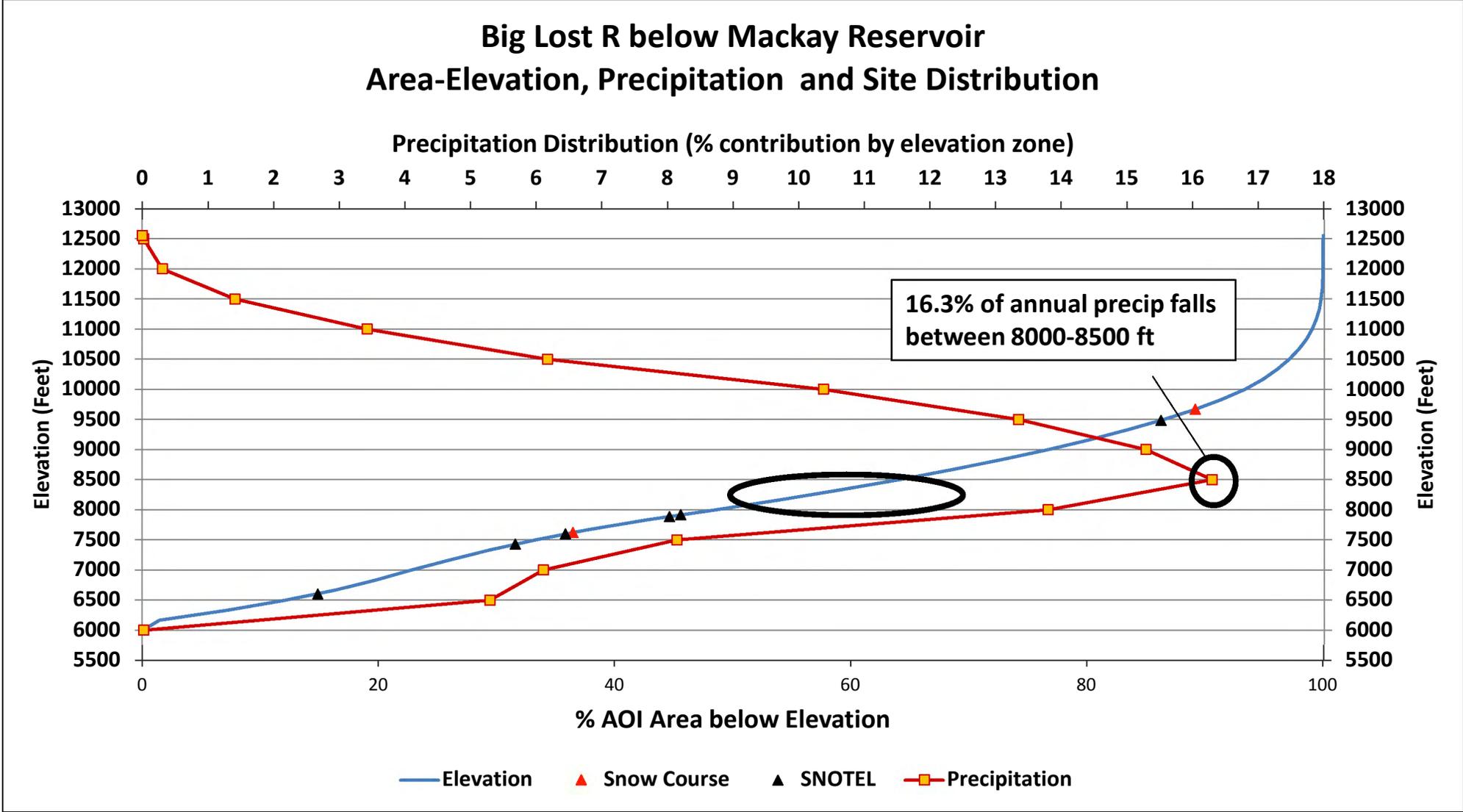


Basins WITH Snow Course(s) Located in Critical Precipitation Zone

Snow Courses for Potential Conversion



Basins WITHOUT Snow Course Located in Critical Precip Zone



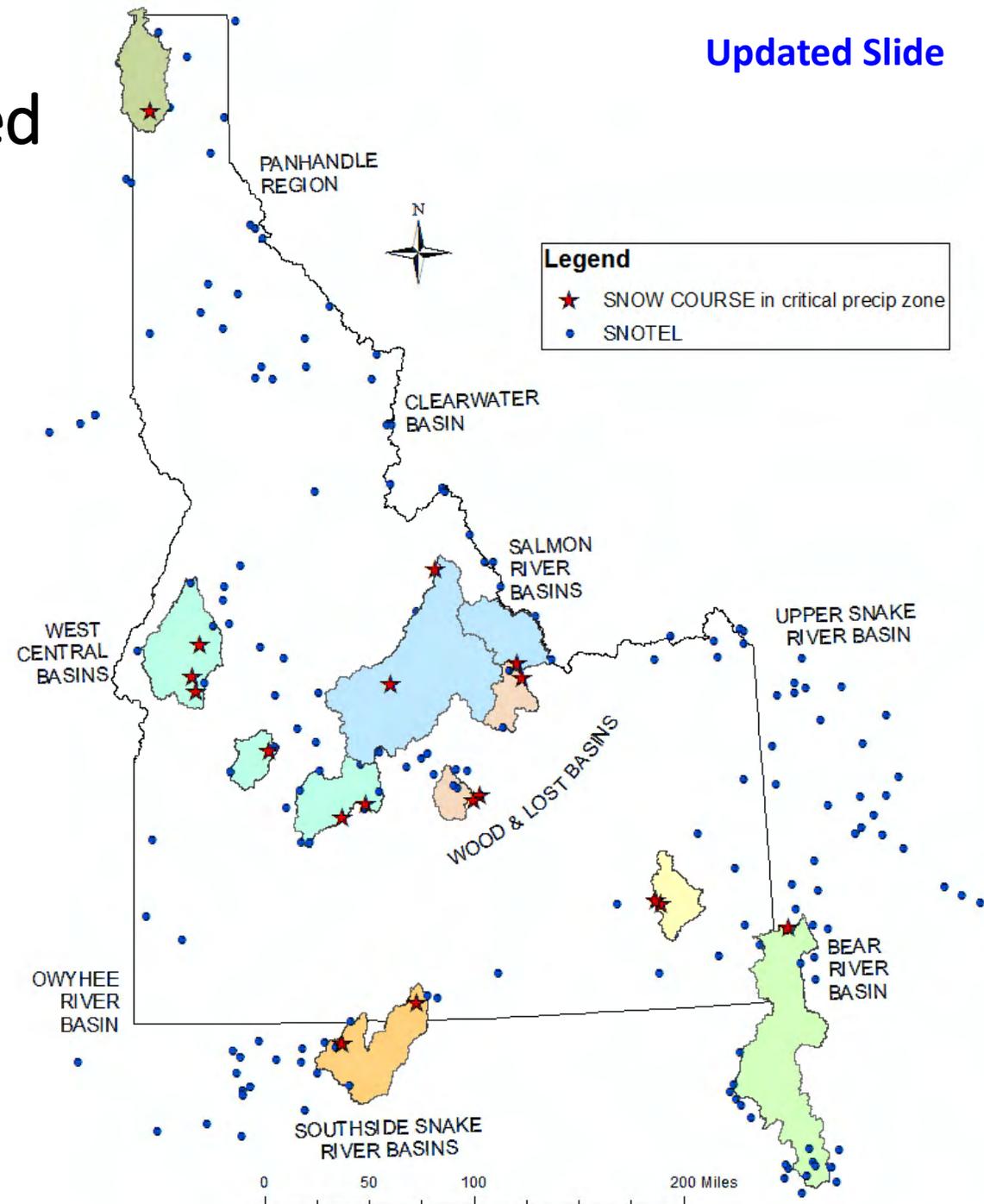
3. Basins WITH Snow Course(s) Located in Critical Precipitation Zone

Forecast Point

- Bear R below Stewart Dam
- Lemhi R near Lemhi
- Little Lost R near Howe
- Little Wood R near Carey
- Mores Creek near Arrowrock Dam
- Portneuf R at Topaz
- **Priest R near Priest River**
- Salmon Falls Creek near San Jacinto
- Salmon R at Salmon
- SF Boise at Anderson Ranch Dam
- **Weiser R near Weiser**

11 basins

Basins in red have critical precip zones below 3500 ft

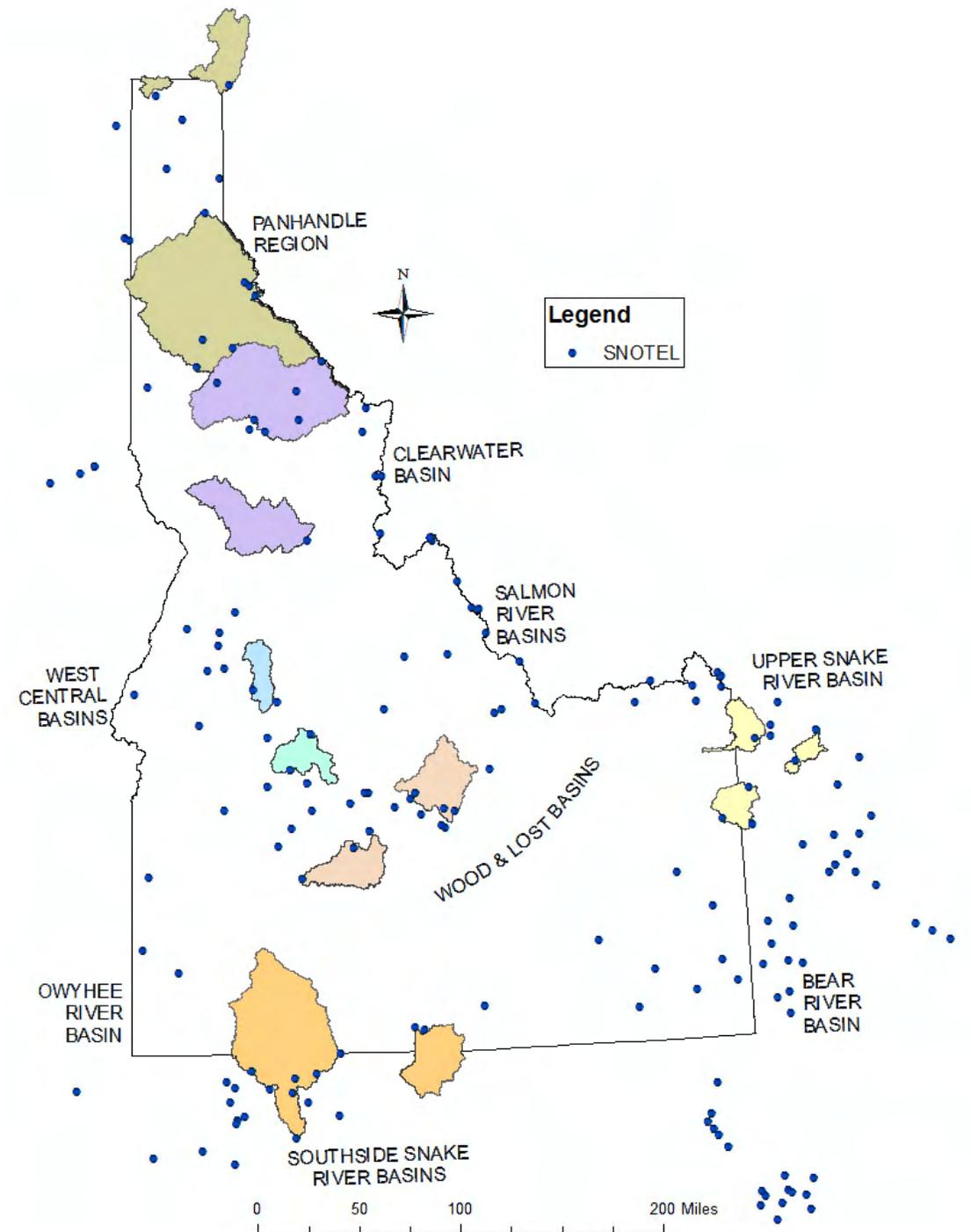


3. Basins WITHOUT Snow Course Located in Critical Precipitation Zone

Forecast Point

- Big Lost R below Mackay Res
- Boundary Creek near Porthill
- Bruneau R near Hot Springs
- Camas Ck near Blaine
- Dworshak Res Inflow
- Falls R near Ashton
- Moyie at Eastport
- NF Coeur d'Alene at Enaville
- Oakley Res Inflow
- Pacific Ck at Moran
- SF Clearwater at Stites (not currently forecasted)
- SF Payette at Lowman
- SF Salmon River near Krassel RS
- Spokane R near Post Falls
- Teton R near Driggs

15 basins



4. Criteria and Metrics

Criterion	Ranking Metric
Agricultural water use	Irrigated acres
Current basin representation	SNOTEL site density (sites per unit area)
Forecast performance	<ol style="list-style-type: none">1. Forecast skill score2. Proportion of April-July precipitation to annual
Overall network improvement	<ol style="list-style-type: none">1. Correlation analysis<ul style="list-style-type: none">• Snow course measurements to March-July and April-July observed flows• Snow course to SNOTEL2. Snow course located in more than one basin's "critical precip zone" (metric scoring to be determined)

Blue = specific to basin

Green = specific to snow course

Agricultural Water Use – Crop / Irrigated acres

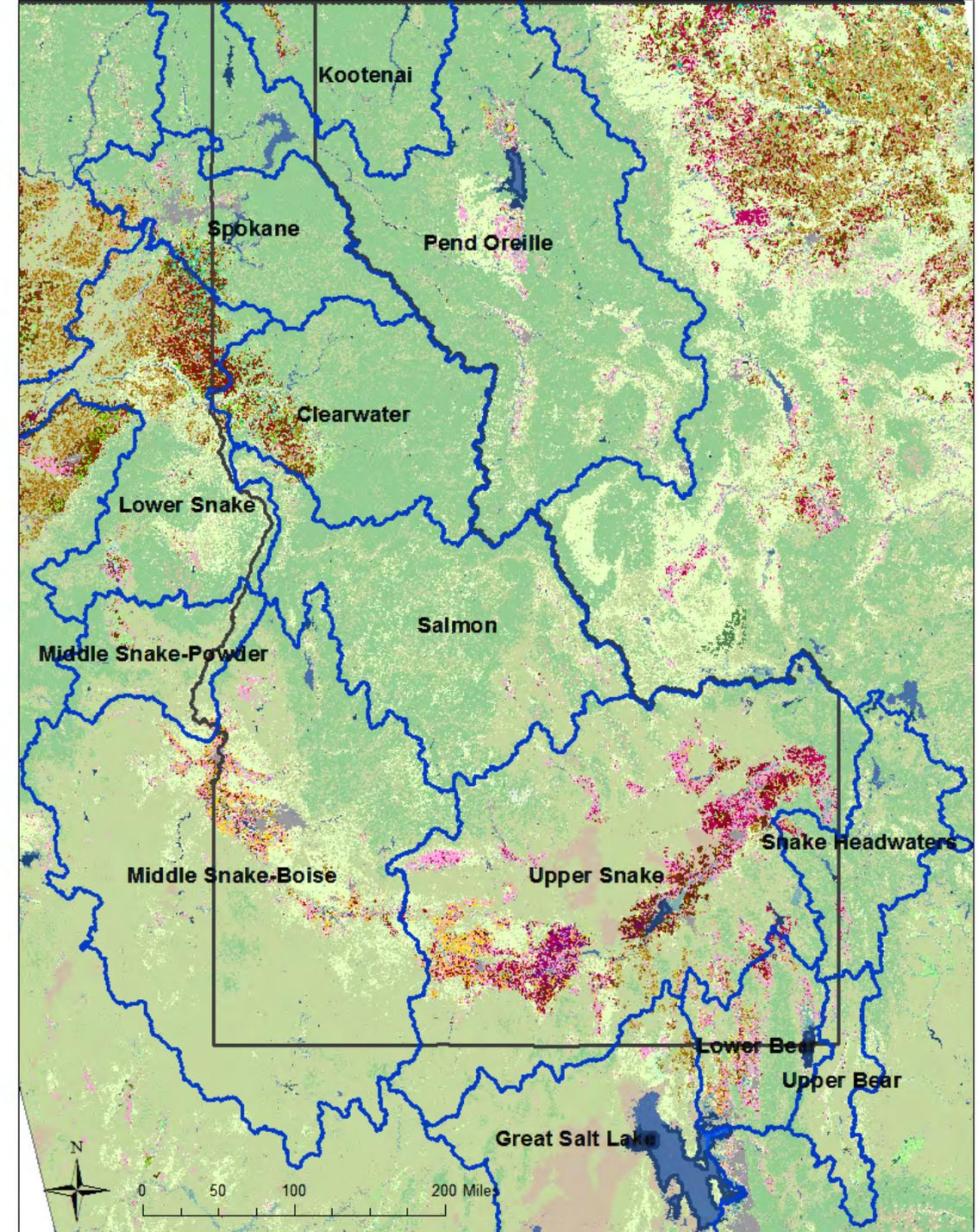
WORK IN PROGRESS

Preliminary analysis based on number of crop acres in HUC-6 boundary

- 2016 data from USDA National Agricultural Statistics Service (NASS) CropScape

New approach

Irrigated Acres - estimates obtained directly from Irrigation Managers



Idaho Irrigated Acres

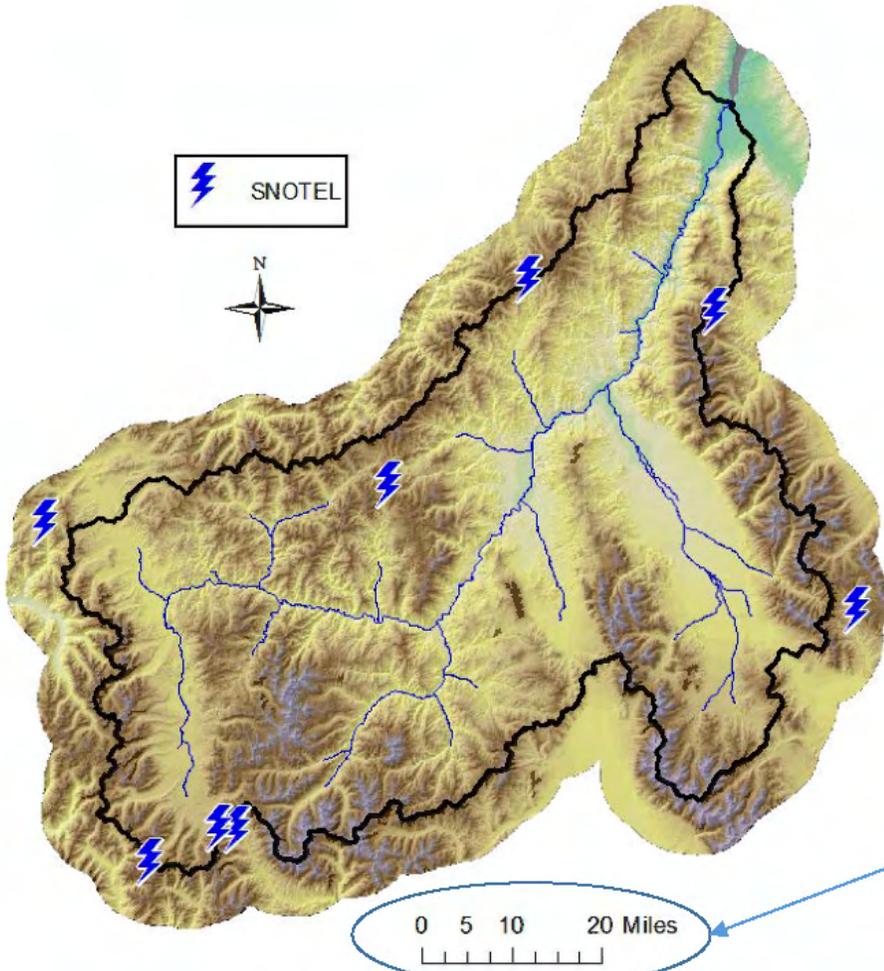
[New Slide](#)

Basin	Forecast point	Irrigated Acres
Henrys Fork	Falls R nr Ashton	56,600
	Teton R nr St Anthony	57,100
	Henrys Fk nr Rexburg	57,400
Snake River	Snake R nr Heise	158,200
	Willow Ck nr Ririe	5,000
	Snake R nr Heise & Henrys Fork	865,000
	Total acres	1,199,300
Similar to 1.2 to 1.3 million irrigated acres from a 2002 Water District #1 summary		
Little Lost	Little Lost R nr Howe	25,000
Big Lost	Big Lost R bl Mackay Reservoir	not obtained yet
Little Wood	Little Wood R nr Carey	12,000
	Fish Creek - no forecast point	8,000
Camas Creek	Camas Creek near Fairfield	not obtained yet
Big Wood	Big Wood R at Hailey	4,000
	Big Wood R ab Magic Reservoir	34,000
	Big Wood R bl Magic Dam	85,000
	Total acres	123,000

Basin	Forecast point	Irrigated Acres
Oakley	Oakley Reservoir Inflow	40,505
Salmon Fall	Salmon Falls Ck nr San Jacinto	7,500
Bruneau	Bruneau R nr Hot Spring	not obtained yet
Owyhee	Owyhee R bl Owyhee Dam	not obtained yet
	Idaho & Oregon	
Boise	Boise R nr Boise	325,000
Payette	Payette R nr Horseshoe Bend	155,000
Weiser	Weiser R nr Weiser	not obtained yet
Bear	Bear R bl Stewart Dam	150,000
	Below Stewart dam in Idaho & Utah	
Salmon	Salmon R at Salmon	not obtained yet
	Lemhi R nr Lemhi	not obtained yet
Clearwater	Unknown number of irrigated or dryland farm acres	
Panhandle Region	Spokane R, Priest, Pend Oreille, Kootenai	
	Unknown number of irrigated or dryland farm acres	

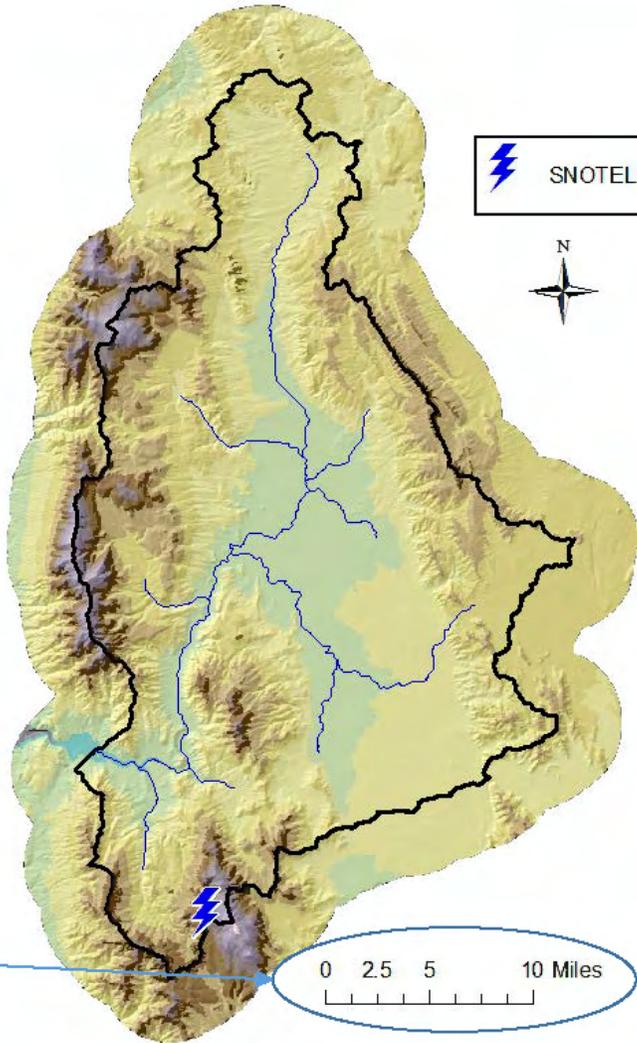
Network Basin Representation – SNOTEL Site Density Examples

- Number of sites per unit area
- Lower density values rank higher



$$\text{density} = \frac{8 \text{ sites}}{6006 \text{ mi}^2} = 0.133 \text{ sites per } 100 \text{ sq miles}$$

note scale differences

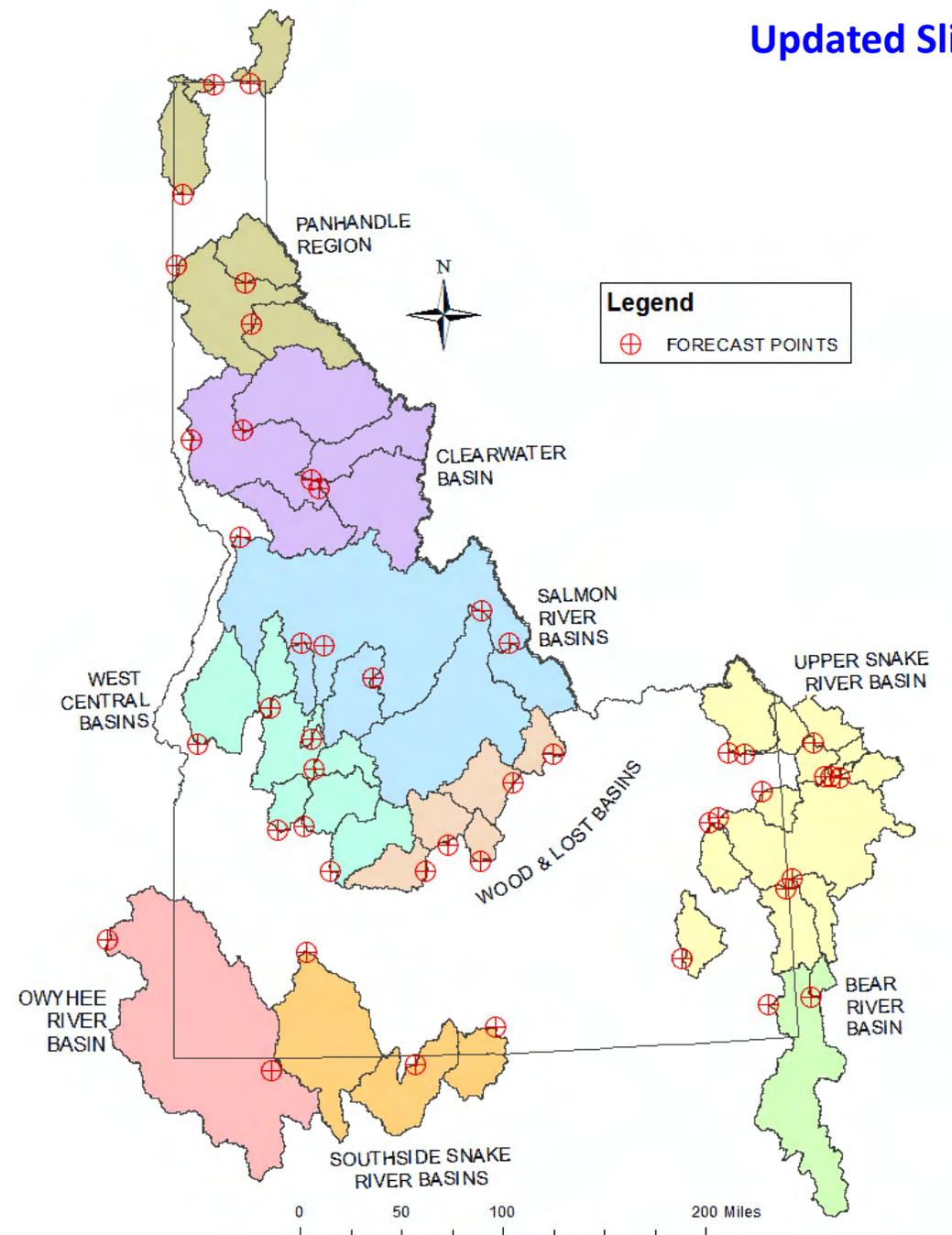


$$\text{density} = \frac{1 \text{ site}}{991 \text{ mi}^2} = 0.101 \text{ sites per } 100 \text{ sq miles}$$

Forecast Performance

(analysis by Tina Andry - NRCS)

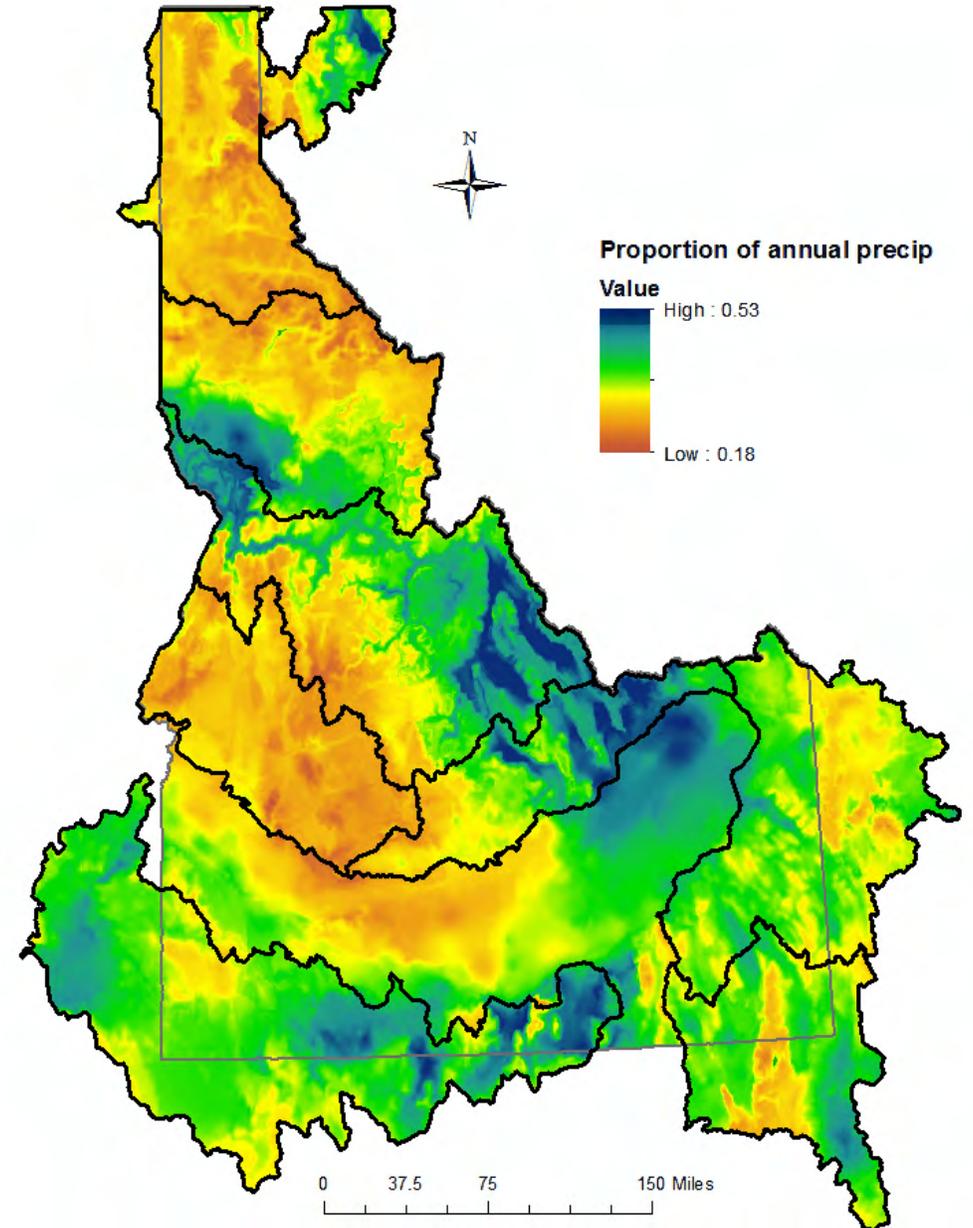
- How well are the forecasts performing?
- Metric – Ranked Probability Score
 - Perfect score = 0
- Greater scores rank higher



Forecast Performance

- Basins with greater April through July precipitation may be more difficult to forecast in the spring
- Based on average annual PRISM data
 - $\frac{\sum(\text{April, May, June, July precip})}{\text{Annual precip}}$
- Greater April – July proportions rank lower

Proportion of annual precipitation that falls between April and July



Preliminary Results – Raw Scores

Basins WITH Snow Course in “Critical Precip Zone”

Forecast Point	Irrigated Acres	RPS Forecast Score (perfect score = 0)	SNOTEL site density (sites per 100 sq mi)	Proportion of Apr-July precip to annual	Snow Course located in "critical zone"	Mar 1 SC Correlation to SNOTEL site (R^2)	Apr 1 SC Correlation to SNOTEL site (R^2)	Mar 1 SC Correlation to Mar-July streamflow volume (R)	Apr 1 SC Correlation to Apr-July streamflow volume (R)	SC located in other basin's critical zone?
Bear R bl Stewart Dam	150,000	0.19	0.45	0.34	CCC Camp	0.87	0.88	0.64	0.62	
Lemhi R nr Lemhi	not obtained yet	0.16	0.36	0.42	Above Gilmore	0.78	0.85	0.78	0.85	yes
Little Lost R nr Howe	25,000	0.17	0.37	0.38	<i>Above Gilmore</i>	0.78	0.85	0.78	0.85	yes
Little Lost R nr Howe	25,000	0.17	0.37	0.38	<i>Spring Mtn Canyon</i>	0.72	0.74	0.26	0.61	
Little Wood R nr Carey	12,000	0.20	0.51	0.31	<i>*Iron Mine Creek</i>	0.88	0.91	0.55	0.70	
Little Wood R nr Carey	12,000	0.20	0.51	0.31	<i>Telfer Ranch</i>	0.82	0.77	0.57	0.64	
Mores Ck nr Arrowrock Dam	325,000	0.20	0.28	0.24	Bad Bear	0.79	0.76	0.62	0.65	
Portneuf R at Topaz	not obtained yet	0.18	0.10	0.34	<i>*Lower Pebble</i>	0.70	0.75	0.66	0.54	
Portneuf R at Topaz	not obtained yet	0.18	0.10	0.34	<i>*Pebble Creek</i>	0.73	0.77	0.72	0.72	
Salmon Falls Ck nr San Jacinto	7,500	0.22	0.22	0.36	Langford Flat Creek	0.59	0.53	0.36	0.32	
Salmon Falls Ck nr San Jacinto	7,500	0.22	0.22	0.36	O Neil Creek	0.74	0.60	0.40	0.20	yes
Salmon R at Salmon	not obtained yet	0.18	0.13	0.35	Bruno Creek	0.91	0.87	0.71	0.77	
Salmon R at Salmon	not obtained yet	0.18	0.13	0.35	<i>*Perreau Meadows</i>	0.76	0.80	0.70	0.79	
SF Boise at Anderson Ranch Dam	325,000	0.18	0.39	0.24	Chimney Creek	0.77	0.79	0.71	0.72	
SF Boise at Anderson Ranch Dam	325,000	0.18	0.39	0.24	<i>*Couch Summit #2</i>	0.84	0.78	0.72	0.76	

in buffered area

*very close in elevation to critical zone (<100 ft)

Site below 3500 ft were not included due to intermittent seasonal snow cover

Preliminary Results – **Transformed Scores***

Basins WITH Snow Course in “Critical Precip Zone”

Updated Slide

Forecast Point	Irrigated Acres	RPS Forecast Score	SNOTEL site density	Proportion of Apr-July precip to annual	Snow Course located in "critical zone"	Mar 1 SC Correlation to SNOTEL site	Apr 1 SC Correlation to SNOTEL site	Mar 1 SC Correlation to streamflow volume	Apr 1 SC Correlation to streamflow volume	SC located in other basin's critical zone?	Summed Total
Bear R bl Stewart Dam		0.48	0.15	0.48	CCC Camp	0.13	0.08	0.75	0.64		2.71
Lemhi R nr Lemhi		0.00	0.38	0.00	Above Gilmore	0.41	0.16	1.00	1.00	yes	2.94
Little Lost R nr Howe		0.19	0.35	0.25	<i>Above Gilmore</i>	0.41	0.16	1.00	0.99	yes	3.35
Little Lost R nr Howe		0.19	0.35	0.25	<i>Spring Mtn Canyon</i>	0.59	0.45	0.00	0.63		2.46
Little Wood R nr Carey		0.68	0.00	0.64	<i>Iron Mine Creek</i>	0.09	0.00	0.56	0.76		2.74
Little Wood R nr Carey		0.68	0.00	0.64	<i>Telfer Ranch</i>	0.28	0.37	0.61	0.67		3.25
Mores Ck nr Arrowrock Dam		0.73	0.56	1.00	Bad Bear	0.38	0.39	0.70	0.69		4.44
Portneuf R at Topaz		0.36	1.00	0.46	*Lower Pebble	0.66	0.42	0.79	0.52		4.21
Portneuf R at Topaz		0.36	1.00	0.46	*Pebble Creek	0.56	0.37	0.89	0.80		4.44
Salmon Falls Ck nr San Jacinto		1.00	0.72	0.36	Langford Flat Creek	1.00	1.00	0.21	0.18		4.47
Salmon Falls Ck nr San Jacinto		1.00	0.72	0.36	O Neil Creek	0.53	0.82	0.27	0.00	yes	3.70
Salmon R at Salmon		0.33	0.92	0.39	Bruno Creek	0.00	0.11	0.87	0.87		3.49
Salmon R at Salmon		0.33	0.92	0.39	*Perreau Meadows	0.47	0.29	0.85	0.91		4.16
SF Boise at Anderson Ranch Dam		0.29	0.29	1.00	Chimney Creek	0.44	0.32	0.87	0.80		4.00
SF Boise at Anderson Ranch Dam		0.29	0.29	1.00	*Couch Summit #2	0.22	0.34	0.90	0.85		3.90
<i>in buffered area</i>											
*very close in elevation											

*see supplemental info for transformed score process

Preliminary Results – Raw Scores

Basins WITHOUT Snow Course in “Critical Precip Zone”

Forecast Point	Irrigated Acres	RPS Forecast Score (perfect score = 0)	SNOTEL site density (sites per 100 sq mi)	Proportion of Apr-July precip to annual
Big Lost R bl Mackay Res	not obtained yet	0.19	0.47	0.35
Boundary Ck nr Porthill	unknown	0.18	0.00	0.28
Bruneau R nr Hot Springs	not obtained yet	0.19	0.18	0.35
Camas Ck nr Blaine	not obtained yet	0.20	0.28	0.26
Dworshak Res Inflow	unknown	0.19	0.20	0.26
Falls R nr Ashton	56,600	0.16	0.28	0.30
Moyie at Eastport	unknown	0.24	0.19	0.31
NF Coeur dAlene at Enaville	unknown	0.28	0.22	0.25
Oakley Res Inflow	40,505	0.20	0.18	0.37
Pacific Ck at Moran	158,200	0.22	0.35	0.30
SF Clearwater at Stites	unknown	not forecasted	0.04	0.37
SF Payette at Lowman	155,000	0.17	0.24	0.25
SF Salmon River nr Krassel				
RS	not obtained yet	0.20	0.30	0.25
Spokane R nr Post Falls	unknown	0.28	0.15	0.25
Teton R nr Driggs	57,100	0.23	0.47	0.31

Preliminary Results – **Transformed Scores*** Basins WITHOUT Snow Course in “Critical Precip Zone”

Forecast Point	Irrigated Acres	RPS Forecast Score	SNOTEL site density	Proportion of April-July precip to annual	Summed Total
Big Lost R bl Mackay Res		0.23	0.01	0.16	0.40
Boundary Ck nr Porthill		0.18	1.00	0.78	1.96
Bruneau R nr Hot Springs		0.25	0.62	0.15	1.03
Camas Ck nr Blaine		0.30	0.41	0.89	1.59
Dworshak Res Inflow		0.20	0.58	0.93	1.71
Falls R nr Ashton		0.00	0.42	0.60	1.02
Moyie at Eastport		0.66	0.61	0.53	1.79
NF Coeur dAlene at Enaville		0.98	0.53	0.97	2.48
Oakley Res Inflow		0.32	0.63	0.06	1.01
Pacific Ck at Moran		0.44	0.27	0.58	1.30
SF Clearwater at Stites		not forecasted	0.91	0.00	0.91
SF Payette at Lowman		0.06	0.50	1.00	1.56
SF Salmon River nr Krassel RS		0.35	0.36	0.96	1.67
Spokane R nr Post Falls		1.00	0.68	0.96	2.63
Teton R nr Driggs		0.54	0.00	0.51	1.06

*see supplemental info for transformed score process

Other criteria to consider

- **Access and land ownership**
- **Proximity of other SNOTEL sites**
- **Basin size**

Challenges

- **Scoring categorical criteria**
- **Applying weights to each criterion**
- **Resources and funding to maintain new site installations beyond contract agreement**

Work in progress

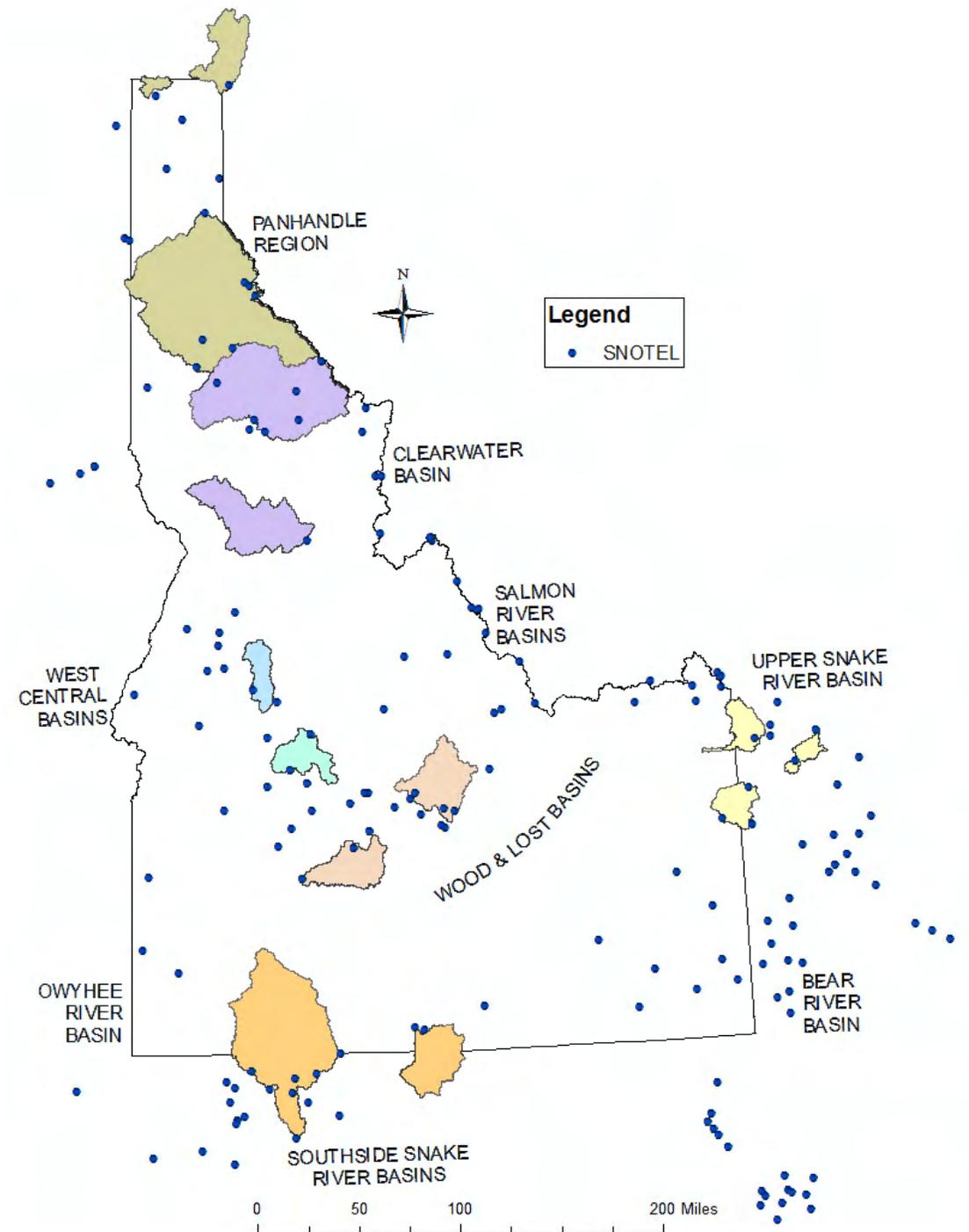
- **Evaluate individual basins to determine other possible network data gaps**
 - **>30% of basin not represented**
 - **>30% of seasonal precipitation not represented**
- **Identify other possible site locations in basins without potential snow course conversion**
 - **RAWS**
 - **Agrimet / Hydromet stations**

Recall the Basins WITHOUT Snow Course Located in Critical Zone

Forecast Point

- Big Lost R below Mackay Res
- Boundary Creek near Porthill
- Bruneau R near Hot Springs
- Camas Ck near Blaine
- Dworshak Res Inflow
- Falls R near Ashton
- Moyie at Eastport
- NF Coeur d'Alene at Enaville
- Oakley Res Inflow
- Pacific Ck at Moran
- SF Clearwater at Stites (not currently forecasted)
- SF Payette at Lowman
- SF Salmon River near Krassel RS
- Spokane R near Post Falls
- Teton R near Driggs

15 basins



Future work

- **Continued communication and meetings with IWRB**
- **Meet with local water users**
- **Provide complete list of ranked basins with detailed justification statements**

Supplemental Information

Raw Score Transformation

- Raw values normalized to specific grouping
 - WITH snow courses located in “critical precip zone”
 - WITHOUT snow courses located in “critical precip zone”

Min – Max Normalization

$$x_{changed} = \frac{(x - X_{min})}{(X_{max} - X_{min})}$$

where X is the set of observed values of x and min and max are the minimum and maximum values in X

- Reverse scoring for SNOTEL site density, proportion of April-July precip, and correlations coefficients
 - Lower values for these metrics score higher
 - Transform normalized score by subtracting from 1
 - Transformation allows for summing scores for ranking purposes

Forecast Point	Elev	USGS station ID #	Major Basin/Region
Bear R bl Stewart Dam	5950	10046500	Bear River Basin
Smiths Fk nr Border	6650	10032000	Bear River Basin
Clearwater R at Spalding	770	13342500	Clearwater River Basin
Dworshak Reservoir Inflow	1500	13340950	Clearwater River Basin
Lochsa R nr Lowell	1453	13337000	Clearwater River Basin
Selway R nr Lowell	1540	13336500	Clearwater River Basin
Boundary Ck nr Porthill	1770	12321500	Panhandle Region
Moyie R at Eastport	2620	12306500	Panhandle Region
NF Coeur dAlene R at Enaville	2100	12413000	Panhandle Region
Priest R nr Priest River	2090	12395000	Panhandle Region
Spokane R nr Post Falls	2003	12419000	Panhandle Region
St. Joe R at Calder	2172	12414500	Panhandle Region
Johnson Ck at Yellow Pine	4656	13313000	Salmon River Basin
Lemhi R nr Lemhi	4960	13305000	Salmon River Basin
MF Salmon R at MF Lodge	4380	13309220	Salmon River Basin
Salmon R at Salmon	3911	13302500	Salmon River Basin
Salmon R at White Bird	1413	13317000	Salmon River Basin
Sf Salmon R nr Krassel Ranger Station	3750	13310700	Salmon River Basin
Bruneau R nr Hot Spring	2599	13168500	Southside Snake River Basins
Oakley Reservoir Inflow	4720	13083500	Southside Snake River Basins
Owyhee R nr Rome	3344	13181000	Southside Snake River Basins
Salmon Falls Ck nr San Jacinto	5120	13105000	Southside Snake River Basins
Buffalo Fk ab Lava Ck nr Moran	6773	13011900	Upper Snake River Basin
Falls R nr Ashton	5390	13047600	Upper Snake River Basin
Greys R ab Reservoir nr Alpine	5729	13023000	Upper snake River Basin
Henrys Fk nr Ashton	5090	13046000	Upper Snake River Basin
Pacific Ck at Moran	6720	13011500	Upper Snake River Basin
Portneuf R at Topaz	4918	13073000	Upper Snake River Basin
Salt R ab Reservoir nr Etna	5676	13027500	Upper Snake River Basin
Snake R at Flagg Ranch	6802	13010065	Upper Snake River Basin
Snake R nr Heise	5015	13037500	Upper Snake River Basin
Snake R nr Moran	6760	13011000	Upper Snake River Basin
Teton R nr Driggs	5953	13052200	Upper Snake River Basin
Willow Ck nr Ririe	4950	13058000	Upper Snake River Basin
Boise R nr Twin Springs	3310	13185000	West Central Basins
Deadwood Reservoir Inflow	5181	13236500	West Central Basins
Mores Ck nr Arrowrock Dam	3120	13200000	West Central Basins
NF Payette R at Cascade	4720	13245000	West Central Basins
SF Boise R at Anderson Ranch Dam	3830	13190500	West Central Basins
SF Payette R at Lowman	3790	13235000	West Central Basins
Weiser R nr Weiser	2206	13266000	West Central Basins
Big Lost R bl Mackay Reservoir	5946	13127000	Wood and Lost Basins
Big Wood R at Hailley	5295	13139510	Wood and Lost Basins
Camas Ck nr Blaine	4870	13141500	Wood and Lost Basins
Little Lost R nr Howe	5880	13118700	Wood and Lost Basins
Little Wood R nr Carey	4991	13148500	Wood and Lost Basins

Memorandum



To: Idaho Water Resource Board

From: Cynthia Bridge Clark

Date: May 7, 2018

Re: Cooperative Cloud Seeding Program 2017/2018 Season Update

REQUIRED ACTION: No action is required at this time.

Representatives from Idaho Power Company will provide a presentation of the 2017/2018 Cloud Seeding season activities. The presentation will also include an update on program expansion and build-out, the development of the Weather Research and Forecast Model-Cloud Seeding Module (partially funded by the IWRB), and the status of the SNOWIE project (Seeded & Natural Orographic Wintertime Clouds: the Idaho Experiment).

Program Background :

- Cloud seeding (also referred to as Weather Modification) was identified as a key water management strategy in the Eastern Snake Plain Aquifer Comprehensive Aquifer Management Plan (ESPA CAMP) and in the draft Treasure Valley CAMP (TV CAMP). The science generally indicates that a professionally managed program can increase winter snowpack and thereby increase runoff by up to 10%, resulting in more surface water for all uses, including aquifer management projects.
- Idaho Power Company (IPC) has operated a cloud seeding program in the Payette River Basin since 2003. In 2008, IPC began efforts to enhance an existing water user- and county-led manual generator program in the Upper Snake River Basin. IPC's cloud seeding enhancement efforts were part of the ESPA CAMP. In 2013, water users approached IPC about the potential to expand its aircraft and remote based generator program to enhance snowpack in the Boise River and Wood River Basins.
- Discussions between IPC, the IWRB, and water users resulted in establishment of a Cooperative Cloud Seeding Program (Program) to expand IPC's cloud seeding operations in the Upper Snake River Basin and establish IPC run programs in the Boise River Basin and Wood River Basin with support from the IWRB and water users.
- On September 23, 2014, the IWRB authorized funding for a portion of the capital expenses incurred by IPC to expand its existing cloud seeding operations in the Upper Snake River Basin, and the Boise River and Wood River Basins. Water users in the Boise and Wood River Basins agreed to share in the operation and maintenance costs of the cloud seeding program, and the IWRB authorized expenditure of up to \$492,000 for capital expenses associated with the cooperative program, not to exceed 40% of actual capital costs.
- The IWRB committed funding for cloud seeding operations beginning with the 2015/2016 winter cloud seeding season. On September 18, 2015, the IWRB authorized expenditure of up to \$200,000 for expenses associated with a one-year Pilot Aircraft Program in the Upper Snake River Basin. The aircraft was successfully used during the 2015/2016 winter cloud seeding season.
- On May 20, 2016, the IWRB authorized expenditures for the Cooperative Cloud Seeding Program operations not to exceed \$600,000 in its Fiscal Year 2017 budget. This funding was used to support cloud seeding efforts during the 2016/2017 winter season including two aircraft.

- The IWRB authorized expenditures up to \$780,000 for the 2017/2018 winter season with the stated goal that both the state and water users financially participate with IPC in the Cooperative Cloud Seeding Program. Program expenses included the operation of three aircraft.
- During FY2018, the IWRB also committed to fund 50% of the project costs, up to \$1.47M, for the development of a Cloud Seeding Module to be integrated with the existing Weather Research and Forecast Model (see project description below).

Weather Research and Forecast Model – Cloud Seeding Module (WRF-CSM):

- IPC has worked with NCAR since 2011 to apply a hi-resolution Weather Research and Forecast (WRF) model to southern Idaho, and develop a cloud seeding module (WRF-CSM) that is integrated with the WRF. The module has a number of objectives that include: forecasting and guidance for operations, retrospective (historic) simulations that can be used for project planning and design (including generator and aircraft operations), and then estimate cloud seeding benefits by tracking snow accumulation with and without cloud seeding through a season. The accumulated snow can then be introduced to a WRF-Hydro model (a distributed hydrologic model) to evaluate runoff benefits from cloud seeding. The WRF-Hydro model will be capable of providing unregulated benefits from target areas, but won't (initially) have the capability to simulate reservoir operations.
- IPC invested over \$2.2 M in the development to the WRF Model and requested that IWRB consider committing to cost-share in the development of the WRF-CSM to improve the effectiveness of cloud seeding efforts. The IWRB agreed to contribute 50% of the costs. Module development is scheduled to be complete in 2020 with a total estimated cost of \$2.94M.

Ongoing Program Operations and Expansion:

- In 2015, the IWRB began supporting the cloud seeding program with funding for capital expenses only. It began authorizing funding for operation and maintenance through the 2015/2016 Pilot Aircraft Program, increasing its contribution to \$780,000 by FY2018. This increase has been a 'movement' toward an equitable division of expenses between IPC, the State and the water users, with an initial goal to have each pay roughly a third of the program's operational expenses.
- Long-term commitments, additional costs associated with program enhancements or program expansion to the projected full build-out (4 aircraft and approximately 80 generators) should be considered. These topics will be introduced to the Cloud Seeding Committee for consideration and presented to the full IWRB at a future meeting.

Attachment(s):

A copy of the draft presentation by Idaho Power Company is provided for reference.

IWRB 2018 Update: IPC Cloud Seeding and SNOWIE

May 17, 2018





Overview

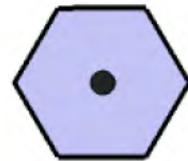
- What is Cloud Seeding
- SNOWIE
- Idaho Power's cloud seeding projects
- Program expansion
- Suspension Criteria

How does a snowflake/raindrop develop? (Cold Cloud)

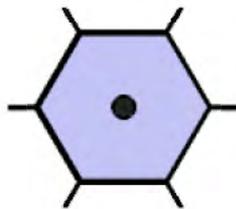
Microscopic dust particle in a cloud.



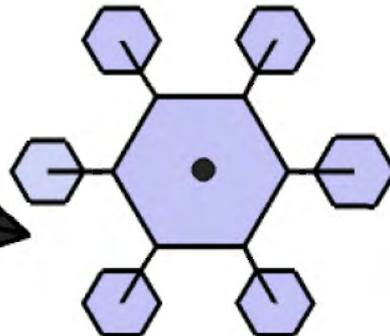
Water molecules condense onto the surface of the particle, and then onto each other in a hexagonal lattice formation.



The hexagonal plate grows into a prism. Different facets grow at different rates, depending on the conditions.



Branching instabilities causes arms to grow on the corners. These grow faster than the rest of the crystal and become more pronounced.



The snow crystal is then blown into a new set of conditions which favour plate growth again. The variability of conditions experienced by each crystal accounts for the complexity of forms seen.

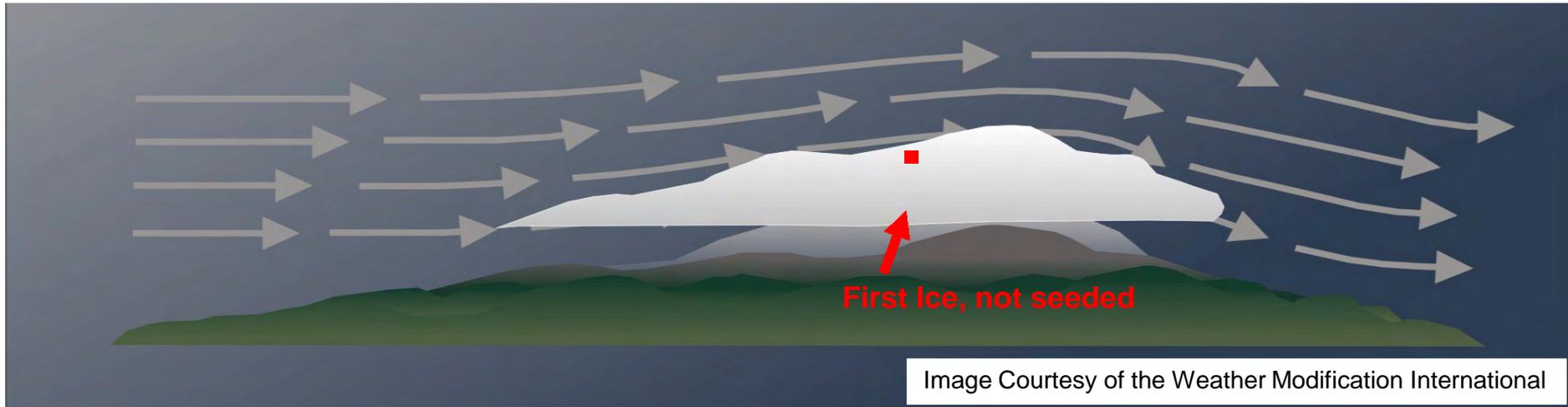
Cold Cloud Seeding Method



- Glaciogenic Seeding
 - Conducted in clouds cold enough to promote growth of ice.
 - Seeding Agents
 - Silver Iodide
 - Dry Ice
 - Liquid Propane (expands into gas form)

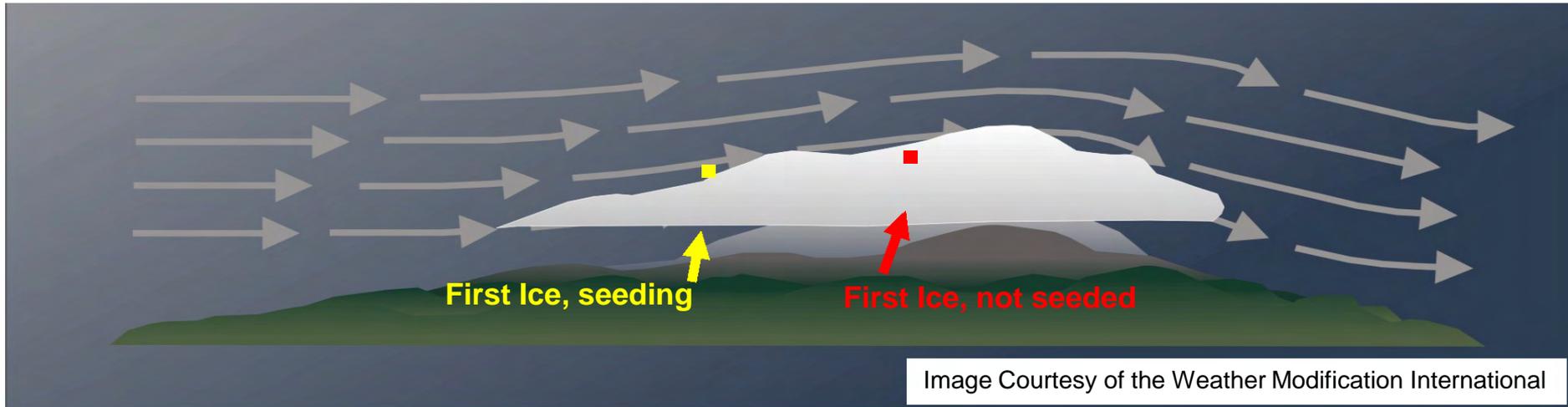
Winter Orographic Cloud Seeding

- *Cloud seeding* provides additional efficient ice nuclei that function at warmer temperatures, allowing ice formation to begin sooner
- This occurs at temperatures as warm as 23°F, though more effectively at 17°F or colder
- Natural ice nuclei become effective below 5°F



Winter Orographic Cloud Seeding

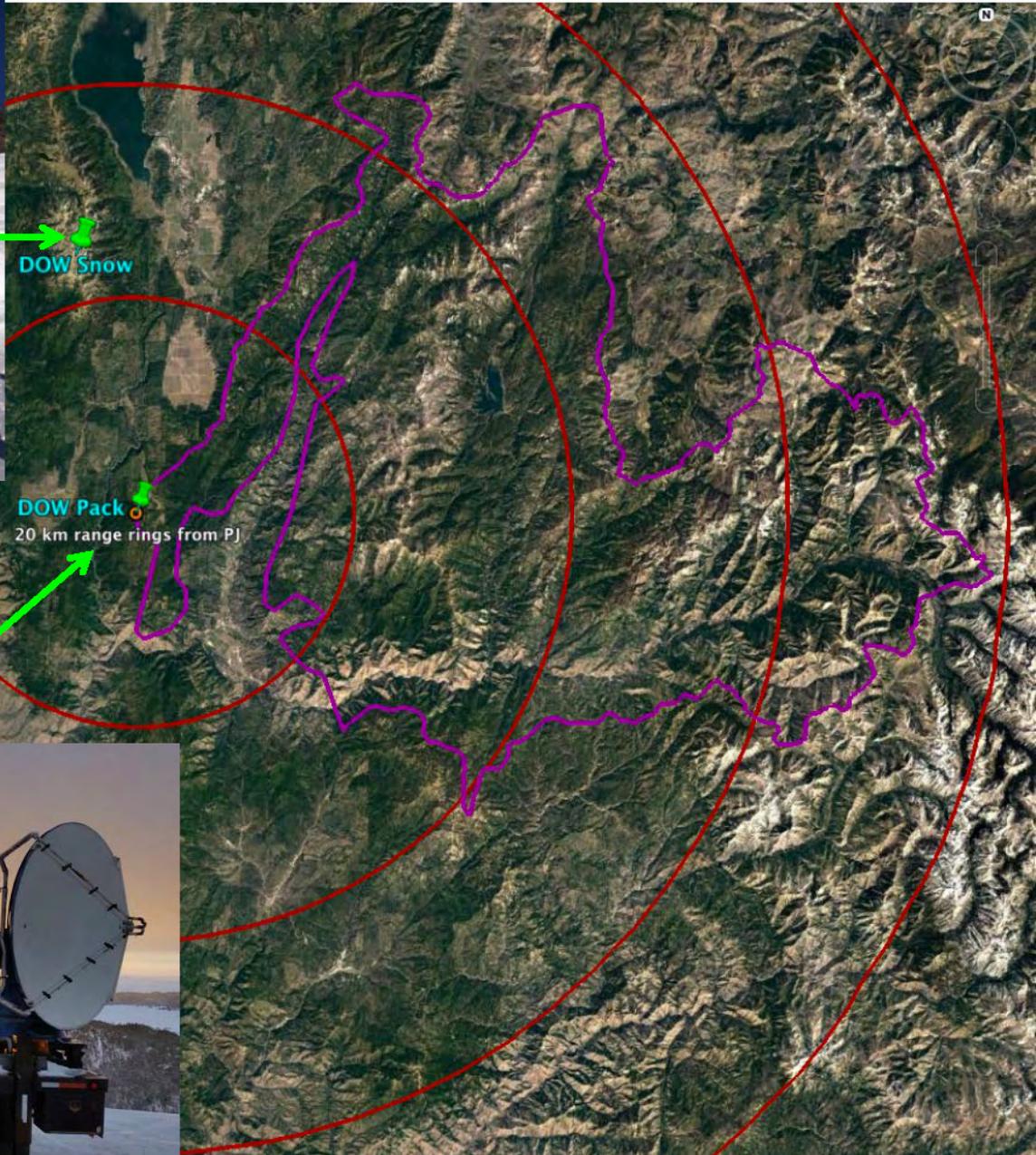
- *Cloud seeding* provides additional efficient ice nuclei that function at warmer temperatures, allowing ice formation to begin sooner
- This occurs at temperatures as warm as 23°F, though more effectively at 17°F or colder
- Natural ice nuclei become effective below 5°F



SNOWIE

Seeded & Natural Orographic Wintertime clouds: the Idaho Experiment

- NSF funded SNOWIE to study winter precipitation processes (\$2.1M)
- Field campaign early 2017 (Jan – Mar), focused on Payette Basin
- Goal:
 - further understand natural and dynamic winter precipitation processes.
 - determine physical processes by which cloud seeding effects winter precipitation.
- Field Effort:
 - Over 75 additional instruments (research aircraft, ground based instruments)
 - 4 PI's, 11 scientists operating instruments and analyzing data
- Results will directly benefit weather modeling over complex terrain
- Collaborative effort between:
 - National Center for Atmospheric Research (NCAR)
 - University of Wyoming
 - University of Colorado, Boulder
 - University of Illinois
 - Idaho Power Company
- Additional Efforts
 - BSU – silver sampling
 - Research seeding aircraft
 - Ice nuclei counter



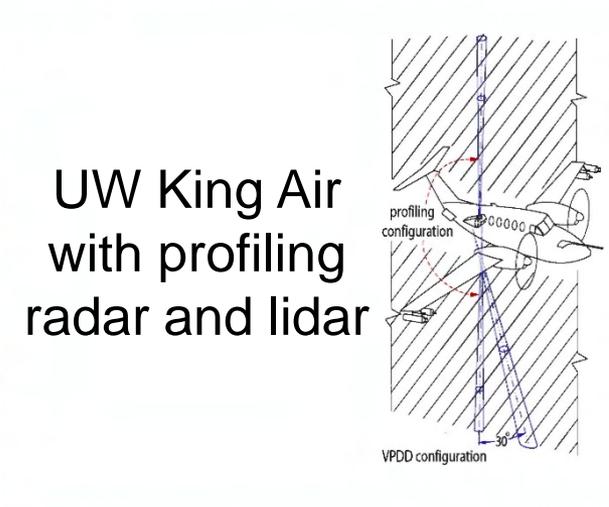
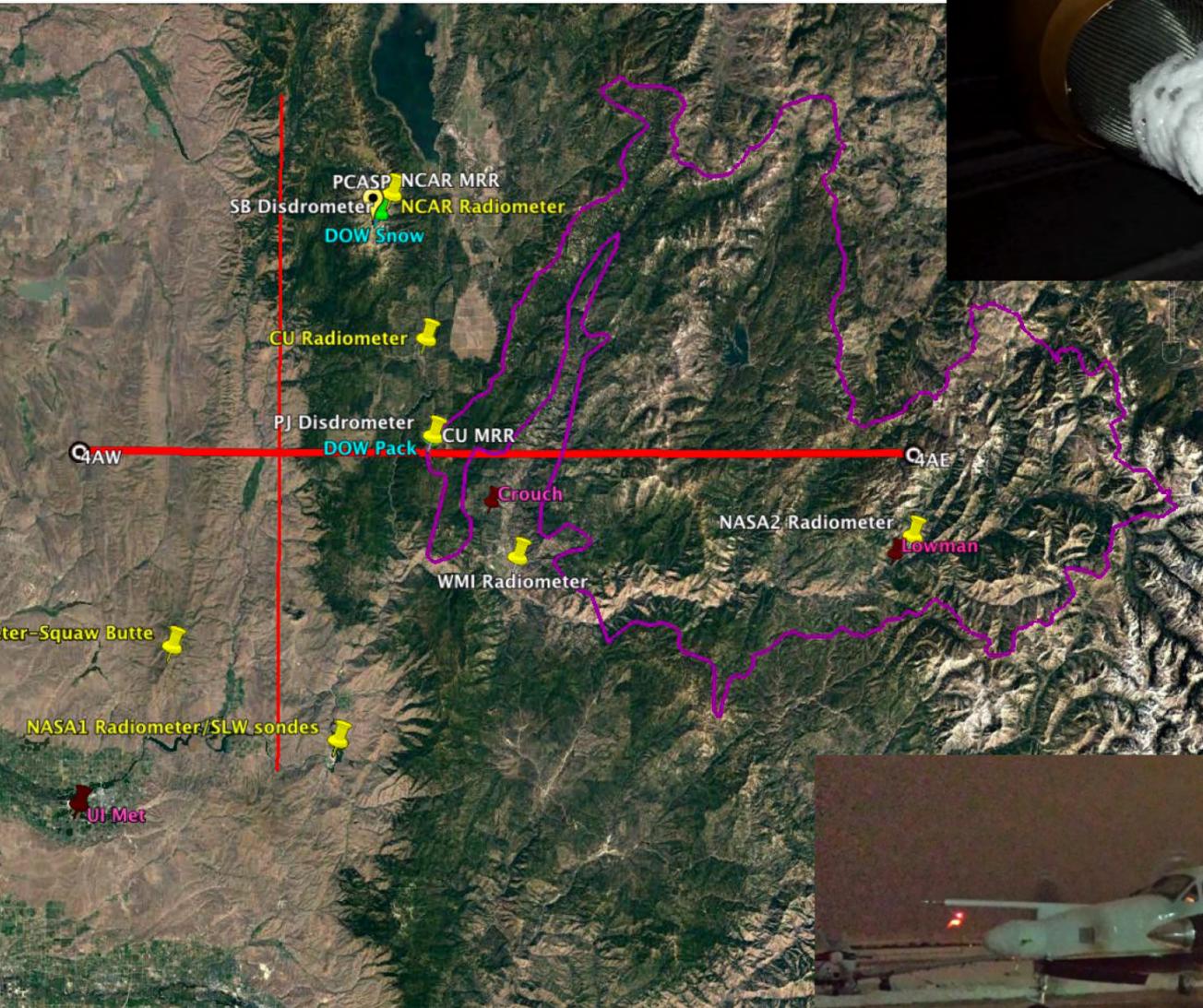
DOW Snow

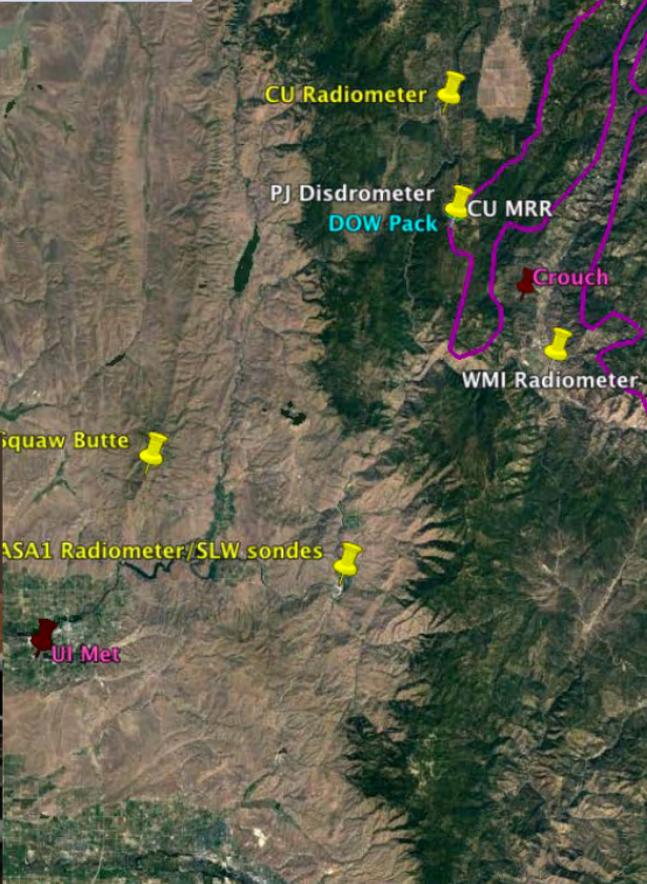
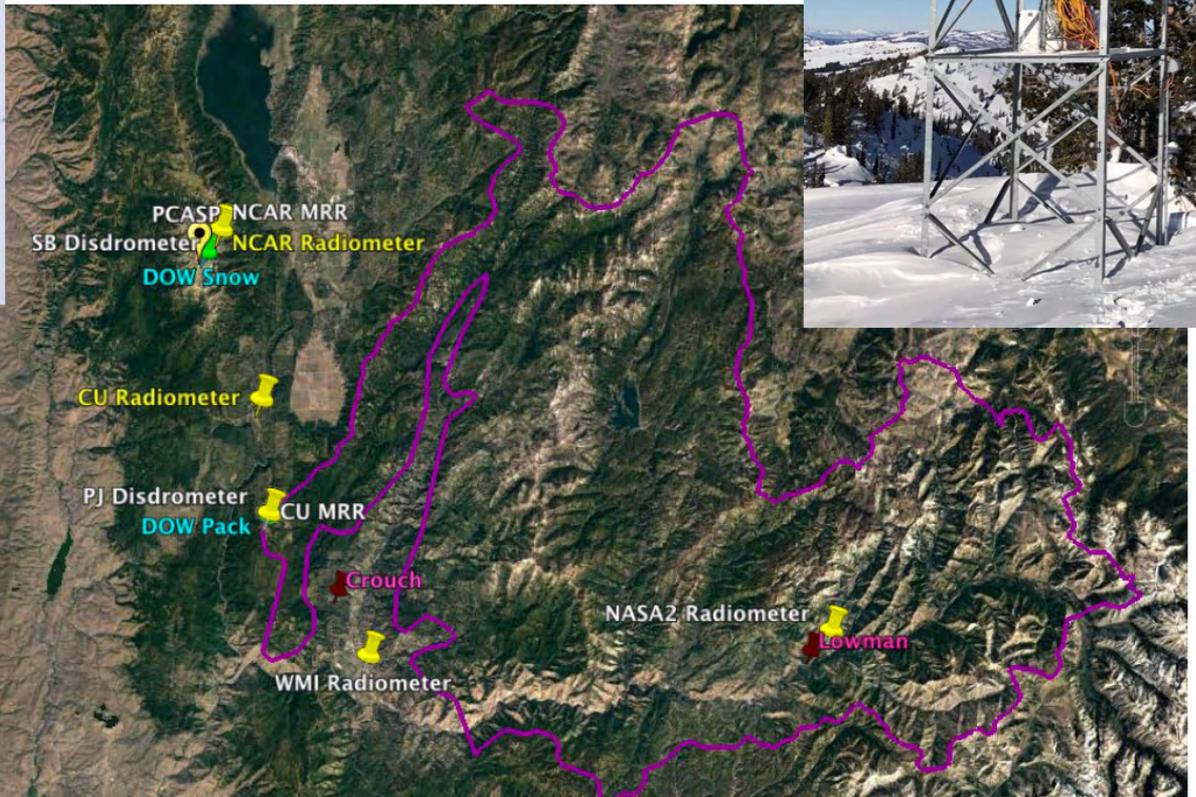
DOW Pack
20 km range rings from PJ





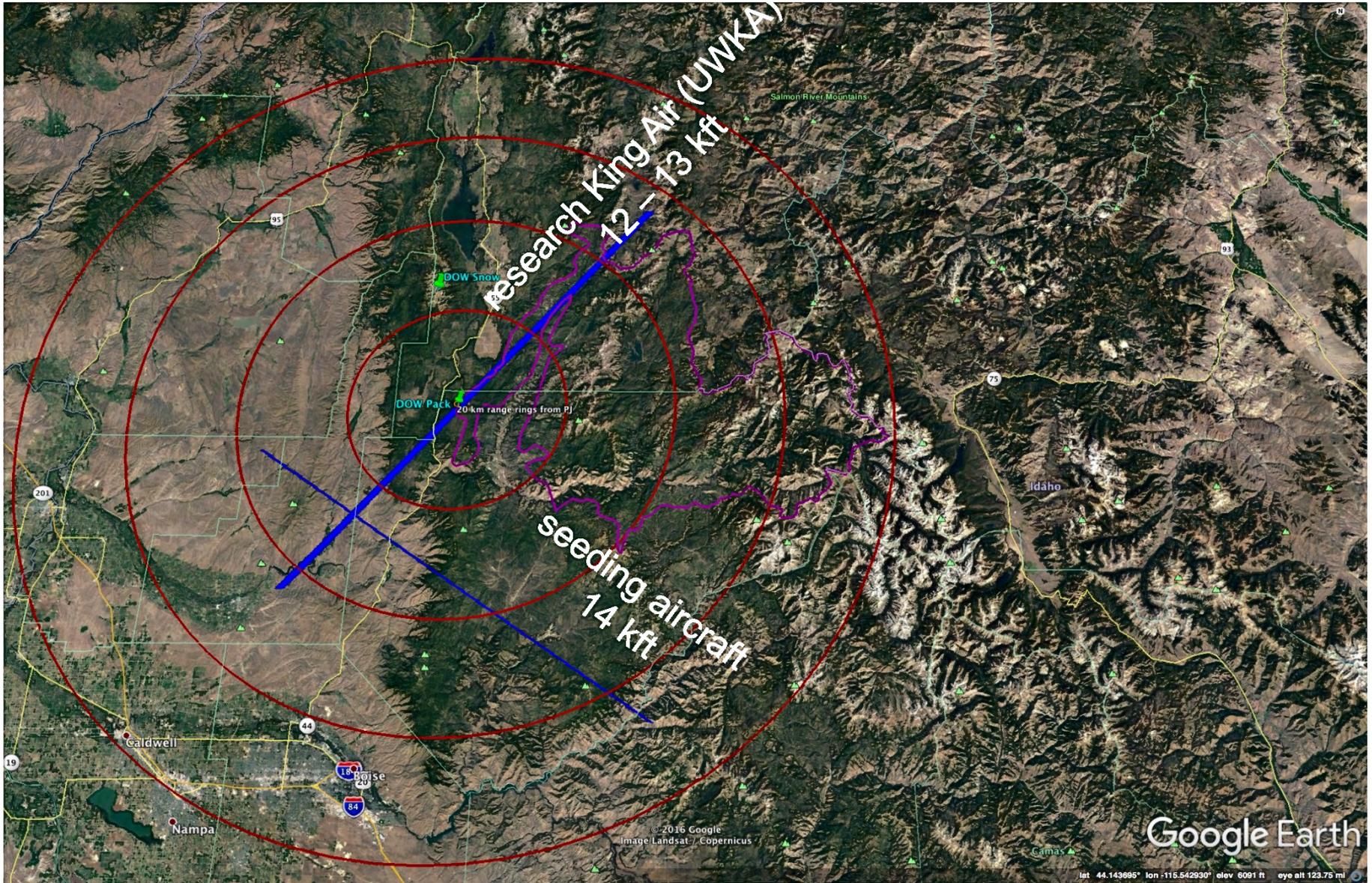






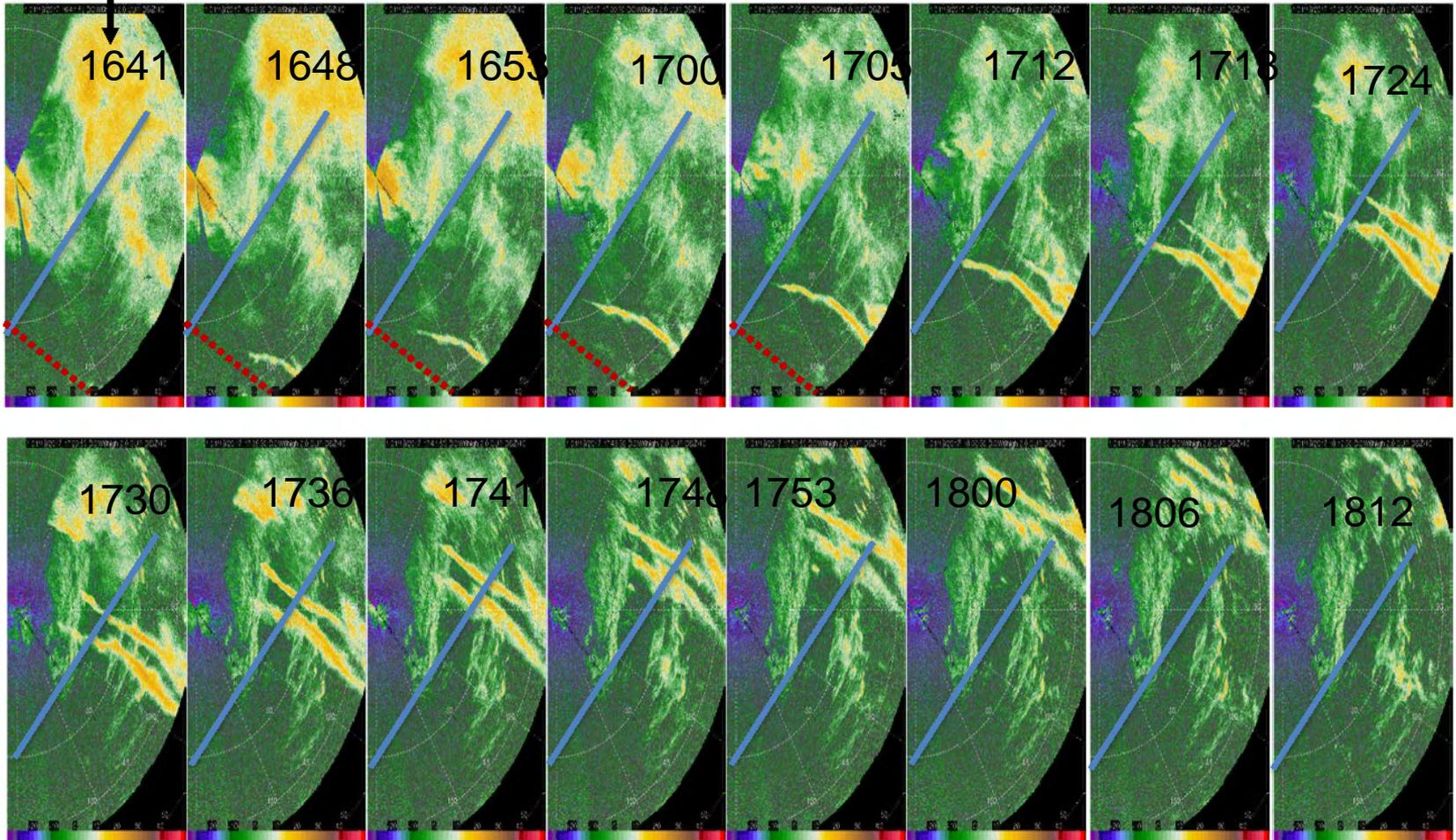
IOP

Intensive Observation Period

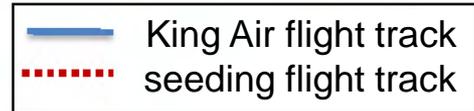


Snow Bank DOW 2° elevation 19 Jan 2017

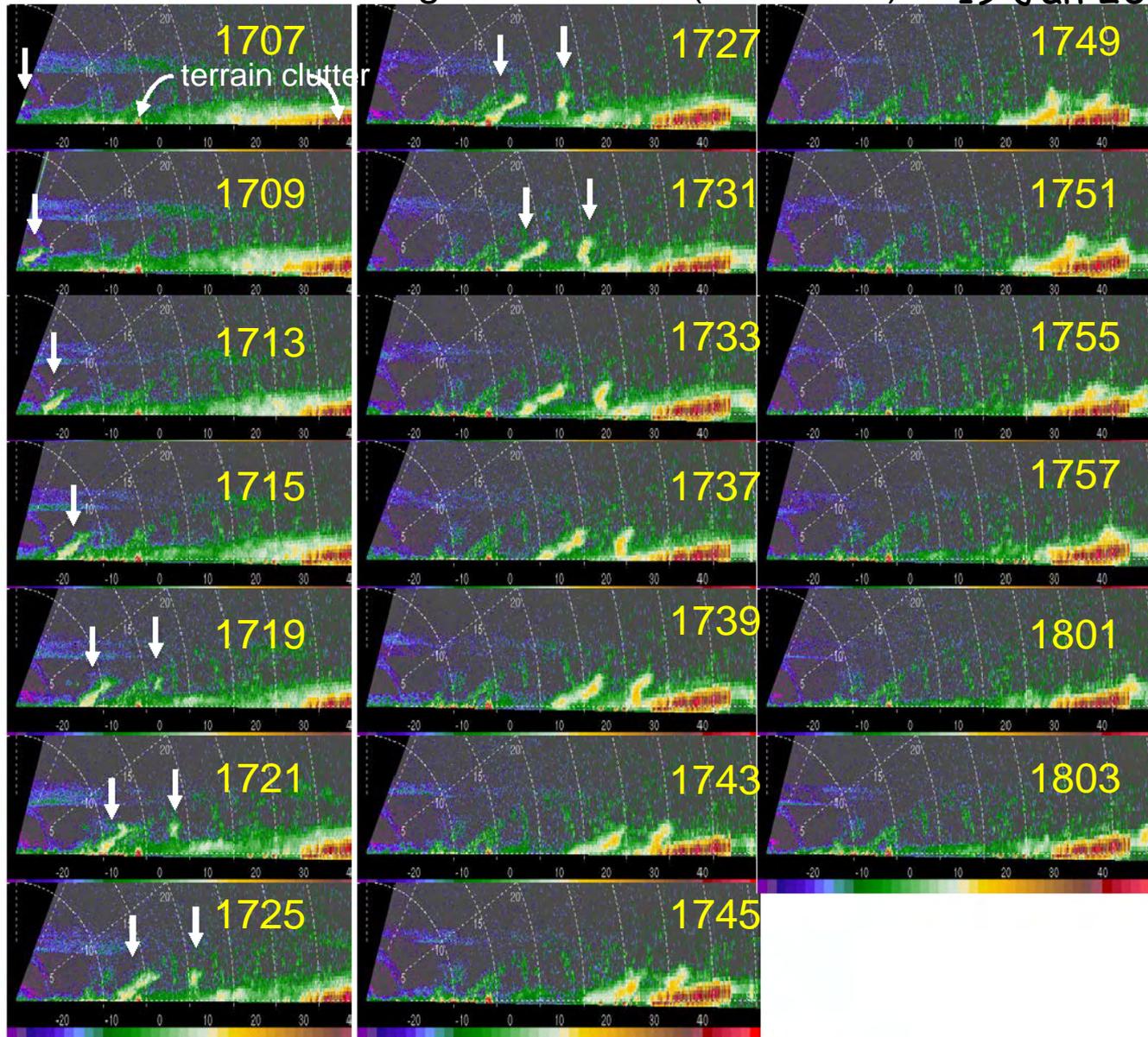
time UTC



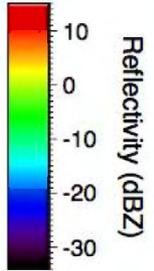
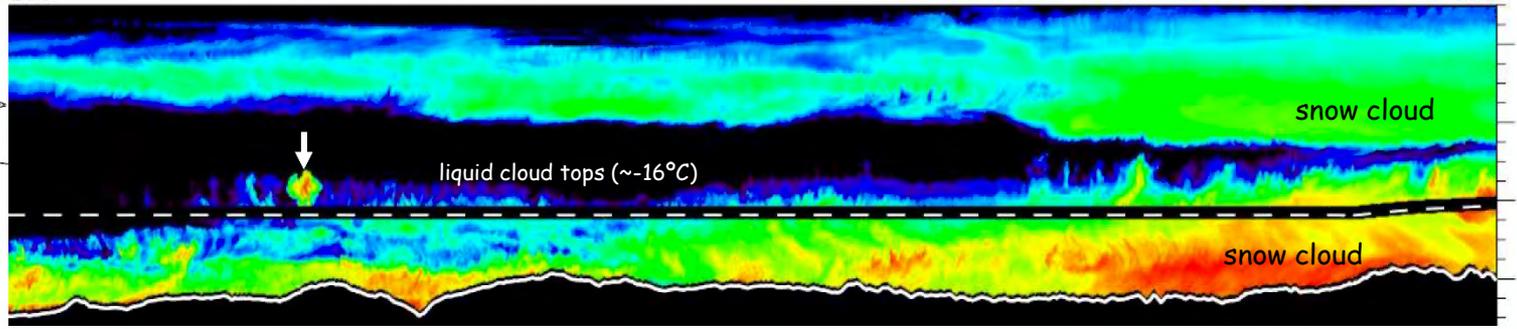
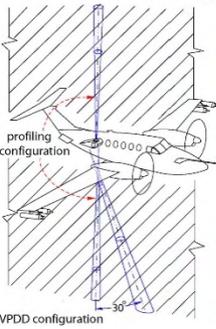
seeding aircraft flies
two seeding legs
(burn-in-place flares)



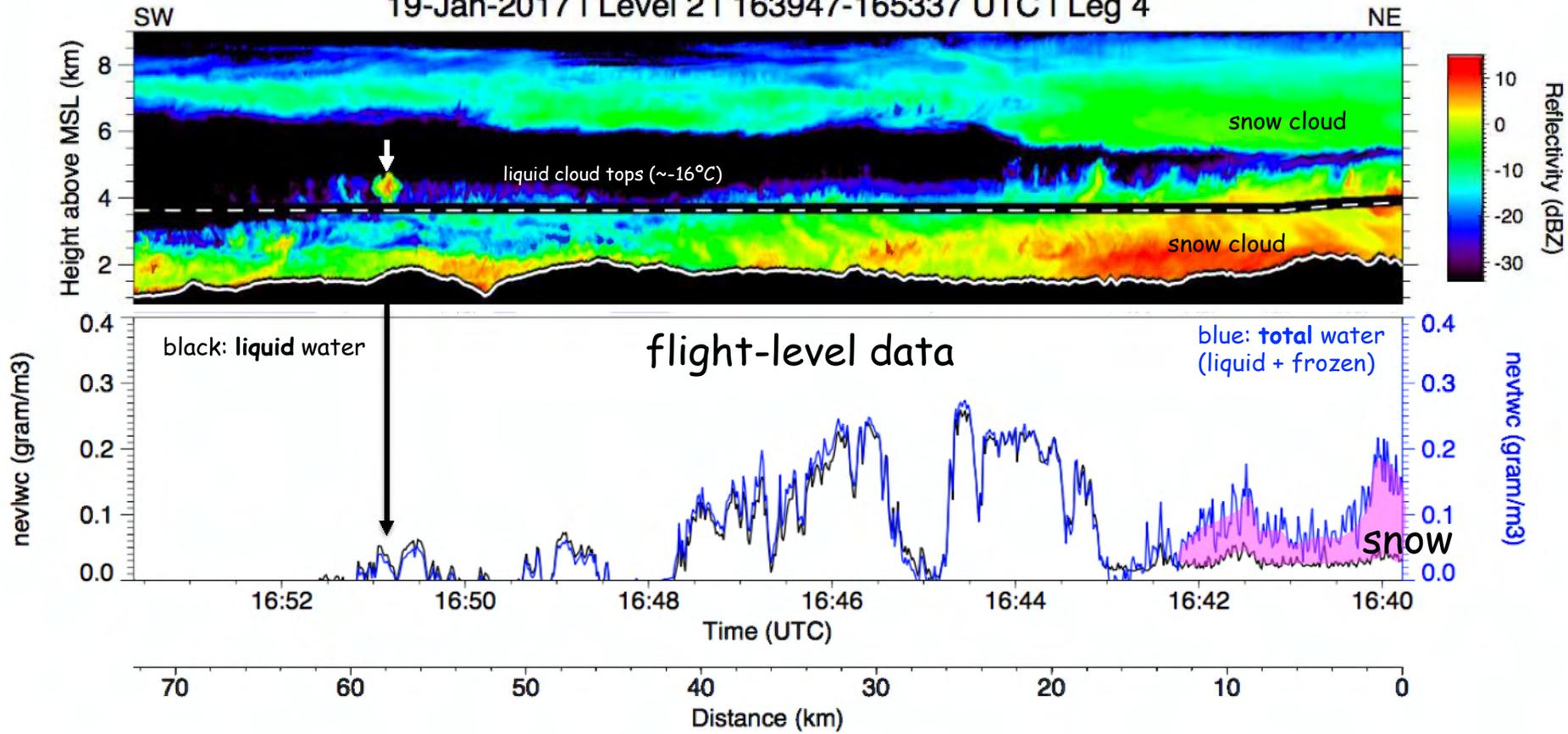
Packer John DOW7 RHIs along UWKA track (downwind) 19 Jan 2017



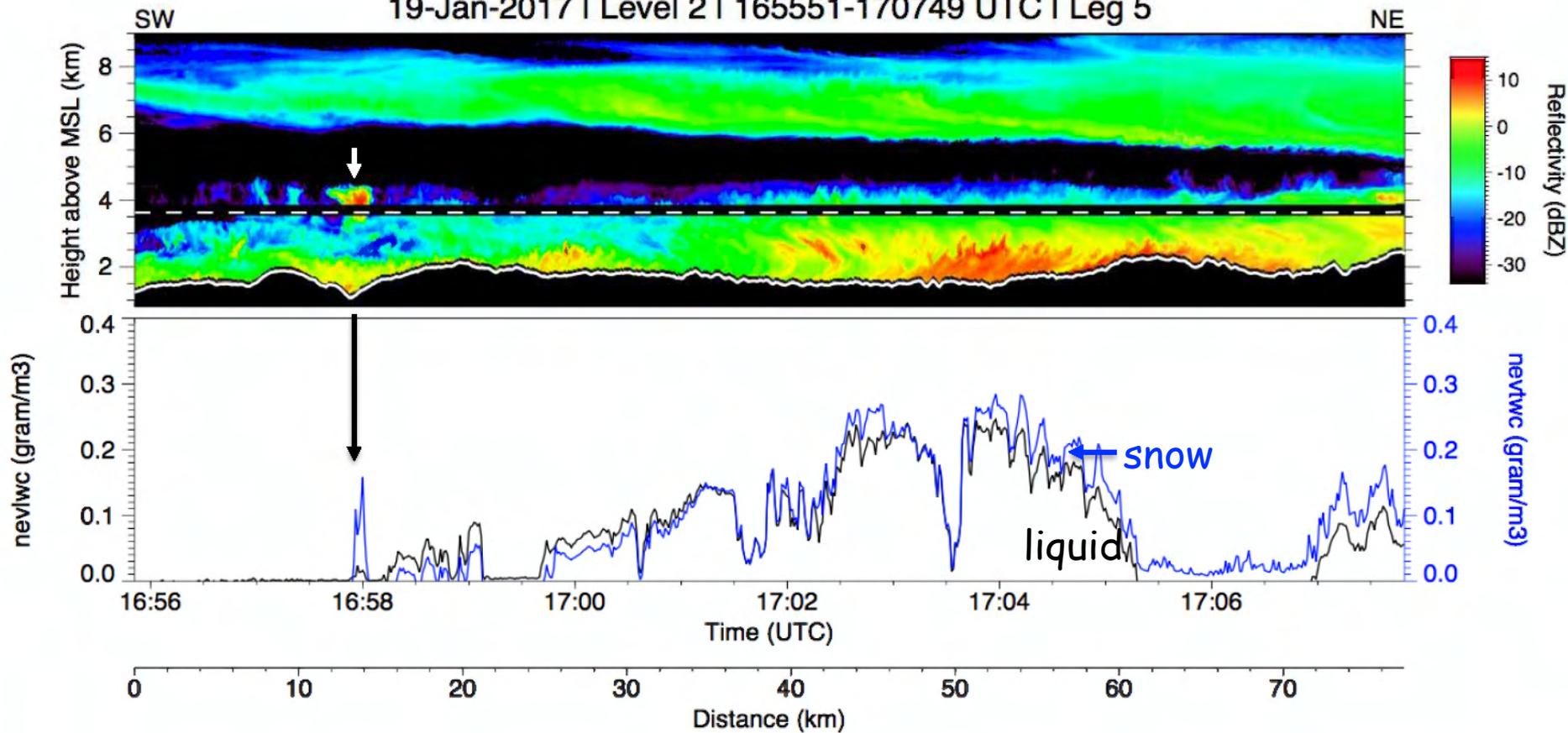
SW 19-Jan-2017 | Level 2 | 163947-165337 UTC | Leg 4 NE



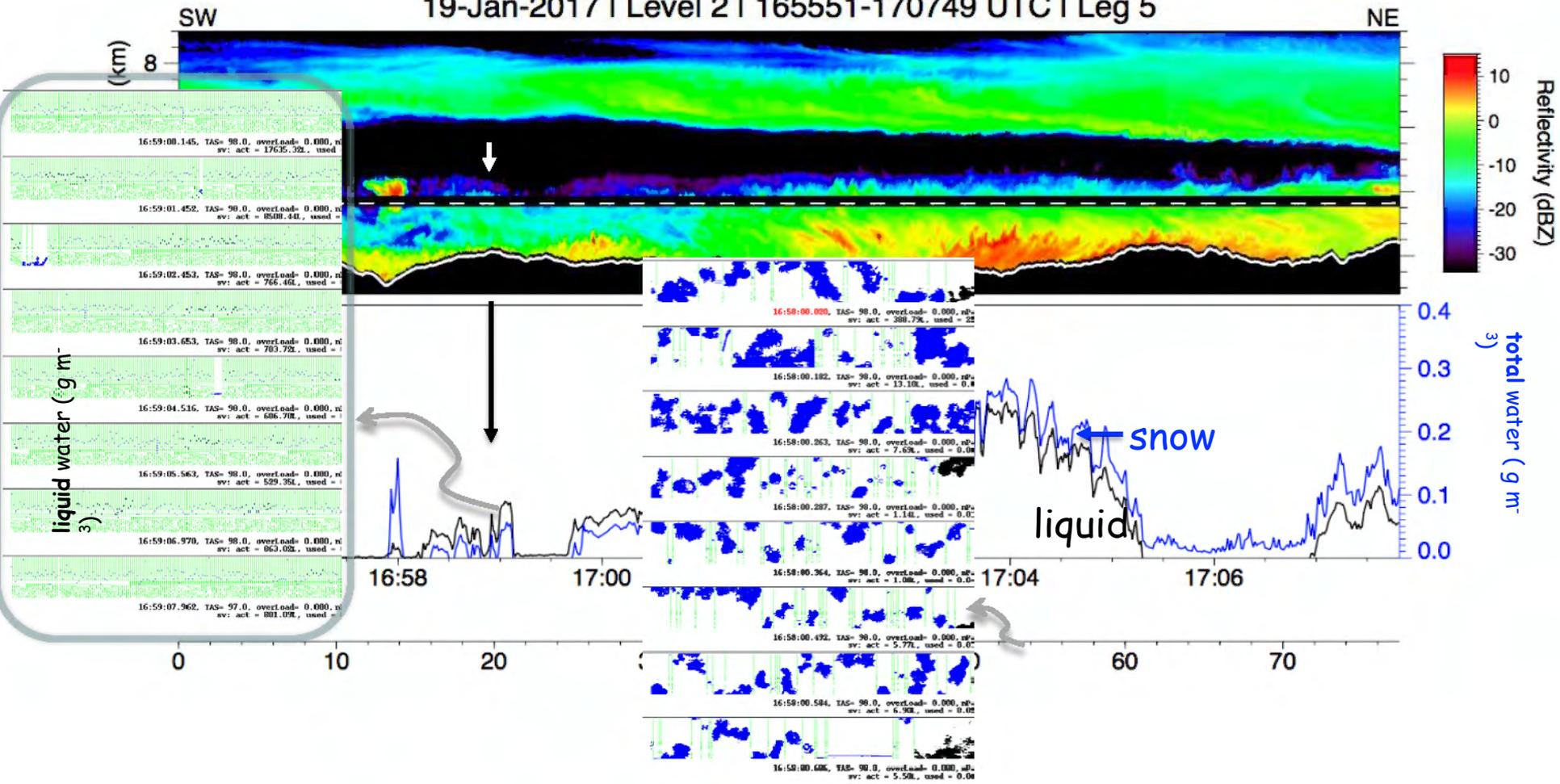
19-Jan-2017 | Level 2 | 163947-165337 UTC | Leg 4



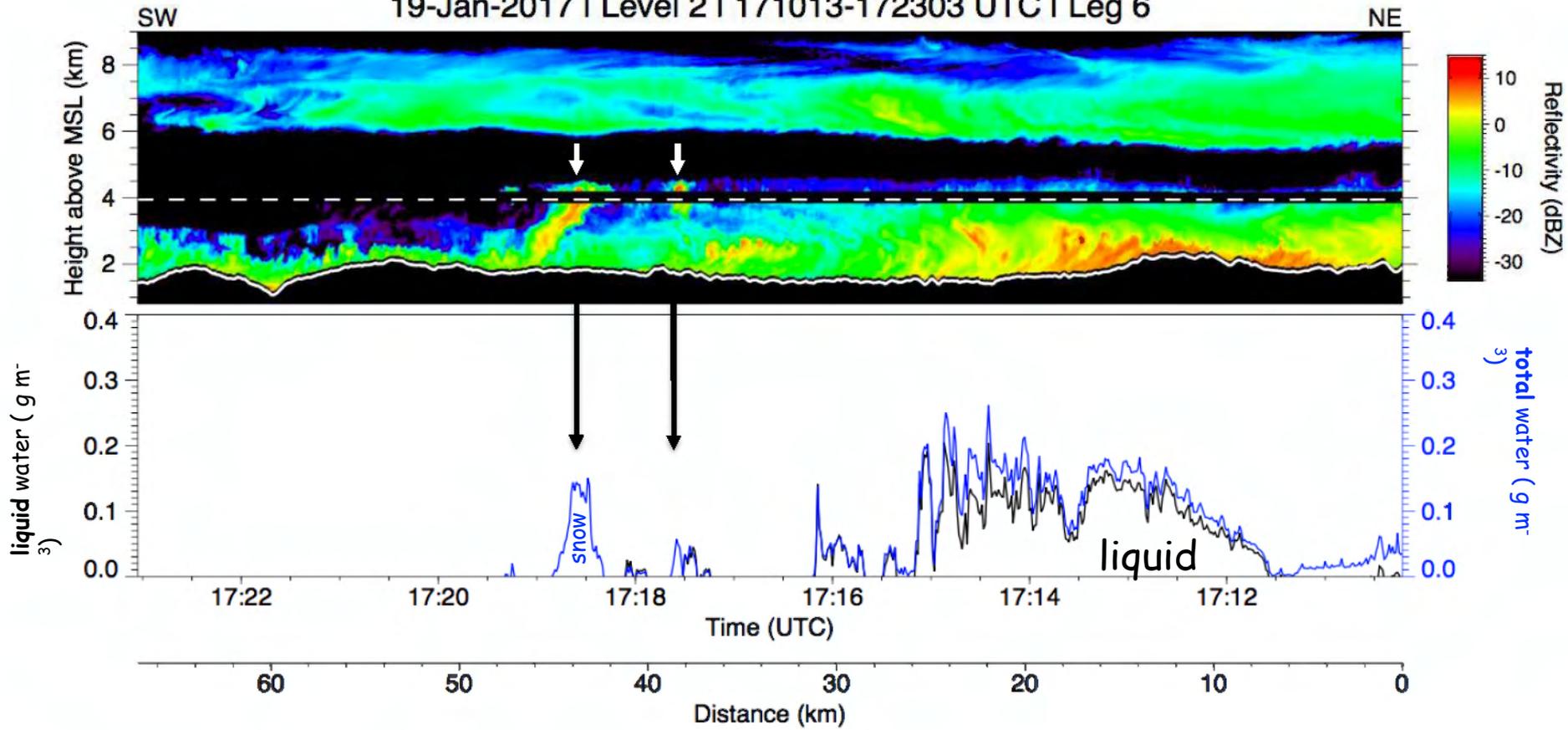
19-Jan-2017 | Level 2 | 165551-170749 UTC | Leg 5



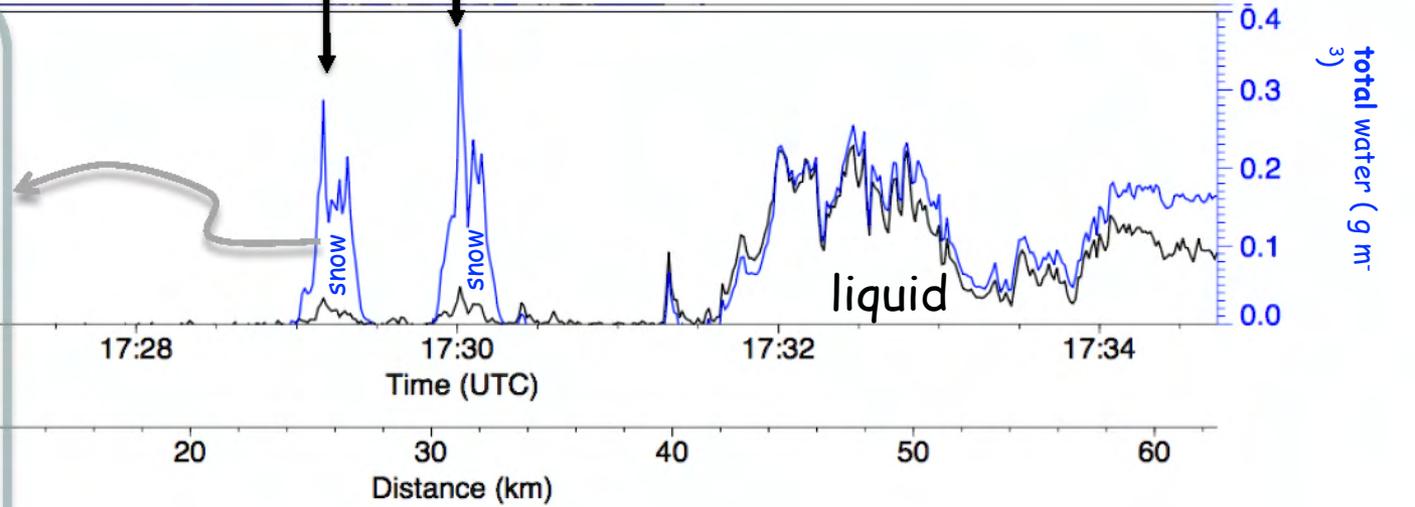
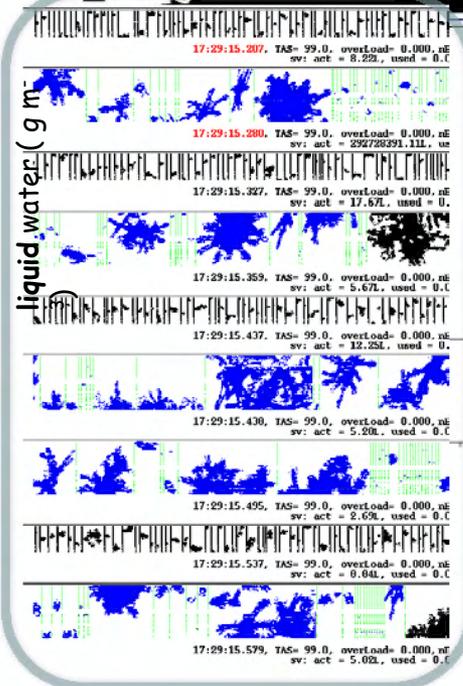
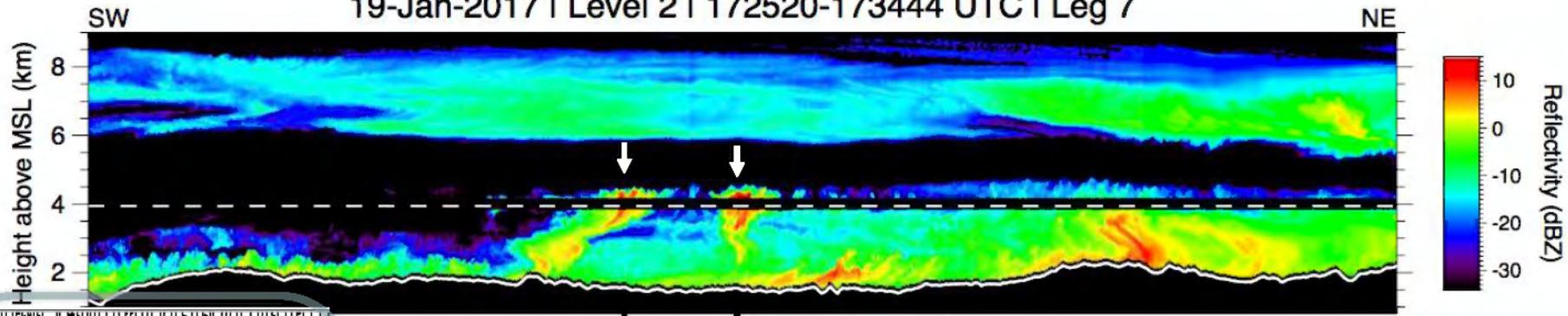
19-Jan-2017 | Level 2 | 165551-170749 UTC | Leg 5



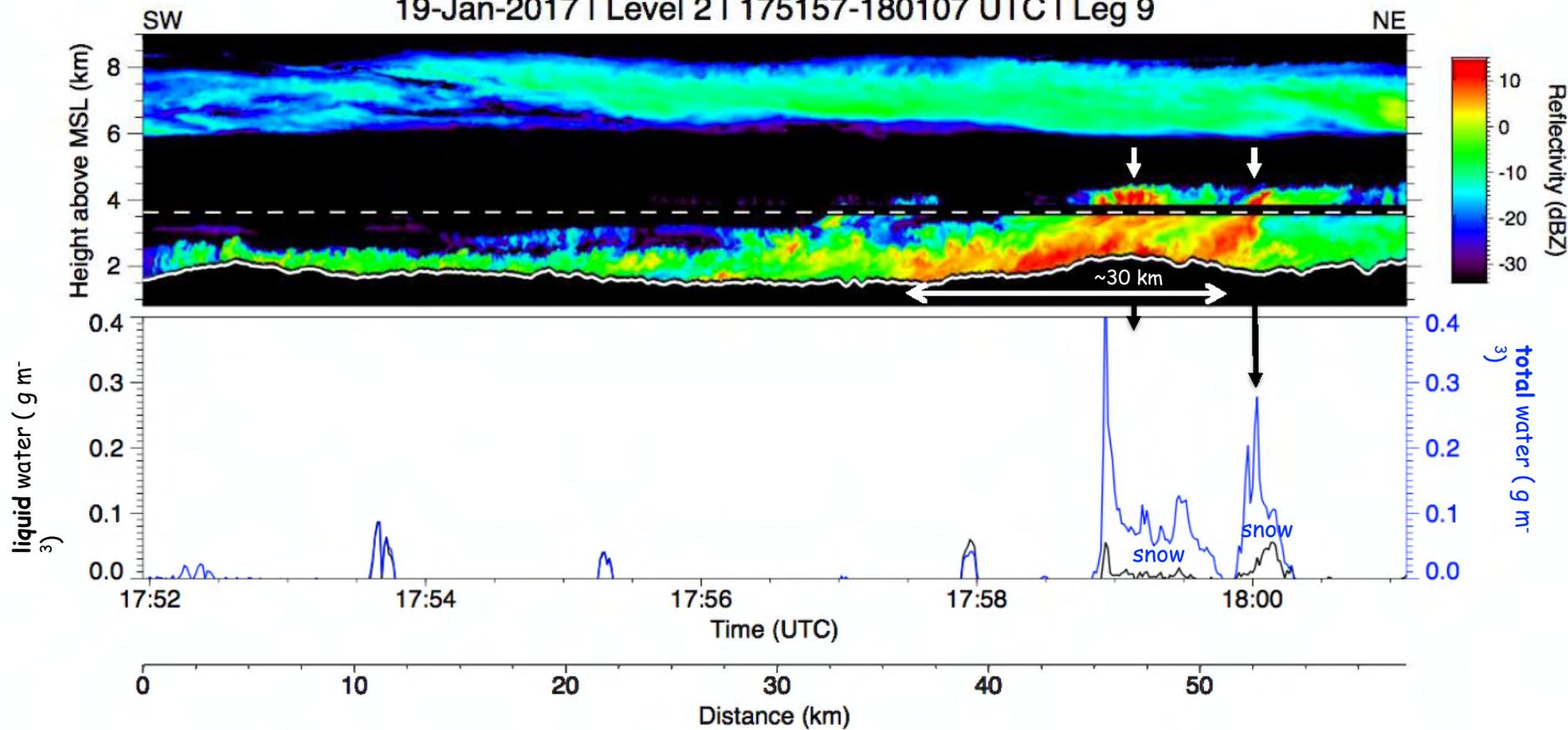
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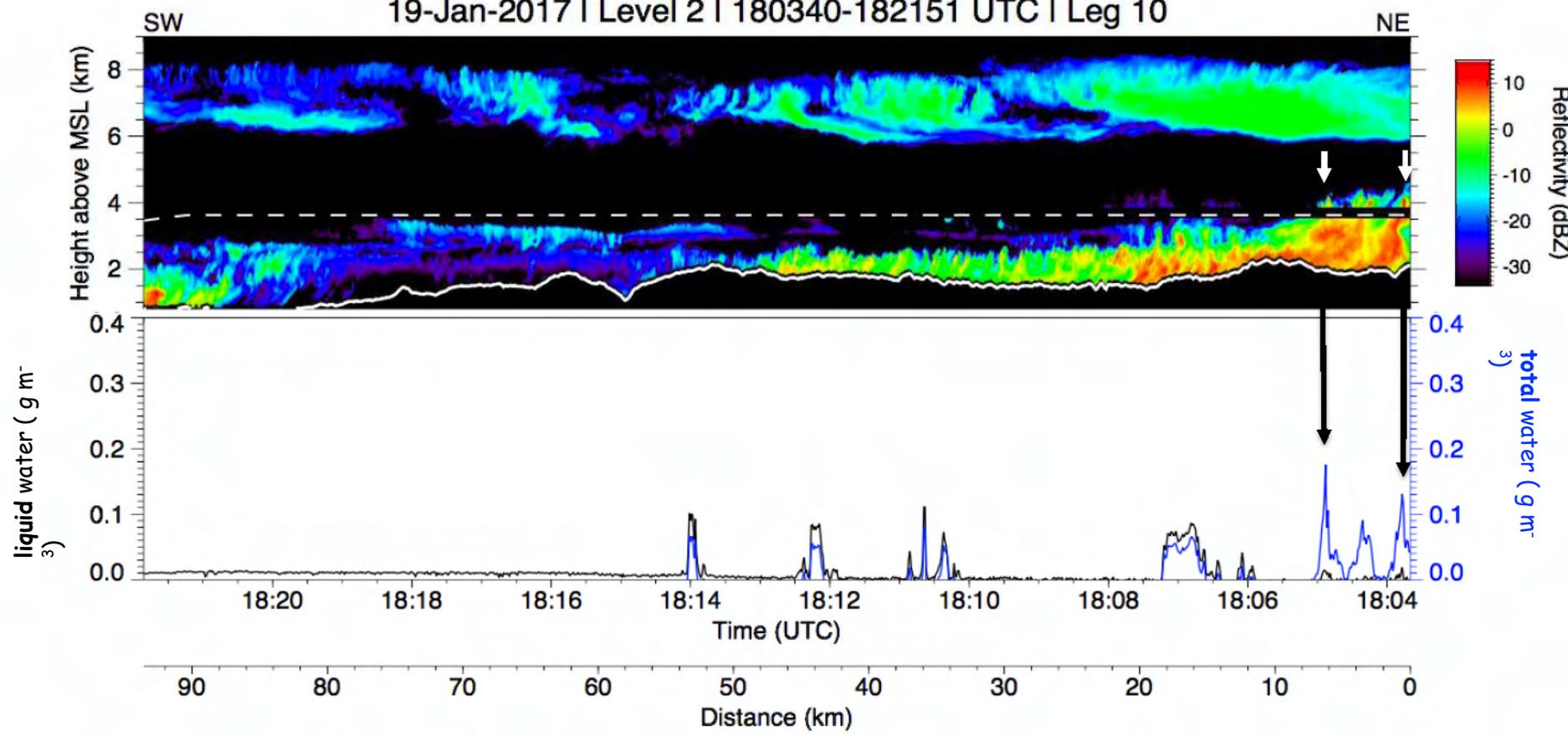
19-Jan-2017 | Level 2 | 172520-173444 UTC | Leg 7

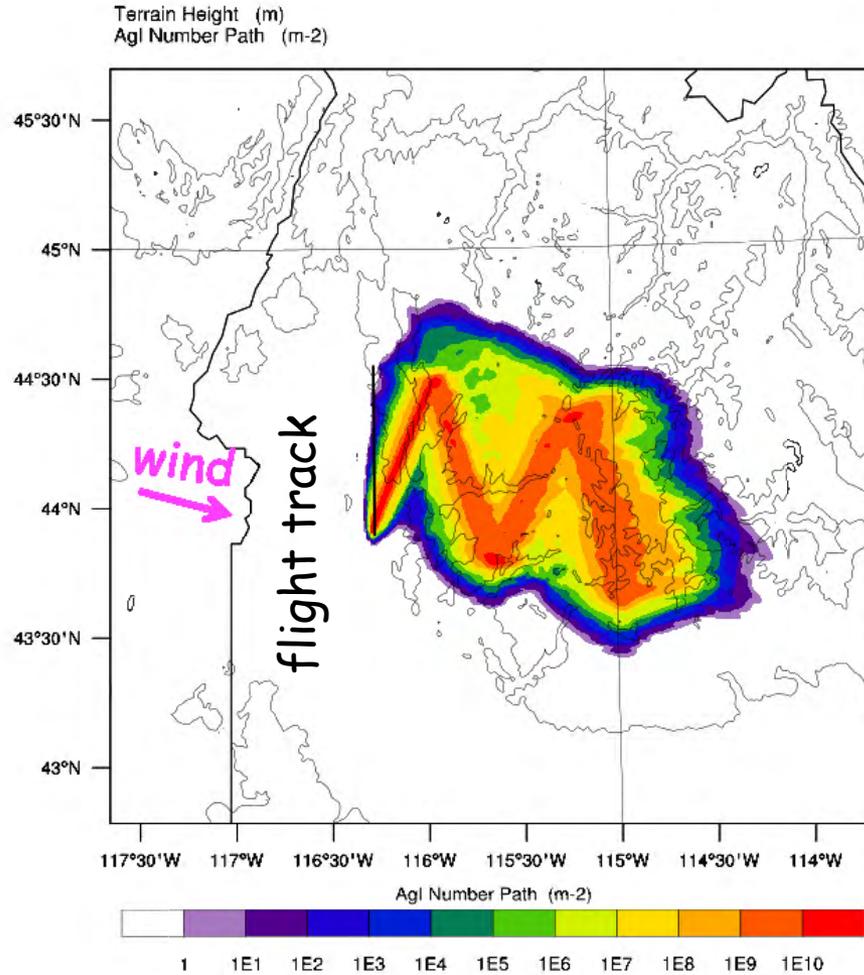


19-Jan-2017 | Level 2 | 175157-180107 UTC | Leg 9

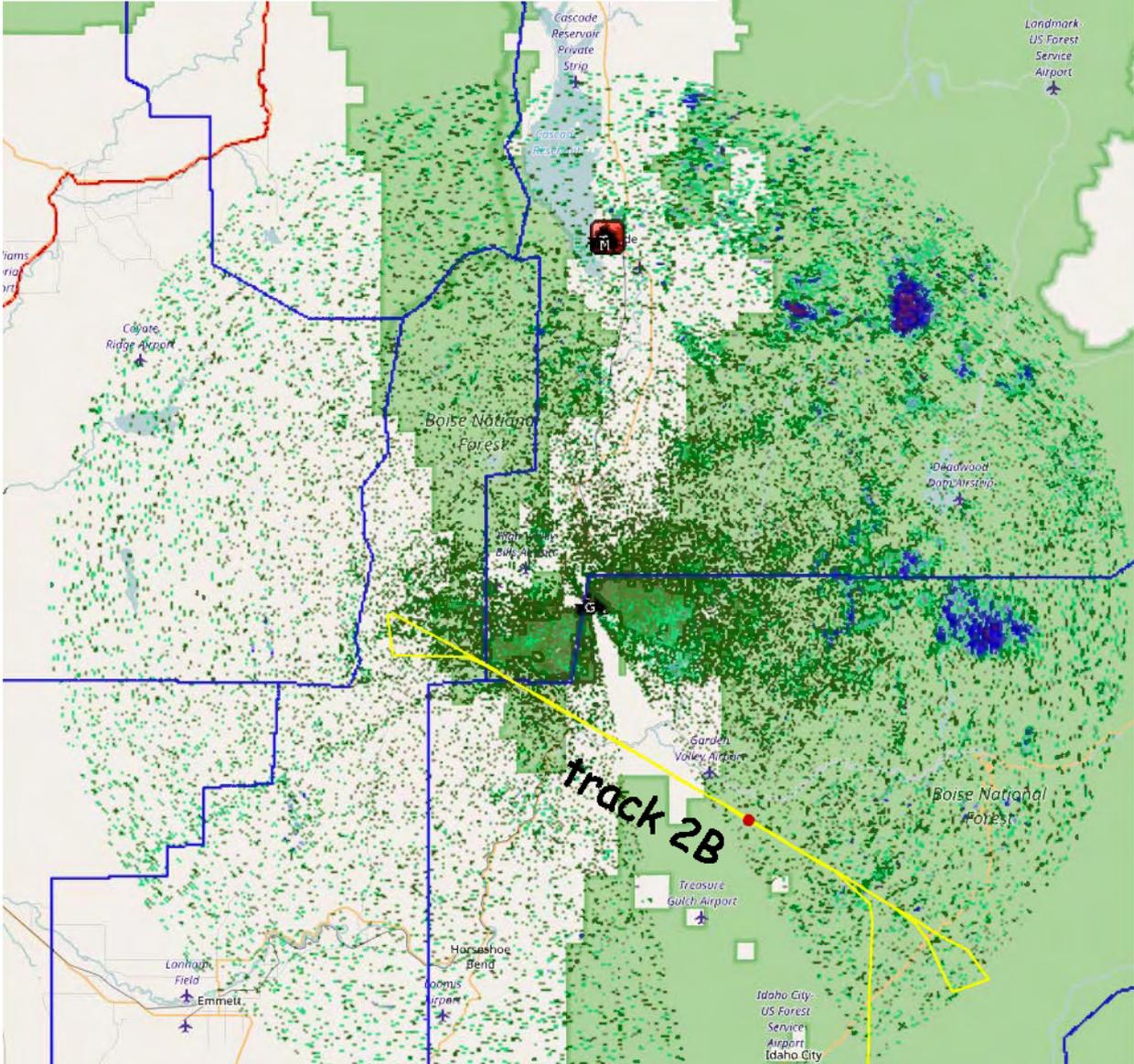


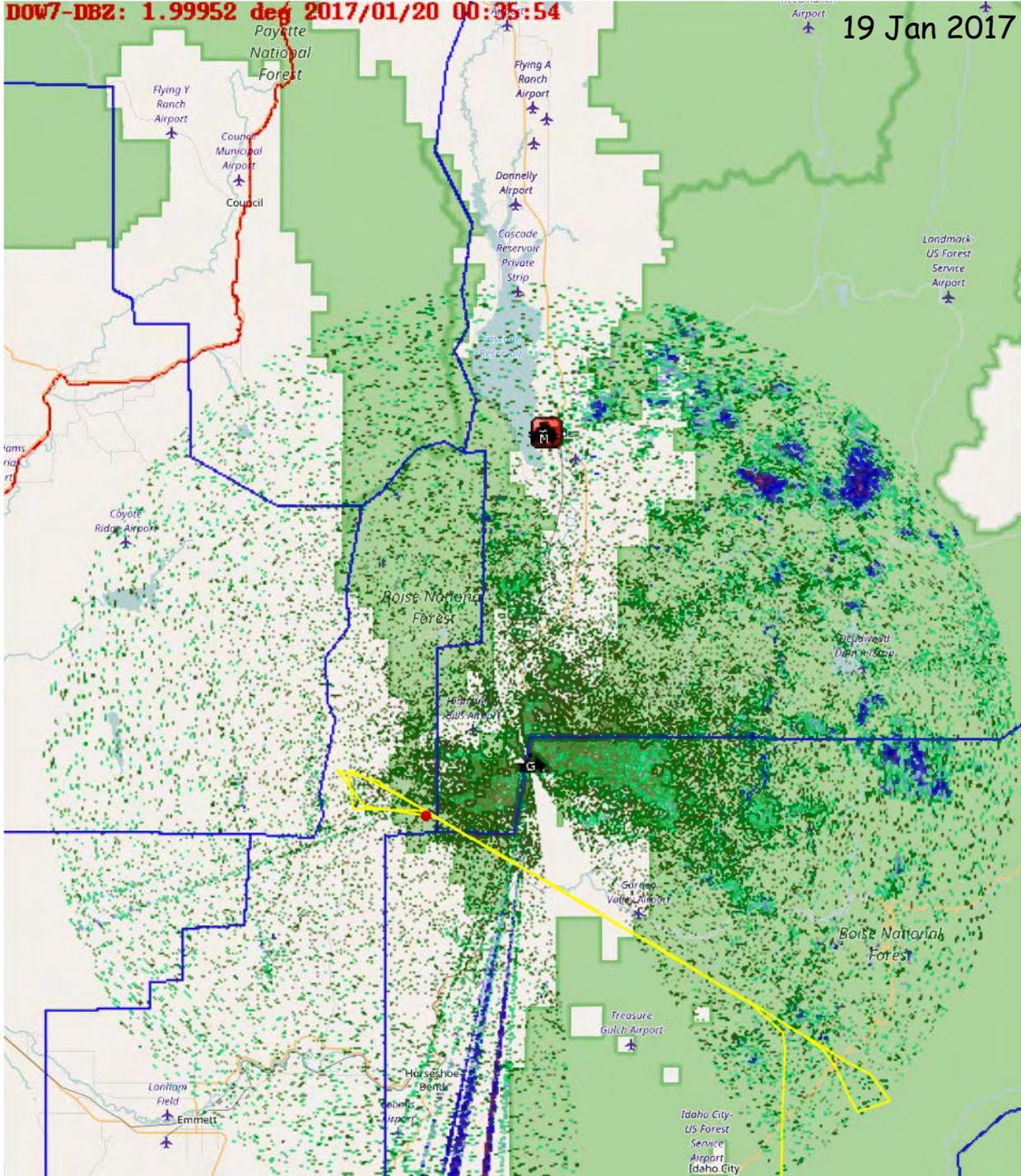
19-Jan-2017 | Level 2 | 180340-182151 UTC | Leg 10

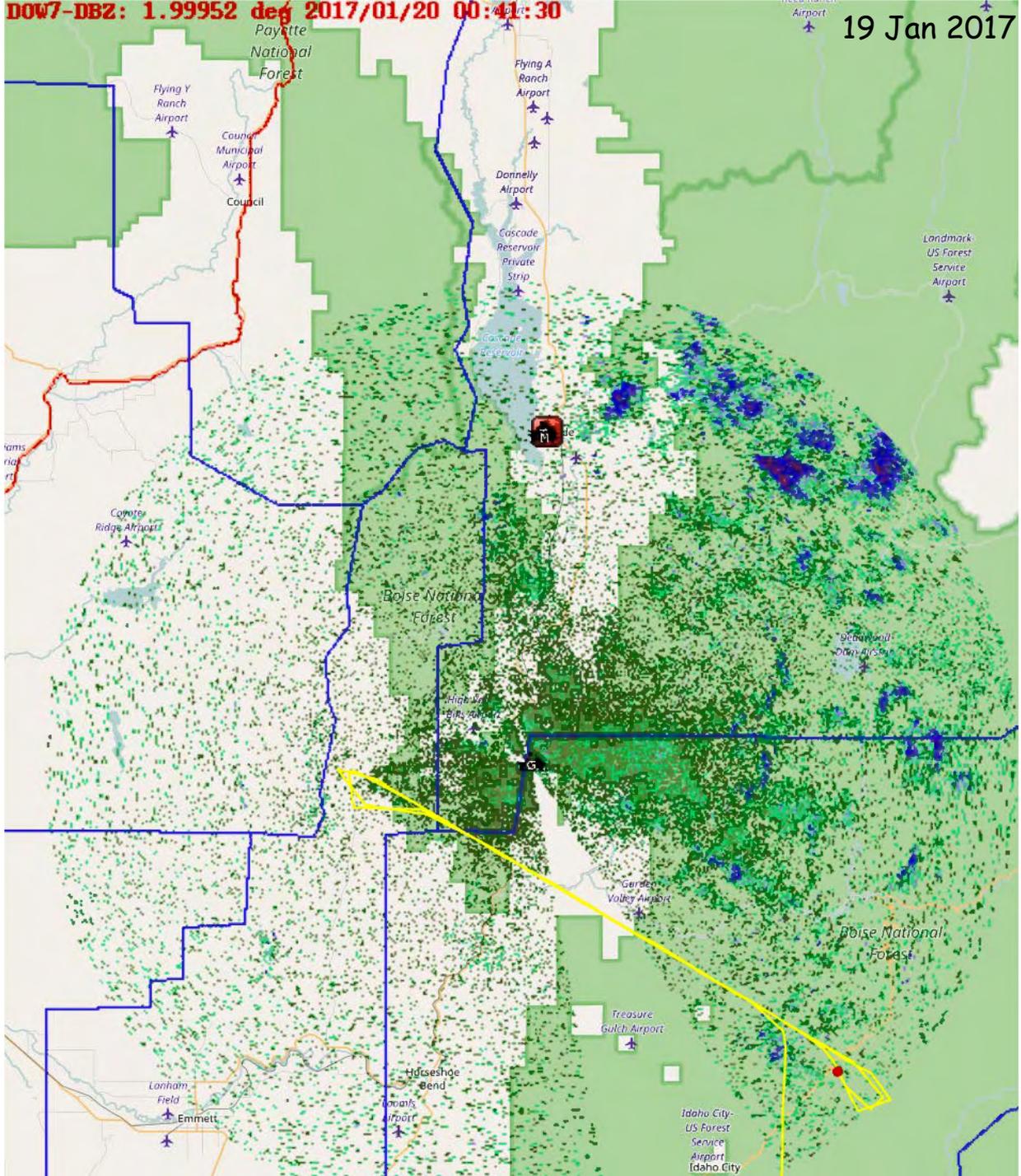


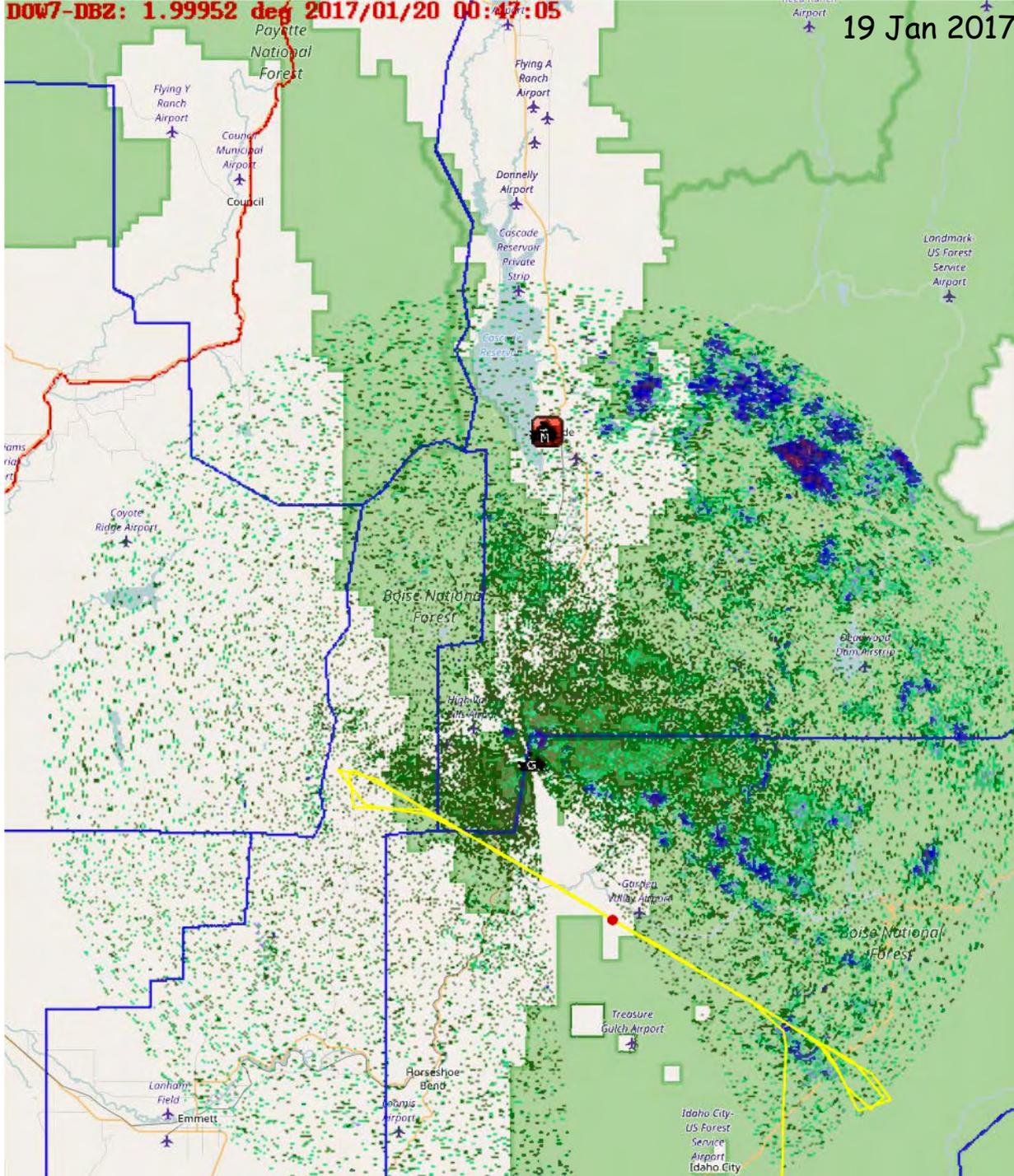


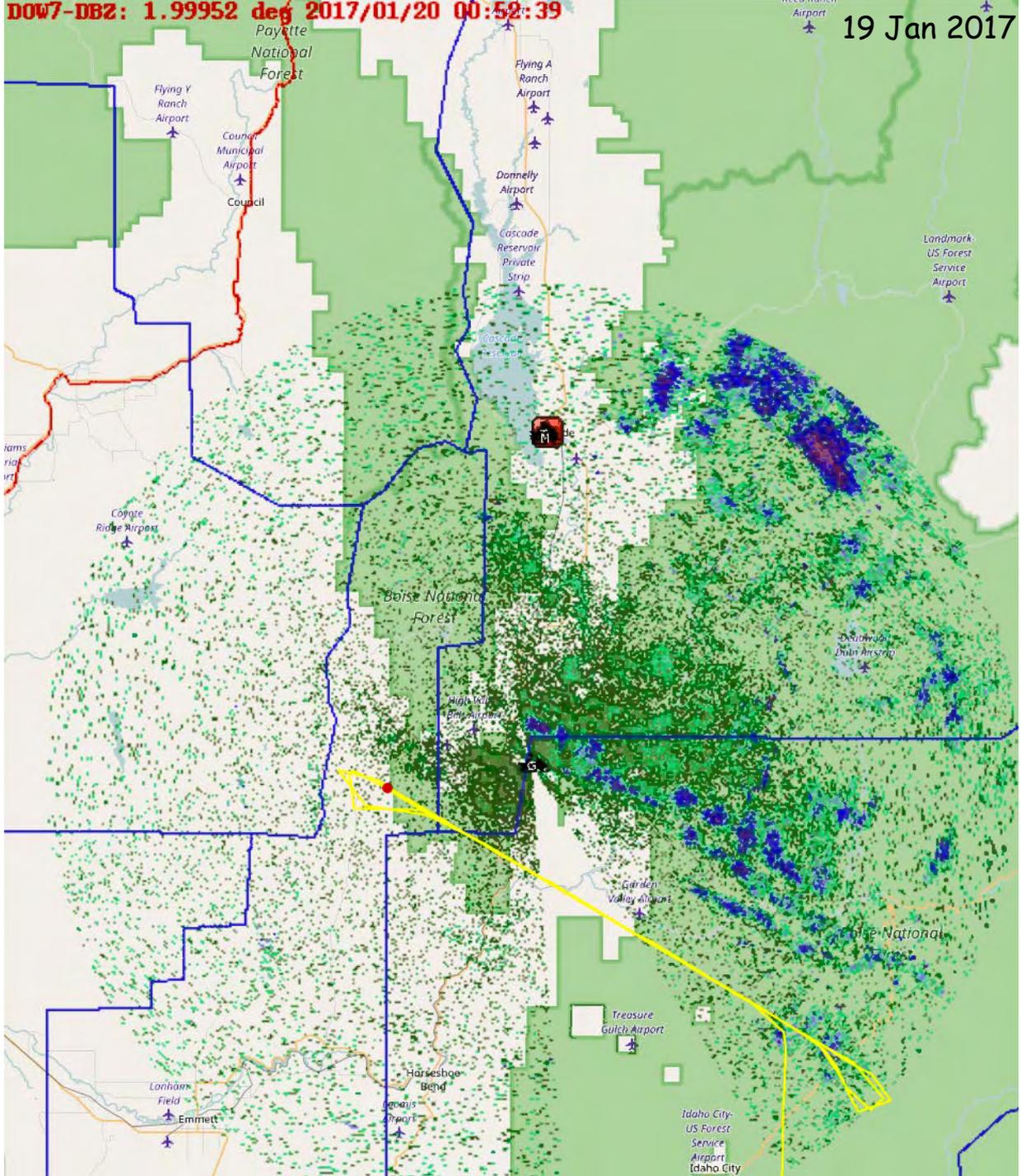
DOW reflectivity + seeding aircraft track

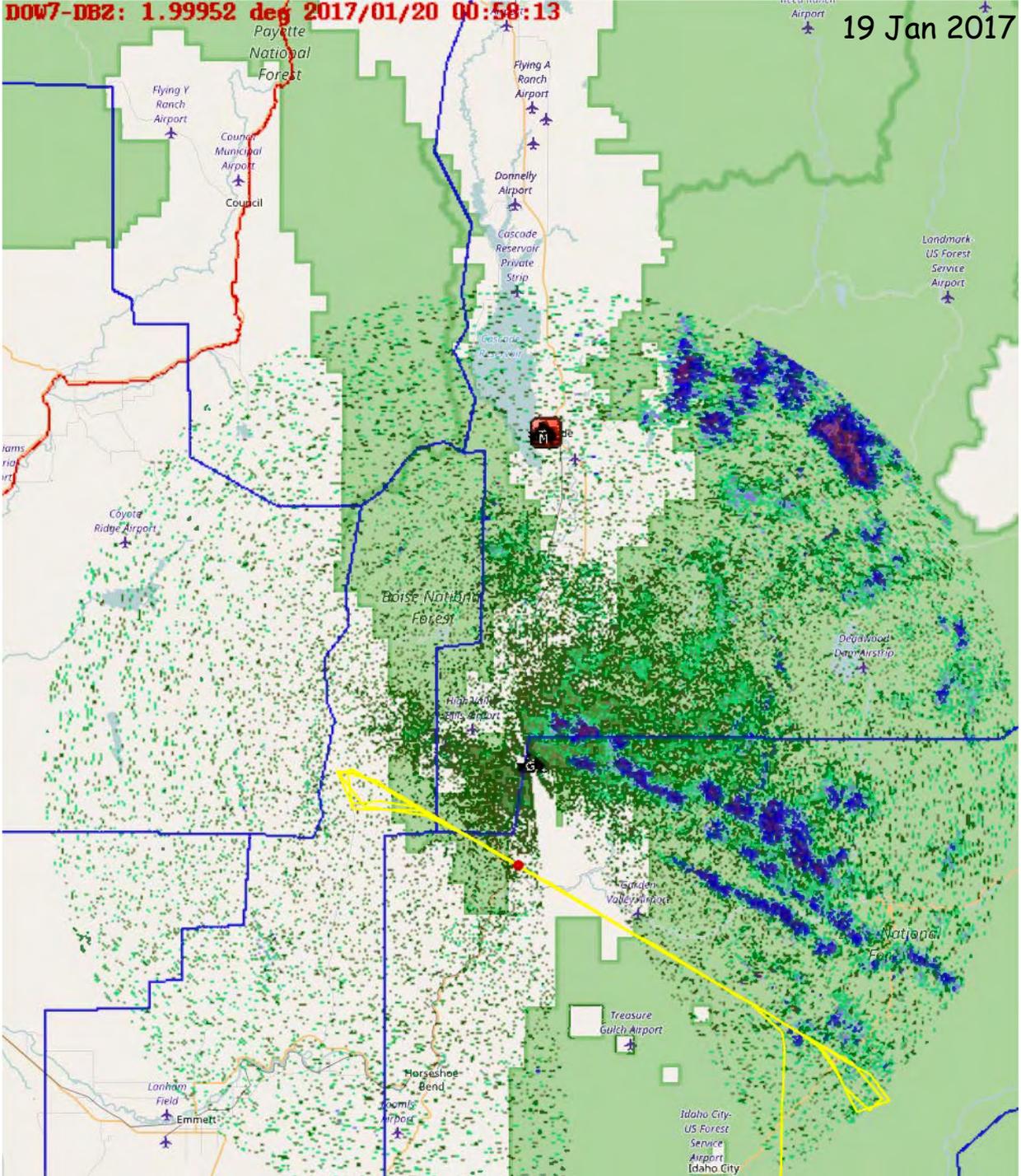


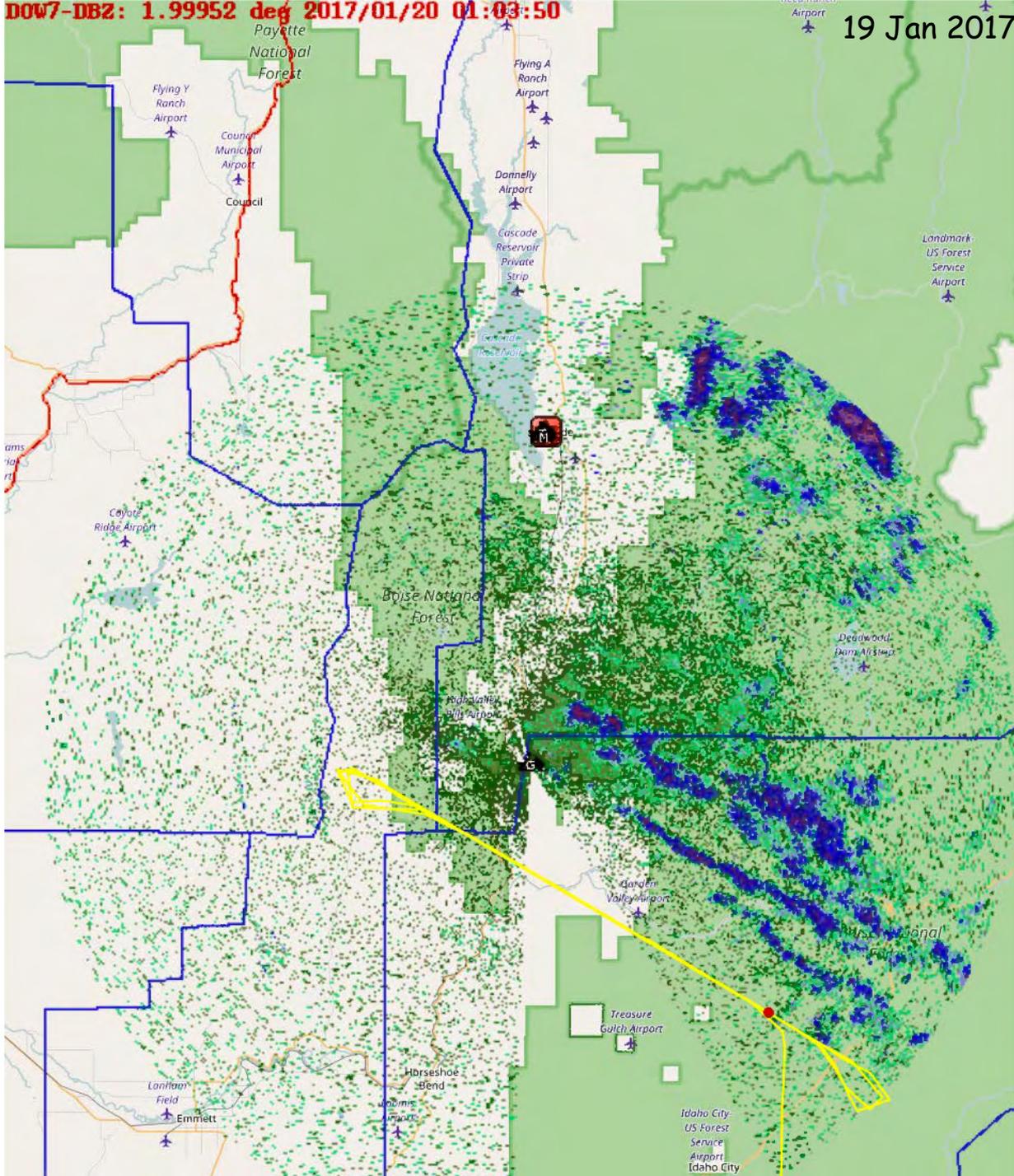


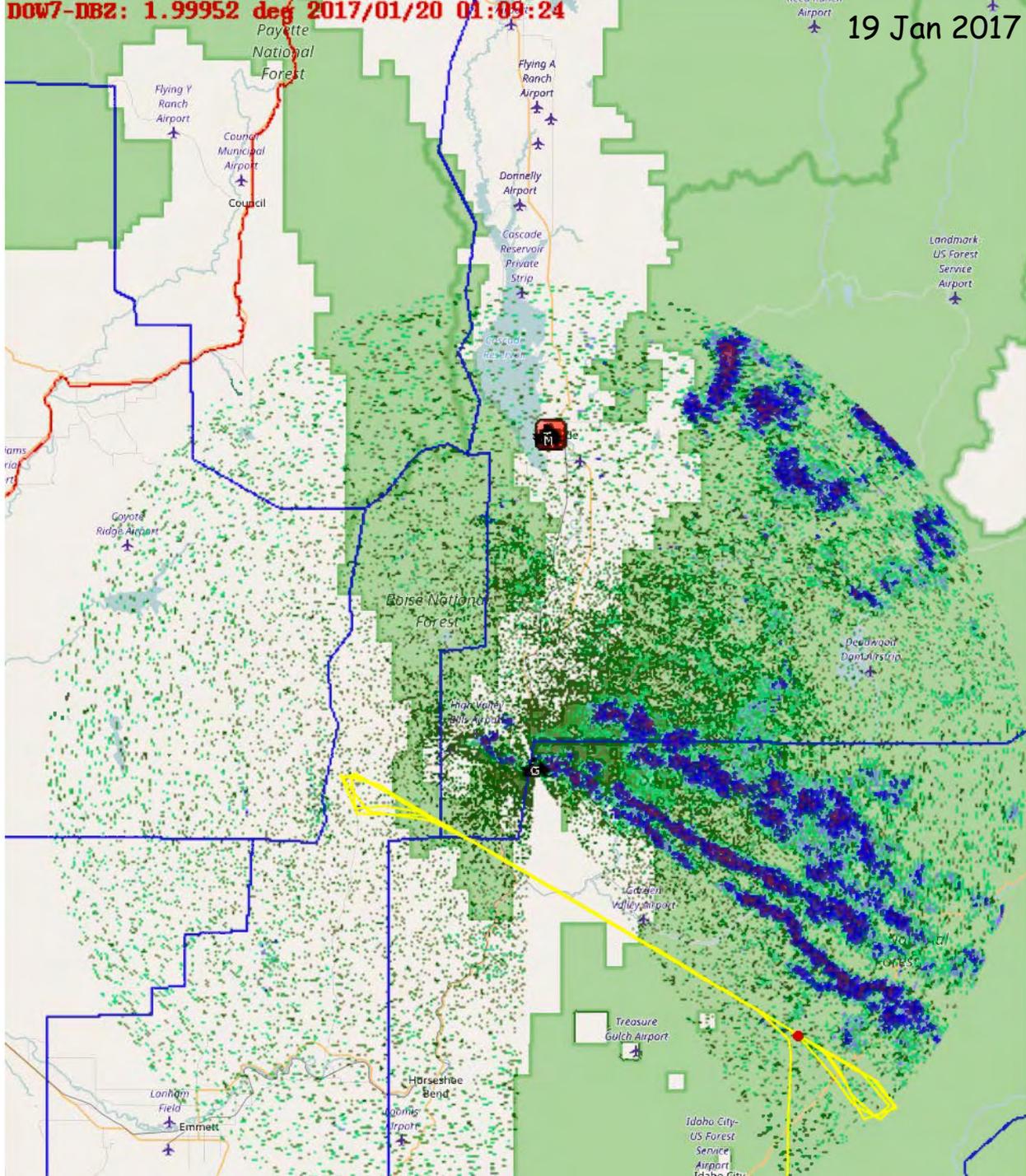


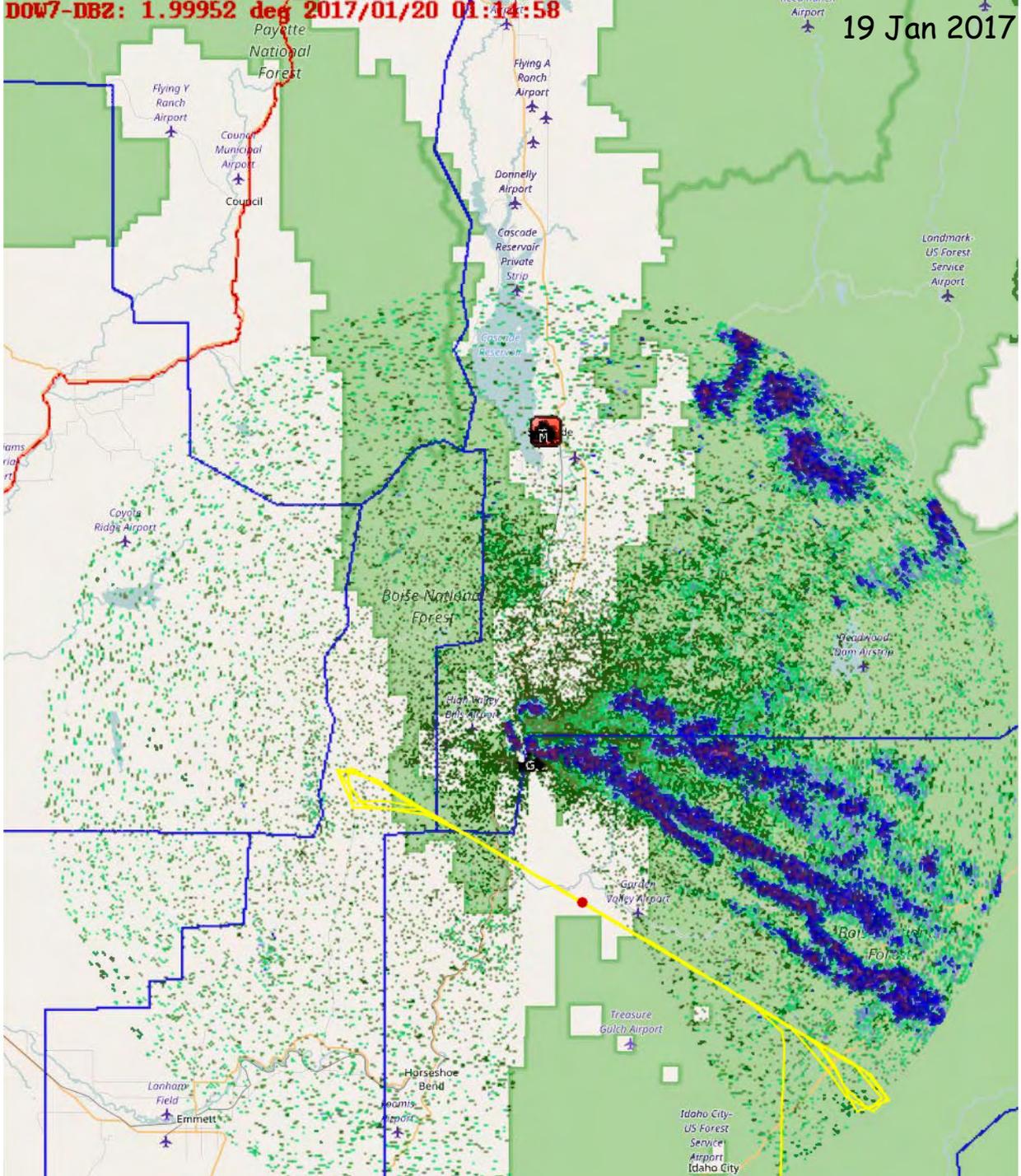






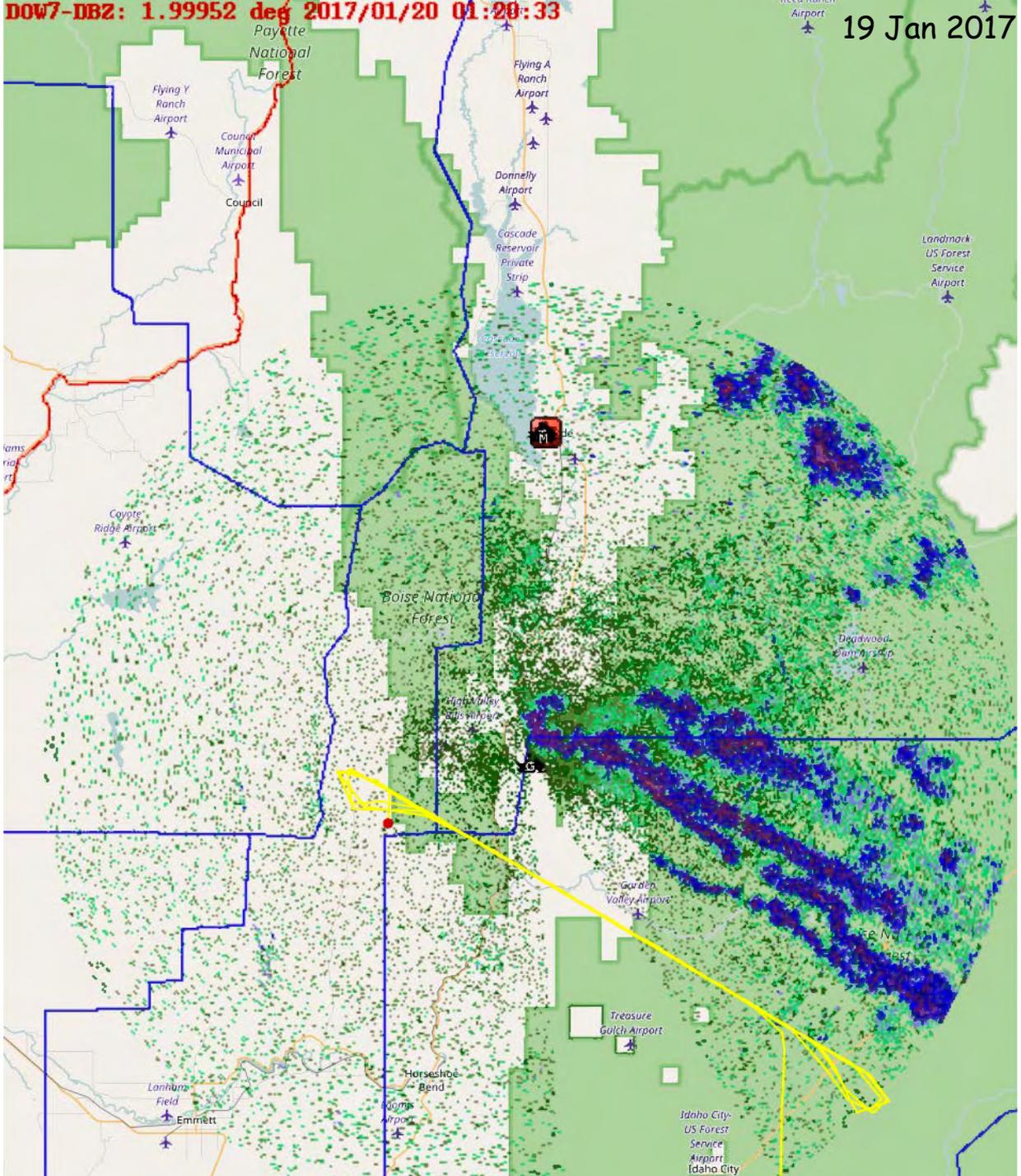


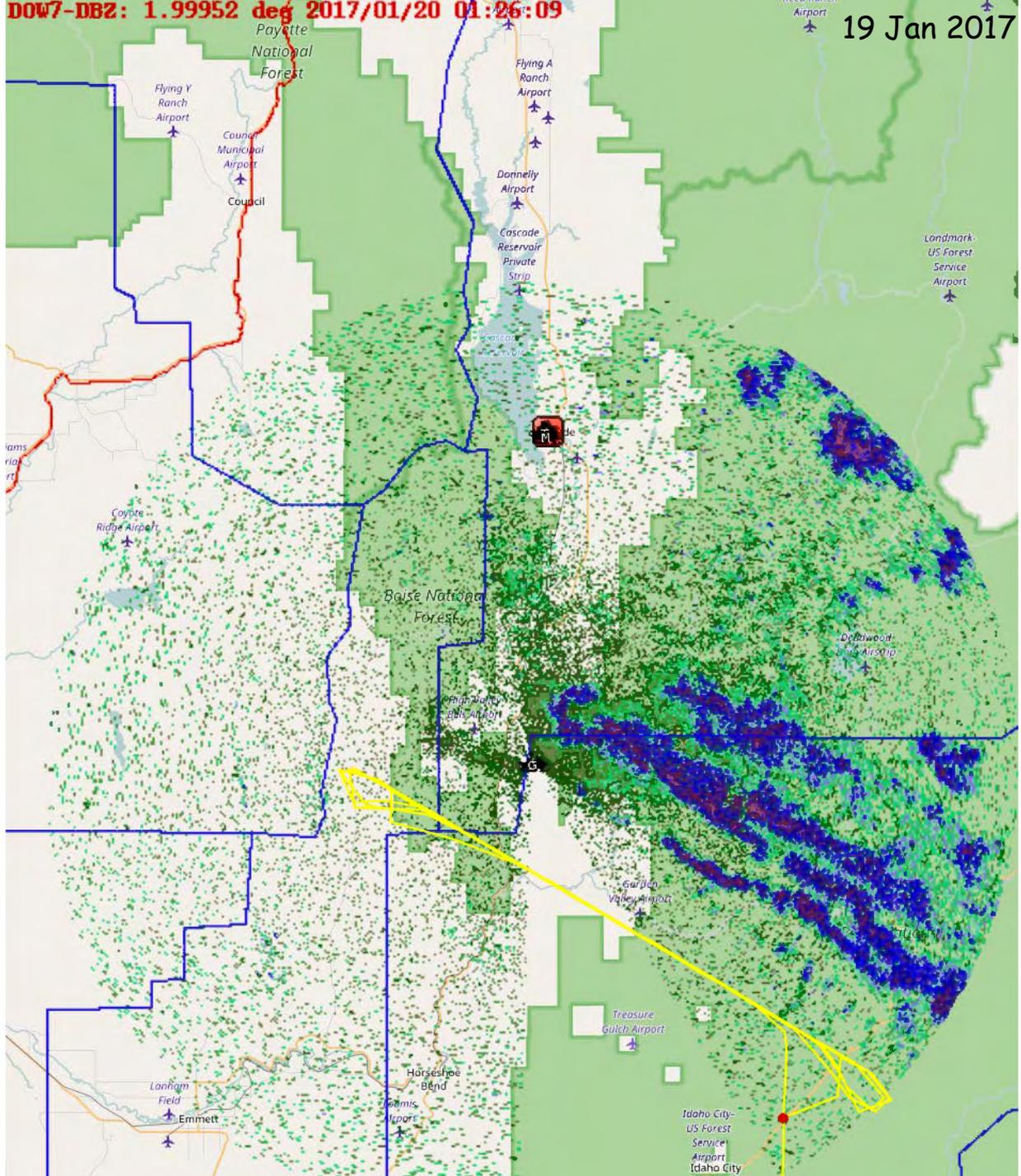


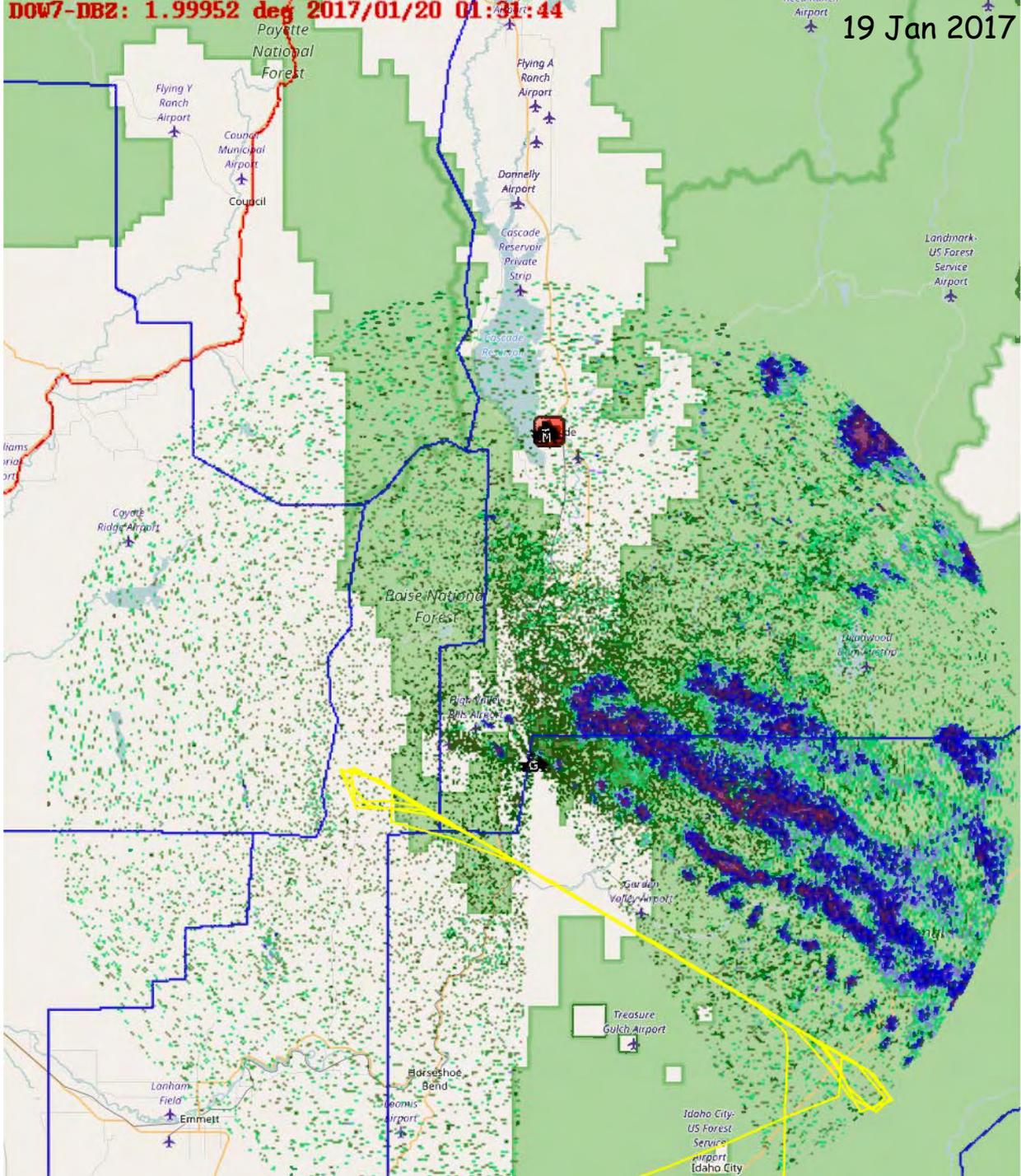


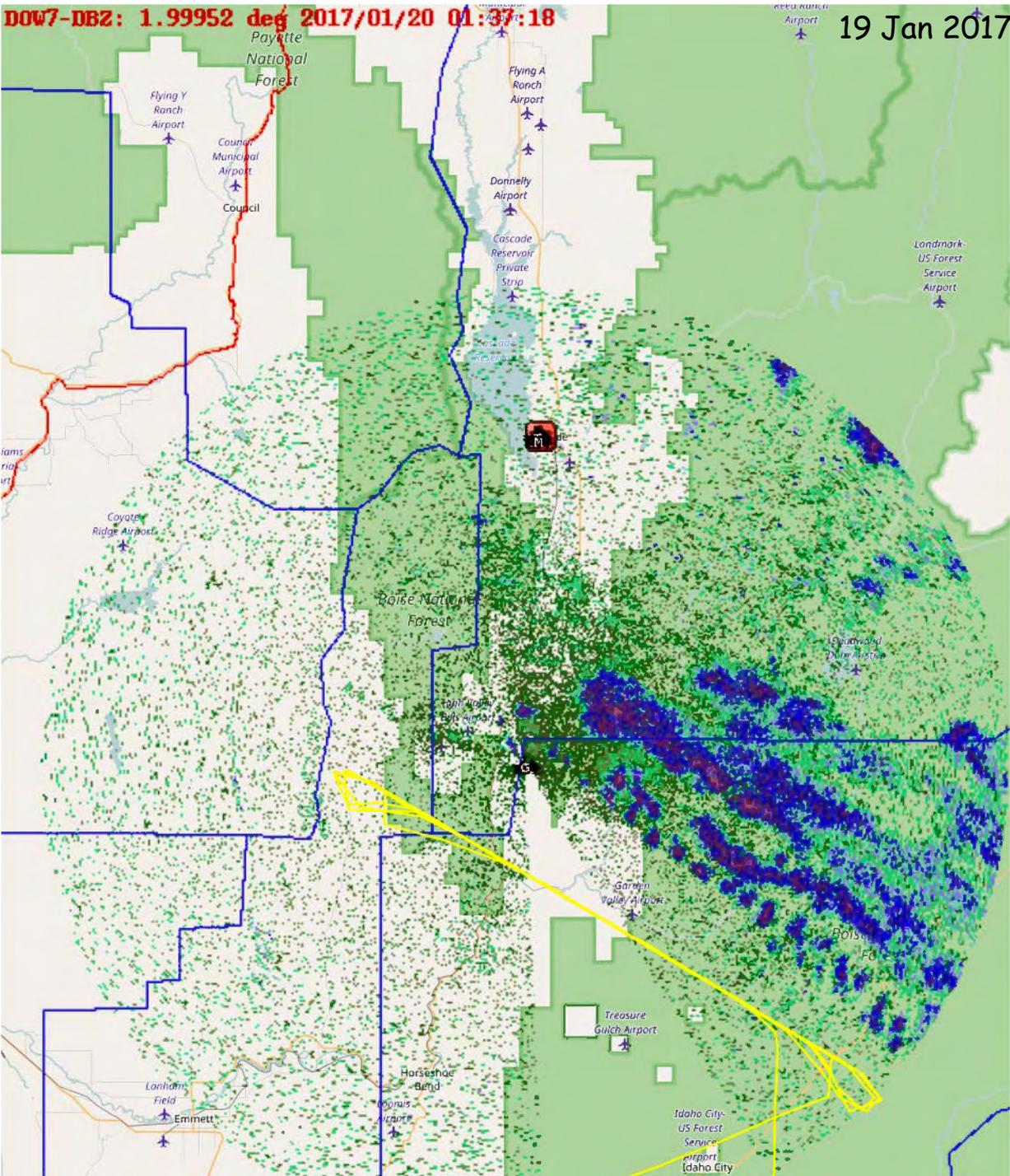
DOW7-DBZ: 1.99952 deg 2017/01/20 01:20:33

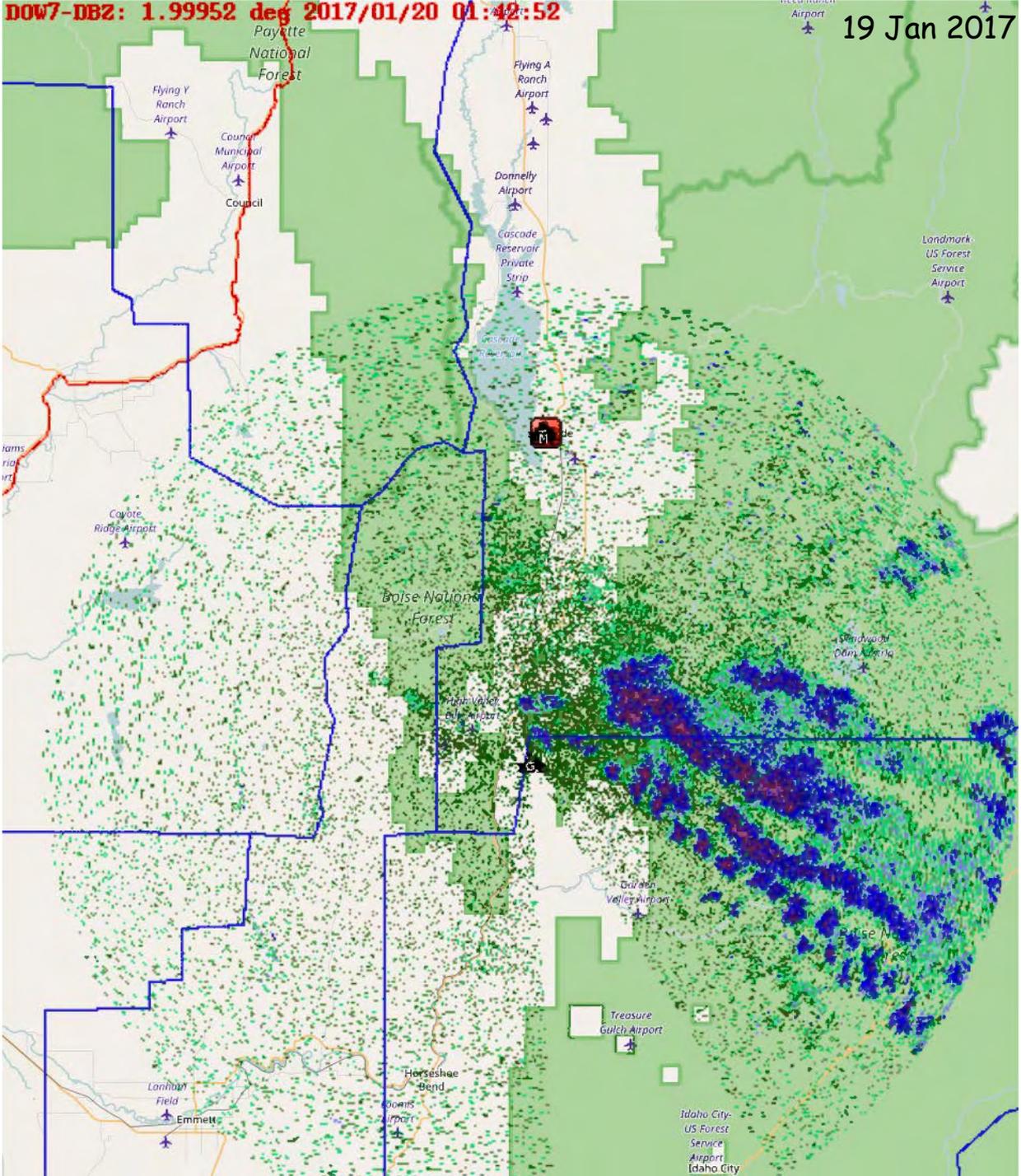
19 Jan 2017

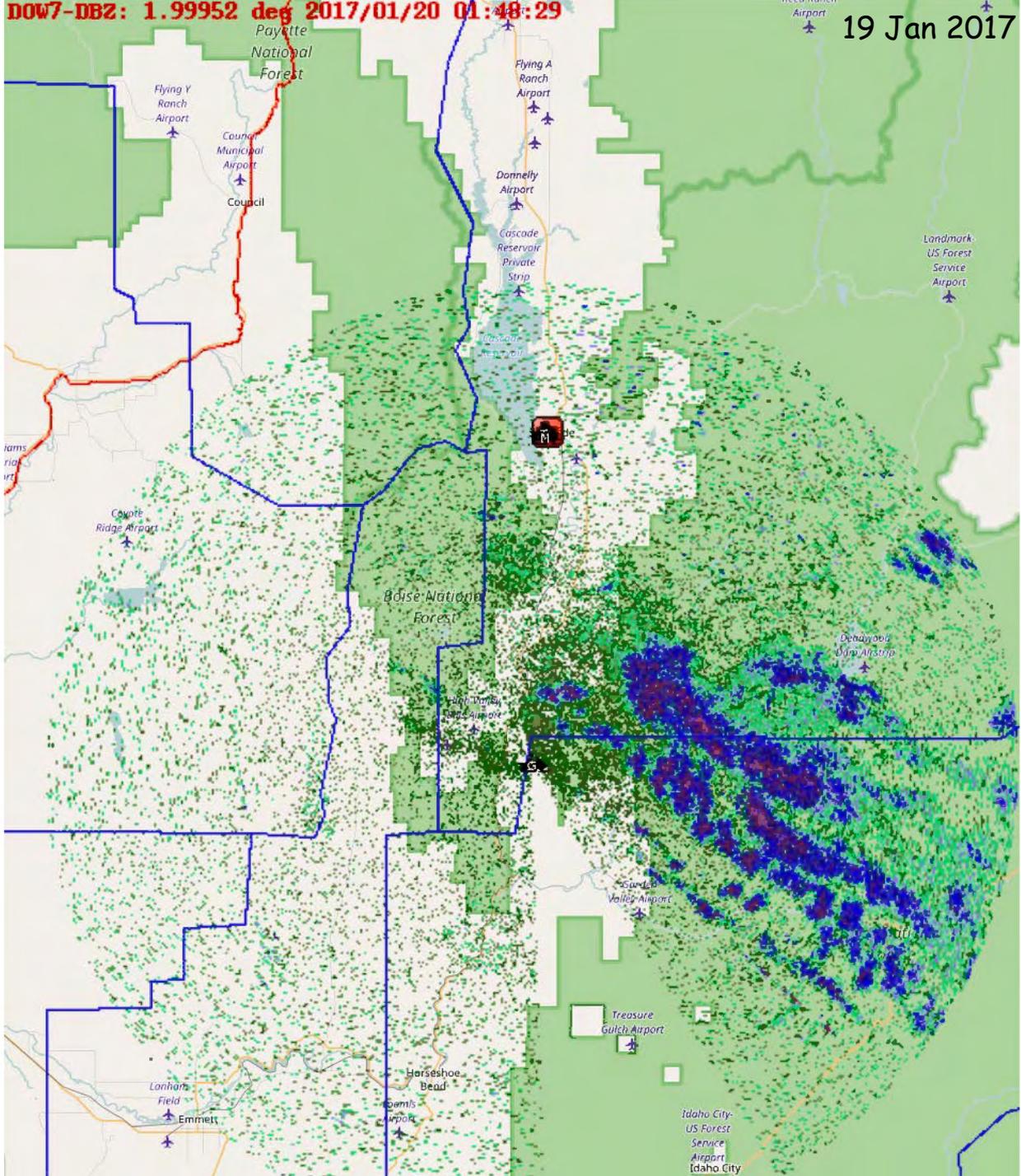


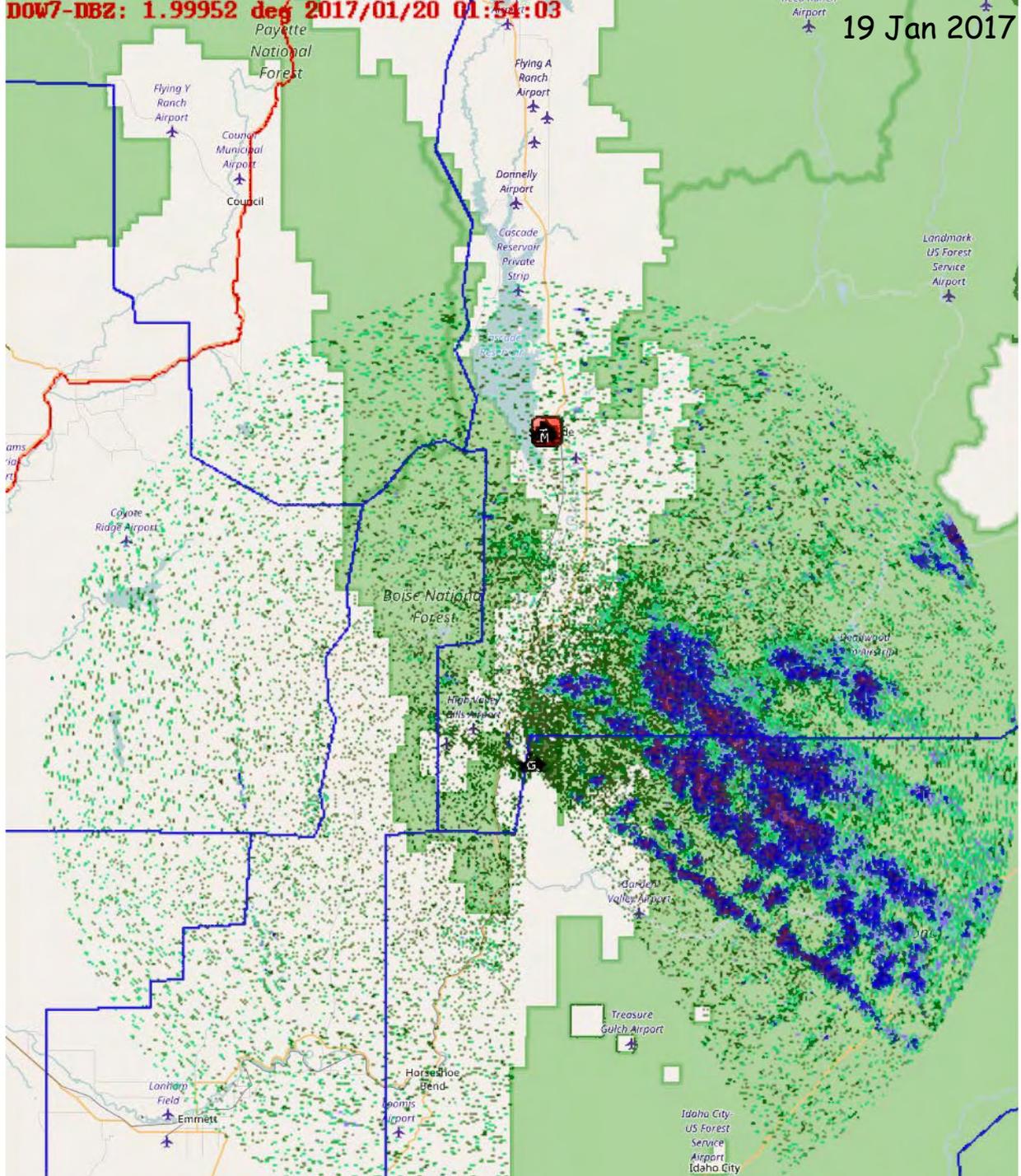


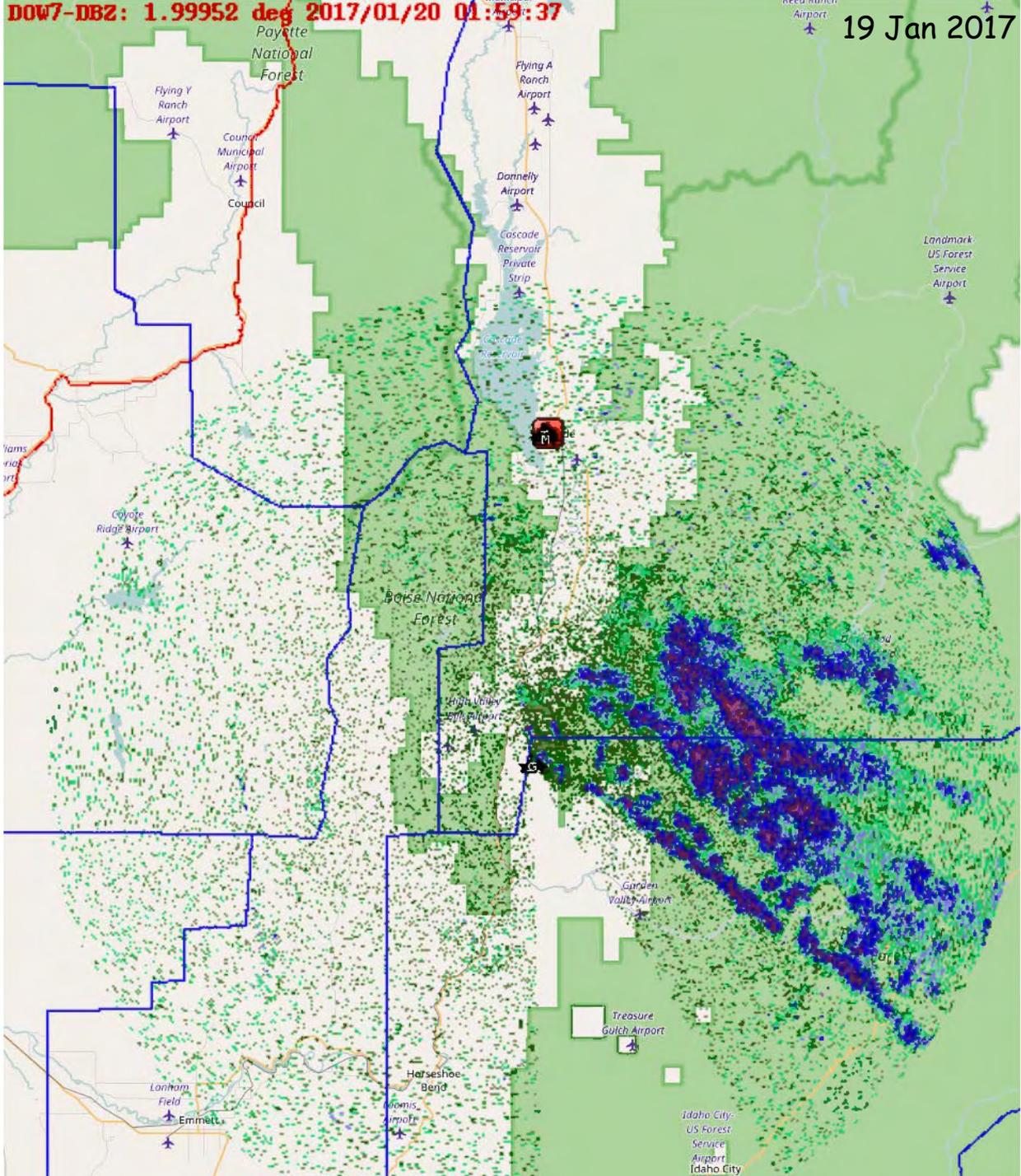


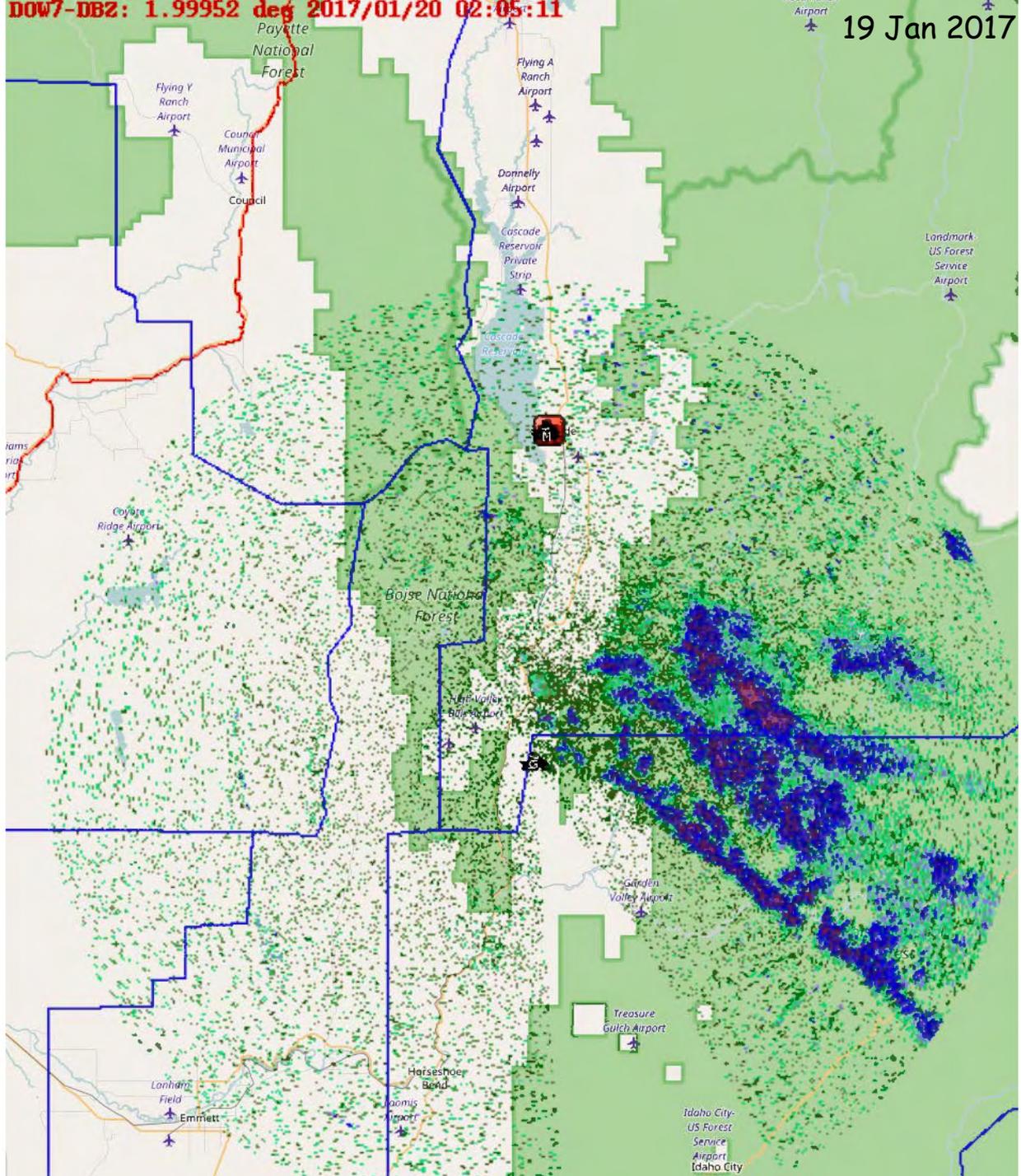


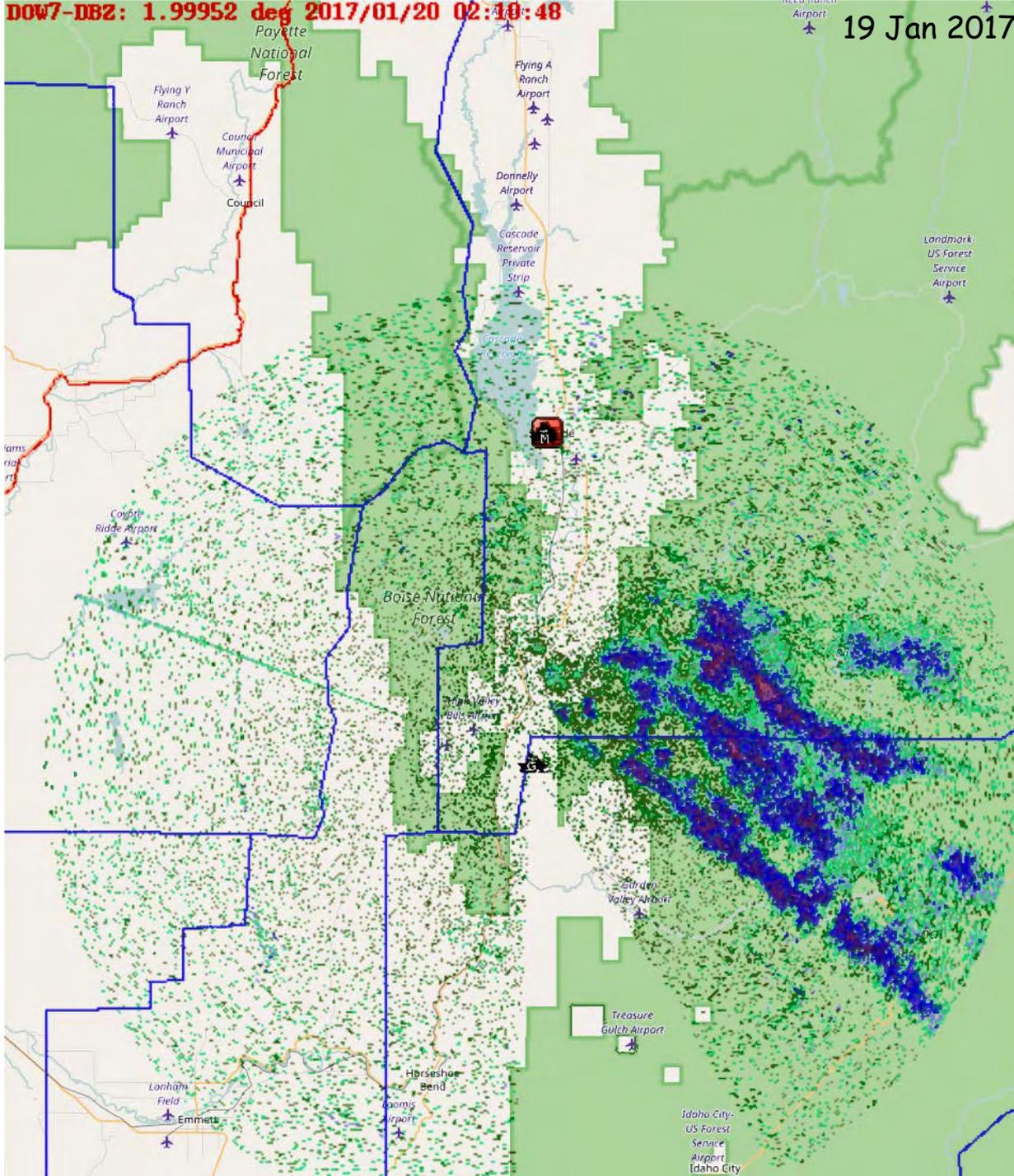


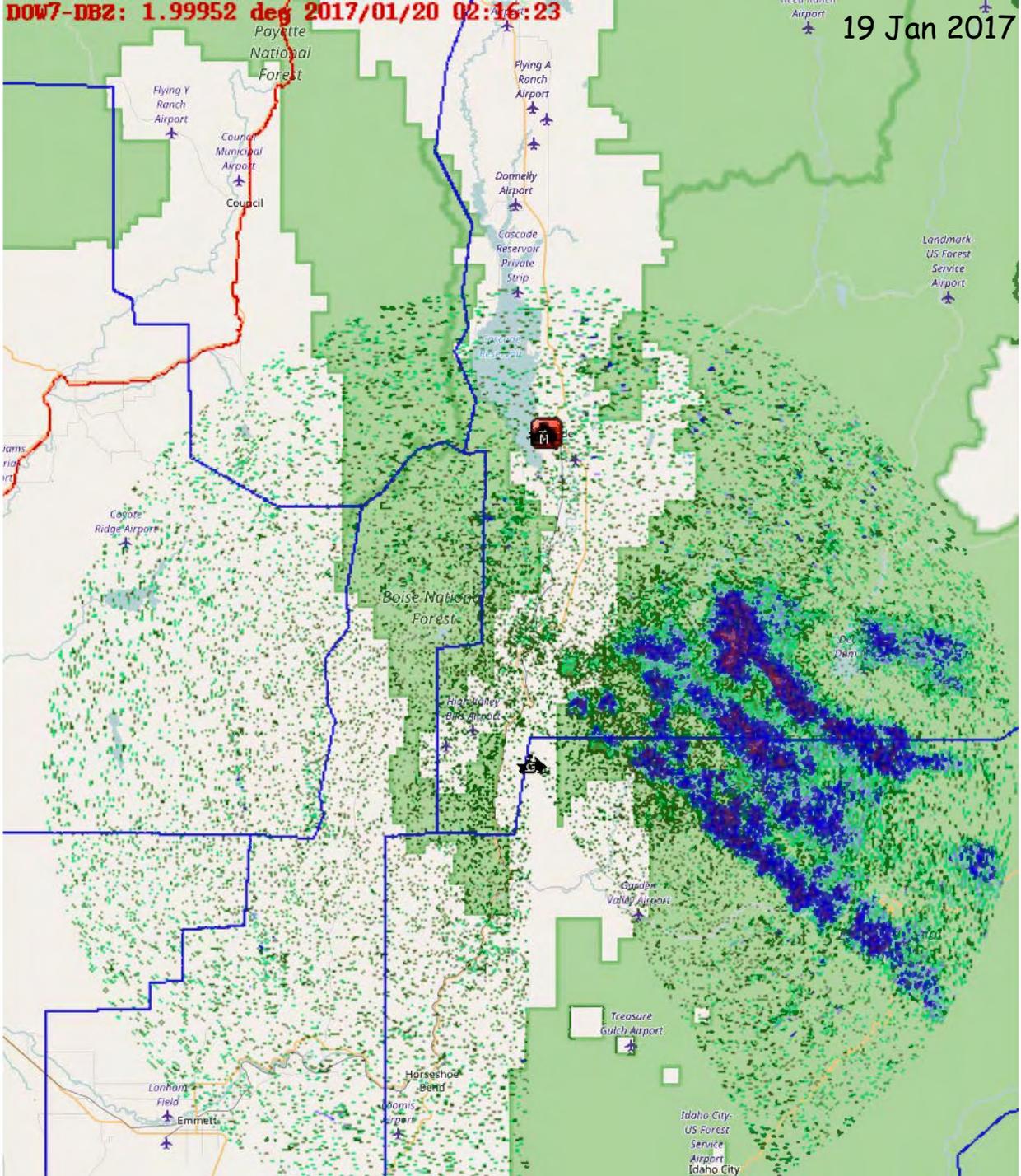


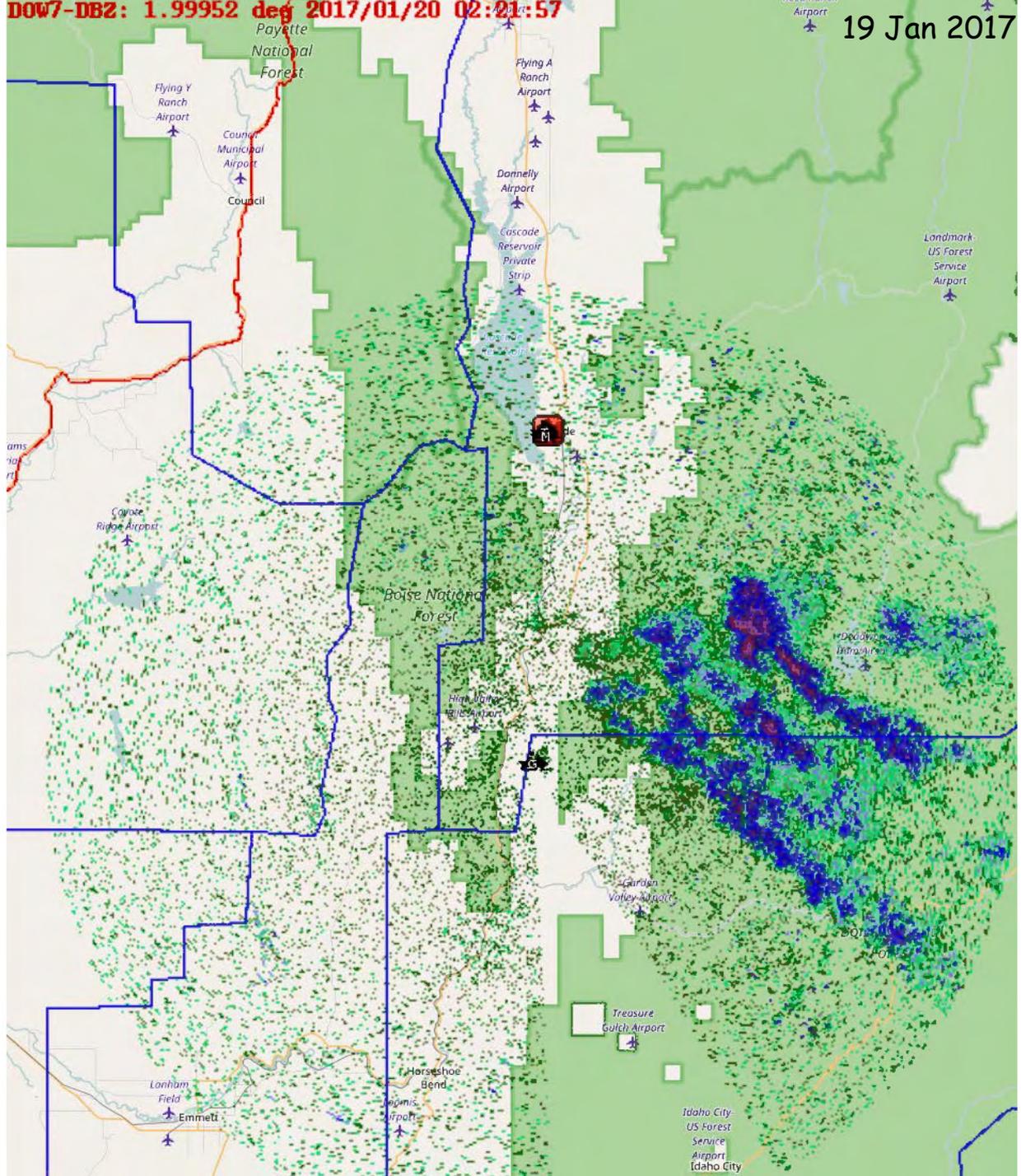


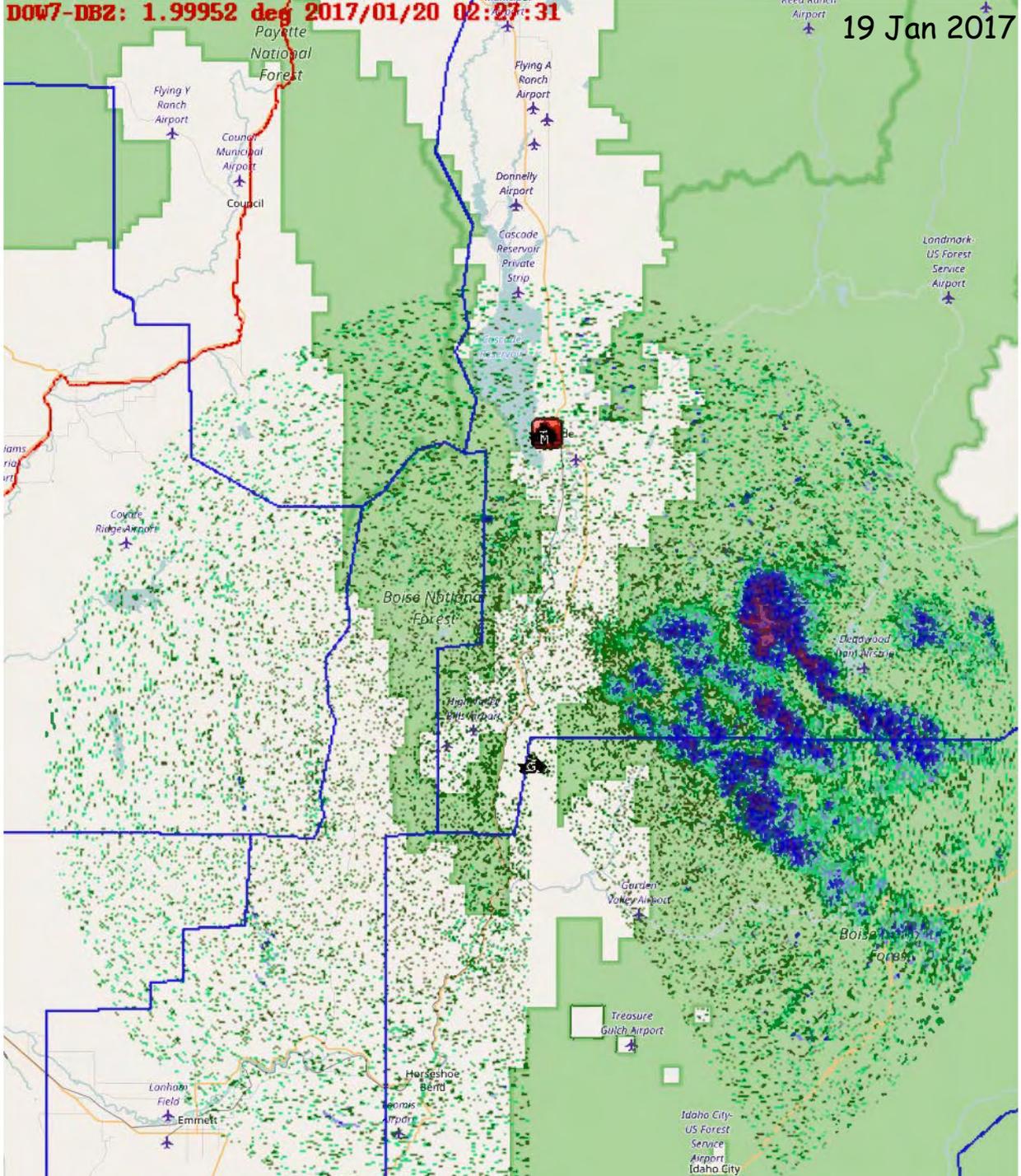


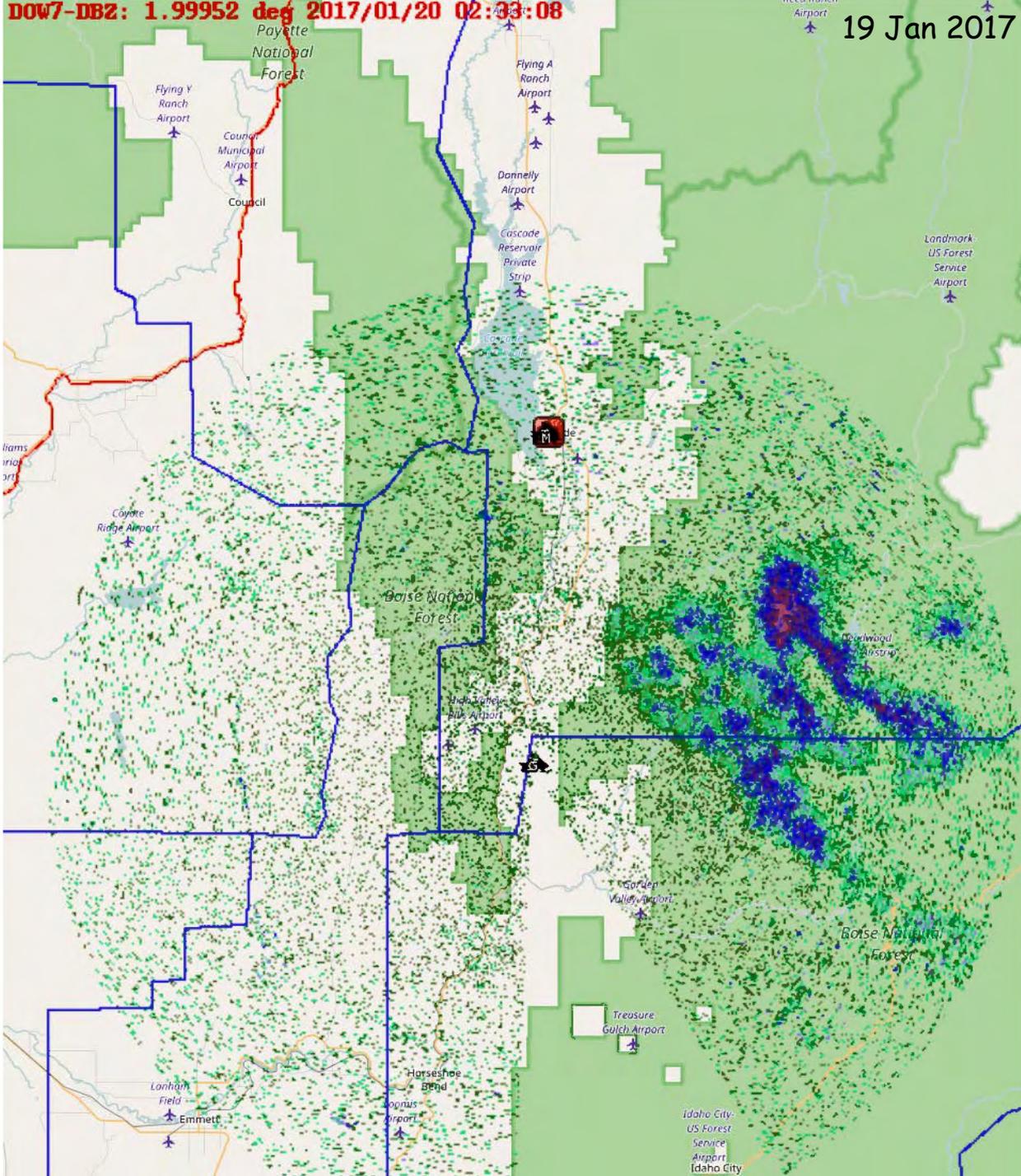














How does SNOWIE benefit this effort?

- PNAS publication ...
 - SNOWIE provided the ‘... first unambiguous observations of the physical chain of events following introduction of glaciogenic cloud seeding aerosol into supercooled liquid orographic clouds.’
- Researchers have a number of additional analysis to do and have a number of additional publications planned
- Ultimately, the findings are consistent with assumptions applied to estimate benefits



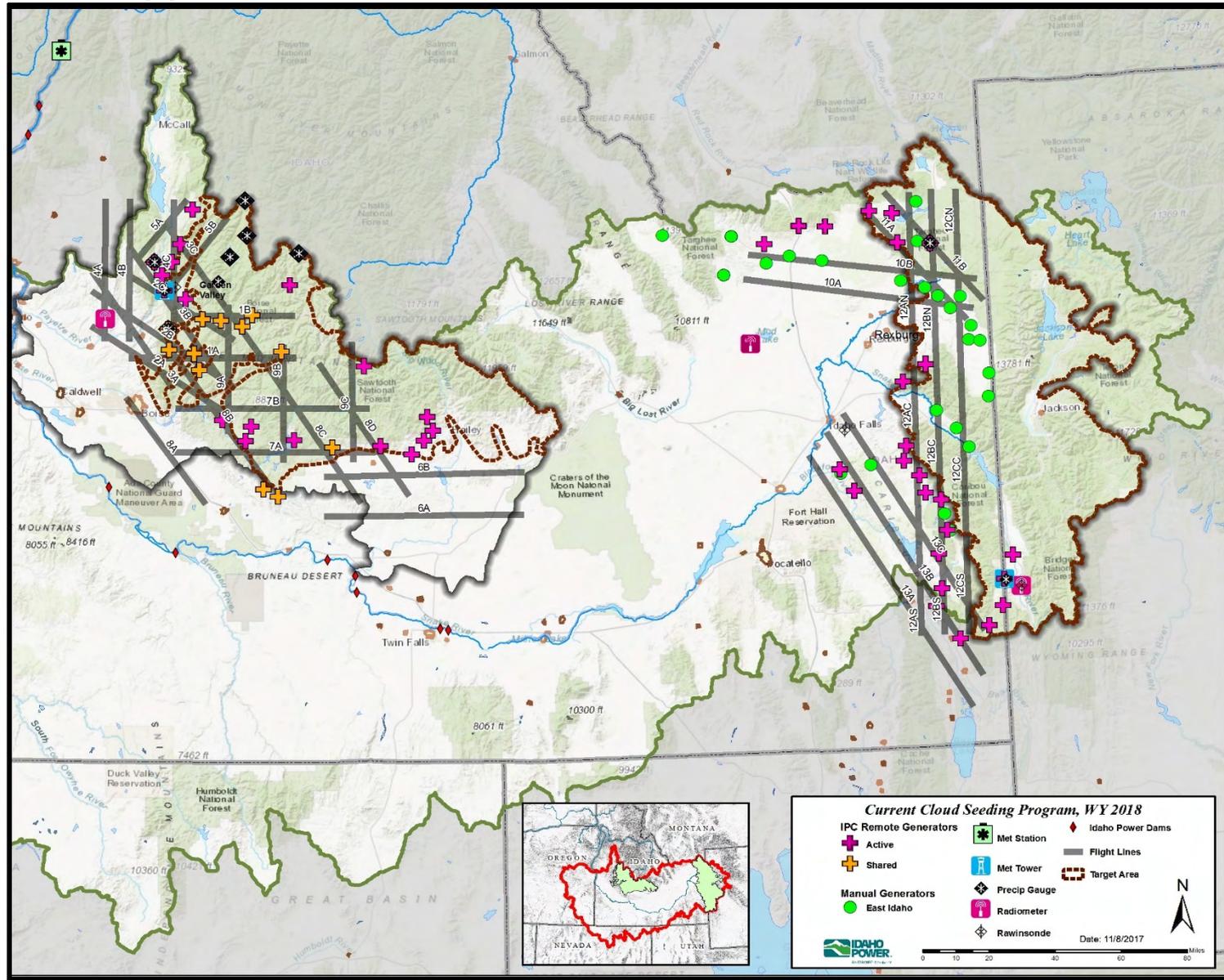
Idaho Power's History with Cloud Seeding

- Began investigating cloud seeding in 1993 (shareholder question)
 - Take home: Long-term water management tool
- Operational in fall of 2003 (7 generators, aircraft, assessment)
 - Completed second year of assessment and third year of operations in May 2005
- In 2008 collaborated with HC RC&D and E Idaho Counties to enhance their program
5 year pilot project for CAMP
- In 2010 started working with WW RC&D to evaluate cloud seeding opportunities in western Wyoming
- In 2011 started working with NCAR to develop WRF model to guide and evaluate CS operations and projects
- In 2013 – contracted with Big Wood Canal Company to seed Wood River with aircraft
- WY 2015 Expansion (44 generators, 2 aircraft)
 - Boise and Wood Basin's – remote generators and aircraft seeding
 - Continued expansion in Salt and Wyoming Ranges
 - IWRB funding a grant for equipment associated with expansion
- WY 2016 Expansion
 - Additional remote generators in Central Mountains and Upper Snake (Total of 53)
 - Third aircraft
- WY 2018 (Current)
 - Total 55 remote generators, 3 aircraft
 - Continued model development

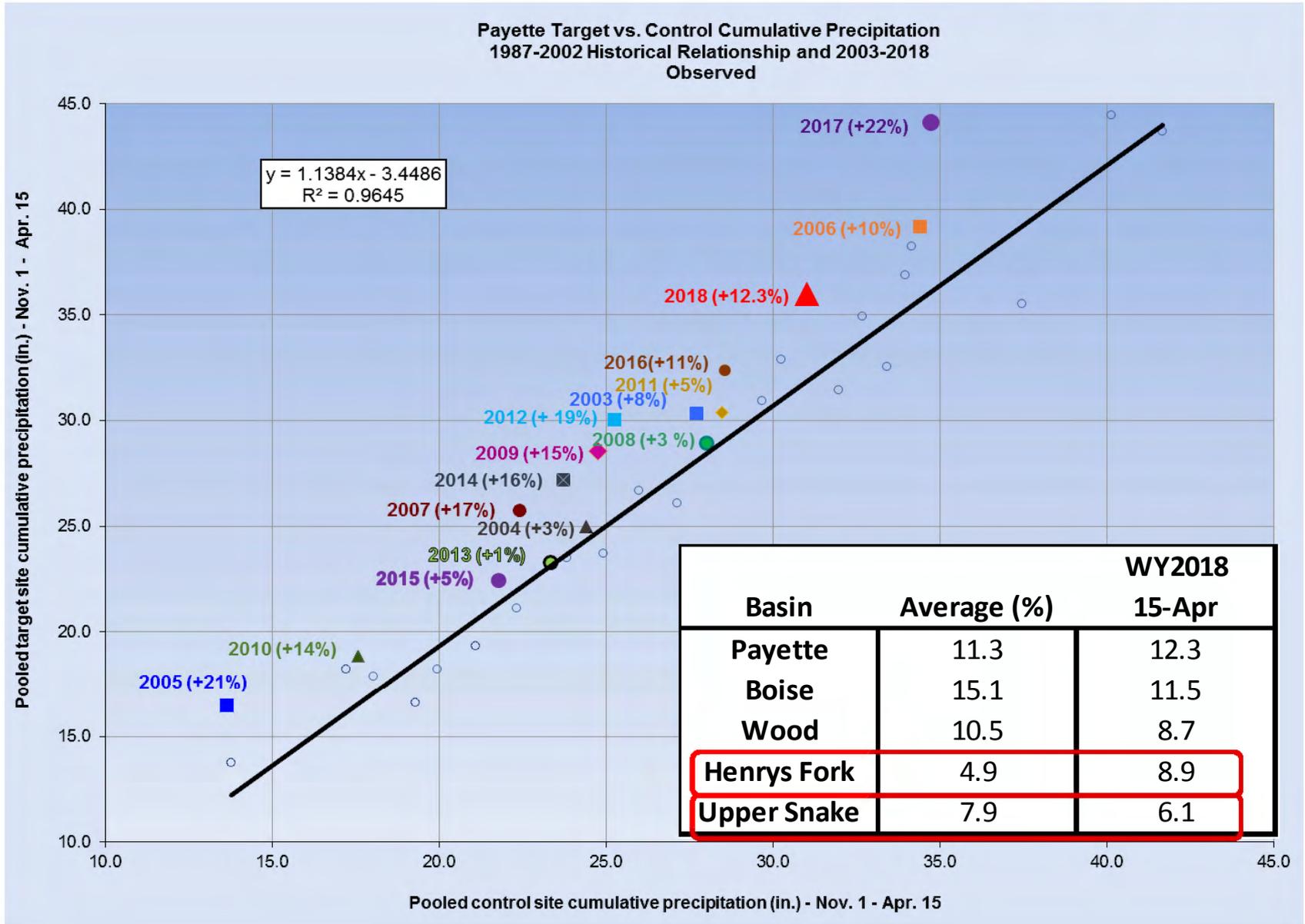
Current Program

Payette, Boise, Wood & Upper Snake

- **Payette**
 - 17 Remote Gen's
 - Aircraft
 - Radiometer
 - Weather Balloon
 - Weather Tower
 - 9 hi-res precip gauges
- **Boise and Wood**
 - 13 Remote Gen's
 - Aircraft
 - Radiometer
 - 2 hi-res precip gauges
- **Upper Snake**
 - 25 Remote Gen's
 - 25 Manual Gen's
 - Aircraft
 - 2 Radiometers
 - 2 Weather Balloons
 - Weather Tower
 - 2 hi-res precip gauge
- **All**
 - Weather Model



Target Control Benefits



Estimated Runoff Benefits (Current)

Additional Runoff

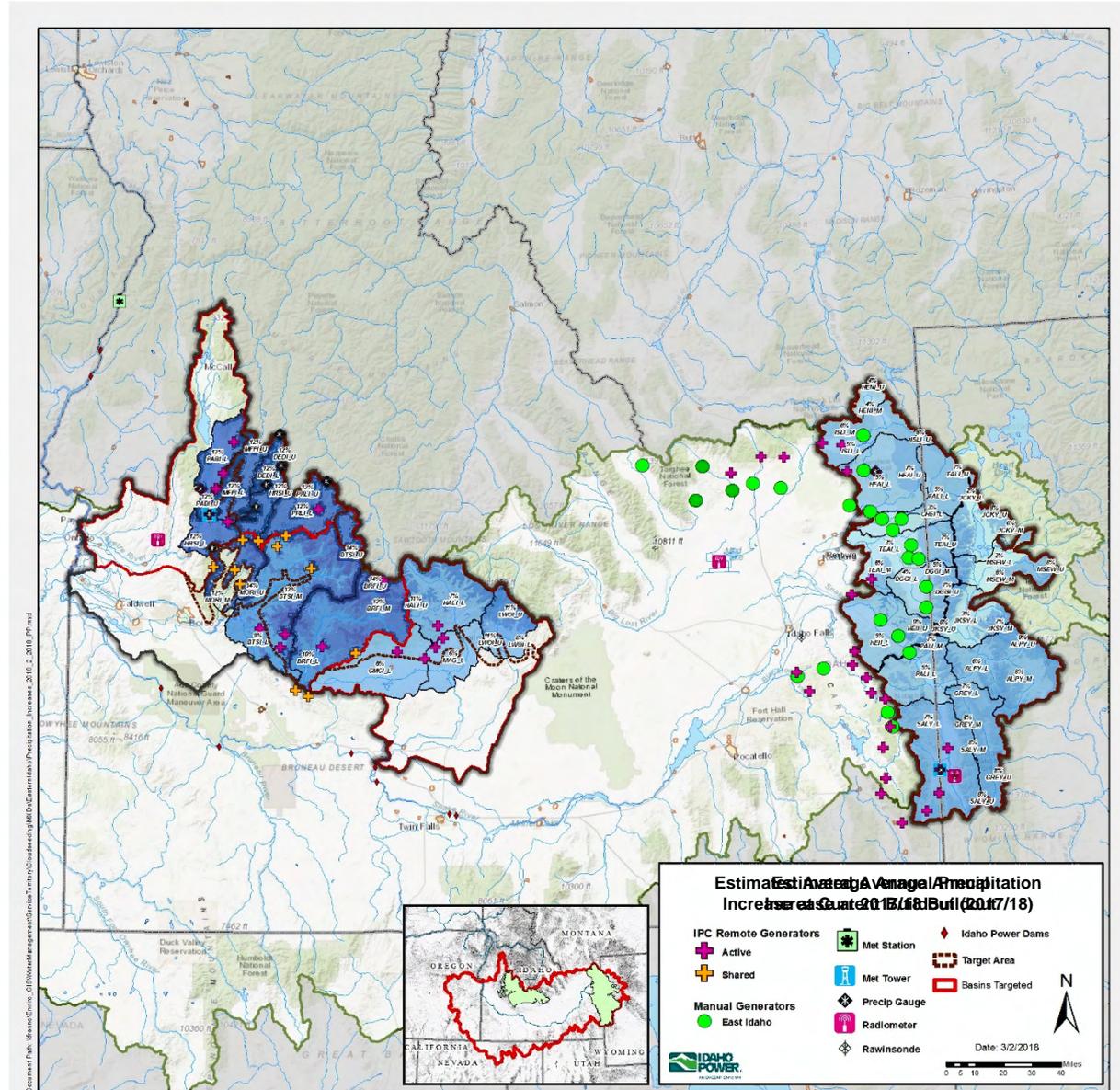
(unregulated)

- Payette – 212 KAF
- Boise – 229 KAF
- Wood – 113 KAF
- U Snake – 424 KAF
- Abv Palisades – 280 KAF
- Henry's Fork – 144 KAF

Total – 978 KAF

Cost of Additional Water

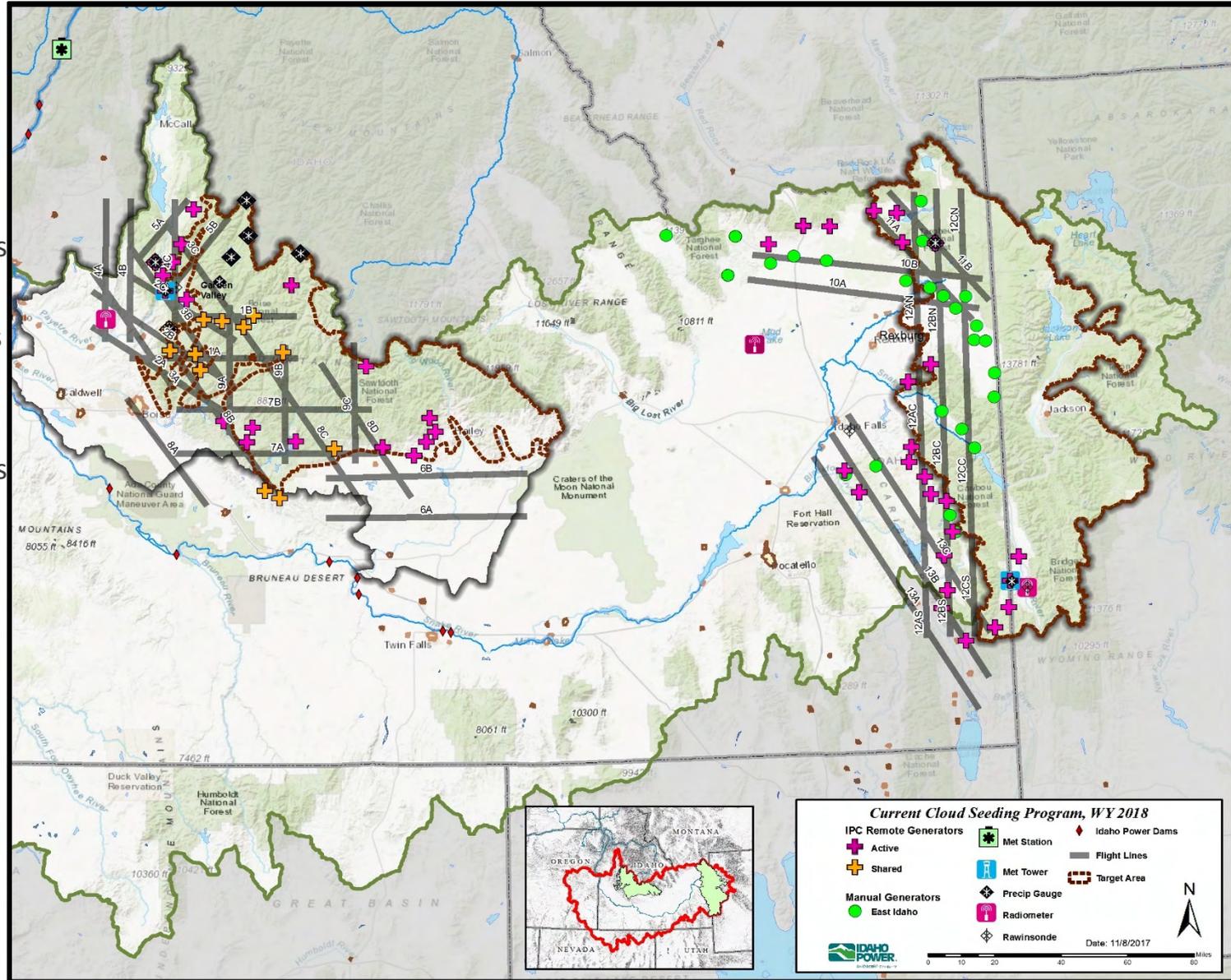
- Gross ~\$3.3/AF



Potential Future Program

Payette, Boise, Wood & Upper Snake

- **Payette**
 - 17 Remote Gens
 - Aircraft
 - Radiometer
 - Weather Balloon
 - Weather Tower
 - 7 hi-res precip gauges
- **Boise and Wood**
 - 20 - 26 Remote Gen's
 - Aircraft
 - Radiometer
 - Weather Balloon
 - 4 hi-res precip gauges
- **Upper Snake**
 - ~ 40 Remote Gens
 - 25 Manual Gens
 - 2 Aircraft
 - 2 Radiometers
 - 2 Weather Balloons
 - Weather Tower
 - 2 to 5 hi-res precip gauges
- **All**
 - Weather Model



Estimated Runoff Benefits (Buildout)

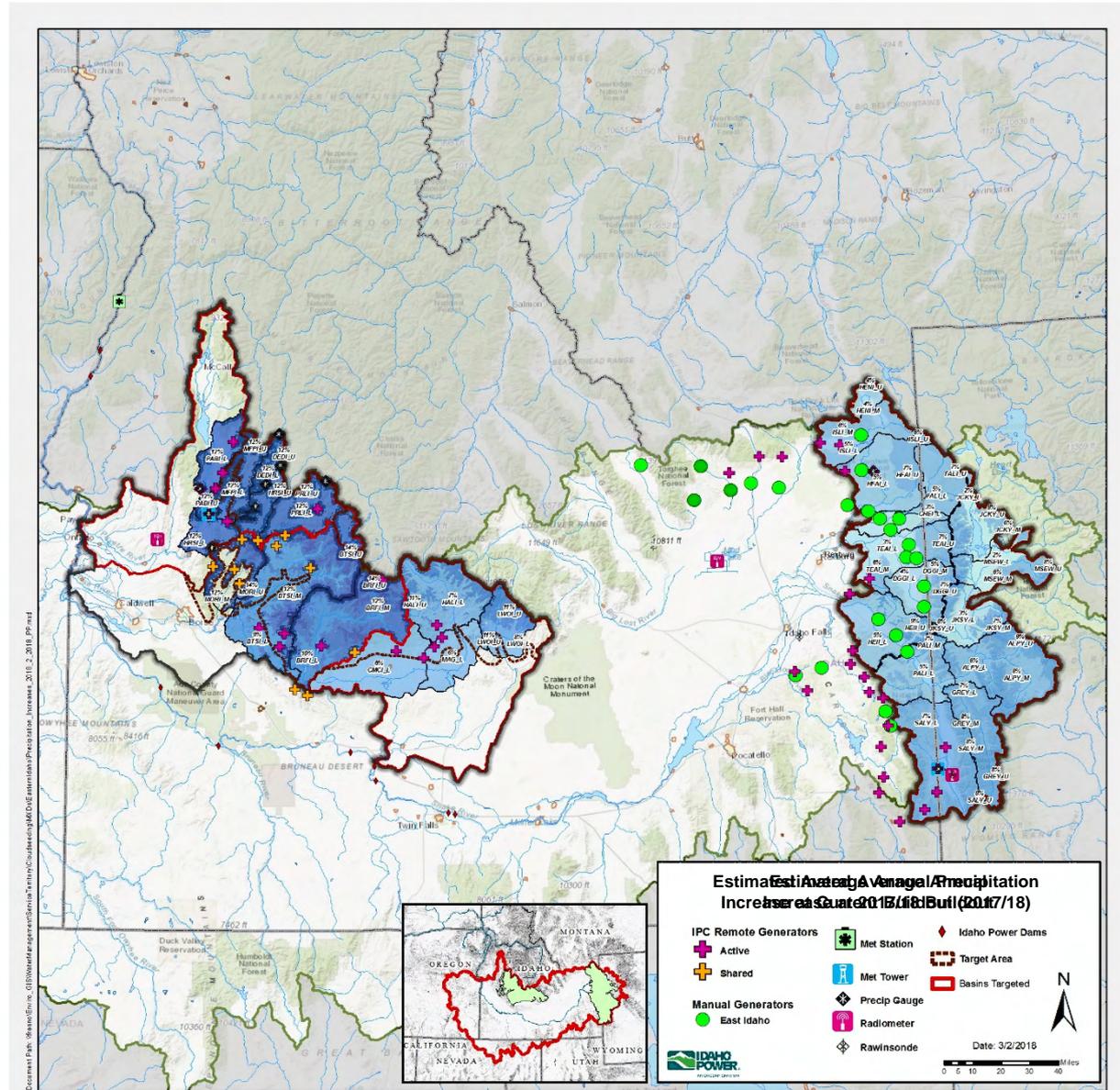
Additional Runoff (unregulated)

- Payette – 212 KAF
- Boise – 280 KAF
- Wood – 162 KAF
- **U Snake – 615 KAF**
 - Abv Palisades – 424 KAF
 - Henry's Fork – 191 KAF

Total – 1,269 KAF

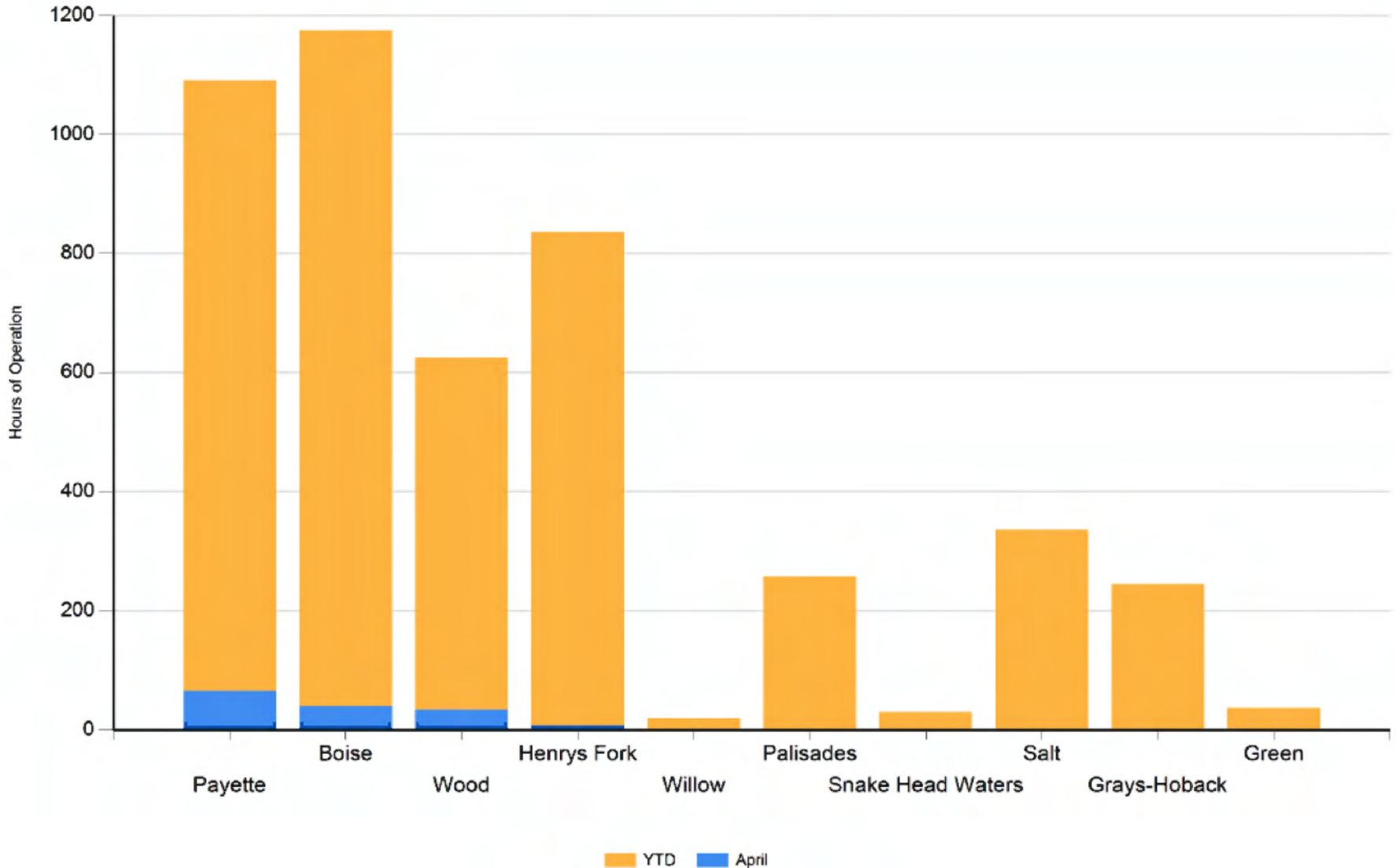
Cost of Additional Water

- Gross ~\$3.5/AF

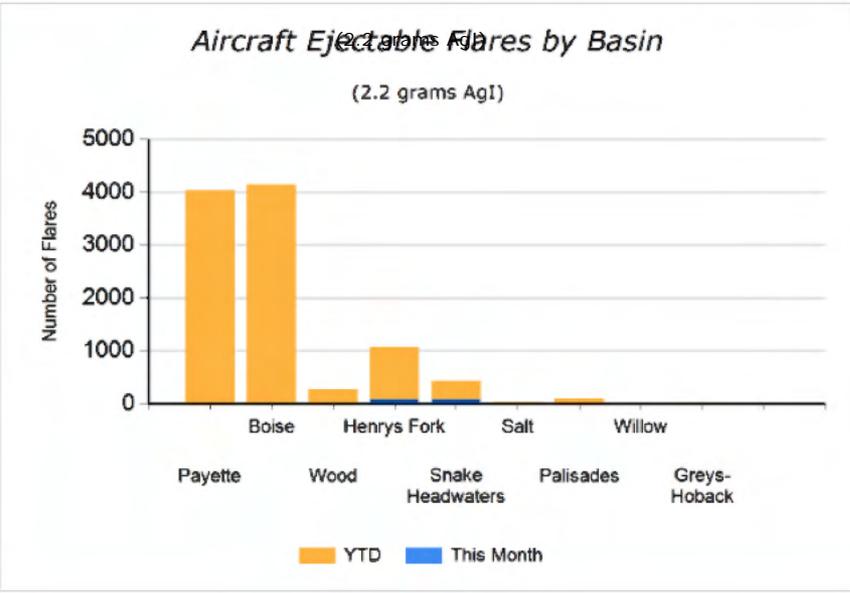
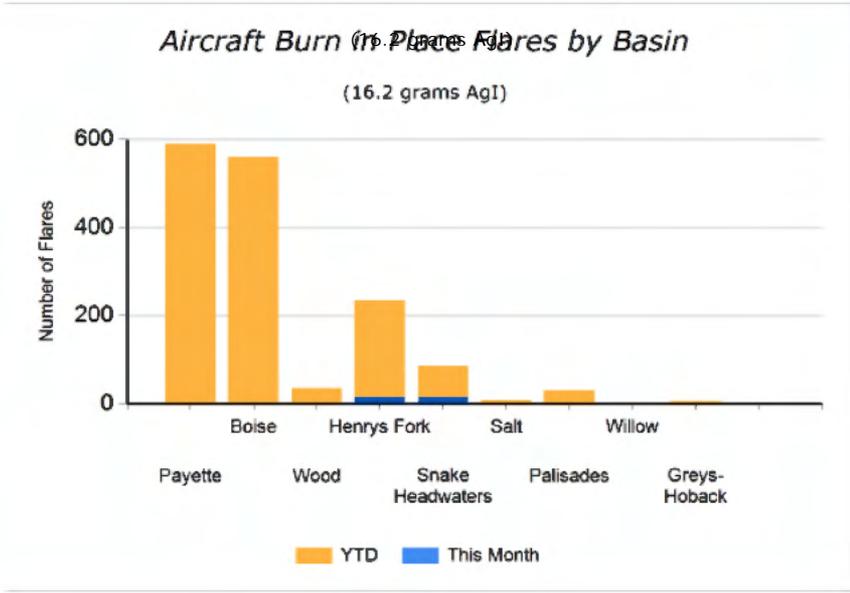
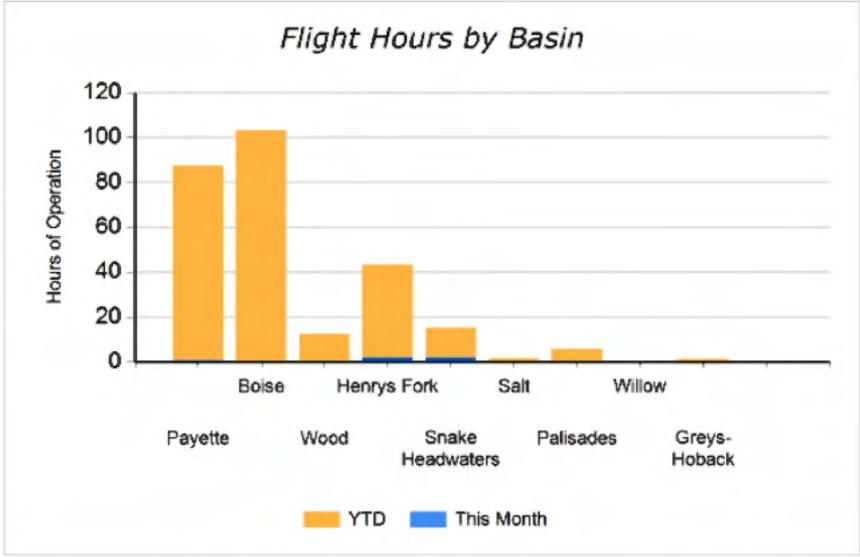


IPC Ground Operations WY2018

Ground Generator Hours by Basin



Aircraft Operations WY2018



WY2018 Wrap-up

Basin	Average (%)	WY2018 15-Apr
Payette	11.3	12.3
Boise	15.1	11.5
Wood	10.5	8.7
Henrys Fork	4.9	8.9
Upper Snake	7.9	6.1

	Henrys Fork		Upper Snake	
	2018	Average	2018	Average
GGENS	836	705	926	863
A/C Hours	43	29	24	21
BIPs	234	99	114	55
Ejs	1065	438	594	325

Number of Seedable storms

November	December	January	February	March	April	WY Total
10	6	8	9	4	2	39



Questions?

Memorandum

To: Idaho Water Resource Board
From: Tim Luke
Date: May 7, 2018
Re: South Fork Clear Water River Suction Dredge Mining Update



REQUIRED ACTION: No action is required at this time.

Background

IDWR is the state agency given primary responsibility to administer the Idaho Stream Protection Act (“Act”) which regulates alteration of streams in the state. The Act declares “[n]o alteration of any stream channel shall hereafter be made unless approval” has been given by the Director of IDWR. Rule 34.01 of the Idaho Stream Channel Alteration Rules (“Rules”) (IDAPA 37.03.07) states “any applicant proposing to operate a vacuum or suction dredge within or below the mean high water mark of a stream channel shall apply for and obtain a stream channel alteration permit. The vacuum or suction dredge shall only be operated in accordance with the conditions of the permit and with the applicable rules.”

The IWRB’s South Fork Clearwater River Basin Comprehensive State Water Plan (“SFCR Plan”) allows limited small scale suction dredge or placer mining on the main stem of the SFCR subject to IDWR permitting and upon requests by miners using a Special Supplement permit application. The SFCR Plan also requires that suction dredge mining sites be inspected by IDWR staff and a fisheries biologist. IDWR did not enforce all of the SFCR Plan requirements for suction dredging between roughly 2009 and 2015.

Starting in 2016, IDWR enforced the Special Supplement requirements, including additional conditions, pre-permit site inspections with a fisheries biologist, and limiting the total number of Special Supplement approvals to 15 dredges on the SFCR. The enforcement of the Special Supplement application with special conditions and 15 approval limit generated complaints from dredge miners and local area legislators. In response, IDWR and the IWRB held two separate listening sessions (June and December, 2017) with local miners and other interested stake holders. Special Supplement conditions have been modified for the 2018 dredge season and the 15 approval limit has been removed.

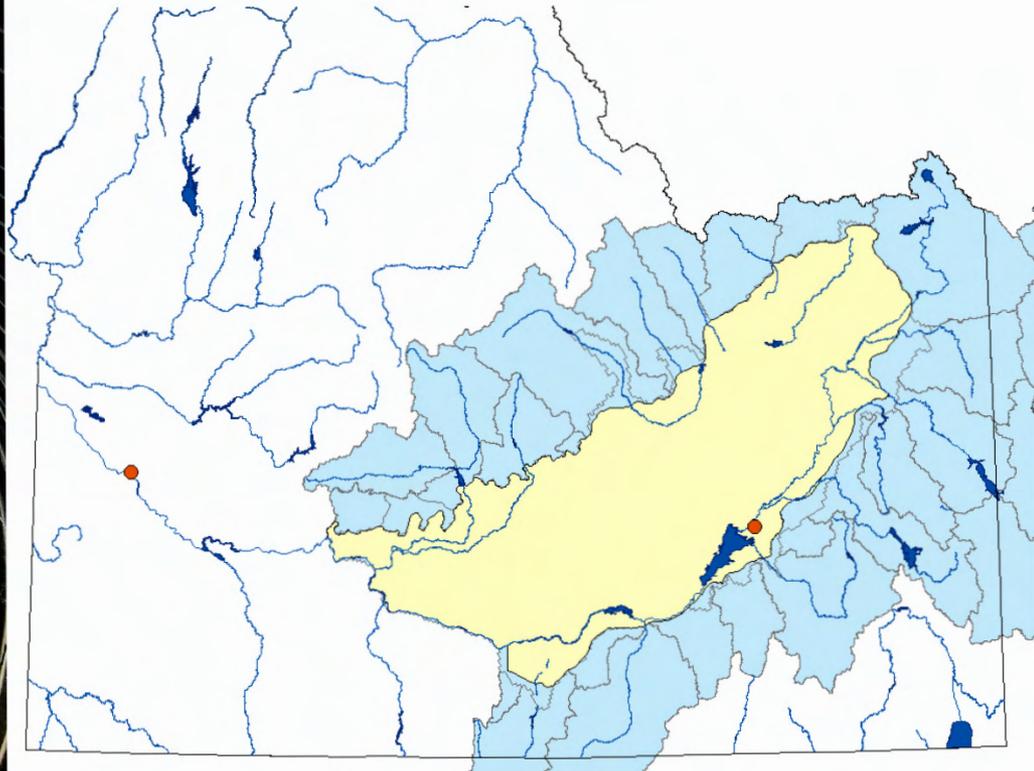
Status

- The SFCR Special Supplement conditions have been revised for the 2018 dredge season. There have been no formal objections or challenges to the revised conditions, and most local miners either accept or support the current conditions.
- IDWR removed the 15 dredge approval limit from the 2018 SFCR Special Supplement instructions.
- Most of the SFCR dredge mining activity is on lands owned or managed by the US Forest Service (USFS) or the BLM. These agencies require miners to submit a Plan of Operation for suction dredging. The agencies must approve the plans and inspect mining sites prior to dredging. Additionally, miners must obtain an NPDES permit from the EPA prior to dredging. Since 2016, the Federal agencies have limited suction dredging to the main SFCR and have instituted a 15 dredge approval limit. The Federal permits have a number of special conditions. The Federal agencies currently do not approve suction dredge mining requests on SFCR tributaries.

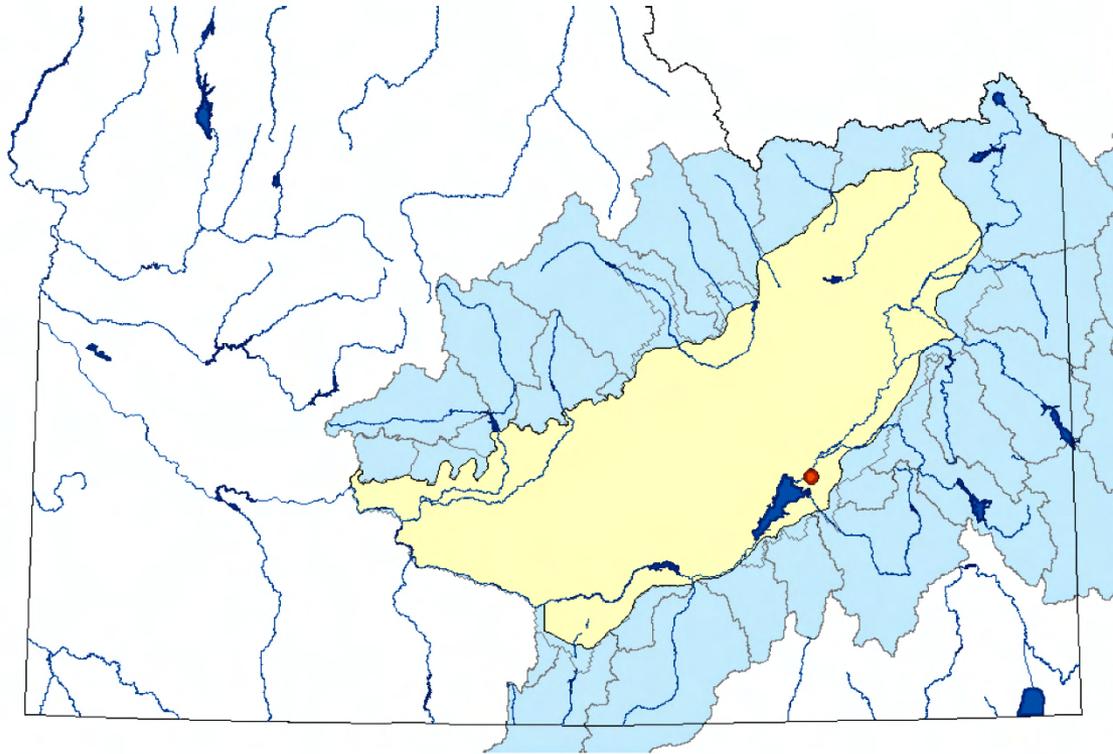
- Consistent with the SFCR Plan, IDWR may consider small scale suction dredge mining authorizations on SFCR tributaries if requests are made using the Joint Permit Application (Form 3804-B or long form application). All mining sites proposed in SFCR tributaries must be inspected by a state or federal fisheries biologist prior to dredging. Three Joint Permit applications have been filed with IDWR proposing suction dredge operations on SFCR tributaries in 2018. IDWR has received more than a half-dozen SFCR Special Supplement requests as of May 7, 2018.
- IDWR staff will provide an update to the IWRB on May 17, 2018 regarding the status, processing and inspection requirements for the Joint Permit applications and SFCR Special Supplement requests filed with IDWR.

ESPA Springs

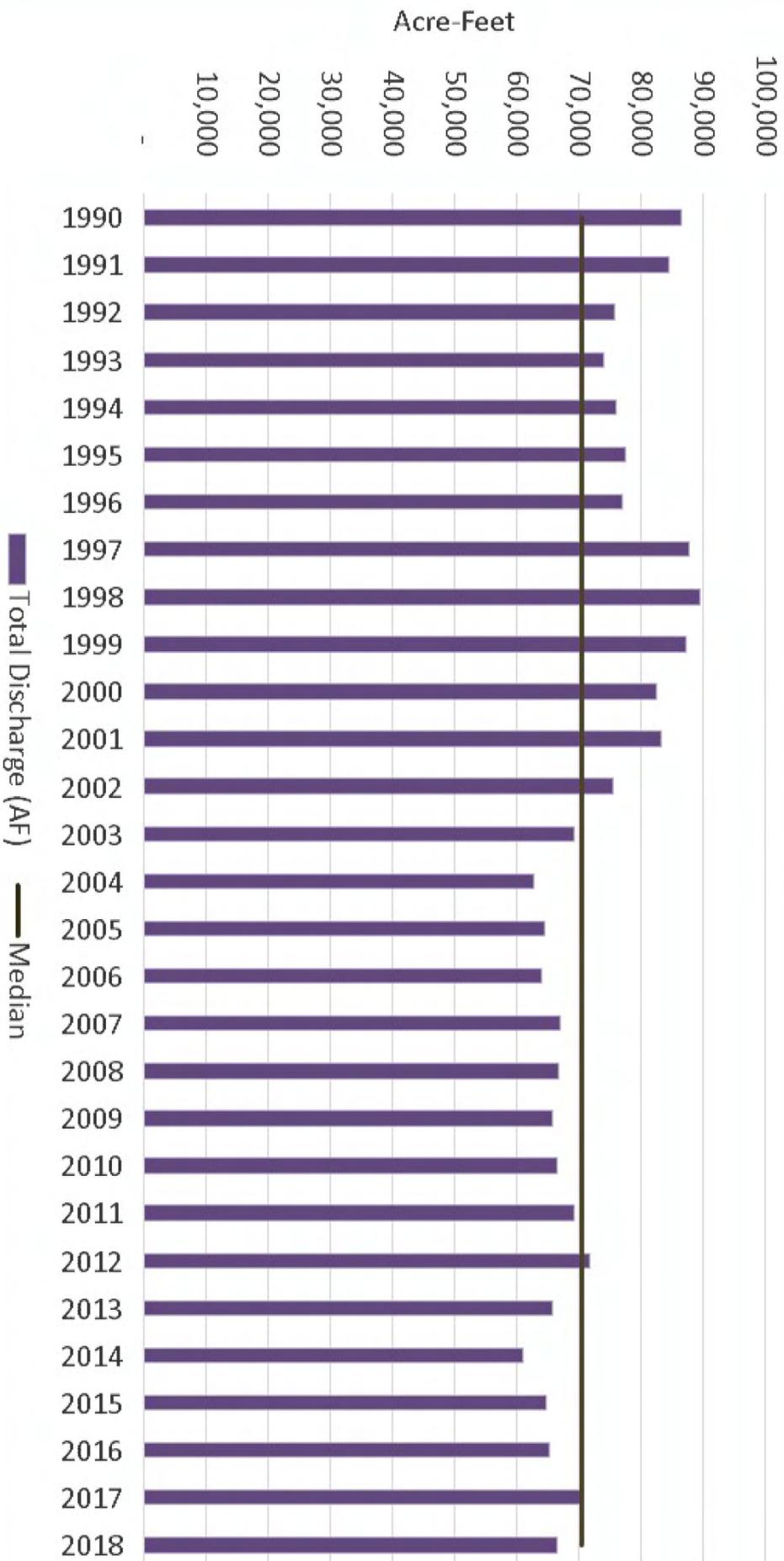
Presented by Liz Cresto
May 17, 2018



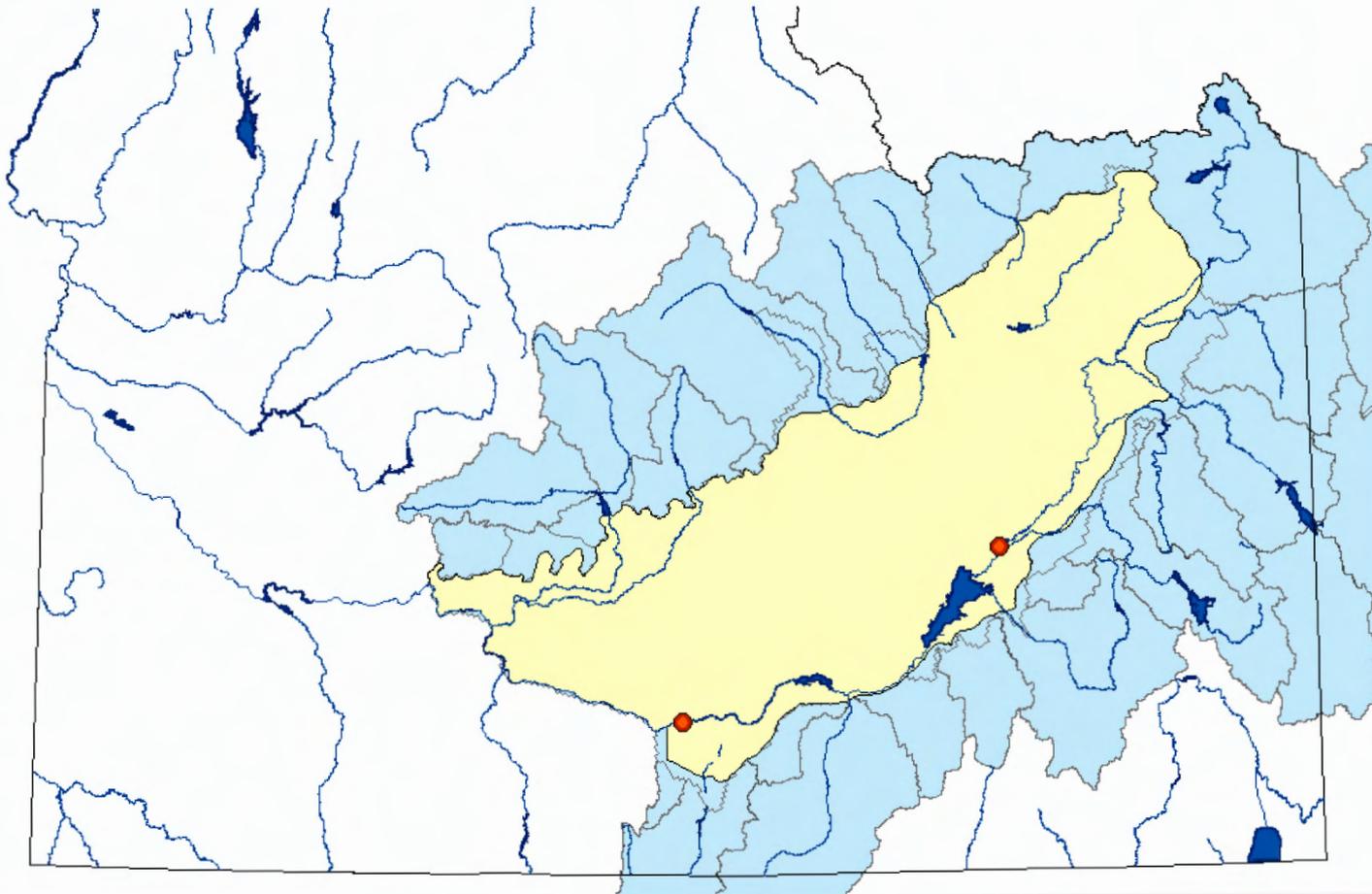
Spring Creek



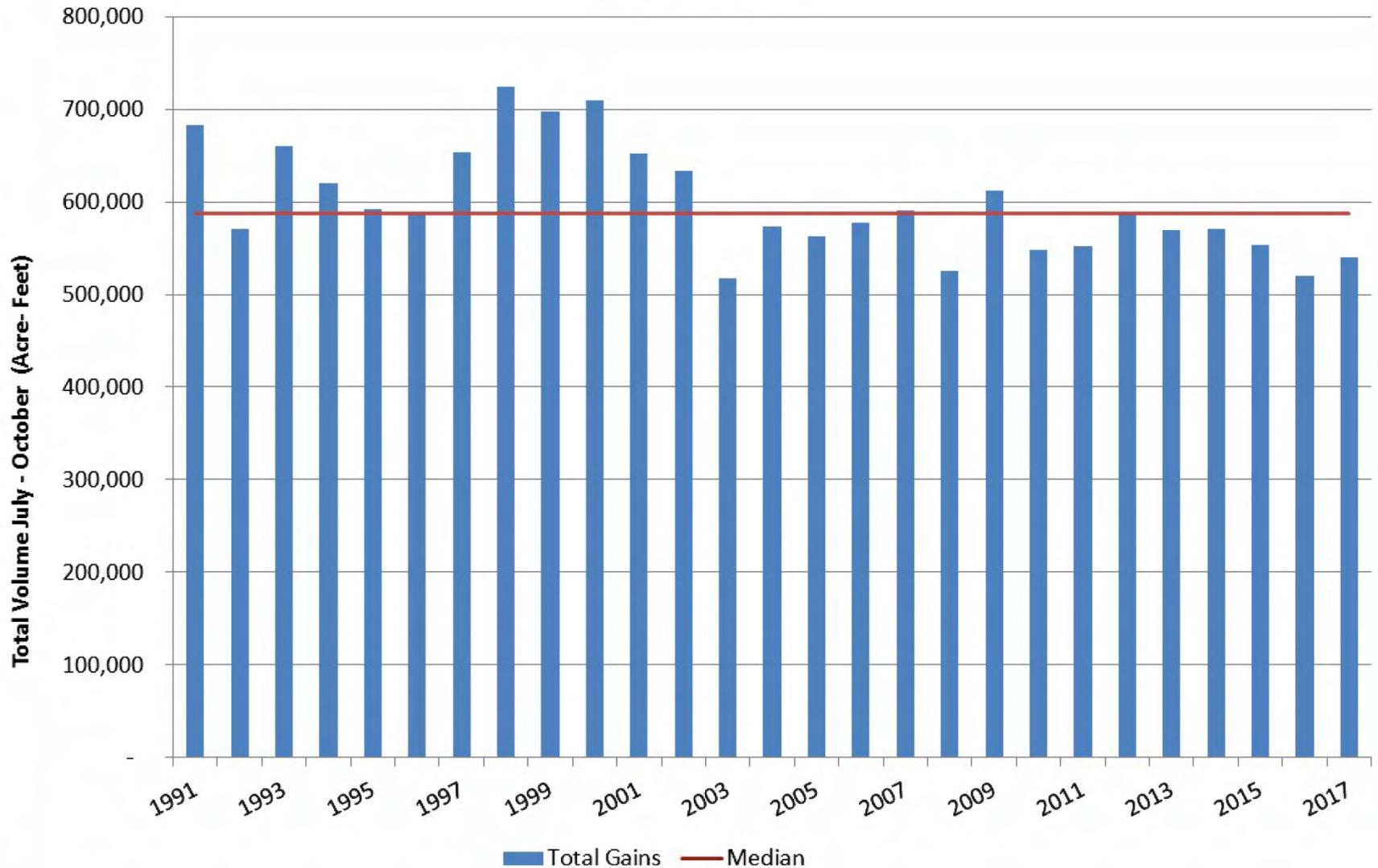
Total Spring Creek Discharge (January - April)



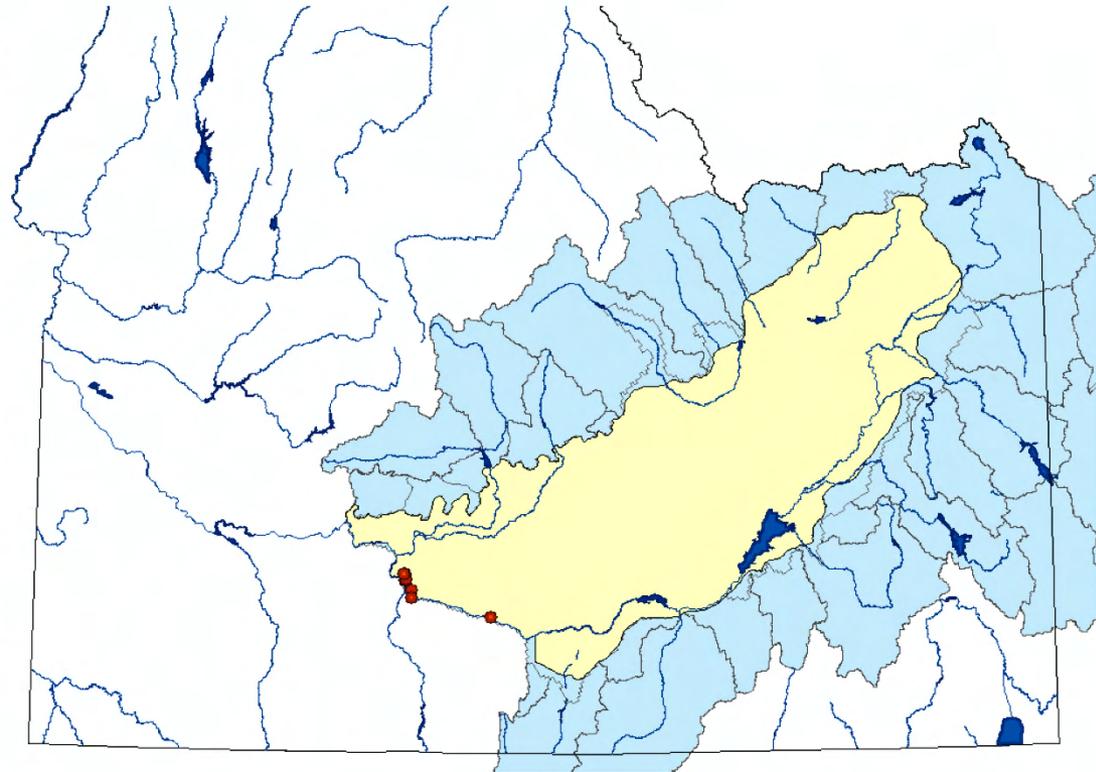
Reach Gains from Water Rights Accounting Near Blackfoot to Milner Reach



Total Reach Gains July - October Blackfoot to Milner (1991 - 2017)



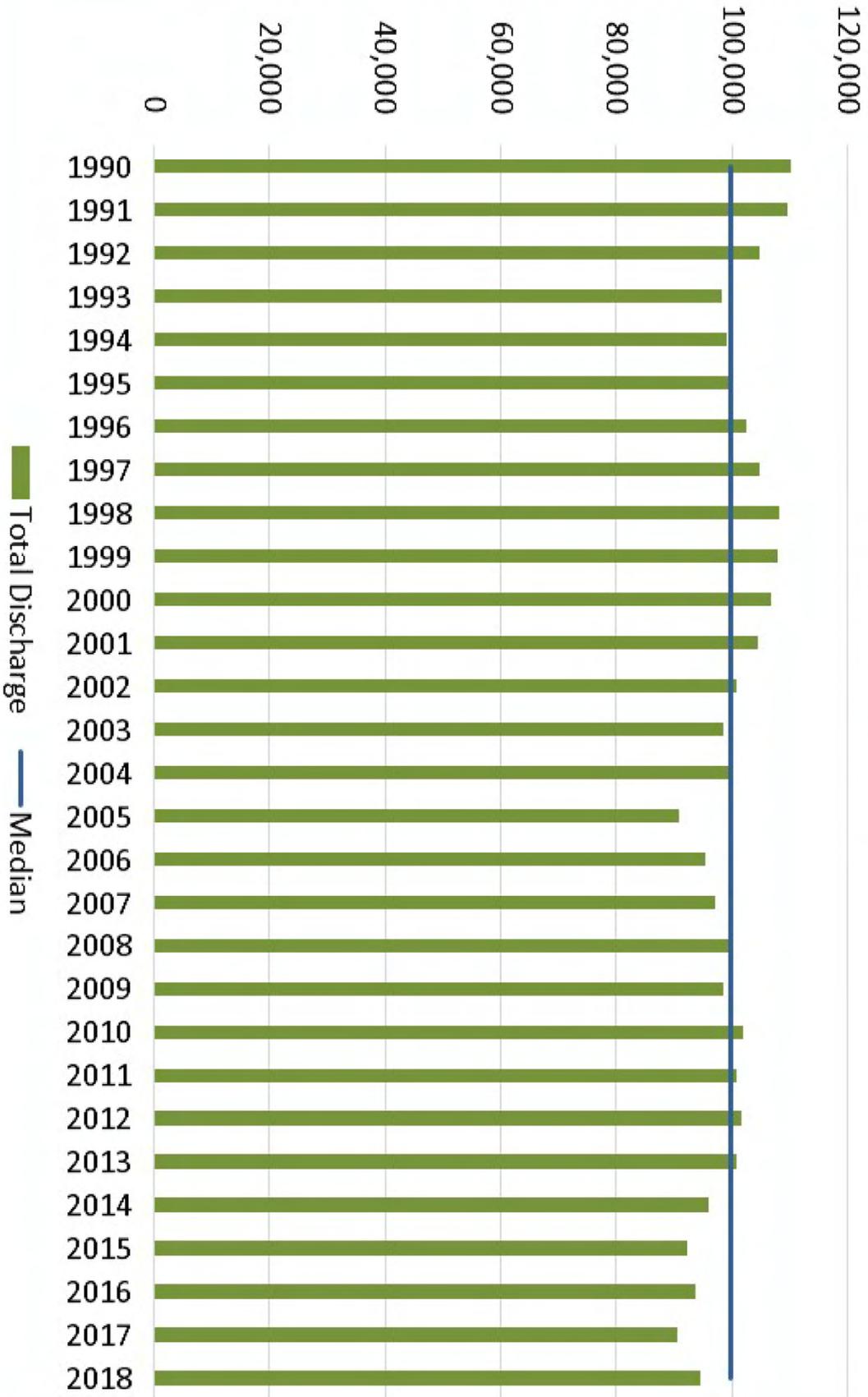
Springs Below Milner



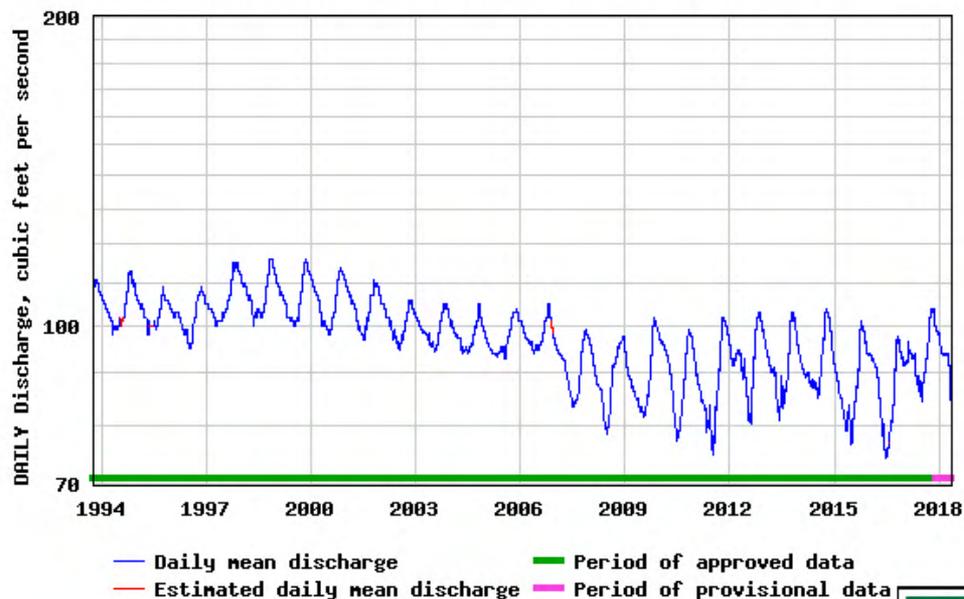


Box Canyon Discharge (November - March)

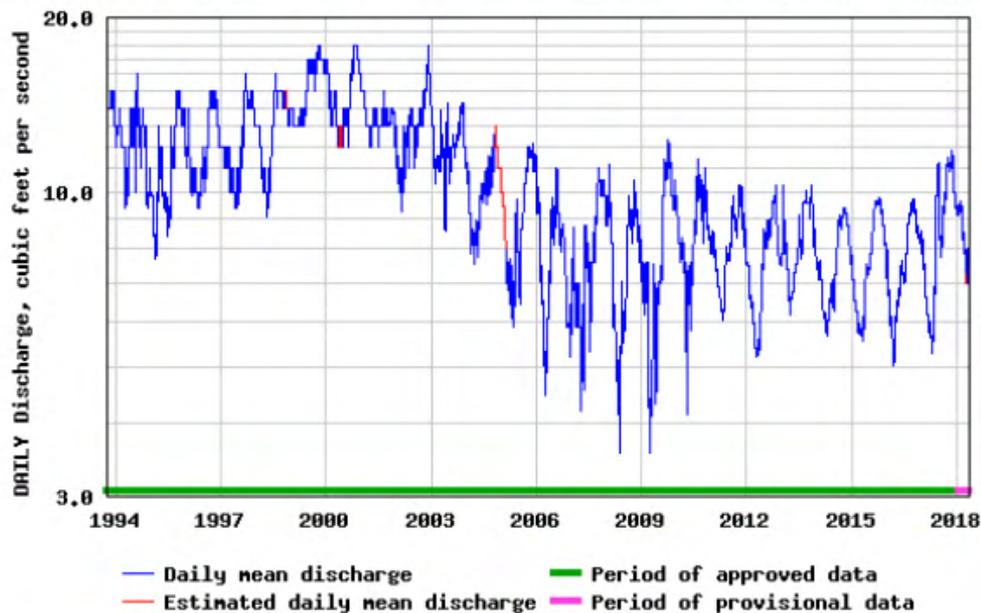
Total Volume November - March (Acre- Feet)

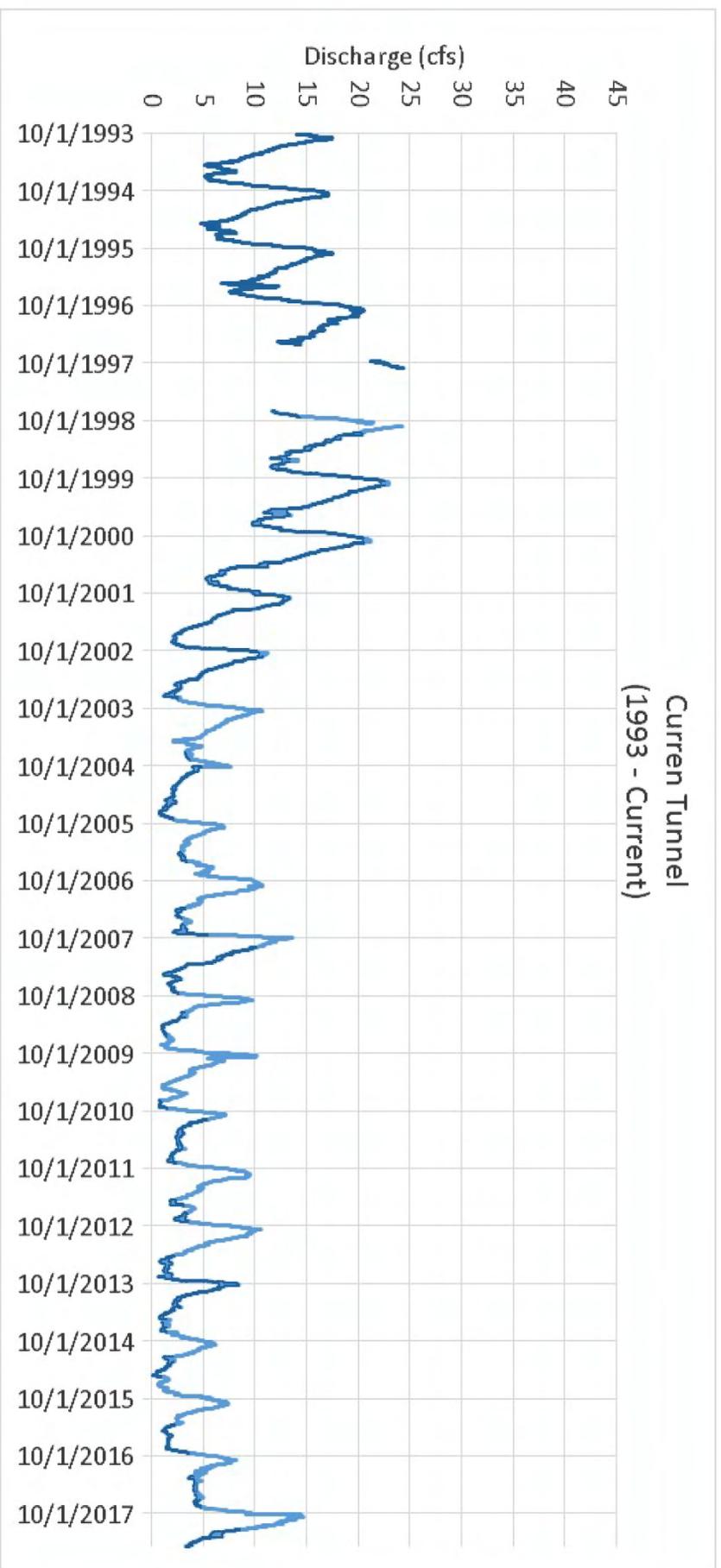


USGS 13095175 BRIGGS SPRING AT HEAD NEAR BUHL ID



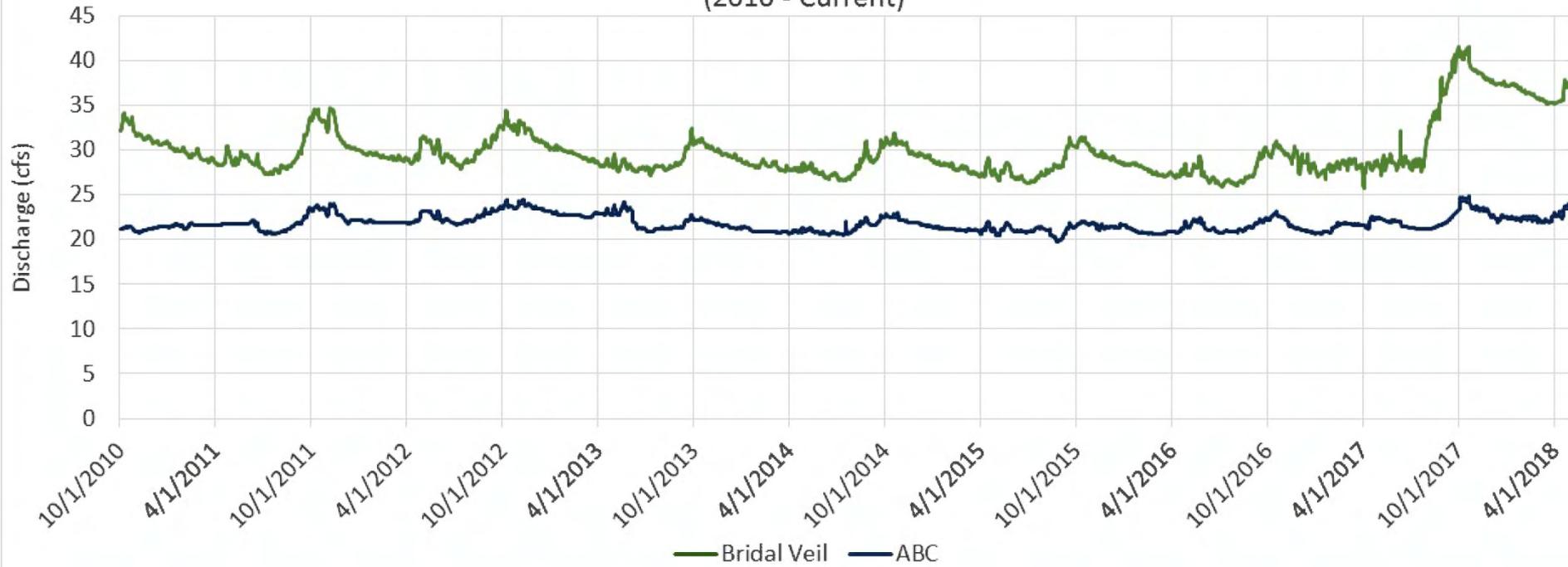
USGS 13089500 DEVILS WASHBOWL SPRING NR KIMBERLY 10S 18E 04AAD1S



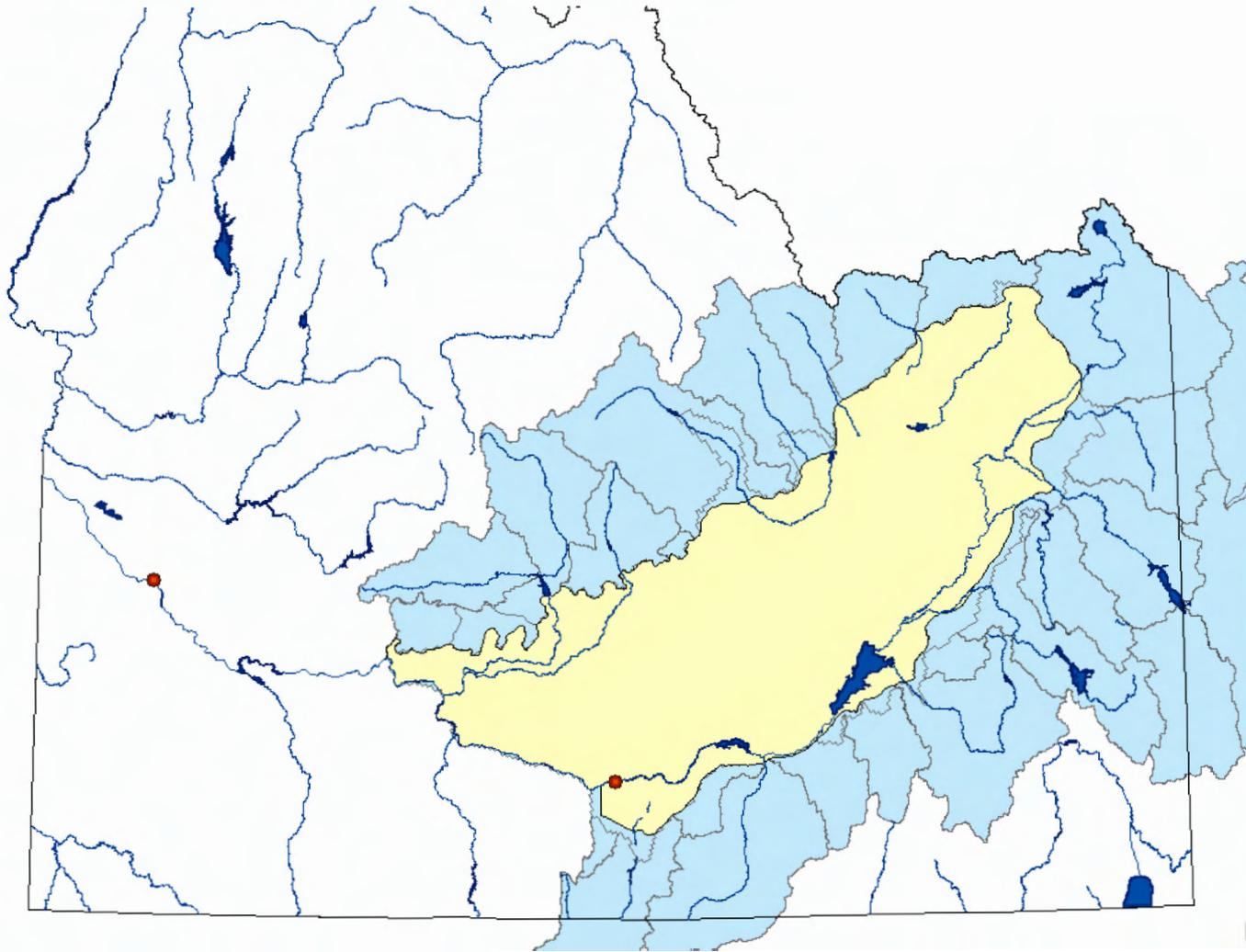




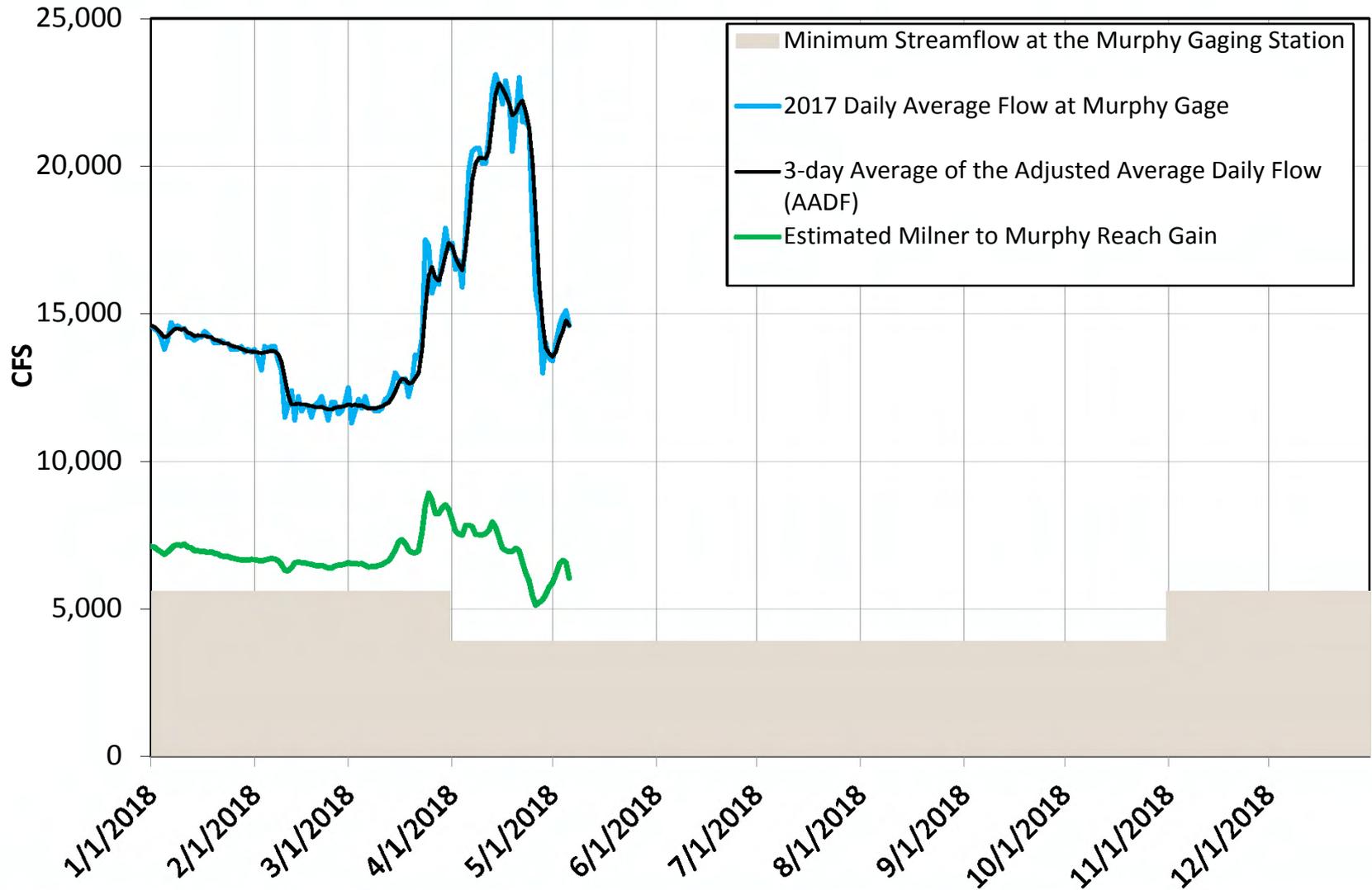
Bridal Veil and ABC Springs
(2010 - Current)



Milner to Murphy



SUMMARY HYDROGRAPH SNAKE RIVER NR MURPHY 2018



Milner to Murphy Reach Gain 2018



Minimum Streamflow at the Murphy Gaging Station	Snake at Murphy Minimum of Record (1981-2016)
Snake at Murphy Historic Median (1981-2016)	Milner to Murphy Reach Gain

Summary and Questions



AMENDED
AGENDA
IDAHO WATER RESOURCE BOARD

C.L. "Butch" Otter
Governor

Roger W. Chase
Chairman
Pocatello
District 4

Jeff Raybould
Vice-Chairman
St. Anthony
At Large

Vince Alberdi
Secretary
Kimberly
At Large

Peter Van Der Meulen
Hailey
At Large

Albert Barker
Boise
District 2

John "Bert" Stevenson
Rupert
District 3

Dale Van Stone
Hope
District 1

Board Meeting No. 4-18
May 18, 2018
8:30 a.m.

Idaho Water Center
Conference Rooms B, C & D
322 E Front Street
BOISE

1. Roll Call

Executive Session – Board will meet pursuant to Idaho Code §74-206(1) subsection (d), to consider records that are exempt from disclosure as provided in chapter 1, title 74, Idaho Code. Topic: MHAFB Water Sustainability Project, Water Utility Contract. In addition, Board will meet pursuant to Idaho Code §74-206(1) subsection (f), for the purpose of communicating with legal counsel regarding legal ramifications of and legal options for pending litigation, or controversies not yet being litigated but imminently likely to be litigated. Topic: MHAFB Water Sustainability Project, Water Rights. Executive Session is closed to the public.

2. *Following adjournment of Executive Session – meeting reopens to the public.*

3. Public Comment

4. Agenda & Approval of Minutes*

5. Financial Report

6. Flood Management Grant Program*

7. FY2019 Secondary Aquifer Budget*

8. ESPA Recharge*

9. Priest Lake Project*

10. Transaction Projects*

11. Appointment of Hearing Officer for Denial of Dredge Mining Applications on Iowa Creek*

12. Bear River*

13. Director's Report

14. Non-Action Items for Discussion

15. Next Meeting & Adjourn

* Action Item: A vote regarding this item may be made this meeting. Identifying an item as an action item on the agenda does not require a vote to be taken on the item.

Americans with Disabilities

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

Memorandum

To: Idaho Water Resource Board
From: Brian Patton & Neeley Miller
Date: May 7, 2018
Re: Financial Status Report



As of **April 30** the IWRB's available and committed balances are as follows:

Secondary Aquifer Fund:

Committed/earmarked but not disbursed	\$15,062,069
Loan principal outstanding	\$0
Uncommitted Balance	\$11,885,996

Revolving Development Account:

Committed/earmarked but not disbursed	\$18,919,786
Loan principal outstanding	\$26,269,118
Uncommitted Balance	\$3,145,496
Anticipated loanable funds available next 1 year	\$6,645,496

Water Management Account

Committed/earmarked but not disbursed	\$1,111,376
Uncommitted Balance	\$9,915

Total committed/earmarked but not disbursed	\$35,093,231
Total loan principal outstanding	\$26,269,118
Total uncommitted balance	\$15,041,407

- The uncommitted balance in the Secondary Aquifer Fund is currently about \$11.9M. This is the result of 1) moving the ESPA Ground Water Districts/IGWA loan from the Secondary Aquifer Fund to the Revolving Development Account through the refinancing of the loan, repaying \$4M plus interest to the Secondary Fund, and 2) receipt of the \$5M in Cigarette Tax proceeds during the current fiscal year, which will be allocated by the IWRB in its FY19 budget for the Secondary Aquifer Fund.
- The committed/earmarked balance in the Water Management Account includes the \$1M legislative appropriation for the Flood Management Grant Program per HB 712.

- Loan applications that we are tracking include:

Potential Applicant	Project	Loan Amount	Comment
New Sweden Irrigation District	Replace Great Western Canal headgate	\$1M	July IWRB meeting?
Salem Irrigation Canal Company	Exchange wells	\$140,000	
North Fremont Canal Company (Marysville)	Continue installing gravity-pressure delivery system (Phase 3)	\$2.5M	July IWRB meeting? Anticipated NRCS match.

Idaho Water Resource Board
Budget and Committed Funds
as of April 30, 2018

SECONDARY AQUIFER PLANNING, MANAGEMENT, & IMPLEMENTATION FUND

FYE 2017 Cash Balance..... 18,459,951.08

FY 2018 Revenue

Interest Earned State Treasury.....	288,735.02	
HB547 - State Recharge & Aquifer Stabilization (SRAS).....	5,000,000.00	
SB1176, Section 4 - Water Sustainability.....	5,000,000.00	
Department of Energy Grant.....	135,750.00	
Loan Interest.....	15,861.10	
Loan Principal.....	4,000,000.00	
TOTAL FY 2018 REVENUE.....		14,440,346.12

FY 2018 Expenditures

SRAS Equipment & Supplies - FY 17.....	(12,305.00)	
SRAS Equipment & Supplies - FY 18.....	(41,783.67)	
SRAS Conveyance Costs - FY 17.....	(1,974,446.32)	
SRAS Conveyance Costs - FY 18.....	(216,168.96)	
South Fork Engineering & Site Evaluation (CON01163, 1164, 1165).....	(85,190.00)	
New Sweden Irrigation District (CON01212).....	(6,751.25)	
Butte Market Lake (CON01168).....	(15,721.38)	
Woodville Canal Company (CON01169).....	(7,536.69)	
AFRD2 - Dietrich Drop Study (CON01139).....	(1,281.25)	
Field Trip Costs.....	(3,190.00)	
North Side Canal Company (CON01199).....	(149,090.32)	
Big Wood Canal Company (CON01226).....	(126,892.02)	
SRAS Site Monitoring.....	(102,835.75)	
SRAS Regional Monitoring - FY 17.....	(61,417.28)	
SRAS Regional Monitoring - FY 18.....	(105,119.68)	
The Ferguson Group.....	(88,359.29)	
Steve Stuebner - Media Services.....	(25,145.08)	
WS Hydrology Monitoring - FY 17.....	(9,877.97)	
WS Hydrology Monitoring - FY 18.....	(49,539.69)	
Ralston Hydrologic Services.....	(26,230.07)	
Washington State University.....	(2,040.00)	
Grants.....	(59,984.03)	
University of Idaho - (CON01152).....	(19,025.60)	
ESHMC Meeting Refreshments.....	(65.85)	
USGS - 6601 (Wood River Modeling).....	(21,470.31)	
USGS - 6605 (Treasure Valley Modeling).....	(333,456.62)	
Department of Energy Grant expenditures.....	(137,189.80)	
Egin Bench Canals Inc (CON01166).....	(95,275.75)	
NRCS Snow Survey contribution (USDA CON01177).....	(50,000.00)	
Quadrant Consulting Inc (CON01238).....	(11,750.04)	
Quadrant Consulting Inc (CON01240).....	(10,095.45)	
Quadrant Consulting Inc (CON01261).....	(180.00)	
Caribou Inc (CON01247).....	(11,800.00)	
Southwest Irrigation District (CON01172).....	(600,000.00)	

Brown & Caldwell (CON01234).....	(14,912.50)
Brown & Caldwell (CON01201, MHAFB Project).....	(373,644.07)
Skinner Fawcett (CON01202, MHAFB Project).....	(6,150.00)
Misc Costs (Phone, meals, etc.).....	(109.87)
Idaho Power - Cloudseeding Model (CON01254).....	(596,000.00)
US Dept of Interior-BOR (Boise River Studies).....	(500,000.00)
TOTAL FY 2018 EXPENDITURES.....	(5,952,031.56)

FY 2018 Cash Balance..... 26,948,265.64

FY 2014 - FY 2017 Committed Funds

	Budget	Amended	Obligated	Expenditures	Carry forward	Committed
Water User Contribution.....	109,493.16		109,493.16	(106,537.50)	2,955.66	0.00
Measurement devices for AWEP conversion projects.....	200,000.00		200,000.00	(16,455.21)	183,544.79	0.00
Cooperative Weather Modification Program (Cloud Seeding - CON01109).....	492,000.00		492,000.00	(354,917.64)		137,082.36
Remaining Initial Funds.....	801,493.16	0.00	801,493.16	(477,910.35)	186,500.45	137,082.36

ESPA Recharge Operations

FY 2017 Conveyance Cost.....	1,500,000	1,150,000.00	2,650,000.00	(2,460,498.29)	189,501.71	0.00
FY 2017 Equipment & Supplies.....	87,000		61,668.70	(61,668.70)		0.00
FY 2017 Regional Monitoring.....	200,000		200,000.00	(200,000.00)		0.00
Total ESPA Recharge Operations.....	1,787,000	1,150,000.00	2,911,668.70	(2,722,166.99)	189,501.71	0.00

ESPA Managed Recharge Infrastructure

Milner-Gooding Dietrich Drop hydro plant bypass.....	50,000	1,450,000.00	1,500,000.00			1,500,000.00
NSCC Wilson Lake Infrastructure Project (CON01199).....	4,000,000	800,000.00	4,800,000.00	(149,090.32)		4,650,909.68
SWID Recharge Project (CON01172).....	1,000,000		600,000.00	(600,000.00)		0.00
Total ESPA Managed Recharge Infrastructure.....	5,050,000	2,250,000.00	6,900,000.00	(749,090.32)	0.00	6,150,909.68

Managed Recharge Investigations

South Fork Engineering & Site Evaluation (CON01163, 1164, 1165).....	200,000		166,000.00	(107,472.28)		58,527.72
NSID Recharge Feasibility (CON01212).....	200,000		200,000.00	(45,035.00)		154,965.00
Butte & Market Lake Canal Co (CON01168).....	39,000		39,000.00	(32,512.46)		6,487.54
Woodville Canal Co (CON01169).....	17,000		17,000.00	(7,536.69)		9,463.31
Total Managed Recharge Investigations.....	456,000	0.00	422,000.00	(192,556.43)	0.00	229,443.57

Statewide Studies & Projects

Treasure Valley Modeling (USGS 6605).....	500,000		500,000.00	(538,461.41)		(38,461.41)
Wood River Valley Aquifer GW Model (USGS 6601).....	200,000		200,000.00	(31,714.90)		168,285.10
Aquifer monitoring network enhancements in priority aquifers.....	100,000		100,000.00	(101,183.53)		(1,183.53)
NRCS Snow Survey contribution USDA (CON01177).....	100,000	100,000.00	200,000.00	(100,000.00)		100,000.00
Mountain Home Air Force Base (PCA 29800).....	1,000,000		1,000,000.00	(379,903.94)		620,096.06
Total Statewide Studies & Projects.....	1,900,000	100,000.00	2,000,000.00	(1,151,263.78)	0.00	848,736.22

TOTAL FY 2014 - FY 2017 COMMITTED FUNDS..... 9,994,493.16 3,500,000.00 13,035,161.86 (5,292,987.87) 376,002.16 7,366,171.83

FY 2018 Budget

ESPA Managed Recharge Operations

	Budget	Amended	Obligated	Expenditures	Carry forward	Committed
Equipment & Supplies.....	100,000		100,000.00	(41,783.67)		58,216.33
Conveyance Cost.....	2,500,000	900,000.00	3,400,000.00	(216,168.96)		3,183,831.04
Site Monitoring.....	150,000		150,000.00	(102,835.75)		47,164.25
Regional Monitoring.....	200,000		200,000.00	(105,119.68)		94,880.32

Total ESPA Managed Recharge Operations.....	2,950,000	900,000.00	3,850,000.00	(465,908.06)	0.00	3,384,091.94
ESPA Managed Recharge Infrastructure						
Northside Canal Recharge Site (CON01240, CON01261).....	1,600,000		1,600,000.00	(10,275.45)	1,271,363.55	318,361.00
Richfield Site Development (CON01234).....	150,000		150,000.00	(141,804.52)		8,195.48
AFRD2 MP 28 Hydro Plan Tailbay (CON01247).....	200,000		200,000.00	(11,800.00)	118,200.00	70,000.00
SF Recharge Site Development.....	250,000		250,000.00		250,000.00	0.00
Butte Market Lake Site Development.....	250,000		250,000.00		250,000.00	0.00
NSID Recharge Site Development.....	250,000		250,000.00			250,000.00
Egin Lakes Phase II.....	500,000	80,000.00	580,000.00	(95,275.75)		484,724.25
Reserved for Additional Recharge Projects.....	1,000,000	(80,000.00)	920,000.00		920,000.00	0.00
Total ESPA Managed Recharge Infrastructure.....	4,200,000	0.00	4,200,000.00	(259,155.72)	2,809,563.55	1,131,280.73
Managed Recharge Investigations						
AFRD2 - MP 34 Investigation (CON01238).....	100,000		100,000.00	(11,750.04)	55,000.00	33,249.96
BWCC Star Lake.....	60,000		60,000.00		60,000.00	0.00
Reserved for additional investigations and engineering.....	300,000		300,000.00	(4,471.25)	195,528.75	100,000.00
Total Managed Recharge Investigations.....	460,000	0.00	460,000.00	(16,221.29)	310,528.75	133,249.96
TREASURE VALLEY						
Treasure Valley Modeling (USGS 6605).....	500,000		500,000.00			500,000.00
Boise River Storage Studies.....	1,000,000		1,000,000.00	(500,000.00)		500,000.00
Treasure Valley DCM Water Conservation Study.....	200,000		200,000.00		200,000.00	0.00
TREASURE VALLEY TOTAL.....	1,700,000	0.00	1,700,000.00	(500,000.00)	200,000.00	1,000,000.00
ELMORE COUNTY						
Canyon Creek Recharge Site.....	50,000	90,000.00	140,000.00			140,000.00
WOOD RIVER VALLEY TOTAL.....	50,000	90,000.00	140,000.00	0.00	0.00	140,000.00
WEISER BASIN						
Weiser River Basin Project/Lost Valley Reservoir.....	100,000		100,000.00		70,000.00	30,000.00
WEISER BASIN TOTAL.....	100,000	0.00	100,000.00	0.00	70,000.00	30,000.00
BEAR RIVER BASIN						
Bear River Aquifer Study.....	50,000		50,000.00		50,000.00	0.00
BEAR RIVER BASIN TOTAL.....	50,000	0.00	50,000.00	0.00	50,000.00	0.00
NORTHERN IDAHO AQUIFERS						
Lewiston Study Phase II.....	109,273		109,273.09	(28,270.07)		81,003.02
NORTHERN IDAHO AQUIFERS TOTAL.....	109,273	0.00	109,273.09	(28,270.07)	0.00	81,003.02
STATE-WIDE						
Aquifer monitoring network enhancements in priority aquifers.....	100,000		100,000.00	(49,539.69)		50,460.31
Cooperative Cloud Seeding Program						
Operations & Maintenance (1/3 of total).....	600,000	18,000.00	618,000.00			618,000.00
Cloud Seeding Modeling Project.....	540,000	56,000.00	596,000.00	(596,000.00)		0.00
Cloud Seeding Benefit Allocation Study.....	200,000		200,000.00			200,000.00
Ground water conservation grants in priority aquifers.....	200,000		200,000.00	(59,984.03)	178,500.00	(38,484.03)
Administrative expenses (public information, staff training, etc).....	80,000		80,000.00	(25,145.08)		54,854.92
Mountain Home Air Force Base (PCA 29800).....		900,000.00	900,000.00			900,000.00
Professional Assistance for securing Federal Funding.....	100,000		100,000.00	(88,359.29)		11,640.71

STATE-WIDE TOTAL	1,820,000	974,000.00	2,794,000.00	(819,028.09)	178,500.00	1,796,471.91
Unspecified Projects in Other Areas or Carry-over	1,368,166	(1,964,000.00)			(595,834.00)	
NRCS Snow Survey contribution						
Boise Project Board of Control						
MP31 Check Dam						
TOTAL FY 2018 BUDGETED FUNDS	11,439,273	1,964,000.00	13,403,273.09			
TOTAL FY 2018 COMMITTED FUNDS						7,696,097.56
PROJECTED CARRY FORWARD					3,398,760.46	
PROJECTED TOTAL FUNDS AVAILABLE FOR FY 2019 BUDGET						11,885,996.25

IDAHO WATER RESOURCE BOARD
Sources and Applications of Funds
as of April 30, 2018
REVOLVING DEVELOPMENT ACCOUNT

Original Appropriation (1969).....	\$500,000.00
Legislative Audits.....	(\$49,404.45)
IWRB Bond Program.....	(\$15,000.00)
Legislative Appropriation FY90-91.....	\$250,000.00
Legislative Appropriation FY91-92.....	\$280,700.00
Legislative Appropriation FY93-94.....	\$500,000.00
IWRB Studies and Projects.....	(\$249,067.18)
Loan Interest.....	\$10,420,758.04
Interest Earned State Treasury (Transferred).....	\$1,888,103.75
Filing Fee Balance.....	\$47,640.20
Bond Fees.....	\$1,469,601.45
Arbitrage Calculation Fees.....	(\$12,000.00)
Protest Fees.....	(\$995.00)
Series 2000 (Caldwell/New York) Pooled Bond Issuers fees.....	\$43,657.93
2012 Ground Water District Bond Issuer fees.....	\$373,300.00
Bond Issuer fees.....	\$21,107.59
Attorney fees for Jughandle LID.....	(\$3,600.00)
Attorney fees for A&B Irrigation.....	(\$4,637.50)
Water Supply Bank Receipts.....	\$6,100,533.79
Legislative Appropriation FY01.....	\$200,000.00
Pierce Well Easement.....	\$2,000.00
Transferred to/from Water Management Account.....	\$317,253.80
Legislative Appropriation 2004, HB843.....	\$500,000.00
Legislative Appropriation 2009, SB 1511 Sec 2, Teton/Minidoka Studies.....	\$1,800,000.00
Legislative Appropriation 2009, SB 1511 Sec 2, Teton/Minidoka Studies Expenditures.....	(\$1,229,460.18)
Weiser Galloway Study - US Army Corps of Engineers.....	(\$1,533,047.30)
Boise River Storage Feasibility Study.....	(\$333,000.00)
Geotech Environmental (Transducers).....	(\$6,402.61)
Priest Lake Improvement Study (16-Mar-16).....	(\$289,252.25)
Treasureton Irrigation Ditch Co.....	(\$5,000.00)
Mountain Home AFB Water Sustainability Project	
Legislative Appropriation 2014, HB 479 Sec 1 and 2.....	4,000,000.00
JR Simplot - WR Purchase.....	(\$2,500,000.00)
LeMoynes Appraisal LLC.....	(\$10,500.00)
IWRB WSB Lease Application.....	(\$750.00)
Integrated Delivery Solutions - Mark Alpert.....	(\$34,459.18)
Brown & Caldwell - Owner's Advisor.....	(\$1,218,298.11)
SPF Engineering - WR Transfer.....	(\$118,715.75)
Skinner-Fawcett - Bond Counsel.....	(\$31,602.41)
Pillsbury, Winthrop, & Shaw - DBO Counsel.....	(\$79,839.30)
Project Costs (mailings, travel, teleconference calls).....	(\$1,769.91)
Publishing Costs.....	(\$1,648.16)
Water District 02 Assessments.....	(\$2,417.18)
Balance for Mountain Home AFB Water Sustainability Project.....	\$0.00
Galloway Dam & Reservoir Project	
Legislative Appropriation 2014, HB 479 Sec 1 and 2.....	\$2,000,000.00
Galloway Dam & Reservoir Project Costs (HB 479).....	(\$124,708.68)
Balance Galloway Dam & Reservoir Project.....	\$1,875,291.32
Boise River (Arrowrock Enlargement) Feasibility Study (HB479)	
Legislative Appropriation 2014, HB 479 Sec 1 and 2.....	\$1,500,000.00
Boise River (Arrowrock Enlargement) Feasibility Study Costs (HB479).....	(\$543,999.98)
Balance Boise River (Arrowrock Enlargement) Feasibility Study (HB479).....	\$956,000.04
Island Park Enlargement (HB 479)	
Legislative Appropriation 2014, HB 479 Sec 1 and 2.....	\$2,500,000.00
Island Park Enlargement Costs (HB 479).....	(\$182,927.65)
Balance Island Park Enlargement (HB 479).....	\$2,317,072.35
Water Supply Bank Computer Infrastructure (HB 479)	
Legislative Appropriation 2014, HB 479 Sec 1 and 2.....	\$500,000.00
Water Supply Bank Computer Infrastructure Costs (HB 479).....	(\$497,350.75)
Balance Water Supply Bank Computer Infrastructure (HB 479).....	\$2,649.25
Balance of Legislative Appropriation 2014, HB 479 Sec 1 and 2.....	\$5,151,012.96
Aqualife Hatchery Sub-Account	
Aqualife Hatchery, HB644, 2014.....	(\$1,886,000.00)
Aqualife Lease receipt from Seapac.....	\$114,720.00
Tax Payments.....	(\$1,419.15)
Lemoyne Appraisal for Aqualife facility.....	(\$10,500.00)
Loan payments received.....	\$2,900,000.00
Loans Outstanding.....	
ESPA Ground Water Districts (Aqualife purchase).....	\$0.00
Total Loans Outstanding.....	\$0.00
Balance Aqualife Hatchery Sub-Account.....	\$1,117,800.85
Bell Rapids Water Rights Sub-Account	
Legislative Appropriation 2005, HB392.....	\$21,300,000.00
Interest Earned State Treasury.....	\$896,015.79
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.....	\$9,142,849.54

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 Water District 02 Assessments.....	(\$60,383.27)	
Payment for Ongoing Bell Rapids Finance Costs (trustee fees, water bank, etc.).....	(\$6,740.10)	
Commitments		
Ongoing Bell Rapids Finance Costs (trustee fees, WD02).....	\$123,491.96	
Committed for alternative finance payment.....	\$0.00	
Total Commitments.....	\$123,491.96	
Balance Bell Rapids Water Rights Sub-Account.....	(\$0.00)	
Pristine Springs Project Sub-Account		
Legislative Appropriation 2006, SB1511, Pristine Springs.....	\$10,000,000.00	
Legislative Appropriation 2006, HB870, Water Right Purchases.....	\$5,000,000.00	
Interest Earned State Treasury.....	\$56,012.83	
Loan Interest.....	\$2,119,124.67	
Transfer from ESPA Sub-Account.....	\$1,000,000.00	
Payment for Purchase of Pristine Springs (3).....	(\$16,000,000.00)	
Payment from Magic Valley & North Snake GWD for Pristine Springs.....	\$4,912,500.23	
Appraisal.....	(\$25,500.00)	
Insurance.....	(\$47,500.25)	
Recharge District Assessment.....	(\$26,605.25)	
Water District 130 Annual Assessment.....	(\$3,841.45)	
Hydro Plants Engineering Certification (Straubhar).....	(\$4,200.00)	
Payment to EHM Engineers for pipeline work.....	(\$1,200.00)	
Payment to John Root for Easement Survey.....	(\$1,000.00)	
Payment to MWH Americas Inc.....	(\$11,326.27)	
Payment to Dan Lafferty Construction.....	(\$16,846.68)	
Telemetry Station Equipment.....	(\$15,193.92)	
Rein Tech LLC (Satellite phone annual payment).....	(\$1,980.00)	
Standley Trenching (Trac system for communication equip).....	(\$2,863.99)	
Property Taxes and other fee assessments (Jerome County).....	(\$9,980.95)	
Rental Payments.....	\$1,767,694.18	
Payments to Scott Kaster.....	(\$180,196.67)	
Utility Payments (Idaho Power).....	(\$38,509.38)	
Costs for property maintenance.....	(\$203,267.04)	
Travel costs for property maintenance.....	(\$517.31)	
Pipeline repair (IGWA).....	(\$170,000.00)	
Transferred to Secondary Aquifer Fund (2011 Legislature; HB 291).....	(\$2,465,300.00)	
Transferred to Secondary Aquifer Fund (2012 Legislature; SB 1389).....	(\$1,232,000.00)	
Transferred to Secondary Aquifer Fund (2013 Legislature; HB 270).....	(\$716,000.00)	
Transferred to Secondary Aquifer Fund (2014 Legislature; HB 618).....	(\$716,000.00)	
Transferred to Aquifer Planning Fund (2015 Legislature; HB 273).....	(\$716,000.00)	
Transferred to Aquifer Planning Fund (2016 Legislature; SB 1402, Sec 3).....	(\$716,000.00)	
Transferred to Aquifer Planning Fund (2017 Legislature; SB 1176, Sec 3).....	(\$716,000.00)	
Pristine Springs Hydropower Projects		
Net power sales revenues.....	\$721,375.59	
Pristine Springs Committed Funds		
To be transferred to Aquifer Planning Fund.....	\$716,000.00	
Repair/Replacement Fund.....	\$0.00	
TOTAL COMMITTED FUNDS.....	\$716,000.00	
Loans Outstanding		
North Snake and Magic Valley Ground Water Districts.....	\$5,087,499.77	
Total Loans Outstanding.....	\$5,087,499.77	
Funds to RP CAMP & TV CAMP Sub-Account.....	\$271,672.34	
Pristine Springs Revenues into Main Revolving Development Account.....	\$551,206.00	
Rathdrum Prairie CAMP & Treasure Valley CAMP Sub-Account		
Pristine Springs Hydropower and Rental Revenues.....	\$271,672.34	
Interest Earned State Treasury.....	\$573.11	
Spokane River Forum.....	(\$18,000.00)	
Treasure Valley Water Quality Summit.....	(\$500.00)	
Kootenai-Shoshone Soil & Water Cons. Dist. - Agrimet Station.....	(\$20,000.00)	
Rathdrum Prairie-Spokane Valley Aquifer Pumping Study (CON00989).....	(\$70,000.00)	
Idaho Washington Aquifer Collaborative.....	(\$10,000.00)	
Committed Funds.....		
Kootenai-Shoshone Soil & Water Cons. Dist. - Agrimet Station.....	\$0.00	
Spokane River Forum.....	\$0.00	
Rathdrum Prairie-Spokane Valley Aquifer Pumping Study.....	\$0.00	
Treasure Valley Water Quality Summit.....	\$0.00	
Idaho Washington Aquifer Collaborative.....	\$0.00	
TOTAL COMMITTED FUNDS.....	\$0.00	
Balance Rathdrum Prairie CAMP & Treasure Valley CAMP Sub-Account.....	\$153,745.45	
Upper Salmon/CBWTP Sub-Account		
Water Transaction Projects Payment Advances from CBWTP/Account.....	\$4,575,064.82	
PCSRF Funds for Administration of Non-Diversion Easements on Lemhi River.....	\$222,257.16	
Interest Earned State Treasury.....	\$166,175.10	
Transfer to Water Supply Bank.....	(\$99,894.84)	
Change of Ownership.....	(\$600.00)	
Appraisals/Closing Costs.....	(\$13,388.48)	

Payments for Water Acquisition		(\$1,625,553.76)
Committed Funds		
Administration of Non-Diversion Easements on Lemhi River.....	\$129,089.39	
Aituras Lake Creek (Breckenridge).....	\$0.00	
Bayhorse Creek (Peterson Ranch).....	\$30,508.94	
Badger Creek (OWBP).....	\$18,634.10	
Beaver Creek (DOT LLP).....	\$120,558.78	
Big Hat Creek.....	\$0.26	
Big Timber Tyler (Leadore Land Partners).....	\$445,695.89	
Canyon Creek/Big Timber Creek (Beyeler).....	\$415,872.49	
Carmen Creek (Bill Slavin).....	\$205,121.60	
Carmen Creek (Bruce Slavin).....	\$128,715.39	
Fourth of July Creek (Vanderbilt).....	\$15,671.59	
Iron Creek (Phillips).....	\$0.00	
Iron Creek (Koncz).....	\$207,922.32	
Kenney Creek Source Switch (Gail Andrews).....	\$23,409.27	
Lemhi - Big Springs (Merrill Beyeler).....	\$57,834.68	
Lemhi River & Little Springs Creek (Kauer).....	\$19,989.16	
Little Springs Creek (Snyder).....	\$266,886.22	
Lower Eighteenmile Creek (Ellsworth Angus Ranch).....	\$1,777.78	
Lower Lemhi Thomas (Robert Thomas).....	\$1,200.00	
Pahsimeroi-Little Mud Creek (Bar G Farm).....	\$4,978.71	
P-9 Bowles (River Valley Ranch).....	\$272,388.78	
P-9 Charlton (Sydney Dowton).....	\$18,029.50	
P-9 Dowton (Western Sky LLC).....	\$216,050.70	
P-9 Elzinga (Elzinga).....	\$267,237.07	
Patterson-Big Springs (PBSC9).....	\$176,627.56	
Pole Creek (Salmon Falls Land).....	\$634,475.70	
Pratt Creek (Mulkey).....	\$80,306.87	
Spring Creek (Richard Beard).....	\$542.88	
Spring Creek (Ella Beard).....	\$795.69	
Whitefish (Leadore Land Partners).....	\$162,188.81	
Total Committed Funds.....	\$3,922,290.13	
Balance CBWTP Sub-Account.....		(\$698,228.13)
Water District 02 WaterSmart Grant Sub-Account		
Received from BOR for BORWS2.....		\$118,058.42
Received from BOR for BORWS3.....		\$59,960.43
Payments made to contractors for BORWS2.....		(\$118,058.42)
Payments made to contractors for BORWS3.....		(\$59,960.43)
Committed Funds:		
Grant Approval for BORWS2.....	\$0.00	
Grant Approval for BORWS3.....	\$0.00	
Total Committed Funds.....	\$0.00	
Balance WaterSmart Grant Sub-Account.....		\$0.00
Water Supply Bank Sub-Account		
Interest Earned State Treasury.....		\$11,238.34
Payments received from renters.....		\$3,487,072.05
Payments made to owners.....		(\$2,859,652.73)
Water Supply Bank Sub-Account Subtotal.....		\$618,657.66
Committed Funds:		
Owners Share.....	\$807,419.32	
Total Committed Funds.....	\$807,419.32	
Balance Water Supply Bank Sub-Account.....		\$11,238.34
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.....	\$1,979,473.22	
Loan Interest.....	\$258,260.39	
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).....	(\$1,875,036.00)	
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.....	(\$3,519,790.74)	
Reimbursement from BOR for Palisades Reservoir.....	\$2,381.12	
W-Canal Project Costs.....	(\$326,834.11)	
Black Canyon Exchange Project Costs.....	(\$158,872.00)	
Black Canyon Exchange Project Revenues.....	\$23,800.00	
2008 Recharge Conveyance Costs.....	(\$14,580.00)	
2009 Recharge Conveyance Costs.....	(\$355,253.00)	
2010 Recharge Conveyance Costs.....	(\$484,231.82)	
Additional recharge projects preliminary development.....	(\$28,909.30)	
Pristine Springs Project Costs.....	(\$8,863.91)	
Loans and Other Commitments		
Commitment - Remainder of Bell Rapids Water Rights Purchase (1).....	\$361,620.00	
Commitment - CREP Program (HB392, 2005).....	\$0.00	
Commitment - Priest Lake Water Mgmt Project (HB677, 2016).....	\$2,419,580.50	
Commitment - Additional recharge projects preliminary development.....	\$337,594.00	
Commitment - Palisades Storage O&M.....	\$10,000.00	
Commitment - Black Canyon Exchange Project (fund with ongoing revenues).....	\$442,252.95	
Total Loans and Other Commitments.....	\$3,571,047.45	
Loans Outstanding:		

American Falls-Aberdeen GWD (CREP).....	\$58,040.75	
Bonneville Jefferson GWD (CREP).....	\$37,408.43	
Magic Valley GWD (CREP).....	\$55,176.62	
North Snake GWD (CREP).....	\$26,331.95	
TOTAL ESP LOANS OUTSTANDING	\$176,957.75	
Uncommitted Balance Eastern Snake Plain Sub-Account		\$671,311.35
Dworshak Hydropower Project		
Dworshak Project Revenues		
Power Sales & Other.....	\$9,087,556.73	
Interest Earned State Treasury.....	\$589,316.16	
Total Dworshak Project Revenues		\$9,676,872.89
Dworshak Project Expenses		
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.....	\$2,530,995.94	
Powerplant Repairs.....	\$171,327.49	
Bond payoff.....	\$391,863.11	
Capital Improvements.....	\$318,366.79	
FERC Payments.....	\$74,396.02	
Total Dworshak Project Expenses		(\$4,176,044.16)
Dworshak Project Committed Funds		
Emergency Repair/Future Replacement Fund.....	\$1,386,235.90	
FERC Fee Payment Fund.....	\$5,973.89	
Total Dworshak Project Committed Funds		\$1,402,209.79
Excess Dworshak Funds into Main Revolving Development Account		\$4,098,618.94
TOTAL		\$26,751,415.87
	Amount	Principal
Loans Outstanding:	Loaned	Outstanding
A&B Irrigation District (Pipeline & Pumping Plant, Dec).....	\$3,500,000.00	\$3,108,449.84
A&B Irrigation District (Pipeline & Pumping Plant, Sept).....	\$3,500,000.00	\$3,240,797.39
Aberdeen-Springfield Canal Company (WRB-491; Diversion structure).....	\$329,781.00	\$71,665.88
Bee Line Water Association (Sep 23, 2014; System Improvements).....	\$600,000.00	\$560,341.34
Canyon County Drainage District No. 2 (28-Nov-12; Drain tile pipeline).....	\$35,000.00	\$19,733.86
Challis Irrigation Company (28-Nov-07; river gate replacement).....	\$50,000.00	\$3,725.59
Chaparral Water Association (21-Jan-11; Well deepening & improve).....	\$68,000.00	\$13,795.21
Clearview Water Company.....	\$50,000.00	\$36,655.11
Cloverdale Ridge Water Corp. (irrigation system rehab 25-sep-09).....	\$106,400.00	\$5,850.47
Consolidated Irrigation Company (July 20, 2012; pipeline project).....	\$500,000.00	\$468,835.82
Country Club Subdivision Water Association (18-May-07, Well Project).....	\$102,000.00	\$0.00
Enterprise Irrigation District (14-Jul-06; Pipeline project).....	\$37,270.00	\$660.60
Enterprise Irrigation District (North Lateral Pipeline).....	\$105,420.00	\$8,438.62
Evans Water Corporation & HOA.....	\$20,000.00	\$18,258.44
Foothill Ranch Homeowners Association (7-oct-11; well rehab).....	\$150,000.00	\$101,088.16
Goose Lake Reservoir Corp.....	\$20,000.00	\$20,000.00
Idaho Ground Water Appropriators (IGWA).....	\$3,208,115.35	\$3,208,115.35
Jefferson Irrigation Company (9-May-2008 Well Replacement).....	\$81,000.00	\$22,994.95
King Hill Irrigation District (24-Sep-10; Pipeline replacement).....	\$300,000.00	\$31,129.93
Lake Reservoir Company (29-July-11; Payette Lake-Lardo Dam Outlet).....	\$594,000.00	\$15,158.89
Last Chance Canal Company (14-July-2015, diversion dam rebuild).....	\$2,500,000.00	\$2,053,889.83
Lava Hot Springs, City of.....	\$347,510.00	\$51,346.67
Lindsay Lateral Association (Engineering Design Project & Pipeline Stur).....	\$19,700.00	\$10,353.68
Marsh Center Irrigation Company (13-May-05; Hawkins Dam).....	\$238,141.00	\$73,615.13
Marysville Irrigation Company (18-May-07, Pipeline Project Phase 1).....	\$625,000.00	\$87,855.06
Marysville Irrigation Company (9-May-08, Pipeline Project Phase 2).....	\$1,100,000.00	\$299,829.27
North Fremont Canal Systems (25-Jan-13; Marysville Project).....	\$2,000,000.00	\$1,305,426.70
North Side Canal Company (16-sep-16; canal rehab project).....	\$5,200,000.00	\$3,895,462.23
Outlet Water Association (22-Jan-16; new well & improvements).....	\$100,000.00	\$94,024.52
Pinehurst Water District (23-Jan-15).....	\$100,000.00	\$66,171.05
Point Springs Grazing Association (July 20, 2012; stock water pipeline).....	\$48,280.00	\$31,403.98
Preston-Whitney Irrigation Company (29-May-09; Fairview Lateral Pipel).....	\$800,000.00	\$0.00
Producers Irrigation Company.....	\$173,000.00	\$95,682.38
Skin Creek Water Association.....	\$188,258.00	\$27,551.12
Spirit Bend Water Association.....	\$92,000.00	\$0.00
St. Johns Irrigating Company (14-July-2015; pipeline project).....	\$1,429,775.00	\$1,417,905.22
Sunset Heights Water District (17-May-13; Exchange water project).....	\$48,000.00	\$20,597.40
Twin Lakes Canal Company (Winder Lateral Pipeline Project).....	\$500,000.00	\$203,423.58
Valley County Local Improvement District No. 1/Jughandle HOA (well pi).....	\$907,552.00	\$514,429.20
TOTAL LOANS OUTSTANDING		\$21,004,659.87
Loans and Other Funding Obligations:		
Senate Bill 1511 - Teton Replacement and Minidoka Enlargement Studies.....		\$678,161.82
Boise River Storage Feasibility Study.....		\$13,578.15
Weiser-Galloway Study (28-May-10).....		\$461,620.87
Priest Lake Improvement Study (16-Mar-16).....		\$81,141.01
Bee Line Water Association (Sep 23, 2014; System Improvements).....		\$39,658.66
Dover, City of (23-Jul-10; Water Intake project).....		\$194,063.00
Evans Water Corporation & HOA.....		\$0.00
Goose Lake Reservoir Corp.....		\$300,000.00
Idaho Ground Water Appropriators (IGWA).....		\$0.00
North Side Canal Company (16-sep-16; canal rehab project).....		\$1,421,605.18
Producers Irrigation Company (23-May-16; new wells).....		\$70,872.50
St. Johns Irrigating Company (14-July-2015; pipeline project).....		\$11,869.78
TOTAL LOANS AND OTHER FUNDING OBLIGATIONS		\$3,272,570.97
Uncommitted Funds		\$2,474,186.03
TOTAL		\$26,751,415.87

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

Idaho Water Resource Board
Sources and Applications of Funds
as of April 30, 2018
WATER MANAGEMENT ACCOUNT

Original Appropriation (1978).....	\$1,000,000.00
Legislative Audits.....	(\$10,645.45)
IWRB Appraisal Study (Charles Thompson).....	(\$5,000.00)
Transfer funds to General Account 1101(HB 130, 1983).....	(\$500,000.00)
Legislative Appropriation (6/29/1984).....	\$115,800.00
Legislative Appropriation (HB988, 1994).....	\$75,000.00
Turned Back to General Account 6/30/95, (HB988, 1994).....	(\$35,014.25)
Legislative Appropriation (SB1260, 1995, Aquifer Recharge, Caribou Dam).....	\$1,000,000.00
Interest Earned.....	\$120,475.04
Filing Fee Balance.....	\$2,633.31
Water Supply Bank Receipts.....	\$841,803.07
Bond Fees.....	\$277,254.94
Funds from DEQ and IDOC for Glens Ferry Water Study.....	\$10,000.00
Legislative Appropriation FY01.....	\$200,000.00
Western States Water Council Annual Dues.....	(\$7,500.00)
Transfer 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
Legislative Appropriation (HB 712, Sec 1, 2018, Flood Management Program).....	\$1,000,000.00
TOTAL	\$5,497,489.85

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

North Lake Water & Sewer District.....	\$7,500.00	
Northside Estates Homeowners Association.....	\$4,492.00	
North Tomar Butte Water & Sewer District.....	\$3,575.18	
North Water & Sewer District.....	\$3,825.00	
Parkview Water Association.....	\$4,649.98	
Payette, City of.....	\$6,579.00	
Pierce, City of.....	\$7,500.00	
Potlatch, City of.....	\$6,474.00	
Preston Whitney Irrigation Company.....	\$7,500.00	
Preston & Whitney Reservoir Company.....	\$3,606.75	
Preston & Whitney Reservoir Company.....	\$7,000.00	
Roberts, City of.....	\$3,750.00	
Round Valley Water.....	\$3,000.00	
Sagle Valley Water & Sewer District.....	\$2,117.51	
South Hill Water & Sewer District.....	\$3,825.00	
St Charles, City of.....	\$5,632.88	
Swan Valley, City of.....	\$5,000.01	
Twenty-Mile Creek Water Association.....	\$2,467.00	
Valley View Water & Sewer District.....	\$5,000.02	
Victor, City of.....	\$3,750.00	
Weston, City of.....	\$6,601.20	
Winder Lateral Association.....	\$7,000.00	
TOTAL GRANTS DISBURSED.....		(\$1,632,755.21)
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.....		\$1,121,290.57
Committed Funds:		
Grants Obligated		
Cottonwood Point Water & Sewer Association.....	\$0.00	
Preston - Whintey Irrigation Company.....	\$7,500.00	
Water District No. 1 (Blackfoot Equalizing Reservoir Automation).....	\$35,000.00	
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	
Flood Management Program (HB712, Sec 1, 2018).....	\$1,000,000.00	
TOTAL GRANTS & LOANS OBLIGATED & UNDISBURSED.....		\$1,111,375.55
Loans Outstanding:		
	Amount	Principal
	Loaned	Outstanding
Arco, City of.....	\$7,500	\$0.00
Butte City, City of.....	\$7,425	\$0.00
Roberts, City of.....	\$23,750	\$0.00
Victor, City of.....	\$23,750	\$0.00
TOTAL LOANS OUTSTANDING.....		\$0.00
Uncommitted Funds.....		\$9,915.02
CURRENT ACCOUNT BALANCE.....		\$1,121,290.57

Memorandum



To: Idaho Water Resource Board
From: Neeley Miller
Date: May 4, 2018
Re: Proposed Flood Management Grant Program

REQUIRED ACTION: Adopt Proposed Flood Management Criteria

Background

House Bill 712 passed and approved by the 2018 Legislature includes a FY 2018 transfer of \$1,000,000 from the General Fund to the Water Management Fund in the Department of Water Resources budget. This funding is intended for a grant program administered by the Idaho Water Resource Board to provide competitive grants for flood-damaged stream channel repair, stream channel improvement, flood risk reduction, or flood prevention projects.

At the April 30, 2018 Finance Committee the proposed Flood Management Grant Program was discussed. The Committee provided recommended changes to the staff and requested the criteria be brought back before them at the May 17 & 18 IWRB meeting for review and consideration.

Attachment(s):

House Bill 712 Text
House Bill 712 Statement of Purpose
Resolution to Adopt Criteria
Attachment A - Proposed Flood Management Grant Criteria

IN THE HOUSE OF REPRESENTATIVES

HOUSE BILL NO. 712

BY APPROPRIATIONS COMMITTEE

AN ACT

1
2 RELATING TO THE APPROPRIATION TO THE DEPARTMENT OF WATER RESOURCES FOR FIS-
3 CAL YEAR 2018; APPROPRIATING AND TRANSFERRING ADDITIONAL MONEYS FROM
4 THE GENERAL FUND TO THE WATER MANAGEMENT FUND FOR FISCAL YEAR 2018; PRO-
5 VIDING LEGISLATIVE INTENT REGARDING GRANT APPLICATIONS FROM THE WATER
6 MANAGEMENT FUND; PROVIDING LEGISLATIVE INTENT REGARDING PROJECT PRIOR-
7 ITIZATION; AND DECLARING AN EMERGENCY.

8 Be It Enacted by the Legislature of the State of Idaho:

9 SECTION 1. CASH TRANSFER FOR FLOOD MANAGEMENT PROGRAM. There is hereby
10 appropriated and the State Controller shall transfer \$1,000,000 from the
11 General Fund to the Water Management Fund created pursuant to Section
12 42-1760, Idaho Code, as soon as practicable to be used for flood-damaged
13 stream channel repair, stream channel improvement, flood risk reduction, or
14 flood prevention projects.

15 SECTION 2. USES OF THE WATER MANAGEMENT FUND. The moneys appropri-
16 ated and transferred in Section 1 of this act are to be administered by the
17 Idaho Water Resource Board through a competitive, matching grant process.
18 Notwithstanding the provisions of Section 42-1760(2)(b), Idaho Code, grants
19 may be larger than \$50,000 at the discretion of the board.

20 SECTION 3. PROJECT PRIORITIZATION. It is the intent of the Legislature
21 that the selection process for the grants authorized in Section 2 of this
22 bill shall require the availability of fifty percent (50%) matching funds
23 and that projects shall be given priority on a competitive statewide basis
24 throughout Idaho. The Department of Water Resources staff shall support
25 this competitive grant process using existing personnel and resources.

26 SECTION 4. An emergency existing therefor, which emergency is hereby
27 declared to exist, this act shall be in full force and effect on and after its
28 passage and approval.

STATEMENT OF PURPOSE

RS26410

This bill includes a FY 2018 transfer of \$1,000,000 from the General Fund to the Water Management Fund in the Department of Water Resources. This funding will provide for a grant program administered by the Idaho Water Resources Board to provide competitive grants for flood preparation, flood response, and long-term flood management.

The bill includes intent language in Section 2 that authorizes the Water Resources Board to approve projects over \$50,000 and requires that grants be competitive on a statewide basis. Section 3 requires that there be a 50% match to state dollars and that the Department of Water Resources shall assist the Water Resources Board with existing personnel and resources.

FISCAL NOTE

This bill provides for the appropriation and transfer of \$1,000,000 from the General Fund to the Water Management Fund in the Department of Water Resources for FY 2018. This fund is continuously appropriated under Section 42-1760, Idaho Code.

Contact:

Rob J Sepich
Budget and Policy Analysis
(208) 334-4742

DISCLAIMER: This statement of purpose and fiscal note are a mere attachment to this bill and prepared by a proponent of the bill. It is neither intended as an expression of legislative intent nor intended for any use outside of the legislative process, including judicial review (Joint Rule 18).

BEFORE THE IDAHO WATER RESOURCE BOARD

IN THE MATTER OF FLOOD) A RESOLUTION TO ADOPT A CRITERIA
MANAGEMENT GRANTS)
_____)

1 WHEREAS, House Bill 712 passed and approved by the 2018 legislature transferred \$1,000,000
2 from the General Fund to the Water Management Fund creating a Flood Management Grant Program
3 administered by the Idaho Water Resources Board (IWRB) to be used for the purpose of for flood-
4 damaged stream channel repair, stream channel improvement, flood risk reduction, or flood prevention
5 projects; and

6 WHEREAS, House Bill 712 allows for the award of grants larger than \$50,000 for the Flood
7 Management Program, at the discretion of the IWRB; and

8 WHEREAS, House Bill 712 directs the IWRB to require the availability of fifty percent (50%)
9 matching funds for all projects to be considered under the grant program; and

10 WHEREAS, House Bill 712 directs the IWRB to prioritize projects on a competitive statewide basis;
11 and

12 WHEREAS, on April 30, 2018 the IWRB Finance Committee discussed a criteria and recommended
13 staff update the criteria for consideration at the May 17 and 18 IWRB meeting; and

14 NOW, THEREFORE BE IT RESOLVED that the IWRB adopts the criteria attached hereto in
15 Attachment A for the award of Flood Management Grants and directs staff to issue a statewide solicitation
16 for Flood Management projects.

DATED this 18th day of May 2018.

ROGER CHASE, Chairman
Idaho Water Resource Board

ATTEST _____

VINCE ALBERDI, Secretary

ATTACHMENT A: Proposed IWRB Flood Management Grant Program Criteria

The Idaho Water Resource Board (IWRB) Flood Management Grant Funding Program provides financial assistance on a competitive statewide basis to Flood Control Districts, Drainage Districts, Irrigation Districts, Canal Companies, Municipalities, Counties and other public entities interested in pursuing flood damaged stream channel repair, stream channel improvement, flood risk reduction, and flood prevention projects. (See HB 712; Statutes 42-1760; IDAPA 37.02.02)

Pursuing flood damage repair and improvement projects can help prevent or reduce flood damage in Idaho's streams and rivers. To be considered for grant funding, entities must be able to provide evidence of flood damage, or evidence of conditions that create the risk of flooding in a stream channel and submit a funding request document outlining the proposed repairs and/or improvements to the stream channel.

Eligible Entities: Flood Control Districts, Drainage Districts, Irrigation Districts, Canal Companies, Municipalities, and Counties. Other public entities are eligible to apply.

Eligible Geographic Area: Statewide

Program Budget:

- \$1,000,000
- No more than 50% (\$500,000) of the total budget may be spent within a single IWRB district. This limit may be waived if there are no competing funding demands.

Funding Amount: up to \$200,000 per project; one project per application

- Funding awards will be reallocated unless Flood Management work begins prior to November 1, 2018.
- Funding will not be distributed unless the project is fully permitted. Sponsor is responsible for providing permit documentation to IWRB staff.

Matching Funds for Projects:

- Entities requesting funding for flood management grant projects must provide at least 50% matching cost-share funding with non-state dollars. Projects that include higher cost share amounts will receive a higher ranking during project evaluations
- In-kind services can be used for 30% of the total projects costs (e.g. a \$100K project, sponsor would have to provide at least \$50K in matching cost share funding. Of the \$50K, the sponsor could provide up to \$30K in in-kind services and \$20K in cash to meet the matching cost-share requirement)
- Funding award will be based on project ranking

Evaluation Criteria: To maximize the effective and efficient use of available funds, applications and sponsor's grant document will be evaluated, scored (*120 point scale*), and ranked according to the following criteria:

Effectiveness of Project (60 points)

- What is the urgency of the project and anticipated costs? (*10 points*)
- What are the objectives and benefits of the project? (*10 points*)
- How does the proposed project solution address the objectives? (*10 points*)
- How will the project measure success of its objectives, and describe the proposed monitoring plan. (*5 points*)
- Is the proposed budget and schedule realistic and is the budget appropriate for the scope of work provided? Has the applicant provided detailed construction expenses documenting how money will be spent to complete the project? (*15 points*)

- Are project sponsors using relevant and appropriate information to develop the proposed project? (Sponsor should include references to relevant studies, assessments, reports, management plans, etc.) How will the project account for expected future changes to hydrology, sediment regimes, or water supply? (10 points)

Readiness of Project (40 points)

- Lead sponsor of project is identified and there is a description of other affected stakeholders and jurisdictions. (10 points)
- Project sponsors will provide documentation that affected local stakeholders and jurisdictions have been consulted. If the project is located within a Flood Control District, the sponsor must provide documentation showing the Flood Control District supports the project, otherwise the project will be declared ineligible. (10 points)
- Specify cash matching funds that will be provided for the project, including any in-kind services. Indicate what funding sources are secured or pending. The applicant must provide at least 50% matching cost share funding with non-state dollars. In-kind services can be used for 30% of the total projects costs (e.g. a \$100K project, sponsor would have to provide at least \$50K in matching cost share funding. Of the \$50K, the sponsor could provide up to \$30K in in-kind services and \$20K in cash to meet the matching cost-share requirement) (10 points)
- Projects that propose matching cost-share amounts above 50% will receive additional points in the ranking. (1 point for each additional 1% increase up to 60%, up to 10 additional points)

Organization Capacity (20 points)

- What is the sponsor's history of successful accomplishments on projects similar to this one? The sponsor shall provide several past project examples, if possible. (10 points)
- What level of sponsor and consultant staffing will be directed toward the implementation of the proposed project? Discuss the number of sponsor and consultant staff and amount of time dedicated for each for the project. Will the project utilize volunteers? If so, how? Include brief resumes or list of qualifications for each member of the project team. (10 points)

Application Process:

Application Submittal Notice: May 21, 2018

Application Deadline: June 15, 2018

Project Funding Recommendations: July 2018 Finance Committee

Funding Awarded: July 27, 2018 Board meeting

Notice of Award: July 30, 2018

Payment Process:

- Funds will be distributed upon sponsor submitting funding reimbursement requests to the IWRB.
- Sponsor funding requests shall include a cover letter which shall include a description of the project activities, dates for performing the project activities, and contractor or supplier invoices.
- A total of 5% shall be retained from each payment request until the project has been completed, and the applicant has fulfilled their deliverable requirements. The 5% award-withholding will be included with the final payment request disbursement.

Project Deliverables:

Entities that receive flood management grant funding will be required to submit monthly progress reports updating the IWRB on project progress, and a final report at the completion of the project. Additionally, entities will be expected to provide completed plans and specifications, bid documents, material testing and sampling reports, and a letter from the sponsor or sponsor's consultant that the project was completed in substantial conformance with the approved plans and specifications. If Flood Management Grant funding is available in the future, sponsor funding requests will not be considered if the sponsor does not comply with the deliverable requirements.

IWRB Districts are as follows:

District No. 1: Boundary, Bonner, Kootenai, Shoshone, Benewah, Latah, Clearwater, Nez Perce, Lewis and Idaho counties.

District No. 2: Adams, Valley, Washington, Payette, Gem, Boise, Canyon, Ada, Elmore and Owyhee counties.

District No. 3: Camas, Gooding, Jerome, Twin Falls, Cassia, Blaine, Lincoln, Minidoka, Lemhi, Custer and Butte counties.

District No. 4: Clark, Fremont, Jefferson, Madison, Teton, Bingham, Bonneville, Power, Bannock, Caribou, Oneida, Franklin and Bear Lake counties.

** No more than 50% (\$500,000) of the total budget may be spent within a single IWRB district. This limit may be waived if there are no competing funding demands.*

BEFORE THE IDAHO WATER RESOURCE BOARD

IN THE MATTER OF FLOOD) A RESOLUTION TO ADOPT A CRITERIA
MANAGEMENT GRANTS)
_____)

1 WHEREAS, House Bill 712 passed and approved by the 2018 legislature transferred \$1,000,000
2 from the General Fund to the Water Management Fund creating a Flood Management Grant Program
3 administered by the Idaho Water Resources Board (IWRB) to be used for the purpose of for flood-
4 damaged stream channel repair, stream channel improvement, flood risk reduction, or flood prevention
5 projects; and

6 WHEREAS, House Bill 712 allows for the award of grants larger than \$50,000 for the Flood
7 Management Program, at the discretion of the IWRB; and

8 WHEREAS, House Bill 712 directs the IWRB to require the availability of fifty percent (50%)
9 matching funds for all projects to be considered under the grant program; and

10 WHEREAS, House Bill 712 directs the IWRB to prioritize projects on a competitive statewide basis;
11 and

12 WHEREAS, on April 30, 2018 the IWRB Finance Committee discussed a criteria and recommended
13 staff update the criteria for consideration at the May 17 and 18 IWRB meeting; and

14 NOW, THEREFORE BE IT RESOLVED that the IWRB adopts the criteria attached hereto in
15 Attachment A for the award of Flood Management Grants and directs staff to issue a statewide solicitation
16 for Flood Management projects.

DATED this 18th day of May 2018.

ROGER CHASE, Chairman
Idaho Water Resource Board

ATTEST _____

VINCE ALBERDI, Secretary

Memorandum



To: Idaho Water Resource Board (IWRB)

From: Brian Patton & Neeley Miller

Date: May 4, 2018

Re: Proposed Secondary Aquifer Planning, Management & Implementation Fund – FY 2019 Budget

REQUIRED ACTION: Adopt FY 2019 Budget

At the April 30, 2018 Finance Committee meeting the FY 2019 budgeting process for the Secondary Aquifer Planning, Management & Implementation Fund (Secondary Aquifer Fund) was discussed. The Finance Committee made a recommendation to the IWRB to adopt the attached budget. Staff will highlight the priorities included in the budget.

Attachment(s):

- 1) Secondary Aquifer Funding Resolution
- 2) Attachment A: Proposed Secondary Aquifer Fund – FY 2019 Budget

BEFORE THE IDAHO WATER RESOURCE BOARD

IN THE MATTER OF STATEWIDE WATER
SUSTAINABILITY AND AQUIFER STABILIZATION,
AND THE SECONDARY AQUIFER PLANNING,
MANAGEMENT, AND IMPLEMENTATION FUND
FISCAL YEAR 2019 BUDGET

A BUDGET RESOLUTION

1 WHEREAS, House Bill 547 passed and approved by the 2014 Legislature allocates \$5 million annually through 2019
2 from the Cigarette Tax to the Idaho Water Resource Board's (IWRB) Secondary Aquifer Planning, Management, and
3 Implementation Fund (Secondary Aquifer Fund) for statewide aquifer stabilization; and
4 WHEREAS, House Bill 677 passed and approved by the 2018 Legislature allocated \$5 million in ongoing
5 General Fund dollars to the IWRB's Secondary Aquifer Fund for statewide water sustainability and aquifer
6 stabilization; and
7 WHEREAS, restructuring of the loan to the various ground water districts on the Eastern Snake Plain has
8 resulted in \$4 million being repaid to the Secondary Aquifer Fund; and
9 WHEREAS, the IWRB has the opportunity to utilize up to \$2.068 million provided by the Idaho National
10 Laboratory for aquifer monitoring in the Eastern Snake Plain Aquifer and the Big Lost Basin Aquifer over a three-
11 year period; and
12 WHEREAS, un-allocated funds already in the Secondary Aquifer Fund will be carried forward into the Fiscal
13 Year 2019 budget; and
14 WHEREAS, many aquifers across Idaho are declining or have existing or potential conjunctive
15 administration water use conflicts, including the Eastern Snake Plain Aquifer, the Mountain Home Aquifer, the Wood
16 River Valley Aquifer, the Big Lost Aquifer, the Raft River Aquifer, the Malad Valley Aquifer, the Treasure Valley
17 Aquifer, the Rathdrum Prairie Aquifer, the Palouse Basin Aquifer, the Lewiston Plateau Aquifer, and others; and
18 WHEREAS, the State of Idaho relies on spring discharge from the Eastern Snake Plain Aquifer (ESPA)
19 through the Thousand Springs to assist in meeting the minimum streamflow water rights at the Murphy Gage
20 established under the Swan Falls Agreement; and
21 WHEREAS, the ESPA has been losing approximately 216,000 acre-feet annually from aquifer storage since
22 the 1950's resulting in declining ground water levels in the aquifer and declining spring flows from the aquifer; and
23 WHEREAS, during parts of 2013 and 2014 flows at the Murphy Gage approached the minimum flow, and
24 in 2015 flows at the Murphy Gage went below minimum flows; and
25 WHEREAS, the ESPA has also been experiencing conjunctive administration water use conflicts over the
26 past two decades that have the potential to significantly impact Idaho's economy; and
27 WHEREAS, on June 30, 2015 members of the Idaho Ground Water Appropriations entered into an agreement
28 with the Surface Water Coalition whereby the ground water users agreed to reduce their consumptive use from the
29 ESPA by 240,000 acre-feet annually and take other actions, and
30 WHEREAS, the 2016 Idaho Legislature passed and approved Senate Concurrent Resolution 138 supporting
31 this agreement; and
32 WHEREAS, the State Water Plan includes a goal to accomplish managed recharge in the ESPA averaging
33 250,000 acre-feet annually; and
34 WHEREAS, the 2016 Idaho Legislature passed and approved Senate Concurrent Resolution 136 directing
35 the IWRB to develop the capacity to achieve 250,000 acre-feet of annual average managed recharge to the ESPA by
36 December 31, 2024; and
37 WHEREAS, the ground water use reduction and managed recharge are together designed to stabilize and
38 then recover the ESPA; and
39 WHEREAS, a recent study commissioned by the IWRB predicts that approximately 160,000 to 283,000 new
40 acre-feet of water supply may be needed to meet the DCMI needs of the growing Treasure Valley population over the
41 next 50 years; and
42 WHEREAS, in October 2017 the Board approved entering into an agreement with the U.S. Bureau of
43 Reclamation to complete the Boise River Storage Feasibility Study; and

44 WHEREAS, conjunctive administration water delivery calls have been made in the Big and Little Wood
45 River Basins against junior-priority upstream ground water uses; and

46 WHEREAS, the Mountain Home aquifer is being over-drafted by about 30,000 acre-feet annually;

47 WHEREAS, the deep aquifer in the Palouse Basin has been declining for decades despite aggressive
48 conservation measures; and

49 WHEREAS, the Department of Water Resources recently enacted Ground Water Management Areas in the
50 Malad Valley Aquifer and the Lewiston Plateau Aquifer in response to declining ground water levels in those aquifers;
51 and

52 WHEREAS, ground water levels in many aquifers are inadequate to sustain a supply of water for surface and
53 ground water irrigation, hydropower, municipal, industrial, and other uses, the curtailment of which would cause
54 severe economic harm to Idaho's economy; and

55 WHEREAS, the 2016 Idaho Legislature passed and approved Senate Concurrent Resolution 137 which
56 recognized that stabilizing and enhancing aquifer levels is in the public interest, and directs the IWRB to take actions
57 in aquifers across the state to stabilize and enhance aquifer levels thereby maintaining water supply for consumptive
58 and non-consumptive uses and minimizing harm to Idaho's economy arising from water supply shortages; and

59 WHEREAS, on April 30, 2018 the IWRB Finance Committee met in Boise, Idaho, and recommended the
60 approval of a Fiscal Year 2019 Budget for the use of available funds in the Secondary Aquifer Fund for statewide
61 water sustainability and aquifer stabilization purposes; and

62 NOW THEREFORE BE IT RESOLVED that the IWRB adopts the Fiscal Year 2017 Budget for the
63 continuously-appropriated Secondary Aquifer Planning, Management, and Implementation Fund as shown
64 in Attachment A to this resolution.

65 BE IT FURTHER RESOLVED that the budget may be adjusted if necessary based on the actual amount of
66 Cigarette Tax funds received, interest income received, amount received from the Idaho National laboratory, or the
67 actual amount of carry-over from Fiscal Year 2018.

68 BE IT FURTHER RESOLVED that funds for budgeted ESPA managed recharge infrastructure shall be
69 approved by the IWRB by resolution for each individual project in excess of \$20,000, detailing the terms and
70 conditions of approval, and must include conditions maintaining long-term access for recharge by the IWRB in any
71 facilities owned by others.

72 BE IT FURTHER RESOLVED that expenditures for ESPA managed recharge operations, investigations and
73 engineering for further ESPA managed recharge capacity development may proceed with no further approvals,
74 however, the IWRB shall be kept apprised of such expenditures.

75 BE IT FURTHER RESOLVED that the Idaho National Laboratory funded monitoring and investigation
76 work in the Eastern Snake Plain Aquifer and the Big Lost Basin Aquifer may proceed with no further approvals up to
77 the total amount provided by the Idaho National Laboratory, however, the IWRB shall be kept apprised of such
78 expenditures.

79 BE IT FURTHER RESOLVED that expenditures for the Treasure Valley Ground Water Model, the Boise
80 River Storage Feasibility Study, and for Aquifer Monitoring Network Enhancements in Priority Aquifers, and
81 Assistance with Federal Issues, and Administrative Expenses may proceed with no further approvals, however, the
82 IWRB shall be kept apprised of such expenditures.

83 BE IT FURTHER RESOLVED that expenditures for the Cooperative Cloud Seeding Program and the Cloud
84 Seeding Modeling Project may proceed with no further approvals, however, the IWRB shall be kept apprised of such
85 expenditures. Further, it is the IWRB's stated goal that both the state and the water users financially participate with
86 Idaho Power in the Cooperative Cloud Seeding Program.

87 BE IT FURTHER RESOLVED that all other expenditures from the Secondary Aquifer Fund shall require
88 an additional approval by the IWRB by resolution.

89 BE IT FURTHER RESOLVED that the IWRB may modify this budget during Fiscal Year 2019 at a properly noticed
90 meeting of the IWRB.

DATED this 23th day of March, 2018.

ROGER W. CHASE, Chairman

Idaho Water Resource Board

ATTEST _____
VINCE ALBERDI, Secretary

ATTACHMENT A – Fiscal Year 2019 Secondary Aquifer Planning, Management, and Implementation Fund Budget

Carry-Over From FY18	\$	2,898,760
General Fund (HB 677):	\$	5,000,000
HB547 funds - receipt of Cigarette Tax proceeds	\$	5,000,000
IGWA Loan Repayment to the Secondary Fund	\$	4,000,000
DOE-INL SEP Funds (\$2.068 M over 3 years)	\$	690,000
Estimated interest	\$	250,000
TOTAL	\$	17,838,760

BUDGET TRACKING

Category	Sub-Category	FY19 Budget
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ESPA MANAGED RECHARGE

ESPA Recharge Operations		Conveyance Cost	\$3,500,000
		Equipment & Supplies	\$89,000
		Recharge Monitoring	\$554,550
		Regional Monitoring	\$200,000
		TOTAL	\$4,343,550
ESPA Managed Recharge Infrastructure Projects	Budgeted Projects	North Side Wilson Canyon Site	\$1,750,000
		AFRD2 MP29 Site	\$2,150,000
		AFRD2 MP28 Hydro Plant Tailbay	\$1,000,000
		South Fork and Other Small Upper Valley Sites	\$1,000,000
		A&B Injection Wells	\$550,000
	Reserved for additional recharge infrastructure projects	\$500,000	
	TOTAL	\$6,950,000	
Managed Recharge Investigations	Budgeted Investigations	North Side Recharge Sites	\$200,000
		Large Upper Valley Site(s)	\$200,000
		Big / Little Wood Sites	\$200,000
		Reserved for additional investigations and engineering	\$300,000
		TOTAL	\$900,000
ESPA Hydrologic Monitoring (DOE Funding) (Year 1 of 3 - Total \$928,000)			\$310,000
ESPA MANAGED RECHARGE TOTAL			\$12,503,550

TREASURE VALLEY

Treasure Valley Aquifer Ground Water Model (Year 3 of 5 - Total \$2.5 M)	\$500,000
Boise River Storage Studies (final payment)	\$1,000,000
Southeast Boise Groundwater Management Area Monitoring	\$100,000
Treasure Valley DCMI Water Conservation Study	\$200,000
TREASURE VALLEY TOTAL	\$1,800,000

CAMAS PRAIRIE

Ground & Surface Water Monitoring	\$75,000
CAMAS PRAIRIE TOTAL	\$75,000

BIG LOST TOTAL

Hydrologic Monitoring (DOE Funding) (Year 1 of 3 - Total \$1.14 M)	\$380,000
BIG LOST TOTAL	\$380,000

PALOUSE BASIN

Water Sustainability Projects	\$100,000
PALOUSE TOTAL	\$100,000

BEAR RIVER BASIN

Water Sustainability Projects	\$250,000
BEAR RIVER BASIN TOTAL	\$250,000

STATE-WIDE

Aquifer monitoring network enhancement in priority aquifers	\$200,000
Cooperative Cloud Seeding Program:	
Operations & Maintenance Costs (Board portion is 1/3 per year)	\$800,000
Cloud Seeding Modeling Project (Year 2 of 4 - Total \$1.47 Million)	\$470,000
Operations costs for additional Ground Generators & Upper Snake Aircraft	\$425,000
Administrative expenses (public information, staff training, etc)	\$80,000
Professional Assistance for securing Federal Funding	\$100,000
STATE-WIDE TOTAL	\$2,075,000

RESERVE FOR WORK IN OTHER PRIORITY AREAS OR CARRY-FORWARD INTO FUTURE YEARS	\$ 655,210
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GRAND TOTAL	\$ 17,838,760
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Memorandum

To: Idaho Water Resource Board
From: Wesley Hipke
Date: March 8, 2018
Re: ESPA Managed Recharge Program Status Report



REQUIRED ACTION at Board Meeting: Resolution amending FY18 Budget Recharge Conveyance Cost from \$2,500,000 to \$4,700,000

I. 2017/2018 Recharge Season Status

IWRB Water Available for Recharge:

Storage Water: 61,100 af - donated by the Surface Water Coalition (SWC)

Natural Flow:

- Snake River
 - Water Right nos. 01-7482 (1,200 cfs), 01-7142 (2,831 cfs), 01-10609 (3,738 cfs)
 - Temporary Approval of Water Use for recharge on the Snake River (including the Henry's Fork and the South Fork) for 2,000 cfs. The approval authorizes the IWRB to recharge water when there is excess water on either river and other water rights have been filled in priority.

- Big/Little Wood Rivers
 - Water Right no. 37-7054 (250 cfs)
 - 37-7054 License Contested – recharging under the Permit
 - Temporary Approval of Water Use for recharge on the Little Wood (800 cfs) and Big Wood (800 cfs) Rivers. The approval authorizes the IWRB to recharge water when there is excess water on either river and other water rights have been filled in priority.

Recharge Period:

- "In-canal" recharge: Under the IWRB's Recharge Program, in-canal recharge occurs when canals are not otherwise filled for delivery of irrigation water. The purpose of the program is to use the canals to recharge additional water that would not have otherwise occurred. Therefore, in-canal recharge under the IWRB's program generally terminates once canals are filled in anticipation of the irrigation season. While cold and wet conditions this spring delayed demand for irrigation water delivery, the IWRB recognized that most canal systems were typically filled by late April. Therefore, the IWRB discontinued all in-canal recharge throughout the ESPA on April 25, 2018.

- “Off-canal” recharge: Off-canal recharge sites can be utilized as long as the IWRB’s water rights are in priority. This year, depending on irrigation demands and weather conditions, managed recharge could continue through May at the off-canal sites.

IWRB Recharge 2017/2018:

A summary of IWRB recharge for the 2017/2018 season as of May 1, 2018 is provided in Table 1 and Figure 1.

Table 1. IWRB Recharge Summary – 2017/2018*						
System	Area	Start of Recharge	Duration of Recharge (Days)	Median Recharge Rate (cfs)	Current Recharge Rate (cfs)	Volume Recharged (Acre-feet)*
Snake River	Lower Valley	Sept 14	230	587	405	270,937
	Upper Valley	Aug 30	245	390	63	231,281
	Snake River Total			245	1,099	468
Big/Little Wood River	Big Wood Canal Co.	Nov 30	146	13	0	5,385
ESPA TOTAL			245	907	468	507,603

* As of May 1, 2018 – IWRB recharge data are preliminary and subject to change.

Upper Valley Summary:

The IWRB partnered with ten irrigation district/canal companies this recharge season contributing to a record year for IWRB recharge in the Upper Valley. Prior to last year, the greatest amount of IWRB recharge in the Upper Valley was nearly 78,000 af. This year, the IWRB recharged over 137,000 af. Recharge under the IWRB’s water rights is currently limited to the Egin Lakes recharge site.

Lower Valley Summary:

Similar to the Upper Valley, IWRB Recharge in the Lower Valley surpassed last year’s record of 180,000 af of managed recharge.

- Twin Falls Canal Company (TFCC) discontinued recharge on March 19.
- Southwest Irrigation District discontinued recharge on April 17.
- American Falls Reservoir District #2 (AFRD2) discontinued in-canal recharge on April 13, but continued recharge deliveries to the MP31 and Shoshone recharge sites. Due to capacity/demand issues, recharge at the Shoshone site was discontinued on April 23. As

irrigation demand has increased, deliveries to the MP31 site have decreased to around 400 cfs.

Big/Little Wood River Summary:

The Big Wood Canal Company (BWCC) delivered water to the Richfield and Devil’s Headgate recharge sites. Deliveries were discontinued to the Richfield site on April 23 and to the Devil’s Headgate site on April 25 to provide canal capacity for irrigation deliveries.

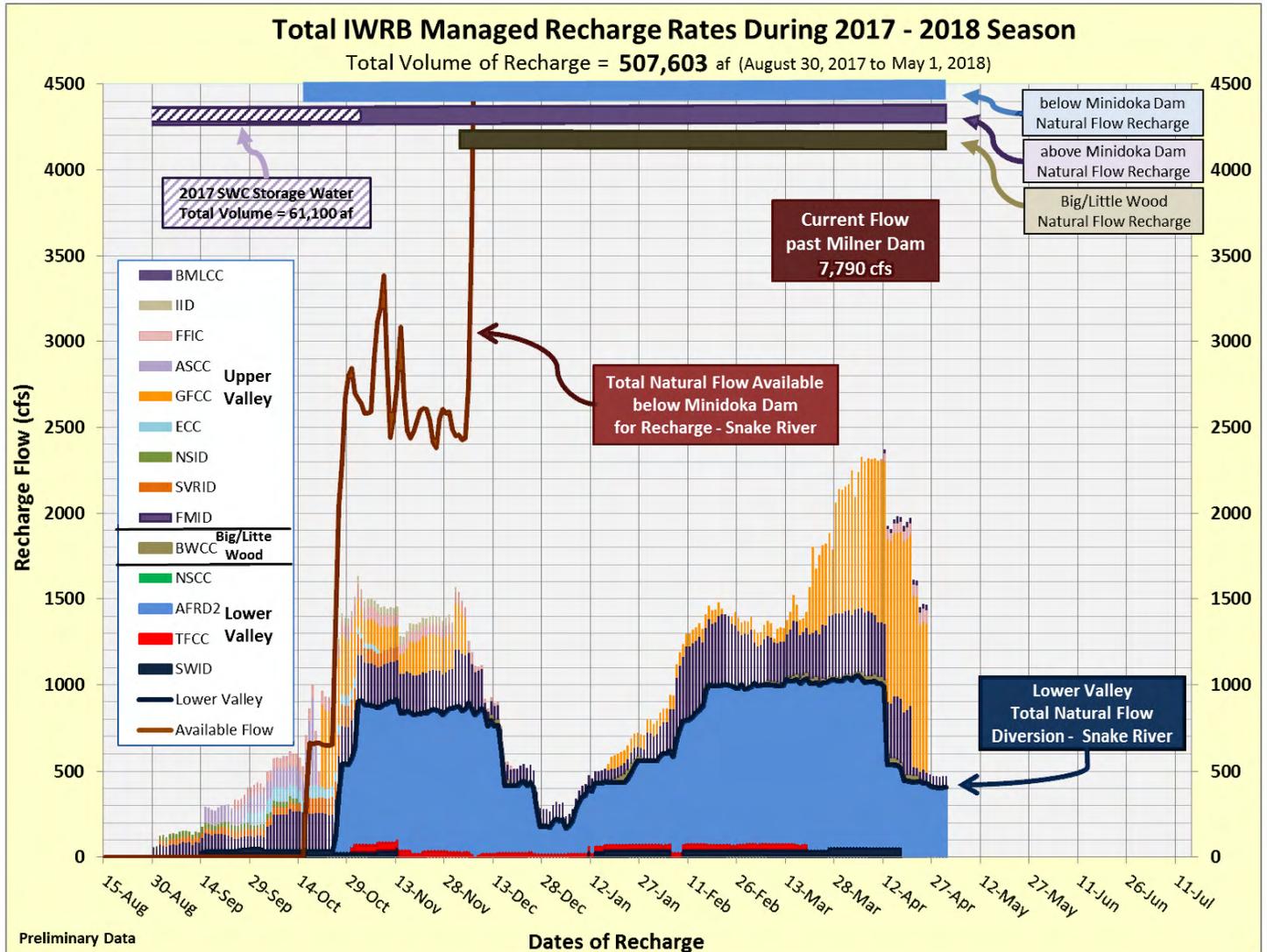


Figure 1. IWRB 2017/2018 ESPA Managed Recharge.

II. ESPA Recharge Program Projects and Buildout Activities

A number of projects have been undertaken to enhance the IWRB’s ability to recharge in the ESPA. The following summary is a brief overview of the projects the IWRB is currently pursuing to meet the managed recharge goal of an average 250,000 af/yr.

For managed recharge projects involving infrastructure improvements to which the IWRB provided funding, a Memorandum of Intent (MOI) was developed to establish a long-term agreement (twenty years) between the IWRB and the entity implementing the project. The MOI acknowledges: 1) the IWRB provided financial assistance for a project; and 2) the entity agrees to deliver and prioritize delivery of the IWRB's recharge water as compensation for financial assistance from the IWRB.

ESPA Managed Recharge Infrastructure Project Summary

IWRB staff is focused on the development of additional recharge capacity throughout the ESPA. The IWRB allocated over \$14 million dollars from 2013 through fiscal year 2018 for infrastructure improvements to increase managed recharge throughout the ESPA. The implementation status of the current projects in the Lower and Upper Valleys is included in Tables 2 and 3, respectively. A summary of the projected projects is identified in Tables 4 and 5.

In the Lower Valley, this includes development of recharge capacity on the North Side Canal system below Wilson Lake, investigation of potential recharge sites along the Milner-Gooding canal, and pursuit of other opportunities as they arise. In the Upper Valley, staff is working with numerous canal companies and other entities to find and develop recharge sites or infrastructure projects to facilitate recharge.

Table 2. Current IWRB ESPA Managed Recharge Projects - Lower Valley

IWRB Partner	Project Name	Project Type	Status	Approved Funds	Scheduled Completion	Description / Key Items
AFRD2	Dietrich Drop Hydro Plant Winter By-pass	Design / Construction	Active	\$1,500,000	Fall 2018	<p>Winter recharge by-pass of the Dietrich Drop Power Plant</p> <ul style="list-style-type: none"> • ENEL and AFRD2 have developed infrastructure improvements to allow the plant to bypass winter time recharge flow. • Finalize cost and project schedule – May 2018 • Planned Completion – Winter 2018/2019
North Side CC	Hydro Plants (4) Improvements for Winter By-pass	Design / Construction	Active	\$5,074,581	Dec 2018	<p>Winter recharge by-pass of the hydro plants between the Milner Pool and Wilson Lake</p> <ul style="list-style-type: none"> • Phase I const. complete – Mar 2018 • 100% Design complete - Apr 2018 • FERC approval for const. – Apr 2018 • Contractor hired - July 2018
Big Wood CC	Richfield Recharge Site	Construction	Active	\$150,000	May 2018	<p>Construction and development of the Richfield Site</p> <ul style="list-style-type: none"> • Construction complete – Mar 2018 • Groundwater Monitoring plan scheduled to be approve by DEQ – May 2018 • All Monitor Well(s) drilled – May 2018 • Dept. of State Lands lease application – May 2018
BLM	Wilson Canyon & MP 29 Right-of-Way	EA / Investigation	Active	\$100,000	Winter 2018	<p>BLM Right-of-Way for Wilson Canyon & MP29 Site</p> <ul style="list-style-type: none"> • Hire Contractor to develop an EA for the two sites – Mar 2018 • Required surveys for EA – Summer 2018 • Prepare FONSI – Fall 2018

Table 3. Current IWRB ESPA Managed Recharge Projects - Upper Valley

IWRB Partner	Project Name	Project Type	Status	Approved Funds	Scheduled Completion	Description / Key Items
Fremont-Madison ID	Egin Lakes Phase II	Construction	Active	\$580,000	Summer 2018	<p>Construction of Egin Lakes Phase II Recharge Capacity Expansion</p> <ul style="list-style-type: none"> • Submittal of EA/Evaluation – Oct 2017 <ul style="list-style-type: none"> ○ Est. BLM approval – May/June 2018 • Construction of weir on Recharge Canal – Feb 2018 • Construction on new recharge areas – Summer 2018 (after BLM approval)
New Sweden ID	New Sweden Site Testing & Groundwater Monitoring Plan	Evaluation of Sites	Active	\$200,000	2018	<p>Preliminary survey of the New Sweden system and hydraulic modeling</p> <ul style="list-style-type: none"> • Approved \$200,000 for testing of sites and a Groundwater Quality Monitoring Program – May 2017 • May 2018 – Testing of Porter Pit complete

Table 4. Projected Lower Valley - IWRB ESPA Managed Recharge Projects

IWRB Partner	Project Name	Project Type	Status	Approved Funds	Scheduled Completion	Description / Key Items
AFRD2	MP 28 Hydro Plant Tailbay	Design / Construction	Planning	None at this time	Winter 2018/2019	<p>Isolating tailbay and improving forebay of the hydro plant during winter recharge</p> <ul style="list-style-type: none"> • AFRD2 purchasing the Hydro Plant - Spring 2018 • AFRD2 developing options for infrastructure improvements for winter time recharge flows – Spring 2018
AFRD2	New Recharge Site Identification	Evaluation	Planning	None at this time	Spring/ Summer 2018	<p>Preliminary Survey and analysis to determine potential recharge site at MP29, MP34, and others</p> <ul style="list-style-type: none"> • Survey data delivered - Feb 2018 • Evaluating and assessing MP29 site – Spring 2018
North Side CC	New Recharge Site Development and Identification	Survey, Design / Construction	Planning	None at this time	2018	<p>Design, Construction, and development of a Groundwater Quality Monitoring Program for site(s) below Wilson Lake</p> <ul style="list-style-type: none"> • Alternative Analysis – Dec 2017 • NSCC meeting to discuss Alternatives – Jan 2018 • Design and construction of Wilson Canyon site - 2018 • Design and construction of other site(s) – 2018/2019

Table 5. Projected Upper Valley - IWRB ESPA Managed Recharge Projects

IWRB Partner	Project Name	Project Type	Status	Approved Funds	Scheduled Completion	Description / Key Items
South Fork canal companies	South Fork Managed Recharge Site Constructions	Construction	Planning	None at this time	2018	Design and Construction of proposed recharge sites <ul style="list-style-type: none"> • Soliciting recharge sites development projects from the various canal companies
Butte Market Lake Co.	Managed Recharge Canal System Evaluation	Construction	Planning	None at this time	Fall 2018	Design and Construction of proposed recharge sites <ul style="list-style-type: none"> • Soliciting recharge sites development projects

BEFORE THE IDAHO WATER RESOURCE BOARD

IN THE MATTER OF AMENDING THE STATEWIDE
WATER SUSTAINABILITY AND AQUIFER
STABILIZATION, AND THE SECONDARY AQUIFER
PLANNING, MANAGEMENT, AND IMPLEMENTION
FUND FISCAL YEAR 2018 BUDGET

RESOLUTION TO AMEND FISCAL YEAR 2018
THE SECONDARY AQUIFER PLANNING,
MANAGEMENT, AND IMPLEMENTION FUND

1 WHEREAS, House Bill 547 passed and approved by the 2014 Legislature allocates up to \$5 million
2 annually from the Cigarette Tax to the Idaho Water Resource Board's (IWRB) Secondary Aquifer Planning,
3 Management, and Implementation Fund (Secondary Aquifer Fund) for statewide aquifer stabilization; and
4

5 WHEREAS, Senate Bill 1175 passed and approved by the 2017 Legislature allocated \$5 million in
6 ongoing General Fund dollars to the IWRB's Secondary Aquifer Fund for statewide water sustainability
7 and aquifer stabilization; and
8

9 WHEREAS, the State of Idaho relies on spring discharge from the Eastern Snake Plain Aquifer
10 (ESPA) through the Thousand Springs to assist in the meeting minimum streamflow water rights at the
11 Murphy Gage established under Swan Falls Agreement; and
12

13 WHEREAS, the ESPA has been losing approximately 216,000 acre-feet annually from aquifer
14 storage since the 1950's resulting in declining groundwater levels in the aquifer and declining spring flows
15 from the aquifer; and
16

17 WHEREAS, the 2016 Idaho Legislature passed and approved Senate Concurrent Resolution 136
18 directing to IWRB to develop the capacity to achieve 250,000 acre-feet of annual average managed
19 recharge to the ESPA by December 31, 2024; and
20

21 WHEREAS, on May 19, 2017, the IWRB adopted the Secondary Aquifer Fund Fiscal Year 2018
22 Budget, which included \$2,500,000 in ESPA Recharge Operations for Conveyance Cost to recharge excess
23 water in the ESPA; and
24

25 WHEREAS, the 2017/2018 recharge season started on August 30, 2017 and will have recharged
26 over 500,000 acre-feet of water by the end of the recharge season;
27

28 NOW THEREFORE IT BE RESOLVED that the IWRB increases the ESPA Recharge Operations
29 Conveyance Cost for the Fiscal Year 2018 Budget to \$4,700,000.

DATED this 18th day of May, 2018.

ROGER W. CHASE, Chairman
Idaho Water Resource Board

ATTEST _____
VINCE ALBERDI, Secretary

Memorandum



To: Idaho Water Resource Board
From: Neeley Miller
Date: May 8, 2018
Re: Priest Lake Water Management Project

REQUIRED ACTION: Consider resolution to commit funds and provide signatory authority

Background

- In accordance with the direction from Governor Otter and the Idaho Legislature, the Idaho Water Resource Board is supporting efforts to improve sustainability of water supplies statewide.
- As a result of limited water supply and drought conditions in northern Idaho in 2015 and 2016, it was difficult to maintain required pool levels and downstream flow in the Priest River during the recreational season.
- The IWRB subsequently authorized expenditure of up to \$300,000 from the Revolving Development Account to complete the Priest Lake Water Management Study (study) to evaluate strategies to meet long-term water management objectives for the Priest Lake and Priest River system.
- A Request for Proposals was issued to solicit consultant services to complete the conceptual study and subsequent Priest Lake Water Management Project. The proposal submittal period closed in October 2016. Several proposals were submitted and staff review proposals and selected a consultant to perform the study: Mott MacDonald (MM).

Study Recommendations and Costs:

- The work on the study has been completed and includes the following recommendations:
 - Temporarily raising surface level of Priest Lake 3 to 6 inches during the recreational season of dry years and integrating real-time streamflow data to allow more flexibility
 - Outlet structure improvements to the scour apron, modifying and strengthening gates
 - Replace the current existing porous breakwater with a sediment retention feature with some dredging included
- The estimated cost to implement recommendations is approximately \$5 million (\$2.4 million for outlet structure improvements, and \$2.4 - \$2.6 million for Thorofare improvements).

Funding and Legislative changes:

- On January 26, 2018 the IWRB passed a resolution asking the Idaho Legislature to repurpose the remaining balance of \$2,419,600 in a 2005 CREP appropriation that had not been utilized and direct it towards the Priest Lake Water Management Project. In that resolution, the IWRB also indicated that it expects local contributions to the project to total at least \$200,000.
- House Bill 677 passed and approved by the 2018 Legislature included 1) a \$2.4 million transfer from the General Fund to the Revolving Development Account, and 2) \$2,419,600 of funding in the Revolving Development redirected from the Conservation Reserve Enhancement Program (CREP) to be used for the Priest Lake Water Management Project. On March 27, 2018 Governor Otter signed the budget bill (FY 2019) which includes the funds for the Priest Lake Project.

Attachment(s):

A Resolution to Commit Funds and Provide Signatory Authority for Engineering and Design

BEFORE THE IDAHO WATER RESOURCE BOARD

IN THE MATTER OF THE PRIEST)
LAKE WATER MANAGEMENT)
PROJECT)
_____)

A RESOLUTION TO COMMIT
FUNDS AND PROVIDE SIGNATORY AUTHORITY

1 WHEREAS, the State of Idaho owns the Priest Lake Dam (dam) which was constructed in 1950
2 and reconstructed in 1978 as an outlet control structure to maintain lake levels in the Priest River in
3 accordance with Idaho Code §70-507; and
4

5 WHEREAS, Senate Bill 1261 passed and approved by the 2018 Legislature updated Idaho Code
6 §70-507 to 1) clarify that management of the state-owned dam on Priest Lake at Outlet Bay is under the
7 jurisdiction of the Idaho Water Resource Board, and 2) to allow for flexibility of the management of the
8 lake level to a range between 3 feet and 3.5 feet on the USGS Priest Lake Outlet gage (located upstream
9 of the dam) after run-off of the winter snowpack until the close of the main recreational season; and
10

11 WHEREAS, as a result of drought conditions in northern Idaho in 2015 and 2016, it was difficult
12 to maintain required pool levels and downstream flow in the Priest River during the recreational season;
13 and,
14

15 WHEREAS, the Priest Lake, Upper Priest Lake and Priest River are significant draws for tourism
16 and recreation, and are highly valued environmental and economic assets for Bonner County and the
17 State of Idaho; and
18

19 WHEREAS, in 2016 the Idaho Water Resource Board (IWRB) authorized the expenditure of up to
20 \$300,000 from the Revolving Development Account to complete the Priest Lake Water Management
21 Study (study) to evaluate strategies to meet long-term water management objectives for the Priest Lake
22 and Priest River system; and
23

24 WHEREAS, the study has been completed and recommended temporarily raising surface level 3
25 to 6 inches during the recreation season of dry years and integrating real time streamflow data to allow
26 more flexibility; and
27

28 WHEREAS, the study also recommended making outlet dam structural and operational
29 improvements; and
30

31 WHEREAS, the study also recommended replacing the current existing porous breakwater with a
32 sediment retention feature and dredging of the Thorofare; and
33

34 WHEREAS, the estimated cost for these recommended improvements is approximately \$5
35 million; and
36

37 WHEREAS, in November 2017 the IWRB accepted and endorsed the recommendations in the
38 Priest Lake Study and recommended proceeding with the project if and when funding becomes
39 available.

40 WHEREAS, House Bill 677 passed and approved by the 2018 Legislature included 1) a \$2.4
41 million transfer from the General Fund to the Revolving Development Account, and 2) a redirect of
42 \$2,419,600 in the Revolving Development from the Conservation Reserve Enhancement Program (CREP)
43 to be used for the Priest Lake Water Management Project; and
44

45 WHEREAS, Mott MacDonald has been selected, through a competitive process, to assist the
46 IWRB with this project; and
47

48 NOW, THEREFORE, BE IT RESOLVED that the IWRB authorizes the expenditure of funds not to
49 exceed \$ _____ from the Revolving Development Account for the Engineering and Design
50 phase of the Priest Lake Water Management Project, which includes preliminary engineering, regulatory
51 permitting, final engineering, and public/stakeholder support; and
52

53 NOW, THEREFORE, BE IT FURTHER RESOLVED that the IWRB authorizes its chairman or designee
54 to execute the necessary agreements or contracts to complete the Engineering and Design phase of the
55 Priest Lake Water Management Project.

DATED this 18th day of May, 2018

Roger Chase, Chairman, IWRB

ATTEST _____
Vince Alberdi, Secretary, IWRB

Memorandum



To: Idaho Water Resource Board

From: Amy Cassel

Date: May 4, 2018

Re: Water Transaction Program – Bohannon Creek 2018-2037 Source Switch

REQUIRED ACTION: Consideration of a resolution to fund the Bohannon Creek 2018-2037 water transaction

Background:

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

During the early portion of the irrigation season, Bohannon Creek typically becomes dewatered below the lowest diversion, Bohannon Creek 3 (BHC-3), potentially blocking fish passage and placing fertilized steelhead eggs (redds) at risk of drying up during the critical incubation period. For the last four years, IWRB staff developed annual, early season agreements to compensate water users for spilling up to 2 cfs in lower Bohannon to maintain sufficient water to facilitate the incubation of steelhead eggs in the lowest reach of Bohannon Creek.

The long-term plan to address flow limitations on lower Bohannon Creek is to eliminate the BHC-3 diversion and transfer 5.5 cfs of senior water rights to a new point of diversion on an existing Lemhi River ditch (L-8A). The senior rights are held by Betty Stokes and Dale Jolley, the only two water users who currently divert water at BHC-3. The change will require construction of a new pumping station on the Lemhi River at the L-8A ditch, a pipeline, and improved irrigation infrastructure. The change in the location of the point of diversion and costs associated with pumping water from the Lemhi River will increase on-farm costs to both the operators. Therefore, staff proposed development of a 20-year agreement to compensate the owners for the increased costs of pumping water from the new location at L-8A.

The implementation of the new irrigation infrastructure and the execution of the agreements not to divert with both operators is not expected until mid to late summer 2018. The current estimate for 20 years of pumping for both operators is \$1,370,370. Funding for this transaction is available through the 2018 Idaho Fish Accord and the Columbia Basin Water Transaction Program.

The Streamflow Enhancement and Minimum Streamflow Committee initially reviewed and approved pursuit of this transaction at meetings held on November 7, 2017 and March 13, 2018.

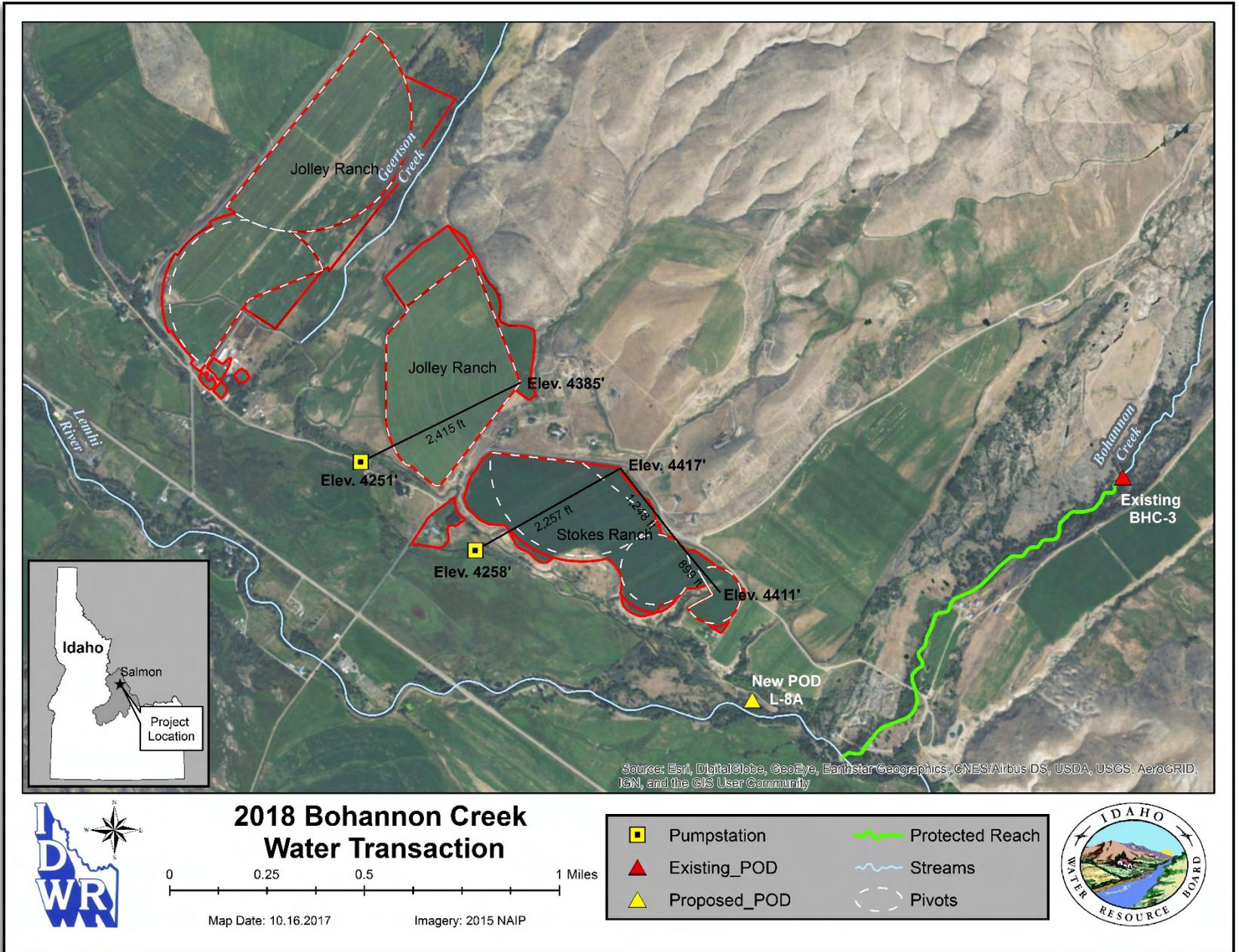
Action Items

Consideration of the attached funding resolution for a total of \$1,370,370.00 for 20 years of pumping costs for both water users. Funds for the water transactions will come from 2018 Idaho Fish Accord and the Columbia Basin Water Transaction Program.

Attachment(s)

For reference, the following information has been included in the meeting materials.

- Draft Resolution to approve funding for the Bohannon Creek 2018-2037 water transactions.
- Map of Bohannon Creek place of use and point of diversion.



BEFORE THE IDAHO WATER RESOURCE BOARD

IN THE MATTER OF BOHANNON CREEK 2018-
2037 WATER TRANSACTION CONTRACTS

RESOLUTION TO APPROVE FUNDS AND
PROVIDE SIGNATORY AUTHORITY

1 WHEREAS, Chinook salmon and steelhead habitat in the Lemhi River basin is limited by low flow
2 and seasonally disconnected tributaries; and
3

4 WHEREAS, Bohannon Creek provides steelhead and juvenile Chinook salmon habitat and the
5 2004 Snake River Water Rights (“Nez Perce”) Agreement commits the state to providing incentives for
6 improving fish habitat which includes improving or protecting flow conditions to augment stream flows;
7 and
8

9 WHEREAS, it is in the interest of the State of Idaho to reconnect Lemhi River tributaries to
10 encourage recovery of ESA-listed Chinook salmon and steelhead fish; and
11

12 WHEREAS, the Idaho Water Resource Board (IWRB) is authorized to expend Bonneville Power
13 Administration funds for flow restoration through the Columbia Basin Water Transaction Program and
14 the Idaho Fish Accord Water Transaction Fund; and
15

16 WHEREAS, the Bohannon Creek-3 diversion can dewater the lower reach of Bohannon Creek
17 and impair the spawning and rearing of ESA-listed steelhead and Chinook salmon; and
18

19 WHEREAS, IWRB staff has developed twenty-year agreements not to divert water with two
20 water users on the Bohannon Creek-3 diversion to maintain full season connectivity and increase stream
21 flow for anadromous and resident fish; and
22

23 WHEREAS, the water users have changed their point of diversion to pump from the Lemhi River
24 and the funds paid under the agreement will approximate the power expenses incurred, over a 20-year
25 period, by changing the points of diversion; and
26

27 WHEREAS, funds are available from the Bonneville Power Administration through the Idaho Fish
28 Accord Idaho Water Transaction Fund and the Columbia Basin Water Transaction Program fund; and
29

30 WHEREAS, IWRB staff anticipates the funds being placed into the IWRB Revolving Development
31 Account for annual payment to the water right owners; and
32

33 WHEREAS, the Bohannon Creek transaction is in the public interest and is consistent with the
34 State Water Plan; and
35

36 NOW, THEREFORE BE IT RESOLVED that the Board authorizes the Chairman, or his assigns, to
37 enter into contracts with E. Dale Jolley and Betty W. Stokes and/or their heirs or subsequent owners for
38 agreements not to divert out of Bohannon Creek in the amount of one million, three hundred seventy
39 thousand, three hundred seventy dollars (\$1,370,370.00).
40

41 NOW THEREFORE BE IT FURTHER RESOLVED that this resolution is subject to the condition that
42 the IWRB receives the requested funding from the Bonneville Power Administration through the Idaho
43 Water Transaction Program in the amount of one million, three hundred seventy thousand, three
44 hundred seventy dollars (\$1,370,370.00).

DATED this 18th day of May, 2018.

ROGER W. CHASE, Chairman
Idaho Water Resource Board

ATTEST _____
VINCE ALBERDI, Secretary

Memorandum

To: Idaho Water Resource Board
From: Amy Cassel
Date: May 4, 2018
Re: Water Transaction Program – Big Timber 2 – Phase II



REQUIRED ACTION: Consideration of a resolution to fund the Big Timber 2018-2037 water transaction

Big Timber Creek is an Upper Lemhi River tributary that has been identified as a high priority reconnect stream for Lemhi River Basin restoration efforts. Beginning in 2008, partner agencies have been working with water users on the Big Timber-2 (BT-2) diversion to reconnect it to the Lemhi River. In 2010, Idaho Water Resource Board (IWRB) entered into an agreement not to divert with Leadore Land Partners (LLP) to spill 4.5 cfs of BT-2 water to a new point of diversion on the Lemhi River. Because the new point of diversion required a new pumping station on the Lemhi River and increased on-farm costs to the operator, the 2010 agreement was designed to compensate LLP for 20 years of estimated pumping costs. Funds from the Columbia Basin Water Transaction Program and the Idaho Fish Accord were used to cover the estimated cost of power for 20 years.

At the time of the initial agreement in 2010, LLP wanted to continue to flood irrigate with a portion of its water right at BT-2, so 1.38 cfs of its water right remained in that diversion for flood irrigation. In 2016, LLP entered into a conservation easement with the Lemhi Regional Land Trust and as part of the permanent easement, agreed to “future water conservation projects.” While the 2010 transaction and additional projects on Big Timber Creek have resulted in full-season connectivity, flow does remain a limiting factor and the additional 1.38 cfs would augment flows and improve fish habitat.

Staff would like to develop a second 20-year agreement not to divert with LLP to leave the remaining 1.38 cfs in Big Timber Creek and to change its point of diversion to pump out of the Lemhi River. An additional pump is required as the existing pump station cannot accommodate any additional water. Due to climate constraints, construction of the new pipeline and pump station will not begin until late spring 2018. Therefore, the execution of the agreement not to divert is not expected until early to mid-summer. The estimated cost for 20 years of pumping is \$117,936.84. Funding for this transaction is available through the 2018 Idaho Fish Accord.

The Streamflow Enhancement and Minimum Streamflow Committee initially reviewed and approved pursuit of this transaction at meetings held on November 7, 2017 and March 13, 2018.

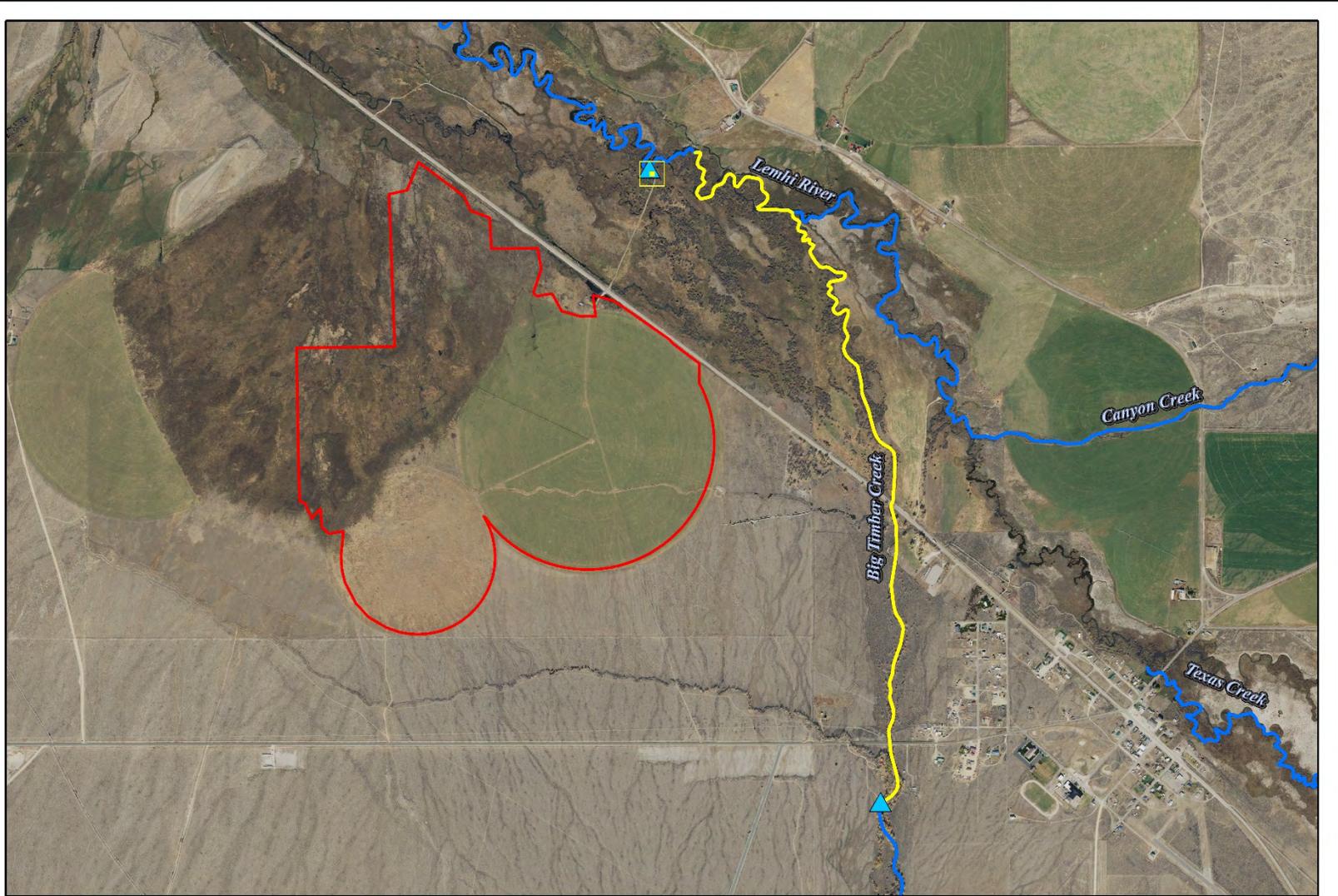
Action Items

Consideration of the attached funding resolution for a total of \$117,937 for 20 years of pumping costs. Funds for the water transaction will come from 2018 Idaho Fish Accord.

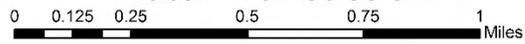
Attachment(s)

For reference, the following information has been included in the meeting materials.

- Draft Resolution to approve funding for the Big Timber 2018-2037 water transaction.
- Map of Big Timber Creek place of use and point of diversion.



2018 Big Timber 2 Phase II Water Transaction



Map Date: 10.16.2017

Imagery: NAIP 2015

BT2_Pumpstation	Protected Reach
Leadore_Land_Partners_POD	Streams
Leadore_Land_Partners_BT2_POU	



BEFORE THE IDAHO WATER RESOURCE BOARD

IN THE MATTER OF BIG TIMBER CREEK 2018-2037
WATER TRANSACTION CONTRACT

RESOLUTION TO APPROVE FUNDS AND
PROVIDE SIGNATORY AUTHORITY

1 WHEREAS, Chinook salmon and steelhead habitat in the Lemhi River basin is limited by
2 seasonally disconnected tributaries; and
3

4 WHEREAS, Big Timber Creek provides steelhead and juvenile Chinook salmon habitat and the
5 2004 Snake River Water Rights (“Nez Perce”) Agreement commits the state to providing incentives for
6 improving fish habitat which includes improving or protecting flow conditions to augment stream flows;
7 and
8

9 WHEREAS, it is in the interest of the State of Idaho to reconnect Lemhi River tributaries to
10 encourage recovery of ESA-listed Chinook salmon and steelhead fish; and
11

12 WHEREAS, the Idaho Water Resource Board (IWRB) is authorized to expend Bonneville Power
13 Administration funds for flow restoration through the Columbia Basin Water Transaction Program and
14 the Idaho Fish Accord Water Transaction Fund; and
15

16 WHEREAS, IWRB staff has developed a twenty-year agreement not to divert water from Big
17 Timber Creek to maintain an additional 1.38 cfs to increase stream flow for anadromous and resident
18 fish; and
19

20 WHEREAS, the water user has changed the point of diversion to pump from the Lemhi River and
21 the funds paid under the agreement will approximate the power expenses incurred, over a 20-year
22 period, by changing the points of diversion; and
23

24 WHEREAS, funds are available from the Bonneville Power Administration through the Idaho Fish
25 Accord Idaho Water Transaction Fund; and
26

27 WHEREAS, IWRB staff anticipates the funds being placed into the Idaho Water Resource Board
28 (IWRB) Revolving Development Account for annual payment to the water right owners; and
29

30 WHEREAS, the Big Timber Creek transaction is in the public interest and is consistent with the
31 State Water Plan; and
32

33 NOW, THEREFORE BE IT RESOLVED that the Board authorizes the Chairman, or his assigns, to
34 enter into a contract with Leadore Land Partners or subsequent owners for an agreement not to divert
35 out of Big Timber Creek in the amount of one hundred seventeen thousand, nine hundred thirty-seven
36 dollars (\$117,937.00).
37

38 NOW, THEREFORE BE IT FURTHER RESOLVED that this resolution is subject to the condition that
39 the IWRB receives the requested funding from the Bonneville Power Administration through the Idaho
40 Water Transaction Program in the amount of one hundred seventeen thousand, nine hundred thirty-

41 seven dollars (\$117,937.00).

DATED this 18th day of May, 2018.

ROGER W. CHASE, Chairman
Idaho Water Resource Board

ATTEST _____
VINCE ALBERDI, Secretary

Memorandum

To: Idaho Water Resource Board
From: Amy Cassel
Date: May 4, 2018
Re: Water Transaction Program – Knapp Creek Acquisition



REQUIRED ACTION: Consideration of a resolution to fund the acquisition of Knapp Creek Water Right No. 77-4207 from Western Rivers Conservancy

Background:

Knapp Creek, located in the Upper Middle Fork Salmon Basin, is tributary to Marsh Creek. Marsh Creek and Bear Valley Creek form the Middle Fork Salmon River. ESA-listed Chinook salmon, steelhead, and bull trout currently utilize Knapp Creek for spawning and rearing. The Middle Fork Salmon basin has not been supplemented with hatchery fish and therefore, other than occasional strays, the population is of natural origin. Furthermore, the Middle Fork Salmon River contains the highest elevation spawning grounds in the world for spring/summer Chinook salmon.

Located in Custer County approximately 20 miles from Stanley, Idaho, Habitat Holdings, LLC (HH, LLC) owns Water Right No. 77-4207, which is appurtenant to 159 acres and 7.45 cubic feet per second (cfs) from Knapp Creek. HH, LLC's diversion, one of only two on Knapp Creek, is the uppermost irrigation diversion on the creek. HH, LLC signed a Purchase and Sale Agreement with Western Rivers Conservancy in April 2018 with the intent to convey the water right to the Idaho Water Resource Board (IWRB) for permanent in stream flow protection and the land to the United States Forest Service (USFS). Purchase of the land would be funded through the Land and Water Conservation Fund and management of the property would continue in perpetuity under the USFS. Ownership of the water right would be changed to the IWRB and permanently leased and rented through the Idaho Water Supply Bank to the minimum stream flow water right at the mouth of Marsh Creek.

The appraised value for HH, LLC's water right was approximately \$1,157,196. The valuation analysis was based on the land value with and without water. The property has no encumbrances, is located in the Sawtooth Valley, and can be subdivided.

Funding of the water right acquisition was awarded by the Pacific Coast Salmon Recovery Fund (PCSRF) Board on March 19, 2018. The requested amount from PCSRF is \$775,322.00, which was determined based on the landowner's agreement to provide 33% match as an in-kind donation.

The Streamflow Enhancement and Minimum Streamflow Committee initially reviewed and approved pursuit of this transaction at meetings held on November 7, 2017 and March 13, 2018.

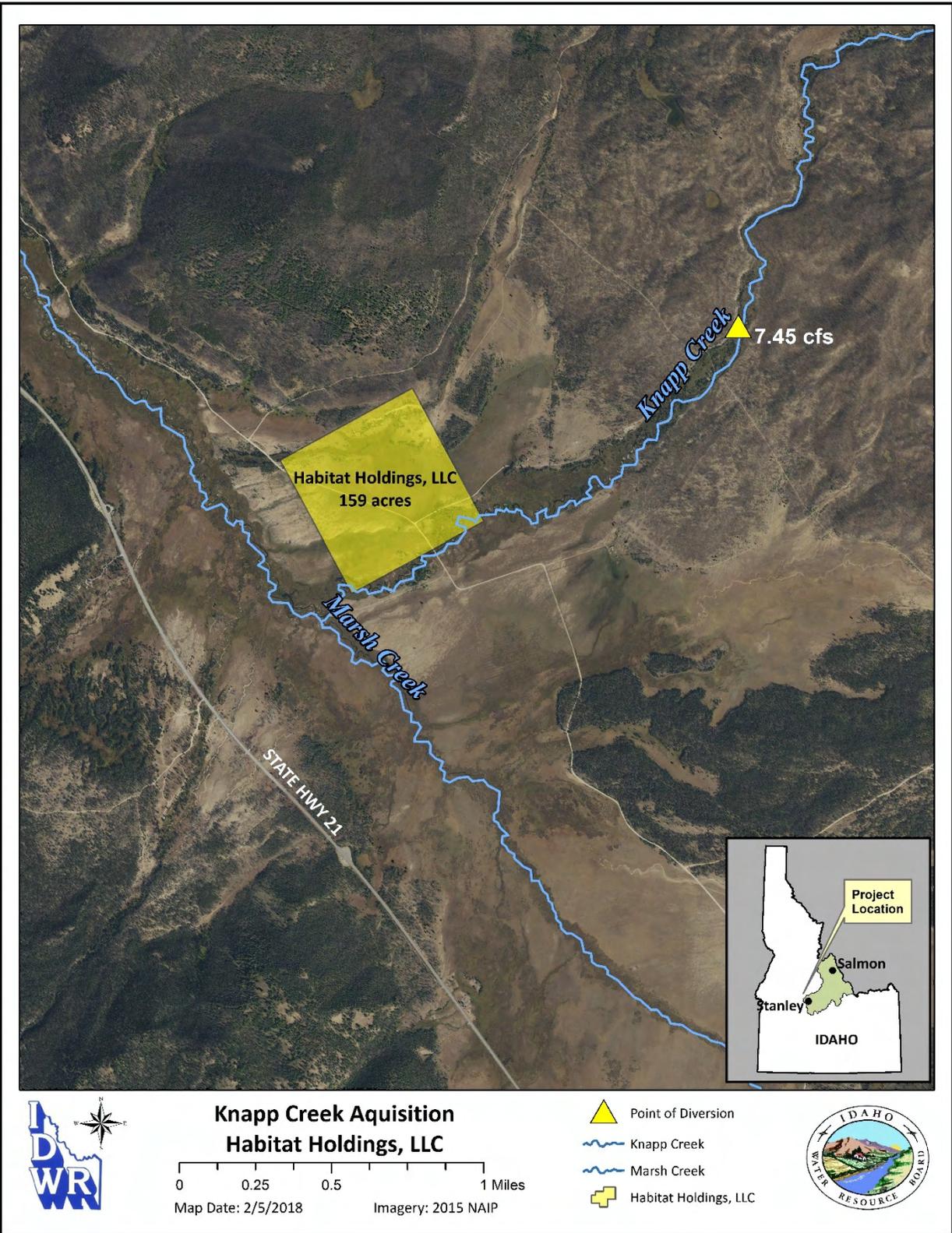
Action Items

Consideration of the attached funding resolution for a total of \$775,322.00 to acquire Knapp Creek Water Right No. 77-4207. Funds for the acquisition will come from the Pacific Coast Salmon Recovery Fund.

Attachment(s)

For reference, the following information has been included in the meeting materials.

- Draft Resolution to approve funding for the Knapp Creek Acquisition of Water Right No. 77-4207.
- Map of Knapp Creek WR. No. 77-4207 place of use and point of diversion.



BEFORE THE IDAHO WATER RESOURCE BOARD

IN THE MATTER OF THE BOARD PURCHASE OF
WATER RIGHT NO. 77-4207 FROM WESTERN
RIVERS CONSERVANCY

RESOLUTION TO APPROVE FUNDS AND
PROVIDE SIGNATORY AUTHORITY

1 WHEREAS, natural origin Chinook salmon, steelhead, and bull trout habitat in the Middle Fork
2 Salmon River basin is impacted by flow-limited tributaries; and
3

4 WHEREAS, Knapp Creek, tributary to Marsh Creek, has been identified as a high priority stream
5 for flow restoration efforts, to provide high quality spawning and rearing habitat for natural origin
6 anadromous Chinook salmon, steelhead, and resident bull trout, and
7

8 WHEREAS, it is in the interest of the State of Idaho to increase flow in Knapp Creek to encourage
9 recovery of ESA-listed Chinook salmon, steelhead, and bull trout fish; and
10

11 WHEREAS, Water Right No. 77-4207 has been historically diverted from Knapp Creek for
12 irrigation purposes; and
13

14 WHEREAS, the Idaho Water Resource Board (IWRB), pursuant to Section 42-1734, Idaho Code,
15 has the authority to acquire, purchase, lease, or exchange land, rights, water rights, easements,
16 franchises, and other property deemed necessary or proper for the construction, operation, and
17 maintenance of water projects; and
18

19 WHEREAS, the Water Right owner desires to sell to IWRB all their legal interests in Water Right
20 No. 77-4207 appurtenant to 159 acres, so that the water may remain in Knapp Creek to enhance fish
21 habitat; and
22

23 WHEREAS, upon acquisition, Water Right No. 77-4207 may be leased into the Idaho Water
24 Supply Bank and rented out through the Idaho Water Supply Bank for permanent delivery to minimum
25 stream flow Water Right No. 77-14210 on Marsh Creek; and
26

27 WHEREAS, funds are available from the Pacific Coast Salmon Recovery Fund (PCSRF) for a
28 purchase of the water right; and
29

30 WHEREAS, the Knapp Creek transaction is in the public interest and is consistent with the State
31 Water Plan; and
32

33 NOW, THEREFORE BE IT RESOLVED that the IWRB hereby agrees to purchase the assignment of
34 Water Right 77-4207 for seven hundred seventy-five thousand, three hundred twenty-two dollars
35 (\$775,322.00) contingent upon the IWRB and the Water Right Owner executing a written agreement
36 governing the rights and responsibilities of the parties resulting from the assignment of the water right.
37

38 NOW, THEREFORE BE IT FURTHER RESOLVED that this resolution is subject to the condition that
39 the IWRB receives the requested funding from the PCSRF in an amount of seven hundred seventy-five
40 thousand, three hundred twenty-two dollars (\$775,322.00).

DATED this 18th day of May, 2018.

ROGER W. CHASE, Chairman
Idaho Water Resource Board

ATTEST _____
VINCE ALBERDI, Secretary

BEFORE THE IDAHO WATER RESOURCE BOARD

IN THE MATTER OF APPLICATION)
FOR STREAM CHANNEL ALTERATION)
PERMIT NO. S01-20253)
_____)

RESOLUTION

1 WHEREAS, on February 12, 2018, the Idaho Department of Water Resources (“IDWR”)
2 received Joint Application for Permits No. S01-20253 (“Application”) filed by David Shackleton
3 (“Shackleton”) for a stream channel alteration permit to suction dredge mine within Iowa Creek
4 from July 10, 2018, to August 10, 2018; and
5

6 WHEREAS, on April 9th and 10th, 2018, IDWR sent letters to Shackleton denying his
7 request to operate recreational mining equipment within Iowa Creek from July 10, 2018, to
8 August 10, 2018; and
9

10 WHEREAS, Shackleton requested in writing within fifteen days after service of IDWR’s
11 letters a hearing before the Idaho Water Resource Board (“IWRB”) on IDWR’s denial of
12 Shackleton’s request to operate recreational mining equipment within Iowa Creek from July 10,
13 2018, to August 10, 2018; and
14

15 WHEREAS, it is necessary for the IWRB to appoint a hearing officer to preside over the
16 hearing requested by Shackleton and issue a recommended order in accordance with Idaho Code
17 §§ 67-5243(1)(a) and 67-5248;
18

19 NOW THEREFORE BE IT RESOLVED, the IWRB hereby appoints James Cefalo,
20 Water Resources Program Manager, IDWR Eastern Region, as the hearing officer in the above-
21 captioned proceedings.

Adopted this _____ day of May 2018.

ROGER CHASE, Chairman
Idaho Water Resource Board

ATTEST: _____
VINCE ALBERDI, Secretary

MEMO



To: Idaho Water Resource Board
From: Brian Patton
Subject: Bear River Update
Date: May 7, 2018

ACTION ITEM – Resolution approving funds

This memo provides an update of recent activities on the Bear River Basin. Also attached is a resolution authorizing funds.

At the March 23, 2018 IWRB meeting, the IWRB passed a resolution authorizing the filing of a water right application, in cooperation with the State of Utah, for storage in Bear Lake. This was prompted, in part, by Pacificorp’s proposals for a “spinning reserve” project on the Bear River. The water right application was filed the same day. Since that time, coordination meetings have been held with the State of Utah, which additional meeting scheduled. Utah faces somewhat different challenges than does Idaho, including Great Salt Lake interests, and strongly wants to proceed with modelling studies to evaluate the effects of storing additional water in Bear Lake. In addition, Pacificorp, which owns the inlet and outlet facilities at Bear Lake, has met separate with Governor Herbert of Utah and with Governor Otter. Both Governor Herbert of Utah and Governor Otter expressed support for a negotiated solution, however, Governor Otter strongly expressed support for protecting Idaho’s interests.

Also recall that storing more water in Bear Lake would require the acquisition of flood easements in the Gentile Valley area south of Grace. Pacificorp has been moving to acquire these easements to accommodate their spinning reserve effort. There is some thought that the IWRB, perhaps working with the Bear River Water Users, could acquire these easements instead in preparation for additional storage in Bear Lake.

Attached is a resolution that would authorize up to \$100,000 for two items: 1) appraisals of lands where flood easements in gentile Valley would be located, and 2) costs and/or contracts needed to participate in modelling studies with the State of Utah. Because both items are still somewhat uncertain, Staff is proposing that although funds would be authorized, all expenditures would require the father direction of the Chairman.

BEFORE THE IDAHO WATER RESOURCE BOARD

IN THE MATTER OF THE) A RESOLUTION
BEAR LAKE WATER STORAGE)

1 WHEREAS, the Bear River flows through the States of Idaho, Wyoming, and Utah. It
2 begins in the Uinta mountain of Utah, meanders back and forth between Utah and Wyoming,
3 before entering Idaho near Montpelier and finally flowing through Idaho to Utah before ending
4 in the Great Salt Lake, and;

5
6 WHEREAS, the entire flow of the Bear River is diverted in Idaho at Stewart Dam into
7 Mud Lake and Bear Lake. The water is subsequently returned to the Bear River’s natural
8 channel, and;

9
10 WHEREAS, the Bear River is subject to an interstate Compact dated February 8, 1980
11 and codified by Idaho Code 42-3402 (“Bear River Compact”); and

12
13 WHEREAS, the Bear River Compact sets forth, among other things, allocation in the
14 Lower Division as between Idaho and Utah for future water development, including ground
15 water, and;

16
17 WHEREAS, under the Bear River Compact Idaho has the first right to the remaining
18 water in the Lower Division resulting in an annual depletion of not more than 125,000 acre-feet,
19 and Utah has the second right to the remaining water in the Lower Division resulting in an
20 annual depletion of not more than 225,000 acre-feet, and;

21
22 WHEREAS, State Water Policy 5A provides: “Water use and management in the Bear
23 River Basin shall conform to the allocations agreed to in the Bear River Compact.”, and;

24
25 WHEREAS, State Water Plan Policy 5B provides: “The Idaho Water Resource Board
26 supports enhancing water supplies, increasing water use efficiency, and implementing water
27 supply bank mechanisms to help meet future water needs in the Bear River Basin, and;

28
29 WHEREAS, State Water Plan Policy 5B further provides: “[T]he state should move
30 forward with the development of Idaho’s depletion allocation as provided for in the Compact.”,
31 and;

32
33 WHEREAS, pursuant to the designation of the Bear River Ground Water Management
34 Area, a Management Plan for the Bear River Ground Water Management Area was prepared by
35 a committee of local stakeholders and adopted by IDWR in 2003. Among other
36 recommendations, the Management Plan states: “The advisory committee recommended
37 preparation of a comprehensive state water plan for the Bear River Basin in Idaho. A water plan
38 could recommend feasibility studies for new storage facilities and other water supply
39 enhancements. Additional storage could facilitate development of the first 125,000 acre feet of

40 depletion allowed to Idaho in the Bear River Compact. New storage could be in surface
41 reservoirs or underground as managed aquifer recharge.”, and;

42
43 WHEREAS, the Idaho Water Resource Board (“IWRB”) holds a minimum lake level
44 from the bottom of Bear Lake to elevation 5902, and;

45
46 WHEREAS, Pacificorp owns the facilities used to store water in Bear Lake and operates
47 the reservoir portion of Bear Lake between elevations 5902–5923.65 feet, and;

48
49 WHEREAS, Pacificorp entered into the July 2, 2004 Amended and Restated Bear Lake
50 Settlement Agreement with various Idaho and Utah entities regarding irrigation water delivery,
51 and;

52
53 WHEREAS, Pacificorp entered into the April 10, 1995 and April 18, 2000 Operation
54 Agreement with Utah, Wyoming, and Idaho regarding operations of Bear Lake Reservoir, and;

55
56 WHEREAS, under normal conditions, Bear Lake operations by Pacificorp sets a March
57 31st lake level target elevation of 5918 feet, known as the PTE, which is set to maintain space in
58 the lake for flood control during high runoff periods while meeting contract requirements for Bear
59 Lake storage water; and

60
61 WHEREAS, there appears to be an opportunity to utilize the space in Bear Lake between
62 elevation 5918 and 5923.65 to store water that is otherwise released from the lake or bypassed past
63 the lake to maintain the March 31 target elevation of 5918; and

64
65 WHEREAS, the space in Bear Lake between elevations 5918 and 5923.65 is approximately
66 400,000 acre-feet; and

67
68 WHEREAS, the opportunity to store additional water in Bear Lake would assist both Idaho
69 and Utah interests, and may assist both states with development of their respective compact
70 entitlements; and

71
72 WHEREAS, it appears that the State of Utah, acting through its Division of Water
73 Resources, has interest in being a joint applicant along with the Idaho Water Resource Board in
74 any water right filing to store additional water in Bear Lake; and

75
76 WHEREAS, achieving the ability to store additional water in Bear Lake may entail some
77 significant challenges, including acquiring or developing downstream flood conveyance capacity
78 in the Gem Valley area, acquiring the ability to utilize inlet and outlet facilities owned by
79 Pacificorp, re-negotiation of the April 18, 2000 Operations Agreement, and potentially other
80 challenges; and

81
82 WHEREAS, on March 23, 2018 the IWRB passed a resolution authorizing the filing of a
83 water right application to store additional water in Bear Lake in cooperation with the State of Utah,
84 and the water right application was filed the same day; and

86 WHEREAS, there are expenses associated with proceeding with this Bear Lake effort,
87 including working with Utah on modeling studies, potentially acquiring flood easements in the
88 Gentile Valley, and others; and
89

90 NOW, THEREFORE BE IT RESOLVED that the Idaho Water Resource Board hereby
91 authorized the expenditure of up to \$100,000 from the Revolving Development Account for
92 appraisals in preparation for acquiring flood easements in the Gentile Valley, and for participating
93 in modeling studies with the State of Utah which also may entail retaining consultants to help carry
94 out the work.
95

96 NOW THEREFORE BE IT FURTHER RESOLVED that because the work to be
97 performed is still somewhat undefined, all expenditures shall require the direction of the Chairman
98 of the Idaho Water Resource Board.

DATED this 18th day of May, 2018.

ATTEST:

ROGER CHASE, Chairman

VINCE ALBERDI, Secretary