

# Update on Wyoming Issues

April 25, 2012

Jodee Pring

Wyoming State Engineer's Office

Presentation to the Wind/Big Horn Basin Advisory Group



## Topics to cover:

- Missouri River Programs in which the State Engineer's Office is involved
- Recap of water year 2011 in Wyoming and the Missouri River Basin as a whole

# MISSOURI RIVER

R E C O V E R Y   P R O G R A M

## Programs in the Basin



*Photo Credit: NEBRASKAland Magazine/Nebraska Game and Parks Commission*

# Missouri River Basin

*Nation's Longest River (2,321 miles)*

*From Three Forks, Montana to St. Louis, Missouri*

*Eight Authorized Purposes:*

- 1) Fish & Wildlife*
- 2) Flood Control*
- 3) Hydropower*
- 4) Irrigation*
- 5) Navigation*
- 6) Recreation*
- 7) Water Quality*
- 8) Water Supply*



# What is the MRRIC?

- *Authorized in Section 5018 of the 2007 Water Resources Development Act (WRDA) and established by the Assistant Secretary of the Army (Civil Works).*
- *Makes recommendations and provides guidance on a study of the Missouri River and its tributaries, and on the existing Missouri River recovery and mitigation program.*
- *Helps guide the prioritization, implementation, monitoring, evaluation, and adaptation of recovery actions.*
- *Includes a broad stakeholder representation to ensure a comprehensive approach to Missouri River recovery implementation while providing for congressionally authorized Missouri River project purposes and to ensure public values are incorporated into the study and the recovery and mitigation plans.*

# Role of MRRIC

Water Resources  
Development Act  
(WRDA) of 2007

2003 Biological  
Opinion (BiOp)  
(Amended)

Bank Stabilization  
and Navigation  
Project (BSNP)  
Mitigation Plan

MRRIC

Provide Recommendations

Missouri River  
Recovery Program  
(MRRP)  
(Existing Recovery &  
Mitigation Plans)

Missouri River  
Ecosystem  
Restoration Plan  
(MRERP)  
(Study)

# Water Resources Development Act

## *WRDA 2007 Section 5018*

*Part (a)*

*The Secretary of the Army, in consultation with the MRRIC, shall conduct a study of the Missouri River and its tributaries to determine actions required to:*

- mitigate losses of aquatic and terrestrial habitat*
- recover federally listed species under the Endangered Species Act of 1973*
- restore the ecosystem to prevent further declines among other native species*

*Part (b)*

*Recovery Implementation Committee to be established by Secretary*

*Committee membership includes:*

- Federal Agencies*
- States*
- Tribes*
- Non-Governmental Stakeholders*

*Committee duties include:*

- Provide Guidance to Secretary, Federal Agencies, Tribes, & State Agencies on the Study*
- Provide Guidance and Recommendations to Secretary on Missouri River Recovery and Mitigation Plan*

# Missouri River Recovery Program

- *Habitat Construction*
  - *Shallow Water Habitat*
  - *Emergent Sandbar Habitat*
  - *Cottonwood Reforestation*
- *Propagation/Hatchery Support*
- *Research, Monitoring, & Evaluation*
- *Flow Modifications*
- *Public Involvement*





# Threatened & Endangered Species



*Interior Least Tern*  
(E)

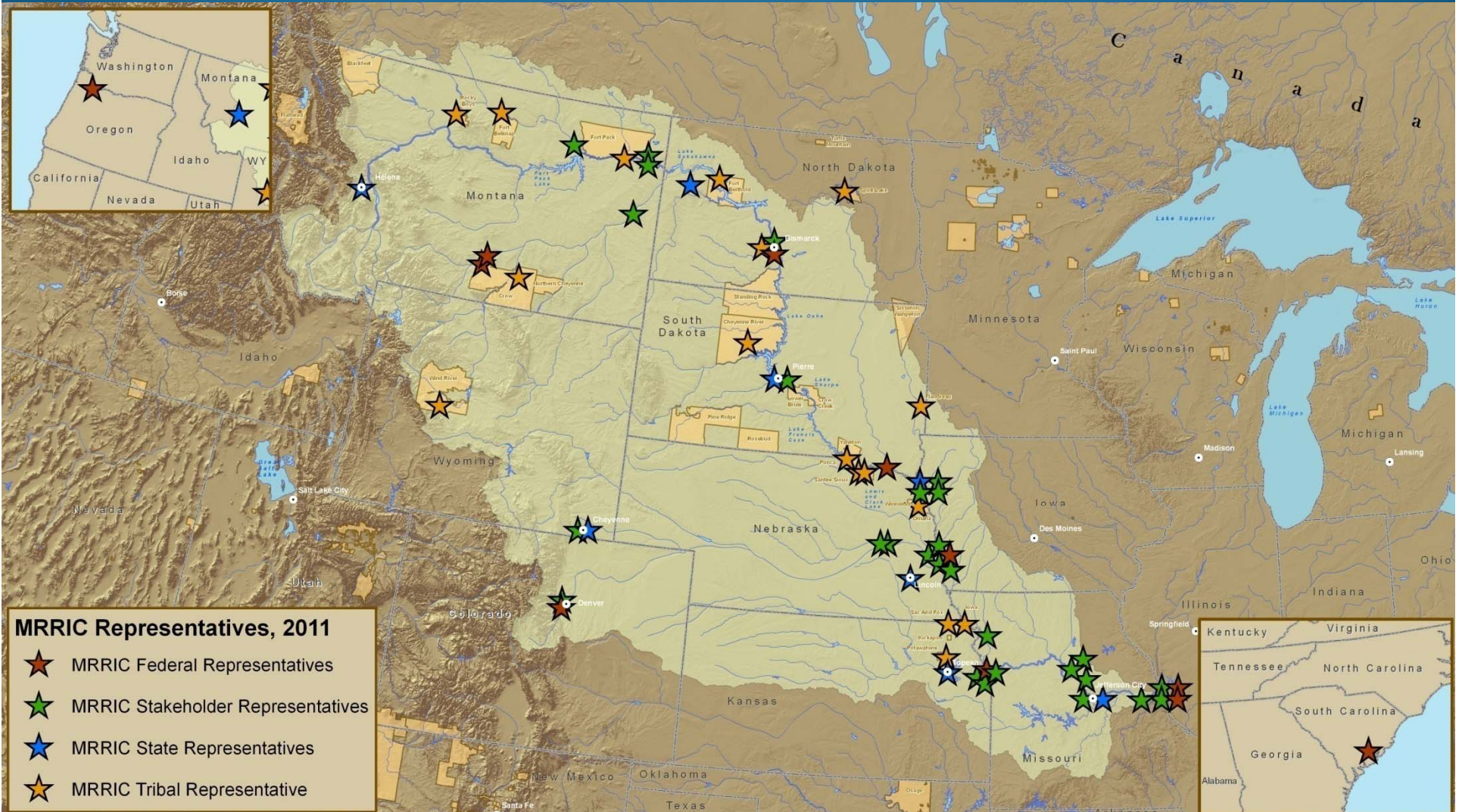


*Piping Plover*  
(T)



*Pallid Sturgeon* (E)

# Shared River, Shared Interests



# Missouri River Basin States

## MRRIC

- *Iowa*
- *Kansas*
- *Missouri*
- *Montana*
- *Nebraska*
- *North Dakota*
- *South Dakota*
- *Wyoming*



# Unique Features/Opportunities

*Charter drafting team was a collaborative effort*

*Interaction with basin leaders and decision-makers*

*Mutual learning opportunities*

➤ *Missouri River Recovery Program*

➤ *Social, economic, cultural*

*Contributing to Missouri River Recovery Program*

*Relationship building*

*Committee recommendations are made by consensus*



# MRRIC Meetings

*Approximately every three months - four per calendar year*

*Meeting sites alternate*

*Monday afternoon - optional tours and information sessions*

*Formal meeting - Tuesday through mid-day Thursday*

*One-day video-teleconference (VTC) webinar scheduled each Spring*

*Information sharing webinars between meetings*

*Frequent work group telephone conferences between meetings*

***Note: Members are not reimbursed for travel  
or lodging under statute***



# MISSOURI RIVER ECOSYSTEM RESTORATION PLAN (MRERP)

- Authorized by Congress in WRDA 2007, Sec. 5018
- Effort led by USACE in partnership with the USFWS to develop a plan to mitigate, recover, and restore the Missouri River ecosystem
- Provides a scientific focused analysis of restoration, mitigation and recovery needs and alternatives for the Missouri River for the next 50 years (NEPA and Amended BiOP)
- Considers impacts and benefits to existing social, cultural, and economic resources in the basin
- MRERP targeted by MO congressional delegation
- Introduced amendments to the FY12 budget that halted spending
- HR 2354 eliminated spending in FY12
- Prior to suspension, MRERP had completed 4 years of a multi-year cooperative effort

# MISSOURI RIVER AUTHORIZED PURPOSES STUDY (MRAPS)

- Intended to provide a comprehensive review of the eight Missouri River mainstem system authorized purposes and infrastructure to determine if 1944 Flood Control Act continues to meet contemporary needs
- \$25 million authorized by Congress in 2009
- Only scoping and initial steps have been completed
- On Feb. 19, 2011, House Amendment 53 was passed which eliminated funding for MRAPS
- MRAPS targeted by MO congressional delegation
- Introduced amendments to the FY12 budget that halted spending
- HR 2354 eliminated spending in FY12

# MISSOURI RIVER ASSOCIATION OF STATES AND TRIBES (MoRAST)

- Regional interstate organization formed by joint resolution of the Governors of Wyoming, Montana, North Dakota, South Dakota and Kansas and the Mni Sose Intertribal Water Rights Coalition
- Formed to help resolve issues of concern to the basin states and tribes
- Serve as a forum to foster communication and information exchange among the member states, tribes and various other governmental units
- Facilitate the management of the natural resources of the Missouri River Basin, including water resources, fish and wildlife while considering the impacts to the economic, historical, cultural, and social resources
- Issue paper on Congressional funding for MRAPS and MRERP

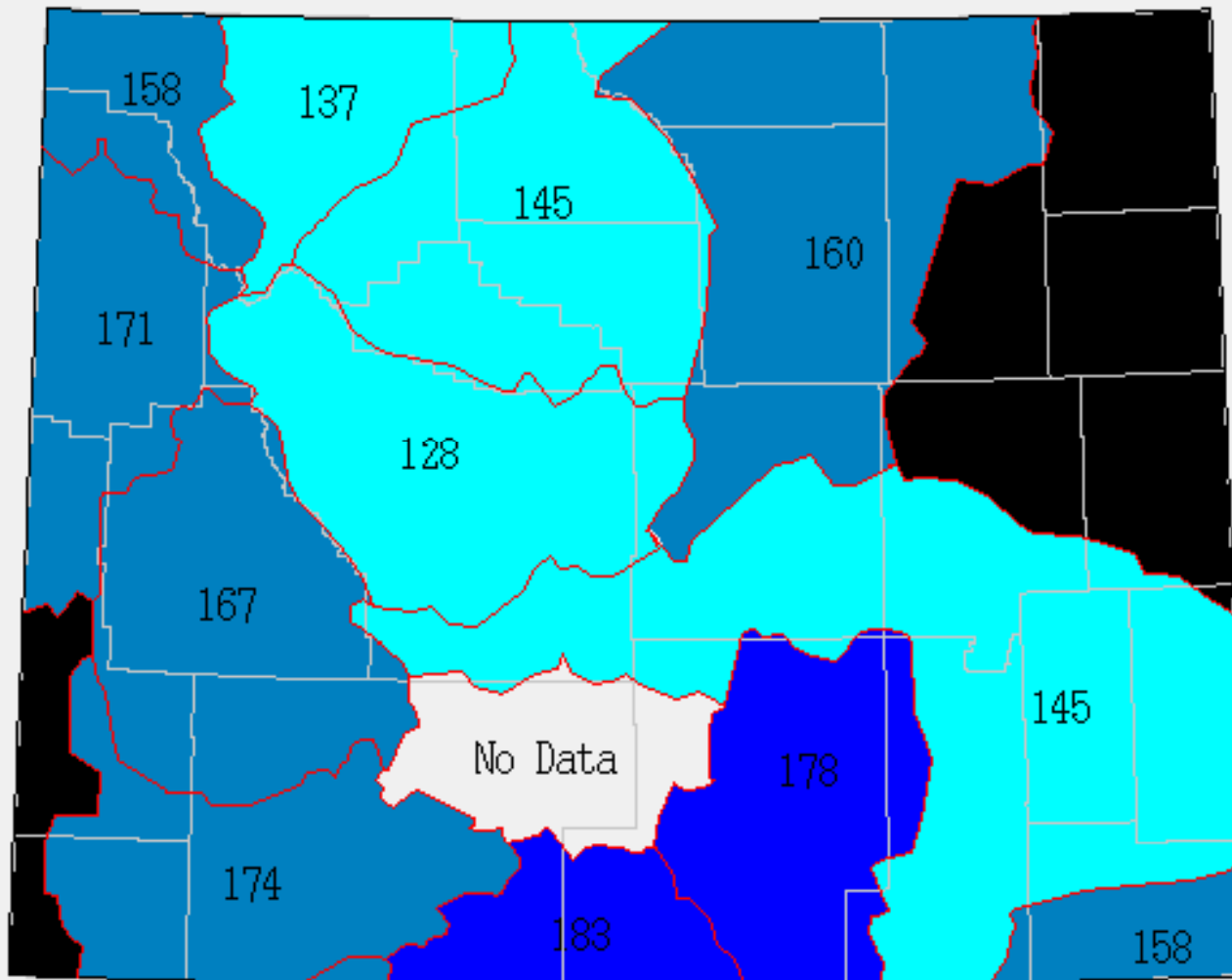


# Recap of Water Year 2011

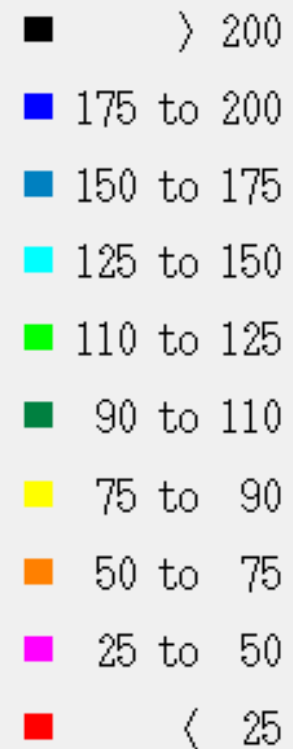


# Snowpack continued to increase due to May storms

SWE % of Average as of Friday, 06 May 2011



Percent  
of Average



\* = Data may not provide a valid measure of conditions

# Grassy Lake SNOTEL—May 2011



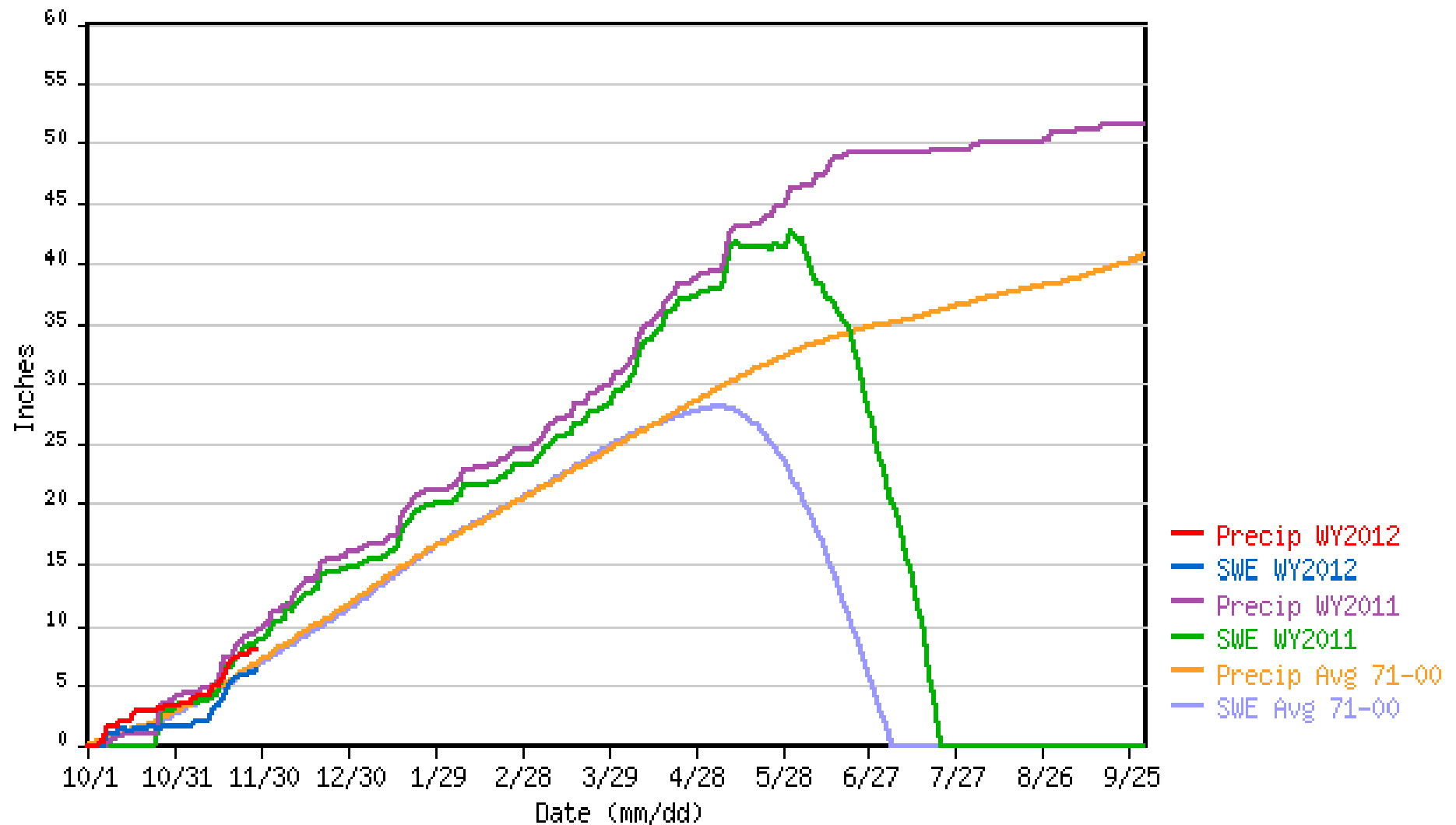


# Wind/Big Horn System

- Snow continued to build due to May and June events
- Fortunately June remained cool and the large snowpack released fairly slowly

# TOGWOTEE PASS SNOTEL as of 11/28/2011

\*\*\* Provisional Data, Subject to Change \*\*\*



# US 14A-Bighorn Mountains



# Opening Hwy 14A



# Shell Falls

over 50 mudslides impacted highways in WY (May-July)





# Approach to Wigwam Fish Hatchery



# US 26 Flooding



# US 26 after the flood waters have gone down



# Debris above causeway Bighorn Reservoir

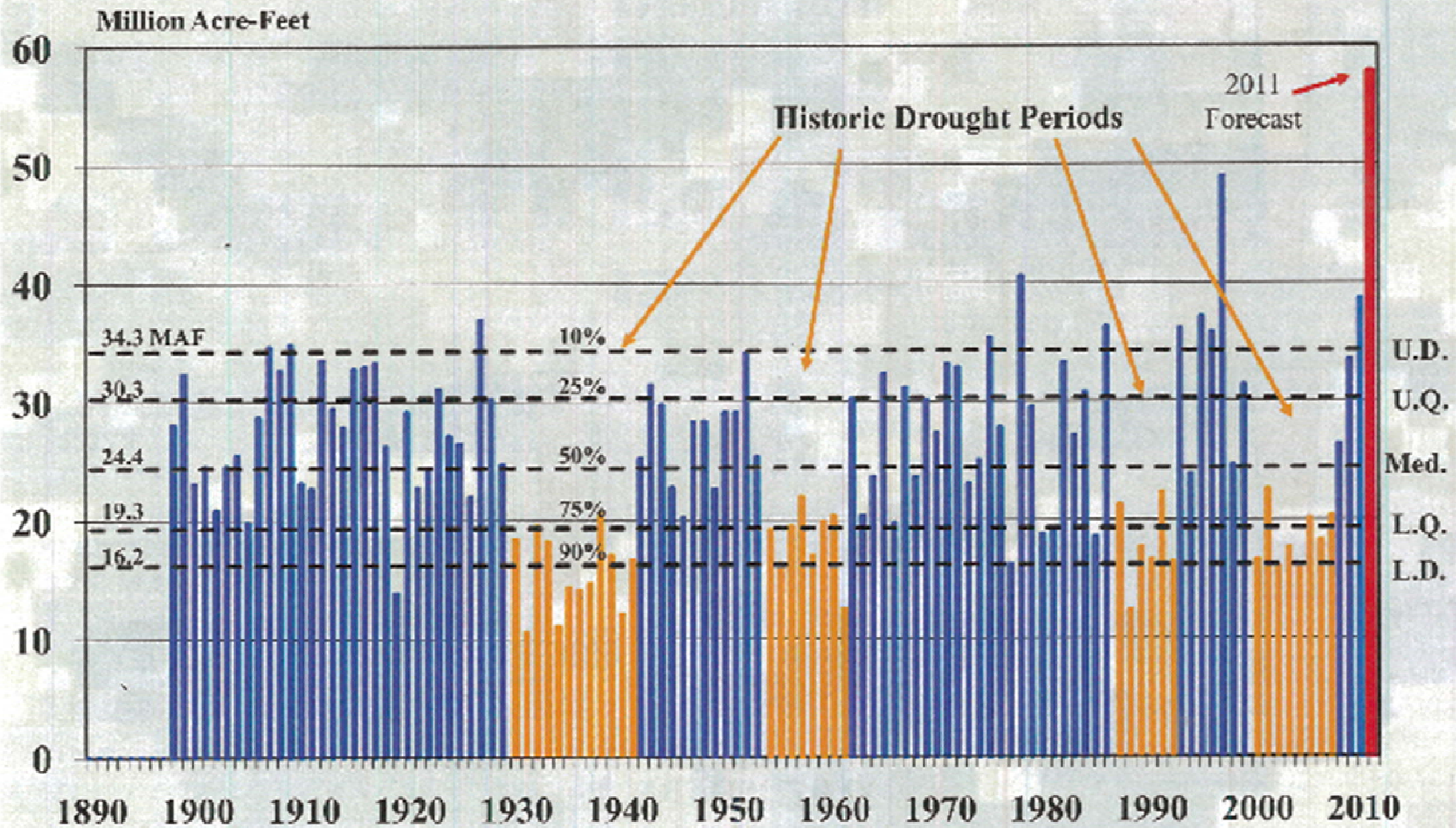


# Six mainstem facilities operated as designed

Although the inflows in 2011 far surpassed the design flows for the system, it performed well. The highest previous release at Garrison Dam above Bismarck and Oahe Reservoir above Pierre had been 65,000 cfs. In 2011, flows of 150,000 cfs were released.



# Missouri River Mainstem System Annual Runoff above Sioux City, IA





# Flood of 2011

- 2010 Runoff = 38.7 MAF (3<sup>rd</sup> highest)
- 3 consecutive years above average
- 2010 was also a lower basin flood year
- All flood control storage space was available prior to 2011 runoff season
- Downstream flood control operations in March and early April 2011



# 2011 – What Actually Happened

- 2011 runoff was 61.2 million acre-feet (MAF)
  - 247% of normal and the highest runoff in 114 years
  - May, June and July 2011 were 3 of top 5 highest months of runoff in 114 years of record
  - 2011 March – July runoff (48.4 MAF) exceeded the reservoir flood storage design flood (39.7 MAF)
  - System storage peaked at 72.8 MAF on July 1



# Flooding in Montana near Hardin, MT after May, 2011 rain event



AP



Hamburg, IA  
levee breach

# Photos from western Iowa taken by a MRRIC member's daughter, Maddison Sieck



Union Township  
Southeastern Nebraska

# Holt County, Northwestern MO



NRCS offices are actively involved with the Flood Recovery Task Force to aid farmers in dealing with Sedimentation removal/remediation





Woltemath Farms  
Hamburg, IA



# Bighorn Water Supply Forecast

(1000 acre-feet)

Forecast Points	April 1, 2012 Forecast of April-July Runoff			30 Yr. April-July Runoff Avg. <sup>2</sup>	Expected % of Avg.	Comparative Actual April - July Runoff			
	Reasonable Minimum <sup>1</sup>	Expected	Reasonable Maximum <sup>1</sup>			W. Yr. 2011	W. Yr. 2010	W. Yr. 2009	W. Yr. 2008
Bull Lake Reservoir	105	135	165	141.1	96	187	151	159	135
Wind River above Bull Lake Creek	280	380	480	412.4	92	696	408	546	412
Boysen Reservoir	350	550	750	574.4	96	995	861	803	522
Buffalo Bill Reservoir	550	700	850	679.3	103	1230	674	954	955

<sup>1</sup> The probability is estimated to be 9 chances in 10 that the actual volume will fall between the reasonable minimum and reasonable maximum.

<sup>2</sup> Average is based on the 1982-2011 period.



# Water Resources Data System

- WRDS Homepage
- Online Data
  - Water
  - Climate
  - Map Server
  - PRISM Climate Data
- Water Library
- State Climate Office
- Drought
- Cooperative Projects
  - Snowpack
  - Research Support
  - Other Water Sites

### CoCoRaHS



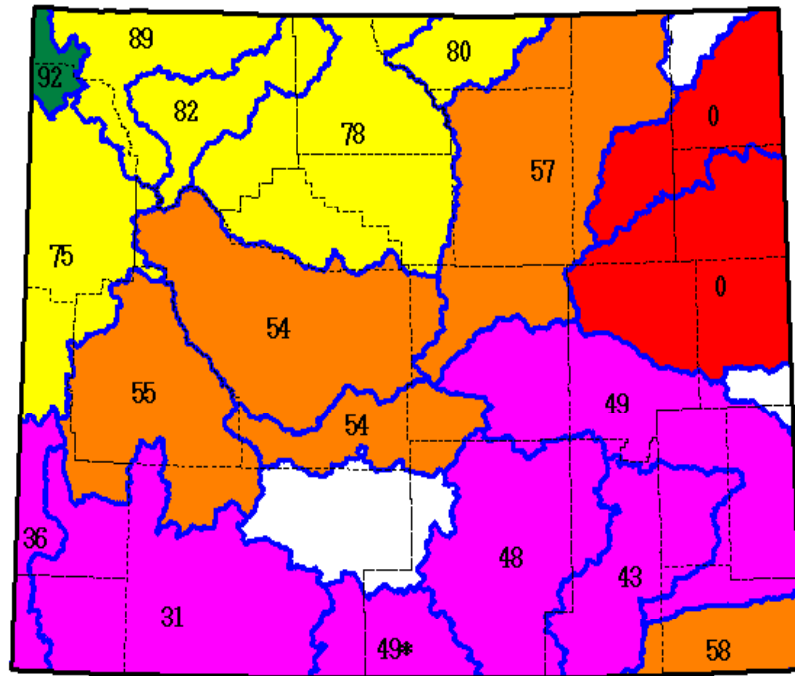
Water Resources Data System  
 Dept 3943  
 1000 E. University Ave.  
 Laramie, WY 82071

wrds@uwyo.edu  
 Ph (307) 766-6651  
 Fax (307) 766-3785

At 12:18pm, 24-Apr-2012  
 Temperature: 73.5°F  
 Humidity: 14%  
 Wind: 9.0 mph from W



SWE % of Average as of Tuesday, 24 April 2012



- Percent of Average
- > 200
  - 175 to 200
  - 150 to 175
  - 125 to 150
  - 110 to 125
  - 90 to 110
  - 75 to 90
  - 50 to 75
  - 25 to 50
  - < 25
  - No Data

\* = Data may not provide a valid measure of conditions



Questions ??

