



American Water Works
Association

Dedicated to the World's Most Important Resource®

AWWA WEBINAR OCTOBER 21, 2020 | 11:00 A.M. – 12:30 P.M. MT

Watershed Protection and Military Installations

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WEBINAR MODERATOR



Jeff Lerner
Consultant
U.S. Endowment for Forestry & Communities

Since 2015 Jeff has helped develop and manage the Healthy Watersheds Consortium Grant Program, focused on protecting watershed lands, as a consultant with the U.S. Endowment for Forestry and Communities and in conjunction with the EPA and USDA NRCS. He has over 25 years of experience with forest and other habitat conservation throughout the U.S. and holds degrees in Zoology, Conservation Biology and Sustainable Development.

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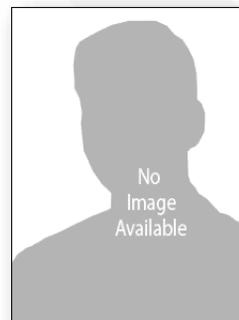
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Program Director,
Readiness and
Environmental Protection
Integration (REPI) Program
Office of the Assistant
Secretary of Defense



Shannon Wettstein
District Manager
Morrison Soil and Water
Conservation District



Susan Carr, PhD
O2O Program Manager
North Florida Land Trust



John Barrett
Land Program Director
Arizona Land and Water
Trust

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HEALTHY WATERSHEDS CONSORTIUM GRANT PROGRAM

A partnership to accelerate watershed protection

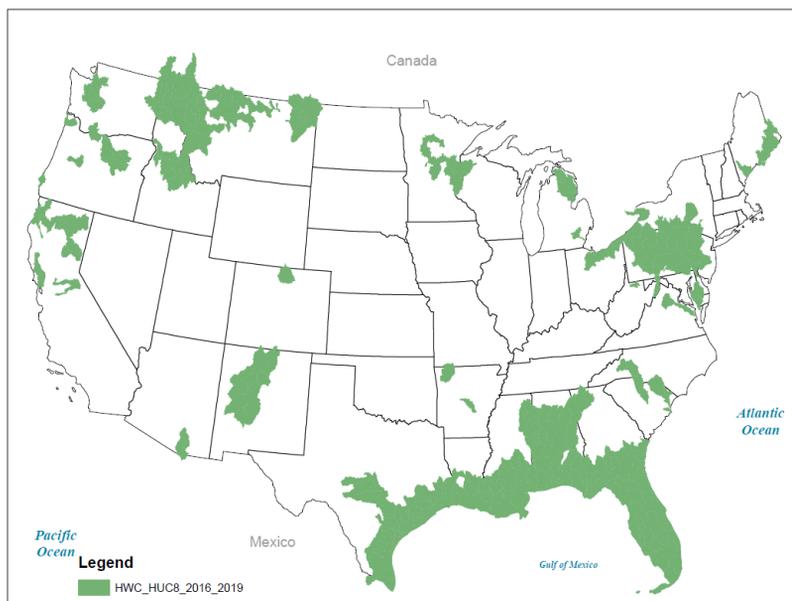


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HEALTHY WATERSHEDS CONSORTIUM GRANTS

- 2016 – 2019
- 56 awards
- \$10 million
- 450,000 acres
- 1,500 stream miles



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LEARNING OBJECTIVES

1. Understand military installations and how they are involved with watershed protection.
2. Develop familiarity with federal and state programs that can provide resources for protecting watersheds and source water areas.
3. Learn ways that water utilities can work with military installations to advance their own goals for watershed protection.

“Military installations, water utilities, and other conservationists may ultimately want the same thing: a more protected watershed”

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TODAY'S AGENDA



DOD Introduction

Kristin Thomasgard, Program Director REPI, Dept. of Defense

Watershed Protection in the Camp Ripley Sentinel Landscape

Shannon Wettstein, District Manager, Morrison County SWCD

Accelerating Watershed Protection in the O2O Corridor

Susan Carr, Program Manager, North Florida Land Trust

Protecting Desert River Systems in SE AZ for Military Buffers & Water Supply

John Barrett, Director of Land Protection, Arizona Land and Water Trust



ASK THE EXPERTS



Jeff Lerner
U.S. Endowment for
Forestry &
Communities



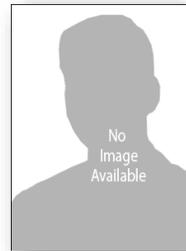
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Office of the Assistant
Secretary of Defense



Shannon Wettstein
Morrison Soil and
Water Conservation
District



Susan Carr, PhD
North Florida Land
Trust



John Barrett
Arizona Land and
Water Trust

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AN INTRODUCTION TO DOD'S CONSERVATION PARTNERSHIPS

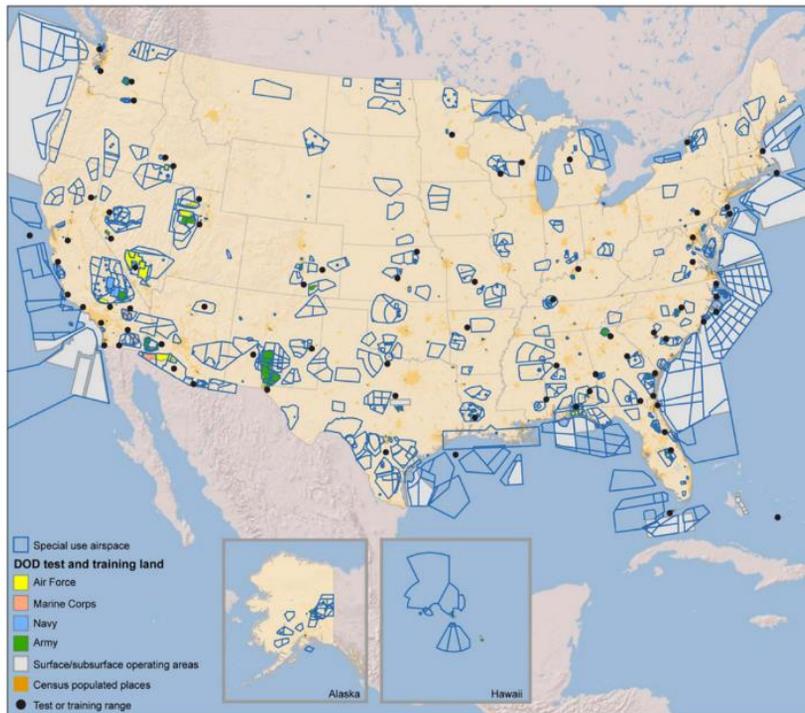
Kristin Thomasgard
Program Director
Readiness and Environmental Protection
Integration (REPI) Program
Department of Defense

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THE MILITARY'S LAND, AIR AND SEA SPACE



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IMPORTANCE OF DOD TO LAND MANAGEMENT AND PROTECTION

27 MILLION ACRES under DoD management

ALMOST 4X MORE ENDANGERED SPECIES per acre than any other federal lands

2X THE SIZE of all state parks combined

75 SPECIES only found on DoD lands

1/2 THE SIZE of all of America's national parks

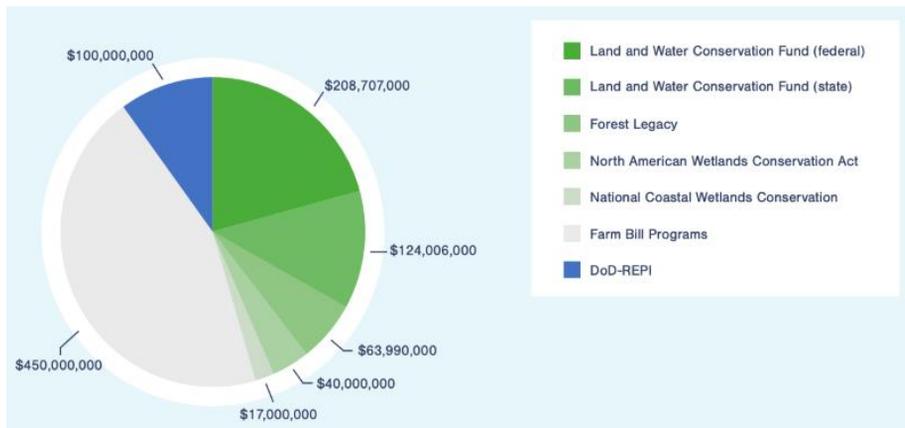
MORE THAN 80% of America's ecological systems supported

1/2 MILLION ACRES of conservation and farm lands in the last decade the military helped protect



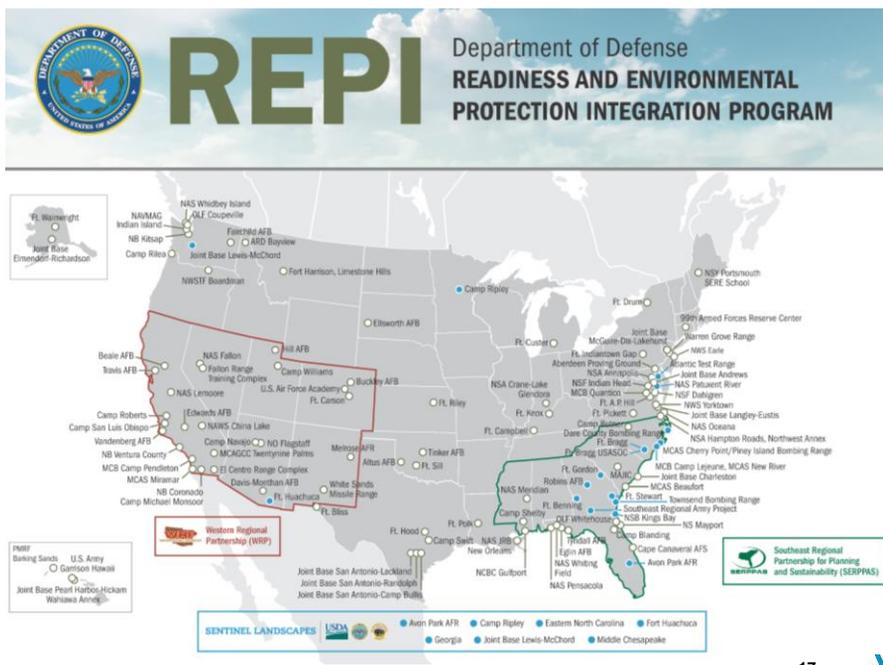
SIGNIFICANT NATURAL RESOURCE PROGRAMS, POLICIES AND FUNDING

- DoD REPI Program is the 4th largest federal land protection program
- Through FY2019, \$962 million in DoD funds have been leveraged with \$854 million in partner funds



REPI PROJECT LOCATIONS AND LANDSCAPE PARTNERSHIP AREAS

- 109 projects in 33 states
- 7 Designated Sentinel Landscapes
- 2 Regional Partnerships



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Jeff Lerner
U.S. Endowment for Forestry & Communities



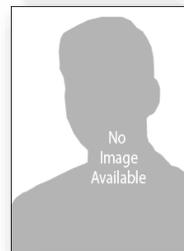
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Office of the Assistant Secretary of Defense



Shannon Wettstein
Morrison Soil and Water Conservation District



Susan Carr, PhD
North Florida Land Trust



John Barrett
Arizona Land and Water Trust

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CAMP RIPLEY SENTINEL LANDSCAPE

MINNESOTA

Shannon Wettstein
District Manager
Morrison Soil and Water
Conservation District (SWCD)

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INGREDIENTS AND STEPS TO CREATING A SENTINEL LANDSCAPE

- 1 C Shared **Goals**
- 4 C **Partners**
- 1 C Implementation **Money**

Mix to create the right consistency
Bake and Share Your Successes

<https://sentinellandscapes.org/landscapes/camp-ripley/>

- Why is Camp Ripley interested in Watershed Protection?
- Why are our partners interested in Sentinel Landscape?
- How did we go about setting goals to protect drinking water?
- What will ensure our program is successful?

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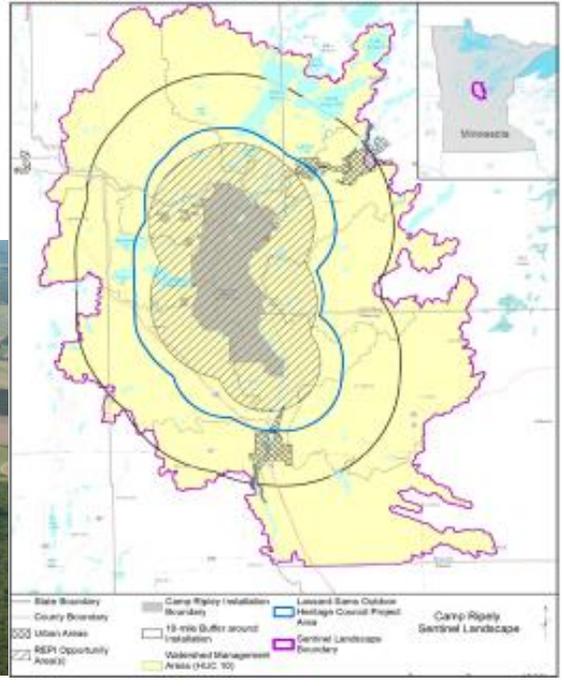
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PROTECTING THE QUALITY OF WATER ENTERING THE MISSISSIPPI RIVER FOR LOCAL COMMUNITIES AND DOWNSTREAM CITIES

- Private Properties in Size from 60-100 Acres
- Agricultural
- Forested
- Recreational

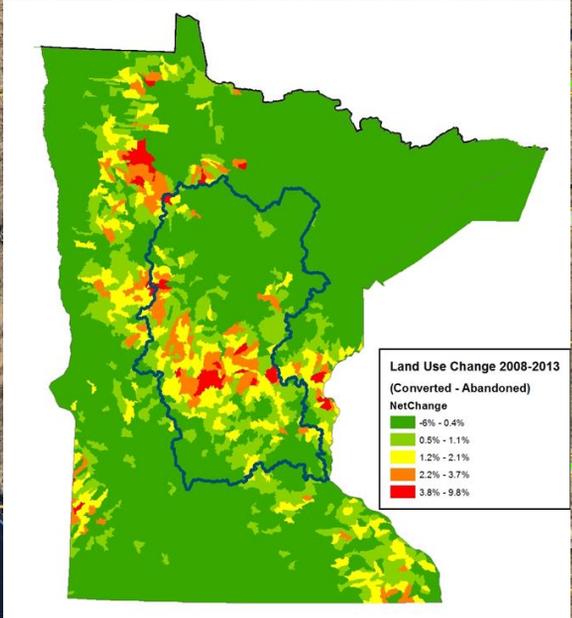
Figure 1: Camp Ripley Sentinel Landscape Map



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WHY IS CAMP RIPLEY IS INTERESTED IN WATERSHED PROTECTION

By allowing incompatible development nearby, such training can be impeded, bringing complaints about the noise, odors and smoke from machinery and weapons



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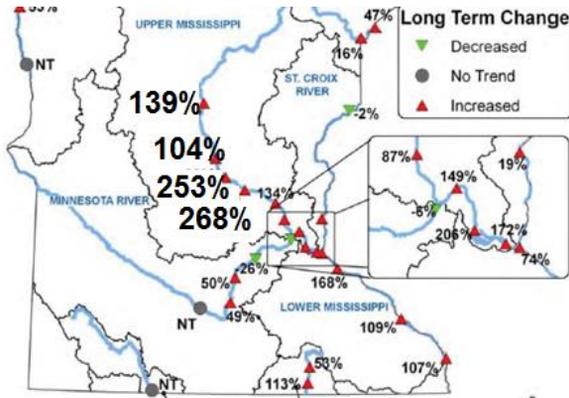
WHY OUR PARTNERS ARE INTERESTED IN SENTINEL LANDSCAPES

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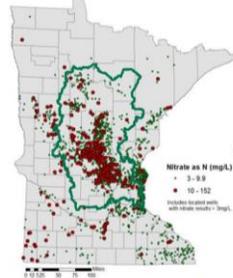
SHARED STRATEGIES TO ACHIEVE FUTURE CONDITIONS

- Protect and enhance high quality natural resources
- Protect working lands
- Increase coordination
- Restore and improve habitat and water resources

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Private wells



(Note that only wells with nitrate-N > than 3 mg/L are illustrated here)

Public Water Supplies



ENHANCEMENT GOAL: PROTECT AND ENHANCE HEALTHY WATER AND FOREST ECOSYSTEMS

Specifically – Nitrate Contamination

- Nitrate Trends
- Private Wells
- Public Water Supplies

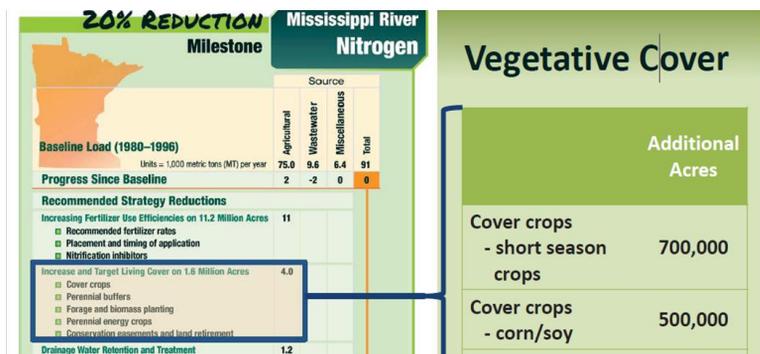
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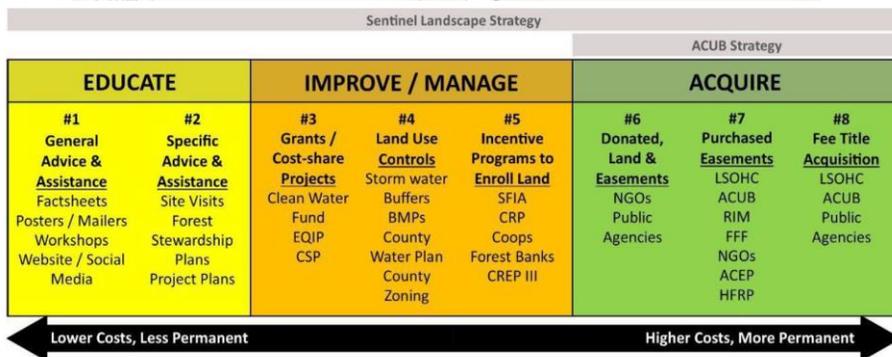
HOW TO ADDRESS WATER QUALITY ISSUES

- Prioritizing Goals
- Targeting Best Management Practices
- Measuring Impacts



Vegetative Cover

	Additional Acres
Cover crops - short season crops	700,000
Cover crops - corn/soy	500,000



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ENSURING SUCCESS

- Leverage
- Partner Contributions
- Memorandums of Agreement
- Celebrating and Sharing Success

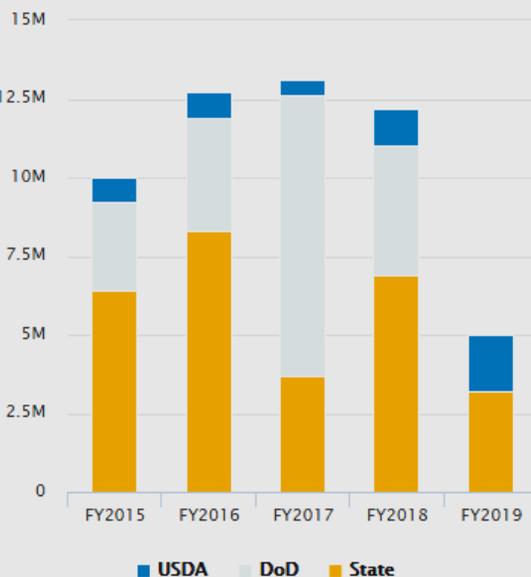
Program Status

Leveraged Federal Funding To Date: \$42,480,400

LSOHC Funding To Date: \$14,962,000

- 300+ easements completed
- 31,500+ easement acres
- 2,270+ fee title acquisition acres
- 300+ landowner donated acres
- 200+ interested landowners

Total Funding by Partner



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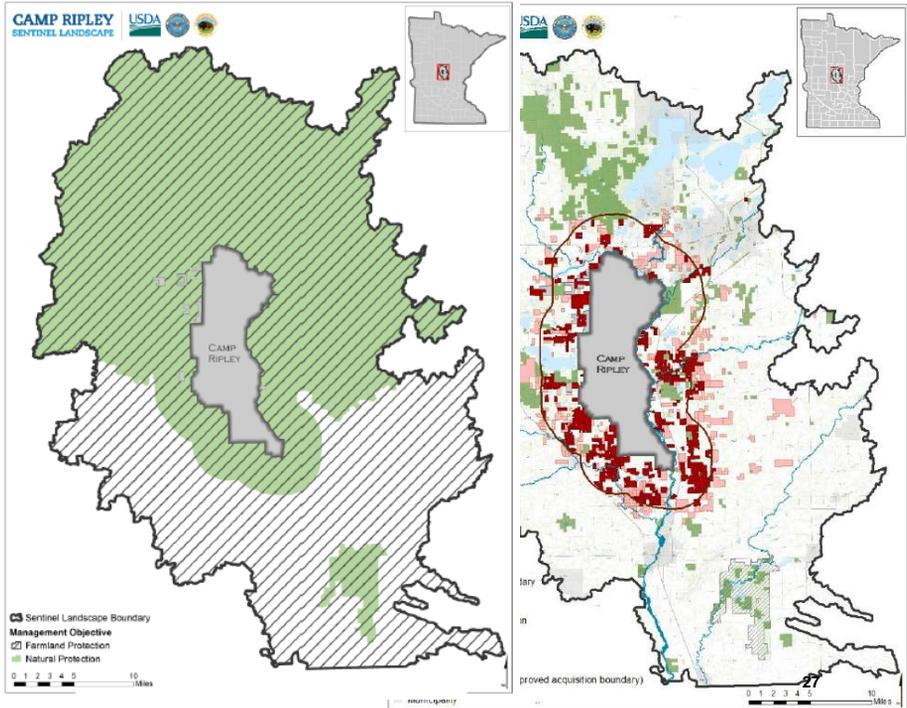
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INGREDIENTS AND STEPS TO CREATING A SENTINEL LANDSCAPE

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- 4 C Partners
- 1 C Implementation Money

Mix to create the right consistency
Bake and Share Your Successes

<https://sentinellandscapes.org/landscapes/camp-ripley/>



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Jeff Lerner
U.S. Endowment for Forestry & Communities



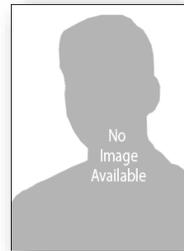
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Morrison Soil and Water Conservation District



Susan Carr, PhD
North Florida Land Trust



John Barrett
Arizona Land and Water Trust

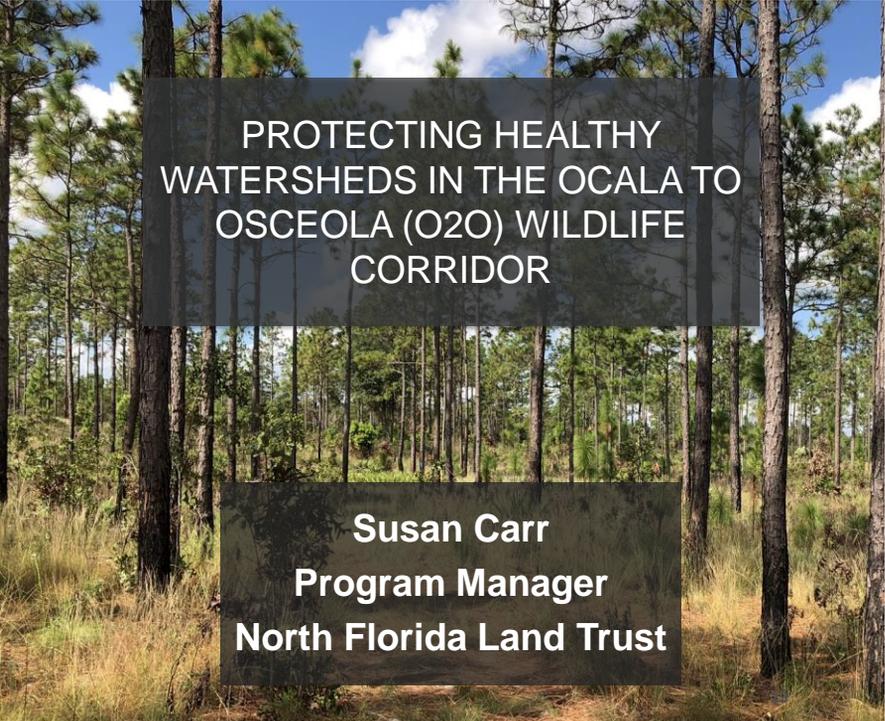
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**PROTECTING HEALTHY
WATERSHEDS IN THE OCALA TO
OSCEOLA (O2O) WILDLIFE
CORRIDOR**

**Susan Carr
Program Manager
North Florida Land Trust**

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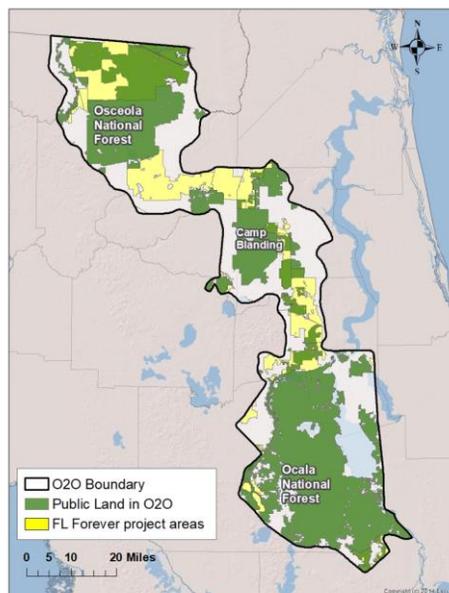
INTRODUCTION: THE O2O CONSERVATION INITIATIVE

- Military readiness and watershed protection in North Florida: A public-private Partnership model
- A Military buffer program as basis for other State and Federal conservation programs
- How water utilities can work with Partnerships and military installations to protect watersheds

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THE OCALA TO OSCEOLA (O2O) WILDLIFE CORRIDOR



- Network of Public and Private lands anchored by two National Forests
- 1.6 Million Acres: about ½ privately owned
- Rural and Natural Lands
- Camp Blanding Joint Training Center (Army National Guard)
- Florida Forever project areas

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The O2O: Wetlands

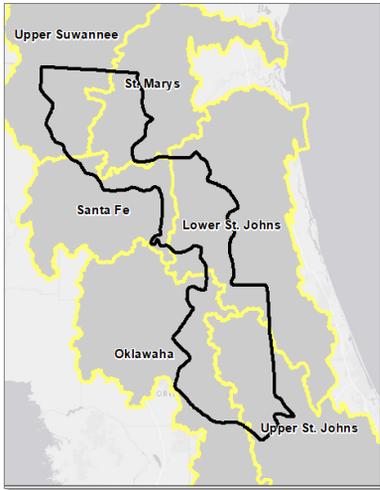


THE O2O WILDLIFE CORRIDOR

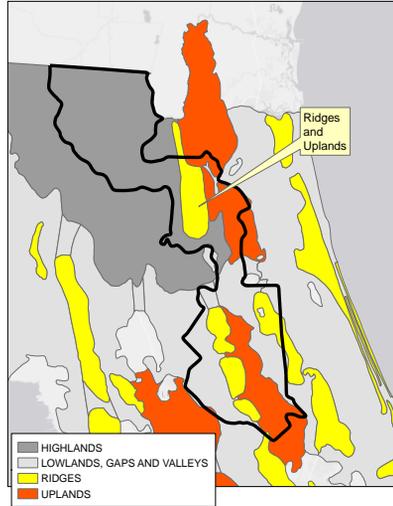
- Part of the Florida Wildlife Corridor
- Florida Ecological Greenways Network



O2O: SPANS SIX WATERSHEDS



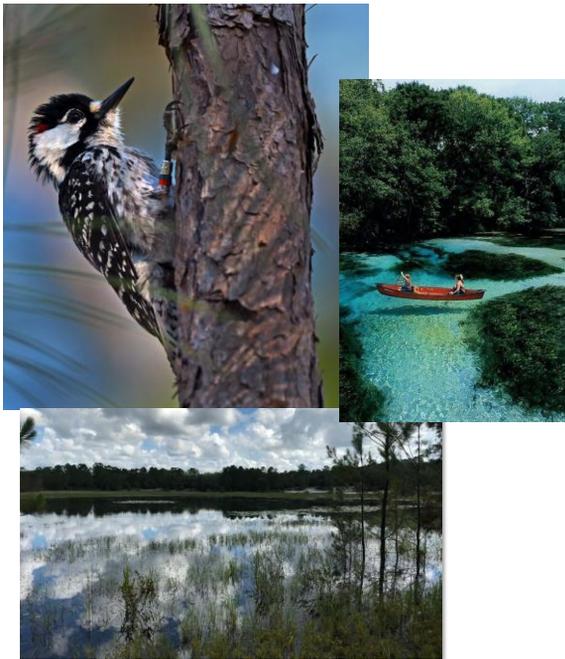
Major HUC 8 Watersheds



Physiographic provinces North FL



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O2O Wildlife Corridor Vision:

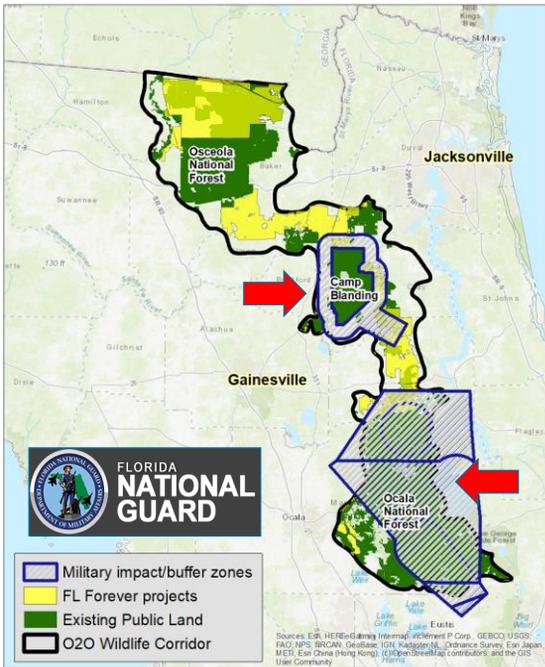
1. Natural landscapes, connector lands

- Habitat: Wildlife, imperiled species
- Working Forests
- Watershed Protection



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O2O Wildlife Corridor Vision:

2. Landscape compatible for Military Readiness

- Camp Blanding (National Guard)
- U.S. Navy Bombing Ranges

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O2O CONSERVATION INITIATIVE

1. Land Protection: Purchase, conservation easements

- **GOAL: 140,000 acres by 2040**

2. Land Management: Conservation on public and private lands

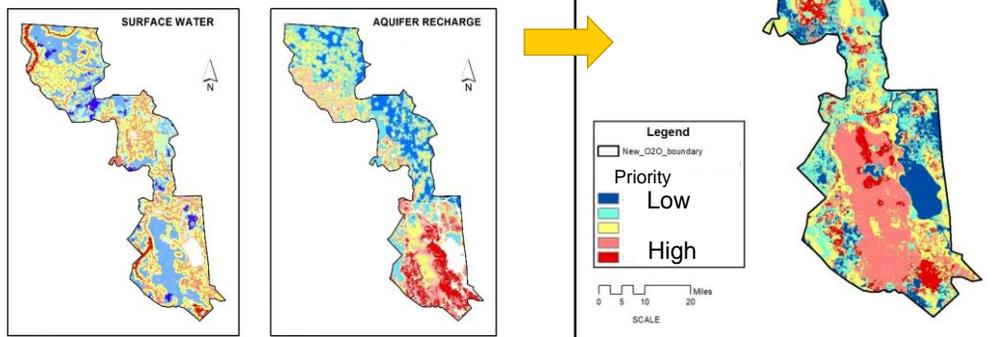
- **GOAL: Habitat, Water, Working Forests**



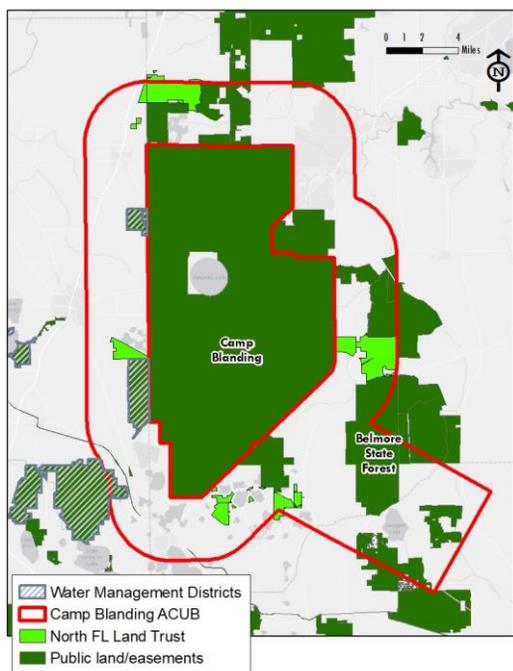
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Strategic Land Protection: Priority Acres

1. Conservation strategy based on landscape priorities (GIS model)
2. Overall model includes water resources
3. Priority model from Partner inputs (Water districts)



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Camp Blanding: Army Compatible Use Buffer (ACUB) Program

- State Water Management Districts early partners
- North Florida Land Trust: has cooperative agreement
- Over 7,000 ACUB acres protected since 2017

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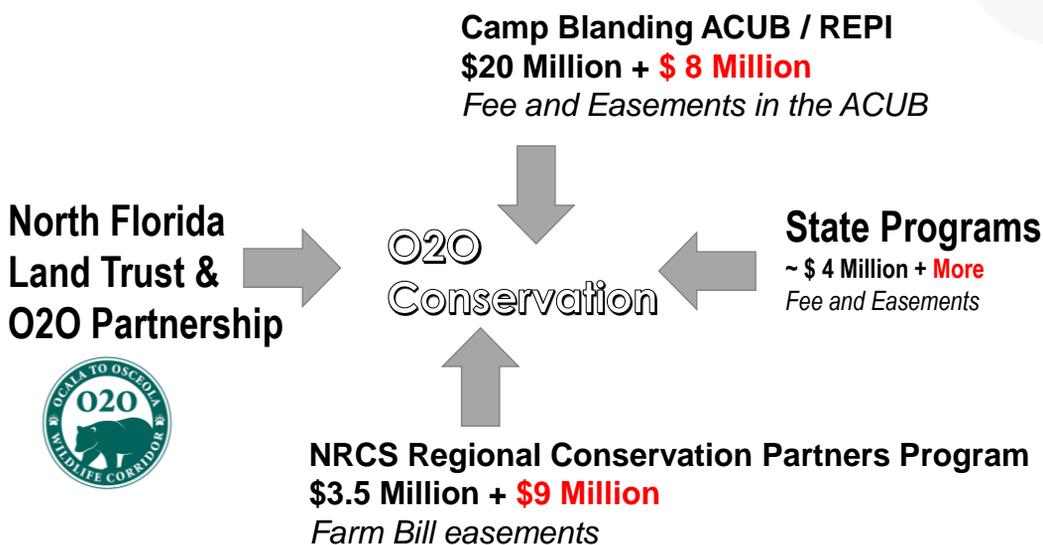
What are the interests of Camp Blanding and U.S. Navy?

- *Deter incompatible land use around installations (buffer)*
- *Avoid regulatory restriction (listed species)*
- *Watershed protection: source water for installation and surrounding landscape*

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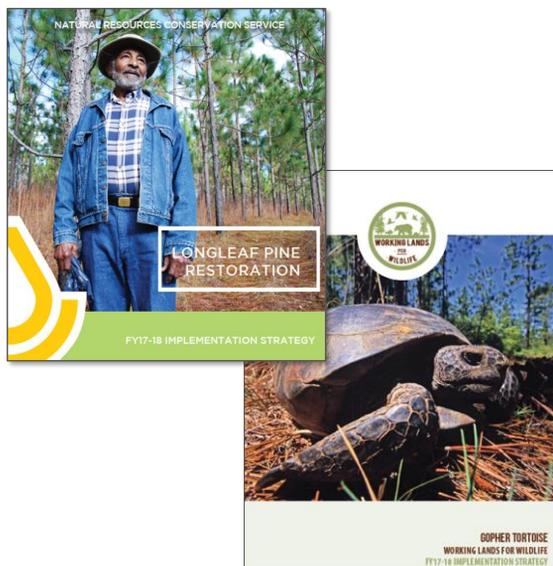
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FOUNDATION OF THE BIGGER O2O PARTNERSHIP



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Natural Resources Conservation Service
Regional Conservation Partnership Program (RCPP)

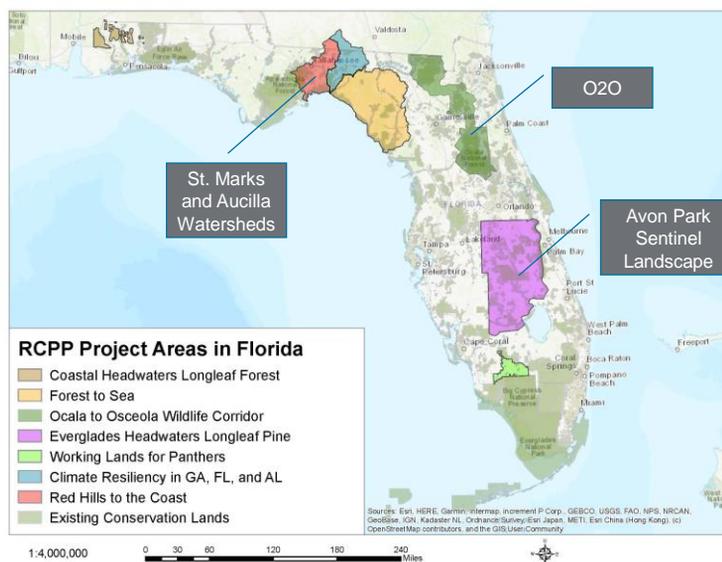


- Leverages Partnership programs
- Flexible “match” requirements
- Funding for easements and conservation management
- Allows Partners to guide Farm Bill programs
- Centered on landscape resource concerns: WATER



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REGIONAL CONSERVATION PARTNERSHIP PROGRAM (RCPP) IN FLORIDA



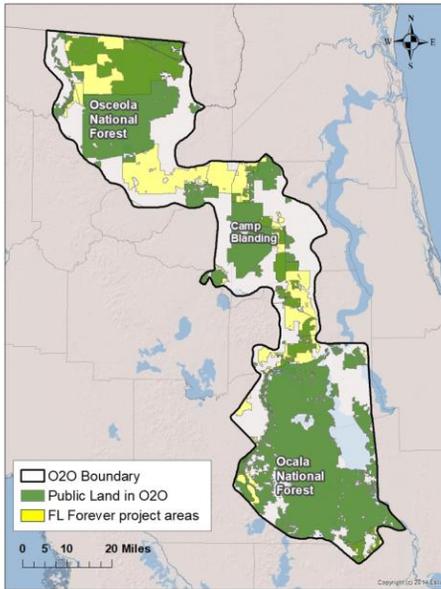
- Landscape centered
- Wildlife habitat, Watersheds, Sentinel landscapes
- Requires outcomes assessment: Water resources
- Utilities can partner

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STATE CONSERVATION PROGRAMS: FLORIDA FOREVER



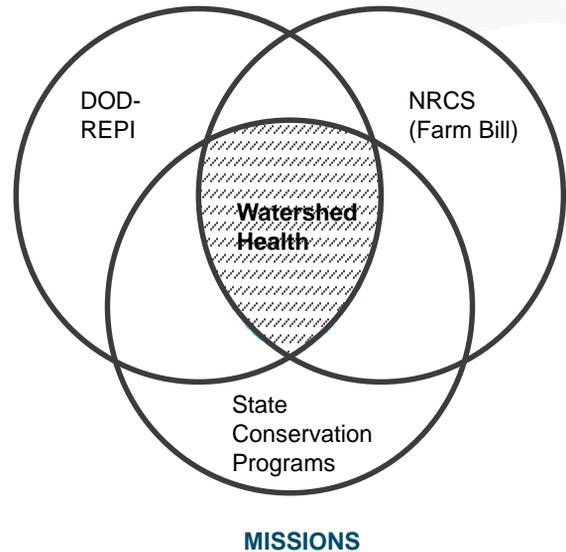
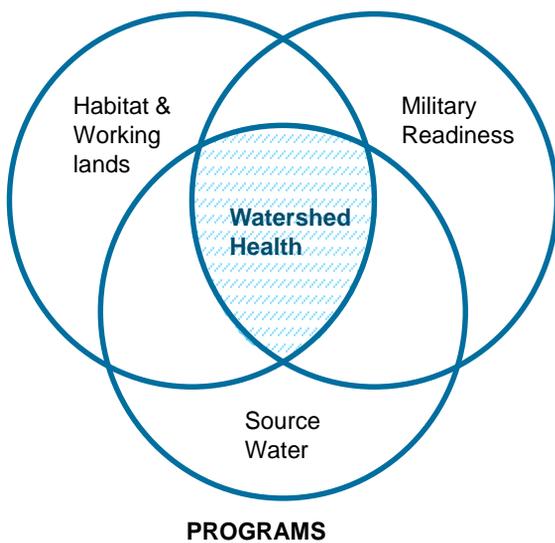
- Landscape scale program areas
- Land acquisitions evaluated: watershed benefits
- Florida Water Management Districts involved
- About 5,000 acres new O2O conservation land since 2017

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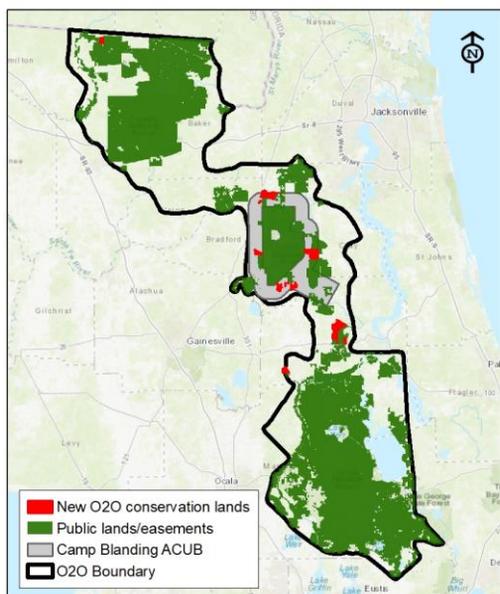
OVERLAPPING PROGRAMS AND MISSIONS: WATERSHED HEALTH



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13,000 acres new conservation lands since 2017

HOW DOES **LAND PROTECTION** AFFECT WATERSHED HEALTH?

- Deter incompatible land use: Water consumption & pollution
- Strategic land protection watershed health
- Protect working forest lands

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HOW DOES **LAND MANAGEMENT** HELP WATERSHED HEALTH?

Land Management: Forest Management for wildlife habitat, good for water quantity and quality



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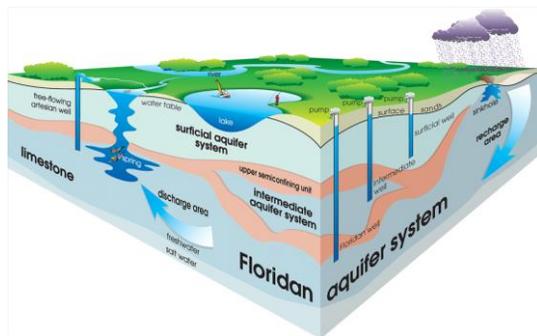
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SPECIES HABITAT MANAGEMENT: GOOD FOR SOURCE WATER



Gopher Tortoise habitat



Aquifer Recharge



ADVICE

Utilities can quantify and manage watershed land protection as an asset

Need tools and partners

Talk with your local land trust – Can they quantify water assets related to land protection in your watershed?

Florida Example: Protect one acre – increase water supply to aquifer by nearly 400 gallons/day

Florida Example: Restore farm to native forest, reduce nutrient runoff. Cost to buy and convert land much less than water treatment costs



SUMMARY



Susan Carr
North Florida Land Trust
scarr@NFLT.org

- Sentinel Landscape/REPI/ACUB as basis for successful Partnerships
- Power of the public-private Partnership
- Quantify watershed health benefits: Assets

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ASK THE EXPERTS



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FORT HUACHUCA & REGIONAL WATER CONSERVATION

John Barrett
Land Program Director
Arizona Land and Water Trust

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- Non-profit land trust
- Work directly with private landowners interested in permanent conservation of their property, usually rangeland or ecologically significant land
- Conservation easements
- Use Federal, state and private/foundation resources

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ARIZONA RIVER SYSTEMS



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SAN PEDRO RIVER

- Free flowing
- Ephemeral
- Critical riparian area
- Used by 250 species of migratory birds



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SANTA CRUZ RIVER

- Effluent dependent
- Culturally significant
- Headwaters inside Fort Huachuca Sentinel Landscape



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THREATS

CLIMATE
(especially heat and drought)

PUMPING
(withdrawal exceed recharge)

**Arizona Department of Water Resources (2014):
Aquifer under Fort Huachuca and Sierra Vista dropping 2.2 feet per year**



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RESPONSE

- Land protection
- Conservation easements
- Land use / Groundwater connection
- Private property



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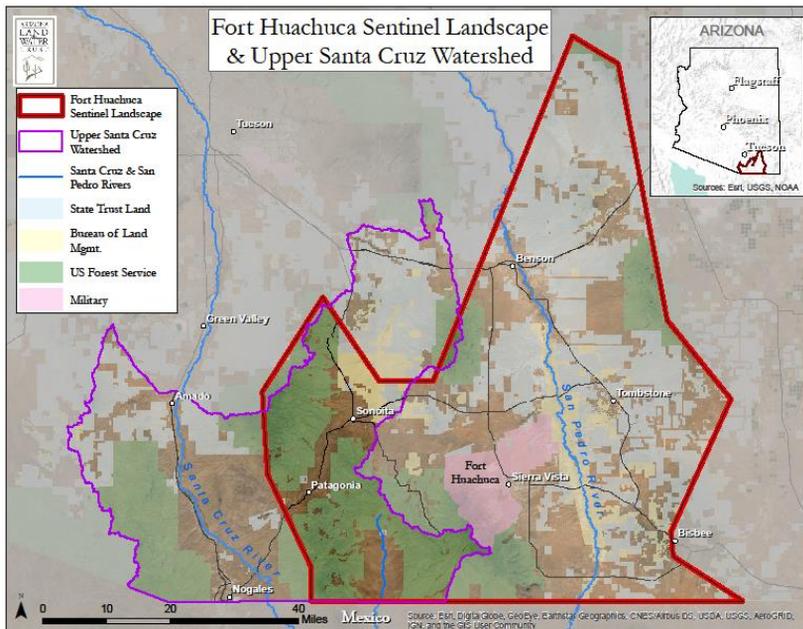
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CONSERVATION EASEMENTS
&
HEALTHY WATERSHEDS CONSORTIUM GRANT



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RESPONSE
&
COCHISE CONSERVATION RECHARGE NETWORK

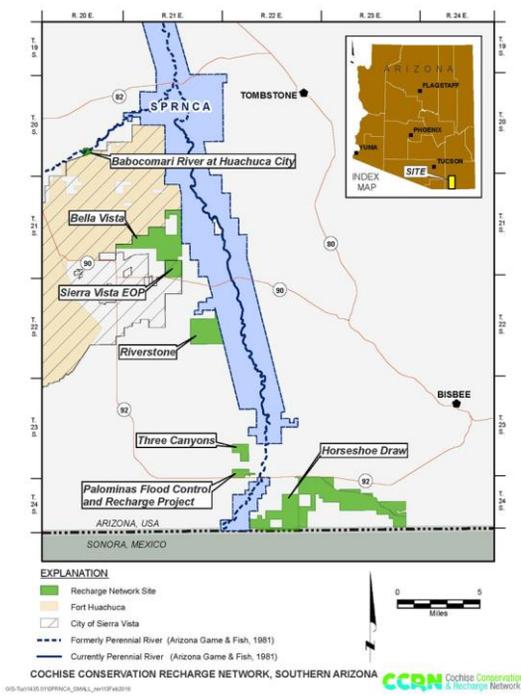
1. 6,344 acres of land where recharge/replenishment can most benefit river flows (both surface and subsurface)
2. Wide range of partners—county, municipalities, non-profits, local NRCDs
3. Wide range of projects—stormwater runoff recharge basins, grassland restoration, effluent settling ponds, land protection
4. Annually, conserve ~3,000 acres-feet of groundwater and facilitate ~3,000 acre-feet of stormwater and effluent recharge
5. Land acquisitions funded through Army Compatible Use Buffer Program

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**RESPONSE
 &
 COCHISE
 CONSERVATION
 RECHARGE
 NETWORK**



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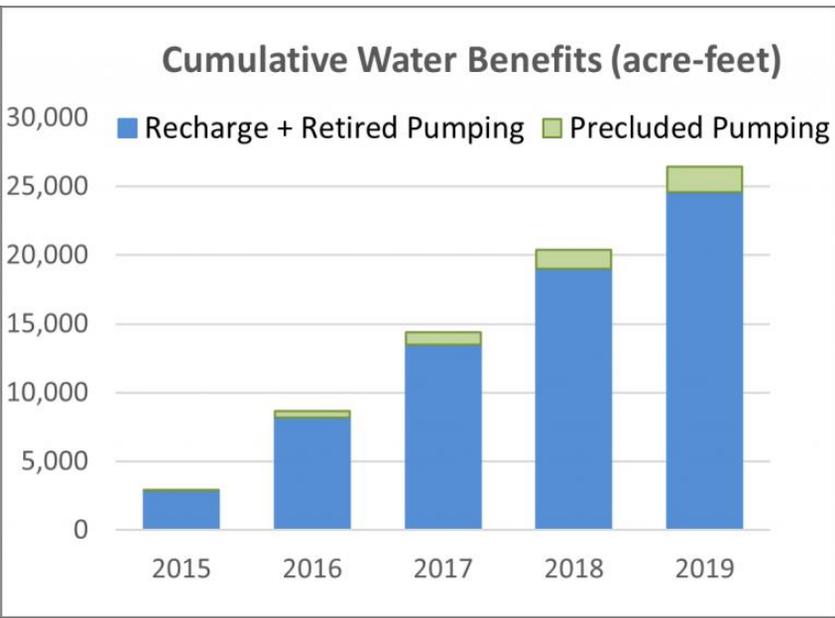
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RESPONSE
 &
COCHISE CONSERVATION RECHARGE NETWORK



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FUTURE

1. Department of Defense is taking a lead role in planning for resilience, interested in working with communities around installations.
2. Understanding that collaboration is essential to long-term protection of desert rivers.
3. Traditional jurisdictional boundaries between Federal agencies eroding in Sentinel Landscapes.

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ASK THE EXPERTS



Jeff Lerner
U.S. Endowment for
Forestry &
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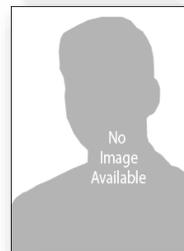
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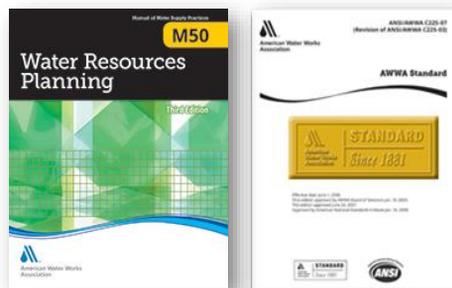
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ADDITIONAL RESOURCES

- [AWWA Source Water Protection Resource Community](#)
- [AWWA Water Conservation Resource Community](#)
- [M50 Water Resources Planning](#)
 - AWWA catalog no: 30050-3E
- [AWWA G300-14 Source Water Protection](#)
 - AWWA catalog no: 47300-2014
- [NRCS Source Water Document](#)
- [Healthy Watersheds Consortium Grant Overview](#)
- [REPI Fact Sheet](#)
- [Sentinel Accomplishments](#)



UPCOMING WEBINARS

Oct 22 - FREE Webinar from Napoli Shkolnik: A Cost Recovery Program: PFAS Water Contamination

Oct 28 - A Closer Look at New and Not so New CEC's: PFAS, Microplastics and Solvents

Oct 29 - Managing Cyber Risk in the Water Sector: Threats, Responsibility and Solutions

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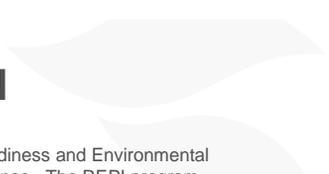
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PRESENTER BIOGRAPHY INFORMATION



Since 2013, Kristin Thomasgard has served as Program Director for the Department of Defense Readiness and Environmental Protection Integration (REPI) Program, which links communities, land preservation, and national defense. The REPI program protects the military's mission by preventing, removing, and mitigating restrictions to military activities through partnerships with state and local governments, land conservation organizations and other key stakeholders. To-date, REPI partnerships have conserved over 688,000 acres of land at 110 installations in 33 states. Ms. Thomasgard also serves as the federal chair for the Sentinel Landscapes Partnership, a collaborative effort between the U.S. Departments of Agriculture, Defense, and the Interior.

Shannon Wettstein is the district manager for the Morrison Soil and Water Conservation District in Minnesota. She and her team work with the Camp Ripley Sentinel Landscape program to protect 75,000 acres of rural buffer lands to maintain military training capabilities while conserving one of the most ecologically rich environments and important source water areas in the Midwest.

Susan is a Program Manager with the North Florida Land Trust, a nonprofit conservation organization dedicated to land conservation. She works to permanently protect a large landscape known as the Ocala to Osceola Wildlife Corridor, which is part the larger Florida Wildlife Corridor. Susan's earlier professional career included positions with the USDA Forest Service and Natural Resources Conservation Service, and several nonprofit conservation organizations. She earned a B.S. in Botany from the University of Florida and a M.S. in Plant Biology from Louisiana State University. Susan eventually returned to her undergrad alma mater to complete her PhD in Wildlife Ecology and Conservation. Her graduate research focused on floristic diversity of fire-maintained pinelands across Florida, and fostered a deep appreciation for Florida's natural landscapes.

John Barrett is the director of land protection for the Arizona Land and Water Trust. He and his team work with partners in the Fort Huachuca area of southern Arizona to buffer the base from encroachment while also supporting projects that will protect riparian areas, groundwater supplies, and streamflow, conserving up to 56,000 additional acres.

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