

CLEARING THE WATERS

A NEWSLETTER BY THE SURFACE WATER QUALITY BUREAU

VOLUME 31

ISSUE 2

FALL 2026



**New Mexico Environment Department
Surface Water Quality Bureau**
www.env.nm.gov/surface-water-quality

CLEARING THE WATERS

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Cover Photo: Bitter Creek
Credit: Jocelyn Harimon

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This newsletter is published semiannually by the New Mexico Environment Department's Surface Water Quality Bureau.

Funding is provided by a Clean Water Act §319(h) grant from the U.S. Environmental Protection Agency.



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2026 Insect Conservation Workshop for State Agencies

By Alan Klatt, Surface Water Quality Bureau

The April 23, 2026, **Insect Conservation Workshop** for New Mexico state agencies was a huge success this year. It was hosted by the Xerces Society for Invertebrate Conservation, the University of New Mexico's Division of Arthropods, and Wild Friends, a statewide UNM School of Law program that provides education and civics training on wildlife conservation to students in grades 5-12.



The workshop brought together the NM Department of Agriculture (NMDA), NM Department of Transportation (NMDOT), NM Environment Department (NMED), NM Department of Wildlife (NMDOW), NM Energy Minerals and Natural Resources Department (EMNRD), and the NM State Lands Office (SLO) to share information on the importance of insects and to discuss conservation strategies.

An incredible group of Ruidoso High School students got things started by sharing their experience testifying before the Senate Conservation Committee on the importance of insect education and insect conservation. In February 2026, legislators unanimously passed **Senate Memorial (SM) 3** which acknowledges that insects provide vital functions in ecosystems including pollinating one-third of global food crops, decomposing waste, eliminating pests, and protecting soil health. SM 3 further acknowledges that scientists are worried about decreasing insect populations due to habitat loss, pollution, pesticides, invasive species, and climate change. SM 3 requested that state agencies participate in a workshop about insect identification, ecology, monitoring and management.

David Lightfoot and Simon Donesky, both from UNM's Division of Arthropods, gave very informative presentations on New Mexico's arthropods and their conservation status. New Mexico has diverse topography and landforms which contributes to increased environmental diversity and biotic diversity. There is an estimated 10,000-15,000 arthropod species in New Mexico.

2026 Insect Conservation Workshop for State Agencies: cont'd

The **New Mexico Rare Arthropods Resource** (NM-RARe) was introduced during their presentation. NM-RARe lists rare, threatened, and endemic arthropods to New Mexico and highlights the needs of species so they can be better protected. Several articles about declining insect populations were discussed with habitat loss, pesticide use, and climate change contributing to the decline. Recommended actions include managing existing natural landscapes for native species (preserving what is left) and restoring degraded habitat for native species (restoring what was lost).



Alan Klatt presenting at the Insect Conservation Workshop. Photo Courtesy of the conference hosts

Kaitlin Haase of the Xerces Society gave a very in-depth presentation on invertebrate conservation including habitat creation, optimizing disturbance regimes, and mitigating human impacts. Creating insect habitat has four main steps 1.) Assess your site for target species and local conditions, 2.) Prepare your site by removing invasive weeds (minimize herbicide use), 3.) Plant/seed with pesticide-free plant material and prioritize diversity, and 4.) Maintain your site with adaptive management.

Additional best management practices (BMPs) to support insect populations include the following:

- **Grazing** – Utilize a high-density, short duration grazing schedule and reduce stocking rates during drought.
- **Mowing** – Schedule around growing season and incorporate unmowed strips.
- **Agriculture** – Integrate pest and pollinator management utilizing regenerative agricultural practices such as low till/no till and diversified crops.

Here are some of the agency highlights. To support pollinators, NMDOT prioritizes green stormwater infrastructures (GSI), conducts rare plant surveys, uses native seed mixes based on New Mexico's ecoregions, and is minimizing the use of herbicides through employee training and installing "no-spray zones" in areas with rare plants. NMDA provides insect collection and identification services, registers commercial beekeepers through their apiary program, offers pesticide applicator education, conducts pesticide misuse investigations, and is developing a **New Mexico Pollinator Protection Plan**.

2026 Insect Conservation Workshop for State Agencies: cont'd

EMNRD State Forestry Division shared about the work they do to support the early detection of bark beetles and to keep forests healthy with thinning treatments. NMDOW gave an overview of the **State Wildlife Action Plan (SWAP)**; As of 2025, the statutory definition of “wildlife” now includes insects and the SWAP has been revised to include insects for the first time as **Species of Greatest Conservation Need (SGCN)**. Of the 505 total SGCN, 94 are insects. The SWAP describes key habitats, threats to habitats, and actions to conserve SGCN and their habitats. The New Mexico State Land Office primarily promotes insect conservation through habitat improvement and avoidance of damage to rare insect species through project review. This year NMSLO participated in the New Mexico Bumble Bee Atlas, documenting presence of bumble bees and their floral resources on New Mexico state trust land. In the upcoming year, NMSLO and partners will monitor insect diversity and abundance on reclaimed well pads to better understand how insect communities and the delicate food webs they support respond to reclamation.

With regards to surface water, benthic macroinvertebrates such as stoneflies (Plecoptera), caddisflies (Trichoptera), and mayflies (Ephemeroptera) can be used as indicators of clean, well-oxygenated water with stoneflies being the most sensitive to pollution. NMED Surface Water Quality Bureau has been collecting benthic macroinvertebrate (BMI) data since 1979 and developed a regional **Mountain Stream Condition Index (M-SCI)** in 2006 in collaboration with Dr. Gerald Jacobi and Tetra Tech Inc. to help determine if New Mexico’s surface waters are supporting aquatic life. Aquatic life is a designated use for all of New Mexico’s surface waters. The M-SCI score is composed of twelve individual metrics from five metric categories covering taxonomic composition, taxonomic richness, tolerance, habitat, and functional feeding group. Sites with low M-SCI scores, those ranking below the 25th percentile of reference sites, are considered “Not Supporting” with respect to aquatic life use and are listed as “impaired” in New Mexico under Clean Water Act Section 303(d). BMI data has also been instrumental for developing sediment and nutrient thresholds which are also used to determine if water quality standards are being met.

As of 2024, SWQB has identified 11 streams that are impaired with respect to BMI data and at least one other impairment (Table 1).

Table 1: 2024 CWA Section 303(d) list of impaired streams that are listed as impaired for benthic macroinvertebrates and at least one additional impairment.

WATER_NAME	IMPAIRMENTS
Cow Creek (Pecos River to Bull Creek)	Benthic Macroinvertebrates Temperature
Gallinas River (Las Vegas Diversion to USFS bnd)	Benthic Macroinvertebrates Temperature
Las Animas Ck (perennial prt Animas Gulch to headwaters)	Benthic Macroinvertebrates Dissolved Oxygen
Pecos River (Alamitos Canyon to Jack’s Creek)	Benthic Macroinvertebrates Temperature
Pecos River (Cow Creek to Canon de Manzanita)	Benthic Macroinvertebrates Turbidity
Rio Bonito (Perennial prt NM 48 near Angus to headwaters)	Benthic Macroinvertebrates Escherichia Coli (E. Coli) Flow Regime Modification Temperature
San Francisco River (Box Canyon to Whitewater Creek)	Benthic Macroinvertebrates Escherichia Coli (E. Coli)
San Francisco River (Centerfire Creek to AZ border)	Benthic Macroinvertebrates Sedimentation/Siltation Temperature
San Francisco River (NM 12 at Reserve to Centerfire Creek)	Benthic Macroinvertebrates Temperature Turbidity
Tecolote Creek (I-25 to Blue Creek)	Benthic Macroinvertebrates Escherichia Coli (E. Coli) Nutrients Temperature
Trout Creek (Perennial prt San Francisco R to headwaters)	Benthic Macroinvertebrates Temperature

Multiple lines of evidence such as BMI data, a biological indicator, in conjunction with chemical and physical stream data provides stronger evidence of a water quality problem compared to using just a single indicator. Under the framework of the 1972 federal **Clean Water Act (CWA)**, after a stream is listed as impaired, the next step is to develop a Total Maximum Daily Load (TMDL), which identifies pollutant load reduction targets that are necessary to attain water quality standards and support designated uses.

Of the streams listed in Table 1, all but Trout Creek has a TMDL in place for at least one impairment. Note that TMDLs specifically for BMIs do not exist, because BMIs are not a pollutant. After TMDL development, the next step SWQB takes under the CWA to address nonpoint sources of pollution is to develop a Watershed Based Plan (WBP). Of the streams listed in Table 1, all the streams except Las Animas Creek, the Rio Bonito (near Angus, NM), and Tecolote Creek have watershed-based plans – a WBP for Tecolote Creek is currently under development. SWQB has several funding programs to support projects such as those identified in WBPs that improve water quality and riparian habitat.

SWQB's online mapper is a great resource to identify what impairments, TMDLs, WBPs, and restoration projects are in your area of interest.

SWQB Staff are available if anyone has additional questions about this information –

I can be reached at alan.klatt@enm.nm.gov and at 505-819-9623.

In closing, I would like to leave everyone with a few key restoration strategies for benthic macroinvertebrates:

- **Protect, maintain, and restore** diverse riverine habitats like riffles, glides, pools, side channels, floodplains, and wetlands using nature-based solutions that utilize woody debris, boulders, and native vegetation to shade the water, lower temperatures, keep dissolved oxygen levels high, and supply organic matter (allochthonous food sources).
- **Manage upstream dams and reservoirs** to release ecological or scouring flows that mimic natural seasonal patterns and help naturally maintain habitat features such as pools, side channels, wetlands, and floodplains.
- **Reduce the release of pollutants into the environment** and reduce runoff from urban areas and agricultural areas that have the potential to transport sediment and other pollutants to waterbodies.

New Mexico Wetlands Inventory Update: Advancing Wetland Mapping and Classification Across the State

By Shabana Shoukath, Surface Water Quality Bureau

The New Mexico Environment Department (NMED) Surface Water Quality Bureau (SWQB), in partnership with Saint Mary's University of Minnesota Geospatial Services and with funding from the U.S. Environmental Protection Agency (EPA) Region 6 Wetland Program Development Grants, is continuing efforts to update and enhance New Mexico's statewide wetlands inventory. Accurate wetland mapping is essential for protecting New Mexico's water resources, supporting restoration efforts, informing land management and permitting decisions, and helping communities adapt to changing environmental conditions. The Wetlands Inventory Update Project provides the foundation for these efforts by developing a comprehensive, standardized, and scientifically robust wetlands database for the state.

Building a Stronger Wetlands Inventory

Work through this project is updating and standardizing wetland mapping across New Mexico using nationally recognized classification systems, including the U.S. Fish and Wildlife Service (USFWS) Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979), U.S. Army Corps of Engineers (USACE) Hydrogeomorphic Classification for Wetlands (Brinson), and USFWS Dichotomous Keys and Mapping Codes for Wetland Landscape Position, Landform, Water Flow Path, and Waterbody Type (LLWW) Descriptors. Together, these systems provide detailed information on wetland characteristics, hydrology, ecological functions, and landscape connectivity. In addition to wetland mapping, the project incorporates USFWS Riparian Habitat Classification and Mapping and wetland functional assessments, creating a more complete picture of New Mexico's aquatic resources. These enhanced datasets are publicly available through the NMED Open EnviroMap platform. Wetlands classified using the Cowardin system are also available through the U.S. Fish and Wildlife Service's National Wetlands Inventory (NWI).

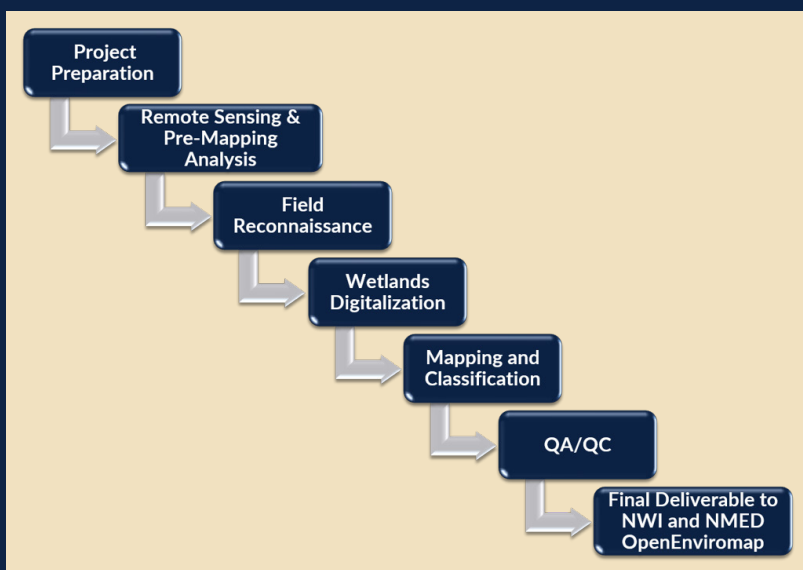
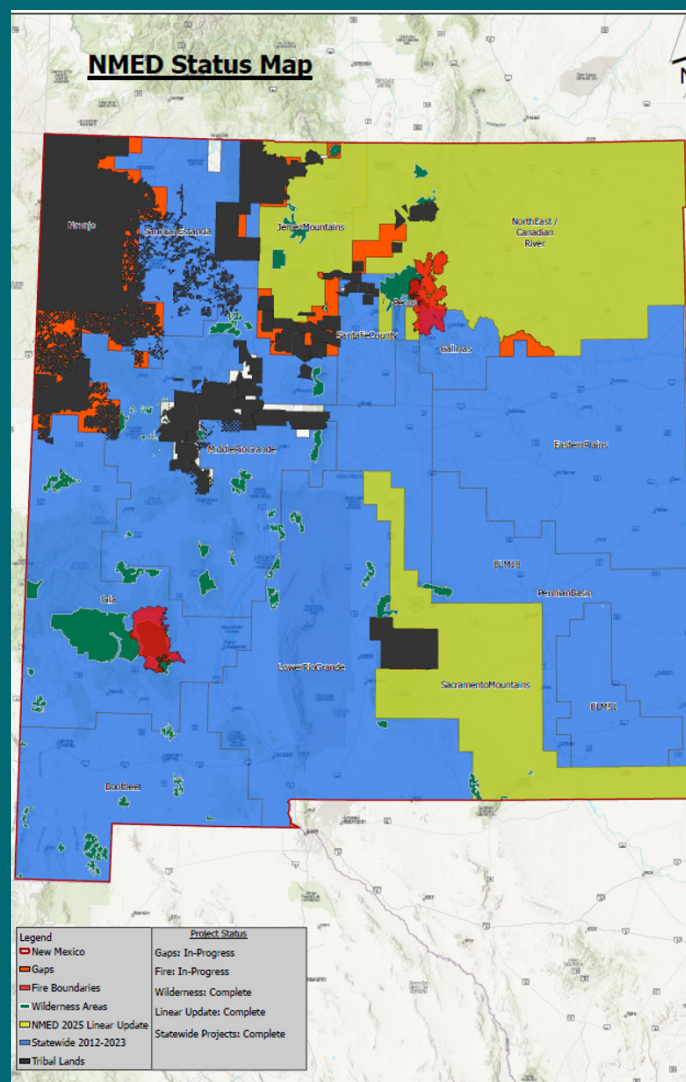
New Mexico Wetlands Inventory Update: *cont'd*

Mapping Progress Across New Mexico

The NMED Status Map displays the substantial progress and ongoing effort of wetland mapping across the state. These updates address new NWI standards, landscape changes, wildfire impacts, edge-mapping inconsistencies, and previously unmapped or fragmented wetland areas, while also expanding mapping coverage within wilderness and other protected areas.

Combining Technology and Field Verification

The mapping process integrates advanced geospatial technologies with on-the-ground field verification. Project staff use high-resolution aerial imagery, Light Detection and Ranging (LiDAR) elevation data, soils information, hydrology datasets, and other remote sensing tools to identify potential wetlands. Field reconnaissance then validates mapping interpretations, documents wetland conditions, and refines classifications.



New Mexico Wetlands Inventory Update: *cont'd*

A key component of the project is stakeholder engagement and technical collaboration.

The New Mexico Wetlands Program convenes a Technical Advisory Committee (TAC) composed of representatives from federal and state agencies, tribal governments, academic institutions, non-governmental organizations, and other wetland professionals. The TAC provides technical guidance, reviews mapping methodologies, and helps ensure consistency and scientific rigor throughout the project.

In addition, the Wetlands Program hosts mapping workshops, field demonstrations, roundtables, and training events that provide opportunities for stakeholders to learn about wetland mapping and classification methods, review project progress, and contribute local knowledge. To further expand public access and outreach, the program developed interactive Story Maps that showcase wetland mapping efforts, project findings, and regional wetland resources through engaging maps, photographs, and educational content. These outreach tools help communicate the value of New Mexico's wetlands to land managers, decision-makers, researchers, educators, and the public while promoting science-based conservation and stewardship across the state.

Supporting Wetland Protection and Restoration

The updated inventory provides valuable information for a wide range of conservation and management activities, including:

- Wetland Action Plans (WAPs)
- New Mexico Rapid Assessment Method (NMRAM) implementation
- Watershed-based planning
- Restoration and conservation prioritization
- Clean Water Act (CWA) permitting and NM state regulatory review
- Climate resilience and hydrologic change analysis
- Identification of sensitive habitats and restoration opportunities

Physical and Biogeochemical Functions	Habitat Functions
□ Surface Water Detention □ Streamflow Maintenance □ Groundwater Recharge □ Nutrient Transformation □ Carbon Sequestration □ Sediment and other Particulate Retention □ Bank and Shore Stabilization	□ Fish Habitat □ Aquatic Invertebrate Habitat □ Waterfowl Habitat & Water Bird Habitat □ Uncommon Wetlands Plant Communities □ Other Wildlife Habitat

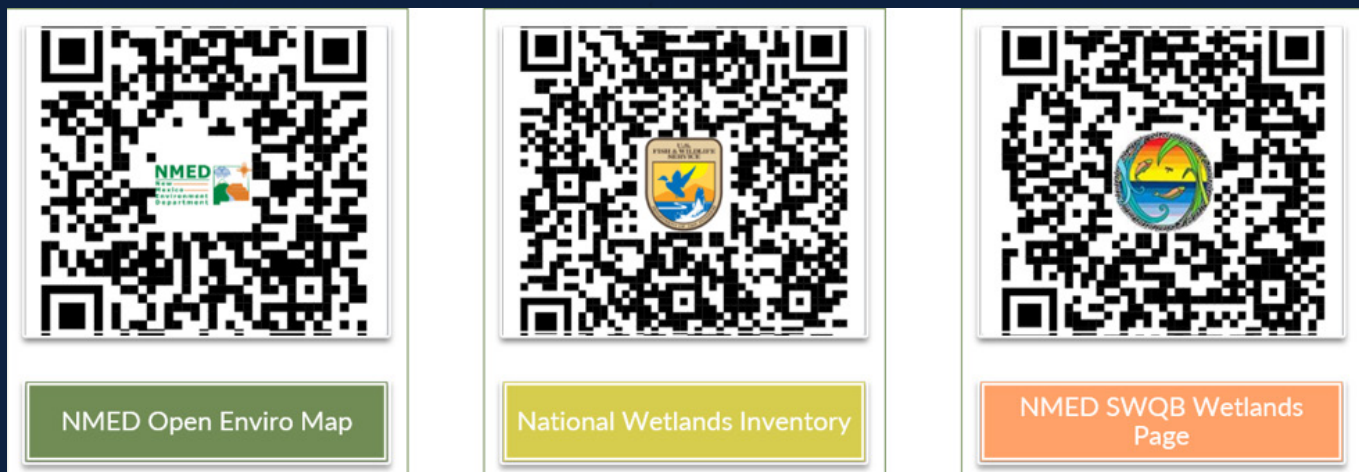
New Mexico Wetlands Inventory Update: *cont'd*

The project also supports the development of functional classifications, helping resource managers better understand wetland conditions, ecological services, and restoration opportunities. Building upon the statewide wetlands inventory, the New Mexico Wetlands Program is also exploring machine learning-based approaches to identify Potentially Restorable Wetlands (PRWs). Using high-resolution LiDAR data, soils information, hydrologic variables, and predictive modeling, this effort will help identify wetlands with the greatest restoration potential, support watershed planning, restoration prioritization, and long-term conservation across New Mexico.

Project Outlook

The resulting statewide wetland inventory will provide an invaluable resource for protecting water quality, conserving wildlife habitat, supporting restoration projects, and informing science-based decision-making across New Mexico for years to come. As the project progresses toward completion in October 2027, the New Mexico Wetlands Program will make geospatial datasets available to support planning, assessment, restoration, and research throughout New Mexico.

Organizations, agencies, researchers, and other stakeholders interested in accessing wetlands mapping data, learning more about the project, TAC meetings, outreach events, mapping workshops and Wetlands Roundtables are encouraged to contact Zach Shephard, Wetlands Program Coordinator zach.shephard@env.nm.gov, Shabana Shoukath, Wetlands Program Project Officer shabana.shoukath@env.nm.gov and Shinya Burck, shinya.burck@env.nm.gov. The New Mexico Wetlands Program welcomes collaboration and participation from partners working to protect, restore, and better understand New Mexico's wetland resources.



New Nonpoint Source Program projects

Federal Funds*

319- Watershed-Based Plan: Update for Stormwater Management in the El Paso Las Cruces Watershed

Doña Ana Soil and Water Conservation District (DASWCD)



State Funds**

RSP - El Rito Creek Middle Reach Implementation,

Amigos Bravos

State Funds

RSP - Rio Gallina Chama River Confluence Restoration

Chama Peak Land Alliance



State Funds

RSP - Mora River Restoration Phase III - Rio Mora National Wildlife Refuge

Hermit's Peak Watershed Alliance

State Funds

RSP - Phase II: Restoration of Natural Flow Dynamics in Canjilon Creek, Headwaters of the Rio Chama

Keystone Restoration Ecology, Inc



State Funds

RSP - Phase II: San Antonio Headwaters Restoration Project

Keystone Restoration Ecology, Inc

State Funds

RSP - Phase II: Spur Lake Headwaters Restoration Project

Keystone Restoration Ecology, Inc



State Funds

RSP - Rio Puerco Riparian and Beaver Habitat Restoration Project

Rio Grande Return

**Funding Sources Include: Clean Water Act (CWA) Section 319*

***Funding Sources Include: Land of Enchantment, Watershed Protection Assistance Program (WPAP), River Stewardship Program (RSP)*

New Nonpoint Source Program projects

State Funds

Rio Tusas Restoration Project

River Source, Inc.



State Funds

Rio Grande Bar 2 Restoration at the Pueblo of Santa Ana

Pueblo of Santa Ana

State Funds

Historic Riparian Floodplain Recharge Using Green Stormwater Infrastructure

City of Santa Fe



State Funds

Rio en Medio and Rio Nambé Watershed Low Tech Process-Based Assessment, Planning, and Design

Rio Grande Return

State Funds

NM Rio San Antonio and Lagunitas Creek Stream and Wetland Restoration Implementation Project

Trout Unlimited, Inc.



State Funds

Tecolote Watershed Based Plan

Hermits Peak Watershed Association

State Funds

Middle Rio Grande Watershed Based Plan

Ciudad Soil and Water Conservation District



SECTION UPDATES

Triennial Review of 20.6.4 NMAC

The New Mexico Environment Department (NMED) petitioned the New Mexico Water Quality Control Commission (WQCC) to consider the docketed matter of WQCC 25-75 (R) to amend 20.6.4 New Mexico Administrative Code (NMAC). The WQCC held a public hearing on NMED's proposed standards amendments on September 28-29. The Commission deliberated on the proposals on September 30 and adopted the majority of NMED's proposals.

Prominent Items proposed include:

- New wetlands-specific narrative criterion- **ADOPTED**
- New EPA recommended PFOS and PFOA aquatic life criteria- **ADOPTED**
- Consolidating and clarifying which costs will be covered by third party petitioners- **NOT Adopted**
- Aquatic life use clarifications in the Gila/San Francisco Basin based on a thorough review and analysis of available temperature, fisheries, and supporting data- **ADOPTED**

STAFF UPDATES



Austin Fitzgerald
Monitoring Team Scientist

A warm welcome to Austin who comes to the SWQB from Atlanta, GA where he worked for U.S. EPA Region 4 implementing sections 401 and 404 of the Clean Water Act



Avery Simpson
Advanced TMDL Writer

Congratulations to Avery in his new role as the MASS Advanced TMDL Writer!



WATERSHED PROTECTION

SECTION UPDATES



The Escudilla Landscape Watershed Restoration Action Plan and Watershed Based Plan Addendum has been approved by the U.S. Environmental Protection Agency. The associated watersheds have also been added to the NPS Priority Watersheds for planning.

Surface Water Quality Bureau **Watershed Protection Assistance Program** Applications are due **October 15th** -



The **Watershed Protection Assistance Program** (WPAP) helps communities in their efforts to improve surface water quality and river habitat. WPAP provides funding to support the development, construction, maintenance, or monitoring of projects that directly or indirectly contribute to the improvement of surface water quality, riparian habitat, or aquatic habitat. Applicants may request up to \$75,000 per request. For more information and how to apply, visit our [NPS Funding Opportunities Page](#)

STAFF UPDATES



Zach Shephard

Wetlands Team Supervisor

A warm welcome to Zach as he steps into the role of Wetlands Team Supervisor!



Susan Styer

Former *Clearing The Waters* Editor

A big THANK YOU to Susan for many years of dedication to the design, content and production of *Clearing the Waters*!



Jocelyn Harimon

New *Clearing the Waters* Editor

Jocelyn will be the new editor for the bi-annual publication of the *Clearing the Waters* Newsletter.



SECTION UPDATES



Surface Water Quality State Permitting Program

The Surface Water Quality Bureau presented the testimony to the Water Quality Control Commission from June 8th through June 18th to support the proposed amendments to 20.6.2 New Mexico Administrative Code (NMAC) Ground and Surface Water Protection to create a Surface Water Quality State Permitting Program (SWQSPP) for discharges to surface waters of the State, and to consider a proposed new rule at 20.6.5 NMAC New Mexico Pollutant Discharge Elimination System to control the discharge of pollutants into waters of the United States under the authority of the federal Clean Water Act. The WQCC will deliberate on the proposed amendments and rules at their November 9th meeting. Please visit the [WQCC Docketed Matters webpage](#) for information on the rulemaking process.



nonpoint source associated

UPCOMING EVENTS

OCT. 14

October Stream Restoration Day

Rio de Las Vacas, Santa Fe National Forest

9 a.m. - 3 p.m. to sign up [*RSVP to Karen by email*](#)

OCT. 17

Urban Forest Management in Practice

Selecting for Tree Species Biodiversity along the Santa Fe River

10 a.m.-12 noon, Space is limited, [register here](#)

OCT. 23-25

Hands-on Workshop with in-arroyo & upland structures

Rio Embudo, Dixon

to sign up email [*abqwildlifefederation@gmail.com*](mailto:abqwildlifefederation@gmail.com)

OCT. 26

Santa Fe Watershed Association Open House

Santa Fe Watershed Association Office
1413 Second Street, Suite 2 & 3

4 p.m.– 6 p.m.



nonpoint source associated

UPCOMING EVENTS

SWQB Wetlands Program - Wetland Mapping & Classification Workshops

Learn about the statewide wetland inventory update and discuss how wetlands mapping can support wetland management, restoration, conservation, and planning. Events in this series include:

OCT. 27-29

Oct. 27 – Farmington: TAC Meeting at San Juan College (morning, in person/online) and Mapping Workshop at Animas River Park (afternoon, in-person only).

Oct. 28 – Taos: Mapping Workshop, 1:00 p.m. at Taos Library, followed by field workshop at 2:00 p.m. at Fred Baca Park. (In-person only)

Oct. 29 – Santa Fe: Mapping Workshop, 1:00 p.m. at the Santa Fe State Library Yucca Room, followed by field workshop at 2:00 p.m. at Two Mile Pond and the Santa Fe River. (In-person only)

NOV. 18

Fall 2026 Wetlands Roundtable

Join the SWQB Wetlands Program for their Fall 2026 Wetlands Roundtable to learn about wetlands related work throughout the state and to participate in wetlands general topic discussions.

Santa Fe, Santa Fe State Library Pinon Room

Please reach out to Zach Shephard at zach.shephard@env.nm.gov to be added to the invite lists.

