Sustaining Colorado Watersheds Conference

CHALLENGES AND OPPORTUNITIES FOR ENVIRONMENTAL MITIGATION BANKING IN COLORADO

Jason Kline, Noah Greenburg
SWCA Environmental

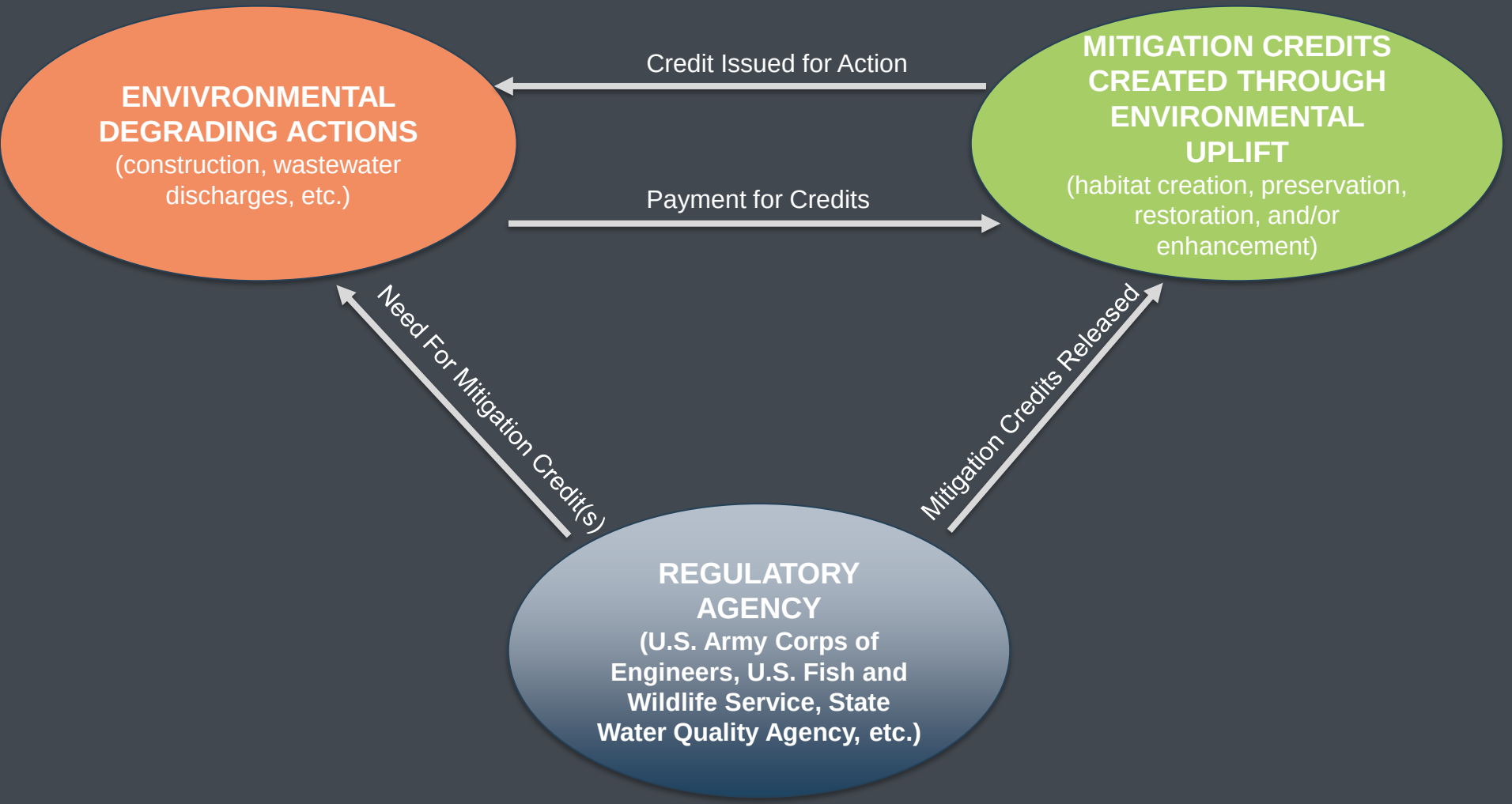
Sarah Marshall
Colorado Natural Heritage Program

WARNER COLLEGE
OF NATURAL RESOURCES
COLORADO STATE UNIVERSITY

PRESENTATION OUTLINE

- What is environmental mitigation banking
- How can environmental mitigation banking help protect Colorado watersheds?
- What challenges prevent healthy mitigation bank markets in Colorado?
- How could Colorado promote the establishment of environmental mitigation banks?

ENVIRONMENTAL MITIGATION BANKS



ENVIRONMENTAL MITIGATION BANKS

- Clean Water Act Section 404

Wetland/Stream

- Preservation
- Restoration
- Creation
- Enhancement

ENVIRONMENTAL MITIGATION BANKS

Challenges to Wetland and Stream Mitigation Bank Establishment

- **Time required to navigate agency approval**
  - Often requires many years, decoupling supply/demand relationship
- **Water rights requirements**
  - Cost of water in Colorado can exceed $90K per acre of wetland created
  - Uncertainty regarding which wetland enhancement/creation activities require dedicated water rights
  - Long-term exposure to litigation from downstream water right owners
- **Regulatory uncertainty**
  - Shifting rules on Waters of the U.S. may affect the demand for wetland mitigation
  - Lack of Colorado guidance on:
    - Water rights, credit ratios, and credit types are often not resolved until a significant investment (financial and time) has occurred

ENVIRONMENTAL MITIGATION BANKS

- Endangered Species Act

Threatened and Endangered Species Habitat

- Preservation
- Restoration
- Creation
- Enhancement

U.S. Fish and Wildlife Service Review

Mitigation Bank Credits Available for Sale/Use

ENVIRONMENTAL MITIGATION BANKS

Challenges to Threatened and Endangered Species Conservation Banks

- **Time required to navigate agency approval**
  - Often requires many years, decoupling supply/demand relationship
- **Limitations on eligible lands**
  - **Lands cannot be under conservation for any other purpose unless the bank proposes to provide additional habitat value**
- **Regulatory uncertainty**
  - Species' listing status is uncertain and subject to 3-year review cycle. If a species is delisted, unsold conservation bank credits may lose all financial value

ENVIRONMENTAL MITIGATION BANKS

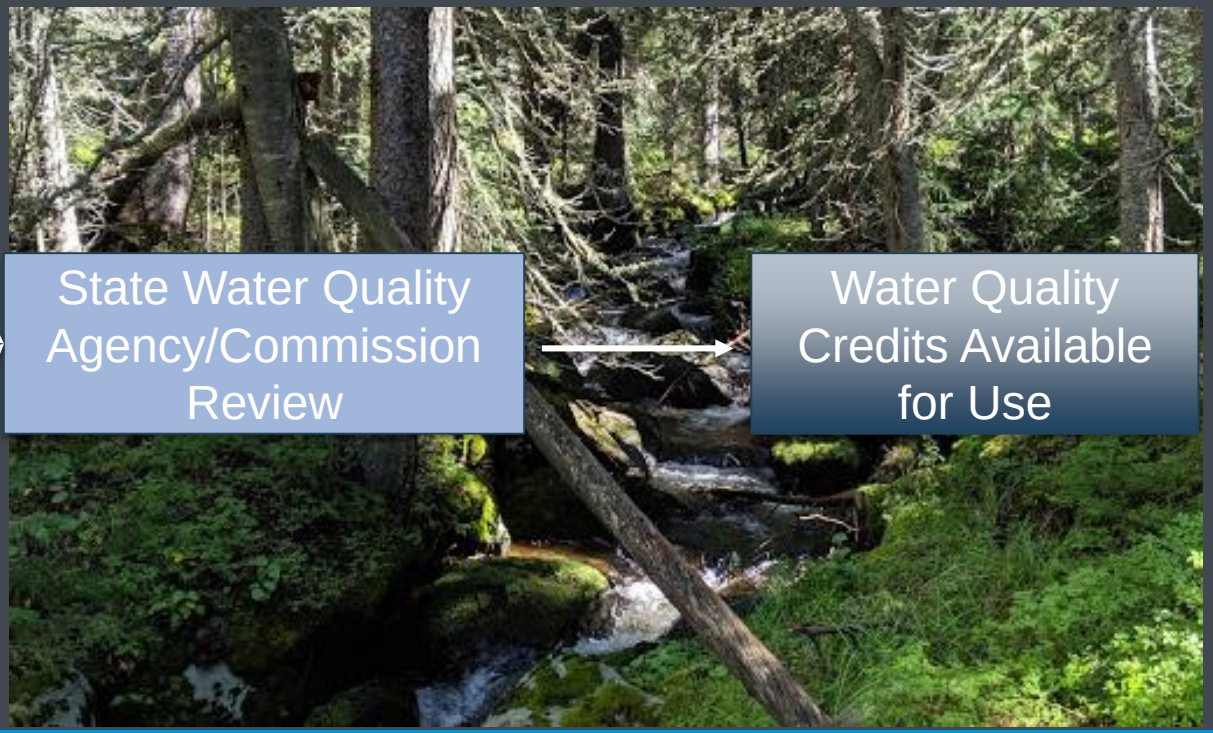
- Clean Water Act Section 402—Water Quality Credit Trading

Point and Non-Point Source Management

Nutrient Reduction

Sediment Reduction

Temperature Reduction



ENVIRONMENTAL MITIGATION BANKS

Challenges to Water Quality Credit Trading

- Limited use to-date in Colorado
- Regulatory Uncertainty
  - In stream standards
  - Technology-based requirements
- Effectiveness Demonstration Requirements
  - Baseline, Credit Calculation, Long-Term Monitoring
- Colorado geography
  - Many potential credit buyers have small upstream basins with limited opportunity for credit establishment and/or development of credit banks

Opportunities for Voluntary and Compensatory Restoration

- 2008 Mitigation Rule (USACE and USEPA):
  - **Avoidance** > minimization > mitigation
  - **Restoration** > rehabilitation > enhancement > **preservation**
  - **Mitigation banks** > permittee-responsible mitigation (and in-lieu fee programs)
- **Watershed approach**

Scale of challenges vs. solutions

The Rc
Dust P
April 22, 2018 · 7:24
LUKE RUNYON

This Year's H
Blessing And
By Colorado Public Radio Sta

Jeff Derry, director of t
Angel monitoring site i
Luke Runyon/KUNC

The Dillon Reservoir begins to fill with water from the above-average snowpack in Colorado.

Lake Powell pictured in 2017. Photo courtesy of Anna Irene / Flickr via Creative Commons

Why We Shouldn't Be Celebrating the "End of Drought" in Colorado

line Has Been Leaking Since
t To Know About What

In Colorado And

Town of Windsor

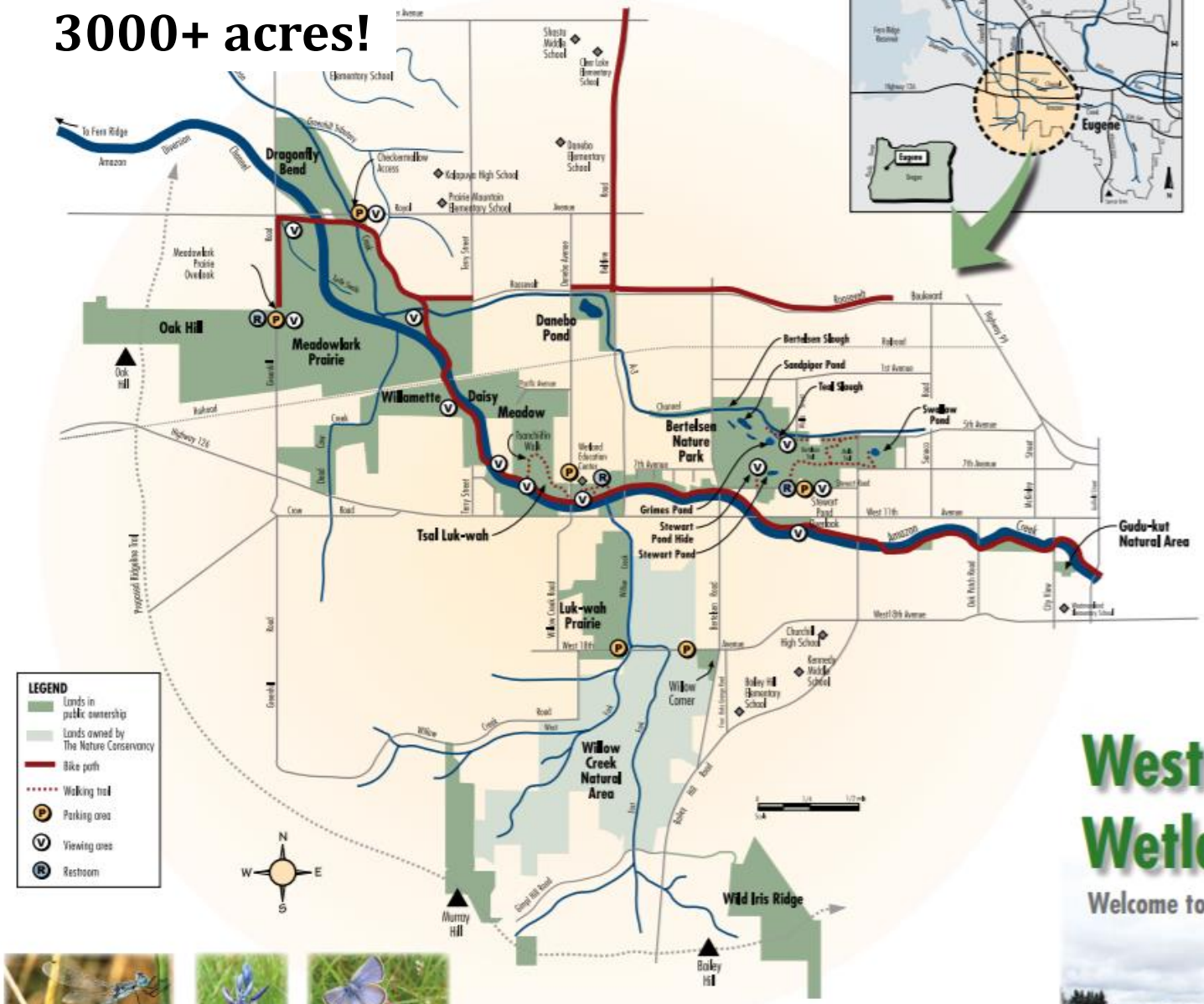
Restoration opportunities

1. Collaboration
2. Prioritization
3. Capacity-building
4. Innovation and creativity

Restoration opportunities

1. **Collaboration**
   - Starting at the **prioritization** stage (and ideally before)
   - Watershed groups, landowners, conservation NGOs, federal/state/local agencies, scientists, water providers
   - What are the potential benefits for doing restoration, and who cares?
   - Pairing land and water rights owners/managers with projects that benefit everyone
   - Continuing through project **implementation** and **monitoring**

3000+ acres!



Park Rules

Welcome to the West Eugene Wetlands.

Enjoy your visit, and please remember:

- Keep dog(s) on leash and under control at all times. Dispose of pet waste properly.
- West Eugene Wetland sites are closed to the public one hour after sunset through one hour before sunrise (except for the Fern Ridge Bike Path).

Prohibited activities include:

- Overnight camping and open flame fires.
- Littering or dumping of waste.
- Use of motorized vehicles.
- Possession and/or consumption of alcohol.
- Possession of glass beverage containers.
- Hunting, discharging of firearms, possession of weapons, and/or use of fireworks.
- Collecting or disturbing any natural resource.
- Entering areas that are closed to public use.

Thank you for your cooperation.

Willow Creek Natural Area

spreadwing damselfly, comas, Fender's blue butterflies

West Eugene Wetlands Guide

WEST EUGENE WETLANDS

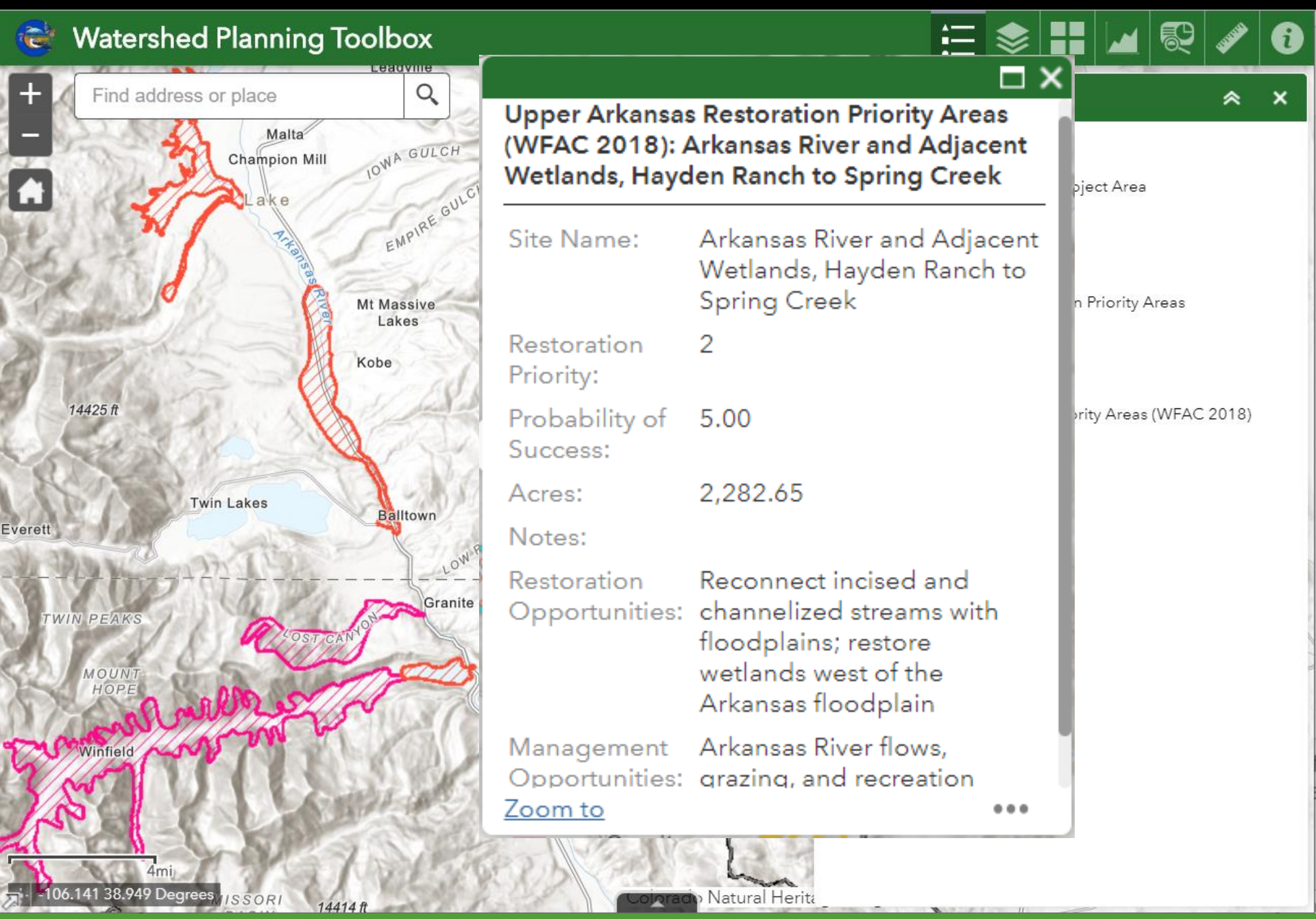
Welcome to the West Eugene Wetlands

Collaboration – increasing project impact, quality

Targeted work in optimal locations **vs. reactionary work** in less ideal locations – potential for in-lieu fee (ILF) programs?

- No current ILF programs for wetlands/streams in CO
  - Voluntary projects as a template (e.g., Peaks to People Water Fund, Forests to Faucets)?
- ESA: Canada lynx in-lieu fee mitigation fund – CDOT, FHWA, USFWS

Image: USFS


Watershed Planning Toolbox
Find address or place
Malta
Champion Mill
Lake
IOWA GULCH
EMPIRE GULCH
Arkansas River
Mt Massive Lakes
Kobe
14425 ft
Twin Lakes
Balltown
Everett
Granite
TWIN PEAKS
LOST CANYON
MOUNT HOPE
Winfield
4mi
-106.141 38.949 Degrees
14414 ft
Upper Arkansas Restoration Priority Areas (WFAC 2018): Arkansas River and Adjacent Wetlands, Hayden Ranch to Spring Creek
Site Name: Arkansas River and Adjacent Wetlands, Hayden Ranch to Spring Creek
Restoration Priority: 2
Probability of Success: 5.00
Acres: 2,282.65
Notes:
Restoration Opportunities: Reconnect incised and channelized streams with floodplains; restore wetlands west of the Arkansas floodplain
Management Opportunities: Arkansas River flows, grazing, and recreation
Zoom to
oject Area
n Priority Areas
rity Areas (WFAC 2018)

Using compensatory restoration to enable passive and voluntary restoration

- **What are the priorities where you're working?**
  - Ex: headwater flow restoration:
    - Replacing undersized culverts or obsolete structures to **restore the natural flow regime** (water, sediment, wood, plant propagules, and other organisms)

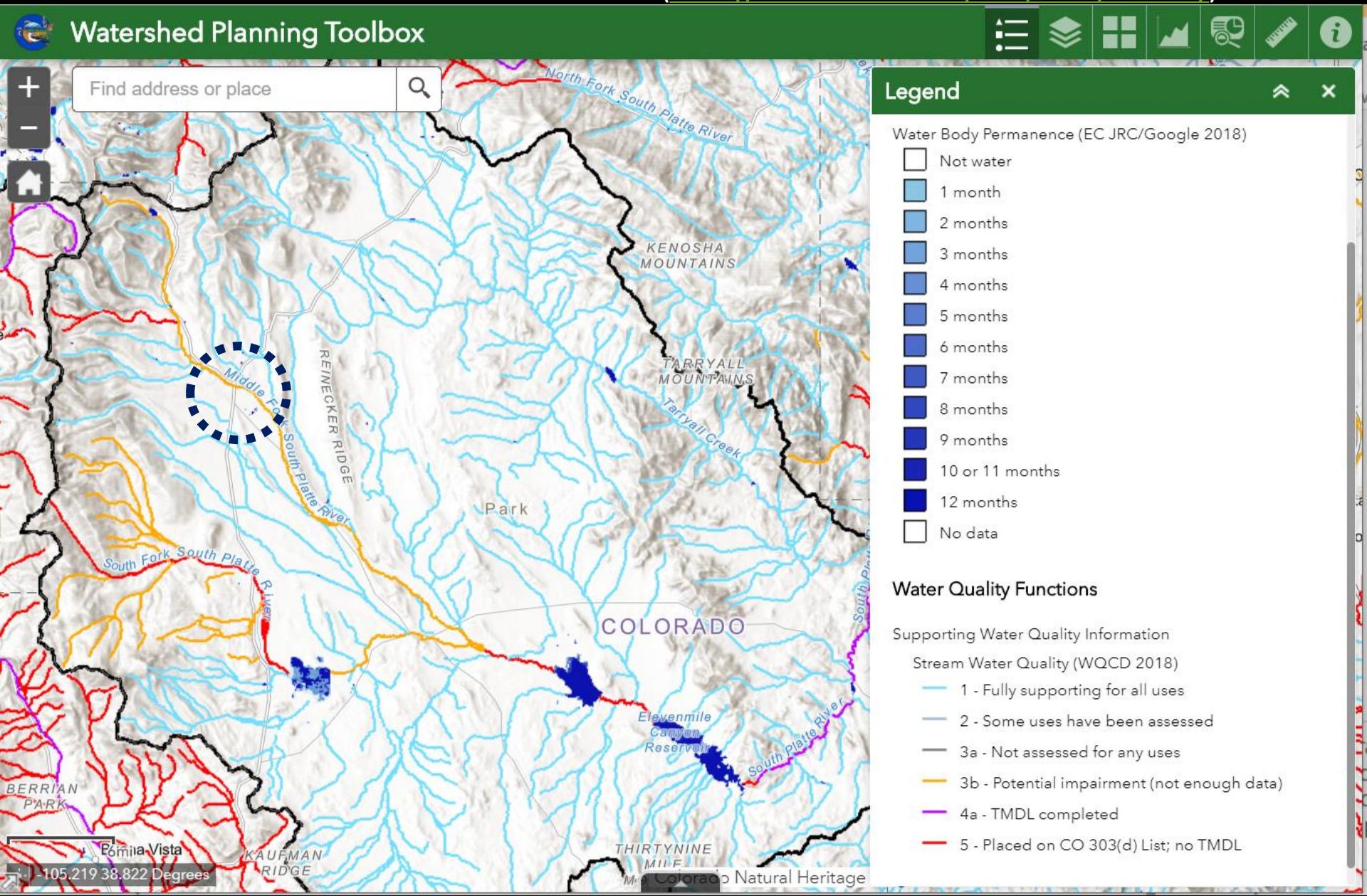
Using compensatory restoration to enable passive and voluntary restoration

- Ex: flow restoration + nonpoint source pollution in urban and agricultural areas
  - BMPs for NPS pollution + timing/delivery of runoff along entire riparian corridors to benefit habitat
- TMDLs

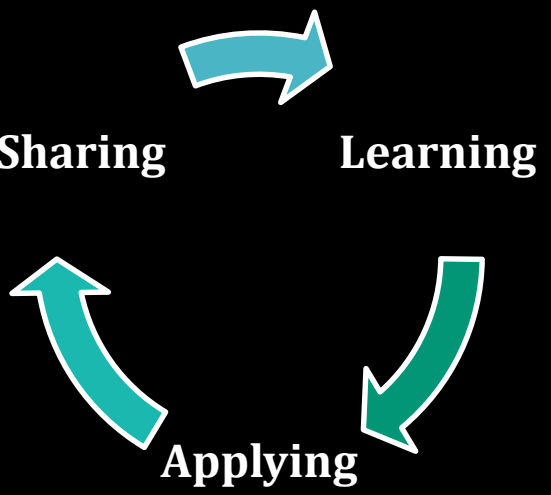
Native critters and vegetation don't like how the South Platte River flows, so Denver wants to turn back time

Man-made dams and urbanization have stunted the river's biodiversity.

The South Platte River between Denver's Overland and Ruby Hill neighborhoods, Sept. 17, 2019. (Kevin J. Beaty/Denverite)


Watershed Planning Toolbox
Find address or place
North Fork South Platte River
KENOSHA MOUNTAINS
TARRYALL MOUNTAINS
Tarryall Creek
REINECKER RIDGE
Middle Fork South Platte River
South Fork South Platte River
Park
COLORADO
Elevenmile Canyon Reservoir
South Platte River
BERRIAN PARK
Fomila Vista
KAUFMAN RIDGE
THIRTYNINE MILE
-105.219 38.822 Degrees
Legend
Water Body Permanence (EC JRC/Google 2018)
Not water
1 month
2 months
3 months
4 months
5 months
6 months
7 months
8 months
9 months
10 or 11 months
12 months
No data
Water Quality Functions
Supporting Water Quality Information
Stream Water Quality (WQCD 2018)
1 - Fully supporting for all uses
2 - Some uses have been assessed
3a - Not assessed for any uses
3b - Potential impairment (not enough data)
4a - TMDL completed
5 - Placed on CO 303(d) List; no TMDL

Restoration needs



1. Collaboration
2. Prioritization
3. **Capacity-building**
   - Enough people, and the right people to do the work
   - Matching skillsets to prioritization, planning, and implementation
   - **Learning** from each project → **applying** to future projects
     - **Transparency**
     - **Elevating the state of knowledge and practice for everyone**

Challenge: scale of stressors vs. projects… let's do this!

Jason Kline: jkline@swca.com
Noah Greenberg: Noah.Greenberg@swca.com
Sarah Marshall: Sarah.Marshall@colostate.edu

SWCA® ENVIRONMENTAL CONSULTANTS
Sound Science. Creative Solutions.®

NATURAL HERITAGE PROGRAM COLORADO

WARNER COLLEGE OF NATURAL RESOURCES
COLORADO STATE UNIVERSITY