



NEVADA  
DIVISION OF  
NATURAL HERITAGE



Nevada Department of  
**CONSERVATION &  
NATURAL RESOURCES**

# Nevada's Wetland Program

2023 EPA Region 9 Wetlands Meeting

March 2, 2023

**Presented by:**

Chantal Iosso

*Wetland Program Coordinator*

# PRESENTATION OUTLINE

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- Overview of Nevada wetlands
- Nevada's Wetland Program Plan
- WPDG funded projects
  - WetBar
  - Spring surveys
  - Wetland species
  - WPP updates
- What's next?
- Wetland program partners

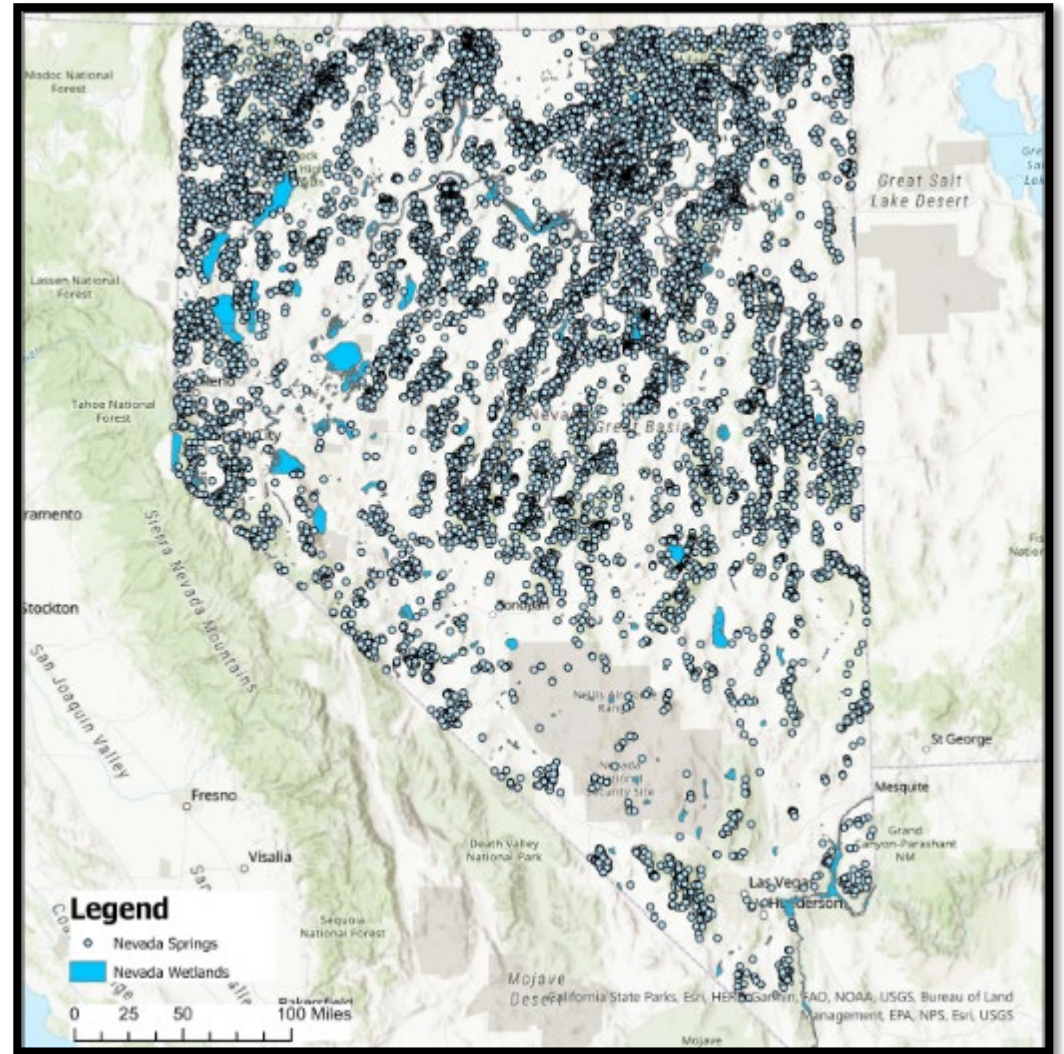




# NEVADA WETLANDS

## AN INTRODUCTION

- Driest state (~9 in/yr precip)
- Wetlands in NV include seeps, springs, riparian zones, saline lakes, marshes, and seasonal wetlands like ephemeral streams, playas, vernal pools, etc.
- >27,000 springs
- 2.9 million acres of wetlands
- <5% of NV by area, used by >75% of the species.





## NEVADA WETLANDS THREATS AND CHALLENGES

### Wetland threats

- 52-90% of wetland acreage lost in the last 200 years
- Few wetlands jurisdictional under CWA; minimal state regulatory protection
- Climate change vulnerability
- Vegetated wetlands disproportionately privately owned and necessary for industry/ag

### Management challenges

- Wetland work split amongst dozens of agencies
- >85% of wetlands have not been surveyed

**= Need for statewide Wetland Program and Plan!**

# WETLAND PROGRAM PLAN OBJECTIVES

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## Assessment, Inventory, and Monitoring

- Develop Level 1 and 2 survey tools
- Expand inventory efforts
- Wetland database

## Voluntary Restoration and Protection

- Define restoration goals
- Identify priority wetlands
- Guidance on techniques for restoration
- Tracking of restoration projects

## Sustainable Financing

- Funding for staff and wetland projects
- Coordination to maximize funding

**Stakeholder Involvement** is part of each Objective

## WPP development

Led by NDNH

Stakeholder survey

1:1 meetings w/ wetland  
partners





## WPDG-FUNDED WORK

### LINKING WPP OBJECTIVES TO '19 AND '21 WPDG PROJECT TASKS\*

		Core Elements		
		Assessment, Inventory, and Monitoring	Voluntary Restoration and Protection	Sustainable Financing
WPDG Tasks	WetBar development	X	X	
	Spring surveys and SpringsOnline	X	X	
	Wetland-dependent species	X		
	Wetland Program Coordinator and WPP update	X	X	X

\*NV has received WPDG funding since the early 2000s

# WETBAR

## LEVEL 1 WETLAND ASSESSMENT TOOL

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Developed by Dr. Ken McGwire at the Desert Research Institute  
Funded in '19 and '21 WPDG

### **GIS-based toolbar to easily integrate and analyze:**

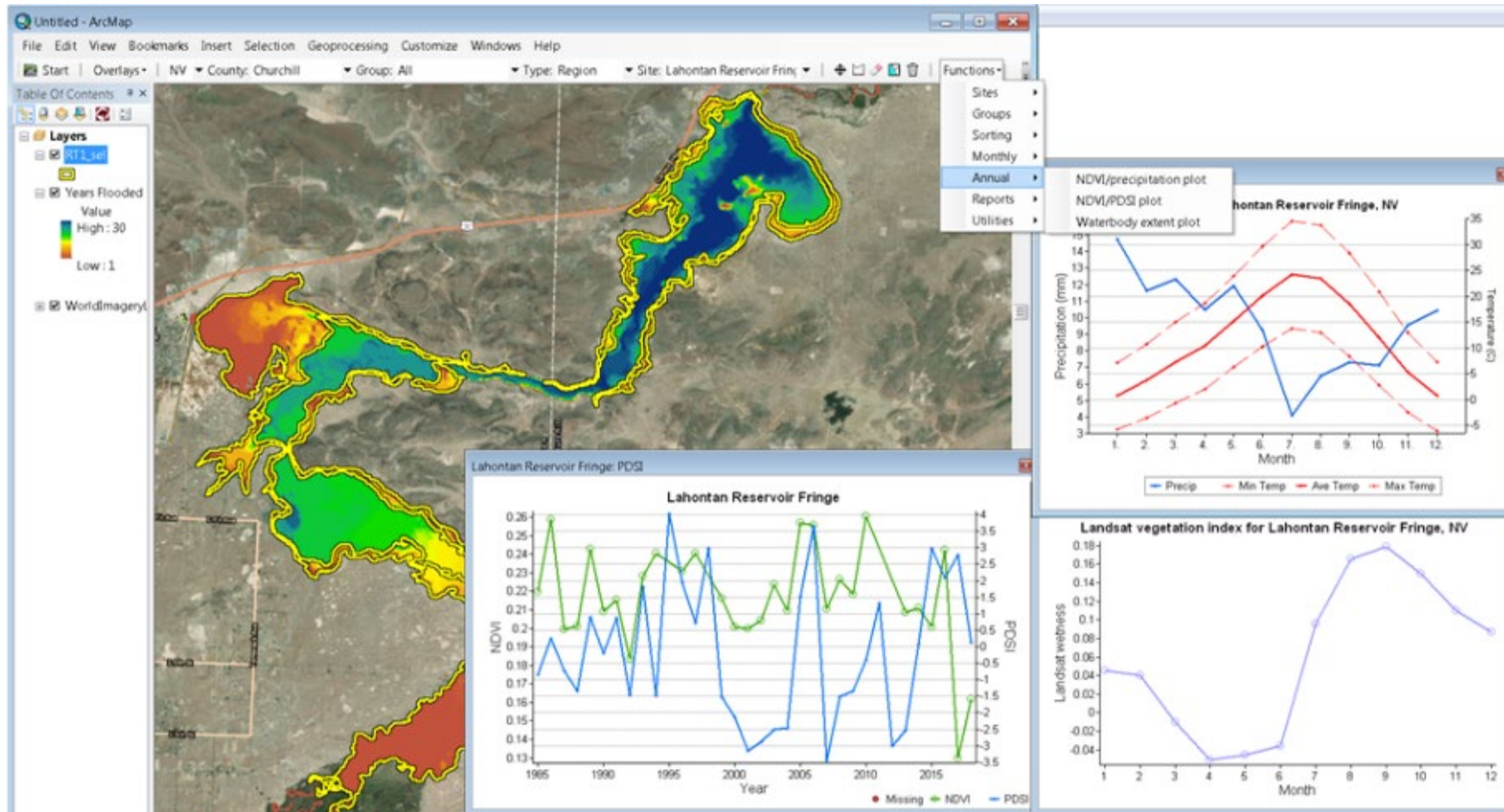
- Landsat imagery from 1985-present; other aerial imagery
- Web-based data (wells, stream gauges, climate, soils, land ownership, etc.)
- No GIS experience required

### **WetBar uses:**

- Pre-survey site analysis
- Trend assessment of vegetation vigor (NDVI), waterbody extent
- Comparison to trends of nearby ground/surface water, climate, etc
- Assessments of specific sites or statewide
- Identifying restoration sites, habitat for Lahontan Cutthroat Trout

# WETBAR

## EXAMPLE WETBAR ANALYSIS

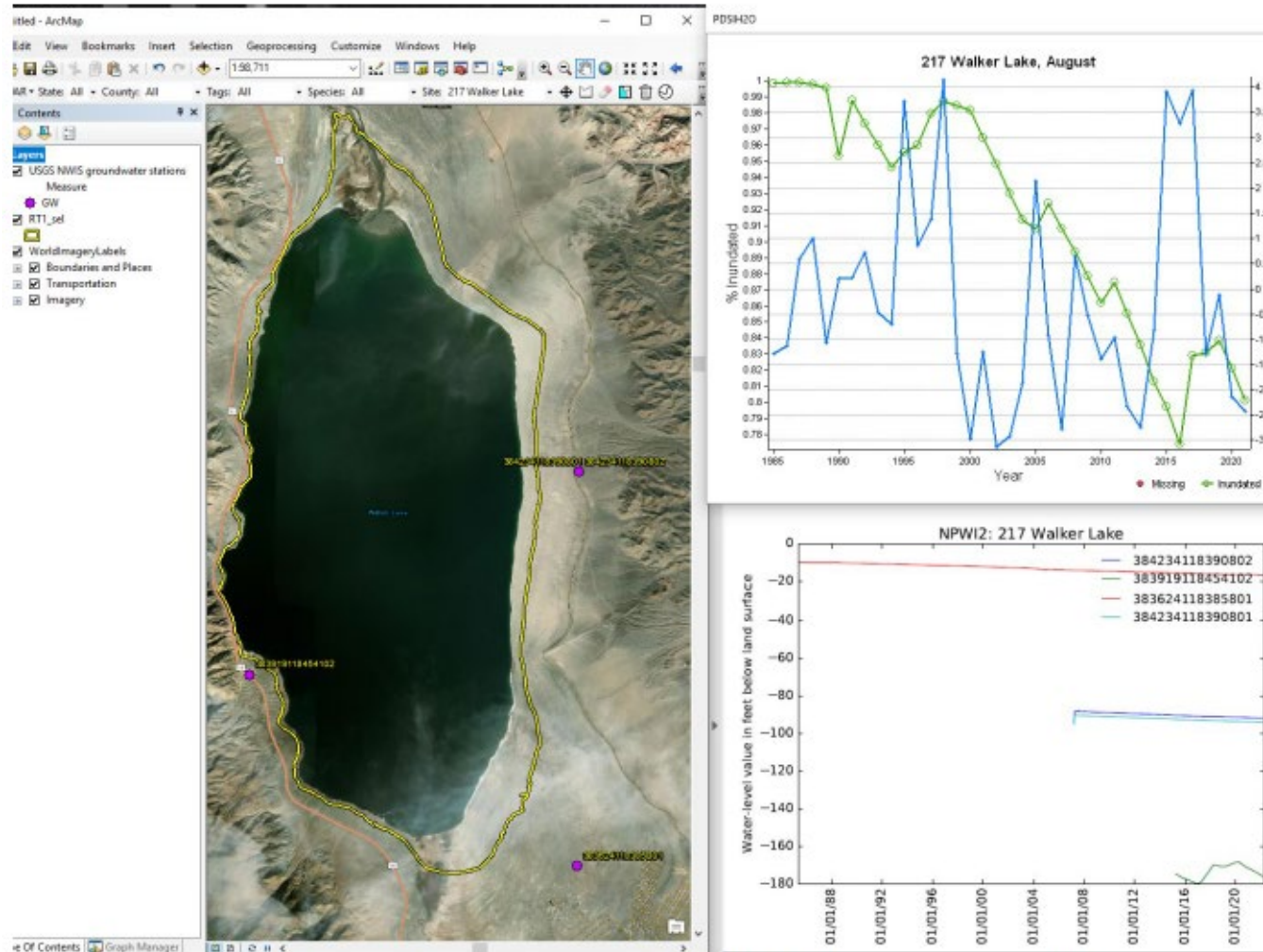


Annual NDVI, precipitation, and temperature at Lahontan Reservoir. Courtesy of Dr. Ken McGwire, DRI



# WETBAR

## EXAMPLE WETBAR ANALYSIS



Comparison of Walker Lake inundation, PDSI, and nearby well levels. Courtesy of Dr. Ken McGwire, DRI

# SPRING SURVEYS AND DATA MANAGEMENT

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Led by the Springs Stewardship Institute  
Funded in '19 and '21 WPDG

## **Springs inventorying**

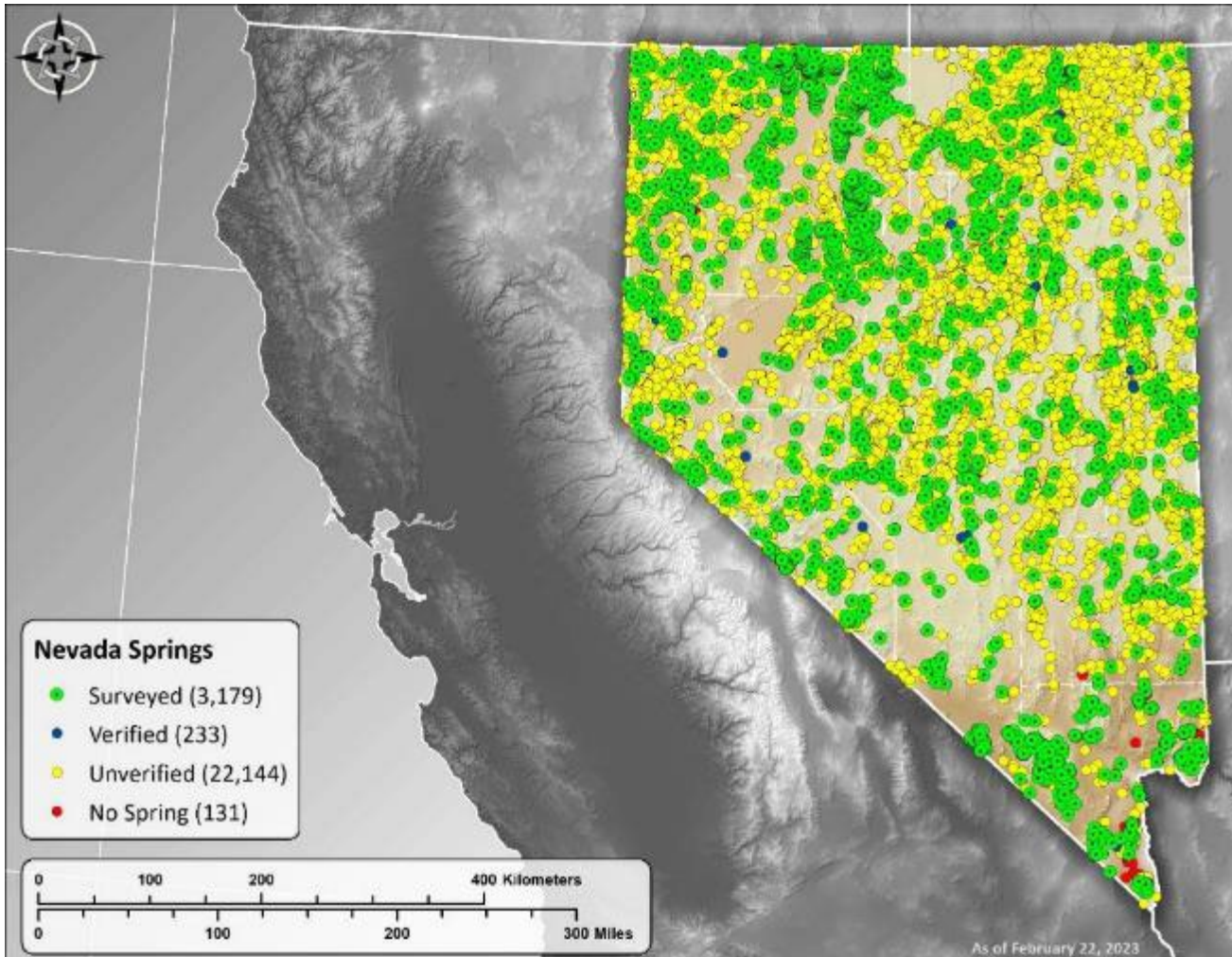
- >500 springs surveyed throughout NV
- Surveys include hydrology, water chemistry, plant species composition, condition, geomorphology, sensitive species (springsnails) and more
- Focus on understudied areas

## **SpringsOnline improvements**

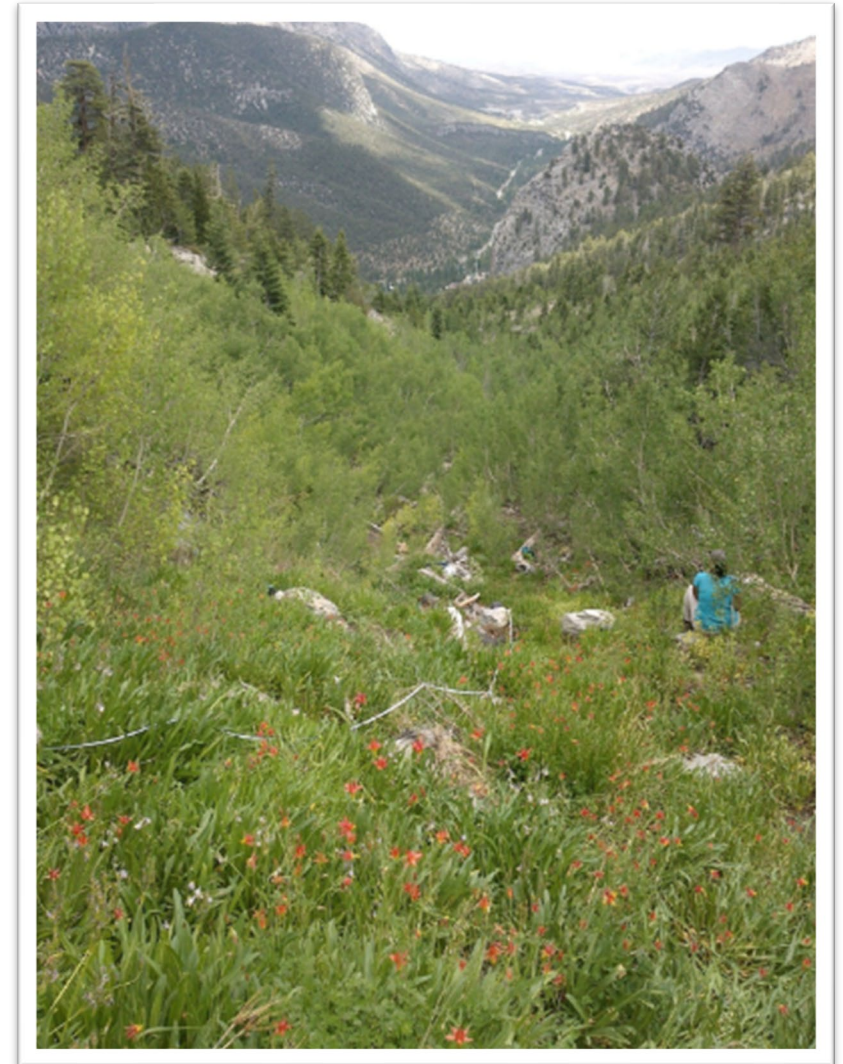
- <https://springsdata.org/>
- Free, publicly accessible, secure database for biologic, hydrologic, and geomorphic data on springs ecosystems
- Automatic reports for easy communication

# SPRING SURVEYS

## INVENTORY PROGRESS



Courtesy of Dr. Jeff Jenness, SSI





# WETLAND DEPENDENT SPECIES

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Led by The Nature Conservancy and NDNH  
Funded in '19 WPDG

- Data mining for 66 at-risk wetland dependent species
  - Lit reviews
  - Compilation from agencies
- Data incorporated in statewide sensitive species database (Biotics)



# WETLAND PLAN UPDATES

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Led by NDNH  
Funded in '21 WPDG

- Funded full-time Wetland Program Coordinator
- Updating the WPP for 2023-2028
- Coordinating and collaborating with wetland stakeholders





# WHAT'S NEXT?

## FUTURE AND ONGOING WETLAND PROJECTS

### Surveys of rare wetlands

- Fens and vernal pools (regional priority)

### Wetland reference sites

- Documenting and describing pristine wetlands
- References for restoration

### Spring surveys

- Under-surveyed areas and springsnail habitat

### Wetland outreach

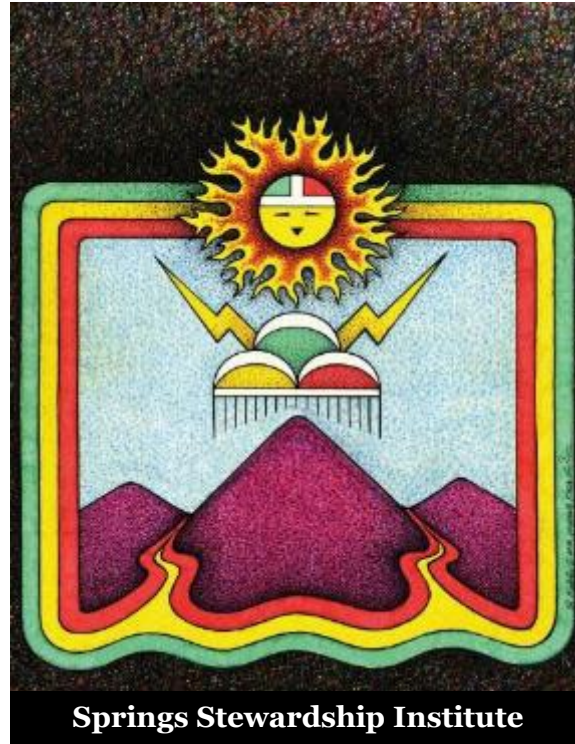
- Communication and collaboration with wetland stakeholders

### And more....



# WETLAND PROGRAM PARTNERS

THANK YOU!



Springs Stewardship Institute



Other partners that provided feedback and engaged in wetland work:

- US Forest Service
- Bureau of Land Management
- US Fish and Wildlife Service
- US Geological Survey
- Nevada Division of Environmental Protection
- Nevada Department of Wildlife
- Pyramid Lake Paiute Tribe
- Riparian Creeks and Communities Team
- USDA National Resource Conservation Service
- Nevada Division of Water Resources
- Friends of Nevada Wilderness

And many more...

# Questions?



## Contact

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