Program Portal: https://webapps.usgs.gov/MRGESCP/



Middle Rio Grande Endangered Species Collaborative Program



TABLE OF CONTENTS

Non-Federal Co-Chair's Letter	03
Acronyms & Abbreviations	04
Guiding Principles	05
Committee Members	06
The Rick Billings Memorial Award	08
Journey to Adaptive Management	09
Burn Site Field Trip	11
Workshop on Vegetated Islands and Bars	12
2022 Collaboratory: From Planning to Practice	14
2022 Year in Review	16
2022 Collaborative Seminars	18
2022 Signatory Activity Collage	19
What Our Signatories Have to Say About the Collaborative Program	20
Messages for 2023	21
Schedule for 2023	22
Federal Co-Chair's Letter	23



NON-FEDERAL CO-CHAIR'S LETTER

from Mark Kelly, Non-Federal Co-Chair of the Executive Committee Albuquerque Bernalillo County Water Utility Authority

As I reflect on all that we accomplished in 2022 as a Collaborative Program, I feel proud – proud and excited for all that we have teed up for 2023. With the convening of the first biennial Collaboratory in December 2022, we officially moved from planning to practice. In other words, we have finished establishing the Collaborative Program as a science and adaptive management program, and are—as noted at the Collaboratory—shifting to using the framework we've developed to make meaningful, timely, scientifically sound, and actionable management recommendations.



Last year, we started realizing the Collaborative Program's potential for addressing priority management issues in the face of the reality of the new Middle Rio Grande ecosystem under climate change. In 2022, we saw two fires in the bosque: one around Belen, New Mexico, which burned nearly 900 acres, and one in Albuquerque, New Mexico, which burned over 30 acres. We also saw drying in the Angostura Reach for the first time in nearly 40 years. These events underscore the trends we have seen in vegetative communities, hydrology, geomorphology, weather, and listed species.

In response to interest from multiple signatories on the topic, we held a workshop focused on management of vegetated islands and bars in fall 2022. The Collaborative Program also, in partnership with the Bosque Ecosystem Monitoring Program and the City of Albuquerque Open Space Division, hosted a field trip to the bosque burn site. Such events are important steps in developing a common understanding of the issues facing the Middle Rio Grande, taking into account any potentially competing priorities and goals, and collaboratively finding strategies to address the issues.

As we move into 2023, we will continue tackling difficult listed species-related issues marked by scientific uncertainty. The Collaborative Program, through its use of sound scientific processes and principles, adaptive learning, and collaborative dialogue, can recommend scientifically justified solutions to priority management questions facing managers in the Middle Rio Grande.

Mun Kely

Mark Kelly Non-Federal Co-Chair of the Executive Committee

ACRONYMS & ABBREVIATONS

ABCWUA	Albuquerque Bernalillo County Water Utility Authority
AM	Adaptive management
Audubon	Audubon Southwest
BEMP	Bosque Ecosystem Monitoring Program
BDD	Buckman Direct Diversion
СоА	City of Albuquerque
Collaborative Program/Program	Middle Rio Grande Endangered Species Collaborative Program
EC	Executive Committee
FPC	Fiscal Planning Committee
HR	Habitat restoration
Long-Term Plan	Long-Term Plan for Science & Adaptive Management
MRG	Middle Rio Grande
MRGCD	Middle Rio Grande Conservancy District
NMDGF	New Mexico Department of Game and Fish
NMISC	New Mexico Interstate Stream Commission
NMMJM	New Mexico meadow jumping mouse
PESU	Pecos sunflower
Reclamation	U.S. Bureau of Reclamation
RGSM	Rio Grande silvery minnow
SAMC	Science and Adaptive Management Committee
SAMIS	Science and Adaptive Management Information System
SDM	Structured decision making
SWFL	Southwestern willow flycatcher
UNM	University of New Mexico
USACE	U.S. Army Corps of Engineers
USGS	U.S. Geological Survey
YBCU	Yellow-billed cuckoo

GUIDING PRINCIPLES

Our Mission

The Middle Rio Grande Endangered Species Collaborative Program (Collaborative Program or Program) provides a collaborative forum to support scientific analysis and implementation of adaptive management to the benefit and recovery of the listed species pursuant to the Endangered Species Act within the Program Area, and to protect existing and future water uses while complying with applicable state, federal, and tribal laws, rules, and regulations.

Our Species of Interest

The Collaborative Program supports the recovery of five federally listed species inhabiting the Middle Rio Grande (MRG): the endangered Rio Grande silvery minnow (RGSM; *Hybognathus am*arus), the endangered southwestern willow flycatcher (SWFL; *Empidonax traillii extimus*), the threatened yellow-billed cuckoo (YBCU; *Coccyzus americanus*), the endangered New Mexico meadow jumping mouse (NMMJM; *Zapus hudsonius luteus*), and the threatened Pecos sunflower (PESU; *Helianthus paradoxus*).



- Establish and maintain a self-sustaining population of endangered RGSM distributed throughout the MRG.
- Maintain and protect the MRG recovery unit goals for endangered SWFL.
- Maintain and protect suitable threatened YBCU habitat in the MRG.
- Establish and maintain a self-sustaining endangered NMMJM population in the MRG.
- Maintain and protect the threatened PESU in the MRG.
- Avoid the future listing or up-listing of species in the Collaborative Program area.
- Manage available water to meet the needs of endangered species and their habitat.

COMMITTEE MEMBERS

Executive Committee (EC)

CO-CHAIRS

Mark Kelly

Katrina Grantz

REPRESENTATIVES

Paul Tashiian Kim Eichhorst **Rick Carpenter Colleen Langan-McRoberts** Anne Marken **Bill Grantham Matthew Wunder** Page Pegram [Jan-Jun] Grace Haggerty [Jun-Dec] Blane Sanchez Michael Scialdone Alan Hatch Thomas Turner LTC Patrick Stevens [Jan-Aug] LTC Jerre Hansbrough [Aug–Dec] **Jennifer Faler** Shawn Sartorius

Non-Federal Co-Chair, EC Representative for Albuquerque Bernalillo County Water Utility Authority (ABCWUA) Federal Co-Chair, U.S. Bureau of Reclamation (Reclamation)

Audubon Southwest (Audubon) Bosque Ecosystem Monitoring Program (BEMP) Buckman Direct Diversion (BDD) City of Albuquerque (CoA) Middle Rio Grande Conservancy District (MRGCD) New Mexico Office of the Attorney General (NMOAG) New Mexico Department of Game and Fish (NMDGF) New Mexico Interstate Stream Commission (NMISC) NMISC Pueblo of Isleta Pueblo of Sandia Pueblo of Santa Ana University of New Mexico (UNM) U.S. Army Corps of Engineers (USACE) USACE Reclamation U.S. Fish and Wildlife Service

EC Representatives:

[back row left to right] Jim Wilber (alternate for Reclamation), Dustin Chavez-Davis (alternate for CoA), Matthew Wunder, Mark Kelly, Kyle Harwood (alternate for BDD), Ryan Gronewold (alternate for USACE), Bill Grantham [front row left to right] Grace Haggerty, Anne Marken, Michael Scialdone, Kim Eichhorst



Fiscal Planning Committee (FPC)

CO-CHAIRS

Grace Haggerty Debra Hill

MEMBERS

Mark Kelly Quantina Martine Kim Eichhorst Dustin Chavez-Davis Brittney Erdmann Anne Marken Bill Grantham Virginia Seamster Michael Scialdone Lynette Giesen Thomas Turner Ryan Gronewold Non-Federal Co-Chair Federal Co-Chair

ABCWUA Audubon BEMP CoA MRGCD MRGCD NMOAG NMOAG NMDGF Pueblo of Sandia Reclamation UNM USACE

Science and Adaptive Management Committee (SAMC)

MEMBERS

Thomas Archdeacon Meaghan Conway Megan Friggens Ryan Gronewold Mo Hobbs S. Dave Moore Ari Posner Ara Winter Alan Hatch Aquatic Ecology Expert Ecosystem Function Expert Climate Science Expert Hydrology Expert Aquatic Ecology Expert Terrestrial Ecology Expert Geomorphology Expert Statistics/Modeling Expert EC *Ex Officio* Member



Figure 1. Structure of Collaborative Program committees and groups.

THE RICK BILLINGS MEMORIAL AWARD



RICK BILLINGS

HILS THE

Former member and supporter of the Collaborative Program, award namesake.

Rick Billings was the former EC Non-Federal Co-Chair, an EC member, and a long-time supporter of the Collaborative Program. In his memory, Reclamation's Albuquerque Area Office sponsors an annual award recognizing an individual's contributions to the success of the Collaborative Program.

The winner of the 2022 Rick Billings Memorial Award is Grace Haggerty from the NMISC. Grace was unanimously nominated for the award, with her nominators citing her many years in the Collaborative Program, high engagement, and work with non-federal and federal organizations alike among their reasons for selecting her.

"

The Collaborative Program is in a much better place because of Grace and she deserves some recognition for all her hard work.

"

[Grace] has been a resource to her agency's staffing and to the work of the other nonfederal and federal [Collaborative] Program participants. As one nominator accurately stated, "Grace has been a guiding force for the Collaborative Program for many years." As a stalwart supporter, she regularly attends meetings, contributes technical her expertise committees and groups, and contracts important work that benefits the Collaborative Program. For example, Grace has contracted with GeoSystems Analysis to develop the RioRestore geospatial database of habitat restoration (HR) sites, and with Dr. Charles Yackulic at the U.S. Geological Survey (USGS) to develop the RGSM Integrated Population Model. In addition, Grace is also a champion of the Los Lunas Silvery Minnow Refugium as a place for rearing RGSM and as a potential experimental facility. Grace has also served as the Non-Federal Co-Chair for the FPC for several years, in addition to her role as the EC representative for the NMISC.

The Collaborative Program would like to recognize Grace's continual support by awarding her the 2022 Rick Billings Award!





GRACE HAGGERTY Winner of the 2022 Rick Billings Memorial Award, pictured rafting with her daughter [top] and hiking [bottom].

JOURNEY TO ADAPTIVE MANANGEMENT



Provided by Debbie Lee Program Manager Program Support Team

Collaborative Program signatories have been develop attempting to adaptive an management (AM) program for listed species in the MRG since the late 2000s. The Collaborative Program's first AM plan, Adaptive Management Plan Version 1, was finalized in 2011, but it was only within the last few years that a functional plan was fully realized. A traditional AM cycle has six primary implement, assess, design, monitor. steps: evaluate, and adjust. To apply this cycle to the Collaborative Program, we had to identify not only the operational limitations of our signatory organizations, but also our assumptions about what the Collaborative Program was and what it had the potential to be. Once those limitations and assumptions were defined, opportunities for the Collaborative Program and its signatories to implement AM became clearer.

Successful AM is transparent, well documented, and iterative. In order to meet these standards, the Collaborative Program devoted a significant portion of the last few years to developing the tools and processes needed for implementing AM. Using a modified version of the U.S. Agency for International Development's Collaborating, Learning, and Adapting Framework, we identified conditions needed for either enabling AM or implementing AM within the Collaborative Program, the elements that define each condition, and the tools that support each condition (Figure 2).

One of the most important tools we developed to support AM is the Program Portal, a website housing the Collaborative Program's Calendar, Document Library, data sets, and Interactive Map. Having a public-facing collection of resources ensures all participants have access to the same up-to-date information and data, which is foundational to AM.

In 2022, the EC adopted the ecosystem approach, which was an important addition to its AM process. The ecosystem approach focuses on supporting the essential structure, processes, and functions that keep an ecosystem in balance, so it can continue to provide the benefits and services on which its inhabitants depend. Importantly, this places the Collaborative Program's listed species within a larger spatial and temporal context, which is necessary for managing the dynamic MRG ecosystem, and the physical conditions within the river and historic floodplain. By applying the ecosystem approach, the Collaborative Program can identify and protect vital ecosystem functions, plan in the face of uncertainty, and integrate the management goals of different organizations into one shared vision.

	ENABLING ADAPTIVE MANAGEMENT			IMPLEMENTING ADAPTIVE MANAGEMENT		
CONDITIONS	CULTURE	PROCESSES	ENGAGEMENT	COLLABORATION	LEARNING	MANAGEMENT RELEVANCE
ELEMENTS	 ✓ Openness ✓ Relationships & Networks ✓ Continuous Learning & Improvement ✓ Reputation ✓ Value 	 ✓ Knowledge Management ✓ Institutional Memory ✓ Decision-Making ✓ Peer Review ✓ Timeline 	 ✓ Investment ✓ Resources ✓ Information Sharing ✓ Mutual Benefit ✓ Relevance 	 ✓ Internal Collaboration ✓ External Collaboration 	 ✓ Results & Findings ✓ Addressing Uncertainty ✓ Scientific Evidence Base ✓ Documenting Change ✓ Improvement of Tools 	 ✓ Recommendations ✓ Innovation ✓ Responsiveness ✓ Ecosystem Approach ✓ Scenario Planning

Figure 2. Conditions for enabling and implementing AM within the Collaborative Program and elements that define each condition.

JOURNEY TO ADAPTIVE MANAGEMENT

The key milestones for the Collaborative Program's journey to developing a functional AM process through 2022 are shown in Table 1:

Table 1. Key Milestones in Development of the Program's Adaptive Management Process

2011 Completed Adaptive Management Plan Version 1

2017 Held EC Taos Retreat reaffirming commitment to the Program and direction to adopt AM as the decision framework

Apr 2018 Approved a new Program operational structure

May 2018 Developed key critical scientific uncertainties for RGSM, SWFL, YBCU, and NMMJM

Jun 2019 Approved a new mission statement

Sep 2019 Incorporated YBCU, NMMJM, and PESU into Program species of interest

Dec 2019 Held first Science Symposium

Dec 2019 Premiered new Program Portal

Feb 2020 Approved new Program goals

Sep 2020 Approved SAMC charter

Dec 2020 Launched Interactive Map, including RioRestore geospatial database, on Program Portal

Dec 2020 Approved Science & Adaptive Management Plan

Jul 2021 Adopted revised By-Laws

Jul 2021 Approved Science Objectives

Mar 2021 Developed Science Strategies for Objectives

Oct 2021 Developed administrative Biennial Schedule

Dec 2021 Approved Long-Term Plan for Science & Adaptive Management

Jun 2022 Approved Peer Review process

Jun 2022 Adopted the Ecosystem Approach

Dec 2022 Premiered Science and Adaptive Management Information System (SAMIS)

Dec 2022 Held first Collaboratory

A major theme at the December 2022 Collaboratory the need to identify and challenge was assumptions. The ecosystem approach serves to address our previous assumption that "what is good for a particular species is good for the system." This assumption may no longer hold true given the observed changes in the system over the past century, as well as the projected future changes. As we move forward with implementing AM, the Collaborative Program is working to provide scientifically supported recommendations to management and funding agencies. These recommendations will help to prioritize research that addresses critical scientific uncertainties and help to focus management of listed species on strategies that offer the greatest potential conservation benefit.

To fulfill the Collaborative Program's role of supporting AM in the MRG, we must be open to learning, changing, and making mistakes. We must consistently test our assumptions in order to ensure our actions and activities are those most beneficial to listed species and their habitats into the future. We also must listen to our signatories and elicit the input of external organizations in order to regularly realign the Collaborative Program's priorities with the management needs of the present and future.

The Collaborative Program's AM process is detailed in the Long-Term Plan for Science & Adaptive Management (Long-Term Plan), found on the Program Portal. It is meant to be a living document, continually assessed and revised to reflect how the Collaborative Program can operate more effectively and be more responsive to the priorities of its signatories.





Provided by Michelle Tuineau Project Coordinator *Program Support Team*

On May 25, 2022, a fire started in the Albuquerque bosque and burned approximately 34 acres before it was contained and put out. In response to this major fire event, BEMP and the CoA, Open Space Division hosted a visit of an area of the burn site behind Bosque School, referred to as the Deep Dark Woods, for Collaborative Program participants. On June 17, 2022, 38 participants from BEMP, Pueblo of Sandia, Pueblo of Santa Ana, NMISC, Audubon, USACE, Reclamation, UNM, Tetra Tech, Inc., CoA Open Space, CoA Parks & Recreation, New Mexico State Forestry, Bosque School, and the Program Support Team attended the impromptu field trip.

The group of stakeholders, managers, and researchers discussed post-fire mitigation strategies, monitoring needs, safety, and overall brainstorming for the Deep Dark Woods burn site and other burned areas of the bosque. Over the two-hour visit, the group toured the burn site and broke into small groups for discussion. They discussed landscape considerations, fuels reduction, water and hydrology, soil and topography, vegetation, public outreach and education, and potential study questions and data collection efforts.

To follow up on the visit, CoA Open Space formed a task force to develop a draft plan for the Deep Dark Woods burn site. The task force met on June 30, 2022, and went on to implement ideas such as data collection to better understand the unstable post-fire conditions and regeneration of both native and invasive species, as well as steps to address public perception and safety. Students at the Bosque School created videos linked to posted QR codes in and around the site to educate the public on the dangers associated with post-fire areas that have many dead and dying cottonwood snags. Still more ideas were generated at this meeting that addressed soil health, topography, regaining vegetative diversity, and controlling invasive species. Aspects of these ideas will be implemented at the site in the future.

More information about this fire was presented during Collaborative Seminar: Post May 2022 Montaño Fire Analysis, available on the Program YouTube channel.







WORKSHOP ON MANAGEMENT OF VEGETATED ISLANDS AND BARS



Provided by Catherine Murphy Science Coordinator *Program Support Team*

On October 4-5, 2022, forty-two participants representing seventeen different organizations attended an in-person Collaborative Program workshop that focused on management of vegetated islands and bank-attached bars hosted by the Pueblo of Santa Ana at the Tamaya Wellness Center. A small planning group of Collaborative Program volunteers organized the two-day event with the goal of identifying planning and research needs relating to the workshop topic. To support that goal, a panel of four invited speakers presented attendees with historical and technical context on vegetated islands/bars, which prompted discussions within the subsequent breakout groups. Each of the three successive breakout sessions was facilitated by one volunteer from the small planning group and one Program Support Team member, who guided participants through a structured decision making (SDM) process. SDM is an organized approach that enables multiple stakeholders to analyze a decision by breaking it into its component parts.

Invited speakers presented information on important physical and ecological features of vegetated islands/bars, as well as associated trends and forecasts. Mike Harvey, Tetra Tech, Inc., presented a summary of the hydrology and geomorphology of the MRG. Ari Posner. Reclamation, discussed river channel management and maintenance activities in the MRG. Todd Caplan, GeoSystems Analysis, Inc., presented on establishment of riparian vegetation in the channel and related impacts to the SWFL. Finally, Dagmar Reclamation. examined Llewellvn. current conditions and future projections for the MRG. The speakers summarized key takeaways from their presentations and participated in a panel discussion with workshop attendees immediately following the talks. Recordings of all presentations, as well as the panel question/answer session, are available on the Program YouTube channel.

Next, the workshop participants took part in a realtime group polling exercise to assess the urgency and uncertainty of management issues related to vegetated islands/bars (Table 2). The exercise was designed to collectively assess and explore differences in priorities and perceptions among participants regarding each management issue. The group discussion that followed highlighted not only differences in how participants perceived issues relating to management of vegetated islands/bars, but also variations in how they defined both urgency and uncertainty. With this list of issues assessed collaboratively, workshop participants broke into smaller breakout groups to work through an SDM process.

Table 2. Issues Related to Vegetated Islands and Bank-Attached Bars

Floodplain inundation on/near islands/bars

Aquatic habitat value adjacent to islands/bars

Management of wetlands on/near islands/bars

Control of invasive species on islands/bars

Flows and sediment transport around islands/bars

Stability/persistence of islands/bars

Water conveyance around islands/bars

Surface-groundwater exchange on/near islands/bars

Evapotranspiration rate associated with islands/bars

Fire fuels reduction on islands/bars

Bosque habitat being "replaced" by islands/bars

Vegetation encroachment on islands/bars

Effect of islands/bars on channel width, depth, and incision

Impact of islands/bars on depletions and channel efficiency

Habitat value of islands/bars

Determining who is responsible for managing islands/ bars During Breakout Session I, each group focused on three or fewer principal issues related to vegetated islands/bars and developed problem statements addressing each of them. Similarly, in Breakout Sessions II and III, the groups developed one or more objectives and strategies, respectively, for each of their problem statements.

To close the workshop, participants gathered to review developed strategies, share additional insights, and identify important themes that emerged during discussions. The need for a more comprehensive and common understanding of vegetated islands/bars was recognized by all. To avoid confusion during future discussions among stakeholders, it was proposed to develop a glossary of technical terms relating to vegetated islands/bars. In addition, compilation of a list of currently available data sets relevant to the workshop topic was suggested to help identify data needs for improved management. Participants also requested the development of a conceptual model representing ecosystem functions and physical river conditions, which would support collaboration around shared goals. Additional research, planning, and management efforts identified during the workshop will be summarized in a report.

Although participants differed in their approach to the topic of vegetated islands/bars, one important central theme was agreed upon by all: management of vegetated islands/bars requires the balancing of three primary management priorities in the MRG, which are water delivery, flood control, and ecosystem management. In the face of an increasingly dynamic river system, achieving this balance will be possible only through collaboration and partnerships, and the Collaborative Program provides an appropriate forum for this task.









Photos: Participants at the Workshop on Management of Vegetated Islands and Bank-Attached Bars. Credit: Catherine Murphy, Program Support Team.





Provided by Michelle Tuineau Project Coordinator *Program Support Team*

The Collaborative Program hosted its first ever Collaboratory on December 6-7, 2022. The two-day event was attended by fifty-three participants each day and sixty-four attendees total. Attendees represented a wide range of affiliations, including academic institutions, federal agencies, irrigation districts, local agencies, non-governmental organizations, private companies, pueblos/tribes. and state agencies. The diversity of representation in the room 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.

In the previous three years, the Collaborative Program did the hard work to accomplish its goal of establishing itself as a science and AM program, which required the development of many processes, including the Long-Term Plan, Biennial

Schedule, and peer review process. With the accomplishment of its first goal, the Collaborative Program is now poised to take on a new goal, one that tests and adaptively improves the many processes it 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 MRG and their habitat.

The Collaboratory set the stage for this goal by adding management relevance to the Collaborative Program's science activities, as well as using signatory feedback to help determine the science priorities for the next two years. 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.

On Day One of the Collaboratory, Debbie Lee, Program Support Team, helped to frame the structure of the Collaboratory during her overview of AM presentation. Figure 3 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 U.S. Navy's planning process, the basic principles of which can easily be applied to other areas, including the Collaborative Program. Following this presentation, participants were split



Figure 3. Sequential structure of Collaboratory sessions; sessions increased in temporal scale and scale of influence.

into breakout groups to discuss the following Collaborative Program science activities: RGSM management (two groups), integrated species management (one group), the Management of Islands and Bank-Attached Vegetated Bars Workshop (one group), and drying in Angostura Reach (one group). Groups identified the top one to three management objectives for each activity and suggested any changes to the Collaborative Program's planning and research around them. The session was designed to align the Collaborative Program's current science activities with AM needs in the MRG.

To begin Day Two of the Collaboratory, three backto-back presentations were given to highlight the different interests and concerns in the MRG that should be considered when planning ahead. Josh Mann, water lawyer, presented on balancing water needs; Amador and Katy Lente, small farmers on the Pueblo of Isleta, spoke on their perspective as members of the agricultural community; and Dave Moeser, a hydrologist, environmental scientist, and data analyst with the U.S. Geological Survey New Mexico Water Science Center, presented on streamflow response to potential changes in climate in the Upper Rio Grand Basin. Dr. Moeser's presentation was particularly important to future discussions as he discussed how long-term drought has led to significant changes in the hydrograph, which has huge implications for species and water management.

With these perspectives in mind, participants were again split into breakout groups to brainstorm strategies for ecosystem management given the changing hydrograph. Groups identified management issues that the Collaborative Program can help address, then selected one to three of the most important issues, and finally came up with assumptions, opportunities, knowledge gaps, and potential strategies for those issues.

outcomes and next steps from The the Collaboratory were presented at the Collaborative Seminar on February 16, 2023. The Collaboratory outcomes combined with outcomes from the Workshop on Management of Vegetated Islands and Bank-Attached Bars (October 2022) and Workshop on Habitat Restoration (August 2021), will directly inform the Collaborative Program's multiyear planning efforts. Based on analysis of the outcomes from the workshops and Collaboratory. the focus areas in Table 3 emerged as important to the Collaborative Program. Moving forward, the Collaborative Program will define an end goal for each focus area and develop immediate, shortterm, and long-term plans for accomplishing them. This path ensures all of the work of Collaborative Program participants will be acknowledged and used to drive us forward!

All presentations from the Collaboratory are available on the Program YouTube page.





Middle Rio Grande Endangered Species Collaborative Program



WHO PARTICIPATED?

185+ participants from 35+ groups

2022 COLLABORATIVE SEMINARS

In 2022, the Collaborative Program hosted seven seminars from invited speakers presenting on work relevant to listed species in the MRG. All seminars were recorded and posted to the Collaborative Program YouTube channel at https://www.youtube.com/@mrgescp.



Middle Rio Grande Collaborative Seminar 1/12/2022

JAN 12 Katey Driscoll, U.S. Forest Service, presented on Statistical Designs and Potential Indicators for Evaluation of Restoration Success.



FEB 24 Dr. Charles Yackulic, USGS, presented on the RGSM Integrated Population Model and Expert Elicitation.



MAY 5 Chris Parrish, Justin Riggs, and Tucker Feyder, USACE, presented on Jurisdictional Waters, Permits, Wetland Delineation, and Compensatory Mitigation.

Post 2022 Montaño Fire Analysis



AUG 11 Katia Chavez, Rayne McCollough, and Dan Shaw, Bosque School, presented on Post May 2022 Montaño Fire Analysis (a.k.a. "Deep Dark Woods Fire").



AUG 23 Robert Dudley, UNM, presented on the 2021 RGSM Population Monitoring Program.



OCT 19 Megan Osborne, UNM, presented on Genetic Monitoring of the RGSM.



DEC 14 Ondrea Hummel, Tetra Tech, Inc., presented on the Bosque Assessment and Update Prioritization.

2022 SIGNATORY ACTIVITY COLLAGE



PIT tagging RGSM for the fish movement study





And the second second second









SWFL fledgling from avian surveys





Horizon Academy West 4th graders observing pond life at the BioPark BEMP site







Bernalillo Middle School students watching deer at the Santa Ana BEMP site



WHAT OUR SIGNATORIES HAVE TO SAY ABOUT THE COLLABORATIVE PROGRAM

"

The Collaborative Program has evolved quite a bit since I went to my first meeting 12 years ago and most changes have been for the better. With Reclamation's commitment to funding the Program Support Team, the almost ad-hoc lead-from-behind feel the Program had has been replaced with an effort that is more organized and focused. Science is being put first, giving the move to Adaptive Management real heft. Best for me is the return of the Habitat Restoration Workgroup (now HR Coordination Group), which provides a forum for river/ bosque managers to come together to discuss relevant natural resource issues and learn from each other. Recovering endangered species will never be a perfect process and, especially, the Rio Grande silvery minnow may not make it despite a tremendous effort, but the Program is better poised to aid in recovery than it was a decade ago.

"

– Michael Scialdone, Pueblo of Sandia, Bosque Project Manager

The Collaborative Program is one of the few that is a fully interdisciplinary, democratic governance of stakeholders who synergistically work together using hypothesis-driven adaptive management to rapidly address issues related to climate change and stakeholder needs and obligations.

- Kim Eichhorst, BEMP, Science and Research Director

"

In 2003, I was UNM's first representative to the Interim Steering Committee, which formed what is currently the Collaborative Program. Really important changes have happened since then. In the age of megadrought, the partners have come together like never before to attempt to manage instream flows to benefit the natural system that relies on spring flow pulses, overbank flooding, and sustained water during dry summers. An increased focus on science and data-driven policy making is an essential part of this, and expanded possibilities and opportunities for adaptive management. Now, 20 years on, we are better equipped to face new challenges of water scarcity and multiple uses. Large collaborative efforts are hard and often unwieldy, but they lead to lasting solutions and more inclusive willingness to tackle new challenges head on.

– Thomas Turner, UNM, Professor of Biology and Curator of Fishes in the Museum of Southwestern Biology

"

The Middle Rio Grande is an incredible greenbelt that runs through the heart of New Mexico and desert southwest. This vital ecosystem provides numerous benefits to the community and supports an abundance of wildlife. The Collaborative Program is a powerful group of stakeholders who share a common interest in supporting the health of the Middle Rio Grande for critical and endangered species. The management of the Middle Rio Grande has become more complex due to climate change, invasive species, development pressure, wildfires, and many other issues. The Collaborative Program is adapting to these complex times through research and monitoring, utilizing and collaborating on scientific methods, and applying a holistic approach to management that promotes an overall healthy ecosystem. This is especially helpful for the Albuquerque's Open Space Division, which manages over 4,000 acres in the bosque in the state's largest metropolitan area.

– Colleen Langan-McRoberts, CoA Open Space Division, Open Space Superintendent

"

The Collaborative Program has gone through many phases with various goals and objectives during its over 20 years of existence. The Program's current mission of providing a collaborative space in support of science and adaptive management is very relevant as signatories seek a new path forward with changing hydrological conditions and great uncertainty. I look forward to the Collaborative Program and the Middle Rio Grande becoming a model for these types of efforts across the nation.

– Jim Wilber, Reclamation, Deputy Area Manager of the Albuquerque Area Office

MESSAGES FOR 2023



Provided by Debbie Lee Program Manager Program Support Team



Provided by Catherine Murphy Science Coordinator *Program Support Team*

We are better together...

One of the purposes of the 2022 Collaboratory was to acknowledge the Collaborative Program's transition from planning to practice. When the Collaborative Program adopted an AM plan tailored to its unique capacity in 2021, it established the tools for developing, evaluating, refining, justifying, and communicating recommendations for endangered species management in the MRG. The primary challenge before us is to find novel solutions within a complex and seemingly rigid decision environment. Trying to collaborate in this decision space can seem tedious and risky, but engaging in a deliberate and transparent process together, however, can increase stakeholder buy-in and produce lasting results. Our signatories see the benefit of utilizing a collaborative forum to generate creative and robust solutions for their shared set of problems.

We see bigger factors at play...

Practical management recommendations must take into account the larger environmental influences that will affect outcomes. In the MRG Basin, these include increased variability in both the river hydrograph and the response of the bosque ecosystem to a changing climate. Navigating these uncertainties for endangered species management will require wide-ranging expertise and a shared long-term outlook. By tracking relevant science and defining likely and extreme climate futures, the Collaborative Program will help its signatories plan in the face of uncertainty. By placing endangered species conservation within the context of an ecosystem approach, the Collaborative Program will enable its signatories to recognize and adapt to shifting paradigms in ecological structure and function. Importantly, the ecosystem approach recognizes the influence of humans on the ecosystem, which is sound practice in a river system as highly managed as the MRG.

We share priorities...

Implementation of collaborative and planning frameworks in 2023 and beyond will further help the Collaborative Program use AM to address complex issues affecting our listed species. Major management issues that have been brought to the Collaborative Program by signatories thus far include restoration monitoring and assessment, island and bar vegetation, and river drying. Each of these multifaceted topics presents a unique set of management challenges requiring careful consideration. Collaboration and proper framing are critical for effective management of issues that affect multiple stakeholders, species, and decision makers. By prioritizing next steps for these issues in the 2023 Work Plan, the Collaborative Program can capitalize on the collective expertise of our participants with a coordinated approach. Adhering to the process we've developed and documenting scientific evidence in SAMIS will also ensure transparency and help to maintain forward momentum and facilitate faster implementation of effective AM.

SCHEDULE FOR 2023

JANUARY	FPC Meeting			
FEBRUARY	SAMC Meeting			
	HR Coordination Field Trip			
MARCH	EC Meeting			
APRIL	FPC Meeting			
MAY	SAMC Meeting			
	HR Coordination Meeting			
JUNE	NE EC Meeting			
JULY	FPC Meeting			
AUGUST	SAMC Meeting			
	HR Coordination Field Trip			
SEPTEMBER	EC Meeting			
OCTOBER	FPC Meeting			
	Climate Futures Planning Workshop			
NOVEMBER	SAMC Meeting			
	HR Coordination Meeting			
DECEMBER	EC Meeting			
	Science Symposium			



FEDERAL CO-CHAIR'S LETTER

from Katrina Grantz, Former Federal Co-Chair of the Executive Committee U.S. Bureau of Reclamation

I have had the honor and privilege to serve as the Federal Co-Chair for the Collaborative Program since April 2021. In December 2022, I stepped down from that role, and am now reflecting on my time with the Collaborative Program and the opportunities I see for the future. I find myself optimistic and excited for the future of the Program and all the great things that it will accomplish.

My predecessor, Wayne Pullan, referred to his time with the Collaborative Program as "doing God's work," and while that may seem like an exaggeration, I find, in some ways, I



have to agree. As the American Southwest faces increasing stressors from climate change, decreasing water supply, and increasing water demand, we know any path forward must utilize collaborative solutions. Endangered species are, in many ways, the proverbial canary in the coal mine. They are the early indicators of threats to the larger ecosystem. Given the increasing uncertainty regarding the Middle Rio Grande ecosystem and its species, the Collaborative Program's move to adopt an ecosystem approach in 2022 was timely.

In 2023, the Collaborative Program will be tackling just what that future may look like and what the impacts will be on the bosque and its species. The Climate Futures Planning Workshop is vitally important to both the Collaborative Program and its signatories for providing clarity to an uncertain future and helping us plan better for it. I encourage everyone to participate in the workshop and help us collectively identify not just threats but solutions and opportunities.

As we move into implementation of adaptive management, we know engagement that is sincere, complete, and transparent, is vitally important for the success of the Collaborative Program, and, as I see it, of the Middle Rio Grande. We have built an amazing thing with the Collaborative Program, and I have hopes of it becoming the model for other riverine programs in the West.

We all know adaptive management and collaboration are hard; they can both be timeconsuming and slow. But in the end, the results are much more meaningful. While I may not officially be a part of the Collaborative Program any more, I will still be watching from afar and look forward to seeing the amazing results of your work!

Katina Aranty

Katrina Grantz Former Federal Co-Chair of the Executive Committee

"The Program's current mission of providing a collaborative space in support of science and adaptive management is very relevant as signatories seek a new path forward with changing hydrological conditions and great uncertainty."

– Jim Wilber, U.S. Bureau of Reclamation

