



Development of Water Quality Standards for Willard Spur

Science Panel Coordination Meeting

Willard Spur Science Panel

January 12, 2012





Agenda

- 1. Overview of Work Completed in 2011**
 - Database/Summary Reports
 - Hydrology/Nutrient Loads
 - Macroinvertebrates
 - Diatoms
 - Water/Sediment Chemistry
- 2. RFPs and Science Panel Makeup**
- 3. Schedule for 2012**





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Overview of Work Completed in 2011

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Waterfowl Study

- **Collected a total of 18 birds on three trips**
- **GWTE, NOPI, GADW, NOSH, and MALL**
- **Initial dissection did not find food items in esophogus**
- **Still processing gut contents**
- **Will compare against results from other GSL wetlands**





Database

- **Will be independent but compatible with DWQ's AQMS database**
- **Will house and reference all project data; lab results, field measurements, photos**
- **Will be accessible via ftp site when it is complete**



Database

- **Received data from lab in late December**
- **Challenges with formatting received from laboratories**
- **Database is currently in MS Access and includes water and sediment chemistry**





Data Summaries

- **Have completed an initial review of chemistry and flow data**
- **Still finalizing database structure**
- **Will create summary documents of sampling/monitoring completed in 2011**



Flow Monitoring

- ★ USGS
- USBR
- ★ DWQ
- PWRWWTP

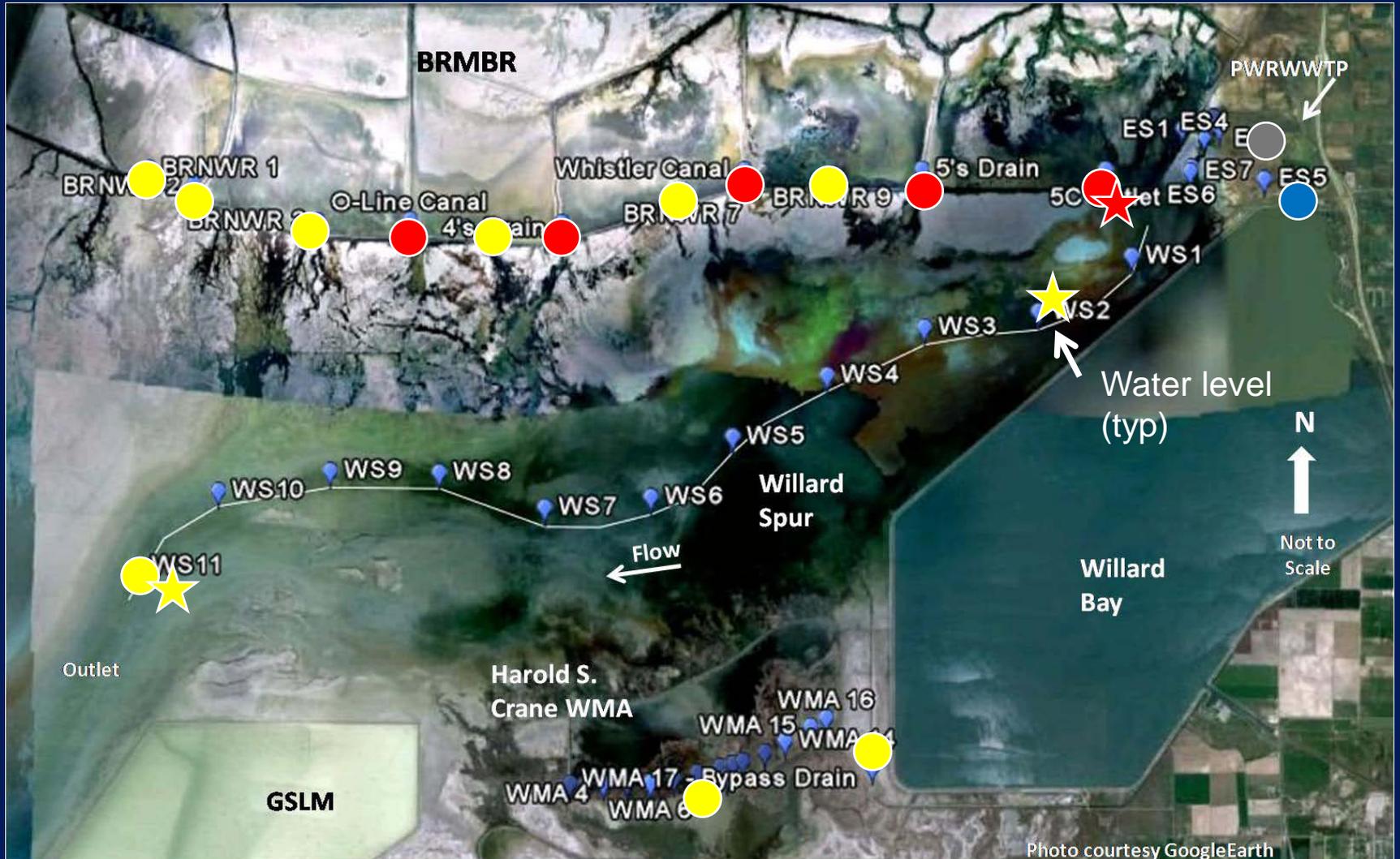


Photo courtesy GoogleEarth

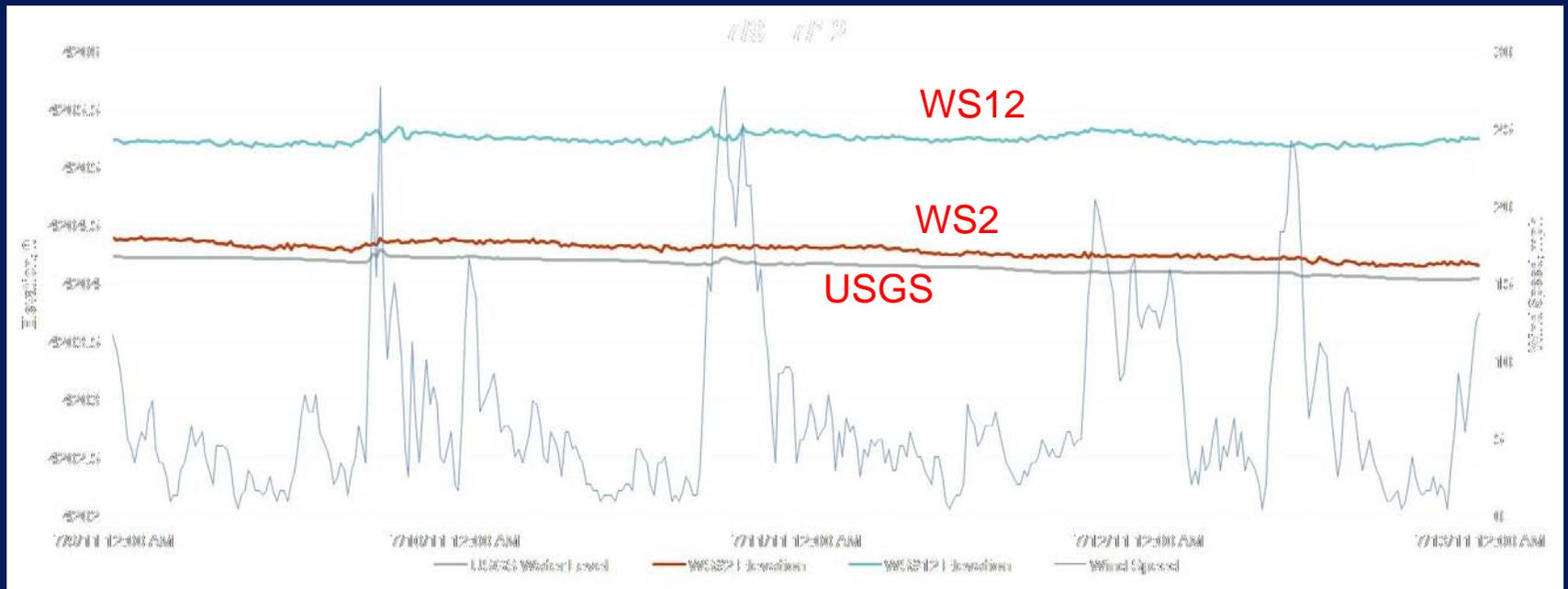


Data Conversion

- **Using USGS and USBR data**
- **Converting DWQ pressure transducer data into flow rates**
 - Auditing transducer data
 - Reconciling with USFWS/DWR operation records

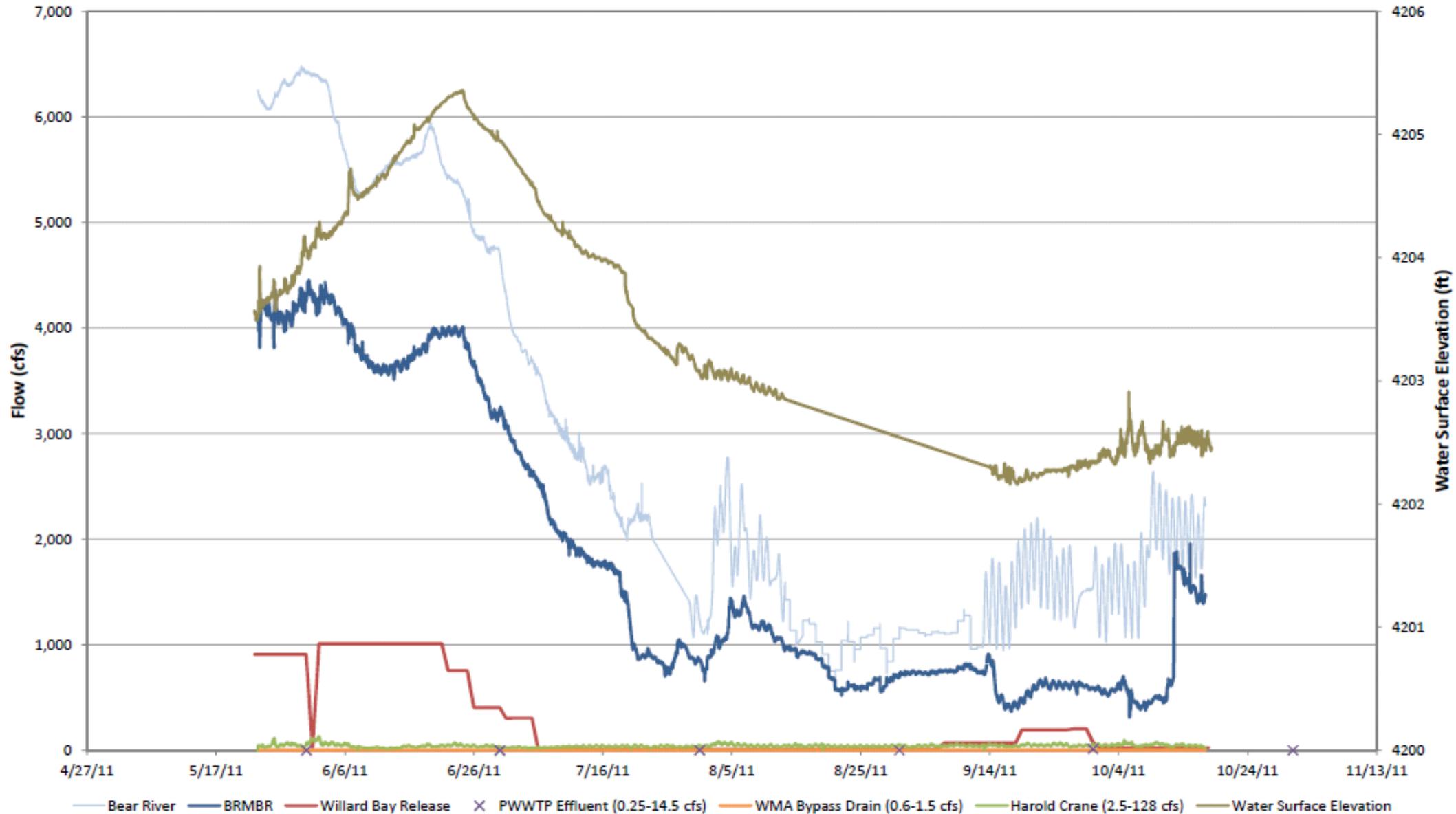


Water Surface Elevation



Preliminary Flow Results

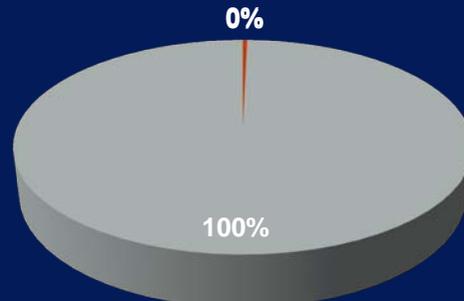
Flow into Willard Spur



Preliminary Nutrient Load Results

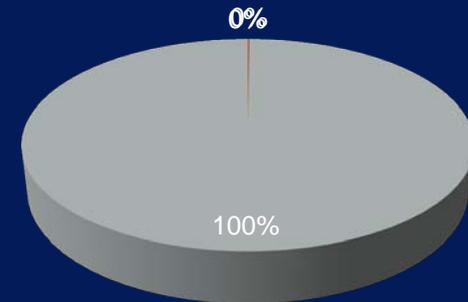
May, 2011 - Total Phosphorus Loads

■ Willard Perry WWTP ■ Willard Bay ■ Bear River Refuge



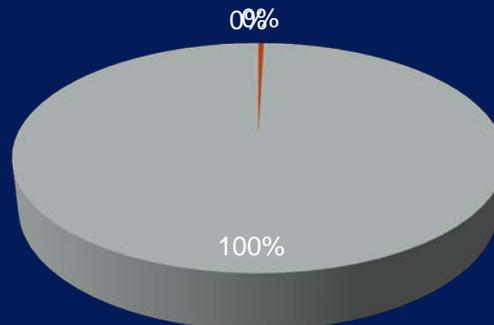
June, 2011 - Total Phosphorus Loads

■ Willard Perry WWTP ■ Willard Bay ■ Bear River Refuge



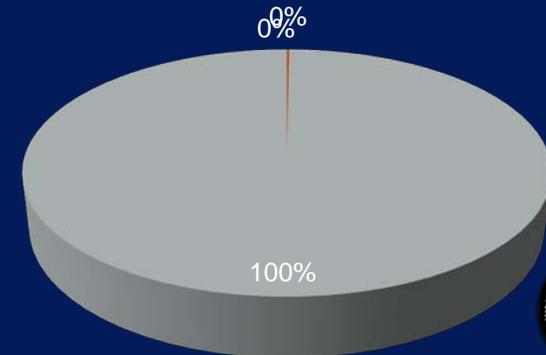
May, 2011 Total Nitrogen Loads

■ Willard Perry WWTP ■ Willard Bay
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June, 2011 Total Nitrogen Loads

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Preliminary Nutrient Comparison

- **WWTP**

- TP=1.56mg/L
- TN=15mg/L

- **BRMBR**

- TP=0.1 – 0.14mg/L
- TN=0.78-1.0mg/L

- **Willard Bay**

- TP=0.03-0.04mg/L
- TN=0.28-0.33mg/L

Development of Water Quality Standards for Willard Spur

Overview of Macroinvertebrate Data



Dr. Larry Gray
January 12, 2012

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Overview of Diatom Data



Dr. Sam Rushforth
January 12, 2012



Development of Water Quality Standards for Willard Spur

Overview of Chemistry Data

Jeff Ostermiller

January 12, 2012



Requests for Proposal

- **Status**

- Research Area No. 1 – Food Web

- *Prepared and submitted SOWs for Research Area No. 1 to PIs*
 - Avian studies – Dr. John Cavitt/WSU
 - Vegetation – Dr. Karin Kettenring/USU
 - Macroinvertebrates – Dr. Larry Gray/UVU
 - Fish studies – Dr. Wayne Wurtsbaugh/USU
- *Discussed in detail with Cavitt/Kettenring/Gray*
- *Any comments on SOWs?*





Requests for Proposal

- **Status**

- Research Area No. 2 – Hydrology

- *Scheduling meeting with USGS in the next few weeks to discuss 2012 revisions*
- *Key question is how to collaborate and leverage the resources of DWQ, USGS, USFWS, and DWR*
- *Goal is to measure flows, monitor water levels, and estimate nutrient loads (modeling)*





Requests for Proposal

- **Status**

- Research Area No. 3 – Nutrient Cycling

- *Submitted SOW to Science Panel and State Purchasing*
- *Working on details with State Purchasing*
- *Hope to get RFP out to USU, UofU, and USGS this month*
- *Any comments on the SOW?*





Science Panel Membership

- **Karin Kettenring has stepped down from the Science Panel**
- **Her expertise was primarily in wetlands ecology, vegetation, and invasive species**
- **Two nominations so far:**
 - Chris Cline/USFWS
 - Dennis Whigham/Smithsonian Env Res Ctr





Goals for 2012

- **By the end of February**
 - Finalize database structure and imports
 - Review and update QAPP and SOPs



Goals for 2012

- **By the end of March**
 - Draft summaries of the 2010 and 2011 datasets
 - Get Bear River Bay data (GSLM effort)
 - Refine sample collection /flow monitoring program
 - Review proposals for Res Area No. 3
- **April 5 Science Panel meeting**





Goals for 2012

- **By April 15**
 - Start implementation of sample collection and monitoring
- **By May 1**
 - Start nutrient cycling research





Goals for 2012

- **By June 30**
 - Research Area No. 1 - Draft literature reviews
 - Research Area No. 3 – Draft literature review
- **July 12 Science Panel meeting**





Goals for 2012

- **By September 30**
 - Research Area No. 1 - Final literature reviews with recommendations
 - Research recommendations for Research Area No. 3
- **October 11 Science Panel Meeting**
 - Identify 2013 research - Research Area Nos. 1 & 3

