

Lower Boise River and Tributaries Applied BMPs and Inventory



Karie Pappani

Idaho State Soil and Water Conservation Commission

TMDL Program Lead

09/11/14

Outline

- * Background-The TMDL Process
- * TMDL Implementation Plans
- * Impaired Waters in the Lower Boise River Subbasin
- * Pollutants
- * Mason Creek Watershed Inventory
- * Conservation Efforts/BMPs Applied
- * Sources of Funding
- * Summary
- * Questions

Background-The TMDL process

- * DEQ assesses lakes, streams, & rivers
- * DEQ writes a Subbasin Assessment (SBA) and Total Maximum Daily Load (TMDL) for watersheds in Idaho
- * DEQ submits the SBA-TMDL to EPA
- * Implementation plans are written by the following designated agencies

BLM-Bureau of Land Management

IDL-Idaho Department of Lands

SWC-Idaho State Soil & Water Conservation Commission

USFS-United States Forest Service

Purpose of Implementation Plans

- * To incorporate ideas from landowners, districts, IASCD, SWCC, NRCS, WAG, and DEQ
- * To describe the condition of the watershed
- * To establish a plan to meet TMDL targets
- * To describe how to reduce pollutant loading
- * To improve water quality
- * To describe past and future conservation efforts
- * To provide recommendations for BMPs and priority areas for treatment

Impaired Waters in the Lower Boise River Subbasin

Lower Boise River Subbasin 17050114

~860,000 acres, 77% private land

❖ Boise River

* Indian Creek

* Fifteenmile Creek

* Fivemile Creek

* Tenmile Creek

* Mason Creek

* Sand Hollow Creek

* Willow Creek

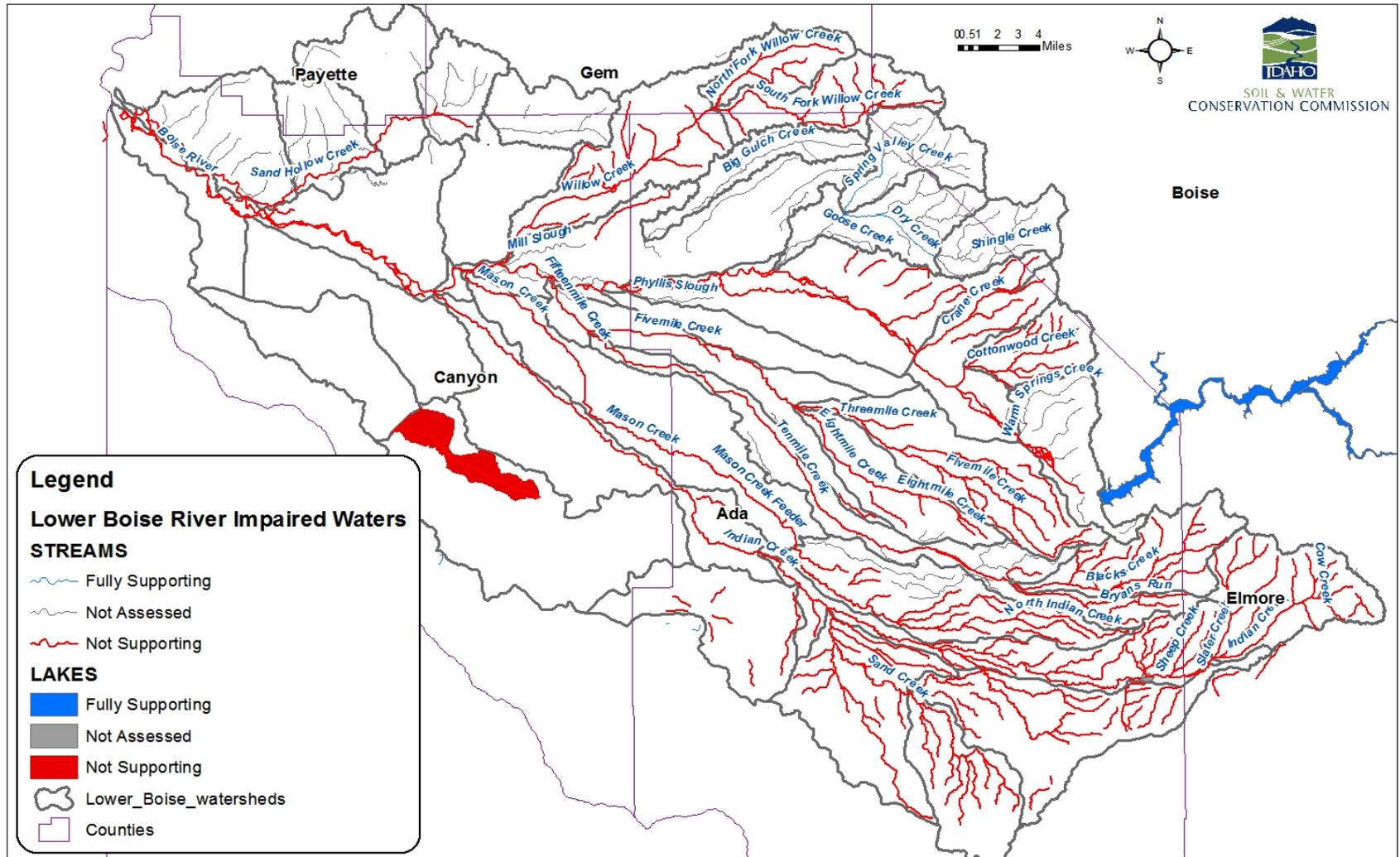
Pollutants

- * Sedimentation/siltation
- * *E. coli*
- * Phosphorus
- * Temperature

Pollution

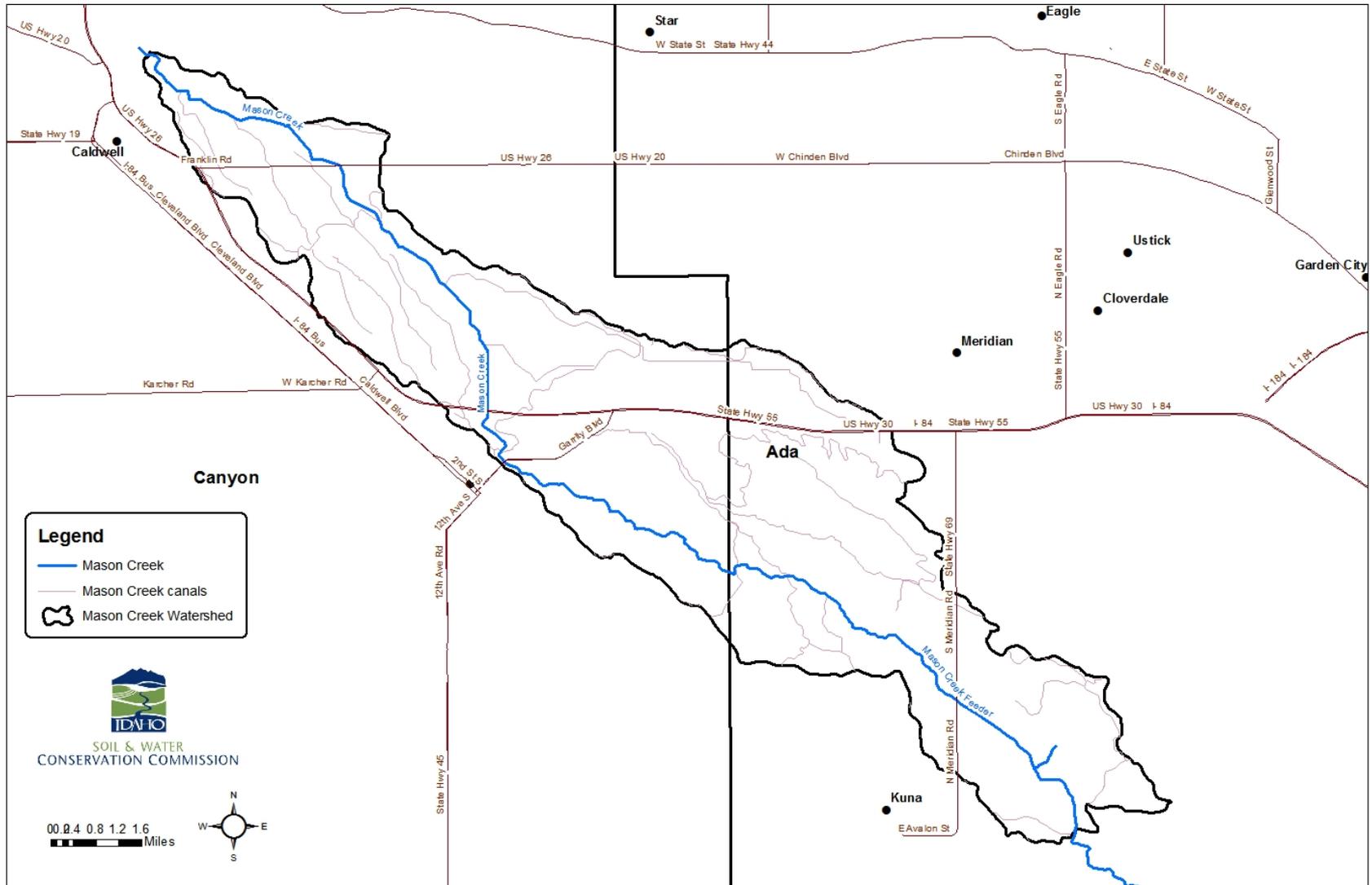
- Low flow alterations

Lower Boise River Subbasin Impaired Waters

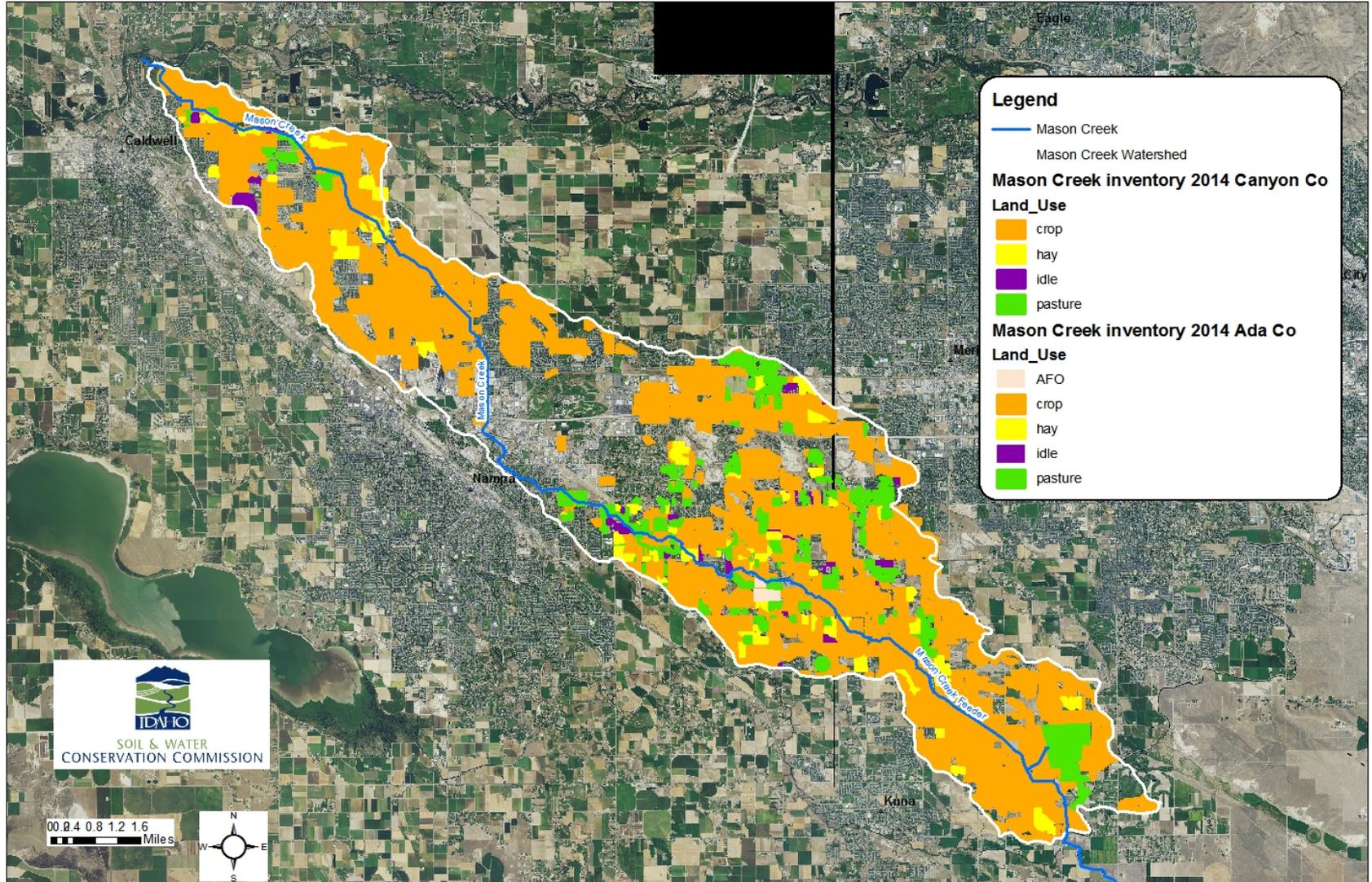


Mason Creek Watershed Inventory

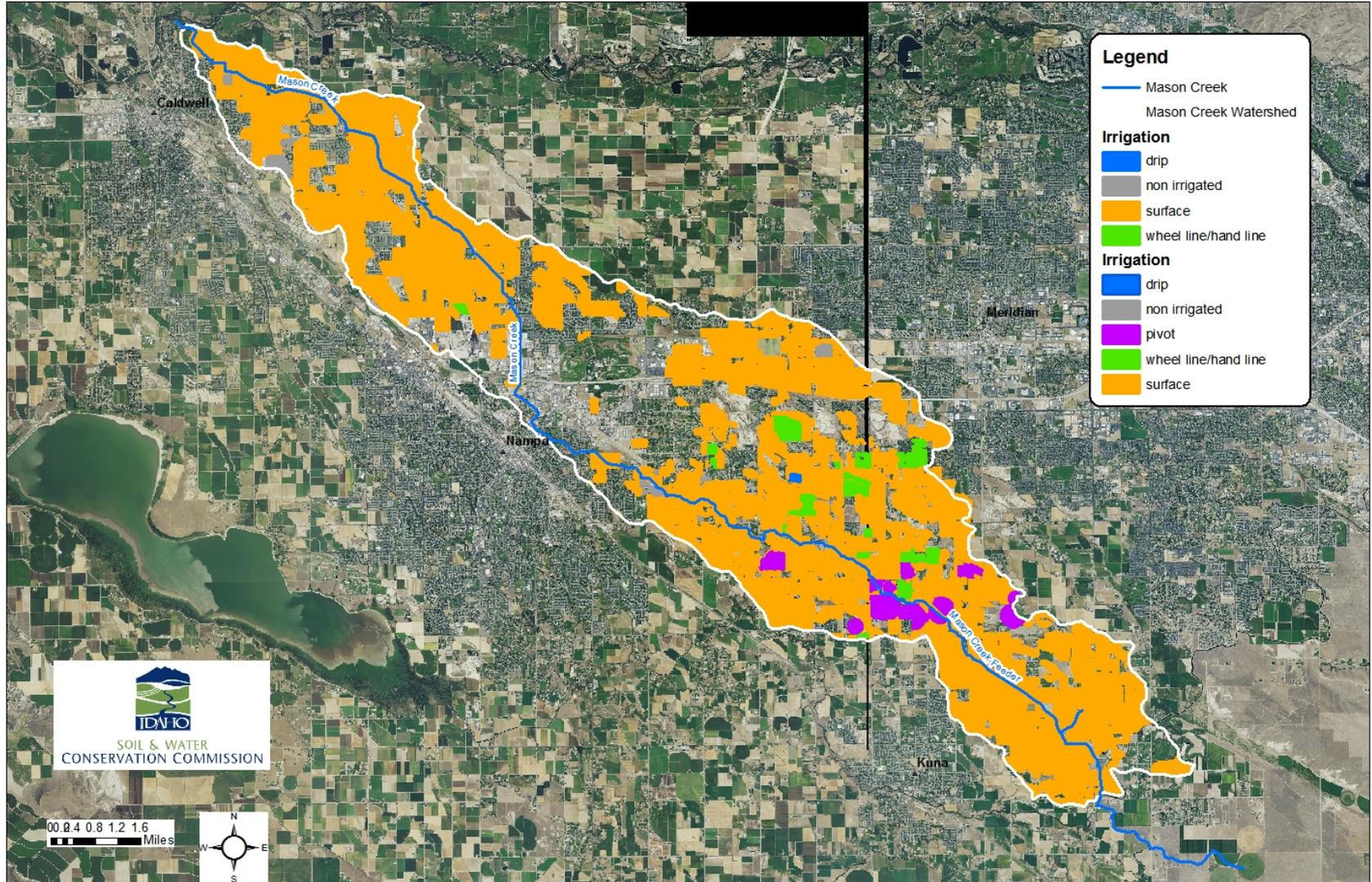
39, 640 total acres/ 24, 500 ac private ag land



Mason Creek Land Use Inventory



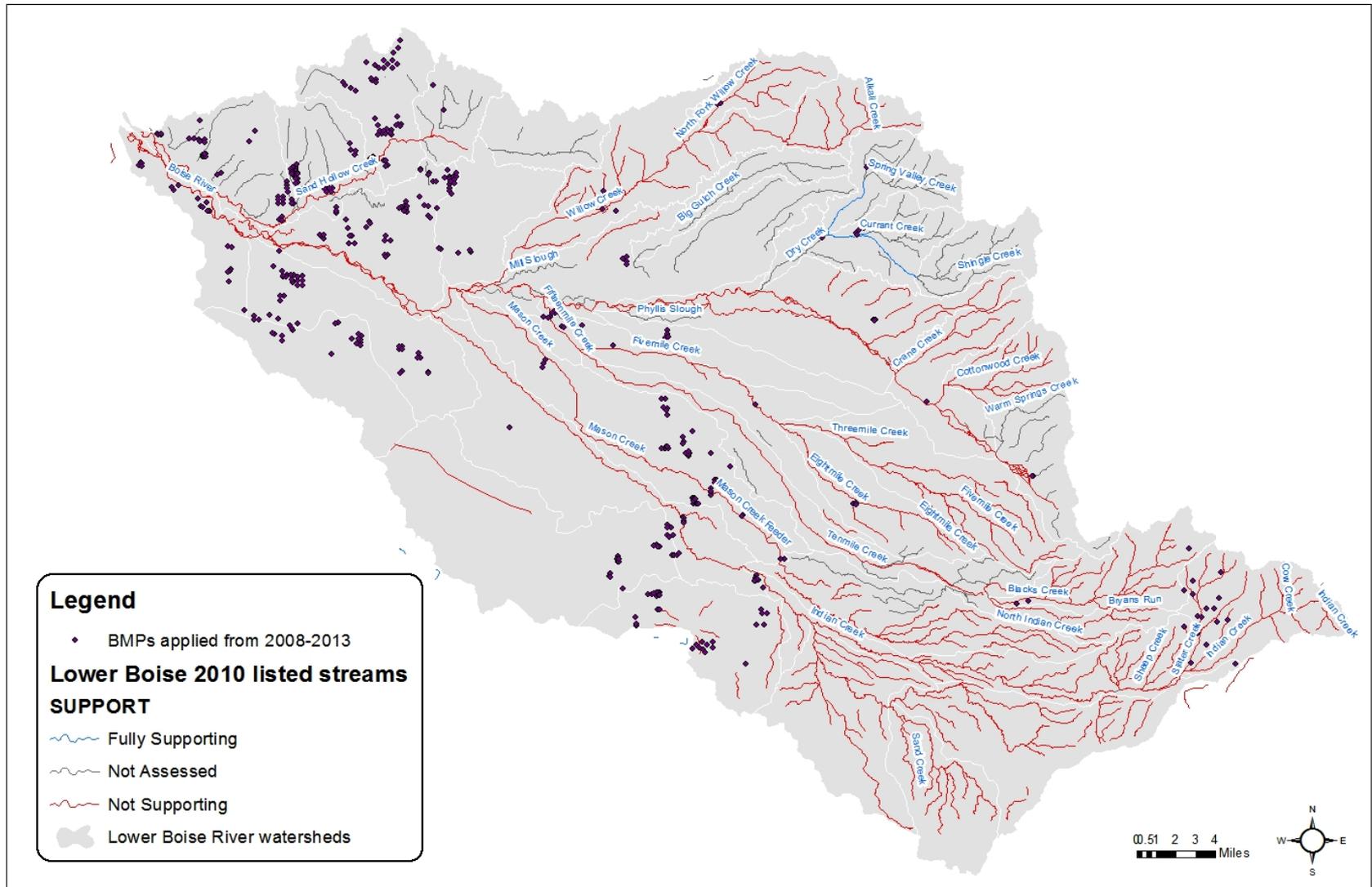
Mason Creek Irrigation Inventory



Mason Creek BMPs

| Mason Creek watershed | Sum of Land Unit Acres | Sum of Applied Amount |
|--|---------------------------|--------------------------|
| Conservation Crop Rotation | 63 | 63 acres |
| Surface Roughening | 63 | 63 acres |
| Conservation Crop Rotation | 1 | 1 acre |
| Cover Crop | 1 | 0.2 acres |
| Fence | 80 | 6,193 feet |
| Forage and Biomass Planting | 109 | 97 acres |
| Integrated Pest Management (IPM) | 6 | 6 acres |
| Irrigation Pipeline | 55 | 3,333 feet |
| Irrigation System, Microirrigation | 14 | 14 acres |
| Irrigation System, Surface and Subsurface | 4 | 4 acres |
| Irrigation Water Conveyance, Pipeline, High-Pressure, Underground, Plastic | 6 | 1,030 feet |
| Irrigation Water Management | 150 | 149 acres |
| Livestock Pipeline | 54 | 1,101 feet |
| Nutrient Management | 37 | 37 acres |
| Prescribed Grazing | 9 | 9 acres |
| Pumping Plant | 51 | 4 each |
| Seasonal High Tunnel System for Crops | 2 | 4,674 square feet |
| Sprinkler System | 71 | 53 acres |
| Structure for Water Control | 53 | 7 each |
| Upland Wildlife Habitat Management | 3 | 2 acres |
| Watering Facility | 9 | 1 each |
| Windbreak/Shelterbelt Establishment | 15 | 3,860 feet |

Lower Boise River Subbasin: BMPs applied from 2008-2013



Conservation Efforts

TABLE 1. Best Management Practices (BMPs) installed in the Lower Boise Subbasin (October 2008-December 2013)

| Practice Name | Practice Code | Sum of Applied Amount | Applied Units | Sum of Land Unit Acres |
|--|---------------|-----------------------|---------------|------------------------|
| Above Ground, Multi-Outlet Pipeline | 431 | 760.0 | ft | 62.4 |
| Agricultural Energy Management Plan, Landscape - Written | 124 | 1.0 | no | 136.2 |
| Agricultural Energy Management Plan, Headquarters - Written | 122 | 1.0 | no | 5.9 |
| Anionic Polyacrylamide (PAM) Application | 450 | 58.4 | ac | 58.4 |
| Channel Bank Vegetation | 322 | 2.0 | ac | 12.8 |
| Channel Bed Stabilization | 584 | 2,000.0 | ft | 15.0 |
| Comprehensive Nutrient Management Plan | 100 | 1.0 | no | 10.0 |
| Conservation Cover | 327 | 17.2 | ac | 49.5 |
| Conservation Crop Rotation | 328 | 1,306.3 | ac | 1,311.2 |
| Cover Crop | 340 | 67.4 | ac | 100.6 |
| Dam, Diversion | 348 | 1.0 | no | 12.8 |
| Fence | 382 | 8,743.0 | ft | 151.4 |
| Field Border | 386 | 7.6 | ac | 18.1 |
| Forage and Biomass Planting | 512 | 130.6 | ac | 141.1 |
| Forage Harvest Management | 511 | 98.4 | ac | 114.5 |
| Integrated Pest Management (IPM) | 595 | 656.2 | ac | 655.7 |
| Irrigation Pipeline | 430 | 59,984.0 | ft | 833.8 |
| Irrigation Regulating Reservoir | 552 | 1.0 | no | 16.2 |
| Irrigation Reservoir | 436 | 0.4 | ac-ft | 4.7 |
| Irrigation System, Microirrigation | 441 | 593.2 | ac | 675.2 |
| Irrigation System, Surface and Subsurface | 443 | 39.8 | ac | 39.8 |
| Irrigation Water Conveyance, Corrugated Metal Pipeline | 780 | 172.0 | ft | 80.6 |
| Irrigation Water Conveyance, Ditch and Canal Lining, Plain Concrete | 428A | 755.0 | ft | 30.6 |
| Irrigation Water Conveyance, Pipeline, High-Pressure, Underground, Plastic | 430DD | 17,155.0 | ft | 368.3 |
| Irrigation Water Conveyance, Pipeline, Low-Pressure, Underground, Plastic | 430EE | 780.0 | ft | 74.5 |
| Irrigation Water Conveyance, Pipeline, Steel | 430FF | 348.0 | ft | 112.8 |
| Irrigation Water Management | 449 | 1,894.4 | ac | 1,949.1 |
| Livestock Pipeline | 516 | 18,241.0 | ft | 1,217.4 |
| Mulching | 484 | 0.5 | ac | 1.7 |

Conservation Efforts cont.

| Practice Name | Practice Code | Sum of Applied Amount | Applied Units | Sum of Land Unit Acres |
|--|---------------|-----------------------|---------------|------------------------|
| Non-forested riparian zone enhancement for fish and wildlife | ANM13 | 1,247.7 | linear ft | 71.4 |
| Nutrient Management | 590 | 1,804.6 | ac | 1,811.2 |
| Nutrient Management Plan - Written | 104 | 1.0 | no | 37.4 |
| Prescribed Grazing | 528 | 7,600.6 | ac | 11,927.7 |
| Pumping Plant | 533 | 32.0 | no | 693.8 |
| Range Planting | 550 | 98.3 | ac | 220.9 |
| Residue and Tillage Management, Reduced Till | 345 | 4.2 | ac | 4.2 |
| Retrofit watering facility for wildlife escape | ANM18 | 27.0 | ac | 404.7 |
| Riparian Forest Buffer | 391 | 4.2 | ac | 15.0 |
| Riparian Herbaceous Cover | 390 | 1.0 | ac | 2.2 |
| Seasonal High Tunnel System for Crops | 798 | 7,013.0 | sq ft | 21.7 |
| Sediment Basin | 350 | 10.0 | no | 182.1 |
| Solar powered electric fence charging systems | ENR02 | 6.0 | no | 127.4 |
| Sprinkler System | 442 | 1,034.6 | ac | 1,160.0 |
| Stream Habitat Improvement and Management | 395 | 2.2 | ac | 2.2 |
| Streambank and Shoreline Protection | 580 | 1,400.0 | ft | 2.2 |
| Structure for Water Control | 587 | 57.0 | no | 847.3 |
| Subsurface Drain | 606 | 720.0 | ft | 18.8 |
| Surface Roughening | 609 | 63.3 | ac | 63.3 |
| Tree/Shrub Establishment | 612 | 4.5 | ac | 55.5 |
| Tree/Shrub Site Preparation | 490 | 2.0 | ac | 12.8 |
| Underground Outlet | 620 | 2,206.0 | ft | 93.7 |
| Upland Wildlife Habitat Management | 645 | 80.8 | ac | 152.7 |
| Watering Facility | 614 | 4.0 | no | 1,126.7 |
| Wetland Enhancement | 659 | 8.7 | ac | 49.5 |
| Wetland Wildlife Habitat Management | 644 | 21.7 | ac | 56.0 |
| Windbreak/Shelterbelt Establishment | 380 | 10,020.0 | ft | 32.6 |

Examples of BMPs by Land Use

Wildlife and natural areas

- * Channel stabilization, channel bank vegetation, conservation cover, riparian forest buffer, streambank & shoreline vegetation, tree & shrub establishment, wildlife habitat management

Rangeland

- * Pipeline, prescribed grazing, rangeland planting, watering facility

Pasture and Hayland

- * Fence, forage harvest management, prescribed grazing, pasture and hayland planting, pipeline, watering facility

Cropland

- * Conservation crop rotation, cover crop, filter strip, irrigation water conveyance, irrigation water management, irrigation system (sprinkler and drip), no till, nutrient management, PAM, pest management, sediment basin

Sources of Funding

Programs

Deadlines

DEQ

- Non-point source 319 Grants

Pre-application May

SWCC

- * Resource Conservation & Rangeland

Development Program (RCRDP) Loan

Continuous sign-up

NRCS (2014 Farm Bill)

- * Environmental Quality Incentives Program (EQIP)
includes Wildlife Habitat Incentives Program (WHIP)
- * Agricultural Management Assistance Program
- * Conservation Stewardship Program (CSP)
- * Conservation Innovation Grant (CIG)
- * Agricultural Conservation Easement Program
- * Regional Conservation Partnership Program

February

February

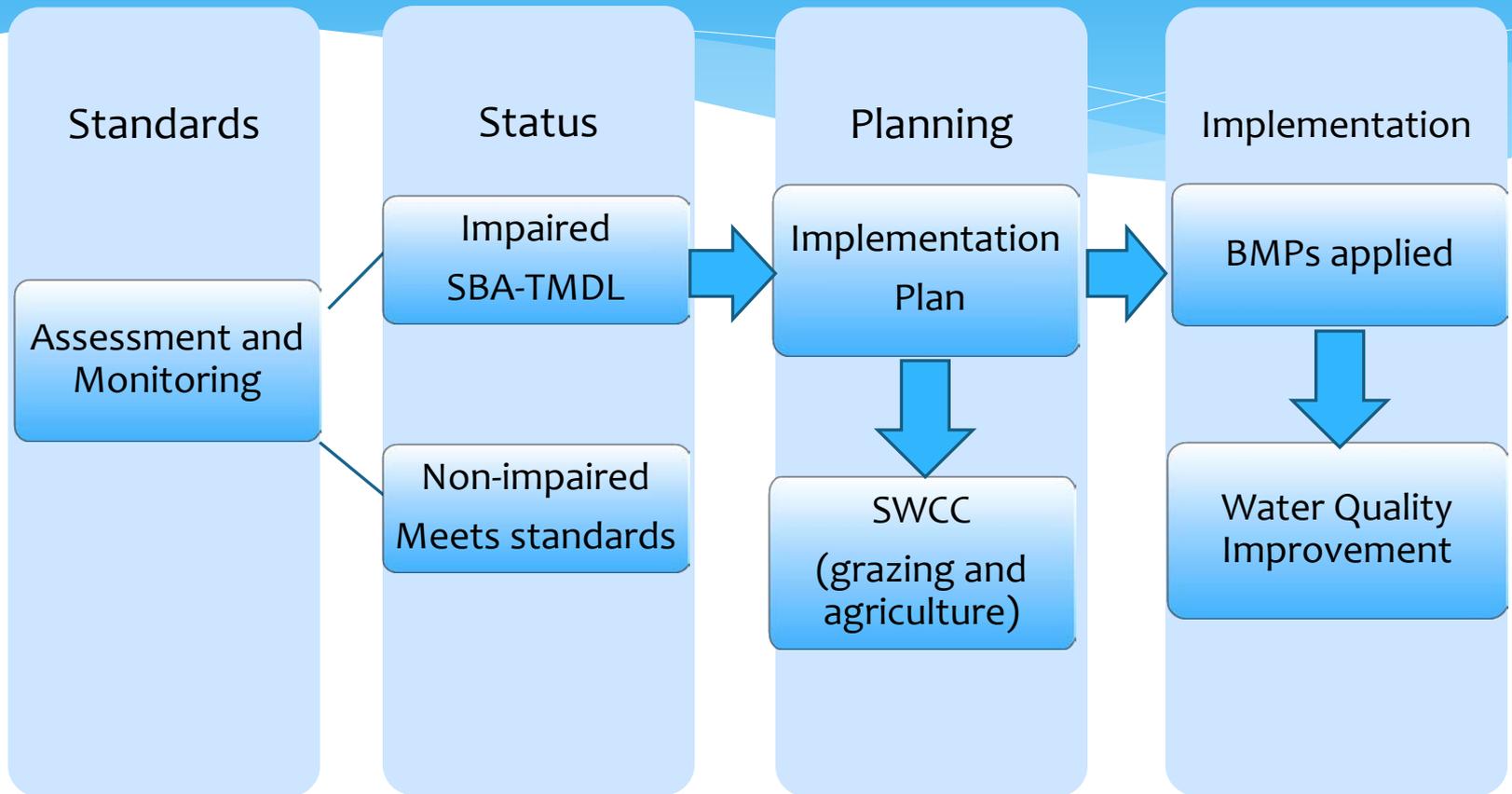
February

March

June

August

Summary



Questions ?