


Harney Valley Groundwater Update

An aerial photograph of the Harney Valley in Oregon. The foreground shows large, circular and rectangular agricultural fields, some of which are green, indicating active crops. The middle ground is a vast, flat, brownish landscape, likely a dry lake bed or salt flat. In the far distance, a long, narrow body of water stretches across the horizon under a clear blue sky.

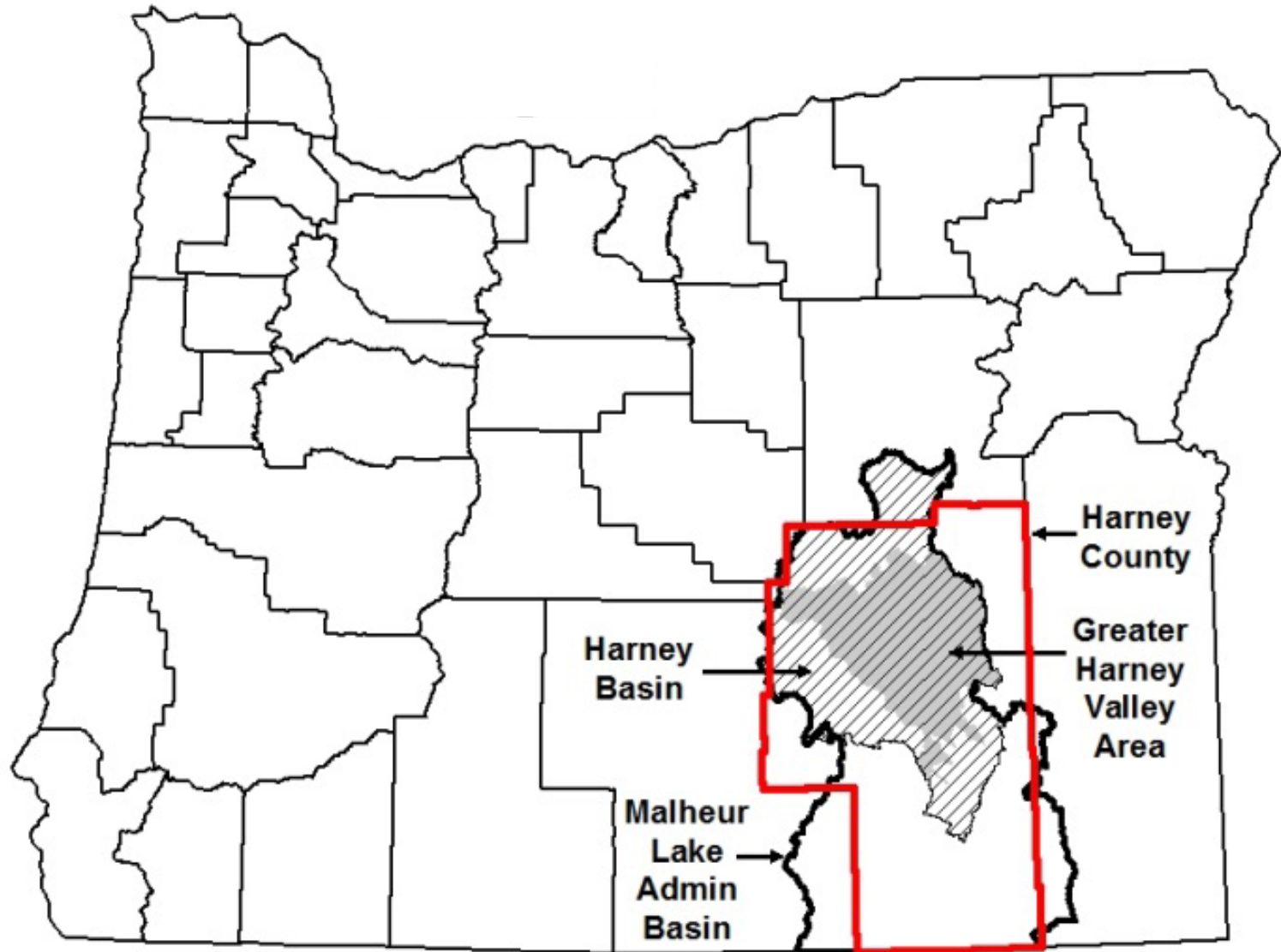
Oregon Water Resources Commission
January 26, 2017

Dwight French, Water Right Services Division Administrator
Justin Iverson, Groundwater Section Manager
Harmony Burrig, Planning Coordinator

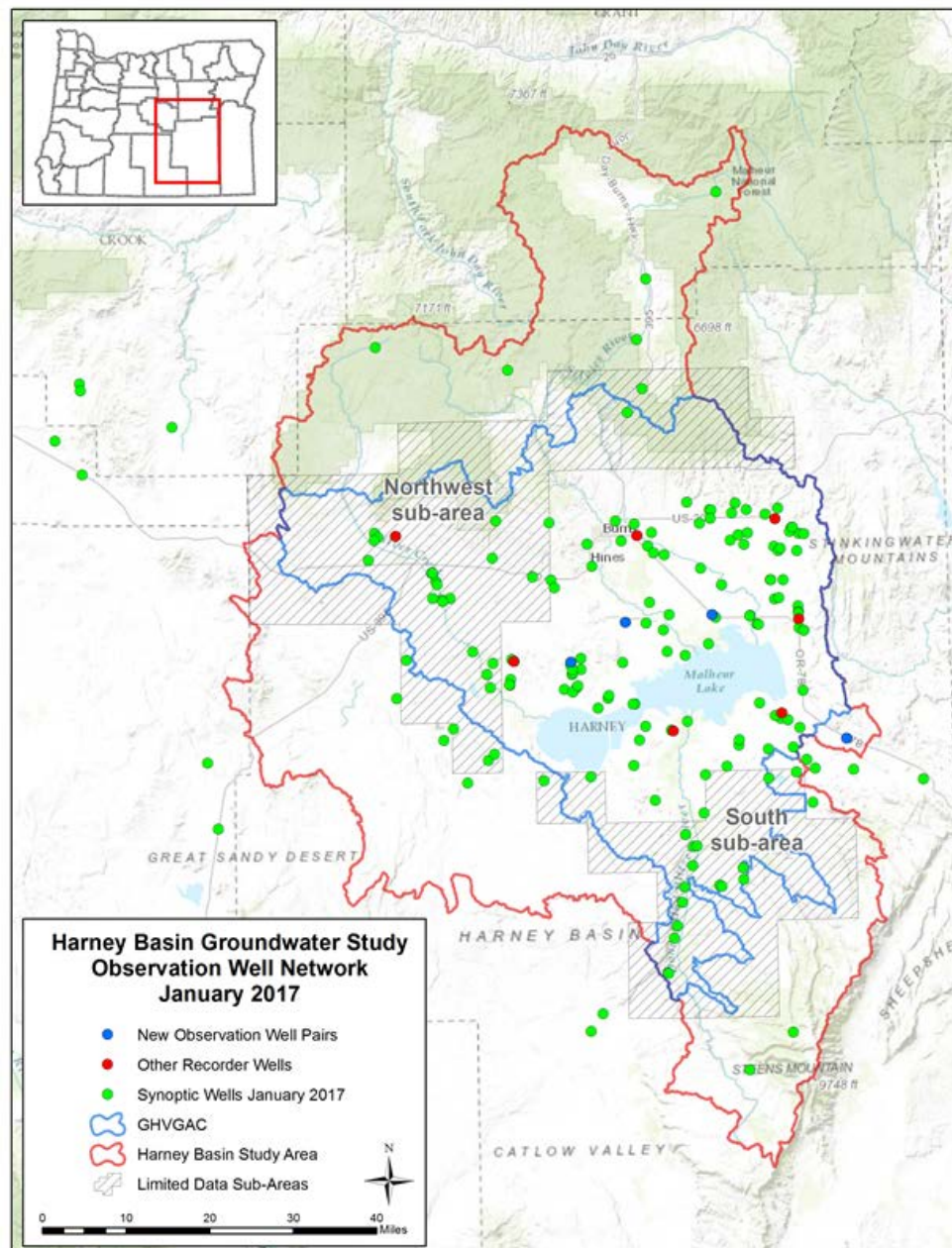
Overview

- **Background**
 - Events leading to rule revisions designating the Greater Harney Valley Groundwater Area of Concern (GHVGAC)
- **Groundwater Study Update**
 - Progress on the cooperative groundwater basin study encompassing the GHVGAC
- **Water Rights Update**
 - Existing applications converted to permits under the new rules

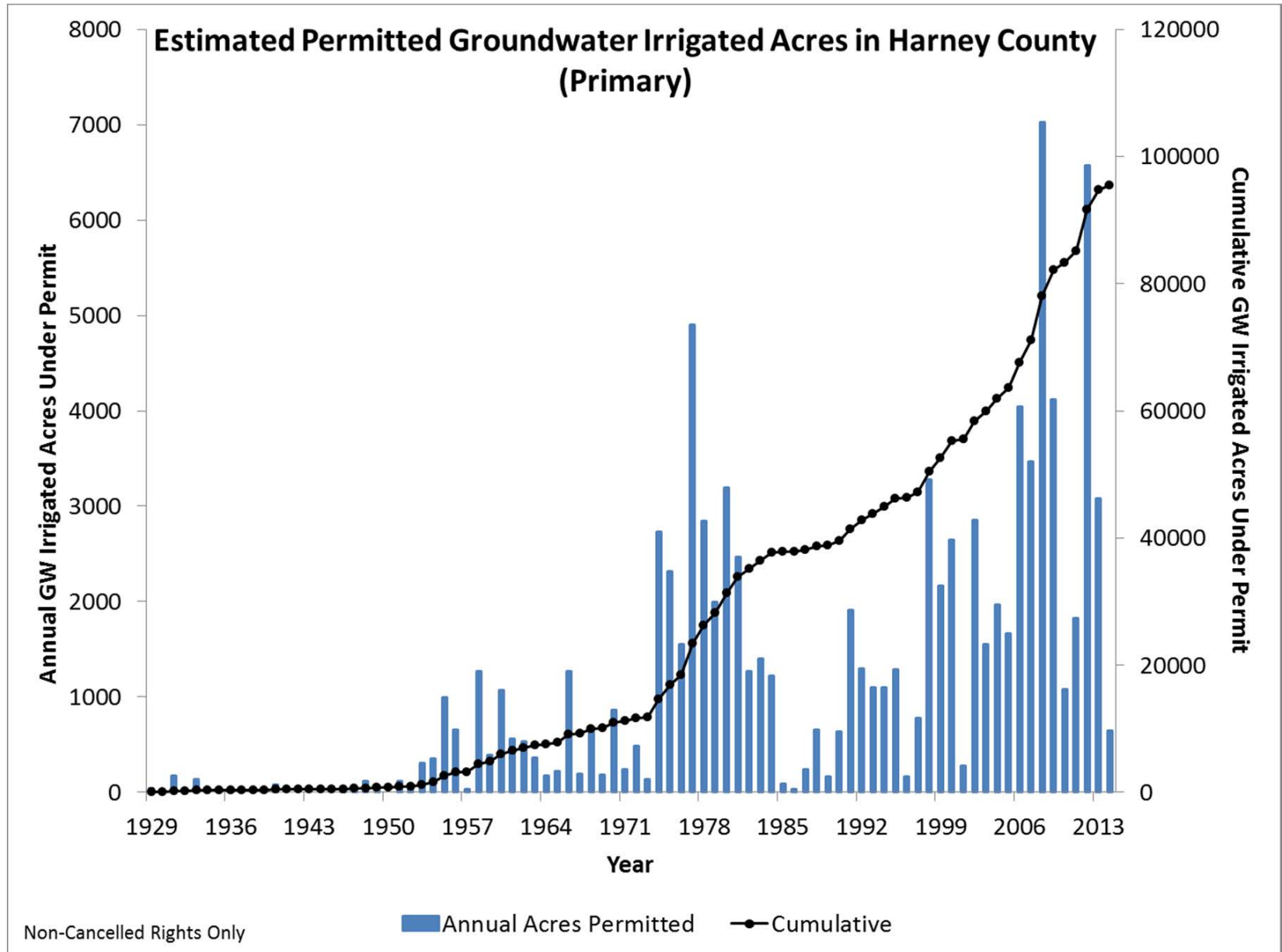
Background – Geographic Setting



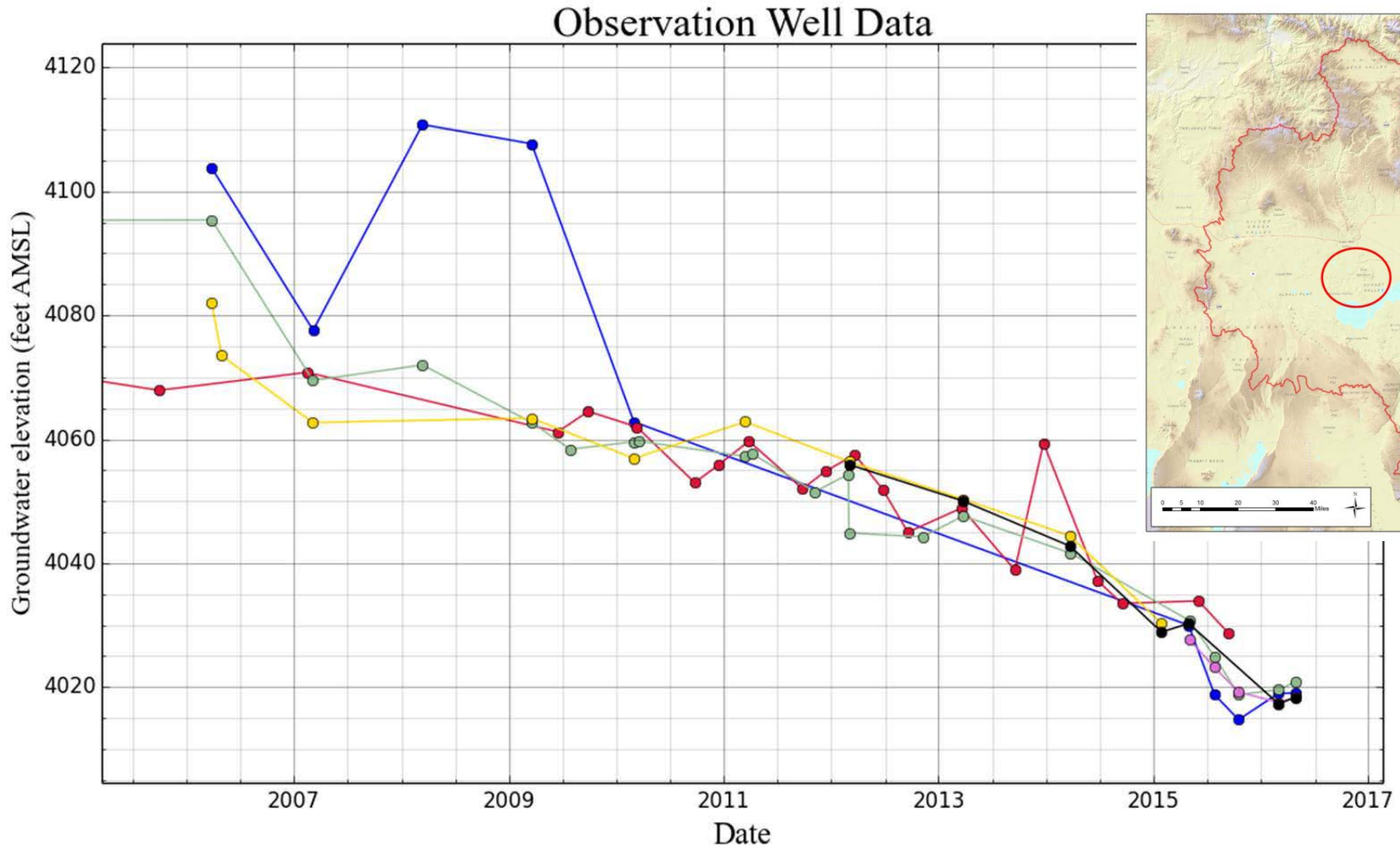
Background – Area of Interest



Background – Permit Development



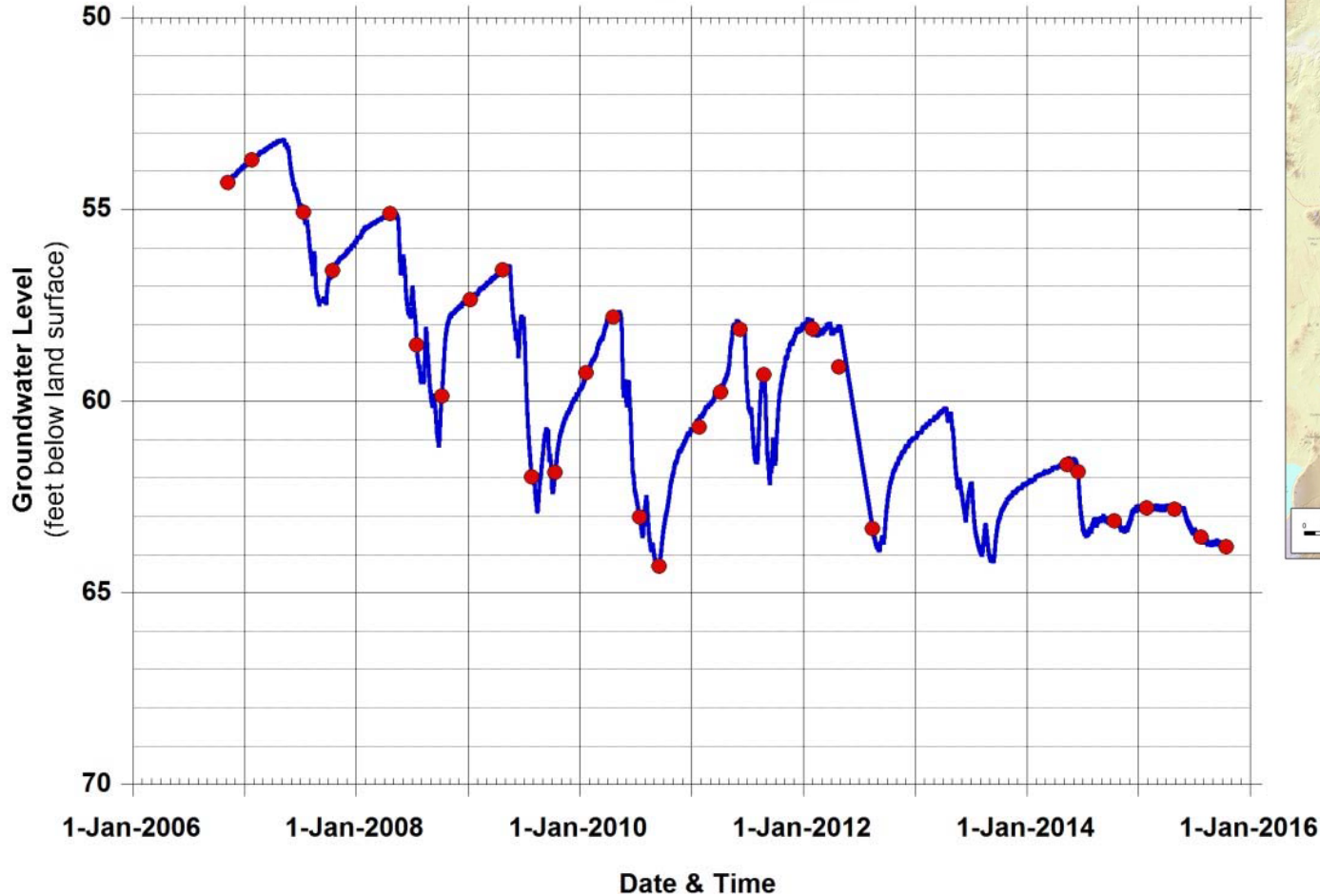
Background – WL Trends



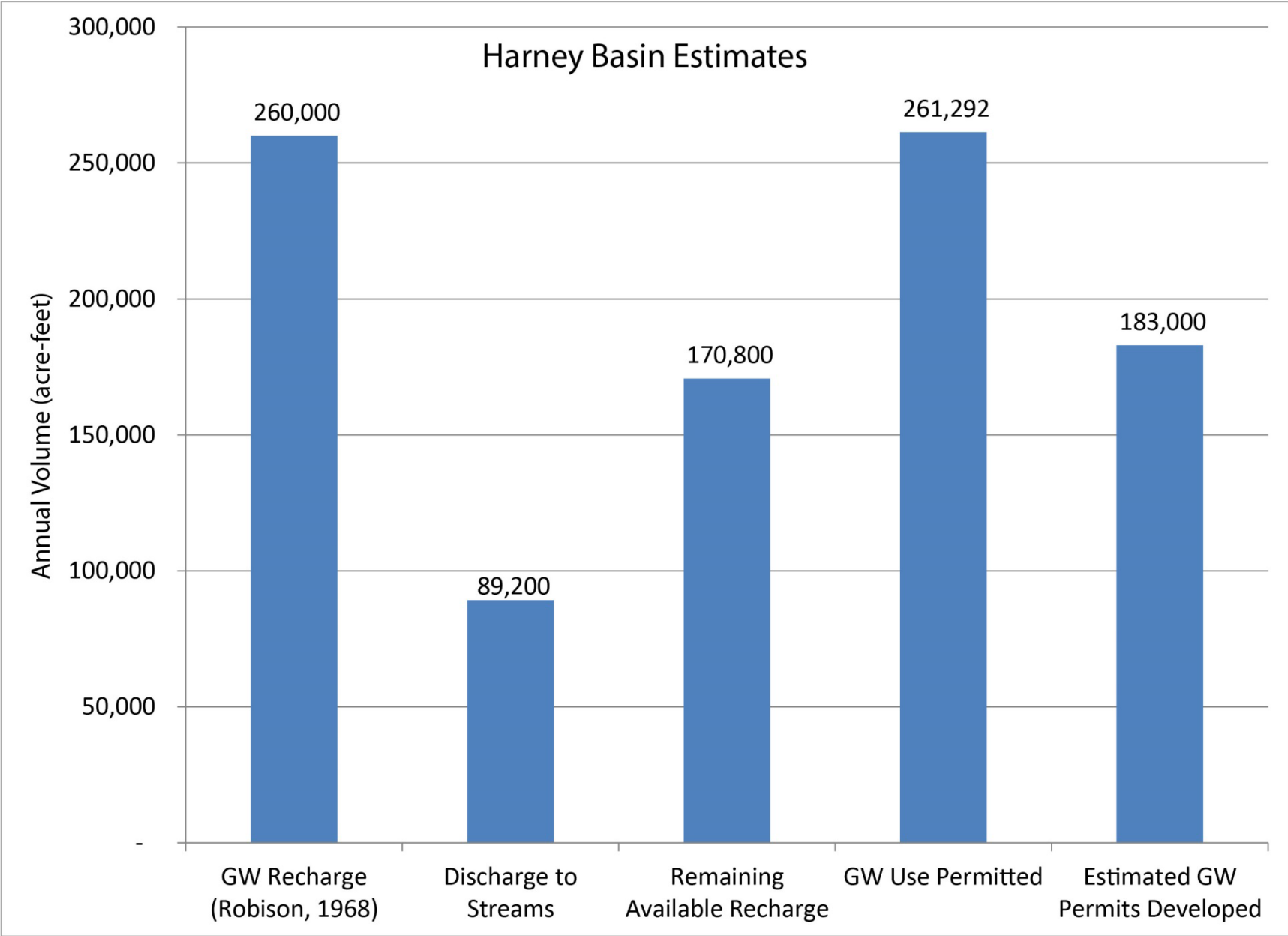
Background – WL Trends

Well Depth = 160 ft
Casing Depth = 40 ft
Seal Depth = 20 ft
Aquifer = Gravel Layers in Clay & Sand

HARN 1245
Mims Recorder Well
T25S/R34E-sec 06 bbb
Harney Valley
(Crane Vicinity)



Background – Water Balance



Groundwater Basin Study

Study objective: Develop a commonly accepted and accurate understanding of the hydrologic system in the Harney Basin.

Plan and conduct the Study in coordination with a local Groundwater Study Advisory Committee.

Groundwater Basin Study

Cooperators:

- **Oregon Water Resources Department (OWRD)**
- **United States Geological Survey (USGS)**
- **Local involvement through the Groundwater Study Advisory Committee**
- **Oregon Department of Geology and Mineral Industries (DOGAMI)**

GW Study Advisory Committee

- **15 members representing diverse interests:**
 - **Irrigated Agriculture (Hay Farming)**
 - **Other Local Businesses (Pump Installer, Well Driller)**
 - **Landowners**
 - **Conservation Interests (TNC)**
 - **Federal Agency (USFWS)**
 - **Watershed Council**

GSAC Purpose Statement

Foster an open exchange of information, data, and ideas with the intent of strengthening the groundwater study.

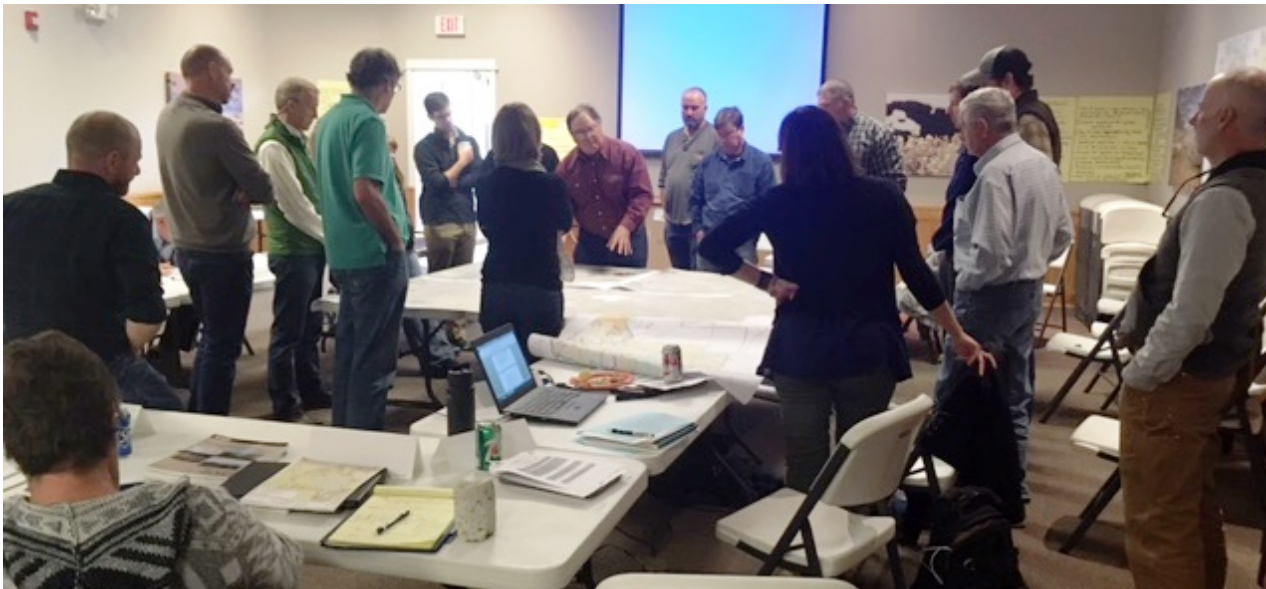
- **Create a forum to share data, information, analyses, and observations on a regular basis**
- **Develop a process to collect, compile, and share local knowledge, expertise and data**

GSAC Meetings

- **Advisory Committee meets quarterly**
- **Open meetings advertised through a mailing list, online and in the paper**
- **All materials maintained online**
 - bit.ly/malheurlakebasin

GSAC Discussion Topics

- **Work Plan overview and feedback**
- **Key study questions and methods**
- **OWRD and local water level monitoring networks**
- **Recommendations for observation well locations**
- **Methods and protocols for measuring groundwater levels**



Groundwater Basin Study

Technical objectives:

- **Gather and assess existing data**
- **Collect new data required to better define the hydrogeologic system**
- **Develop a detailed water budget**
- **Develop an improved conceptual model of the Harney Basin groundwater-flow system.**

Groundwater Basin Study

- **Began Expanding Observation Well Network in 2014**



Groundwater Basin Study

- **Drilled 8 Observation Wells at 4 sites to date. More sites to be drilled before July.**



Field Work Completed

	As of:	12/2016	1/2014
Total Wells Field-Located		335	51
Total Water-Level Synoptic Wells		189	-
Total Water-Level Quarterly Wells		108	23
Spring 2016 Water Level Synoptic Measurements		149	-
Fall 2016 Water Level Synoptic Measurements		180	-
Total Water Levels Measured 2015 (by OWRD staff)		452	-
Total Water Levels Measured 2016 (by OWRD staff)		487	-
Continuous Recorder Instruments Installed		13	2
New Observation Wells Constructed		8	-

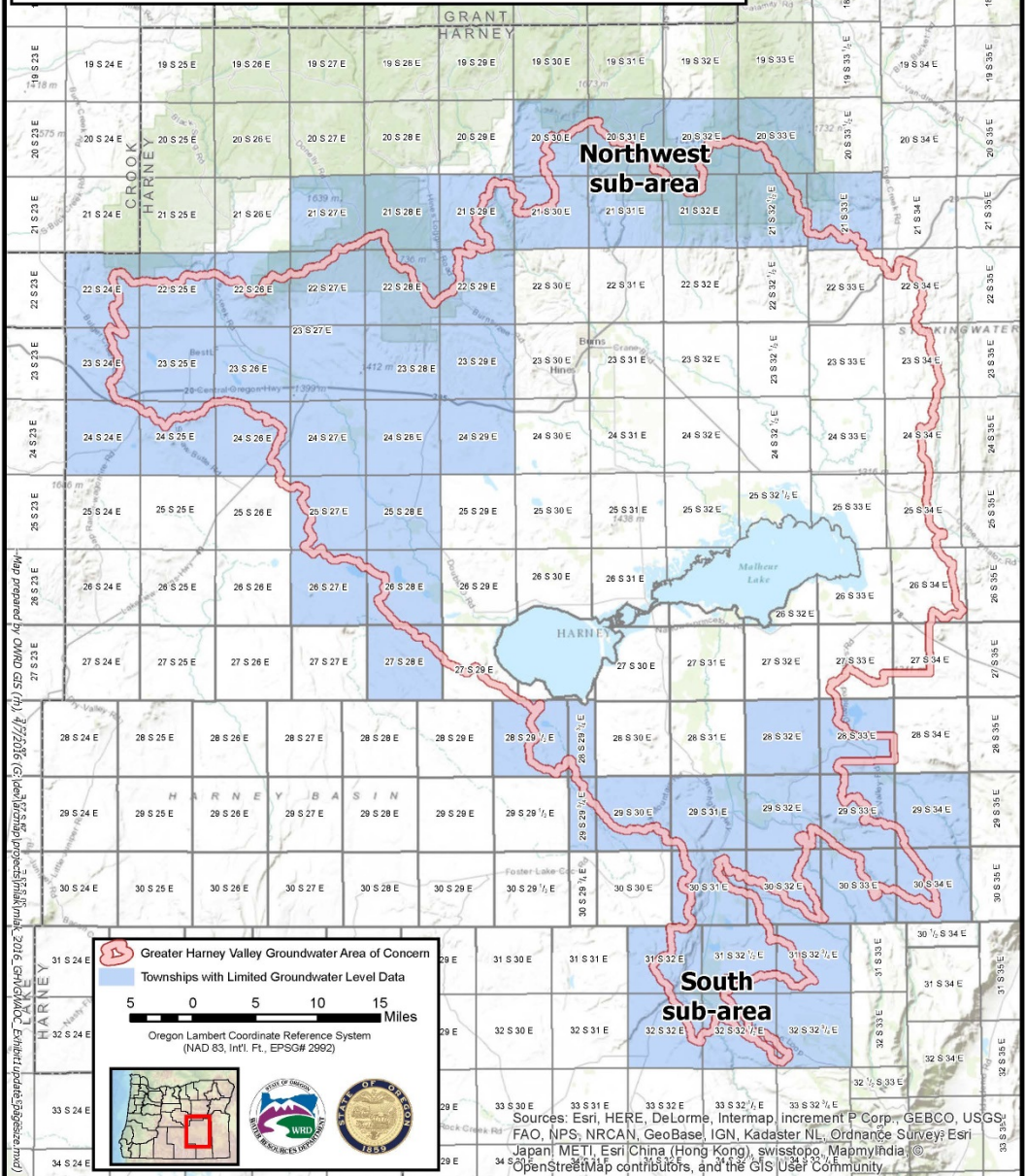
Rules and Permitting Update

- **WRC established the Greater Harney Valley Groundwater Area of Concern (GHVGAC) in the Malheur Lake Basin Program in April 2015**

- **Rules intended to:**
 - **Protect existing groundwater users**
 - **Maintain reasonably stable water levels**
 - **Allow some permits to be issued**
 - **Convene a local Groundwater Study Advisory Committee**
 - **Requires annual study updates to WRC**

Proposed under OAR 690-512-0020

Exhibit 1 TOWNSHIPS WITH LIMITED GROUNDWATER LEVEL DATA IN OR NEAR THE GREATER HARNEY VALLEY AREA



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17 S 33 E 17 S 33 1/2 E 17 S 34 E 17 S 35 E
18 S 33 E 18 S 33 1/2 E 18 S 34 E 18 S 35 E
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GRANT HARNEY

CROOK HARNEY

Northwest sub-area

South sub-area

HARNEY BASIN

HARNEY

Greater Harney Valley Groundwater Area of Concern
Townships with Limited Groundwater Level Data

5 0 5 10 15 Miles

Oregon Lambert Coordinate Reference System (NAD 83, Int'l. Ft., EPSG# 2992)



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

An aerial photograph showing a vast agricultural landscape. In the foreground, there are large, circular green fields, likely corn, with visible tire tracks. A central rectangular field is a mix of brown and green. To the right, there are more circular fields, some brown and some green. In the background, a large, flat, light-colored area, possibly a salt flat or a dry lake bed, stretches across the horizon under a clear blue sky.

Questions and Comments?