MIDDLE RIO GRANDE ENDANGERED SPECIES COLLABORATIVE PROGRAM

April 2020 Newsletter

FEATURED IN THIS ISSUE:

Introducing Catherine Murphy

Catherine Murphy is a quantitative ecologist who recently joined the Program as the Senior Science Coordinator. As part of the Program Support Team, she will engage with signatory activities by providing decision support, uncertainty analysis, and guidance for realizing science objectives. Catherine is originally from Vicksburg, Mississippi, and she has worked in rivers and streams from Texas to Florida and throughout the Mississippi Valley. During her 20+ years with the U.S. Army Engineer Research and Development Center, she developed a career in freshwater fisheries, habitat assessment and environmental compliance pertaining to civil works and water resource issues for the Corps of Engineers. She holds a B.S. in Biology from the University of Texas, as well as a Master of Applied Statistics and a Ph.D. in Wildlife and Fisheries Science from Louisiana State University. Her more recent research focused on floodplain connectivity in the Lower Mississippi River and water quality impairment in warm-water streams. She has also devoted considerable time to conservation of endangered fishes and management of aquatic nuisance species.

Catherine co-teaches courses on stream restoration methodology and data analysis for the River-Coastal Science and Engineering program at Tulane University. In her spare time, she enjoys gardening, cooking, backyard birding, rescuing the occasional reptile, and spoiling her dog Dewey.

Rio Grande Silvery Minnow

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

The Rio Grande silvery minnow (RGSM) was formerly one of the most widespread and abundant species in the Rio Grande Basin but is now listed as endangered. Currently, the RGSM occupies less than 10 percent of its historic range and is restricted to the reach of the Rio Grande in central New Mexico from Cochiti Dam to the headwaters of Elephant Butte Reservoir. To study long-term trends of RGSM abundance, Reclamation uses October catch per unit effort (CPUE; fish/100m2) data from the species population monitoring project.

CPUE of RGSM during October 2019 was higher than the October 2018 estimate (Dudley et al., 2020; Figure 1). During October 2019, a total of 209 RGSM were collected from the 20 standard long term monitoring sites. The species was present at 19 of 20 monitoring sites and was collected in 92 of 333 seine hauls that yielded fish (Dudley et al, 2020). All silvery minnow collected in October 2019 were unmarked and presumably naturally spawned fish. In addition, two age classes of RGSM were present with the majority being young-of-year fish. The results from October 2019 monitoring show that spring runoff flows in 2019 resulted in successful RGSM spawning and recruitment.

In October 2019, 10 additional sites were sampled to assess how the addition of sites influences RGSM CPUE. The addition resulted in the capture of 308 additional silvery minnow, for a 30-site total of 517 silvery minnow. RGSM CPUE for the 20 standard long term monitoring sites was 2.10 fish/100m2, while CPUE with the 10 additional sites was 3.77 fish/100m2.

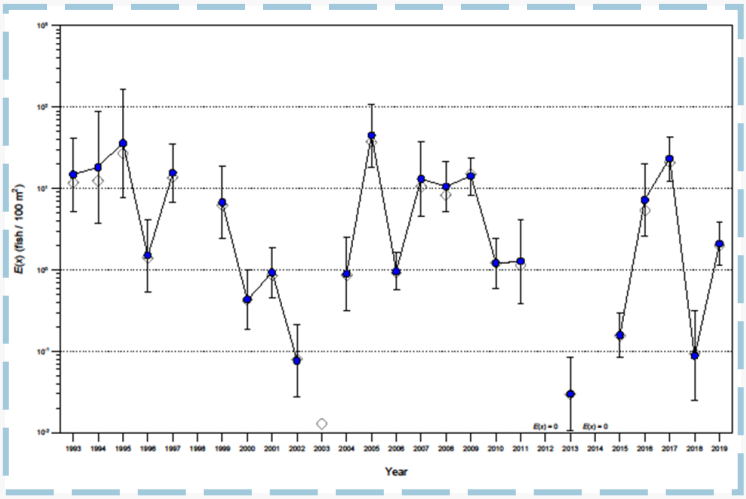

Figure 1. *October RGSM density estimates (E(x)) for 1993–2019 for the 20 standard sites. Solid circles indicate estimates, hollow circles represent simple estimates using methods of moments, and bars represent 95% confidence intervals.*

Literature Cited

Dudley, R. K., S. P. Platania and G.C. White. 2020. Rio Grande Silvery Minnow Population Monitoring During 2019. Report to U.S. Bureau of Reclamation. American Southwest Ichthyological Researchers, Albuquerque, New Mexico.

(Listed Species Update continued on page 2)

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Avian Species

Update provided by Vicky Ryan, U.S. Fish & Wildlife Service

ENDANGERED SOUTHWESTERN WILLOW FLYCATCHER

During the summer of 2019, Reclamation conducted surveys and nest monitoring of the Southwestern willow flycatcher (SWFL) in seven distinct reaches along approximately 200 miles of the Rio Grande, mainly between San Acacia Diversion Dam and Elephant Butte Reservoir. In total, 440 total SWFL territories were detected along the Rio Grande. Though a complete survey effort did not occur in 2019, the total number of territories are presumed to be the same or similar to the 39 observed in 2017 due to the site fidelity characteristic of the species.

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

Similar to previous years, the San Marcial and Elephant Butte Reservoir area was the most productive with a total of 294 territories or roughly 67 percent of the total flycatchers surveyed along the Rio Grande. The population remained consistent when compared to the 293 territories found in 2018. In 2019, Nest success in the Middle Rio Grande (MRG) was 42 percent, which improved from 25 percent nest success observed in 2017.

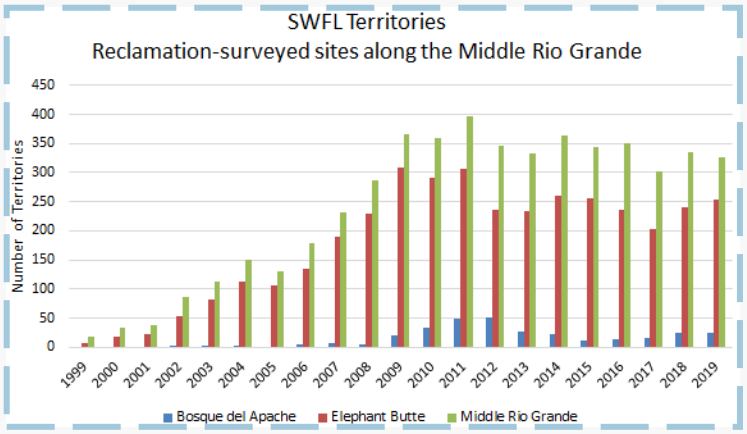

Figure 2. *SWFL territories along the MRG during 1999-2019. (Source: Reclamation). Only territories identified by Reclamation north of Elephant Butte Dam are included. The area from Isleta to San Acacia Diversion Dam was not surveyed in 2019.*

The tamarisk leaf beetle severely defoliated tamarisk throughout the majority of the Rio Grande in 2019. The defoliation took place while SWFL nesting activity occurred but adverse effects are not easily identifiable. In October, the Department of Agriculture's Animal and Plant Health Inspection Service provided a notice of intent to develop a conservation program for the SWFL and its habitat.

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Avian Species (Continued)

THREATENED WESTERN YELLOW-BILLED CUCKOO

Photo: YBCU in hand; Photo Credit: Mark Dettling, USFWS

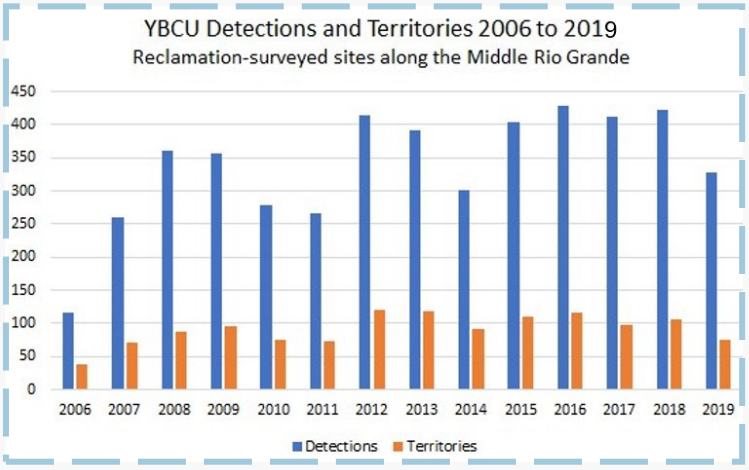

Figure 3. *YBCU detections and territories during 2006-2019. (Source: Reclamation). Only territories identified by Reclamation north of Elephant Butte Dam are included.*

Reclamation conducts comprehensive presence/absence surveys for the yellow-billed cuckoo (YBCU) along the MRG from Highway 380 to Elephant Butte Reservoir and extending from Belen to El Paso, Texas. In 2019, the survey effort decreased with the northern boundary located at San Acacia Diversion Dam to El Paso, and there were 96 YBCU territories (or 429 individual detections) observed by Reclamation. The majority of the territories/detections were located in the San Marcial/Elephant Butte Reservoir area with a total of 42 territories (or 190 individual detections). Although territory numbers seem to be on a decline in Figure 3, the unsurveyed reaches in 2019 had approximately 20 territories (or 82 detections) in 2018. Assuming those territories were still present in 2019, the overall total for the bosque is comparable to recent historic years.

In October 2014, USFWS re-opened the comment period on its proposal to designate 546,335 acres of critical habitat for the YBCU in 80 separate units in nine states, including New Mexico. Eight units of proposed critical habitat are proposed for New Mexico but have not been finalized. The final designation of critical habitat is anticipated to be announced in the Federal Register in or before August 2020.

In 2018, USFWS received a petition to delist the YBCU based on the opinion that the original listing of the species was in error. USFWS determined that a 12-month finding was warranted. The conclusion of USFWS's analysis is anticipated to be announced in the Federal Register in 2020.

(Listed Species Update continued on page 5)

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New Mexico Meadow Jumping Mouse

Update provided by Jeff Sanchez, U.S. Fish & Wildlife Service

The Bosque del Apache National Wildlife Refuge (Refuge) has implemented management prescriptions focused on New Mexico meadow jumping mouse (NMMJM) habitat creation and restoration this past winter (2019/2020).

Refuge staff installed two water control structures adjacent to NMMJM-occupied habitat, which will create additional summer feeding areas for the species. These structures will allow Refuge staff to efficiently manage water within connected moist soil units, thus creating habitat with minimal water.

Refuge staff installed a Langemann gate within the Riverside Canal that will support recently created mouse habitat and enhance currently occupied habitat upstream of the new structure. The Langemann gate is designed to automatically maintain a consistent specified water level regardless of flow amounts. This will allow the Refuge to maximize available water during years when water is limited. During drought years, water levels within the Riverside Canal typically experience extreme fluctuation events, which stress the adjacent herbaceous plant community and expose the NMMJM to predators, such as bullfrogs.

In addition, Refuge staff enhanced mouse habitat along a 1/4–mile stretch of the Riverside Canal by excavating short contours perpendicular to the Riverside Canal. The contours will allow water to sub into these areas and support the native herbaceous plant community required by the NMMJM. The contours mimic natural crevasse splays that have historically formed along the Rio Grande.

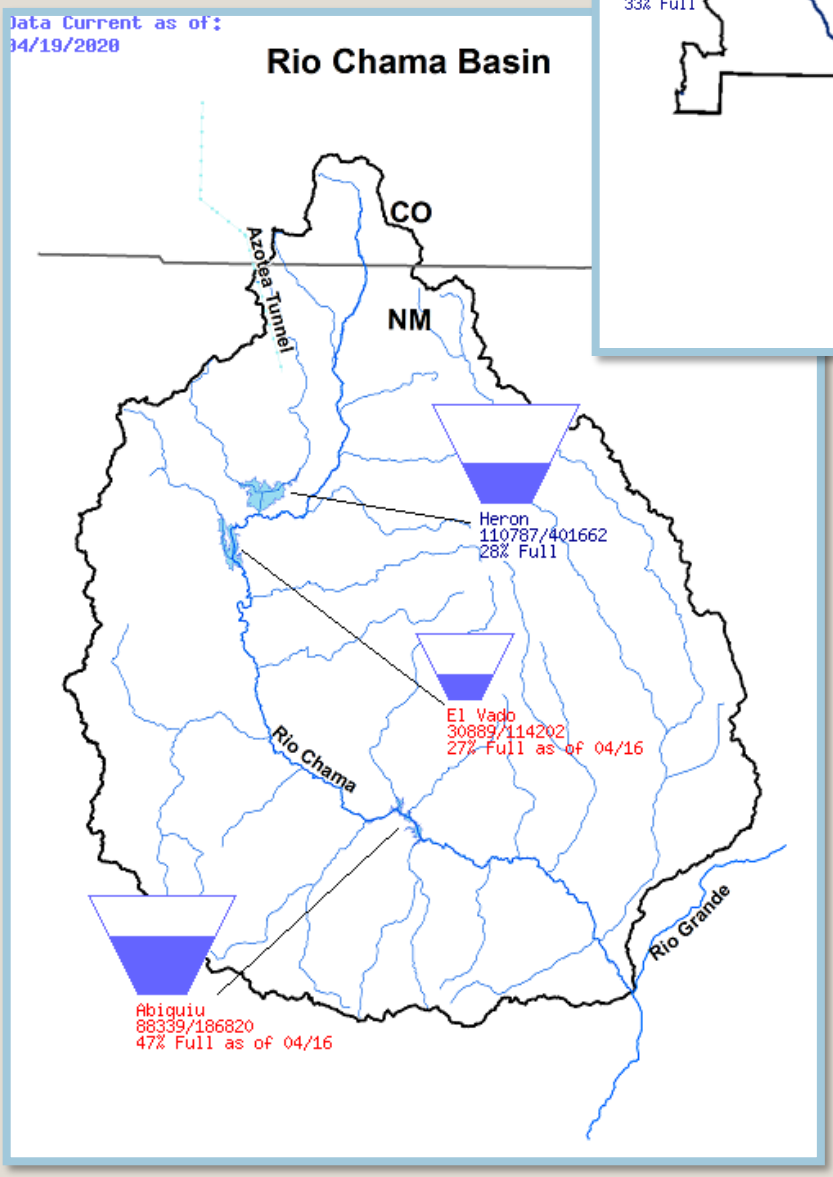
Refuge and USFWS Inventory and Monitoring staff will begin monitoring efforts in June, after the mouse hibernation period resides.

Photo: NMMJM in grass; Photo Credit: Jennifer K. Frey, NMSU

Hydrology Update

Figure 4. *Top: Tea-cup diagram for Reclamation reservoirs in the Rio Grande and Pecos River Basins as of April 19, 2020.*

Figure 5. *Bottom: Tea-cup diagram for Reclamation reservoirs in the Rio Chama Basin as of April 19, 2020.*



River basin tea-cup diagrams are available at https://www.usbr.gov/uc/water/basin/. The level of fill in a tea-cup represents the level of fill at a Reclamation reservoir as of a specified date. Below each tea-cup is the name of a reservoir, a ratio of the volume of water in the reservoir to the max volume of the reservoir (in acre-feet), and the percent full of the reservoir.

(Hydrology Update continued on page 7)

Hydrology Update (Continued)

(Hydrology Update continued from page 6)

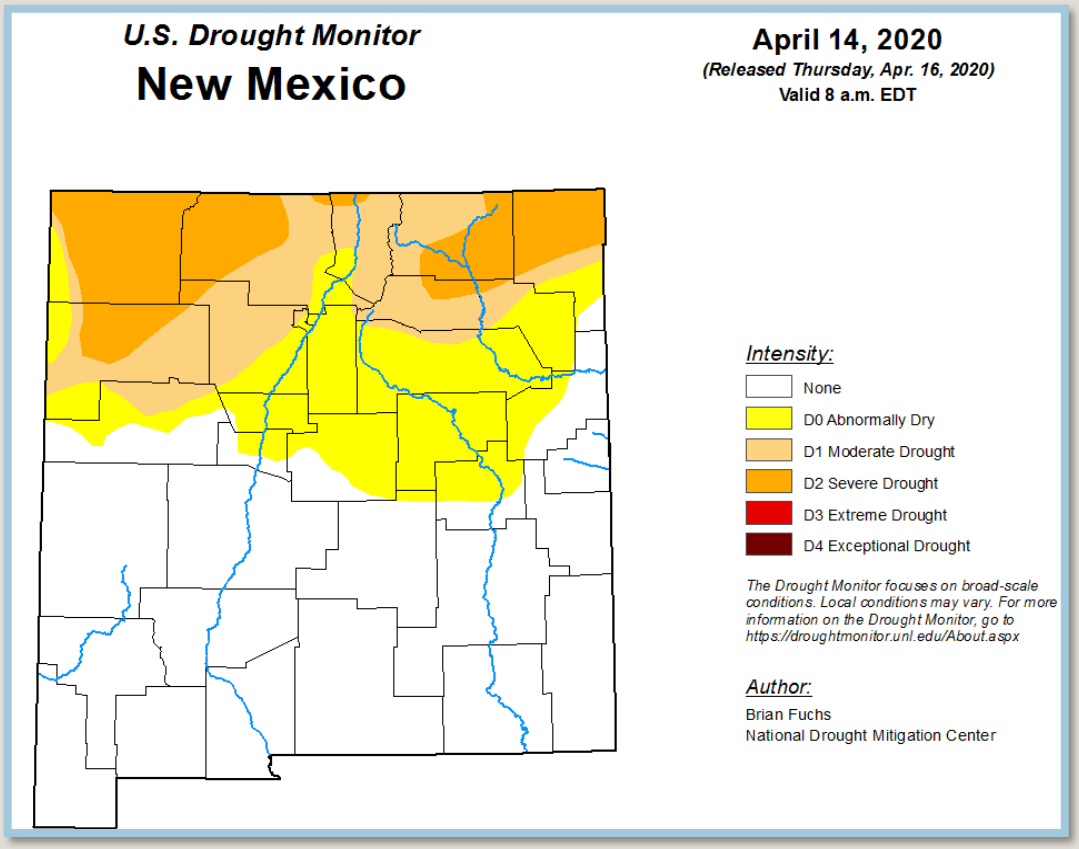
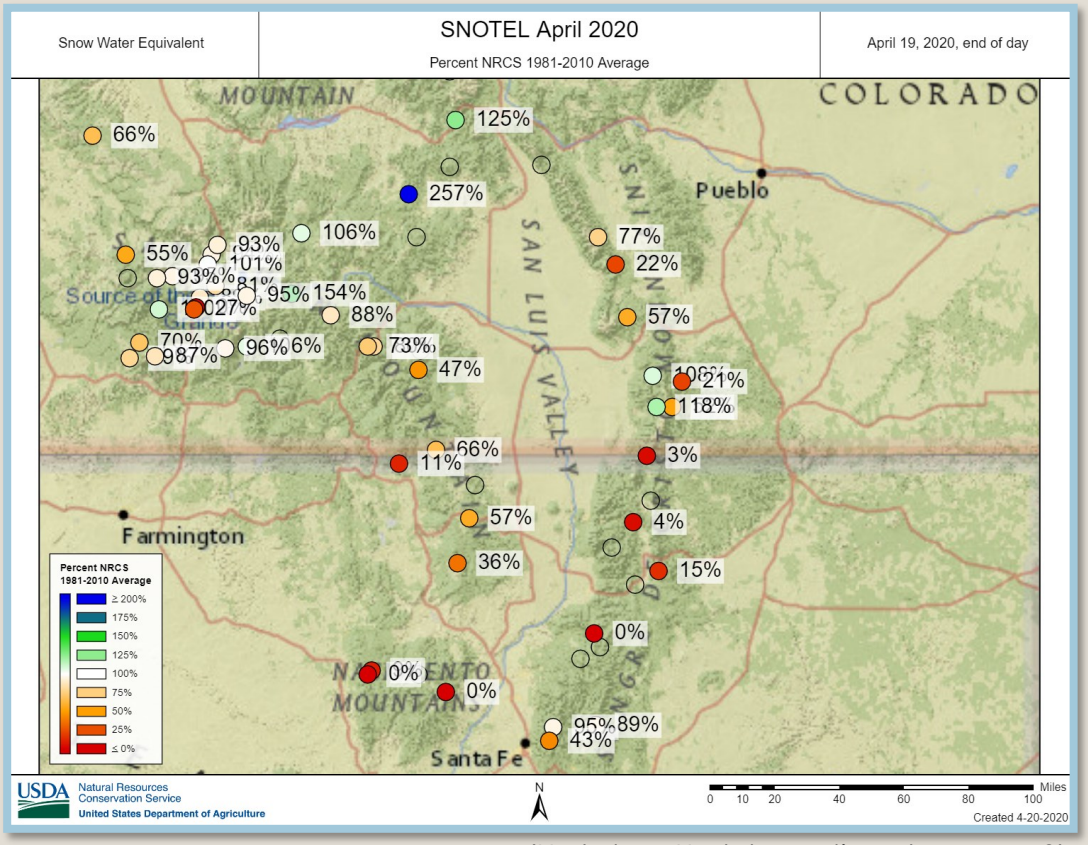


Figure 6. *The U.S. Drought Monitor for New Mexico is available at https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?NM. The figure indicates drought in New Mexico as of April 14, 2020. Drought intensity increases from south to north and ranges from none to severe drought.*

Figure 7. *Snow Telemetry (SNOTEL) data is available at https://www.wcc.nrcs.usda.gov/snow/snowmap.html. The figure depicts snow water equivalent data for April 19, 2020 as a percentage of the 1981-2010 average snow water equivalent. Most stations are below average snow depths.*



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Hydrology Update (Continued)

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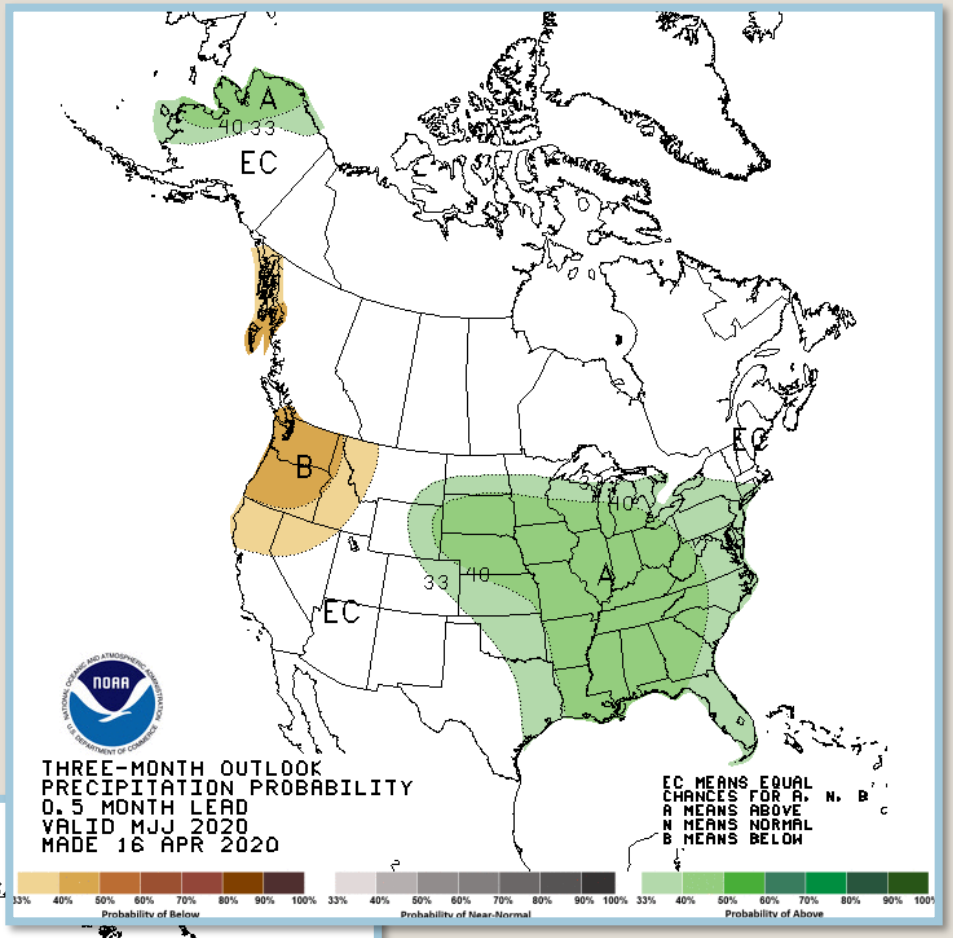
Climate predictions from the National Weather Service are available at https://www.cpc.ncep.noaa.gov/. Outlook intervals are available ranging from 6-10 days to three months.



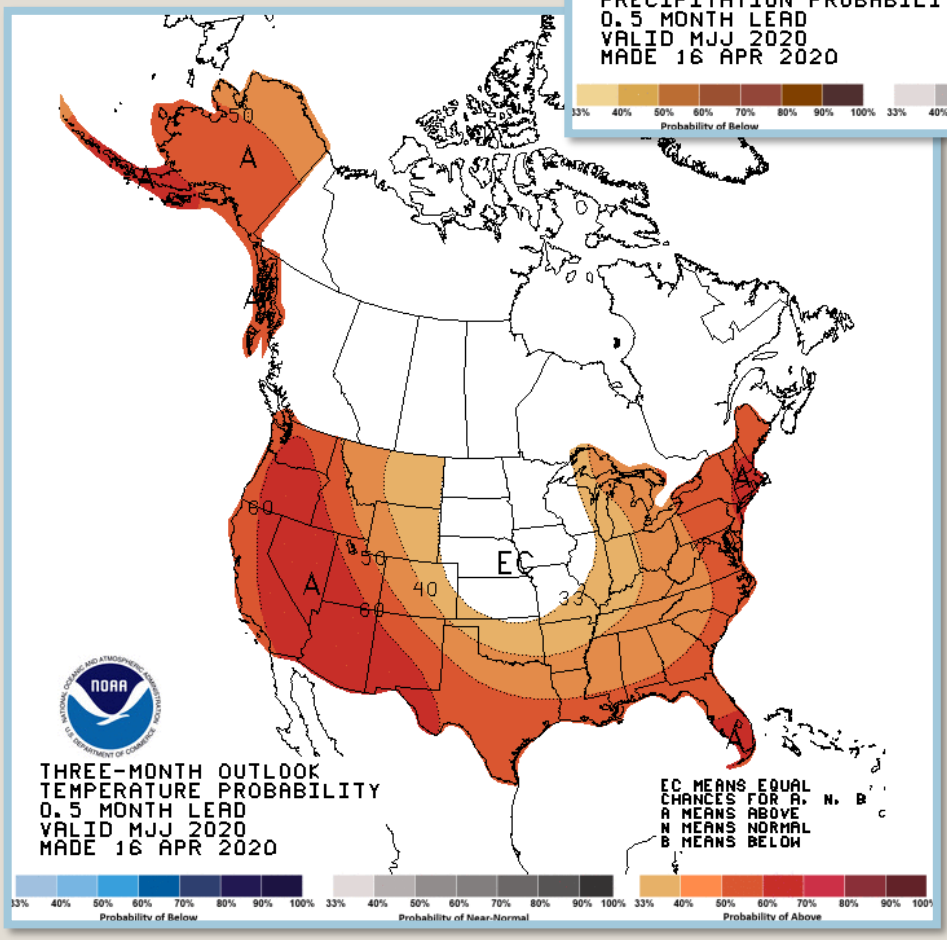


Figure 8. *Top: Three-month precipitation outlook made on April 16. 2020.*

Figure 9. *Bottom: Three-month temperature outlook made on April 16. 2020.*

Program Updates

Administrative Update

Update provided by the Program Support Team (PST)

FY19 Annual Report

The FY19 Annual Report has been sent out for Program signatory review. **Reviews are due no later than May 14, 2020** to Michelle Tuineau at **mtuineau@west-inc.com**. As several write-ups have not yet been submitted, the PST requests your comments and editorial suggestions before the document is formatted into a formal template. If you have not submitted a write-up for a project, please provide one with your review, or send written confirmation that you will not be providing one.

FY19 Annual Report Photo Request

The PST requests additional photos related to FY19 projects. Photos are beneficial as they can provide context/ additional information, break up walls of text, and engage readers. Please review your photo inventories and send your best high-quality images, with a title and photographer for each, to Michelle Tuineau at **mtuineau@west-inc.com**.

Fiscal Planning Committee Update

Update provided by the PST

The Fiscal Planning Committee (FPC) met in April 2020 to discuss FY21's unfunded projects and elect federal and non-federal co-chairs. Lynette Giesen, U.S. Army Corps of Engineers (USACE), and Grace Haggerty, New Mexico Interstate Stream Commission, will serve as FPC co-chairs. The group reviewed the four avian species project descriptions that were approved by the Executive Committee to move forward for scope of work development and cost estimations. These four projects are:

- An Analysis of Overbank Flow and its Relationship with SWFL and YBCU Territory Selection
- An Evaluation of Aerial Imagery and SWFL and YBCU Habitat
- Evaluation of YBCU Prey and Associated Host Plants
- Soil Moisture Holding Capacity Study

For more information on these projects, please contact Debbie Lee at **dlee@west-inc.com**.

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Program Updates (Continued)

(Program Updates continued from page 9)

FPC Update (Continued)

In addition, the FPC reviewed USACE's list of FY20 and FY21 projects that lost funding due to budget cuts. These unfunded projects include:

- Avian Monitoring in the MRG
- Bosque Ecological Monitoring Program
- Collaborative Program Portal and Database
- Changes in Terrestrial Soil Loss in the MRG Basin to 2100
- Development and Application of a HEC-RAS, Mobile-bed, Sediment Transport Model of the MRG
- Evaluating the Grain Size of Bedload Transported from Arroyos into the Rio Grande
- Evaluation of Sediment Dynamics in Habitat Restoration Features of the Albuquerque Reach
- Habitat Restoration Site Surveying
- Monitoring Climate Change in the MRG
- MRG Groundwater Monitoring
- Multi-agency Assessment and Quantification of Sediment and Discharge at Arroyo de los Piños
- Multi-agency Continuous Water Temperature Monitoring of the MRG Basin
- Multi-agency Engineering Modeling Applications for Quantifying Habitat for the RGSM
- Multi-agency Environmental Flow Analysis of Hydrograph and Population Parameters for RGSM Recruitment
- Multi-agency Los Lunas Habitat Restoration Project
- Multi-agency Study for Identifying Restoration Priorities for Threatened Tamarisk-Dominated Habitat to Benefit Future Habitat for SWFL
- SWFL Surveys on the Rio Grande in the Albuquerque Metro Area
- Tamarisk Leaf Beetle Monitoring
- Water Quality Monitoring of Aquatic Refugia in the MRG
- YBCU Noise and Telemetry Study

For more information on these unfunded projects, please contact Lynette Giesen at **lynette.m.giesen@usace.army.mil**.

(Program Updates continued on page 11)

Program Updates (Continued)

(Program Updates continued from page 10)

Science and Adaptive Management Program Development Update

Update provided by the PST

In February and March 2020, the Adaptive Management Work Group (AMWG) met to discuss the Program's adaptive management cycle. The group reviewed the science and adaptive management strategy narrative and provided comments. The group also drafted the purpose, functions, and composition of the Science and Adaptive Management Committee (SAMC).

At a combined Science/Habitat Restoration Work Group and AMWG meeting, the two groups worked to refine the draft RGSM, SWFL, and YBCU conceptual ecological models. Additionally, the groups discussed the identification of key scientific uncertainties, as a piece of the science and adaptive management strategy.

During April 2020, the RGSM and Avian Small Groups each met to reach consensus on their respective models. Efforts to complete the NMMJM and Pecos Sunflower conceptual models are underway and anticipated to be finalized during the summer of 2020.

In May 2020, the AMWG will develop examples that depict the Program's interface with the science and adaptive management strategy. This effort aims to improve the efficiency of administrative processes, increase communication, and assist in establishing the purposes, functions, and compositions of the Program's committees and work groups. Other efforts of the AMWG include developing strategies for meeting Program goals and determining how current work group functions and tasks will operate under the new Program structure.

Population Monitoring Work Group Update

Update provided by the PST

The Population Management Work Group (PMWG) met in March 2020 to discuss details of the 2020 work plan and to progress efforts on the topical executive summaries devised from the science panel recommendations. The group also received an update on the development of the RGSM integrated stock assessment model.

Upcoming Dates & Deadlines

Program Meetings

Population Monitoring Work Group
April 28, 2020
1:00 PM—4:00 PM

Brown Bag—Habitat Restoration in Los Lunas
April 29, 2020
1:00 PM—2:30 PM

Rio Grande Silvery Minnow Work Group
May 5, 2020
1:00 PM—4:00 PM

Adaptive Management Work Group
May 6, 2020
9:00 AM—12:00 PM

Program Deadlines

FY19 Annual Report comments due
May 14, 2020

Signatory Deadlines

2017 RGSM reproductive monitoring SOW comments due
June 30, 2020

Message from U.S. Bureau of Reclamation:

Reclamation will be revising the 2017 scope of work (SOW) for the contractual monitoring of Rio Grande silvery minnow reproductive efforts in the Middle Rio Grande and is seeking comments that may inform these revisions. To prevent potential conflicts of interest, the SOW will not be widely circulated to the MRGESCP. Reclamation invites Program members without conflicts of interest to request a SOW copy from the Contract Officer Representatives for review and comment:

Mr. Joel D. Lusk or **Ms. Michele Gallagher**
Environment and Lands Division, Reclamation
Phone: Joel (505)462-3548 or Michele (505)462-3652
Email: jlusk@usbr.gov or magallagher@usbr.gov

Comments are due no later than June 30, 2020.

Photo: Scenic view of the Middle Rio Grande; Photo Credit: Mike Marcus, APA