

ANNUAL REPORT 2022



Middle Rio Grande Endangered
Species Collaborative Program



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2022 ANNUAL REPORT PREPARED BY:



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ON BEHALF OF:

The Middle Rio Grande Endangered Species Col-
laborative Program

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Fish and Wildlife Service; and Shannon Caruso,
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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 a fire in the bosque that burned over 30 acres on both sides of the river, as well as 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.

A handwritten signature in black ink that reads "Mark Kelly". The signature is stylized and cursive.

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

ACRONYMS & ABBREVIATIONS

ABCWUA	Albuquerque Bernalillo County Water Utility Authority
AM	Adaptive management
Audubon	Audubon Southwest
BEMP	Bosque Ecosystem Monitoring Program
CoA	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 and 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
USFWS	U.S. Fish and Wildlife
YBCU	Yellow-billed cuckoo

GUIDING PRINCIPLES

Our Mission

The Middle Rio Grande Endangered Species Collaborative Program (Collaborative 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 listed species inhabiting the Middle Rio Grande (MRG): the endangered Rio Grande silvery minnow (RGSM; *Hybognathus amarus*), 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*).

Our Goals

- 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

Non-Federal Co-Chair, EC Representative for Albuquerque
Bernalillo County Water Utility Authority (ABCWUA)

Katrina Grantz

Federal Co-Chair, U.S. Bureau of Reclamation (Reclamation)

REPRESENTATIVES

Paul Tashjian

Audubon Southwest (Audubon)

Kim Eichhorst

Bosque Ecosystem Monitoring Program (BEMP)

Rick Carpenter

Buckman Direct Diversion

Colleen Langan-McRoberts

City of Albuquerque (CoA)

Anne Marken

Middle Rio Grande Conservancy District (MRGCD)

William Grantham

New Mexico Office of the Attorney General's Office (NMOAG)

Matthew Wunder

New Mexico Department of Game and Fish (NMDGF)

Page Pegram [Jan-Jun]

New Mexico Interstate Stream Commission (NMISC)

Grace Haggerty [Jun-Dec]

NMISC

Blane Sanchez

Pueblo of Isleta

Michael Scialdone

Pueblo of Sandia

Alan Hatch

Pueblo of Santa Ana

Thomas Turner

University of New Mexico (UNM)

LTC Patrick Stevens [Jan-Aug]

U.S. Army Corps of Engineers (USACE)

LTC Jerre Hansbrough [Aug-Dec]

USACE

Jennifer Faler

Reclamation

Shawn Sartorius

U.S. Fish and Wildlife Service (USFWS)

GROUP PHOTO

Fiscal Planning Committee (FPC)

CO-CHAIRS

Grace Haggerty
Debra Hill

Non-Federal Co-Chair
Federal Co-Chair

MEMBERS

Mark Kelly	ABCWUA
Quantina Martine	Audubon
Kim Eichhorst	BEMP
Dustin Chavez-Davis	CoA
Brittney Erdmann	MRGCD
Anne Marken	MRGCD
Bill Grantham	NMOAG
Virginia Seamster	NMDGF
Michael Scialdone	Pueblo of Sandia
Lynette Giesen	Reclamation
Thomas Turner	UNM
Ryan Gronewold	USACE

Science and Adaptive Management Committee (SAMC)

MEMBERS

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

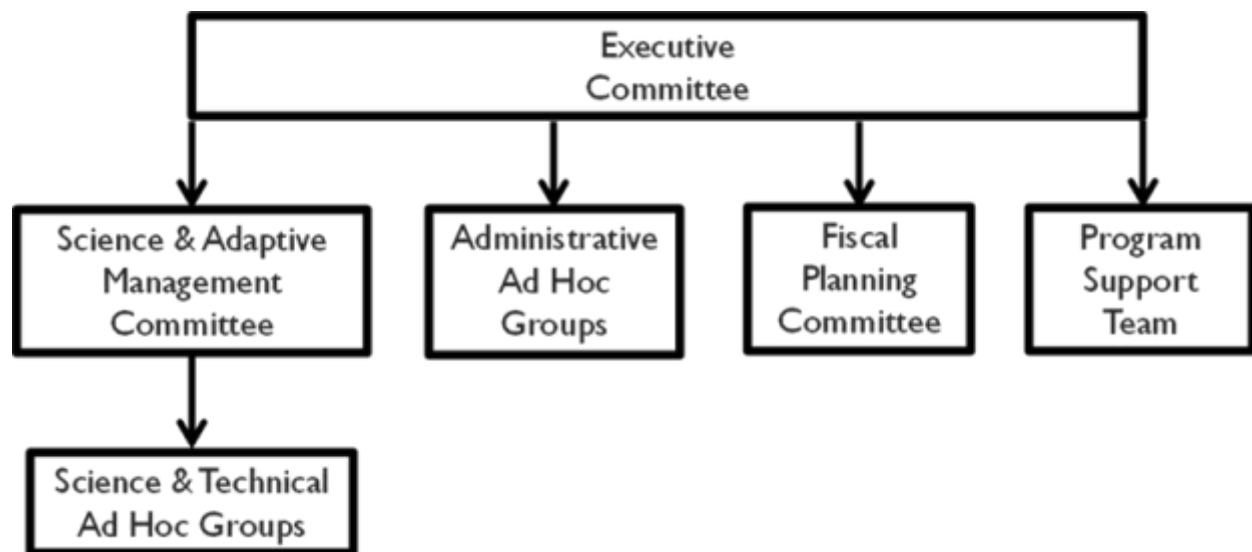


Figure 1. Structure of Collaborative Program committees and groups.

THE RICK BILLINGS MEMORIAL AWARD



RICK BILLINGS

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 non-federal and federal [Collaborative] Program participants.

As one nominator accurately stated, Grace Haggerty has truly been a guiding force in the Collaborative Program for many years. As a stalwart supporter, she regularly attends meetings, contributes her technical expertise to 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 sites, and with Dr. Charles Yackulic at the U.S. Geological Survey 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 MANAGEMENT



Provided by Debbie Lee
Program Manager
Program Support Team

Collaborative Program signatories have been attempting to develop an adaptive 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* (Murray et al.), 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 steps: assess, design, implement, monitor, 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; conditions and elements shown).

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 that 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		
	CULTURE	PROCESSES	ENGAGEMENT	COLLABORATION	LEARNING	MANAGEMENT RELEVANCE
CONDITIONS	<ul style="list-style-type: none"> ✓ Openness ✓ Relationships & Networks ✓ Continuous Learning & Improvement ✓ Reputation ✓ Value 	<ul style="list-style-type: none"> ✓ Knowledge Management ✓ Institutional Memory ✓ Decision-Making ✓ Peer Review ✓ Timeline 	<ul style="list-style-type: none"> ✓ Investment ✓ Resources ✓ Information Sharing ✓ Mutual Benefit ✓ Relevance 	<ul style="list-style-type: none"> ✓ Internal Collaboration ✓ External Collaboration 	<ul style="list-style-type: none"> ✓ Results & Findings ✓ Addressing Uncertainty ✓ Scientific Evidence Base ✓ Documenting Change ✓ Improvement of Tools 	<ul style="list-style-type: none"> ✓ Recommendations ✓ Innovation ✓ Responsiveness ✓ Ecosystem Approach ✓ Scenario Planning
ELEMENTS						

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 Adaptive Management Process

2011 Completed <i>Adaptive Management Plan Version 1</i>
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 was the need to identify and challenge 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, 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.

BURN SITE FIELD TRIP



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, CoA Open Space, CoA Parks & Recreation, NM 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 Montañño Fire Analysis, available on the Program YouTube channel.



*Photos: Participants visiting the Deep Dark Woods bosque burn site.
Credit: Debbie Lee, Program Support Team.*

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 Llewellyn, Reclamation examined 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 real-time 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.

2022 COLLABORATORY: FROM PLANNING TO PRACTICE



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 (53) participants each day and sixty-four (64) 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 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

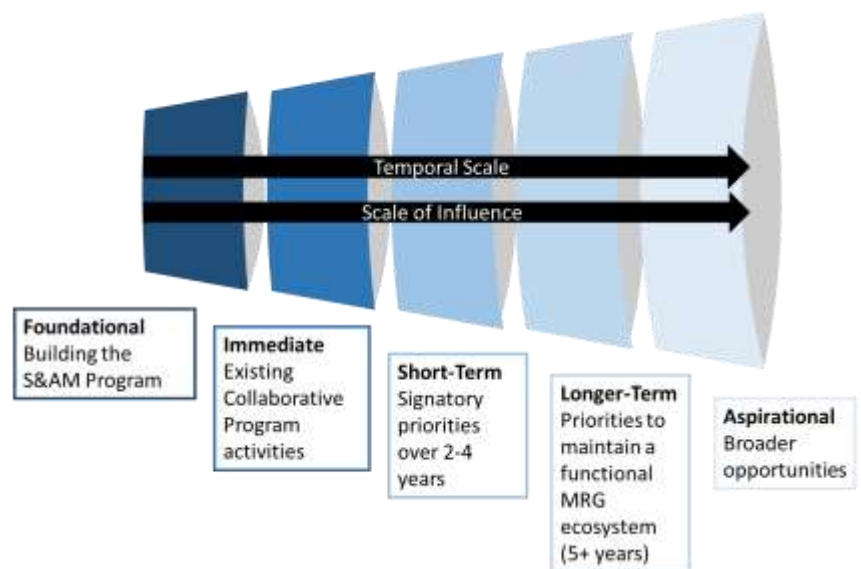


Figure 3. Sequential structure of Collaboratory sessions; sessions move from with topics increasing in scale from left to right .

into breakout groups to discuss the following Collaborative Program science activities: Rio Grande silvery minnow (RGSM) management (two groups), integrated species management (one group), the Management of Vegetated Islands and Bank-Attached Bars Workshop (one group), and drying in Angostura Reach (one group). 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. 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 back-to-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 1-3 of the most important issues, and finally came up with assumptions, opportunities, knowledge gaps, and potential strategies for those issues.

The outcomes and next steps from 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 multi-year planning efforts. Based on analysis of the outcomes from the workshops and Collaboratory, the focus areas in Table 3 emerged as most important to the Collaborative Program. Moving forward, the Collaborative Program will define an end goal for each focus area and develop immediate, short-term, 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.

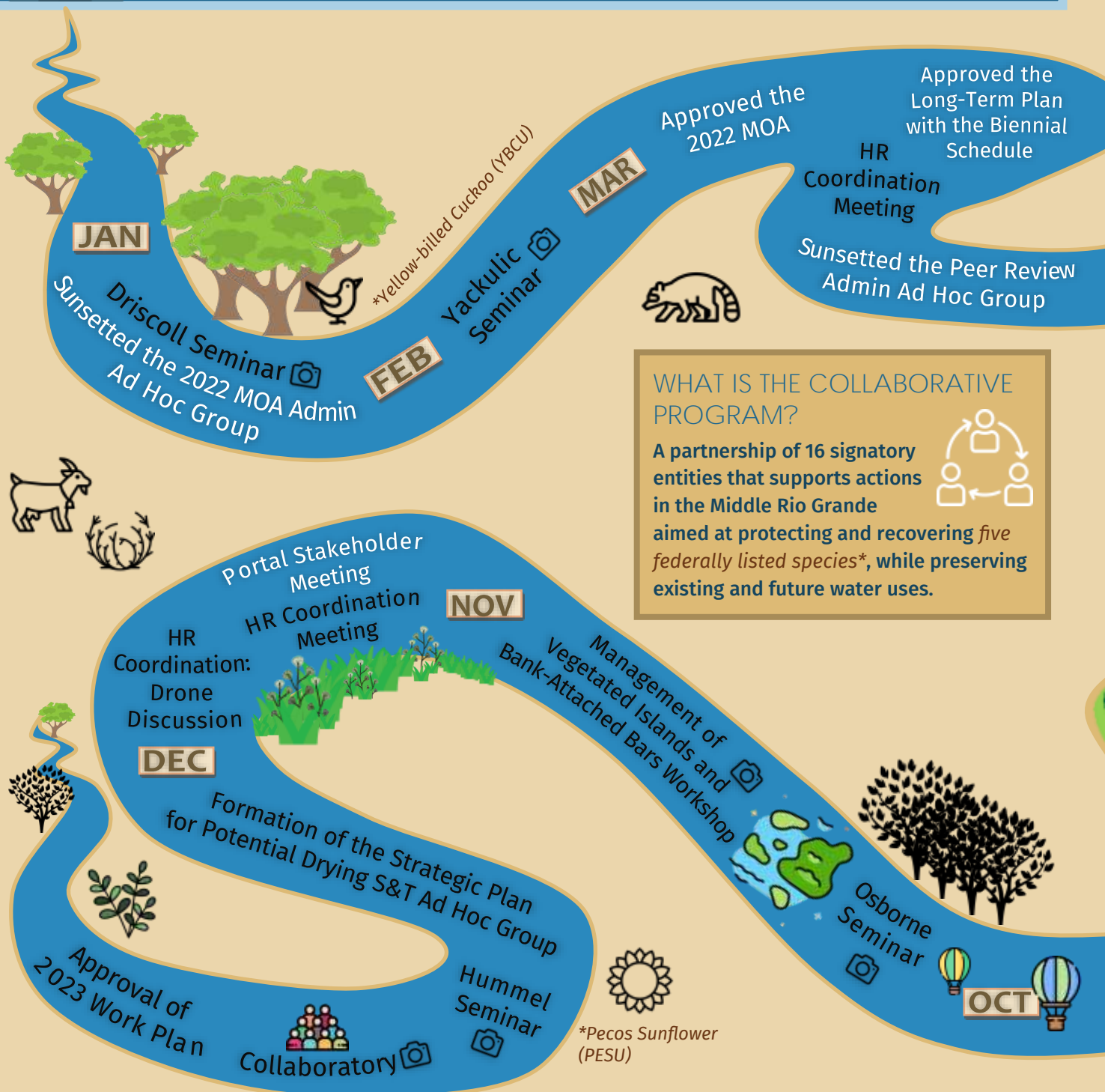
Table 3. Focus Areas for Multi-Year Planning
Climate Scenario Planning
HR Planning, Design, and Assessment
Management of Vegetated Islands and Bank-Attached Bars
RGSM Management and Science
Water Operations and Flexibility
Strategic Planning for River Drying in the MRG



Photos: Participants at the 2022 Collaboratory.
Credit: Debbie Lee, Program Support Team.

Middle Rio Grande Endangered Species Collaborative Program

2022 YEAR IN REVIEW



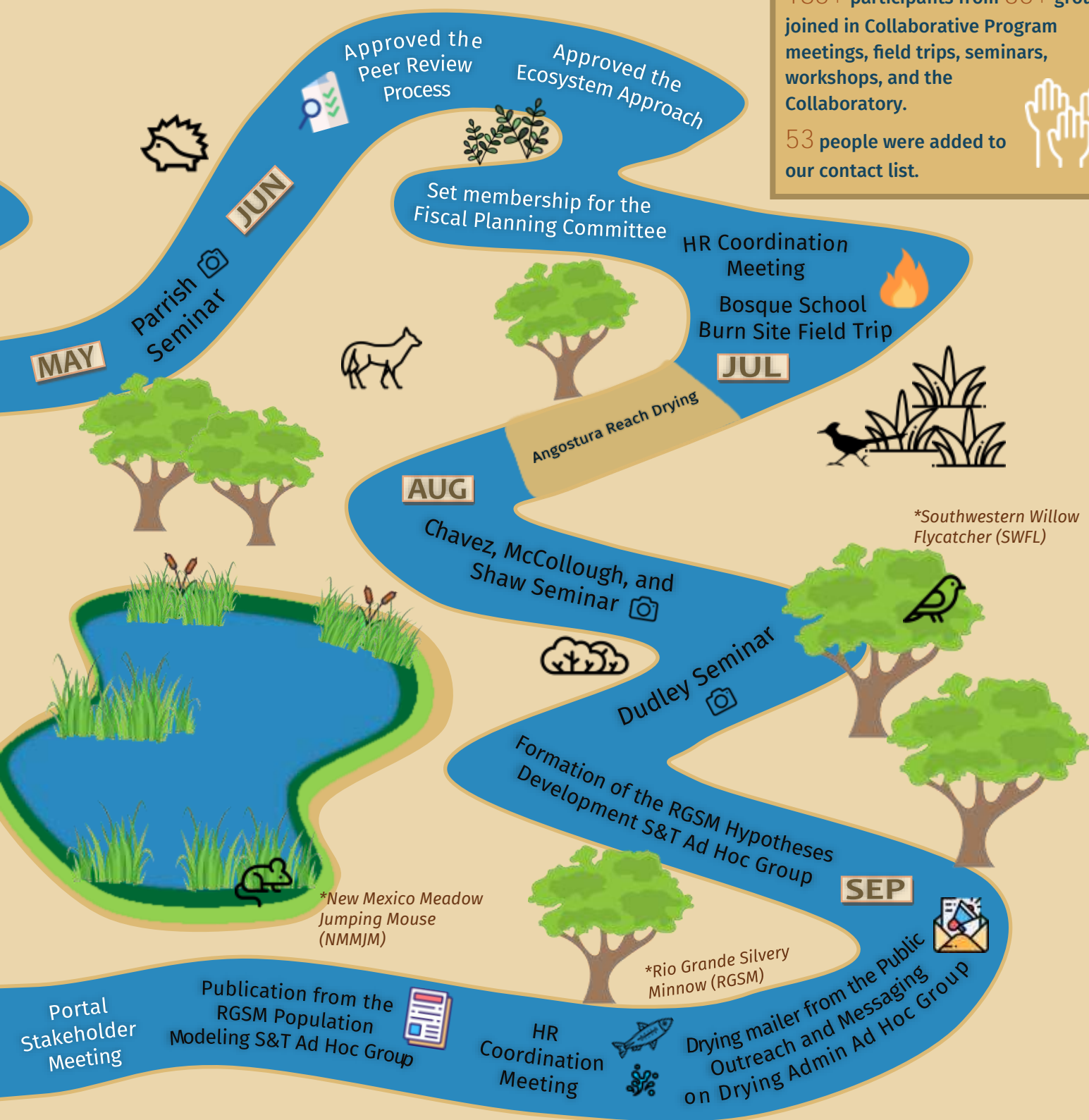
FROM PLANNING TO PRACTICE

In 2022, the Collaborative Program executed its plan to establish itself as a science & adaptive management program and put its newly developed support tools to practice. Planning accomplishments (indicated in white), such as +approving the peer review process, were made early in the year. The year was later dominated by accomplishments that put tools to practice (indicated in black), such as the +workshop, +Collaboratory, and an ad hoc group +publication and +mailer.

WHO PARTICIPATED?

185+ participants from 35+ groups joined in Collaborative Program meetings, field trips, seminars, workshops, and the Collaboratory.

53 people were added to our contact list.



SCIENCE COMMUNICATION BY-THE-NUMBERS



1 Workshop

1 Collaboratory

1 Field Trip

7 Collaborative Seminars

6 Newsletters

5 HR Coordination Meetings

23 Publications Shared

28 MRG Announcements Shared



The picture icon indicates there are event recordings available on the Program Portal.

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/@mrghescp>. Click each image to view a recording of the presentation.



Dr. Charles Yackulic, USGS, presented on the RGSM Integrated Population Model and Expert Elicitation on February 24, 2022.



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



Megan Osborne, UNM, presented on Genetic Monitoring of the RGSM on October 19, 2022.

Statistical designs and potential indicators for evaluation of restoration success

Katey Driscoll
Middle Rio Grande Collaborative Seminar
1/12/2022

Katey Driscoll, U.S. Forest Service, presented on Statistical Designs and Potential Indicators for Evaluation of Restoration Success on January 12, 2022.



Chris Parrish, Justin Riggs, and Tucker Feyder, USACE, presented on Jurisdictional Waters, Permits, Wetland Delineation, and Compensatory Mitigation on May 5, 2022.



Robert Dudley, UNM, presented on the 2021 RGSM Population Monitoring Program on August 23, 2022.



Ondrea Hummel, Tetra Tech, Inc., presented on the Bosque Assessment and Update Prioritization (BAUP) on December 14, 2022.



2022 SIGNATORY HIGHLIGHTS

PLACEHOLDER: TO BE DISCUSSED AT EC

WHAT OUR SIGNATORIES HAVE TO SAY ABOUT THE COLLABORATIVE PROGRAM

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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*

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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*

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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 tackle new challenges head on.

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

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 scenarios, 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	EC Meeting
JULY	FPC Meeting
AUGUST	SAMC Meeting
	HR Coordination Field Trip
SEPTEMBER	EC Meeting
OCTOBER	FPC Meeting
	Climate Scenario 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 working with the Collaborative Program as “doing God’s work,” and while that may seem like just 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 Scenario 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 time-consuming 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!

Katrina Grantz
Former Federal Co-Chair of the Executive Committee



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