



# MIDDLE RIO GRANDE ENDANGERED SPECIES COLLABORATIVE PROGRAM

## December 2022 Newsletter

### A LETTER FROM THE PROGRAM MANAGER

Dear Collaborative Program signatories, partners, and friends –

2022 was a whirlwind year for the Collaborative Program. It was our last transition year of developing the adaptive management program, and we will be officially moving into implementing the processes, procedures, and tools that we have developed over the last few years. Earlier this month, we held our first Collaboratory and our theme was “From Planning to Practice.” This theme encapsulates the shift in the Collaborative Program’s focus, which necessitates a corresponding change in how the signatories engage with the Collaborative Program. The need for complete and transparent communication about planned and implemented activities and associated scientific needs and findings is more crucial than ever. Take a deep breath and congratulate yourselves on your hard work and dedication up until now. And as we pivot, think about how your engagement also has to change as we move from planning to practice.

The beauty of adaptive management is the continuous dedication to iterative learning and, in turn, iterative management. That is also adaptive management’s biggest challenge, and one that the signatories will have to work together to enact. I truly believe that the Collaborative Program signatories can be stronger together, using collective resources to better achieve common goals. With the likelihood of increasing unreliability in the hydrograph, less water availability, and a bosque and riverine ecosystem responding to climate change, the Collaborative Program is uniquely poised to fulfill its mission of “providing a collaborative forum to support scientific analysis and implementation of adaptive management to the benefit and recovery of the listed species...” The potential for the Collaborative Program to implement what we have built over the last six years is huge, while helping natural resource management agencies make scientifically sound decisions in the face of an uncertain future.

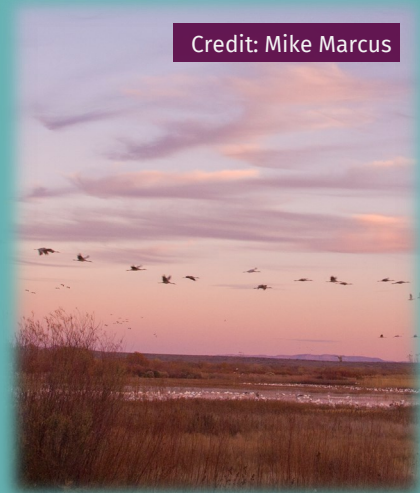
Best wishes for a safe and wonderful holiday season, and a happy new year!

*Debbie Lee* (Debbie Lee), Program Manager

### FEATURED THIS ISSUE:

- ◆ Letter from the Program Manager
- ◆ 2022 Collaboratory
- ◆ Listed Species Updates
- ◆ 2022 Hydrology Update
- ◆ MRG Announcements
- ◆ Recent Publications
- ◆ Program Admin & Science Updates
- ◆ Upcoming Dates

Credit: Mike Marcus



# 2022 COLLABORATORY

## THE 2022 COLLABORATORY: FROM PLANNING TO PRACTICE

Provided by Michelle Tuineau, Program Support Team (PST)

The Collaborative Program hosted its first ever **Collaboratory** on December 6-7, 2022. The two-day event was well attended both days, with fifty-three (53) participants joining each day, and sixty-four (64) attendees overall. Attendees represented a range of affiliations, including academic institutions, federal agencies, irrigation districts, local agencies, non-governmental organizations, private companies, pueblos/tribes, and state agencies. There were executives, legal experts, managers, scientists, and students, among others, in the room. This diversity led to many connections and conversations that would not otherwise have occurred, and attendees had high praise for the value of exchanging ideas, sharing priorities, and planning for the future of the Collaborative Program together.

Over the last three years, the Collaborative Program has done the hard work of **establishing itself as a science and adaptive management (AM) program**. This has required the development of many processes, including the Long-Term Plan, Biennial Schedule, and peer review process. With the accomplishment of its first goal (see figure below), and a newly agreed upon ecosystem approach, the Collaborative Program is poised to

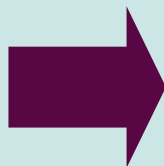
take on a new goal, one that tests and adaptively improves the many processes its developed. The new goal of the Collaborative Program is to **use an AM framework to make meaningful, timely, scientifically sound, and actionable management recommendations to benefit the listed species of the Middle Rio Grande (MRG) and their habitat** (see figure below).

The Collaboratory set the stage for this goal by adding management relevance to the Collaborative Program's science activities and using signatory feedback to help determine the science priorities for the next two years. **Outcomes from the Collaboratory will be sent to the Science and Adaptive Management Committee (SAMC) to inform the Science Evaluation in early 2023.** The Science Evaluation will assess the Collaborative Program's science and AM tools and processes and provide a process for making improvements to them. With the Collaboratory, the Collaborative Program takes a huge step away from **planning** and into the **practice** of fully interacting with its science and AM tools and processes.

The Collaboratory began with **opening remarks** from former Executive Committee (EC) Non-federal Co-chair, **John Stomp** (retired from the Albuquerque Bernalillo County Water Utility Authority [ABCWUA]) and former Federal Co-chair, **Wayne Pullan** (U.S. Bureau of Reclamation [Reclamation]). All recordings of the event are available on the Program Portal: [Click Here](#).

### OLD GOAL: ✓

Establish the Collaborative Program as a Science & Adaptive Management Program



### NEW GOAL:

Use an adaptive management framework to make meaningful, timely, scientifically sound, and actionable management recommendations to benefit the listed species of the MRG and their habitat

Figure: [left] Old Collaborative Program goal and [right] new Collaborative Program goal.

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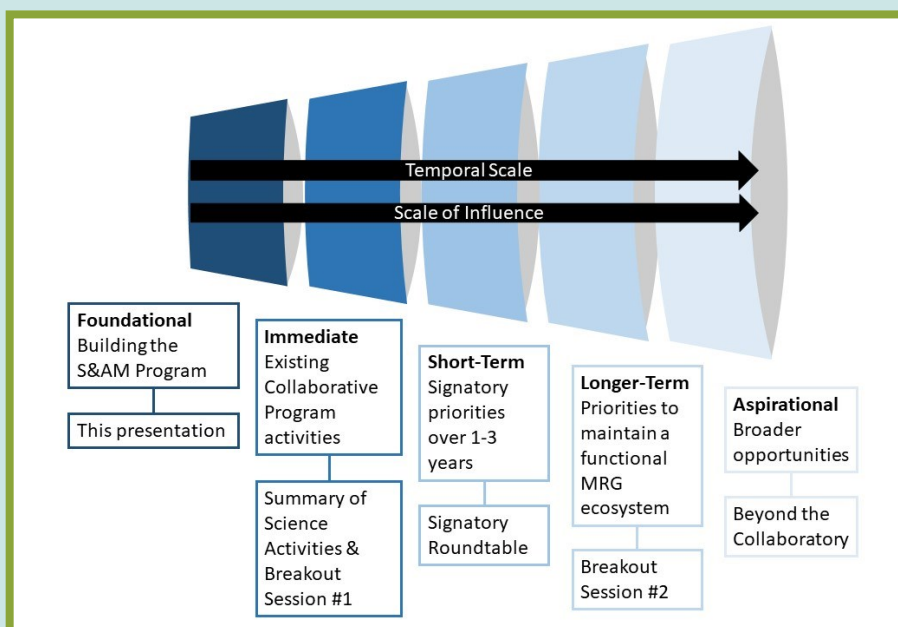
# 2022 COLLABORATORY

On Day One, Debbie Lee, Program Support Team (PST), helped to frame the structure of the Collaboratory during her **overview of AM** presentation. The figure to the bottom left depicts the sequential structure of Collaboratory sessions. The **sessions were designed to increase in temporal scale and scale of influence**, starting with a foundational focus (i.e., building the program) and moving to an immediate focus (i.e., existing activities), then a short-term focus (i.e., signatory priorities), then a long-term focus (i.e., priorities for MRG ecosystem), and finally an aspirational focus (i.e., broader opportunities).

After Debbie reviewed the progress and future path of the Collaborative Program, **Captain Jon C. Duffy**, U.S. Navy, retired, presented on **strategic planning**. Jon focused on the process of planning, the structure of which is depicted in the figure to the bottom right. Although this is a military-based process, the basic principles are easily applied to other areas. Attendees seemed to connect the pieces to their own work and asked many insightful questions during the Q&A. There was a lot of interest in discussing how to deal with insurmountable forces, such as climate change,

and the difference between a restraint (in your control to change; e.g., standard operating procedure) and a constraint (out of your control to change; e.g., drought).

To set up **Breakout Session I**, Catherine Murphy, PST, presented a **summary of 2021-2022 science activities**. Attendees were then split into five breakout groups to discuss the following Collaborative Program science activities: **Rio Grande silvery minnow (RGSM) management** (2 groups), **integrated species management** (1), the **Management of Vegetated Islands and Bank-Attached Bars Workshop** (1), and **drying in Angostura Reach** (1). Groups identified the **top 1-3 management objectives** for each activity and suggested any changes to the Collaborative Program's **planning and research** around them. If there was time, groups also discussed **communication needs** from signatories regarding scientific findings. The goal of this session was to align the Collaborative Program's current science activities with AM needs in the MRG. The compiled outcomes will help the SAMC determine meaningful next steps.



Figures: [left] Sequential structure of Collaboratory sessions; sessions move from small temporal scale and scale of influence to large and [right] the overall planning process from Captain Jon C. Duffy's presentation.

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# 2022 COLLABORATORY

## The Players with Competing Needs

- |                   |                 |                       |
|-------------------|-----------------|-----------------------|
| • United States   | • Pueblos       | • New Mexico          |
| • DOI             | • Cochiti       | • OSE                 |
| • FWS             | • Santo Domingo | • ISC                 |
| • ES Office       | • San Felipe    | • DGF                 |
| • Refuges         | • Santa Ana     | • AG                  |
| • BOR             | • Sandia        | • MRGCD               |
| • SJC             | • Isleta        | • ABCWUA              |
| • MRG Project     | • Mexico        | • City of Albuquerque |
| • RG Project      | • Texas         | • BDD                 |
| • BIA             | • Colorado      | • UNM                 |
| • SOL, NPS & USGS |                 | • Audubon, BEMP,      |
| • DOD             |                 | • WildEarth Guardians |
| • Corps           |                 |                       |
| • DOJ             |                 |                       |

After Breakout Session I report outs, signatory representatives presented their **upcoming planning efforts** during the **Signatory Roundtable**. For each of their planning efforts, signatories provided a short description, the location, the anticipated start and end dates, and any questions that if answered, could help with implementation. Summaries of these efforts are available in a presentation on the Program Portal: [Click Here](#). These summaries will be provided to the SAMC to help facilitate future conversations and work around these efforts. The Collaborative Program will take part in helping answer these questions and in facilitating any needed collaboration

For the last presentation of the day, **Florence Thompson**, lead of the Portal development team with the U.S. Geological Survey, summarized the feedback received on **future Program Portal needs**. She emphasized the **administrative and scientific value the Program Portal** provides to the Collaborative Program. Florence provided insight on funding needs, stakeholder input, the Document Library, the interactive map, and plans for future development, including a schedule and next steps. The Portal development team will use feedback previously provided, as well as any additional comments or questions sent through the Portal Contact page ([Click Here](#)), to improve the user experience.

Day One wrapped with closing words from the PST, and a Happy Hour at Bow & Brewery; but soon enough, Day Two arrived bright and early. It was a wonderful sign of goodwill that most attendees



Figures: [left] Players with competing water needs in the Middle Rio Grande from Josh Mann's presentation and [right] banner for the Oveja Project.

joined us again for Day Two. That could have been because of the interesting dialogue to be had or the tasty vegan and vegetarian-friendly lunch options on both days; we can't be sure!

While the purpose of Day One was to discuss and develop recommendations for foundational, immediate, and short-term topics related to the Collaborative Program, **Day Two** was focused on long-term and aspirational activities. Day Two kicked off with **three back-to-back presentations** from very different speakers. The intent of these presentations was to highlight the interests and concerns in the MRG that should be considered when planning ahead.

To start, **Josh Mann**, a water lawyer with over 16 years of experience working on complex water issues involving Tribal, Federal, State, and local governments in the MRG, presented on **balancing water needs**. Josh began with a review of the many **players with competing water needs** in the MRG (see figure to top left). He then discussed the different reservoirs and water-related projects in the MRG, before speaking to the laws, rights, Compacts, and treaties governing the water in the river. This topic was further complicated by environmental concerns for the RGSM, the potential for litigation, and the uncertainty of the future.

Following Josh's presentation, **Amador and Katy Lente**, small farmers on the Pueblo of Isleta, spoke on their perspective as members of the **agricultural community**. Katy is also an organizer with the **Oveja Project**, which works to revive the New Mexico sheep industry (see right figure). As a tribal member, Amador shared the shortcomings of

*Continued on pg 5*

# 2022 COLLABORATORY

of communications with the Pueblos and how his value of all life shapes his approach to farming and land management. Katy shared the long history of wool production in New Mexico and the work of the Oveja Project, and identified potential opportunities for partnership between wool producers and natural resource managers.

The final presentation of Day Two was given by **Dr. Dave Moeser**, a hydrologist, environmental scientist, and data analyst with the U.S. Geological Survey New Mexico Water Science Center. Dr. Moeser spoke on **streamflow response to potential changes in climate in the Upper Rio Grand Basin**. He discussed how long-term drought has led to significant changes in snowpack, which has the largest impact on streamflow. In short, he projects that streamflow timing has shifted and will continue to shift in the future, which has huge implications for species and water management. The figure to the bottom left summarizes Dr. Moeser's major conclusions.

To close out the presentations, the speakers formed a Presenters Panel and answered audience questions. Presenters messaged a need to **better communicate the work of the Collaborative**

**Program** to invite new collaborators, and to **take progressive actions under changing conditions**.

With water, agricultural, and climate change considerations on their minds, the Collaboratory moved on to **Breakout Session II**. Attendees were split into four breakout groups to brainstorm **strategies for ecosystem management given the changing hydrograph**. Groups first identified issues that will need management, then selected 1-3 of the most important issues, and finally came up with **assumptions, opportunities, knowledge gaps, and potential strategies** for those issues. These topics were first laid out as questions to consider during the overview of AM presentation (questions shown in bottom-right figure). Outcomes from the session will inform the Collaborative Program's multi-year planning efforts.

Wrapping up the event were quick closing remarks from the current EC Federal and Non-federal Co-chairs, **Katrina Grantz** (Reclamation) and **Mark Kelly** (ABCWUA). The PST also laid out the next steps from the Collaboratory. Outcomes will be carried forward by the SAMC and used to inform the Science Evaluation. Many thanks to our fantastic presenters and engaged attendees! The Collaborative Program hopes you all join us for the next biennial Collaboratory in 2024!



The Rio Grande has **changed** significantly, and more **change** is projected

Projected future **changes** are primarily from a **changing** snow regime

These **changes** are occurring in small primarily forested watersheds

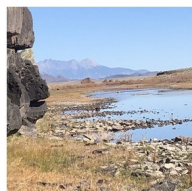
The forests in these watersheds are **changing** rapidly

{\*\*Forest geometry can be used to assess forest changes and guide silviculture practices\*\*}

Small **changes** in naturalized flow can lead to large **changes** for the current river state

Streamflow timing may **change** more than volume in the future

Changes in Streamflow timing may be >1 month



(\*\* current work)

Figures: [left] Major conclusions for Dr. Dave Moeser's presentation and [right] questions for consideration during the Collaboratory, discussed during Breakout Session II.





# LISTED SPECIES UPDATES

## ENDANGERED RIO GRANDE SILVERY MINNOW

**Update provided by Eric Gonzales, U.S. Bureau of Reclamation**

The Rio Grande silvery minnow (RGSM; *Hybognathus amarus*) was formerly one of the most widespread and abundant species in the Rio Grande Basin, but is now listed as endangered. Currently, the RGSM occupies less than 10 percent of its historic range and is restricted to the reach of the Rio Grande in central New Mexico from Cochiti Dam to the headwaters of Elephant Butte Reservoir. To study long-term trends of RGSM abundance, the U.S. Bureau of Reclamation (Reclamation) uses October catch per unit effort (CPUE; fish/100m<sup>2</sup>) data from the species population monitoring project.

Preliminary estimates of RGSM CPUE during October 2022 at 30 sample sites was 0.17 fish/100m<sup>2</sup> (Dudley et al. 2022). During October 2022, a total of 27 RGSM were collected from the 30 long-term monitoring sites. The species was present at 10 of the 30 monitoring sites and was collected in 20 of 369 seine hauls that yielded fish (Dudley et al. 2022). All RGSM collected in October 2022 were unmarked and presumably naturally spawned. In addition, three age classes of RGSM were present, with the majority being young-of-year fish (16 fish) and age 1 fish (10 fish). The results from October 2022 monitoring show that spring runoff flows in 2022 resulted in some RGSM

spawning and recruitment; however, the species CPUE is below the 0.30 fish/100m<sup>2</sup> threshold prescribed in the 2016 Biological Opinion.

The U.S. Fish and Wildlife Service (USFWS) is planning to conduct a five-year status review for the RGSM in 2023

*\*The information presented in this summary is preliminary and may change when a formal analysis on the catch data is conducted for the annual 2022 monitoring report.*

### Literature Cited

Dudley, R. K., S. P. Platania and G.C. White. 2022. Rio Grande Silvery Minnow Population Monitoring During October 2022. Report to U.S. Bureau of Reclamation. American Southwest Ichthyological Researchers, Albuquerque, New Mexico.



Photo: RGSM in seine  
Credit: Pueblo of Santa Ana staff

*Continued on pg 7*

Photo: Middle Rio Grande  
Credit: SWCA Environmental Consultants



# LISTED SPECIES UPDATES

## ENDANGERED SOUTHWESTERN WILLOW FLYCATCHER

Update provided by Jennifer Davis,  
U.S. Fish and Wildlife Service

During the summer of 2022, Reclamation conducted surveys and nest monitoring of the federally-listed endangered southwestern willow flycatcher (SWFL; *Empidonax traillii extimus*). The surveys were completed in six distinct reaches along approximately 128 river miles of the Rio Grande in New Mexico between the Pueblo of Isleta and Elephant Butte Reservoir. This included, the Belen, Sevilleta, San Acacia, Escondida, Bosque Del Apache, and San Marcial reaches. Due to personnel limitations, reaches were not surveyed in their entirety but priority sites were selected in order to meet project compliance needs. Certain sites were also selected to contribute to current baseline population data, monitor population trends, and determine the current distribution of SWFLs along the MRG.

During 2022 surveys, 504 resident SWFLs were documented in the MRG. Overall, apparent territory numbers in the MRG increased in 2022 compared to all previous years, with the next highest year being 399 territories in 2011. Last year, in 2021, only 378 territories were observed.

Similar to previous years, the San Marcial and Elephant Butte Reservoir area was the most productive with a total of 352 territories or roughly 70 percent of the total SWFLs surveyed along the Rio Grande. In 2022, 679 SWFL nests were located and nest fates were determined for 541 nests with 47 percent of those nests fledging young.

Sites are required to be monitored at least every 3 years to maintain an understanding of the current population trends. Planning for 2023 surveys is undergoing to assure that all sites will be monitored as needed.

The USFWS is planning to conduct a five-year status review for the SWFL in the next few years.

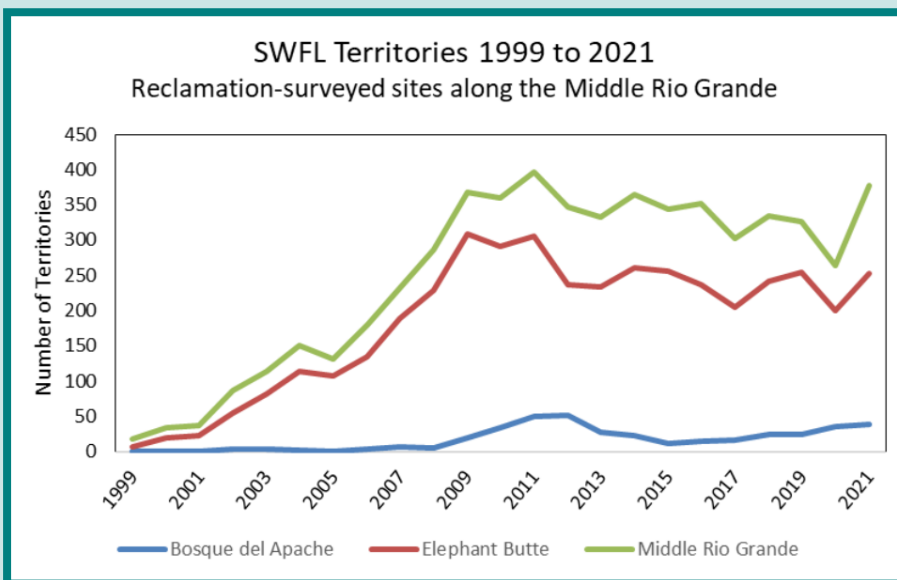


Photo: SWFL on tree branch  
Credit: Shannon Caruso, UNM

Figure: SWFL territories along the MRG during 1999-2021. (Source: Reclamation). In 2019-2021, a full survey of the MRG was not completed, limiting comparisons that can be made with previous years.

Continued on pg 8



# LISTED SPECIES UPDATES

## THREATENED WESTERN YELLOW-BILLED CUCKOO

Update provided by Jennifer Davis,  
U.S. Fish and Wildlife Service

During the summer of 2022, Reclamation personnel conducted presence/absence surveys for the Western yellow-billed cuckoo (YBCU; *Coccyzus americanus occidentalis*) along the MRG of central New Mexico. Surveys were completed across six distinct reaches between Pueblo of Isleta and Elephant Butte Reservoir. Survey efforts were constrained to select high priority study sites in 2022 due to personnel limitations. Consequently, limited comparisons can be made between population data from 2022 and previous years.

A total of 480 Western YBCU detections were recorded during the 2022 breeding season and 122 territories were delineated from these detections. Similar to previous years, the San Marcial Reach contained the largest breeding YBCU population with 317 detections and an estimated 79 breeding territories, comprising 66 percent of all Western YBCU territories within the study area. Overall,

apparent detections and territory numbers in the MRG increased in 2022 compared to all previous years, with the next highest year being 428 detections in 2016 and 121 territories in 2012.

Sites are required to be monitored at least every three years to maintain an understanding of the current population trends. Planning for 2023 surveys is undergoing to assure that all sites will be monitored as needed.

The USFWS is continuing to work with a group of experts on a Species Status Assessment (SSA) that will inform the future Recovery Plan. Please send information to inform the SSA to Jennifer Davis, [Jennifer\\_L\\_Davis@fws.gov](mailto:Jennifer_L_Davis@fws.gov).



Photo: YBCU on tree branch  
Credit: Andy Reago & Chrissy McClarren

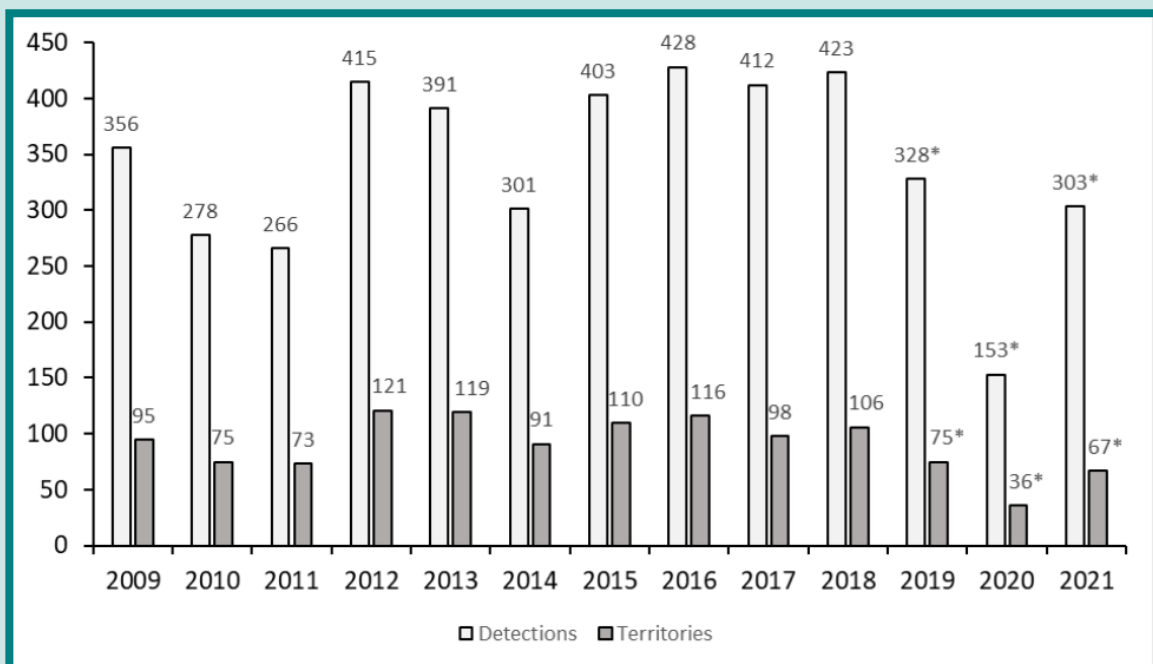


Figure: YBCU detections and territories during 2006-2021. (Source: Reclamation). In 2019-2021, a full survey of the MRG was not completed, limiting comparisons that can be made with previous years.

Continued on pg 9



# LISTED SPECIES UPDATES

## ENDANGERED NEW MEXICO MEADOW JUMPING MOUSE

**Update provided by Mark Brennan, U.S. Fish and Wildlife Service**

The USFWS is finalizing a Recovery Plan for the New Mexico meadow jumping mouse (NMMJM; *Zapus hudsonius luteus*) that is scheduled to be published in the Federal Register in January 2023. It will describe overall management objectives for recovery of the separate populations of NMMJM throughout its current range, including the Bosque Del Apache National Wildlife Refuge (BdANWR) and the rest of the MRG. The MRG is a recovery unit in the final Recovery Plan.

The Recovery Plan will not have any specific recovery actions or projects described in it; those will be included in the Recovery Implementation Strategy (RIS) to be developed shortly after publication of the final Recovery Plan. The RIS will include specific projects and actions for each population area, including the BdANWR and the rest of the MRG, that are considered necessary for recovery and eventual down/delisting. The USFWS will be working with the BdANWR and Collaborative Program as needed to develop appropriate projects and actions for NMMJM recovery in the MRG.

There are a few current projects in the MRG that involve NMMJM. An interstate power transmission line is being planned across New Mexico and Arizona that will cross the MRG between the BdANWR and Sevilleta National Wildlife Refuge. An assessment of NMMJM habitat potential was done for the proposed crossing. Habitat conditions in a few areas of the proposed crossing action area were considered favorable for NMMJM. A track

plate survey for the NMMJM is being done within those areas within the transmission line action area where it will cross the MRG. This survey commenced in 2022 and will be completed in 2023 prior to construction in that section of the project. There were no detections made during the survey in 2022. Appropriate conservation measures will be included in the final project for that reach if confirmation of occupancy is made in 2023.

The USFWS is also coordinating with the Albuquerque Bernalillo County Water Utility Authority (ABCWUA) to include NMMJM habitat conditions in their planning for a new water treatment plant outflow project at their facility in the South Valley along the east bank of the MRG. The USFWS will also contact the U.S. Army Corps of Engineers (USACE) to coordinate any other habitat restoration actions planned by the USACE in the vicinity of the ABCWUA project to enhance the recovery potential for this reach of the MRG for future NMMJM reintroduction efforts.

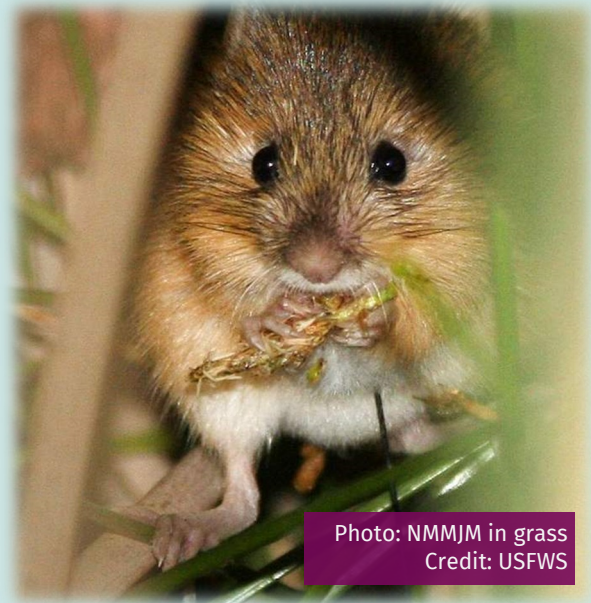


Photo: NMMJM in grass  
Credit: USFWS

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# LISTED SPECIES UPDATES

## THREATENED PECOS SUNFLOWER

Update provided by Sarah D. Yates,  
U.S. Fish and Wildlife Service

The Pecos sunflower (PESU; *Helianthus paradoxus*), also known as puzzle or paradox sunflower, is an annual member of the family Asteraceae. They grow in permanently saturated soils most often associated with spring systems in desert wetland ciénegas and can also be found adjacent to stream and lake margins. Current known established populations are distributed in Cibola, Valencia, Guadalupe, Socorro, and Chaves counties in New Mexico, and Pecos and Reeves counties in Texas.

PESU reach 1.3-2.0 meters (4.25-6.50 feet) in height, have lance-shaped leaves with three veins that are opposite on the lower portion of the stem and alternate at the top, and have stems that branch into many disc flowers with bright yellow rays around a dark purplish center. They rely on the seed bank from previous years for population re-establishment and tend to grow in densely crowded patches. They look similar to the common and prairie sunflowers that grow prolific along western roadsides, but can be distinguished by narrower leaves, fewer hairs on their leaves and stems, slightly smaller flower heads, and later bloom season in the fall, typically September-November.

The PESU was federally listed as threatened in 1999 due to threats such as wetland drying and groundwater depletion, wetland alteration from



fill, draining, and impoundment construction, competition from non-native plants, excessive livestock grazing, mowing, and highway maintenance. 1,305 acres of Critical Habitat have been designated, and a 2005 Recovery Plan details actions to help protect and recover the species. Ongoing conservation includes monitoring of established populations, surveying to identify and record new plant locations, avoidance of disturbance, seed collection, habitat restoration, and educational outreach.

A five-year status review is planned for this upcoming year, and relevant information such as monitoring and surveying reports, habitat assessments, and restoration efforts are appreciated. Please send to Sarah D. Yates, [sarah\\_d\\_yates@fws.gov](mailto:sarah_d_yates@fws.gov).



Photo: PESU field  
Credit: J.N. Stuart



# WHAT'S HAPPENING IN THE MRG?

Find out what's happening in the MRG, including a summary of the Western Yellow-billed Cuckoo Working Group meeting, a 2022 hydrology update, MRG announcements, job announcements, and recent publications.

## WESTERN YELLOW-BILLED CUCKOO WORKING GROUP MEETING

### Update provided by Dr. Hira Walker, coordinator for the Yellow-billed Cuckoo Working Group

On **November 9, 2022**, we held our third Western Yellow-billed Cuckoo Working Group meeting since reengaging a year and a half ago after several years of dormancy. The primary goal of this meeting was to **discuss the breeding habitat characteristics of the western YBCU across its entire range in the U.S. & Mexico**. Specifically, we wanted to find consensus on which breeding habitat characteristics are consistent across the YBCU's western range, delineate ecoregions of similar breeding habitat, and better understand which habitat components are most relevant to management and conservation. To assist us in these efforts, representatives from western Mexico and nine western U.S. states presented information on characteristics of cuckoo breeding habitat within their region at the landscape, patch, and nest site scales. To give us more of a big picture of breeding habitat use, two presenters touched on range-wide patterns; John Stanek, Southern Sierra Research Station, presented on the results of the first-ever-completed western U.S.-wide breeding surveys and Jim Hatten, U.S. Geological Survey, gave a talk on the overlap in SWFL and YBCU habitat models. Finally, Dr. Bruce Orr, Stillwater Sciences, rounded out the session by giving a talk on using LiDAR to assess vegetative structure of potential cuckoo breeding habitat.



Photo: YBCU on tree branch  
Credit: Andy Reago & Chrissy McClarren

In addition to addressing priority questions about cuckoo habitat, we hosted several presentations on topics that support conservation planning. Dr. Hira Walker reviewed our current and future actions, including a recent virtual meet and greet among researchers using Automated Recording Units. Furthermore, two invited speakers, Drs. Kathleen Holland with Virginia Tech and Clark Rushing with the University of Georgia, discussed methods for incorporating human dimensions and structured information analysis, respectively, in prioritizing research and improving management decisions.

We plan to apply insights gained from this meeting to efforts by the Working Group and our partners to draft range-wide and regional guidance documents and recommendations for cuckoo habitat surveys, protection, creation, and restoration. In the next few months, please be on the lookout on our website [www.yellowbilledcuckoo.org](http://www.yellowbilledcuckoo.org) and Listserv for the fall 2022 meeting program, which summarizes the meeting content and conclusions, and for the presentation recordings. Also, please keep an eye out for announcements about our upcoming spring 2023 meeting. If you are interested in joining our Listserv or getting involved with the Western Yellow-billed Cuckoo Working Group in any capacity, please contact Dr. Hira Walker at [coordinator@yellowbilledcuckoo.org](mailto:coordinator@yellowbilledcuckoo.org).

*Continued on pg 12*

# WHAT'S HAPPENING IN THE MRG? CONT.

## 2022 HYDROLOGY UPDATE

**Update summarized from presentation by Carolyn Donnelly, U.S. Bureau of Reclamation, at the December 22nd EC meeting**

Carolyn Donnelly ([cdonnelly@usbr.gov](mailto:cdonnelly@usbr.gov)), Albuquerque Water Operations Supervisor for Reclamation, presented an **update on MRG hydrology in 2022** with a **preliminary outlook for 2023**. The spring 2022 hydrograph peak discharge was lower than desired, and its early arrival and short duration presented additional challenges to successful spawning of RGSM. High winds and high temperatures in April 2022 reduced the expected runoff from snowpack. The spring peak came primarily from the Rio Chama and the mainstem flow began to drop in early May. Post-hoc analysis indicated that conditions at Isleta Diversion Dam in late May were not favorable for a successful “jiggle” for RGSM egg collection. In order to achieve the adequate flow differential to cue spawning, a successful jiggle requires low flows well before it will occur.

River drying began in the San Acacia Reach on June 5, 2022 and continued through September 23, with the maximum extent of 35.61 river miles (RM) occurring on July 26. Drying in the Isleta Reach began on June 16 and continued through September 23, with a maximum extent of 13.95 RM on July 25. For the first time since the 1980s and partially due to construction at El Vado Dam, river drying occurred within the Angostura Reach from July 23 to July 26, with a maximum extent of 10.74 RM on July 26. Drying in the Angostura Reach began at the Wastewater Treatment Plant (WWTP) outfall and moved upstream. Runoff from monsoon rains, along with releases by the Middle Rio Grande Conservancy District (MRGCD) in July, mitigated the drying and eventually restored flows within these three reaches. In fact, 2022 saw the 10th wettest monsoon season on record in Albuquerque. Additionally, Reclamation released 6,337 acre-feet of supplemental water from May 25 to September 21. Close coordination between agencies is required to successfully manage drying and all other water operations. Ongoing coordination occurs frequently among water managers from USACE, Reclamation, MRGCD, the State of New Mexico, and biologists, with weekly coordination calls during the irrigation season.

In keeping with the current trend, the Climate Prediction Center (NOAA) seasonal outlook for early 2023 is forecasting above average temperatures and below average precipitation for the Southwest. El Niño Southern Oscillation (ENSO) models provided by the International Research Institute for Climate and Society indicate that La Niña conditions are favored to continue through winter before transitioning to ENSO neutral in the spring. Provisional SNOTEL (USDA/NRCS) data for New Mexico also indicate that current snow water equivalent (SWE) basin-wide values are falling short of expectation (i.e., <50% of median value). Although snowpack is currently low, it is too early to predict 2023 runoff conditions. However, if the Middle Rio Grande receives an average runoff in 2023, it may briefly exit Rio Grande Compact Article VII restrictions. Reclamation anticipates 5,000 to 12,000 acre-feet of supplemental water from 2023 leases, depending on the San Juan-Chama Project allocation. Coordinating agencies are working diligently on all management options that will support a successful RGSM spawn in 2023.

*Continued on pg 13*



# WHAT'S HAPPENING IN THE MRG? CONT.

## MRG ANNOUNCEMENTS

- The **Rio Grande Compact Commission meeting** in 2023 will be in **New Mexico**.
- New Mexico's **50 Year Water Plan** should be released **end of December 2022**.
- The USFWS's **final Recovery Plan for the NMMJM** will be released in **January 2023**.
- The USFWS will conduct a **five-year status review** for the **RGSM** and **PESU** in 2023. Please send any relevant information on the RGSM to Debra Hill, [debra\\_hill@fws.gov](mailto:debra_hill@fws.gov), and any relevant information on the PESU to Sarah D. Yates, [sarah\\_d\\_yates@fws.gov](mailto:sarah_d_yates@fws.gov).
- The USFWS is continuing to work with a group of experts on a **Species Status Assessment (SSA)** that will inform the **future Recovery Plan for the SWFL**. Please send information to inform the SSA to Jennifer Davis, [Jennifer\\_L\\_Davis@fws.gov](mailto:Jennifer_L_Davis@fws.gov).

## JOB ANNOUNCEMENTS

### Avian Biologist for Audubon Southwest

**Audubon Southwest** is hiring an **avian biologist**. The position is focused on private landowner conservation, outreach, and habitat monitoring. The successful candidate will have experience and/or interest with private landowner conservation programs, bird monitoring, habitat monitoring (utilizing both traditional and modern techniques including drone technology) and Geographic Information Systems. Work will be focused within Audubon Southwest's **Rio Grande program** and Audubon's **Conservation Ranching program**. Apply at <https://tinyurl.com/5yeeyyx>.

### Water Resource Manager and Specialist for Pueblo of Isleta

The **Pueblo of Isleta** is seeking a **Water Resource Manager** and **Water Resource Specialist**! Check out the job listings at <https://tinyurl.com/6eejdazc> and <https://tinyurl.com/54wvhx8v>.

### Biologist Positions with Reclamation's Technical Service Center

There are three job announcements for **biologists** working out of the **Bureau of Reclamation's Technical Service Center** in Denver, Colorado. Applications will be accepted from 12/20/2022 to 01/03/2023. Apply at <https://tinyurl.com/4fcztpk4>, <https://tinyurl.com/mvfzn66c>, and <https://tinyurl.com/bdh25sxm>.

### Reclamation's Summer Temp Positions Along the Rio Grande

These temps will conduct SWFL and YBCU surveys and YBCU radio telemetry in Glendive, Montana, Socorro, New Mexico, and Truth or Consequences, New Mexico. Applications will be accepted from 12/22/2022 to 01/03/2023. Apply at <https://tinyurl.com/4r72ny3j>.

*Continued on pg 14*

# WHAT'S HAPPENING IN THE MRG? CONT.

## RECENT PUBLICATIONS

### Rio Grande Silvery Minnow Population Monitoring During September 2022

Dudley R.K., Platania S.P., White G.C. (2022). Prepared for U.S. Bureau of Reclamation. <https://tinyurl.com/592x84cp>

### Transitioning from microsatellites to SNP-based microhaplotypes in genetic monitoring programs: lessons from paired data spanning 20 years

Osborne, M.J., Caeiro-Dias, G., Turner, T.F. November 2022. *Molecular Ecology*, 31(21). <https://doi.org/10.1111/mec.16760>

#### Abstract:

Many long-term genetic monitoring programmes began before next-generation sequencing became widely available. Older programmes can now transition to new marker systems usually consisting of 1000s of SNP loci, but there are still important questions about comparability, precision, and accuracy of key metrics estimated using SNPs. Ideally, transitioned programmes should capitalize on new information without sacrificing continuity of inference across the time series. We combined existing microsatellite-based genetic monitoring information with SNP-based microhaplotypes obtained from archived samples of Rio Grande silvery minnow (*Hybognathus amarus*) across a 20-year time series to evaluate point estimates and trajectories of key genetic metrics. Demographic and genetic monitoring bracketed multiple collapses of the wild population and included cases where captive-born repatriates comprised the majority of spawners in the wild. Even with smaller sample sizes, microhaplotypes yielded comparable and in some cases more precise estimates of variance genetic effective population size, multilocus heterozygosity and inbreeding compared to microsatellites because many more microhaplotype loci were available. Microhaplotypes also recorded shifts in allele frequencies associated with population bottlenecks. Trends in microhaplotype-based inbreeding metrics were associated with the fraction of hatchery-reared repatriates to the wild and should be incorporated into future genomic monitoring. Although differences in accuracy and precision of some metrics were observed between marker types, biological inferences and management recommendations were consistent.



Photo: Bucketing RGSM into the river  
Credit: Pueblo of Santa Ana staff



Photo: RGSM in bucket  
Credit: Aquatic Conservation Facility staff



# PROGRAM ADMIN & SCIENCE UPDATES

Photo: Cottonwood gallery  
Credit: Danielle Galloway, U.S. Army Corps of Engineers



## PROGRAM ANNOUNCEMENTS

At the December 22 EC meeting, the following decisions were made:

- The **revised Public Outreach and Messaging on Drying Administrative Ad Hoc Group charge** was approved. The revision added the task of developing messaging strategies for the recommendations developed by the Strategic Plan for Potential Drying in Angostura Reach Science & Technical Ad Hoc Group in January 2023. [Click Here](#) to see the charge.
- The **revised Biennial Schedule** was approved. The revision shifted the meeting timeline and clarified which years are A years and which are B years. [Click Here](#) to see schedule.
- The **2023 Work Plan** is available on the Program Portal. [Click Here](#) to see the plan.
- The proposed **2023 Climate Scenario Planning Exercise** was approved. [Click Here](#) to see the approved proposal.

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**Katrina Grantz**, U.S. Bureau of Reclamation, will be **stepping down as the EC Federal Co-Chair**. She took on the role when she joined the Collaborative Program in March 2021, and has been a guiding force during the transition to a science and AM program. We wish her well in her future endeavors. You will be missed, Katrina! The new Federal Co-Chair will be announced in early 2023.

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The **Rick Billings Award** is presented annually to an individual in recognition of their contributions to the success of the Collaborative Program. This year's recipient is **Grace Haggerty** of the New Mexico Interstate Stream Commission (NMISC). Grace has been a **strong voice** in the Collaborative Program for many years. She makes sure the NMISC is **actively engaged** with participation at meetings, technical expertise, and through contracting important services for the Collaborative Program. She champions the **Los Lunas Silvery Minnow Refugium** as a place for rearing RGSM and as a potential experimental facility. She continually **supports the Collaborative Program** and its activities. Most recently, Grace contracted with GeoSystems Analysis to develop the **RioRestore geospatial database of habitat restoration sites**, and with the U.S. Geological Survey to develop the **RGSM Integrated Population Model**. In addition to being an EC member, she has also served during the last few years as the **Non-federal Co-Chair of the Fiscal Planning Committee**. Congratulations, Grace!

# PROGRAM ADMIN & SCIENCE UPDATES CONT.

## PROGRAM ANNOUNCEMENTS CONT.

The Collaborative Program is planning on a **Climate Scenario Planning Exercise** for **summer/fall of 2023**, with the following objectives:

- Using current climate models and the likely future scenarios for the MRG (at a minimum: best case, worst case and most likely), collaboratively determine the endangered species and ecosystem management responses associated with each scenario.
- Collaboratively identify management opportunities for the near-term to mitigate the likely negative impacts of the different potential future scenarios on the listed species and their habitats.
- Identify sources of uncertainty regarding the parameters of each scenario, in the short- and long-term, that the Collaborative Program can help address.

Look for more information next year!

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Several **SAMC members are stepping down** in March 2023. **Beginning in January 2023**, the EC is accepting **applications for new SAMC members** for a two-year term from March 2023–March 2025. Subject matter experts with the following areas of expertise are specifically encouraged to apply: **aquatic ecology, engineering, economics, environmental planning, climate change**. More information will be coming soon. Please contact Catherine Murphy, [cmurphy@west-inc.com](mailto:cmurphy@west-inc.com) with any questions.

## COLLABORATIVE SEMINAR

### BOSQUE ASSESSMENT AND UPDATE PRIORITIZATION

Ondrea Hummel, Tetra Tech, Inc. — **December 14, 2022**

Recording Link: <https://youtu.be/H5yhblmE1JY>

**Ondrea Hummel**, a Certified Ecological Restoration Practitioner and Senior Environmental Scientist at Tetra Tech, Inc., presented a seminar to the Collaborative Program describing the **Bosque Assessment and Update Prioritization (BAUP)**. The BAUP evaluates planning efforts found in the Bosque Action Plan and helps to prioritize the City of Albuquerque Open Space Division's projects in support of restoration, recreation, and education throughout the 4,300-acre Rio Grande Valley State Park (RGVSP) over the next five years. In addition, the BAUP serves to update both the baseline environmental conditions within the RGVSP and the status of Bosque Action Plan projects, some of which were initiated almost 30 years ago. Along with informing the Bosque Action Plan, the BAUP also relates to several other plans relevant to the Collaborative Program and its signatories, including the City of Albuquerque's Climate Action Plan and the Middle Rio Grande Conservation Action Plan.

Ondrea's presentation summarized the project area and goals of the BAUP, the development of evaluation criteria, and stakeholder coordination during the planning process, and culminated in a preview of the top ten priority project alternatives. The BAUP report is currently in review and, once released, will be announced to the Collaborative Program's mailing list. The BAUP is intended to guide internal management actions designed to protect and enhance bosque resources and sustainable community uses, and coupled with the Bosque Action Plan, are founded upon many of the principles of the ecosystem approach (see [Convention on Biological Diversity](#)). Therefore, the lessons learned from this long-term planning and prioritization effort can inform the adaptive management strategies currently being developed for the Collaborative Program.



# UPCOMING DATES

## UPCOMING MEETINGS

Strategic Plan for Potential  
Drying Ad Hoc Meeting

January 6, 2023

10:00 AM—12:00 PM MT

Fiscal Planning Committee  
Meeting

January 24, 2023

9:30 AM—11:00 AM MT

Strategic Plan for Potential  
Drying Ad Hoc Meeting

January 26, 2023

10:00 AM—12:00 PM MT

## UPCOMING PROGRAM DATES

- The Collaborative Program will host a **webinar on the Collaboratory outcomes** in **February 2023**
- The **Program Evaluation** assesses the Collaborative Program's relevance, efficiency, and effectiveness. Each signatory will fill out the survey when it is available and results will be discussed at the **March EC meeting**.
- **Training sessions for the Science and Adaptive Management Information System (SAMIS)** will continue in **January 2023**.
- EC representatives will submit **2022 signatory activities** via SAMIS (if trained) or the Signatory Activity Input Google form by **January 13, 2023**.
- EC representative will submit **2022 Signatory Highlights** (short summaries of their signatory's work in 2022) to be included as quotes in the 2022 Annual Report by **January 13, 2023**.
- The **Habitat Restoration Coordination group** will conduct a **field trip to Pueblo of Sandia** in **January-February 2023**.
- The objectives of the **Survey of Manager Confidence** are to evaluate manager confidence in the available scientific evidence, to evaluate the level of utilization of available evidence, and to characterize managers' expectations and accessibility of data. This survey will be conducted each year. EC representatives are asked to complete the survey by **March 9, 2023**.



Photo: MRG flora  
Credit: Mike Marcus

The information in this newsletter should not be attributed to the Collaborative Program or its Executive Committee, but to the organization from which it was submitted.

For comments and inquiries, contact:

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