NONPOINT SOURCE MONITORING & IMPLEMENTATION

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NPS Monitoring & Implementation

Outline

- Explain the Walla Walla Model
- The Spokane TMDL
  - What is Ecology tracking?
  - How will tracking NPS work?
  - How will the information be used?
- Implementation update
- Next TMDL meeting topics

Walla Walla Model

- Contact groups implementing nonpoint projects
  - Conservation districts
  - Non-profits
  - U.S. Dept. of Agriculture
  - City, County, State agencies
  - Tribes
  - Salmon recovery groups
  - Others as appropriate

What data do we track?

- Agricultural best management practices
  - Riparian buffers
  - Livestock exclusion fencing
  - Off-stream watering
  - Direct seed farming/conservation tillage
  - Conservation Reserve Program
  - Manure storage/management improvements
  - Others as appropriate
  - Location of project if possible
- Challenges – Conservation districts and USDA are not allowed to provide detailed location data. Data must be generalized.

What data do we track, cont.d?

- Urban best management practices
  - Low impact development
  - Stormwater infrastructure improvements
  - Riparian buffers
  - Good housekeeping
    - Street sweeping
    - Cleaning catch basins
    - Collecting hazardous materials
    - Composting green waste
    - Eliminating illicit discharges, etc.

How do we collect data?

- Currently send a spreadsheet to groups to request updated data
- Some data are available from Internet (USDA, WA state databases, etc)
- Challenge – many different data collection tools currently used
  - Conservation Commission (CPDS)
  - Salmon Recovery Funding Board
    - PRISM
    - Habitat Work Schedule
  - How do we get all of these systems to interface – reduce duplication of efforts
  - Data collected in different formats and scales

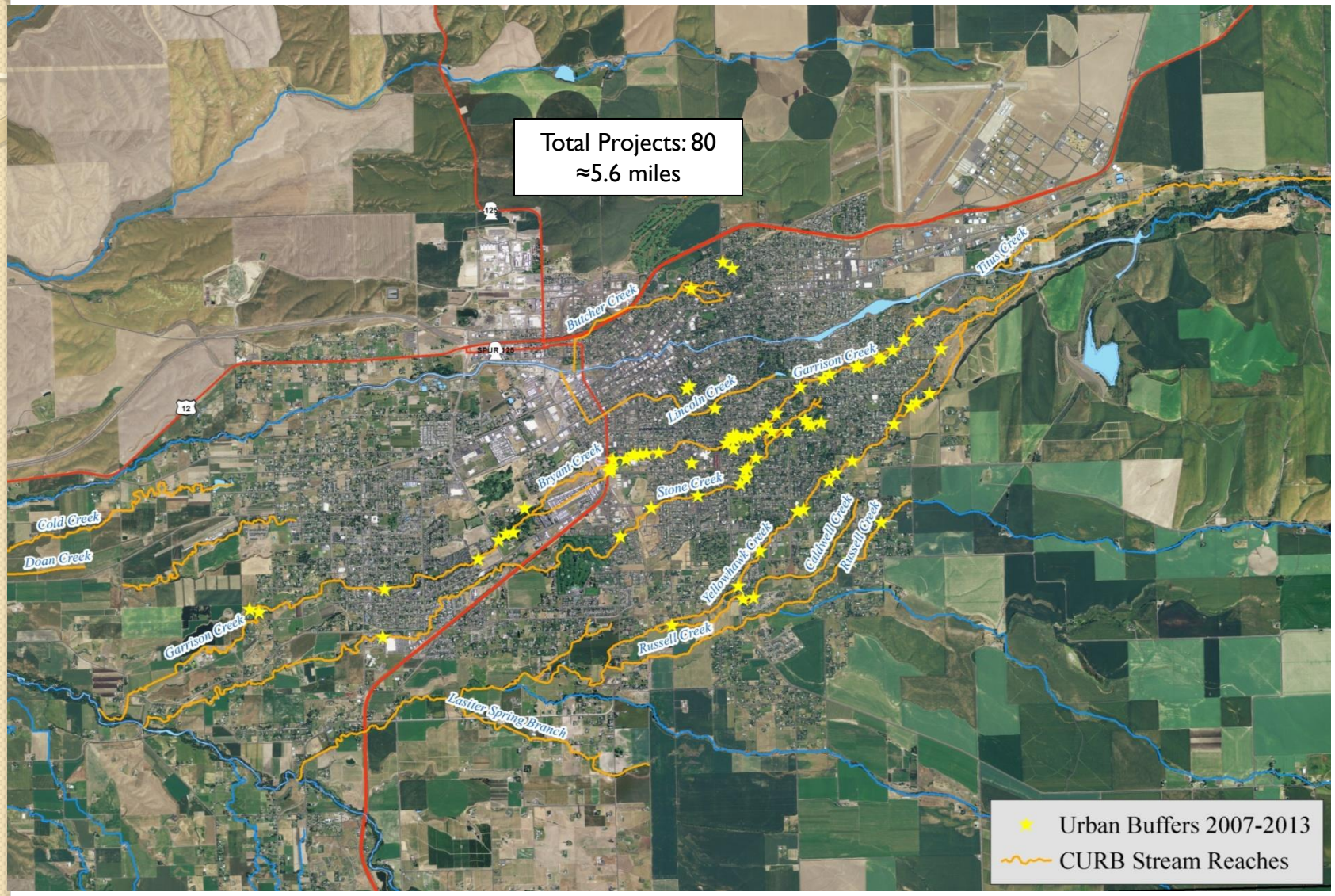
CURB – TSS, KC, & WWCCD

Stone Creek

Garrison Creek

Project	*Number Installed*	*Extent*	*Cost*	*Benefit*
Riparian Buffers	22	5.38 acres 1.36 miles ≈5,000 plants	$72,157	Increased shade, reduced erosion, filtration of pollutants, outreach to urban riparian owners
Education	≈460			Water Quality Education to students

Urban Buffer Locations



Many Small Waters:
Walla Walla, WA Streams and Spring Creeks Restoration

Improving water quality by planting urban riparian buffers

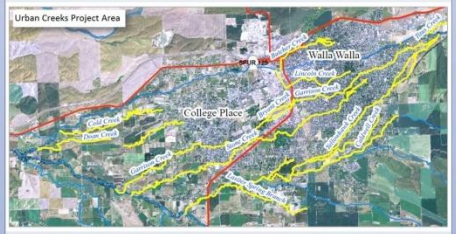
Kooskooskie Commons Tri-State Steelheaders Walla Walla County Conservation District

SUMMARY

Several of Walla Walla's urban creeks do not meet water quality standards for temperature, pH, fecal coliform bacteria, dissolved oxygen, chlorine, PCBs and chlorinated pesticides. Local project partners work to improve water quality through public outreach and by helping urban landowners install riparian buffers.

LOCATION

Ours is a bi-state watershed located in northeast Oregon and southeast Washington. The Walla Walla River's headwaters are located in the Blue Mountains, which define the eastern extent of the watershed. The Walla Walla River and its primary tributaries, Mill Creek and the Touchet River, are the three primary surface channels of the system. They coalesce within the Walla Walla valley before draining to the Columbia River.



CURRENT CONDITIONS

Walla Walla, home to about 30,000 people, was named the "place of many small waters" because of dozens of spring fed creeks and other streams that flow through the valley. These creeks add to the character and culture of the community by enhancing property values and offering many opportunities to enjoy natural beauty within the urban area. Although cool and clean at their source streams, the spring creeks are degraded as they flow through town before reaching ESA-listed salmon and steelhead rivers downstream.

Contributing Factors:

- Destruction of riparian habitat to make space for tidy residential landscaping
- Pesticides and fertilizers applied to lawn turf that is planted to the edge of the creek
- Dumping of garbage, animal and yard waste in streams
- Septic runoff and swimming pool waste water

COMMUNITY OUTREACH

We are working to increase awareness about our local streams and provide information to the public about how to improve conditions.

Signs posted at a restoration project site.

Information booth at community event.

RESTORING URBAN BUFFERS

Since 2006, more than three miles of riparian buffer have been installed at 68 sites along distributaries and spring creeks in Walla Walla and College Place. Riparian restoration has been implemented on all streamside public properties in Walla Walla including parks and schools.

Top: Stone Creek was overrun with invasive reed canary grass and yellow flag iris, which outcompete most native riparian species.
Bottom: One year after planting. Geotex weed barrier fabric was used to control canary grass allowing the native species to become established.

Many private homeowners, business owners and churches voluntarily agree to install riparian buffers along their streams. Each participating landowner commits to a ten-year maintenance agreement, is involved in project planning and provides cash or in-kind matching contributions. Landowner compliance, plant survival and project success are monitored on an annual basis.

The restored riparian areas will:

- Create shade to keep water temperatures cool
- Prevent bank erosion by establishing dense root systems
- Filter polluted runoff from adjacent land
- Improve wildlife habitat
- Enhance green spaces within the community
- Promote biodiversity

A Stone Creek urban riparian buffer project from start to finish.

HANDS-ON LEARNING

The projects involve hundreds of community and student volunteers in addition to a crew of inmates from the Walla Walla Penitentiary trained to become skilled in riparian restoration.

IMPLEMENTING WATERSHED PLANS

This work implements multiple Walla Walla Watershed Total Maximum Daily Load (TMDL) Water Quality Improvement plans by applying best management practices for urban areas and conducting outreach activities to raise awareness and promote adoption of behavioral changes that reduce nonpoint source pollution.

ACCOMPLISHMENTS

68 urban riparian buffers completed
4 miles of stream restored
11 acres riparian buffer installed
9,500 native trees, shrubs, flowers, and groundcovers planted
Over 100 volunteer work parties held

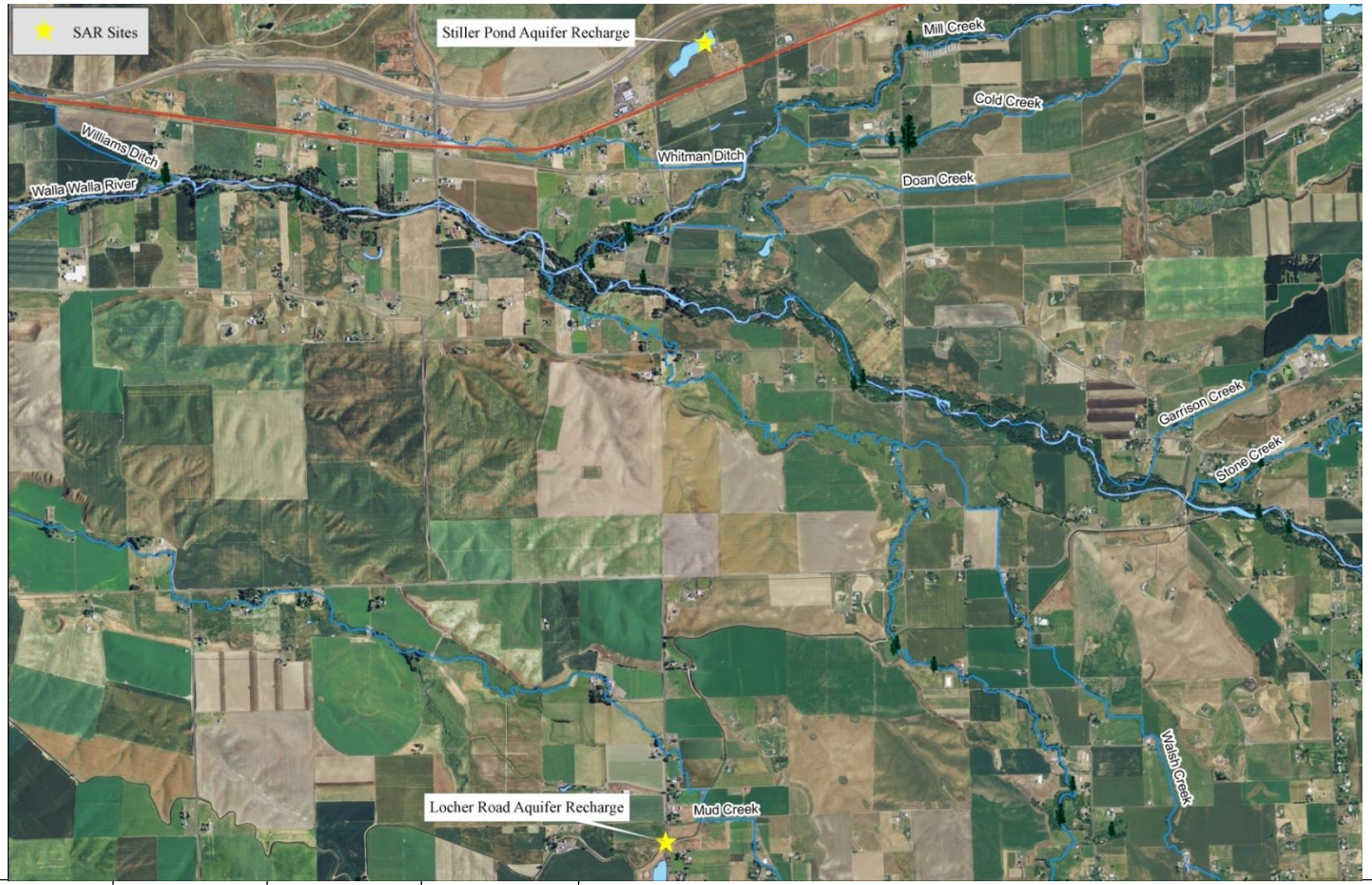
PROJECT PARTNERS

Tri-State Steelheaders
Kooskooskie Commons
Walla Walla Parks and Recreation
Walla Walla Public Schools
Walla Walla County Conservation District
Walla Walla Basin Watershed Council
private homeowners
three local colleges

FUNDING PROVIDED BY:
Washington State Department of Ecology
National Fish and Wildlife Foundation
Washington Department of Fish and Wildlife

Envelope for business cards

Walla Walla Basin Watershed Council



Project	*Number Installed*	*Extent*	*Cost*	*Benefit*
Locher Rd SAR	1	62.27 ac-ft	≈$40,000	Recharge shallow gravel aquifer November 1- May 31, reduce need to withdraw surface water in summer
Stiller Pond SAR	1		N/A	Did not operate in 2013
Goal is 20,000 ac-ft per year (6.5 billion gallons) of recharge. Worked with Ecology to develop uniform water quality sampling plan for WA SAR sites (PCB monitoring is expensive).				

Tri-State Steelheaders

Project	*Details*	*Cost*	*Benefit*
Bridge to Bridge Levee Removal	1/2 mile levee removed, 2 small logjams, 550 feet LWD	$610,000	Restore floodplain function and aquifer recharge, stabilize banks to reduce erosion

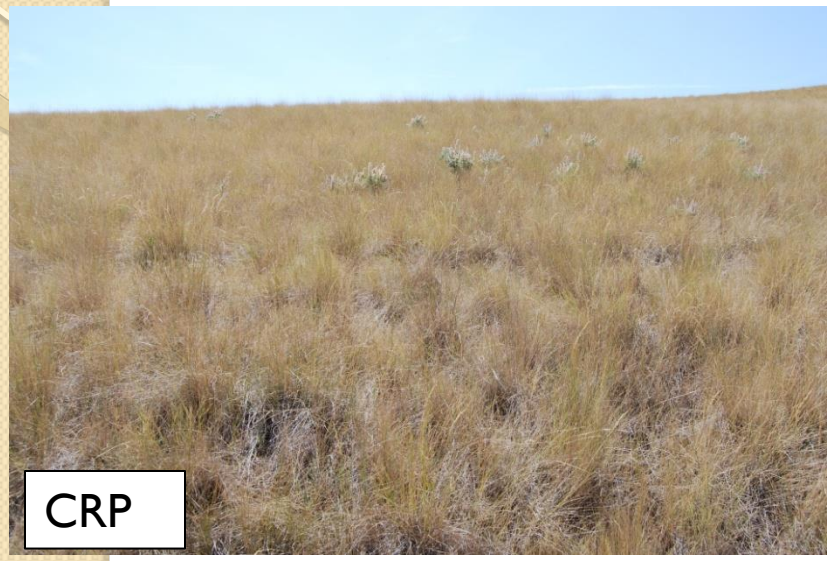
City of Walla Walla

Project	*Stream*	*Date Completed*	*Estimated Benefit*	*Total Project Cost*
13th Ave Bioretention Swales (3,200 linear ft.)	Mill Creek	2013	Reduced pollution to stream	$300,000
Myra Rd Bioretention Swales (250 linear ft.)	Garrison Creek	Ongoing	Reduced pollution to stream	$70,000
Outfall Reconnaissance Inventory (ID illicit discharges to streams)	Butcher, Bryant, Lincoln, Kathy, and Barber Creeks; Peter Spring, Owen Spring; Airport Drainage Ditch	2013	Reduced pollution to streams	$50,000
Orchard Street Sidewalk (discharge switched to dry wells)	Garrison Creek	2013	Reduced pollution to stream	$55,000
UIC Assessment (ID facilities with groundwater pollution risk)	Mill Creek	2013	Reduced pollution to groundwater	$45,000
Pleasant/Home/Fern (upgraded stormwater catch basins)	Garrison Creek	2013	Reduced pollution to stream	$25,000

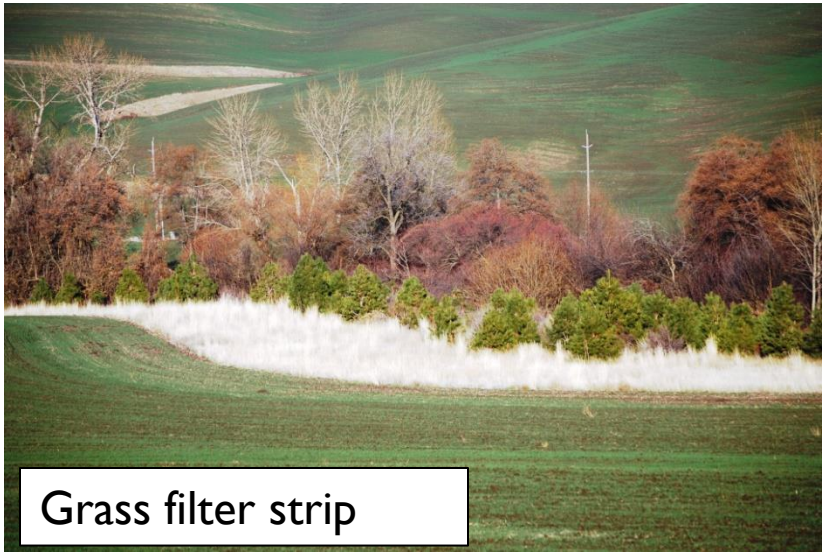
Walla Walla County Public Works

Project	*Details*	*Cost*	*Benefit*
Prospect Ave Phase 2	LID used to mitigate stormwater onsite, 0.5 acres of hydroseeding, 311 sq yds of landscaping, erosion and sediment control during construction	$485,000	Reduce stormwater pollution to streams

USDA – NRCS/FSA



CRP



Grass filter strip

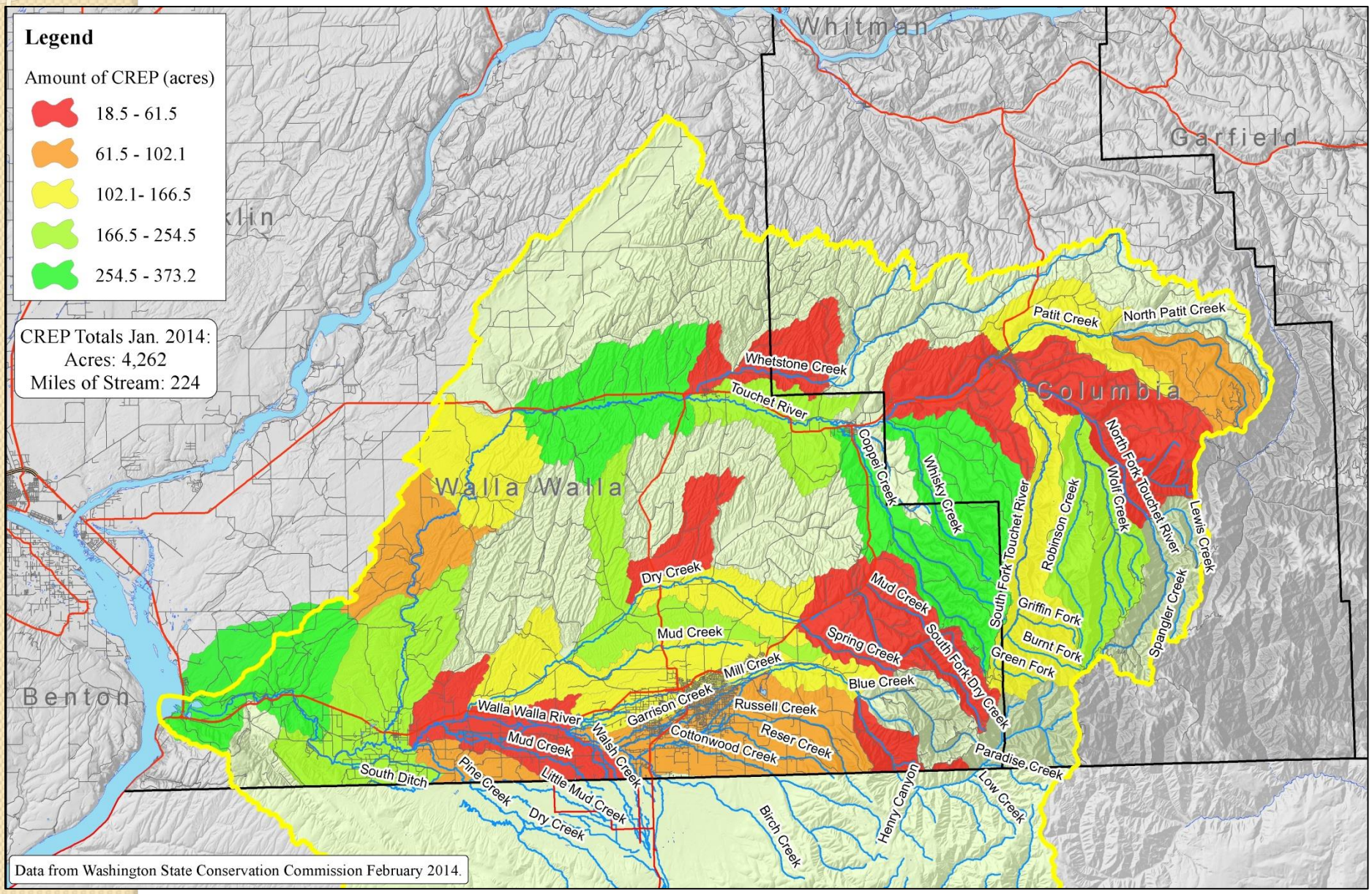
Project	*Number Installed*	*Extent*	*Cost*	*Benefit*
Conservation Reserve Program - Walla Walla & Columbia Counties October 2013	Varies	193,000 acres	Est. $9.65 million/yr ($50/acre)	Est. 1.9 million tons reduced erosion/yr (10 tons/acre/yr)

Source: USDA FSA 2014 CRP data

Walla Walla County Conservation District

Project	*Extent*	*Cost*	*Benefit*
CREP Riparian Buffers	38.3 acres planted	$41,876	Increased shade, reduced erosion, filtration of pollutants
McCaw Instream Restoration	Multiple log jams and LWD structures	$203,000	Reduced bank erosion by est. 9,000 tons/yr, protected CREP buffer
GFID #13 North Lateral Piping	5.6 miles of pipe & 19 pump stations	$2.96 million	1,655 ac/ft of water placed in trust
Bergevin-Williams/Old Lowden Consolidation and Piping	Removed 2 pushup dams, 9.6 miles of pipe & 18 pump stations	$2.9 million	2,404 ac/ft of water placed in trust

Conservation Reserve Enhancement Program (CREP)



THE SPOKANE TMDL

What is Ecology Tracking?

- Lots of information about individual BMPs:
  - The BMP installed
  - Location (waterbody, county, WRIA, lat/long, etc.)
  - Info about the BMP (size of buffer, # plants, kind of plants)
  - Date installed
  - Cost & funding source
  - Contact information
  - Info about status and follow-up monitoring
  - Project goal
  - Etc.

- Ecology grants and loans spent on implementation

Difficult Things To Track – But Should

- Education programs
  - individual activities
  - multiple types of outreach (newsletters, classroom, etc.)
- Monitoring activities
  - Multiple years
  - Several sites
  - Different types of monitoring
- Others?
- Any Ideas for tracking the difficult stuff?

How will NPS tracking work?

1. Must complete the database first!
2. Work with partners to get their implementation information
   - Ecology sends a spreadsheet or form for partners to complete
     - information on BMPs presented earlier
   - Quarterly (but may have to adjust)
   - Partners send completed spreadsheet back to Ecology
3. Ecology will compile and enter all the information into one database
4. This process will continue for the life of the TMDL

What will Ecology do with the database?

1. Generate a report and post on Spokane TMDL website

2. Information will be entered into GIS
   - Will try to make map available on internet

How will the NPS Information be Used?

- Inform the Nonpoint Source Workgroup
- Help determine:
  - Where to target additional:
    - Education
    - BMP installation
  - Nonpoint source phosphorus reductions
  - What types of BMPs are most common
  - When effectiveness monitoring should begin
  - Progress

Nonpoint Source Workgroup

- Focused & Task Oriented on:
  - How to quantify non-point load reductions
  - Partnering together on projects
  - Leveraging funding, contacts, local knowledge to successfully complete projects
  - Prioritizing types of activities & where they should occur
- Mostly made up of folks who do NPS work
- Work on scheduling a meeting soon

IMPLEMENTATION UPDATE

Lake Spokane Bulkhead Removal Project

Before

The bulkhead was failing

- Erosion & water landward of bulkhead

Landowners desired a naturalized shoreline

Partners:

- Spokane CD
- Lk Spokane Assn
- Ecology
- Permitting agencies

Lake Spokane Bulkhead Removal Project

After

(But before planting!)

The project involved:

- removing bulkhead and some soil
- recontouring
- bringing in gravels and larger rocks
- planting native sedges, shrubs, & trees

Benefits:

- increased safety due to gradual slope
- better aesthetic value
- more privacy
- improved water quality

Questions?

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NEXT TMDL MEETING TOPICS

- 2012 - 2013 Biennial Report
- Other?