MIDDLE RIO GRANDE ENDANGERED SPECIES COLLABORATIVE PROGRAM

June 2021 Newsletter

Dear Collaborative Program (Program) signatories, partners, and friends,

It's hard to believe that the year is halfway over. In the last year and a half, the Program, like the rest of the world, has had to find new ways to operate and work together. Virtual meetings have become a regular occurrence, and although that allows us to engage with people outside of our regions, it also limits our engagement to the computer screen. Communication is vital to the Program's success. To that end, we are looking to provide more opportunities for information sharing that is useful and productive to individual signatories, and the Program's larger science efforts.

We are going to start posting regular polls on the Program Portal, with results presented in the Program's newsletters. The first one was this month! (See page 8.) We hope this will be a fun way to take the pulse of Program participants on various topics. Some of those topics may become the focus of a future workshop or seminar.

Which brings me to seminars! The Program will begin hosting quarterly topical seminars, during which folks can share their projects and have robust discussions with participants. These seminars will be structured around the following project categories, which are used to organize the Adaptive Management Relational Database and annual report:

- Species management & recovery
- Population monitoring & modeling
- Habitat assessments & modeling
- Field & laboratory experiments

If you have a project you would like to present, please reach out! More information is on page 2.

We will also be using the newsletter to highlight projects and collaborative opportunities. If you have a project you would like input on, or are seeking a potential partnership for, please let us know! See page 5 for this issue's opportunities.

Stay tuned for our other plans to encourage greater communication, information sharing, and engagement! And if you have any ideas for how the Program can better serve its mission as a collaborative forum that supports science and adaptive management, please reach out. We would love to hear from you!

Best wishes,
Debbie Lee, *Program Manager*

Featured This Issue:

Program Updates

Call for Seminar Topics!

We are planning to host quarterly seminars around projects and other activities happening in the Middle Rio Grande that relate to listed species. If you have a topic you would like to present, please reach out to Michelle Tuineau at mtuineau@west-inc.com. We are looking for projects in the following categories:

- Habitat Assessments & Modeling
- Species Management & Recovery
- Population Monitoring & Modeling
- Field & Laboratory Experiments (including habitat restoration!)

Talks will be no more than 20 minutes, with ample time for questions and discussion after, hosted via Zoom and open to the public. Topics can include findings and lessons learned from completed projects, as well as requests for guidance and improvements to projects still in the planning phase.

2021 RGSM Egg Collection Update

On May 7th, U.S. Fish and Wildlife (USFWS) collected 6,878 Rio Grande silvery minnow (RGSM) eggs at the north boundary of the Bosque del Apache (BdA), which were sent to the Southwestern Native Aquatic Resources and Recovery Center (ARRC). On May 11th, 324 RGSM eggs were collected at the Albuquerque Powerline and transferred to the BioPark. On May 13th and 14th, 4,083 RGSM eggs and 2,007 RGSM eggs, respectively, were collected from the north boundary of the BdA and transferred to the Southwestern Native ARRC.

Photo: Rio Grande silvery minnow egg attached to detritus
Credit: Pauletta Dodge

Photo: Rio Grande silvery minnow eggs on a collector screen
Credit: Pauletta Dodge

Better Living Through Adaptive Management

Provided by: Catherine Murphy, Science Coordinator

As the Collaborative Program settles into an adaptive management (AM) framework and implements its science program, it may be illustrative to show the process through the structure of the Adaptive Management Relational Database (AMRDB). Through the years, the Collaborative Program has amassed an impressive number of studies and initiatives designed to navigate an increasingly complex operational space. One can easily understand how new information and innovative ideas could be lost in the torrent of procedural changes, shifting priorities, and personnel turnover. Some of the important uncertainties that the Collaborative Program seeks to reduce seem to be caught in an eddy, coming back around in reports and meeting minutes, but never quite contributing to adaptive learning. This can feel a little like swimming in an infinity pool – we are burning calories, but not making forward progress. Since we cannot return to a simpler time, our best option is to organize what we have and try a little bootstrapping.

A relational database is a popular method of database design that structures information as a collection of tables that relate to each other in complex ways. This results in a great deal of flexibility and control for managing and

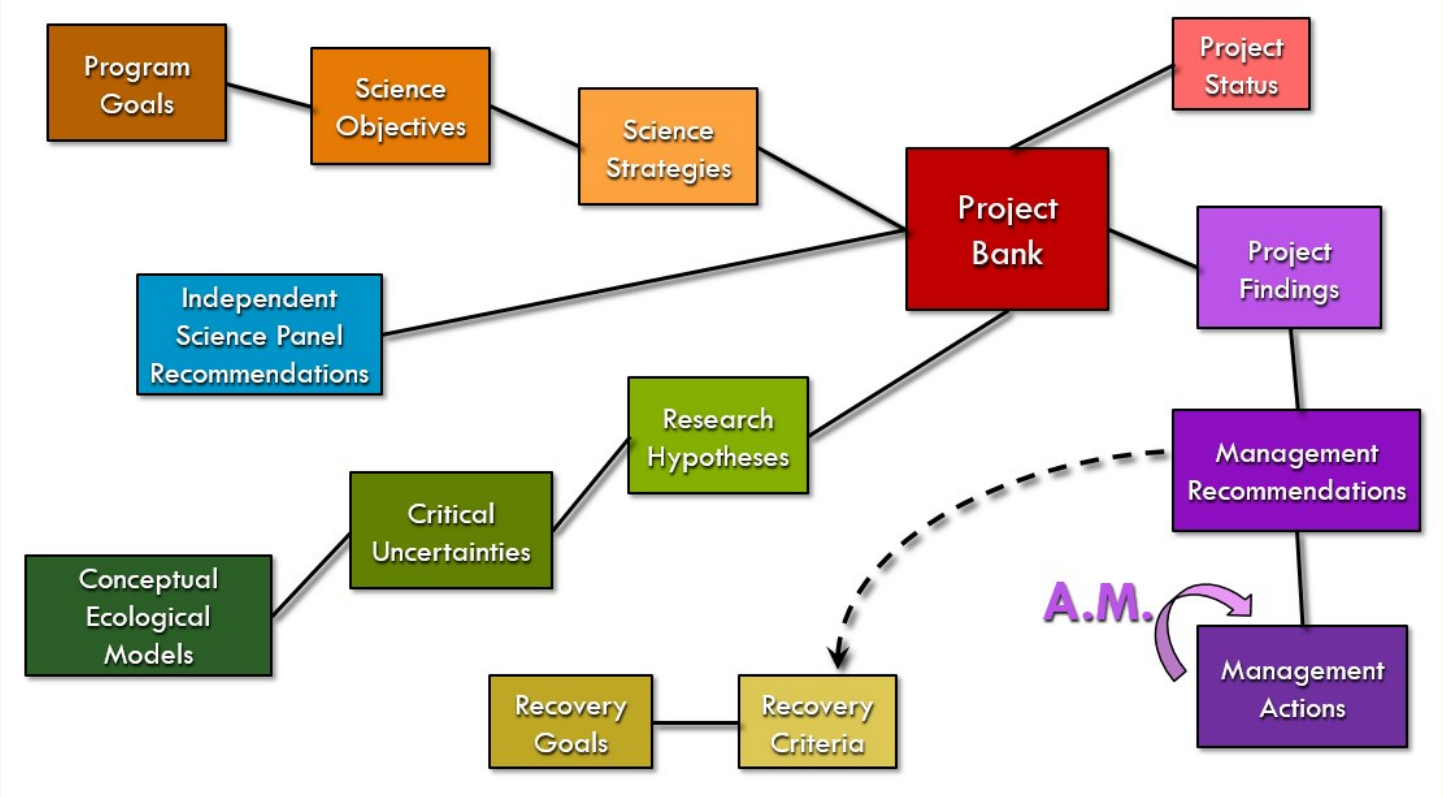


Figure: Relational pathways in the Adaptive Management Relational Database

manipulating interrelated data. The AMRDB warehouses and links information relevant to science and AM of the Middle Rio Grande (MRG), including our guiding principles, conceptual ecological models, independent science panel recommendations, research studies, monitoring programs, and conservation measures. In addition, it references external recovery efforts, such as the U. S. Fish & Wildlife Service Recovery Plans for listed species. By creating this relational network, the AMRDB both informs and is informed by elements outside of the Collaborative Program, enhancing its relevance and value to signatories and greater research and recovery communities. Thus, the AMRDB serves as a decision support knowledge base updated regularly to reflect current scientific understanding and management requirements related to listed species of the MRG. The primary uses of this information repository are 1) integrating Collaborative Program science into system management, 2) evaluating decisions, and 3) planning for future scenarios.

The AMRDB employs a spoke and hub structure to connect different types of information through pathways (spokes) radiating from the central hub of the Project Bank. The Science Program pathways are designed to:

- Support the Collaborative Program mission via Program Goals, Science Objectives and Science Strategies;
- Address Independent Science Panel recommendations; and
- Reduce critical uncertainties in conceptual ecological models.

The Adaptive Management pathways allow for:

- Tracking Ad Hoc Group progress and project status;
- Linking scientific findings to management recommendations; and
- Providing decision support for management actions and recovery criteria.

Using this structure, we not only retain institutional knowledge, but also regularly challenge and revitalize it. By archiving new scientific knowledge within the context of management recommendations, we ensure that no supported findings are left behind. Most importantly, when one of our management recommendations informs and modifies a management action or recovery criterion, we will have documented adaptive management in the MRG.

Photo: Cottonwoods in the Middle Rio Grande
Credit: Mike Marcus

Collaborative Opportunities

There have been several recent opportunities related to habitat restoration (HR) that have been presented for signatory partnerships and Collaborative Program input and recommendations. The City of Albuquerque Open Space Division (OSD) requested science-based support from the Collaborative Program for its HR efforts, and the Albuquerque-Bernalillo County Water Utility Authority (ABCWUA) and U.S. Army Corps of Engineers (USACE) presented partnership opportunities for their HR projects.

The Program Support Team will schedule a HR coordination get-together in mid-July to identify further opportunities for collaboration and to learn more about ongoing or upcoming HR work.

City of Albuquerque OSD HR and Planning Projects

The City of Albuquerque OSD is working on a number of planning projects to further support wildlife habitat in the Middle Rio Grande (MRG) Valley. The OSD is updating the Rank II Bosque Action Plan, continuing to acquire more land to buffer sensitive habitat, and further enhancing existing property to improve existing wildlife habitat and create additional habitat.

The OSD owns and manages the Candelaria Nature Preserve. A Resource Management Plan (RMP) developed for the property focuses on transitioning 82 acres of farmland into a dynamic patch mosaic of habitat. The RMP outlines a 20-year adaptive management plan that takes into consideration changing climate and numerous unknown factors related to embarking on the endeavor. The project also includes developing damp and ephemeral soil areas for wetland type habitat, along with native grasslands, various scrublands, and areas focused on pollinator plants. The OSD is working in concert with similar sites along the MRG Valley, including the Whitfield Conservation Area and Valle de Oro National Wildlife Refuge.

The OSD recently purchased an additional property adjacent to the San Antonio Oxbow, known as the Poole Property, that will serve as an important buffer to the Oxbow. The newly acquired 23-acre site overlooks the Oxbow, which is the only remaining river-connected wetland on the Rio Grande between Bernalillo and Bernardo. The Poole Property site will protect and provide a buffer to this fragile and unique ecological resource. Projects planned for the property include adding an additional buffer for the connected wetlands and employing a youth conservation corps to implement

Collaborative Opportunities

prescribed treatments targeting invasive species, mulching, planting, and reestablishing trails.

The OSD will continue to manage the Rio Grande Valley State Park in support of wildlife habitat and passive recreation. Currently, the OSD is revisiting the Bosque Action Plan to assess and prioritize restoration and recreation projects. In the meantime, ongoing management efforts include invasive species eradication, trail work, fuel mitigation, seeding, planting, and ongoing monitoring to inform future planning and restoration activities. The OSD continues to work in partnership with a variety of organizations to accomplish this work, including the Middle Rio Grande Conservancy District (MRGCD), Albuquerque Metropolitan Area Flood Control Authority, USACE, New Mexico State Forestry, State Land Office, Bosque School, Ancestral Land Conservation Corps, University of New Mexico, and Bosque Ecosystem Monitoring Program.

The OSD has requested input from the Collaborative Program on recommendations for best management practices, suggestions for vegetation that would benefit key species, and input on the possibility of planting Pecos sunflower at the Candelaria Nature Preserve. Please contact Alyssa O'Brien at alyssaobrien@cabq.gov or Colleen McRoberts at cmcroberts@cabq.gov for more information.

ABCWUA Outfall Realignment Project

ABCWUA is in the planning stages of an outfall realignment project at the Southside Water Reclamation Plant (SWRP). The SWRP treats approximately 55 million gallons of wastewater per day, which is released into the Rio Grande via an outfall channel. The project includes improvements that benefit water quality, facilitate public access, and create additional habitat for the Rio Grande silvery minnow. Site monitoring will be conducted to evaluate project success, and maintenance of the site will include erosion repairs, sediment removal, vegetation replacement, and trash clean up.

ABCWUA presented alternative design options for consideration to the Fiscal Planning Committee and is looking for opportunities to partner, including around financial resources, equipment, monitoring, or other collaboration. Additionally, ABCWUA is soliciting Collaborative Program and signatory input to inform further planning efforts, such as recommendations for best management practices, identification of metrics to measure habitat success, development of a monitoring plan, and vegetation planting suggestions.

To find out more, please contact Mark Kelly at mkelly@abcwua.org or Sarah Hendrickson at shendrickson@abcwua.org.

Collaborative Opportunities

USACE Ecosystem Restoration

USACE completed an Integrated Feasibility Report and Environmental Assessment (IFR/EA) that identifies ecosystem restoration opportunities and addresses feasibility in the bosque between the Sandia Pueblo and the Pueblo of Isleta. The IFR/EA evaluated alternative actions aimed at restoring degraded ecosystem structure, function, and dynamic processes. The following actions were taken:

- Restore 261 acres of Bosque in the MRG
- Construct 42 willow swales
- Treat 15 acres for invasive species, re-treating them for resprouts, and planting the areas with native species
- Construct 5 high-flow channels
- Construct 3 wetlands
- Construct 2 areas that will connect with the river
- Construct 1 wet meadow
- Construct 1 bank line terrace
- Remove 3 berms
- Construct 1 area that will divert outfall flows
- Enhance 1 ditch for wet habitat

Photo: Middle Rio Grande
Credit: Jesse Shuck

These actions are expected to benefit the Rio Grande silvery minnow and the southwestern willow flycatcher by protecting, extending, and improving areas of potential habitat. Restoration activities could also benefit other listed species in the MRG. Restoration efforts are expected to occur over a two- to three-year period once the project design stage is complete.

In August 2016, the MRGCD signed a Feasibility Cost Share Agreement with USACE and became a Non-Federal Sponsor of the project. MRGCD and USACE have requested additional non-federal partnership from Collaborative Program signatories during the two-year design stage. USACE was awarded $1.8 million with a 65/35 cost share stipulation. Sponsorships would need to be in place by the end of December 2021 to secure the $1.8 million funding for the design stage of the project.

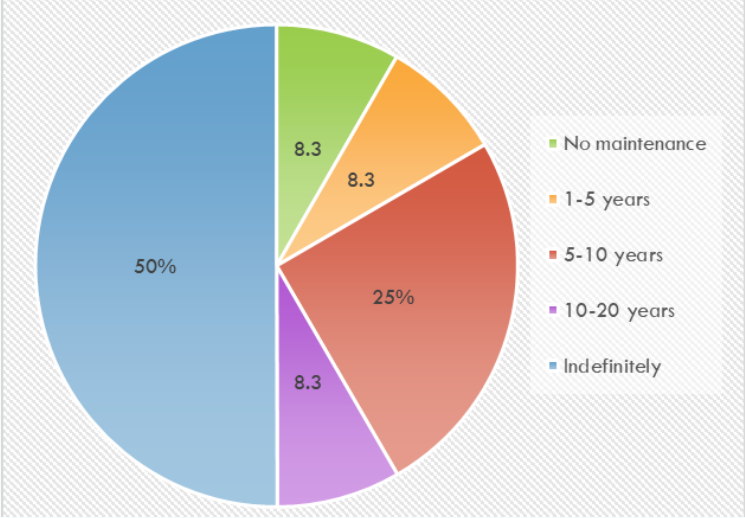
Please contact Yasmeen Najmi at yasmeen@mrgcd.com and Danielle Galloway at danielle.a.galloway@usace.army.mil to find out more.

Collaborative Poll Results

June Collaborative Poll

This month, Collaborative Program participants and interested members of the public participated in an anonymous poll. This poll is part of a monthly poll series meant to encourage the sharing of science and adaptive management ideas. The June poll was related to effective habitat restoration (HR) and measuring success. Below is summary of responses from 12 poll participants, including a pie chart of responses to question 1, quotes from responses to question 2, and a word cloud generated based on responses to question 3. To view the full responses to each question, follow the link: https://webapps.usgs.gov/MRGESCP/documents/responses-to-the-june-2021-collaborative-poll.

Question 1: How far into the future should HR sites be maintained?



In support of 10-20 years of maintenance:

"In order to justify the expense, it should be for a significant amount of time, like 10 years, and then reviewed for effectiveness."

In support of indefinite maintenance:

"There should be a permanent record at least, so that future projects are aware of what techniques have been tried at the site, which informs what is used in the future."

"...habitat features need to be maintained, especially in years of low to moderate flow, when floodplain habitat is vital to the year class of the fish."

"Monitoring and maintenance needs to be a regular part of doing business in the Middle Rio Grande."

Question 2: Why did you select your previous answer?

Below are highlighted quotes from question 2 respondents. These snippets provide some of the reasoning behind respondents' answers to question 1. Full responses can be found on the Program Portal.

In support of no maintenance:

"...sites should be created so that they "maintain themselves" under expected river hydrology."

In support 1-5 years of maintenance:

"...in general, if designed properly, a project should take no more than 5 years to establish new plants and determine vulnerabilities in hard installations..."

In support of 5-10 years of maintenance:

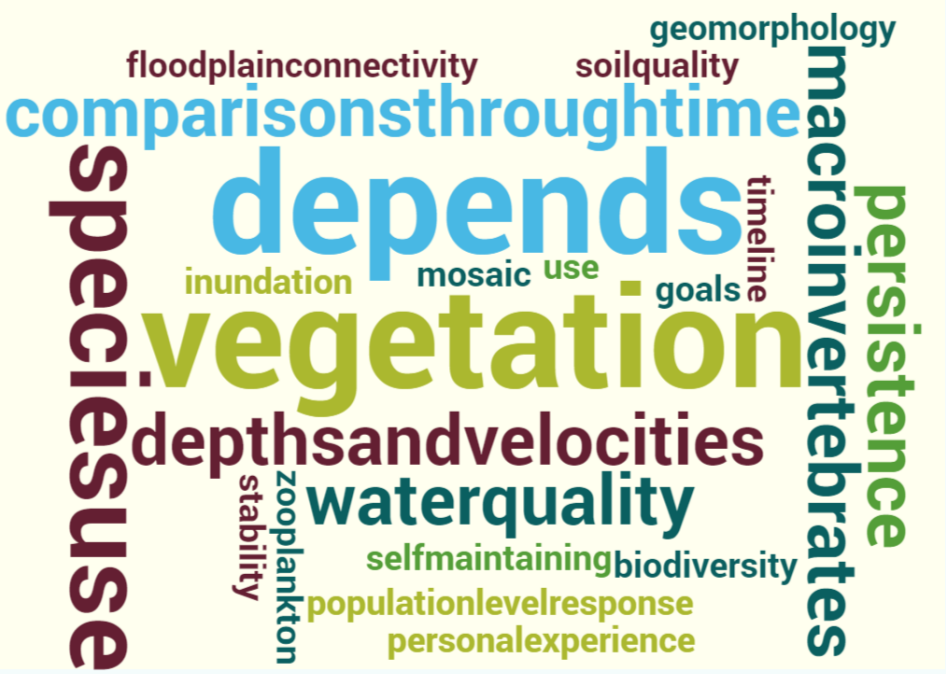
"...all sites require some maintenance, especially in the first few years, to establish vegetation and new baselines for geomorphological conditions. However, indefinite maintenance does not seem sustainable..."

"...the restoration should last as long as necessary to achieve the goals for some recruitment from the endangered species targeted, and whose life cycles are rather short compared to dynamic changes that occur in the Middle Rio Grande riverine ecosystem."

Poll Results and Program Updates

Question 3: What metrics do you use to evaluate the success of HR projects?

Responses to question 3 were used to generate a word cloud. These words or concepts were frequently cited by respondents and they offer insight into the collective approach for choosing metrics to evaluate HR success. Full responses can be found on the Program Portal.



Farewell Wayne Pullan, Welcome Katrina Grantz

After one year as the Federal Co-chair for the Executive Committee (EC), Wayne Pullan's tenure ended in April 2021. Wayne was a decisive leader during a major period of transition for the Collaborative Program and was praised often for his clarity and guidance during meetings. Without a doubt, Wayne helped transform the MRGESCP into the new and improved program it is today.

As Wayne steps aside, he makes way for Katrina Grantz (pictured to the right) to step in as the new Federal Co-chair. Katrina is the Assistant Regional Director of Reclamation's Upper Colorado Basin Region. She oversees a variety of water and hydropower programs in Arizona, Colorado, New Mexico, Texas, Utah, and Wyoming. As the former Glen Canyon Dam Adaptive Management program manager, Katrina brings invaluable experience to her new position on the EC.

Please join us in welcoming Katrina Grantz to the MRGESCP!

Program Updates and Upcoming Dates

Welcome Yasmeen Najmi!

Join us in welcoming Yasmeen Najmi, Planner at the Middle Rio Grande Conservancy District (MRGCD), to the EC. Yasmeen will serve as the alternate representative for MRGCD. Anne Marken, former alternate, has replaced David Gensler as the primary MRGCD representative on the EC.

Administrative Announcement

DRAFT FY20 ANNUAL REPORT MRGESCP REVIEW PERIOD

The draft Fiscal Year 2020 (FY20) Annual Report was sent to the MRGESCP for review on June 23, 2021. Reviews are due July 21, 2021. The revised draft FY20 Annual Report will be up for approval at the Executive Committee meeting on July 28th.

Recent Publications

Wildfires Increasingly Impact Western US Fluvial Networks. Ball G, Regier P, Gonzalez-Pinzon R, Reale J, Van Horn D. (2021). *Nature Communications*, 12, Article 2484(2021). https://rb.gy/1t08vz

Rio Grande Silvery Minnow Population Monitoring During 2020. Dudley RK, Platania SP, White GC. (2021). Report prepared for U.S. Bureau of Reclamation. https://rb.gy/qg45hv

Rio Grande Silvery Minnow Population Monitoring During April 2021. Dudley RK, Platania SP, White GC. (2021). Report prepared for U.S. Bureau of Reclamation. https://rb.gy/o04qij

Upcoming Meetings

MINNOW ACTION TEAM
July 7, 2021
9:00 AM–11:00 AM

EXECUTIVE COMMITTEE
July 28, 2021
9:00 AM–12:00 PM

SCIENCE AND ADAPTIVE MANAGEMENT COMMITTEE
August 26, 2021
8:00 AM–12:00 PM

Program Deadlines

DRAFT FY20 ANNUAL REPORT MRGESCP REVIEW PERIOD
June 23–July 21, 2021

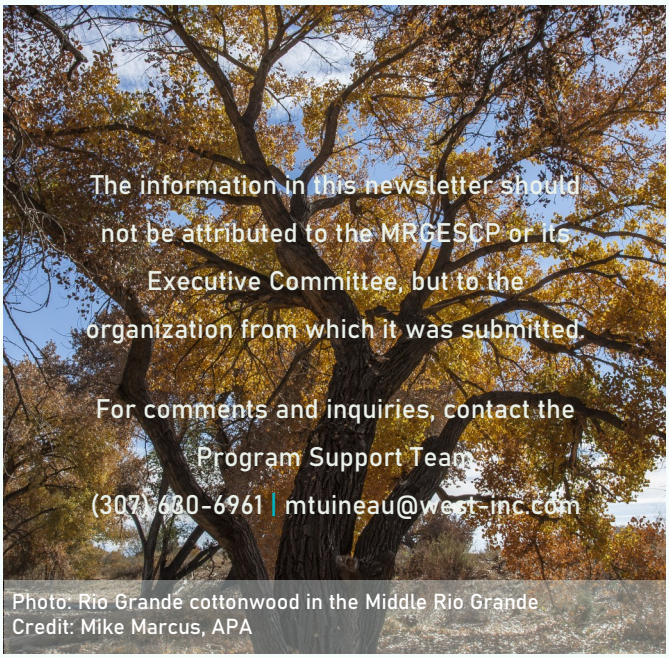


Photo: Rio Grande cottonwood in the Middle Rio Grande
Credit: Mike Marcus, APA