



# IWRB ESPA Managed Recharge Program

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Environmental Resources Technical Working Group

October 2, 2018



# Environmental Resources Technical Working Group

## Agenda

- **Introduction – Group Members**
  - **Administrative Details**
  - **IWRB Recharge Update**
  - **Discussion / Suggestions / Recommendations**
  - **Proposed Actions**
- 

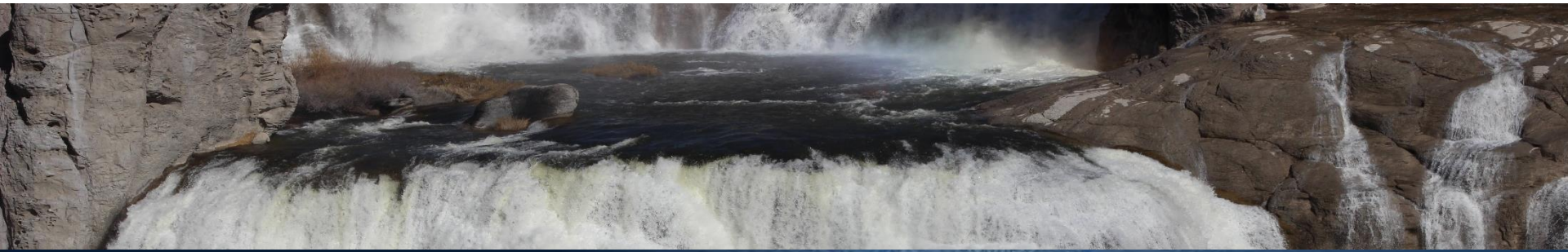


# Environmental Resources Technical Working Group

## Introduction – Group Members

### • Group Members:

- A&B Irrigation District
- American Falls Reservoir District #2
- Burley Irrigation District
- Henry's Fork Foundation
- Idaho Department of Fish and Game
- Idaho Power Company
- Idaho Rivers United
- Idaho Water Users Association
- Milner Irrigation District
- North Side Canal Company
- Trout Unlimited
- Twin Falls Canal Company
- US Bureau of Land Management

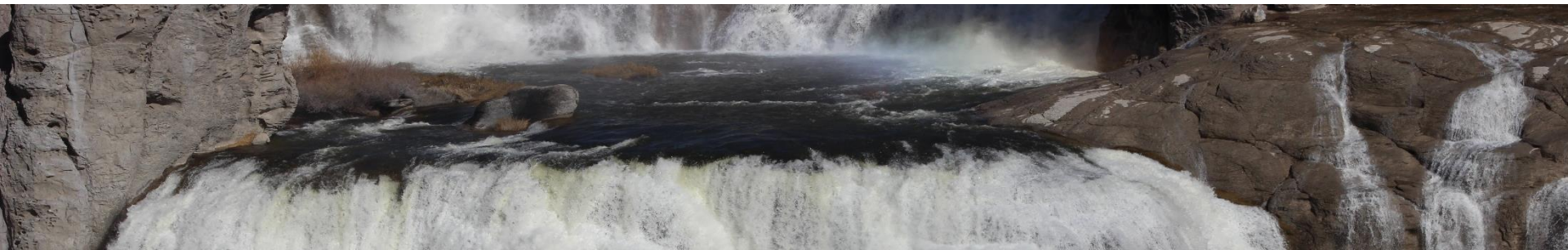


A close-up photograph of a waterfall cascading over dark, wet rocks. The water is white and frothy as it falls, creating a misty spray at the bottom. The background is a soft, out-of-focus green and blue, suggesting a lush, natural environment.

# Environmental Resources Technical Working Group

## Settlement Agreement

- Provide information and recommendations to the IWRB regarding any potential impact on aquatic, wildlife, and recreation resources and on water quality resulting from the exercise of the water right permits.
- Convened at least twice annually, one meeting prior to recharge activities, one meeting after recharge activities.
- Recommendations will be set out in a memorandum and submitted to IWRB for consideration at a regularly scheduled IWRB meeting.



# Environmental Resources Technical Working Group

## Settlement Agreement (cont.)

- Work Group will consider:
  - Actual managed recharge accomplishments;
  - Information related to any impacts on aquatic, wildlife, and recreation resources, and on water quality;
  - Information needs related to future recharge activities;
  - Protocols necessary to ensure consideration of potential impacts.
- Members will also have an opportunity to provide additional information to the IWRB should they wish to do so.
- The IWRB will consider the Working Group's review and recommendations in subsequent decision making regarding managed recharge activities.



# Environmental Resources Technical Working Group

## Administrative Details

- Intent of this Meeting
  - Ground Rules
  - Meeting Dates
  - Task –
    - Writing Recommendations Memorandum
    - Presenting to the IWRB
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# ESPA Managed Recharge Program Update

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Environmental Resources Technical Working Group

**Wesley Hipke, P.G.**

October 2, 2018

## IWRB ESPA Aquifer Recharge Program

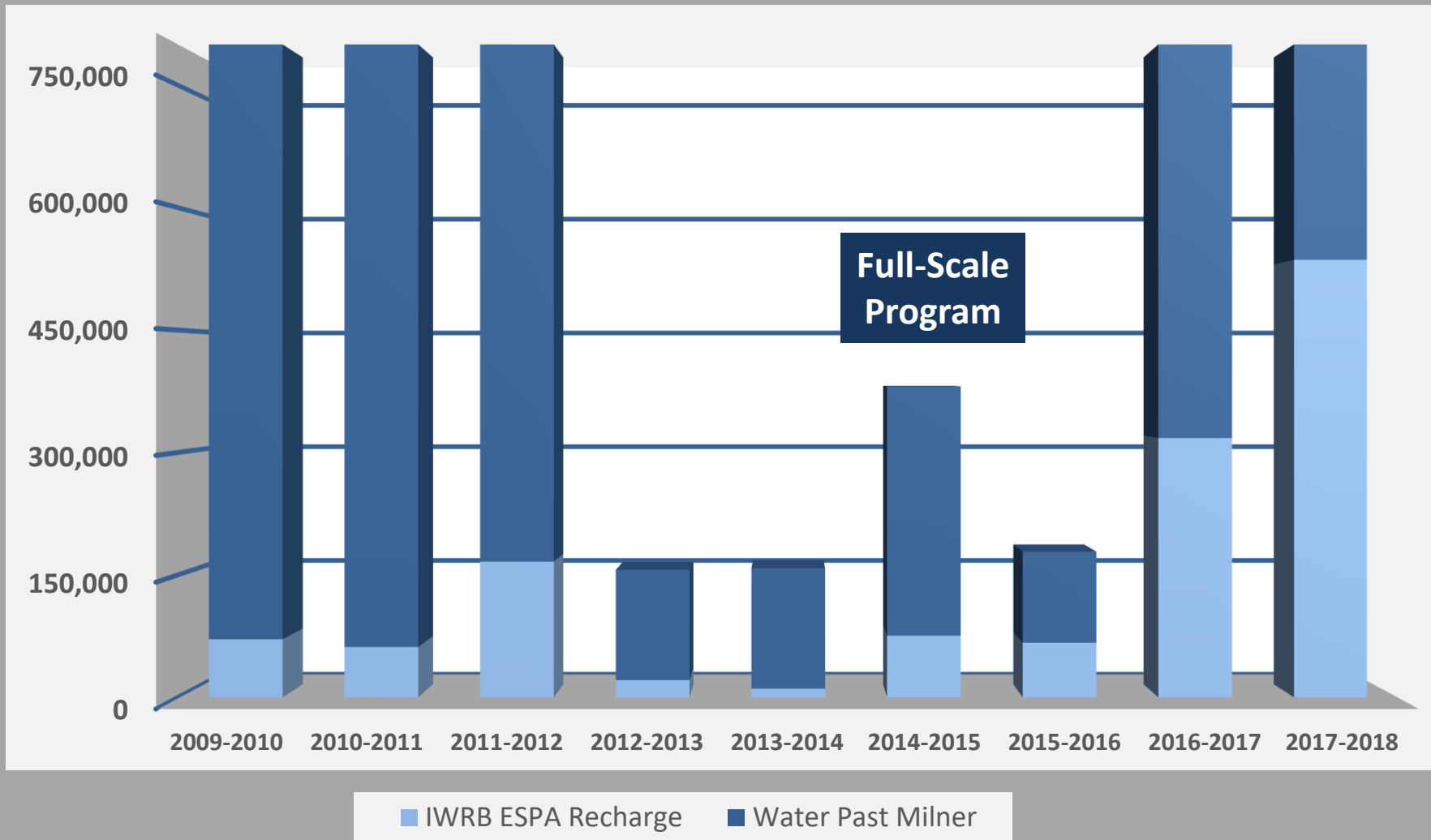
- **IWRB ESPA Recharge - 2017/2018**
- **Monitoring Results**
- **IWRB ESPA Recharge Update - 2018/2019**
- **IWRB Projects**







## IWRB Recharge – 2009 to 2018



# IWRB ESPA Managed Recharge – 2017/2018

**Total IWRB Recharge**  
536,001 af

**Recharge Days**  
298

**Diversion Rate**  
Max: 2,387 cfs  
Median: 700 cfs

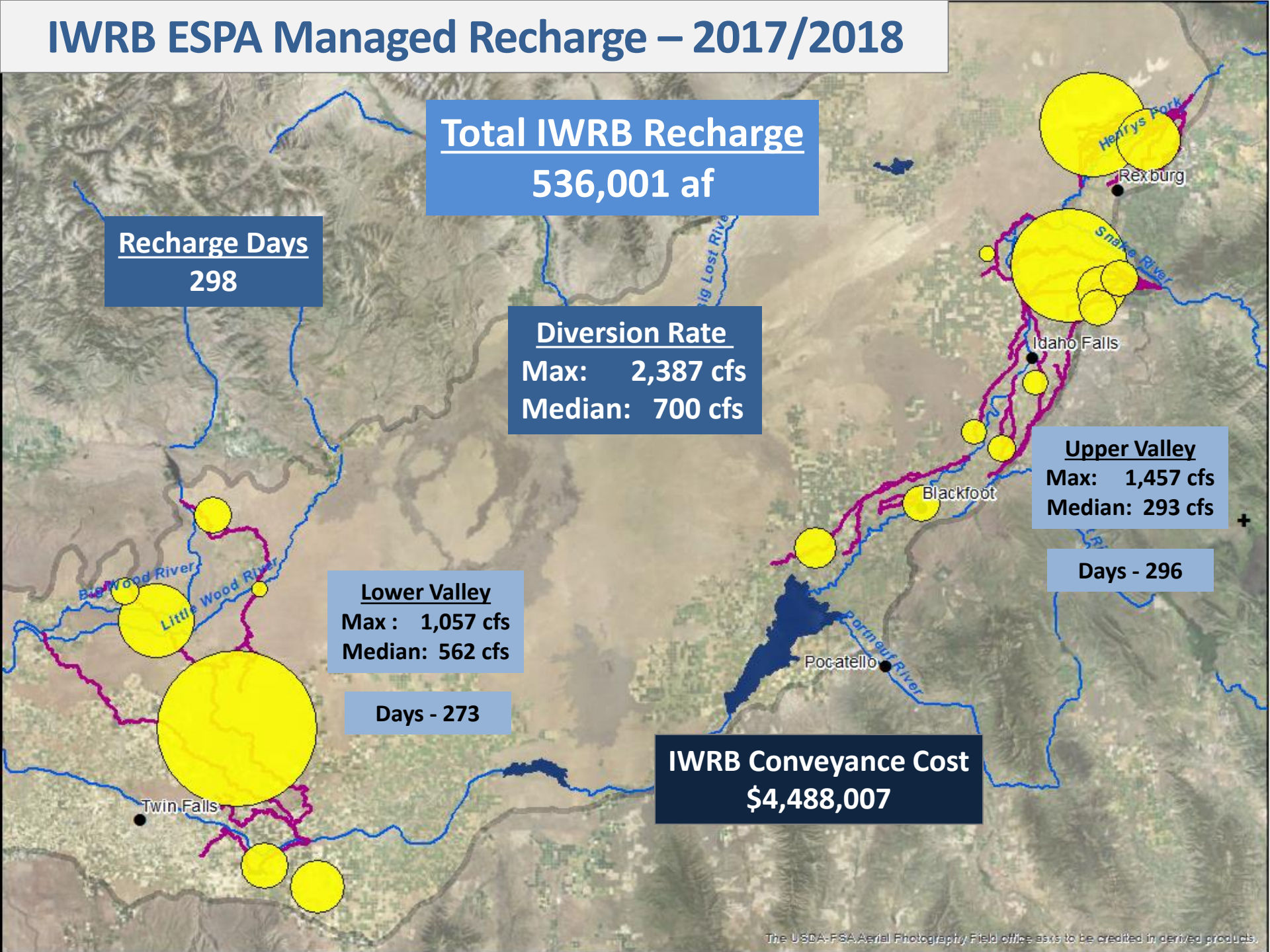
**Upper Valley**  
Max: 1,457 cfs  
Median: 293 cfs

Days - 296

**Lower Valley**  
Max: 1,057 cfs  
Median: 562 cfs

Days - 273

**IWRB Conveyance Cost**  
\$4,488,007



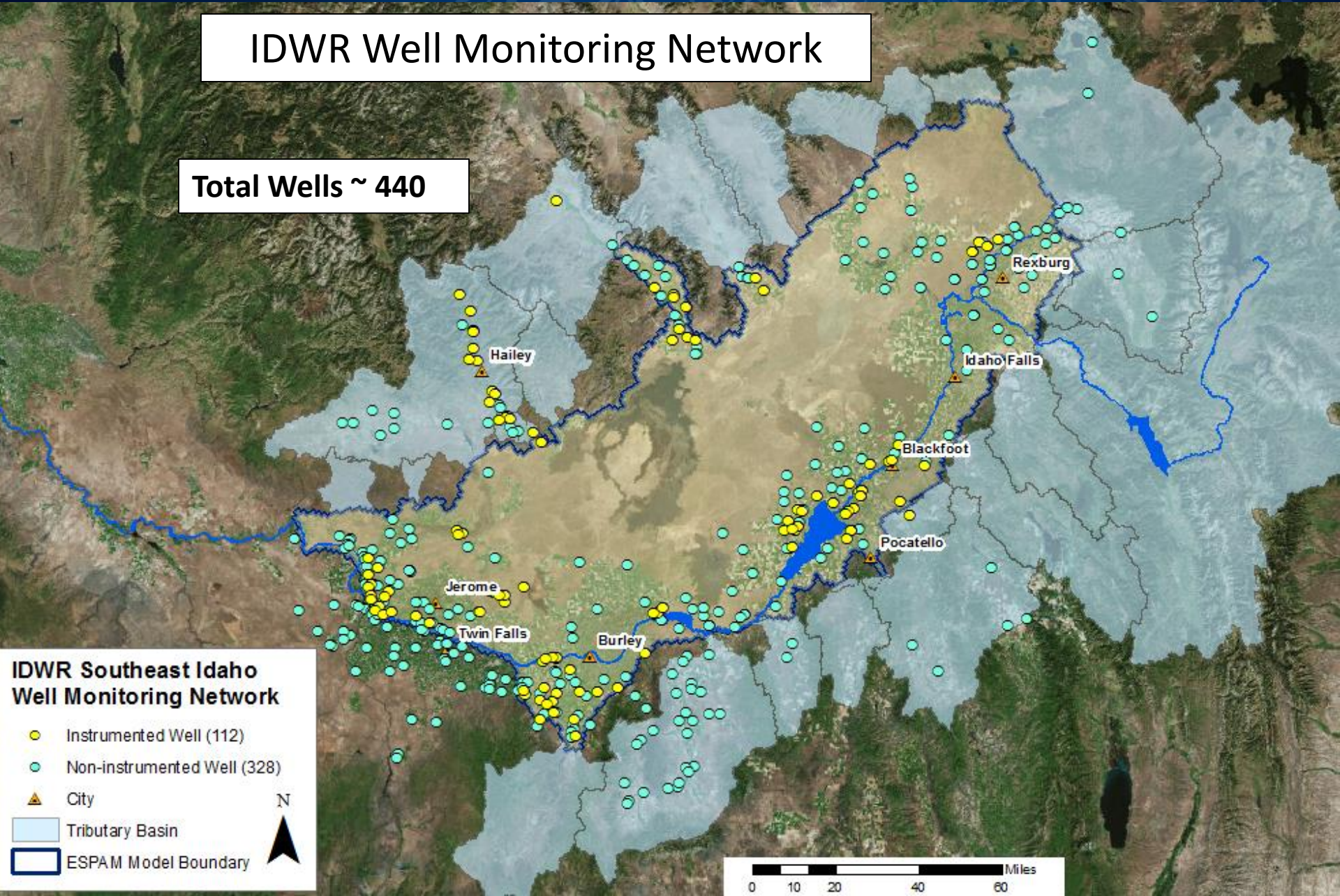
## IWRB ESPA Aquifer Recharge Program

- IWRB ESPA Recharge - 2017/2018
- Monitoring Results
- IWRB ESPA Recharge Update - 2018/2019
- IWRB Projects



## IDWR Well Monitoring Network

Total Wells ~ 440



### IDWR Southeast Idaho Well Monitoring Network

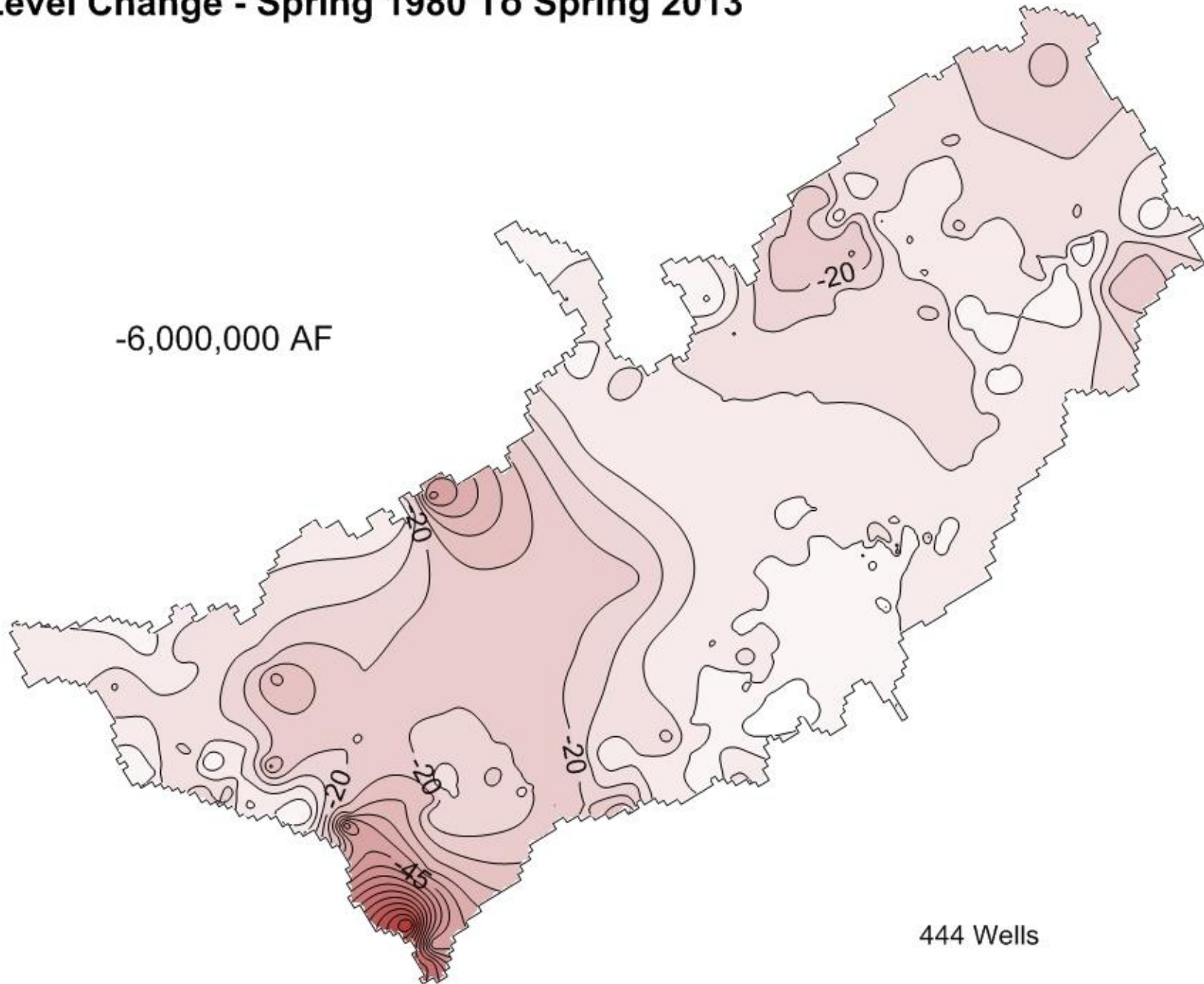
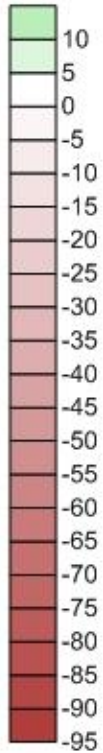
- Instrumented Well (112)
- Non-instrumented Well (328)
- City
- Tributary Basin
- ESPAM Model Boundary

N

0 10 20 40 60 Miles

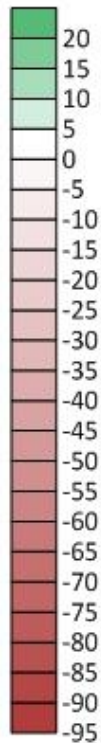
# Water Level Change - Spring 1980 To Spring 2013

Water Level  
Change (ft)

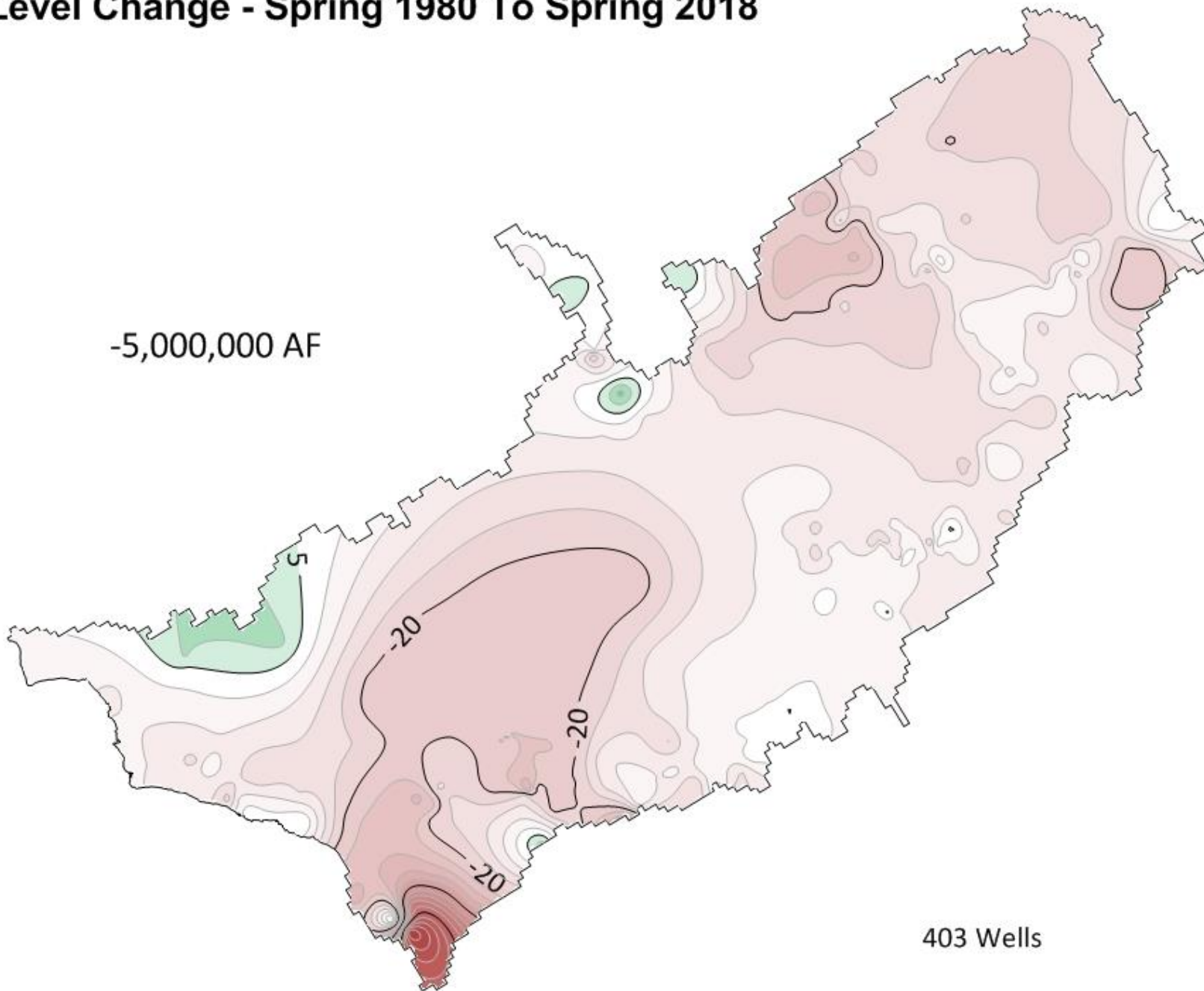


# Water Level Change - Spring 1980 To Spring 2018

Water Level  
Change (ft)

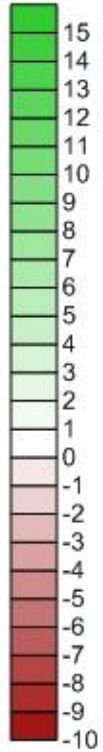


-5,000,000 AF

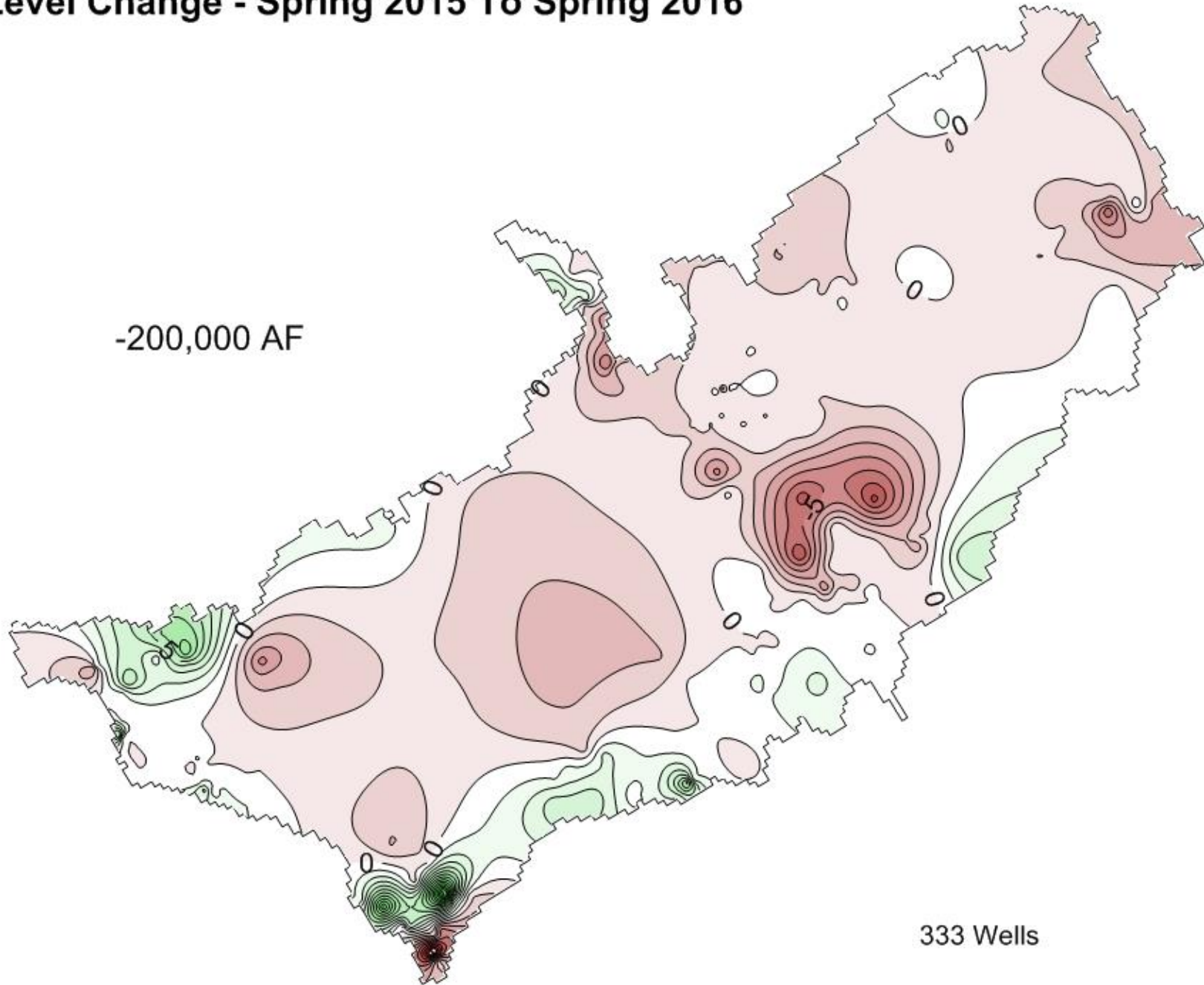


# Water Level Change - Spring 2015 To Spring 2016

Water Level  
Change (ft)



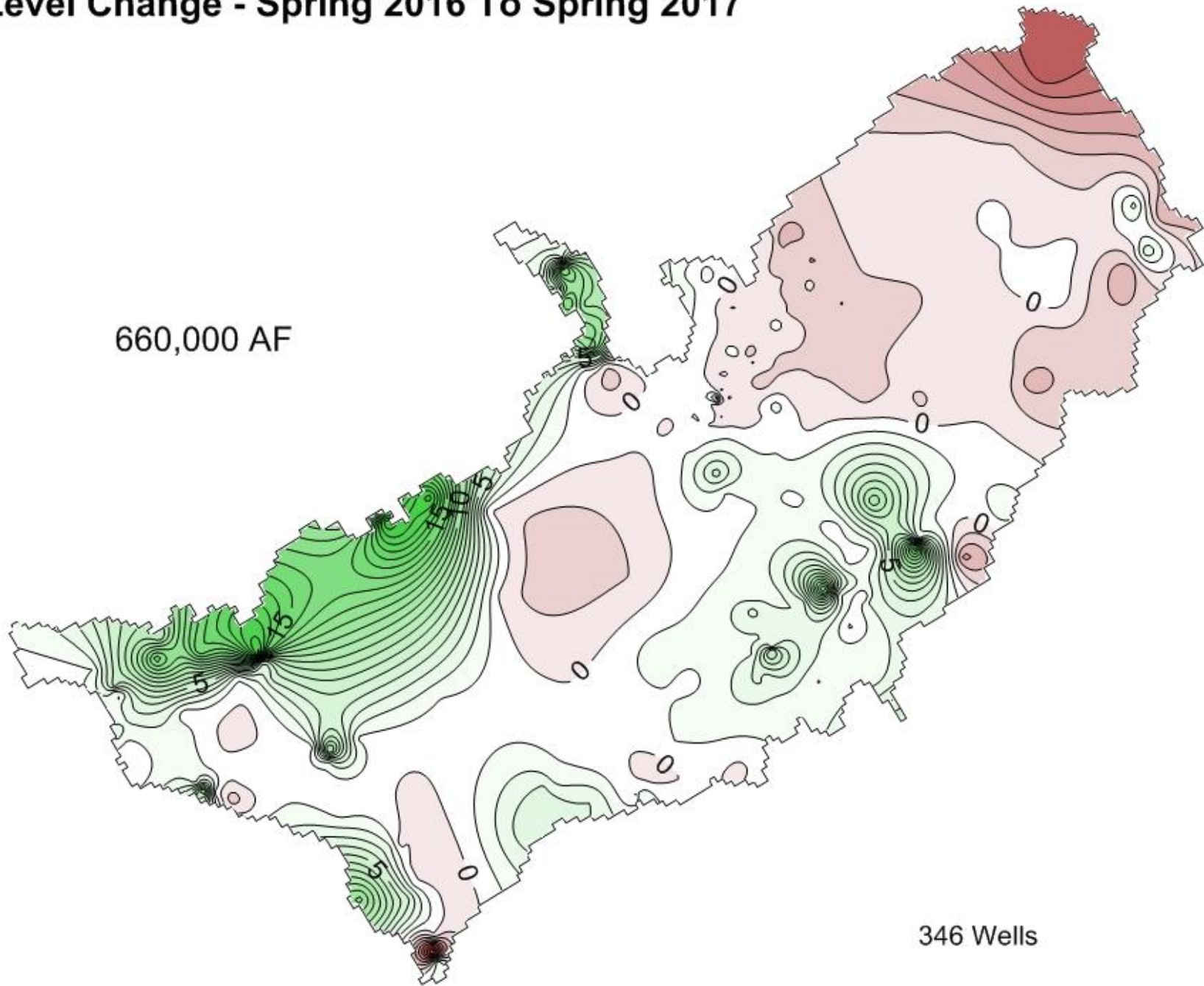
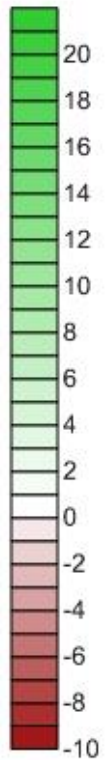
-200,000 AF



333 Wells

# Water Level Change - Spring 2016 To Spring 2017

Water Level  
Change (ft)



660,000 AF

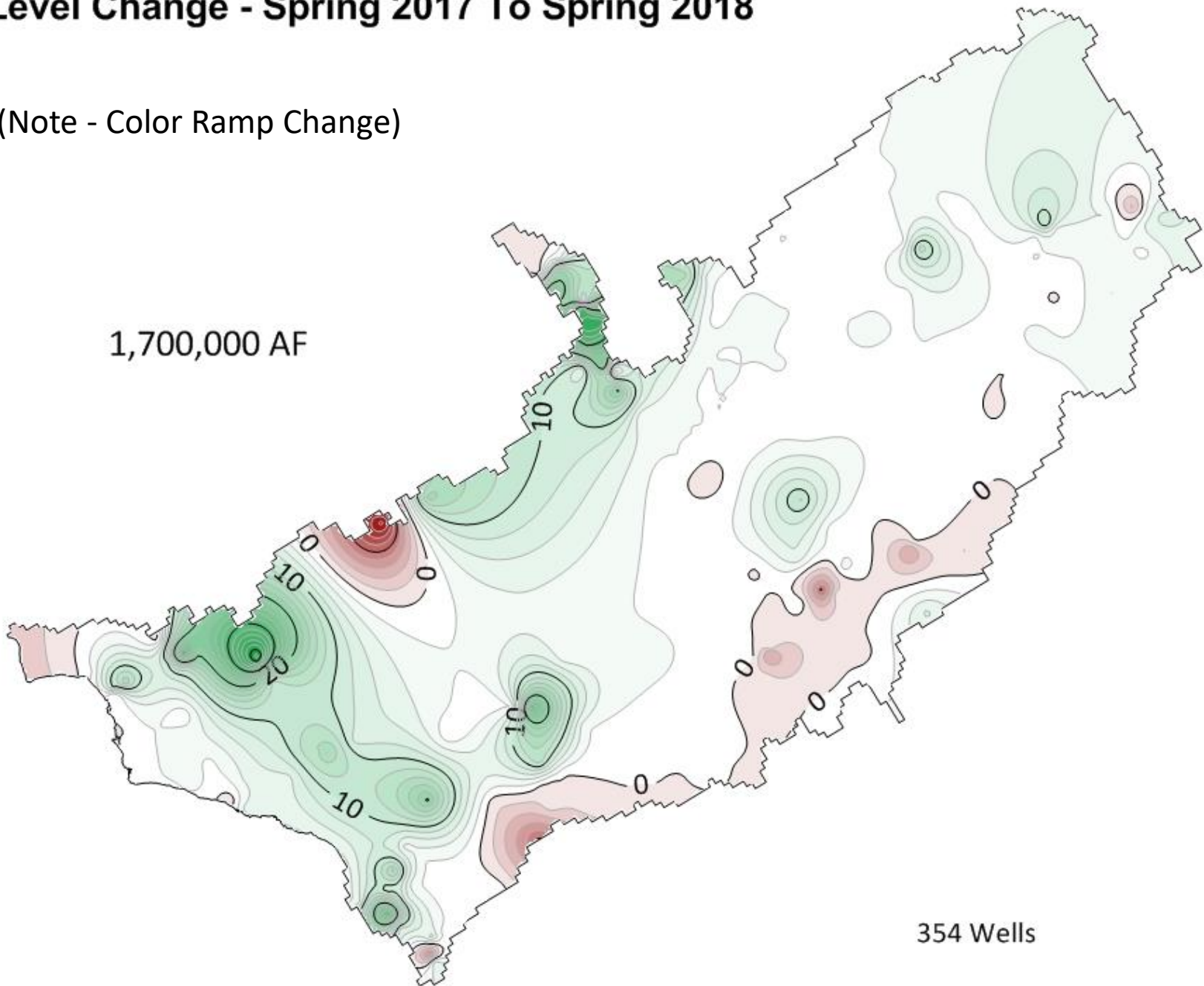
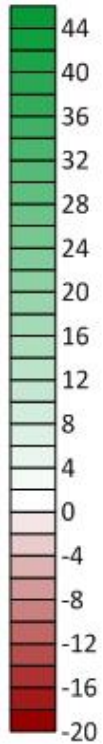
346 Wells



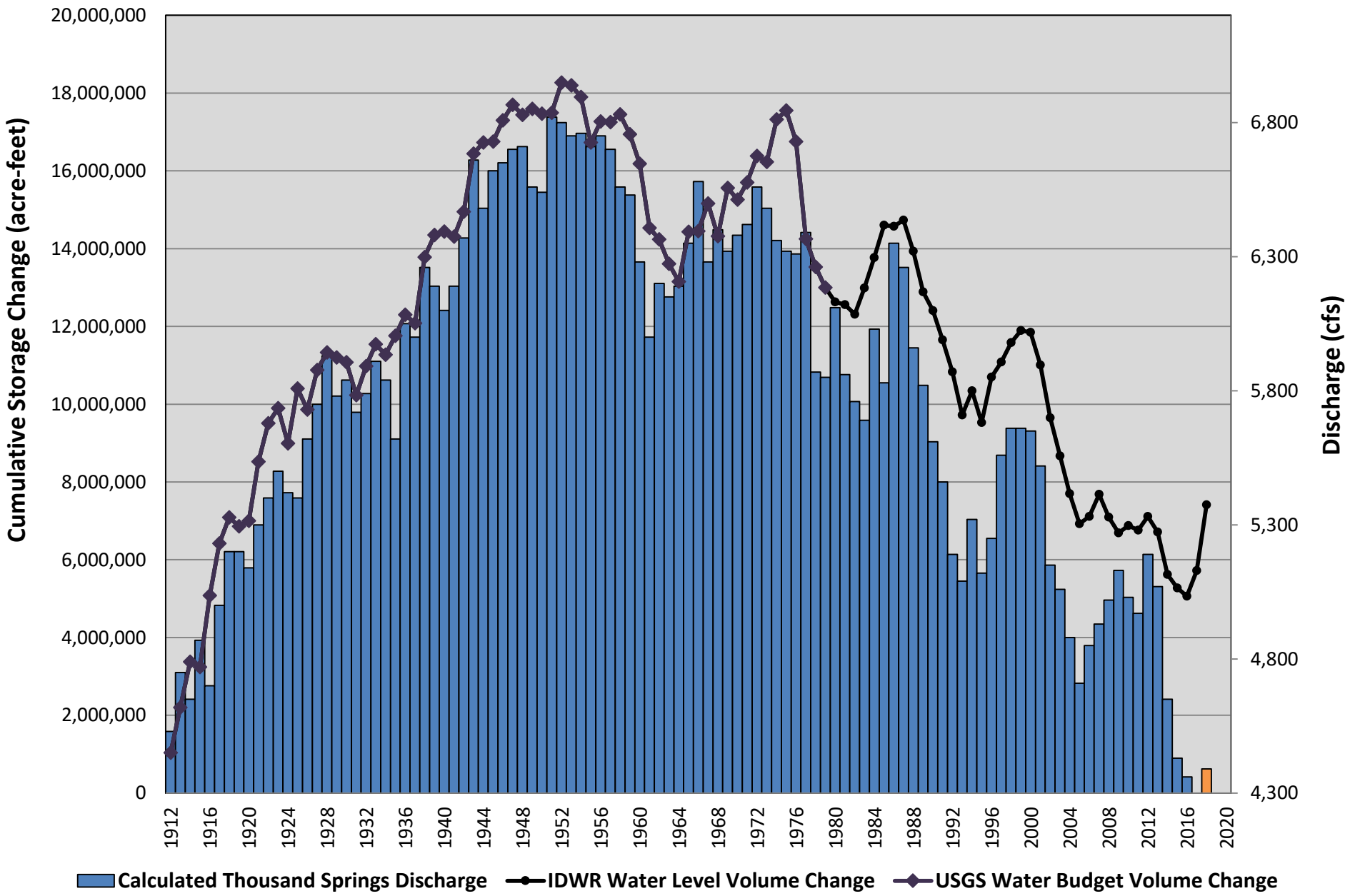
# Water Level Change - Spring 2017 To Spring 2018

(Note - Color Ramp Change)

Water Level  
Change (ft)

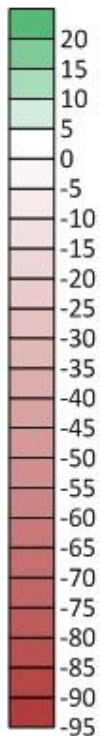


# ESPA Volume of Water and Thousand Springs Discharge

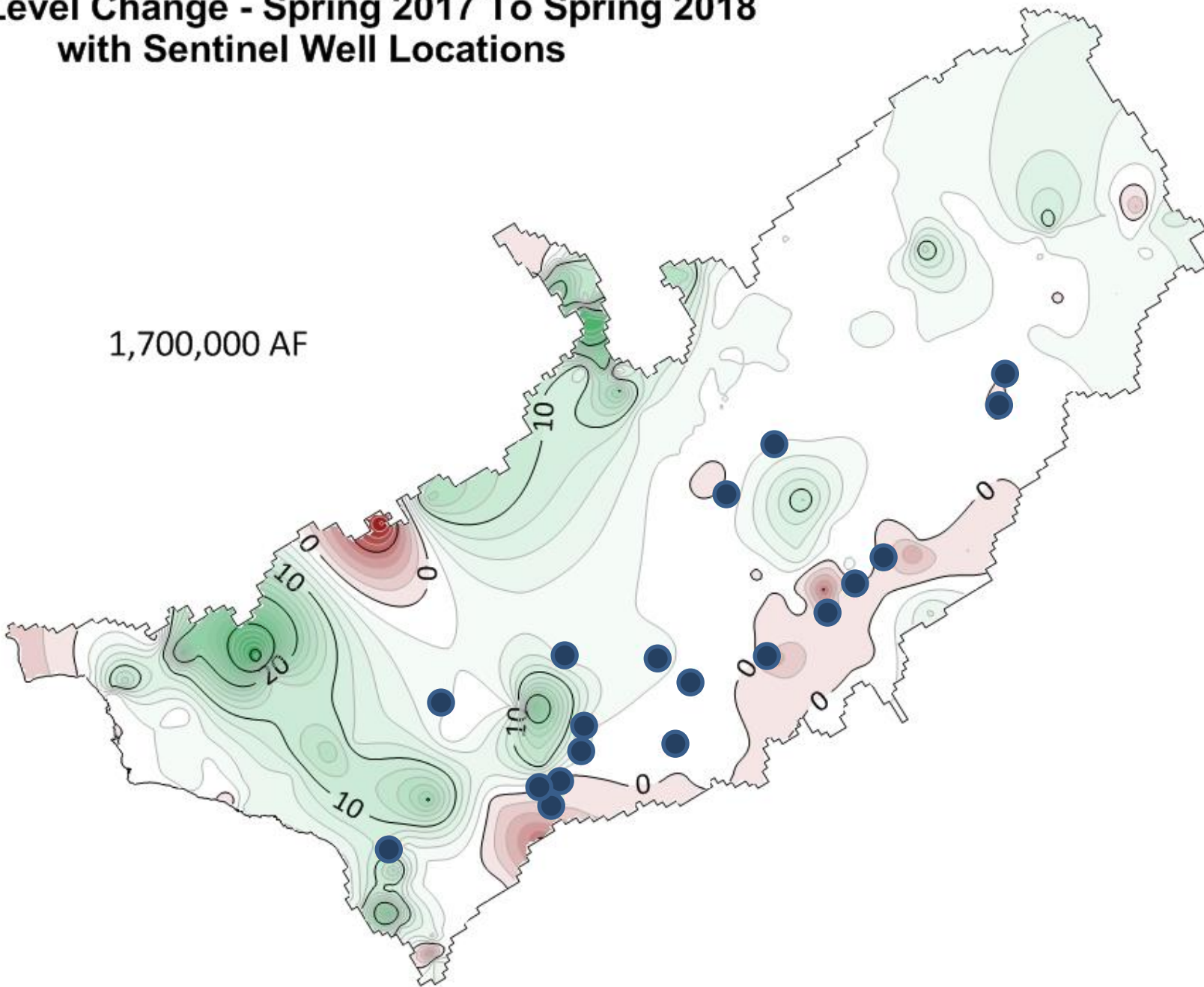


# Water Level Change - Spring 2017 To Spring 2018 with Sentinel Well Locations

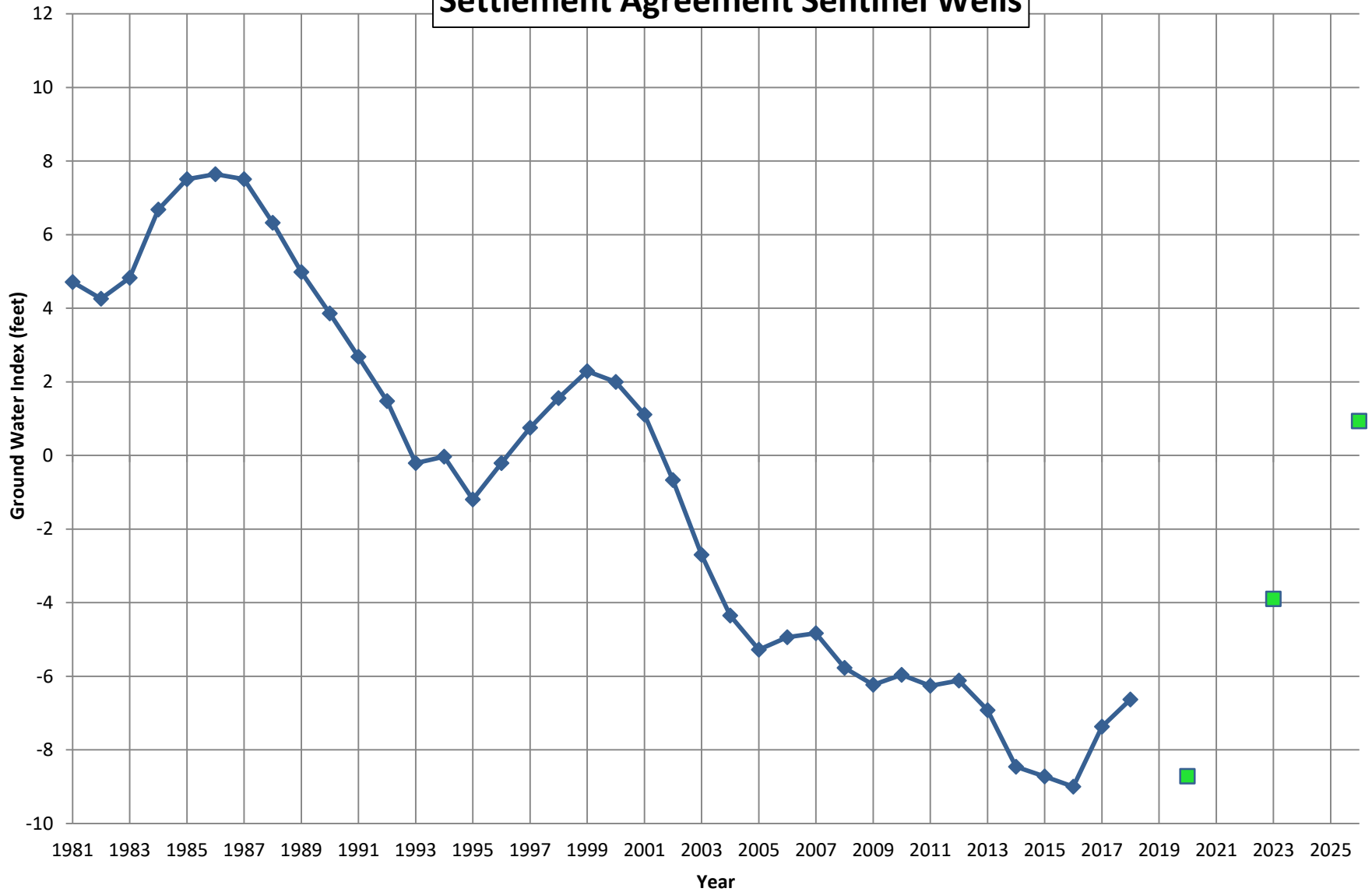
Water Level  
Change (ft)



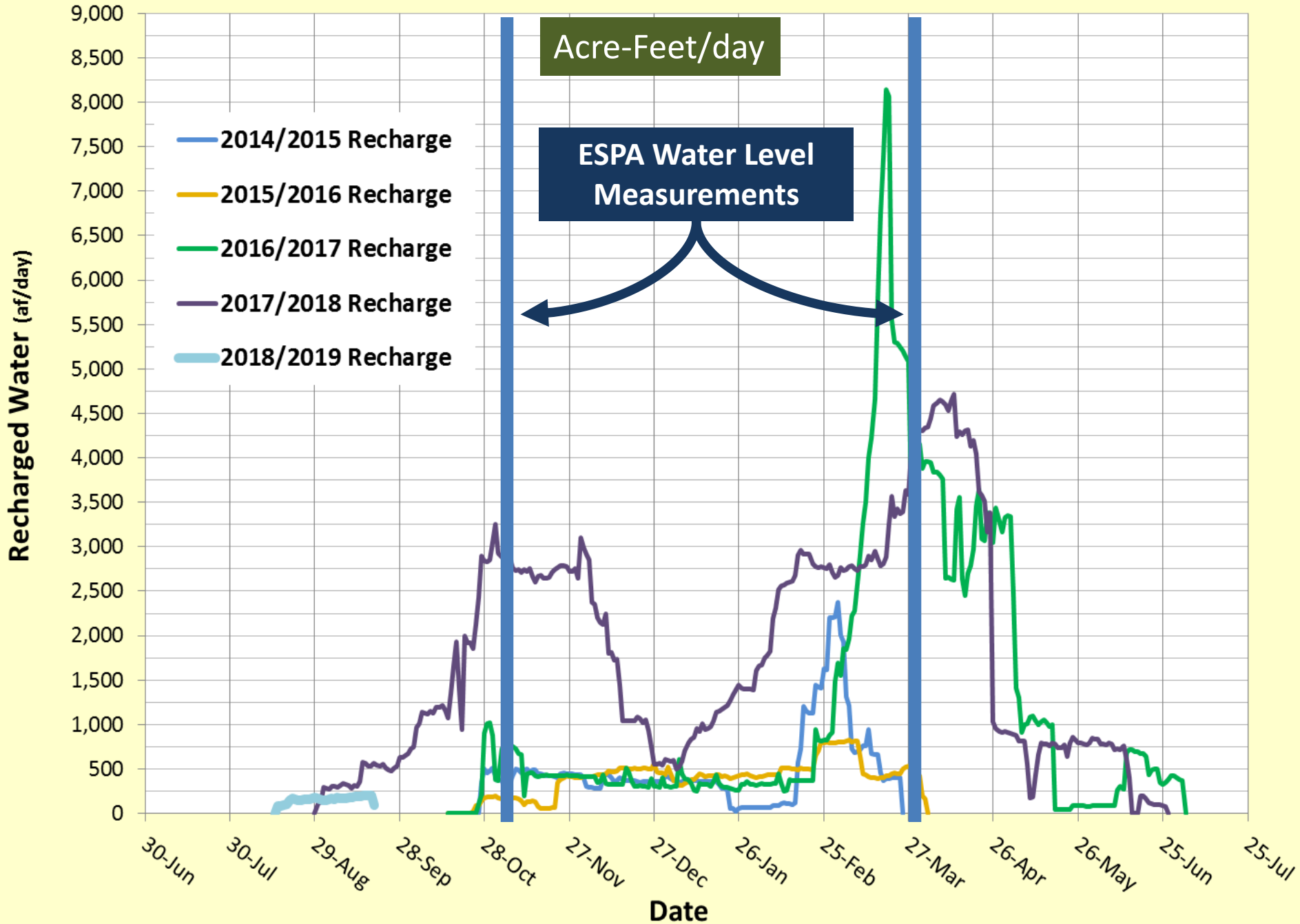
1,700,000 AF



# Annual Ground Water Level Index: Settlement Agreement Sentinel Wells



# ESPA Managed Recharge - Daily Recharge



# IWRB Recharge Water Quality Monitoring

## • Water Quality

### • IDEQ Approved Groundwater Monitoring Program

- MP 31 Recharge Site
- Shoshone Recharge Site
- Richfield Recharge Site – In Process
- Jones Recharge Site – In Process

### • Water Quality Sampling

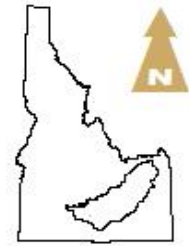
- Source Water
- Groundwater

### • Parameters and Frequency defined by IDEQ

### • Sampling Frequency

- Prior and After Recharge Activities
- Minimally Monthly Sampling During Recharge Activities

# MP 31 Recharge Site Water Quality Monitoring



0 0.25 0.5 Miles

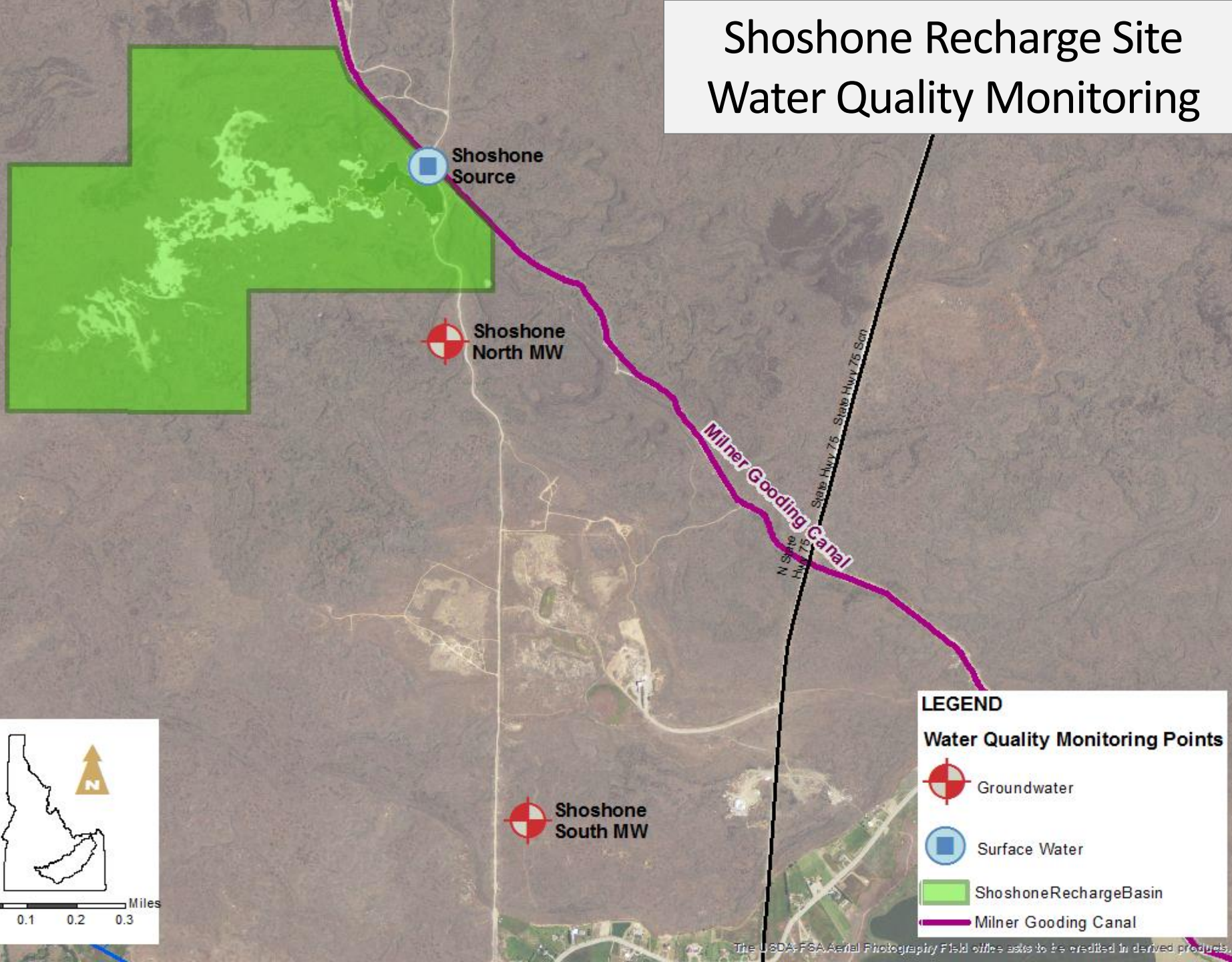


## LEGEND

### Water Quality Monitoring Points





-  Groundwater
-  Surface Water
-  MP31 Recharge Basin
-  Milner Gooding Canal

# Shoshone Recharge Site Water Quality Monitoring



**LEGEND**

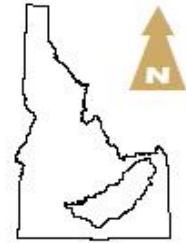
**Water Quality Monitoring Points**

-  Groundwater
-  Surface Water
-  Shoshone Recharge Basin
-  Milner Gooding Canal

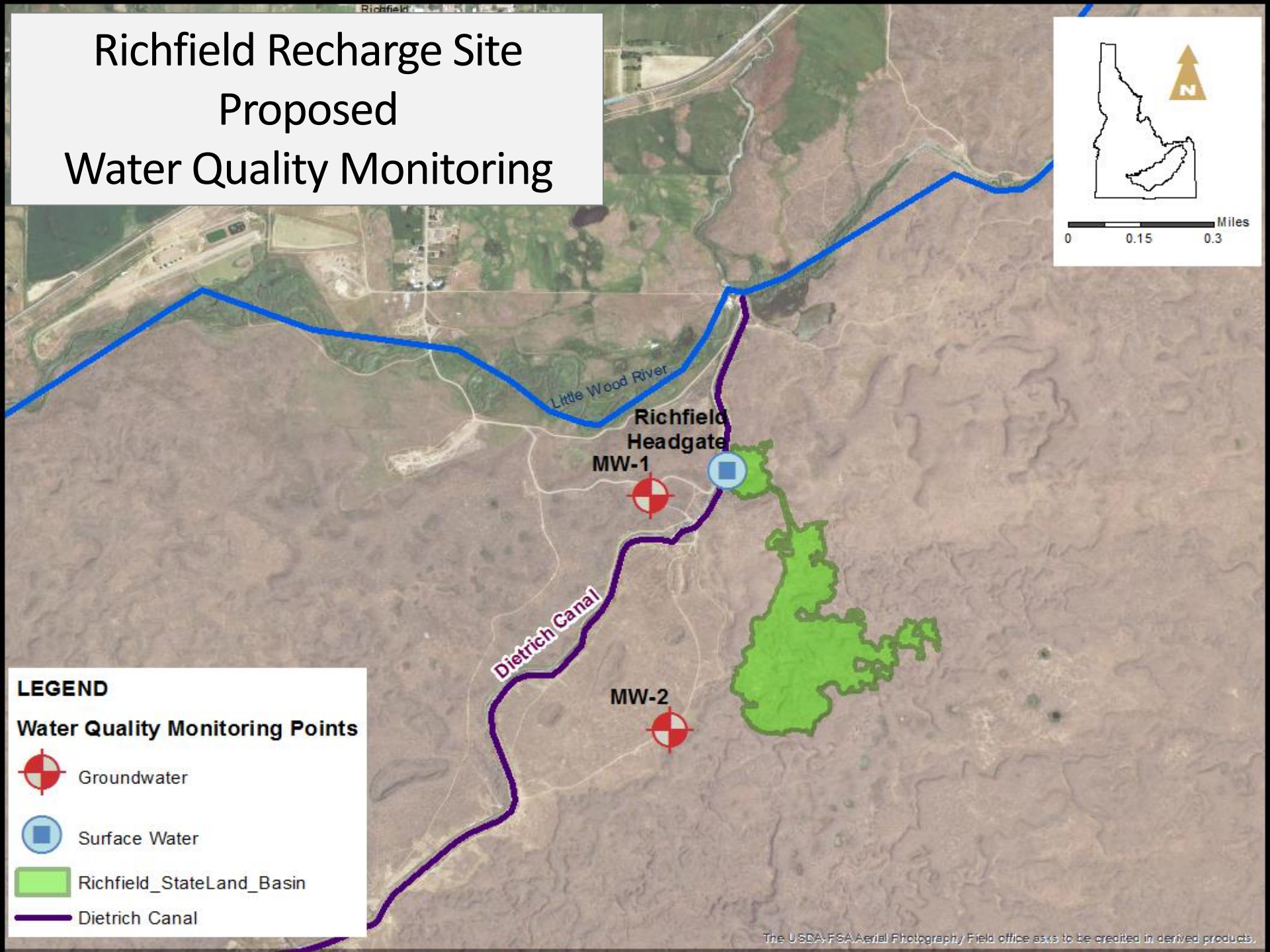
0 0.1 0.2 0.3 Miles



# Richfield Recharge Site Proposed Water Quality Monitoring







0 0.15 0.3 Miles



**LEGEND**

**Water Quality Monitoring Points**

-  Groundwater
-  Surface Water
-  Richfield\_StateLand\_Basin
-  Dietrich Canal

# Jones Recharge Site Proposed Water Quality Monitoring



USDA FSA, ISU GIS TRc



## Legend

-  Managed Recharge Basin
-  Canal
-  River / Stream
-  Proposed Monitoring Well
-  Domestic Well
-  Headgate - Surface Water

0 250 500 1,000 Feet

**Figure 6.**  
**Proposed Monitoring Locations**  
**Harold Jones Managed Recharge Basin**



## IWRB ESPA Aquifer Recharge Program

- IWRB ESPA Recharge - 2017/2018
- Monitoring Results
- IWRB ESPA Recharge Update - 2018/2019
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## Upper Valley Recharge – Fall 2018

**SWC Storage Water -  
58,500 af**

**FMID - Egin Lakes**

25,000 af ~ 120 cfs  
Aug 16 – Nov 16

**Enterprize CC**

5,500 af ~ 100 cfs  
Sept 17 – Oct 31

**Farmers Friend IC**

6,000 af ~ 100 cfs  
Sept 11 – Oct 31

**New Sweden ID**

4,000 af ~ 30 cfs  
Aug 18 – Oct 15

**Snake River Valley ID**

8,000 af ~ 60 cfs  
Aug 21 – Nov 15

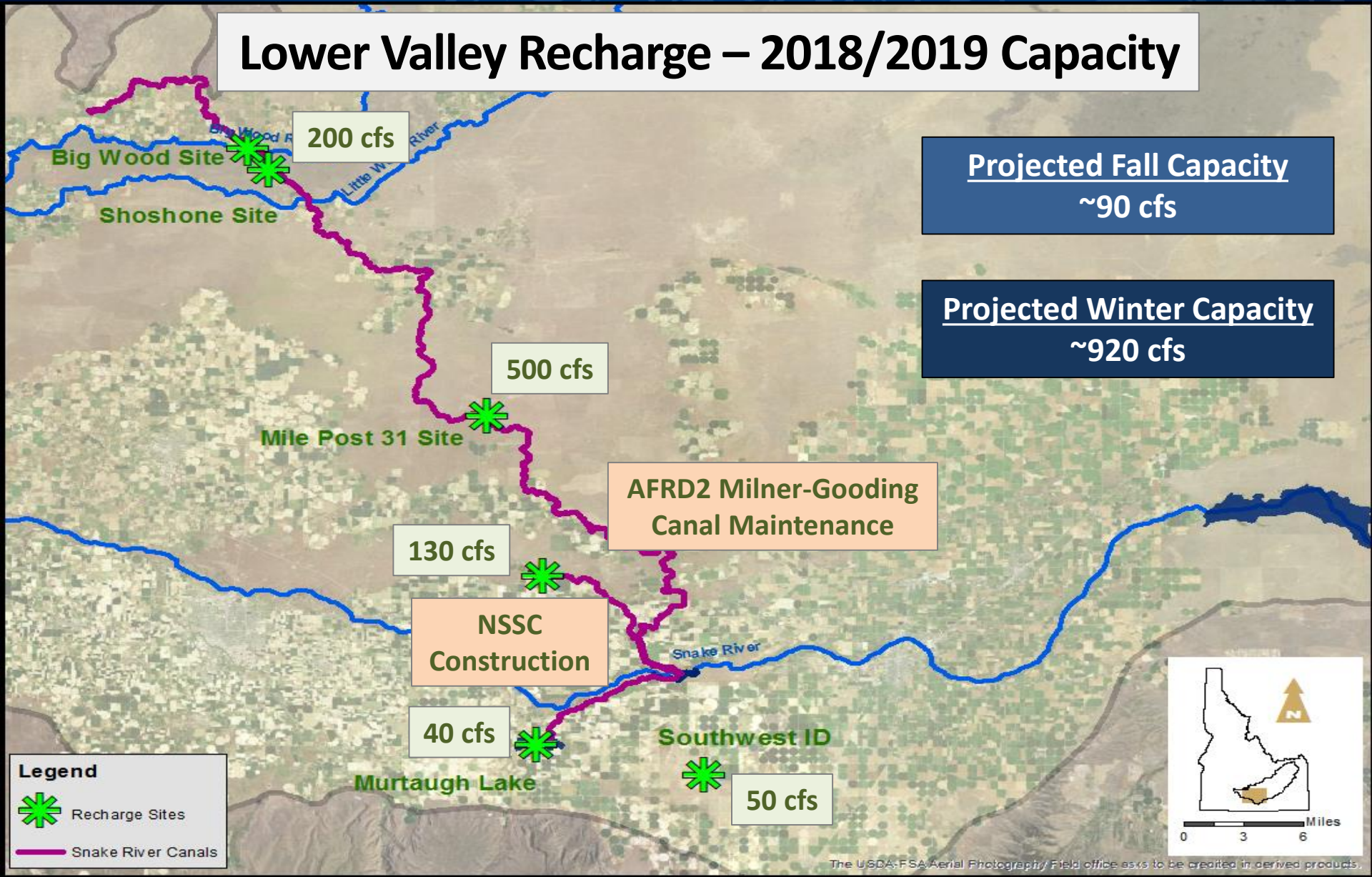
**Aberdeen Springfield CC**

10,000 af ~ 220 cfs  
Sept 10 – Oct 31

American Falls Reservoir

Mud Lake

## Lower Valley Recharge – 2018/2019 Capacity



Projected Fall Capacity  
~90 cfs

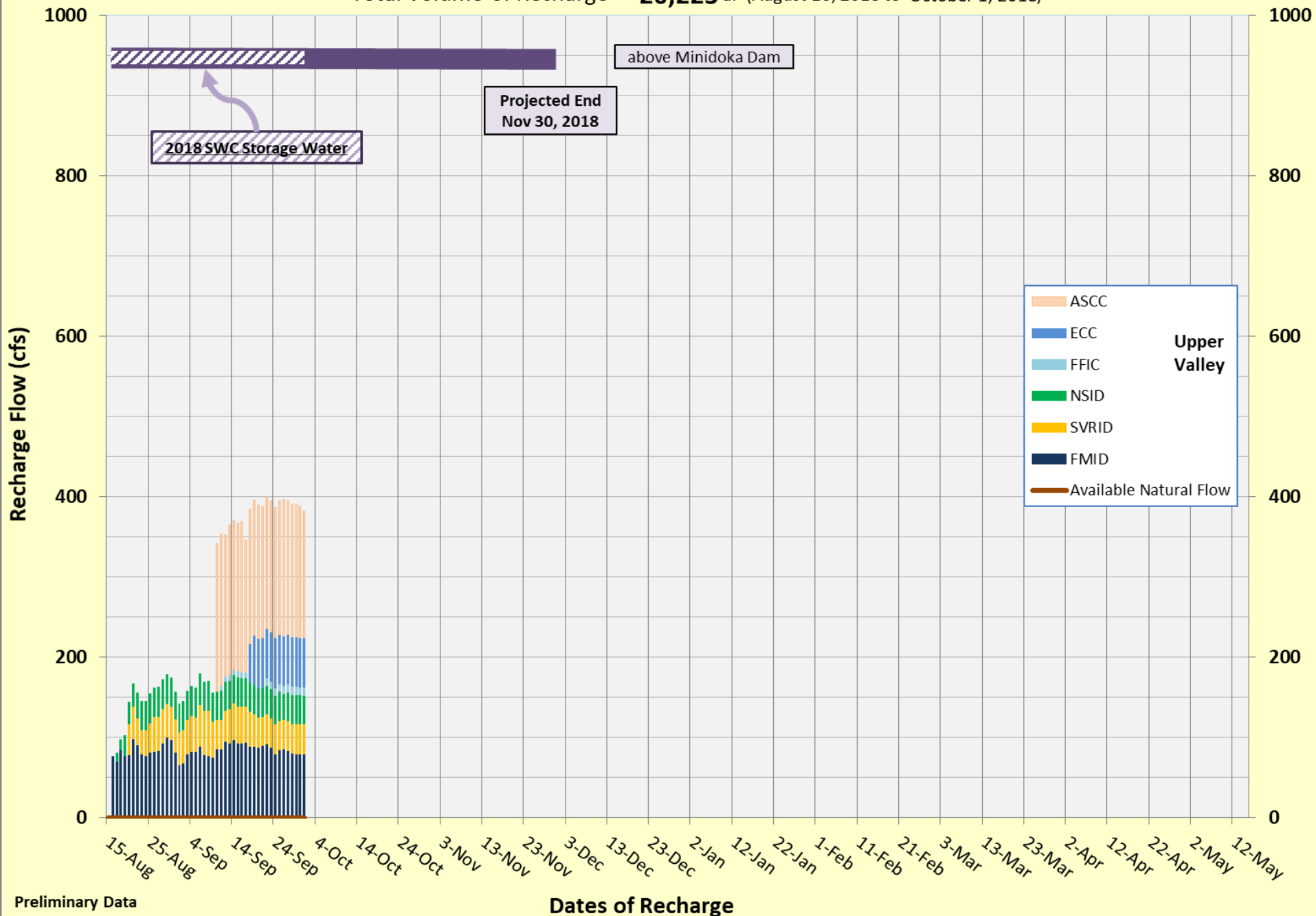
Projected Winter Capacity  
~920 cfs

**Legend**  
\* Recharge Sites  
— Snake River Canals

0 3 6 Miles  
N

# Total IWRB Managed Recharge Rates During 2018 - 2019 Season

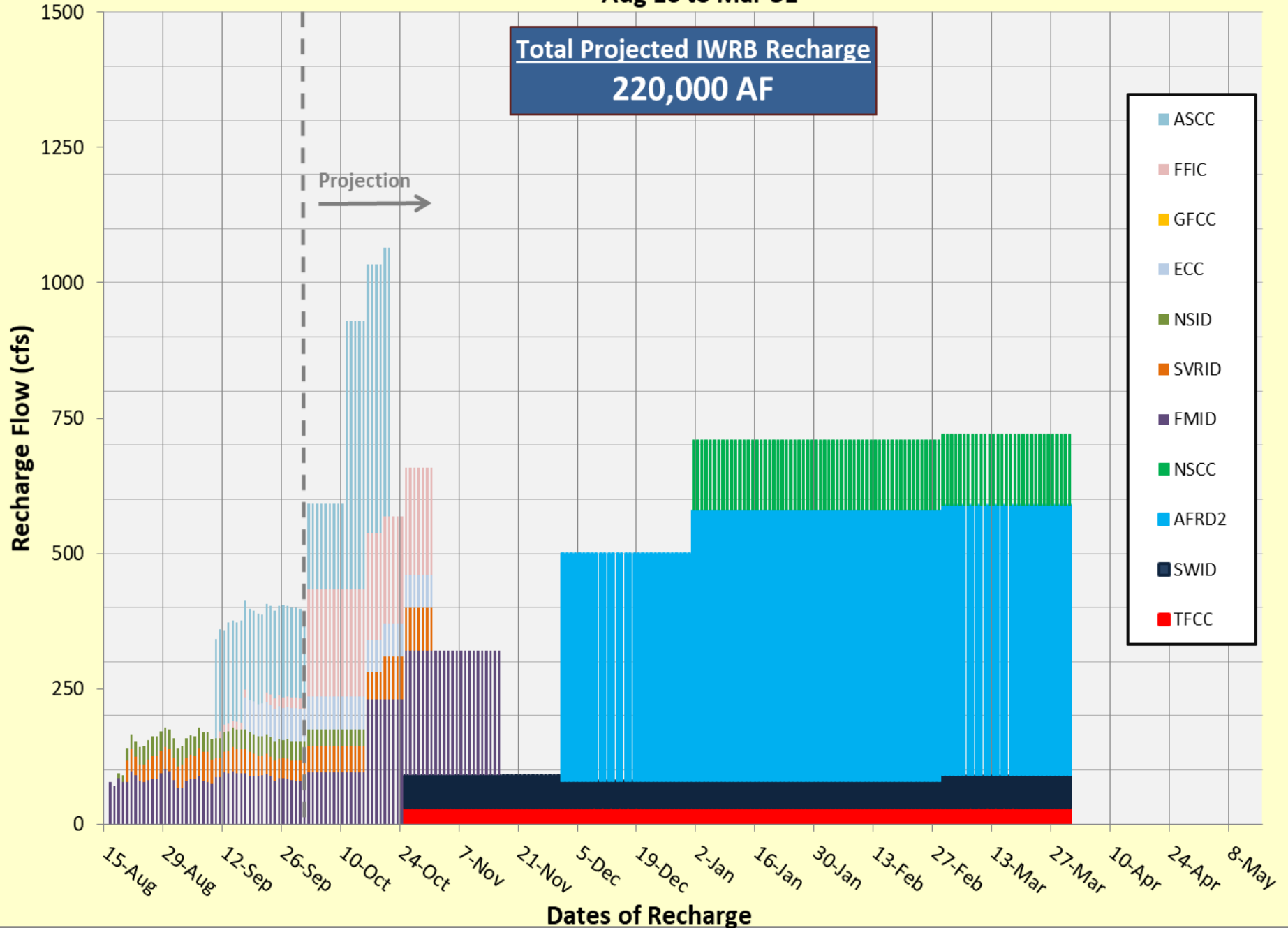
Total Volume of Recharge = **20,223** af (August 16, 2018 to October 1, 2018)



Preliminary Data

# Projected IWRB Recharge - During 2018/2019

Aug 16 to Mar 31



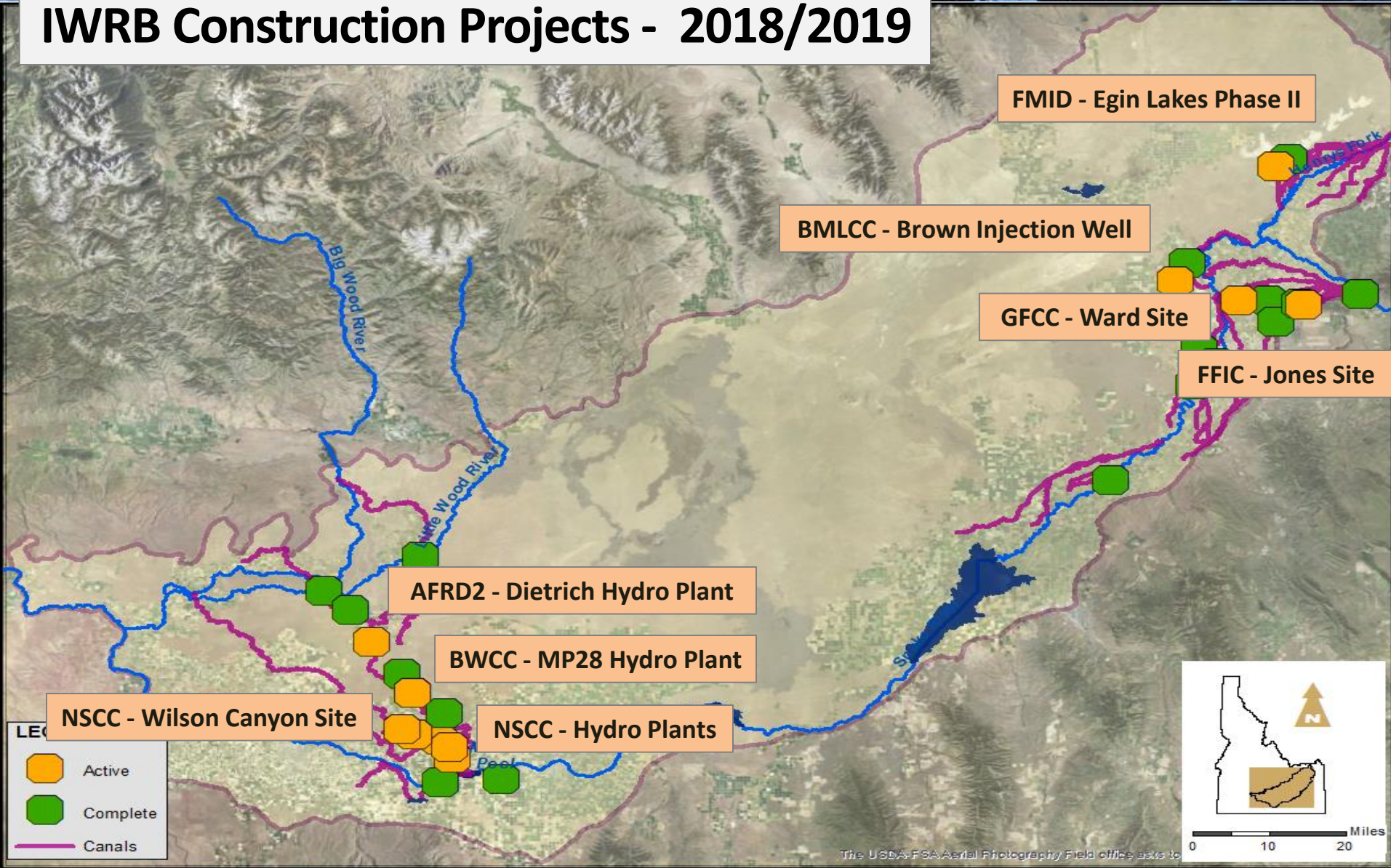
## IWRB ESPA Aquifer Recharge Program

- IWRB ESPA Recharge - 2017/2018
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## IWRB Construction Projects - 2018/2019



# Questions



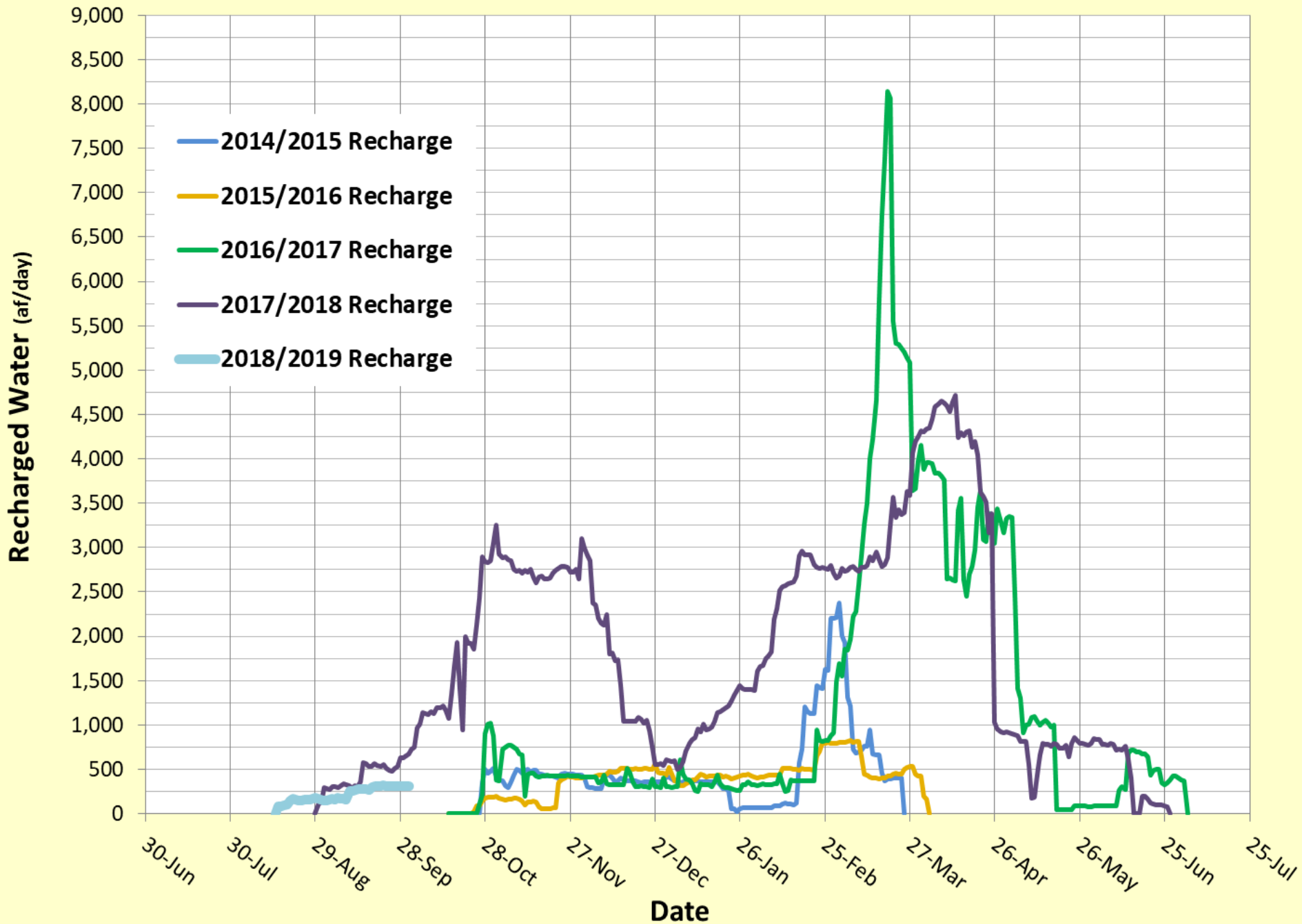


# Environmental Resources Technical Working Group

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- 

# ESPA Managed Recharge - Daily Recharge



# ESPA Managed Recharge - Cumulative

