

Predictions of 2013 Flow Rate in the Platte River Watershed

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Jim Schneider, Deputy Director

Jesse Bradley, IWM Division Head

Nebraska Department of Natural Resources

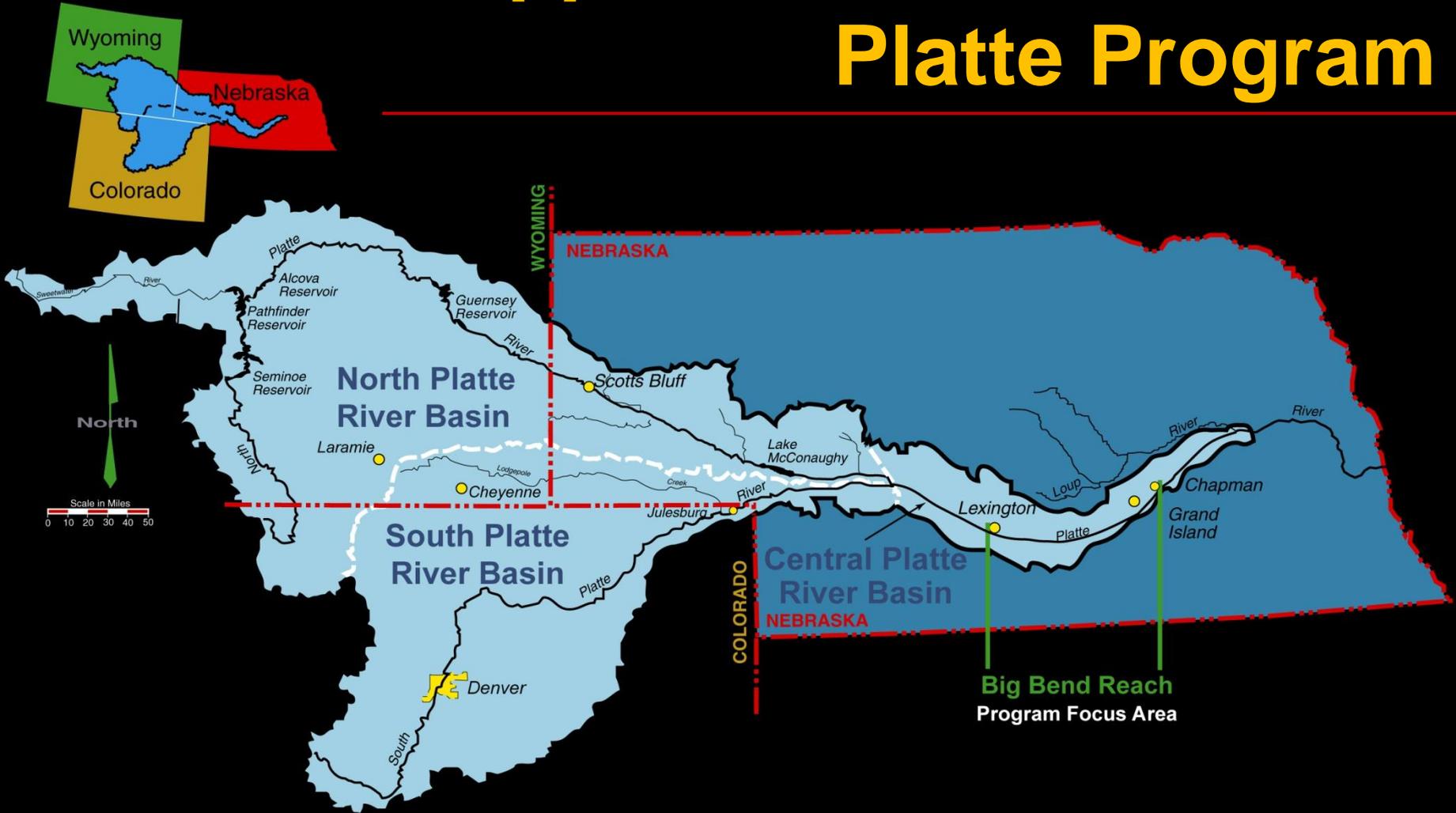


Overview

- 1. Platte River Recovery Implementation Plan**
- 2. Basin-Wide Plan and Integrated Management Plans – Goals and Objectives**
- 3. Water Projects Implemented to meet the Goals and Objectives**
- 4. 2013 Potential Water Supply**



Upper Platte River Basin Platte Program



Platte River Recovery Implementation Program (PRRIP)



- **Program Began January 1, 2007**
- **The agreement signed only addresses implementation of a 1st increment, which is to last through December 2019**

PRRIP - Purposes



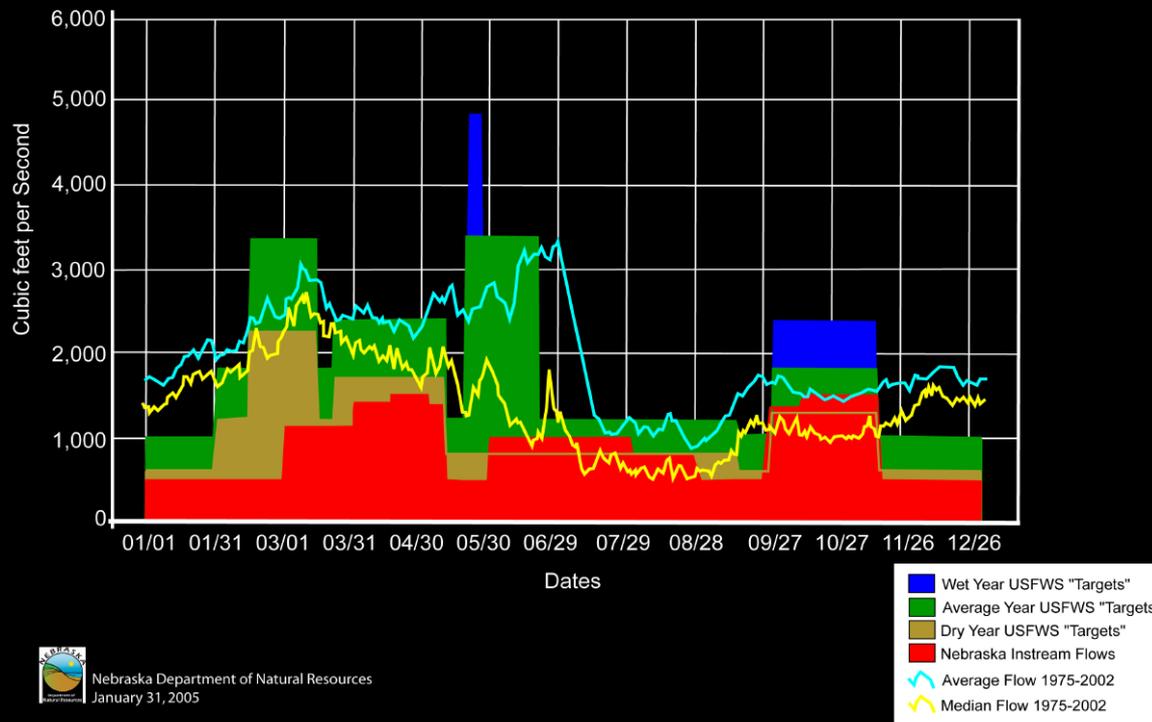
- Improve habitat for four threatened & endangered species
 - Whooping Crane
 - Piping Plover
 - Least Tern
 - Pallid Sturgeon
- Provide ESA Section 7 and Section 9 coverage for all water users in the basin/avoid use of alternative ESA enforcement measures

PRRIP Plan - Water Component

Reduce deficits to USFWS target flows at Grand Island by annual average of 130,000 to 150,000 acre-feet.

Comparison

USF&WS "Target Flows", Nebraska "Instream Flows",
Average and Median Flows/
Platte River at Grand Island



PRRIP – Current Hydrologic Condition



The screenshot shows the website for the Platte River Recovery Implementation Program. The header features the program's logo and name. A navigation menu includes links for Home, About the Program, News and Information, Public Involvement, Publications and Data, and Contractors. The current page is 'Publications and Data > Current Hydrologic Condition'. A search bar is present on the right. The main content area is titled 'Current Hydrologic Condition' and contains a sub-header 'Current Basin Hydrologic Condition and Target Flows for the Platte River at Grand Island, NE'. The current condition is listed as 'DRY'. Below this, the last update date is 'December 5, 2012' and the next update date is 'March 5, 2013'. A table provides target flows for different periods: 600 cfs for Dec 1 - Jan 31, 1,200 cfs for Feb 1 - Feb 14, and 2,250 cfs for Feb 15 - Feb 28.

PLATTE RIVER
RECOVERY IMPLEMENTATION PROGRAM

Home About the Program News and Information Public Involvement Publications and Data Contractors

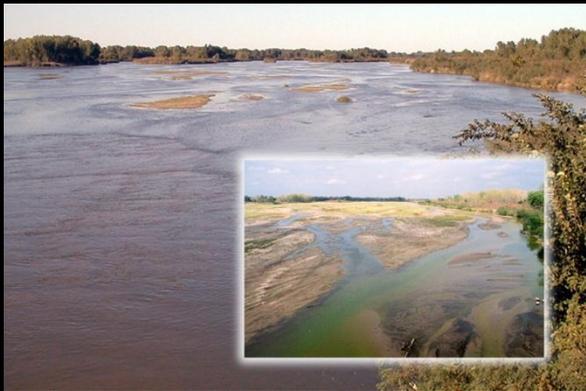
Publications and Data ▶ Current Hydrologic Condition

Current Hydrologic Condition

Current Basin Hydrologic Condition and Target Flows for the Platte River at Grand Island, NE

Current basin hydrologic condition ("wet", "normal", or "dry") ⁽¹⁾	DRY
Hydrologic condition last updated	December 5, 2012
Approximate date of next update	March 5, 2013
Target flows, Platte River near Grand Island, Nebraska for the specified hydrologic condition (daily targets) ⁽²⁾	Dec 1 - Jan 31 600 cfs
	Feb 1 - Feb 14 1,200 cfs
	Feb 15 - Feb 28 2,250 cfs

<https://www.platteriverprogram.org/PubsAndData/Pages/CurrentHydrologicCondition.aspx>



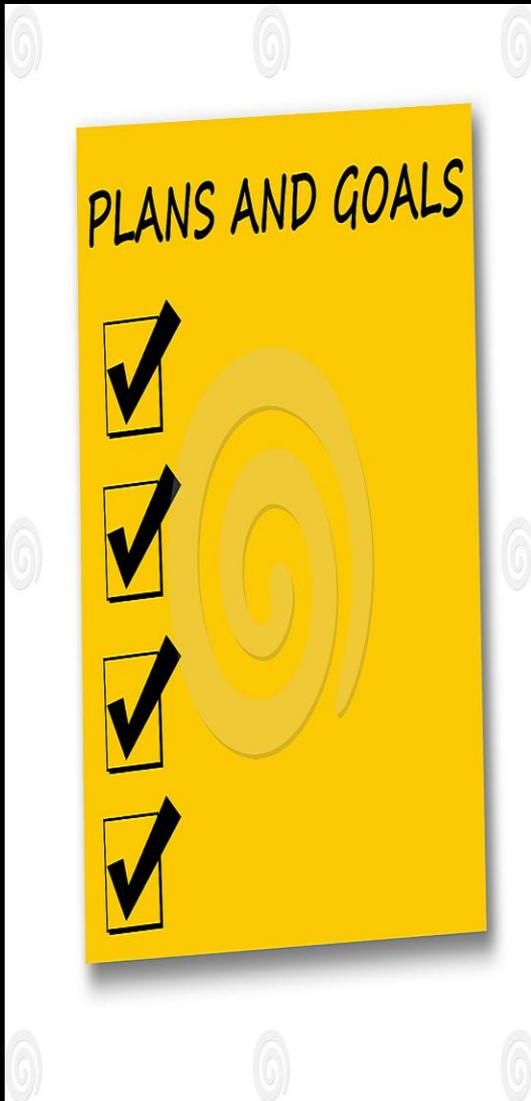
PRRIP - Nebraska New Depletions Plan

- **A plan to prevent or offset depletions caused by new or expanded uses begun since July 1, 1997.**
- **The responsibility for implementing this plan is shared between the state and the natural resources districts (NRDs) involved.**

Basin-Wide Plan and Integrated Management Plans

- **Joint Integrated Water Resources Management**
- **Area: Overappropriated Portions of the Platte River Basin in Nebraska**
 - Upstream of the Kearney Canal Diversion
 - Hydrologically connected surface water and groundwater
 - Includes 5 natural resources districts (NRDs)
 - Central Platte
 - North Platte
 - South Platte
 - Tri-Basin
 - Twin Platte

Basin-Wide Plan Goals and Objectives



- **Achieve and Sustain a Fully Appropriated Condition**
 - **Offset streamflow depletions**
 - **Identify projects to enhance water supply**
 - **Develop evaluation methods and data**

Integrated Management Plans – Goals and Objectives

- **Overappropriated Area and Nebraska New Depletion Plan**
 - Incrementally achieve and sustain a fully appropriated condition
 - Ensure compliance by Nebraska with PRRIP
 - Maintain consistency with the Basin-Wide Plan

Water Enhancement Projects



- **Provide Accretions from**
 - Conjunctive Management Projects
 - Groundwater Retiming Projects
 - Regulatory Actions
 - Retiring Land from Irrigation

Excess Flow Analysis

- **Study Of Historic Streamflows**
 - **Compare to State Protected Flows and Platte Program Target Flows**
 - **Throughout the Basin, excess flows are available at certain times**
 - **Excess flows can be retimed and used in Conjunctive Management projects**
 - **http://dnr.ne.gov/IWM/Reports/PlatteRiverStreamflow_1210.pdf**

Conjunctive Management Projects

- **Conjunctive Management**

- Cozad Canal Conjunctive Management (2014-2019)
- Thirty-Mile Canal Conjunctive Management (2014-2019)
- Canal Seepage Projects: 2011 Demonstration
- Elwood Reservoir
- J2 Re-regulating Reservoir (WAPP)



Conjunctive Management: Cozad Canal and Thirty-Mile Canal

- Cozad Canal (2014-2019) ~8,000 a-f/yr
- Thirty-Mile Canal (2014-2019) ~8,000 a-f/yr



Average annual accretion



~16,000 a-f/yr

Conjunctive Management:

Canal Seepage Projects: 2011 Demonstration

- For groundwater recharge and flood reduction
- Partners
 - 23 Canals
 - DNR
 - South Platte
 - Tri-Basin
 - Twin Platte
 - Central Platte
 - North Platte
- Results:
 - Diversion Total 142,000 a-f
 - Seepage Total 64,000 a-f
 - 2011-2019 Accretion Total 15,000 a-f
 - Average annual accretion ~1,500 a-f/yr**

Conjunctive Management: Elwood Reservoir

■ Partners

- Central Nebraska Public Power Irrigation District (CNPPID)
- TBNRD

■ Diverted water in 2008 and 2009

- Gradual groundwater recharge estimated through 2019

Average annual accretion

~180 a-f/yr

**Ranging from 301 a-f in 2012
to 99 a-f in 2019**

Groundwater Retiming Project

- North Dry Creek (WAPP)

972 a-f/yr



Average annual accretion

~970 a-f/yr

Regulatory Actions

- **NPNRD (Allocations)**



Average annual accretion

~4,000 a-f/yr

**Ranging from 3,182 a-f in 2012
to 4,747 a-f in 2019**

Retiring Land from Irrigation



■ Programs

- AWEPP – Agricultural Water Enhancement Program
- CREP – Conservation Reserve Enhancement Program
- EQIP – Environmental Quality Incentives Program
- PBHEP – Platte Basin Habitat Enhancement Program
- Other programs (e.g., Pheasants Forever)

■ Results

- Permanent Retirements: 5,210 acres
- Temporary Retirements: 16,629 acres
(lasting from 3 to 15 years)



Average annual accretion

~ 6,000 a-f/yr

Total Average Annual Accretion from all Water Enhancement Projects

- **Conjunctive Management** ~28,700 a-f/yr
- **Groundwater Retiming** ~970 a-f/yr
- **Regulatory Actions / Retiring Land** ~10,000 a-f/yr

Total Average Annual Accretion ~40,000 a-f/yr

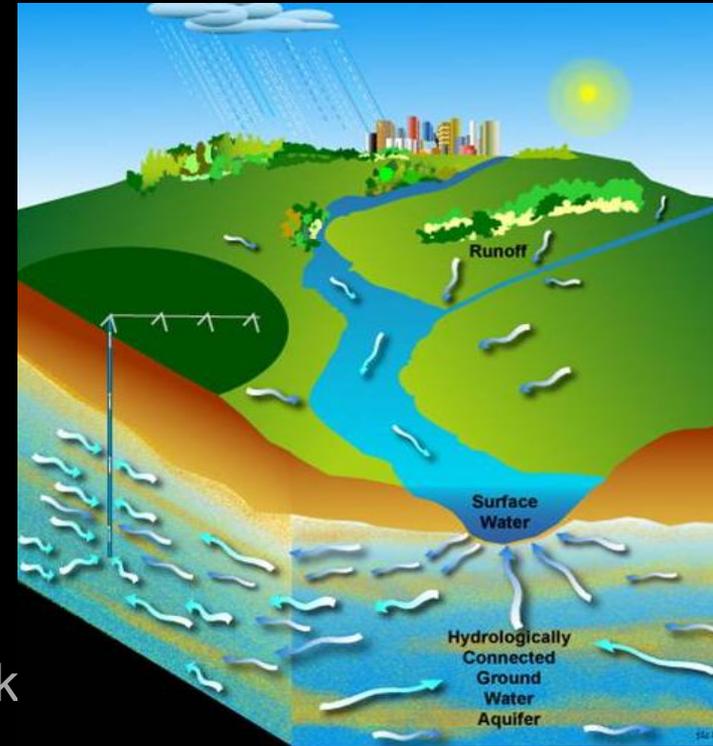
Models

- **COHYST 2010**

- The eastern portion of the Upper Platte Basin from Duncan, NE to the upstream end of Lake McConaughy

- **Western Water Use Model (WWUM)**

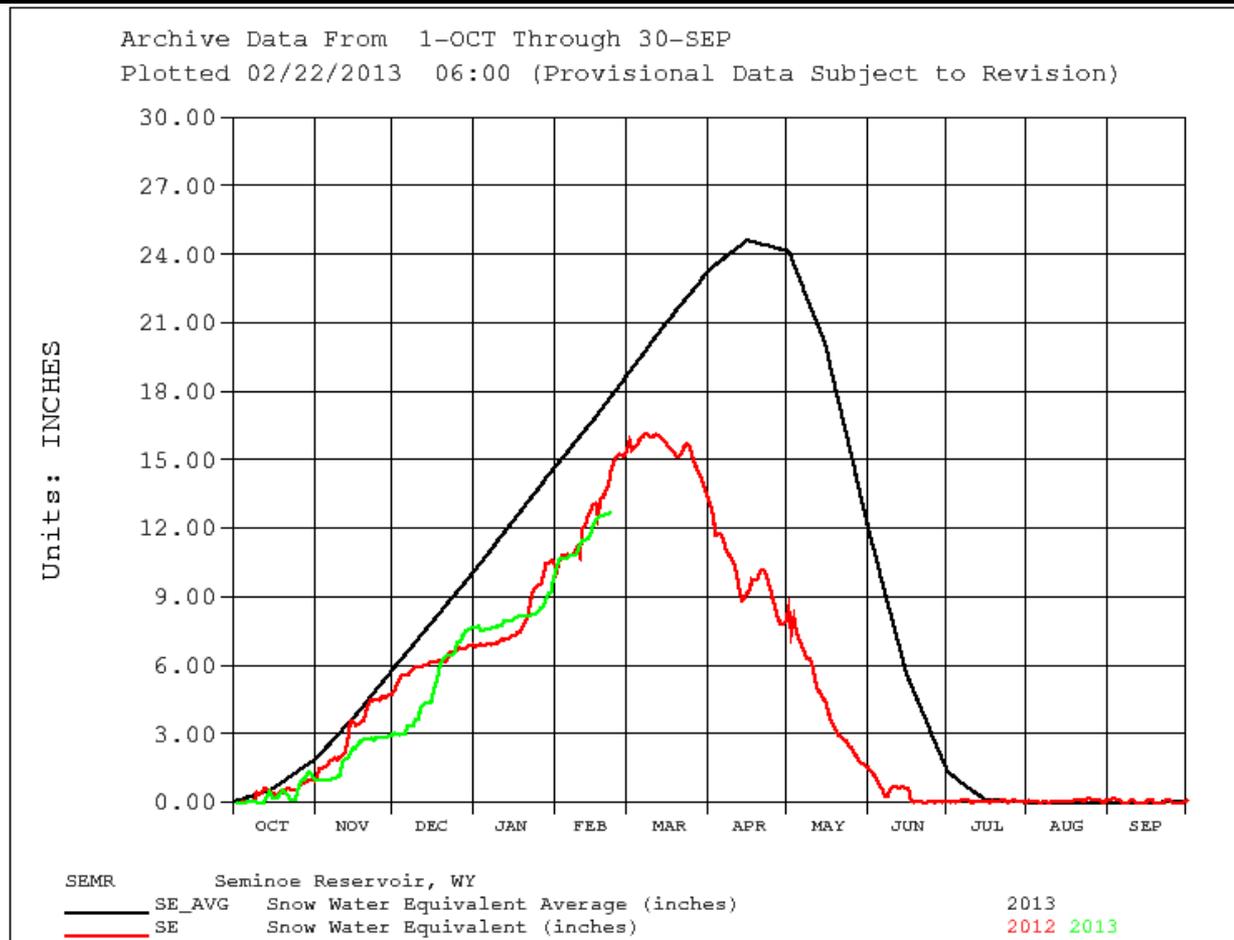
- Upstream of Lake McConaughy to the Wyoming state line and Lodgepole Creek in the South Platte Basin



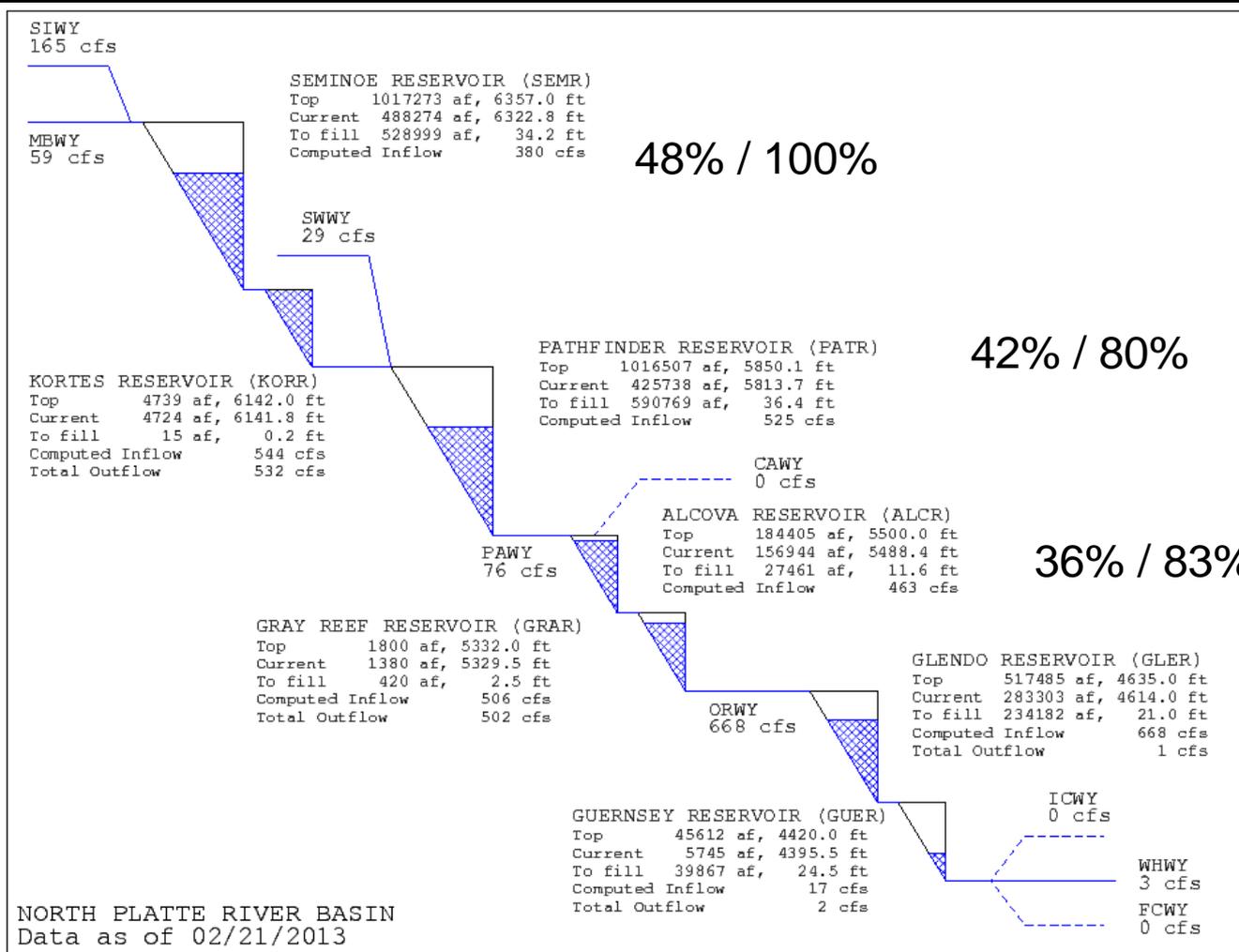
2013 Water Supply

- **SNOTEL**
 - **Snow Water Equivalent**
- **Bureau of Reclamation**
 - **Reservoir Content**
- **CNPPID**
 - **Allocations**

2013 Water Supply: Seminoe SNOTEL



2013 Water Supply: WY Reservoirs

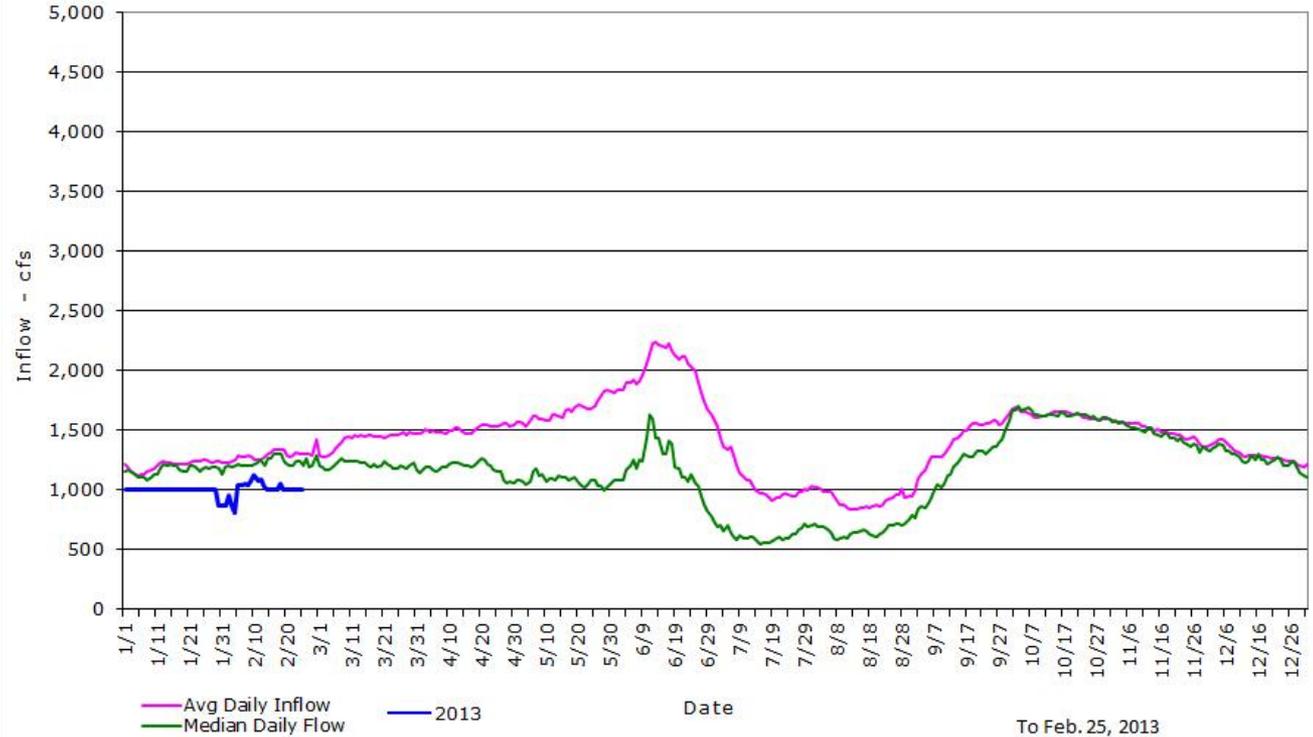


2013 Water Supply: Lake McConaughy

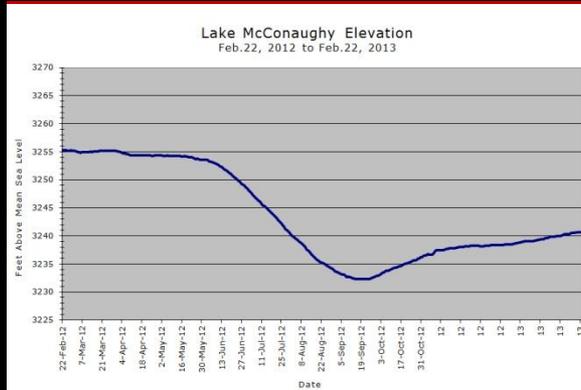


Daily Inflows - Lake McConaughy
Current, Average & Median Flows since 1941

Example to assist with reading graph: The average inflow for March 1 (measurements on every March 1 since 1941) is 1,308 cfs. Similarly, the median flow for March 1 (the middle value in the range of every March 1 reading since 1941) is 1,210 cfs.

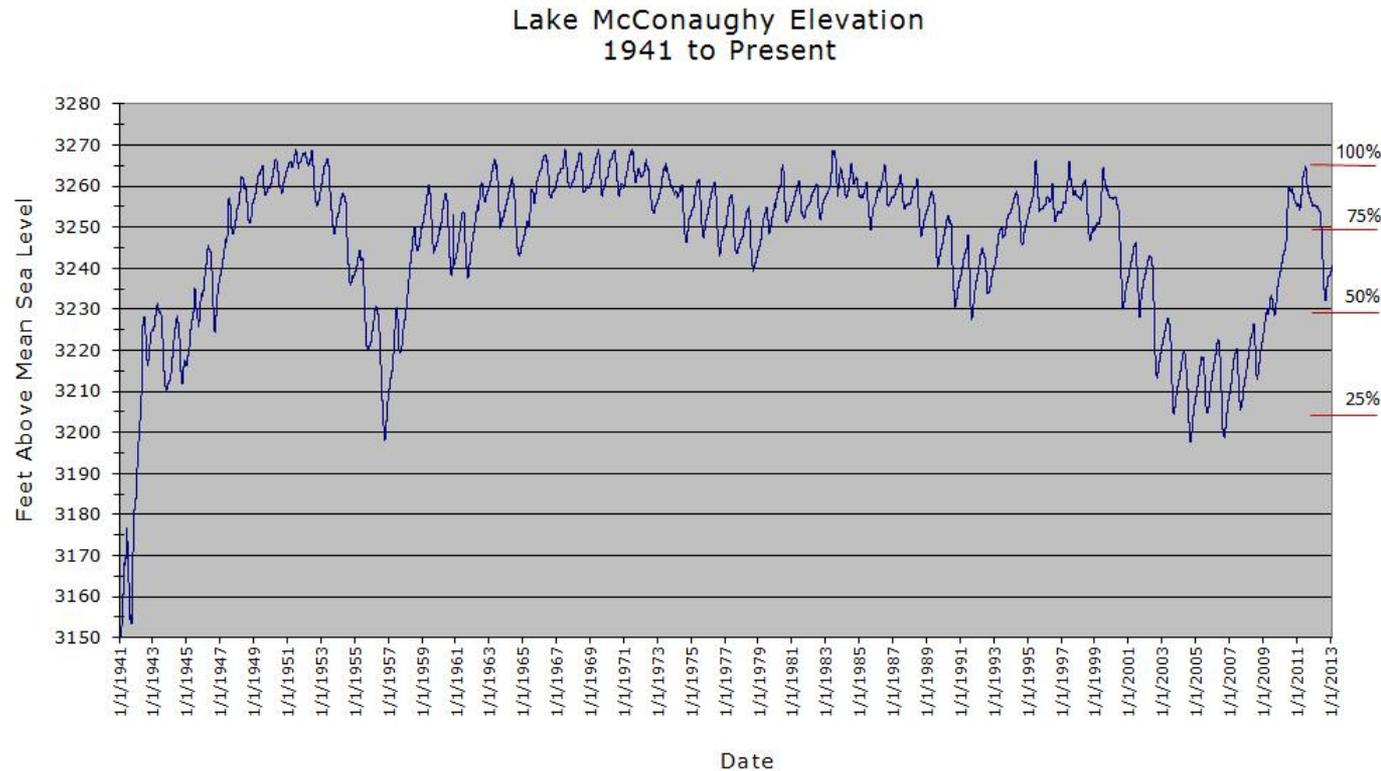


2013 Water Supply: Lake McConaughy

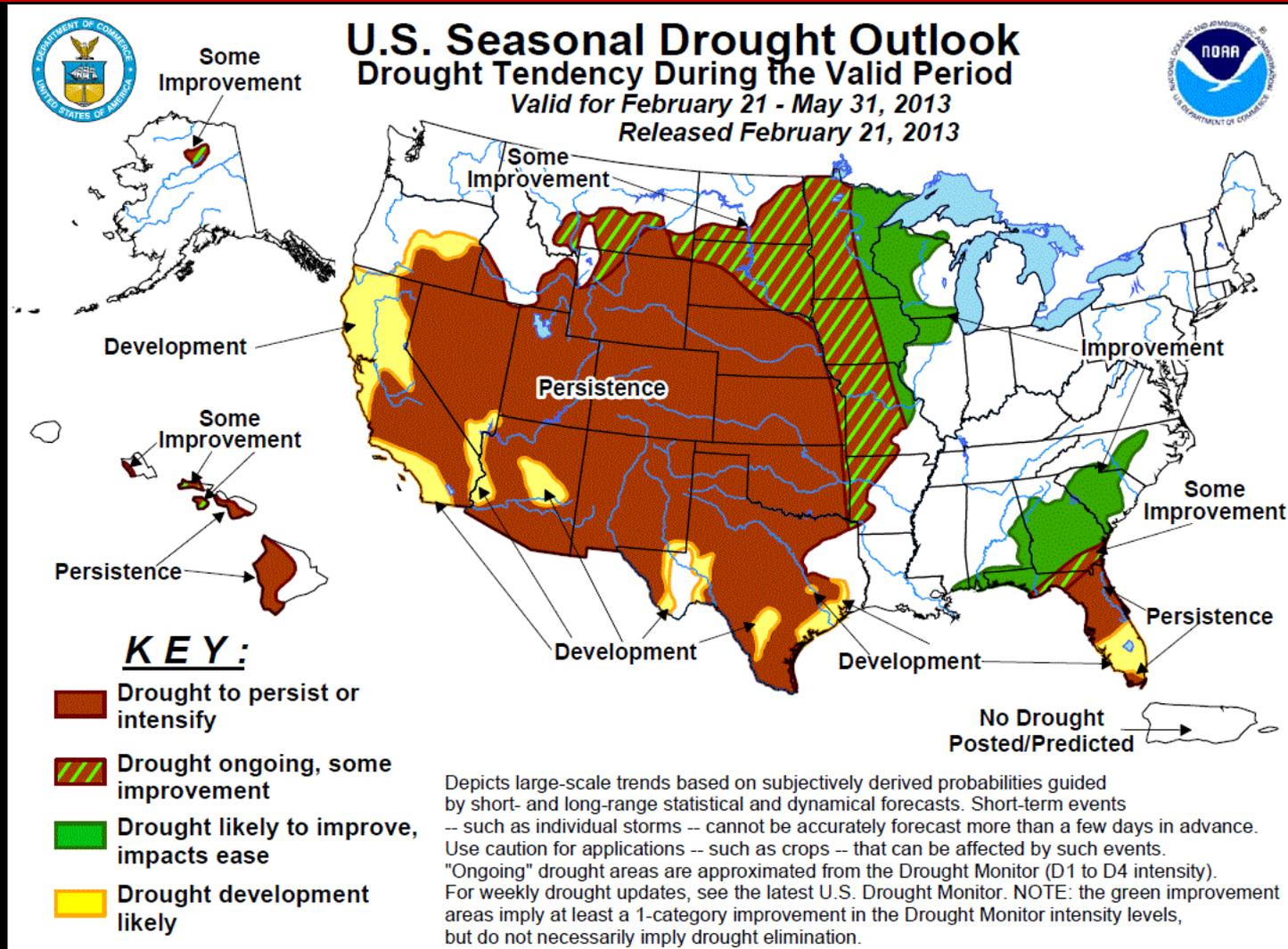


■ 10 inch allocation for 2013

http://www.cnppid.com/Assets/McConaughy_One-Year.jpg



2013 Water Supply: Drought Outlook



Questions?

Jim Schneider, Deputy Director
Jesse Bradley, IWM Division Head

Nebraska Department of Natural Resources

