

Paseo Del Norte Watershed Council

Upper Rio Grande Water Operations Model (*URGWOM*)

Program Updates and Presentation

December 2, 2020



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US Army Corps of Engineers
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ALBUQUERQUE DISTRICT

Fiscal Year 2020 Overview

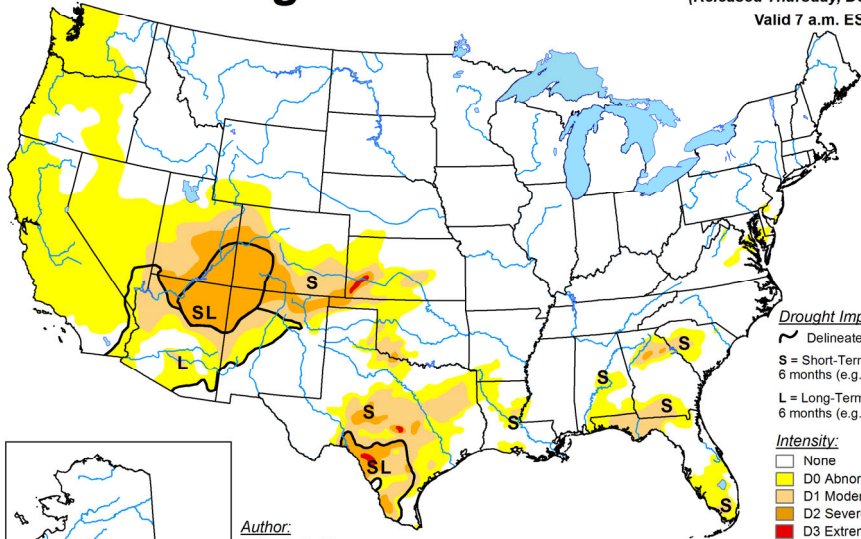
- US Drought Monitor
- Three Month Precipitation and Temperature Forecast
- Water Year and Operations
- URGWOM Training and Development
- URGWOM Model Updates
- RiverWare Software Updates
- Future Developments



United States Drought Monitor

U.S. Drought Monitor

December 3, 2019
(Released Thursday, Dec. 5, 2019)
Valid 7 a.m. EST



Drought Impact Types:

- ~ Delineates dominant impacts
- S = Short-Term, typically less than 6 months (e.g. agriculture, grasslands)
- L = Long-Term, typically greater than 6 months (e.g. hydrology, ecology)

Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

Author:
Deborah Bathke
National Drought Mitigation Center

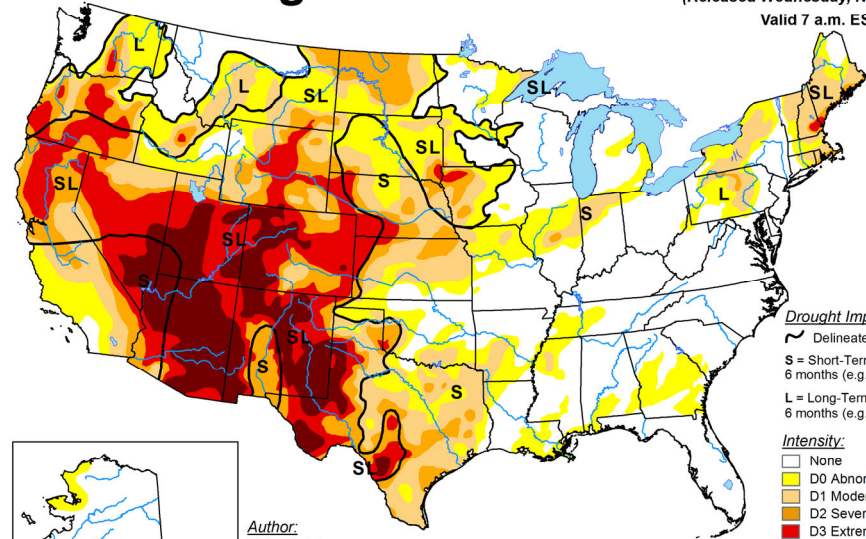
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>



droughtmonitor.unl.edu

U.S. Drought Monitor

November 24, 2020
(Released Wednesday, Nov. 25, 2020)
Valid 7 a.m. EST



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Author:
Richard Heim
NCEI/NOAA

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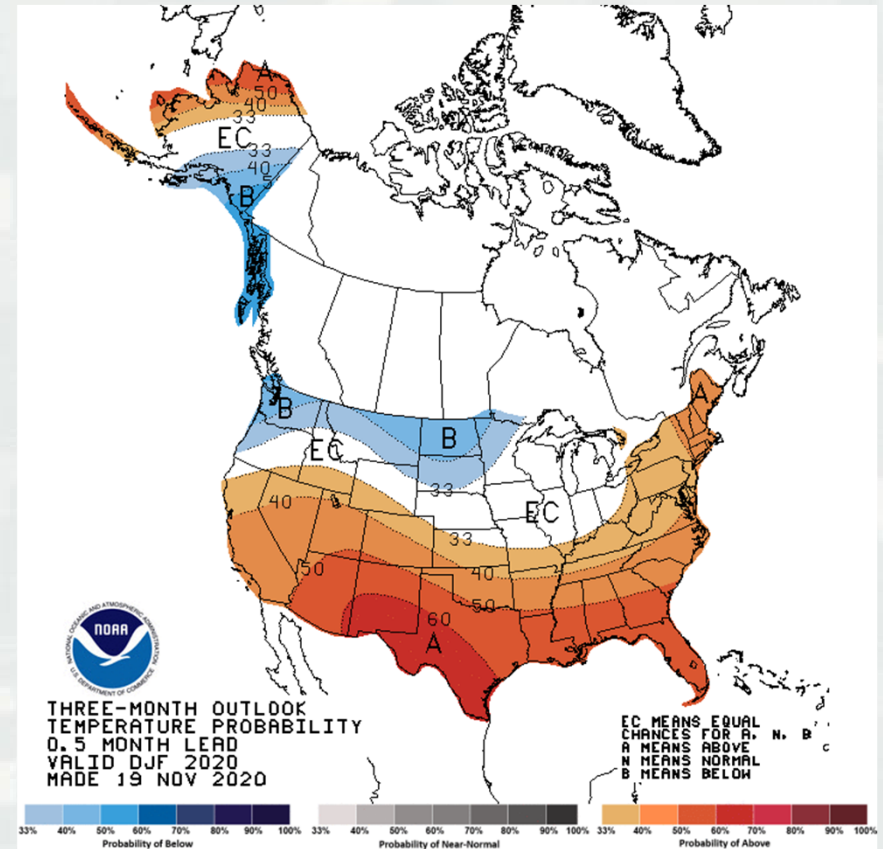
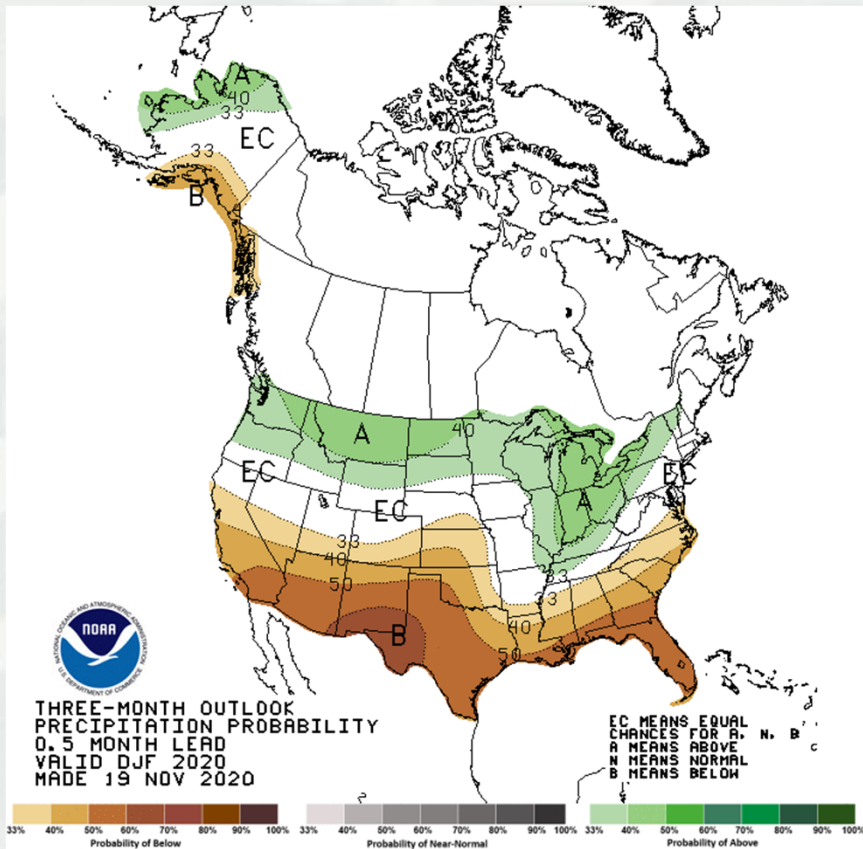
droughtmonitor.unl.edu



CORNERSTONE OF THE SOUTHWEST

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Three Month Precipitation and Temperature Forecast

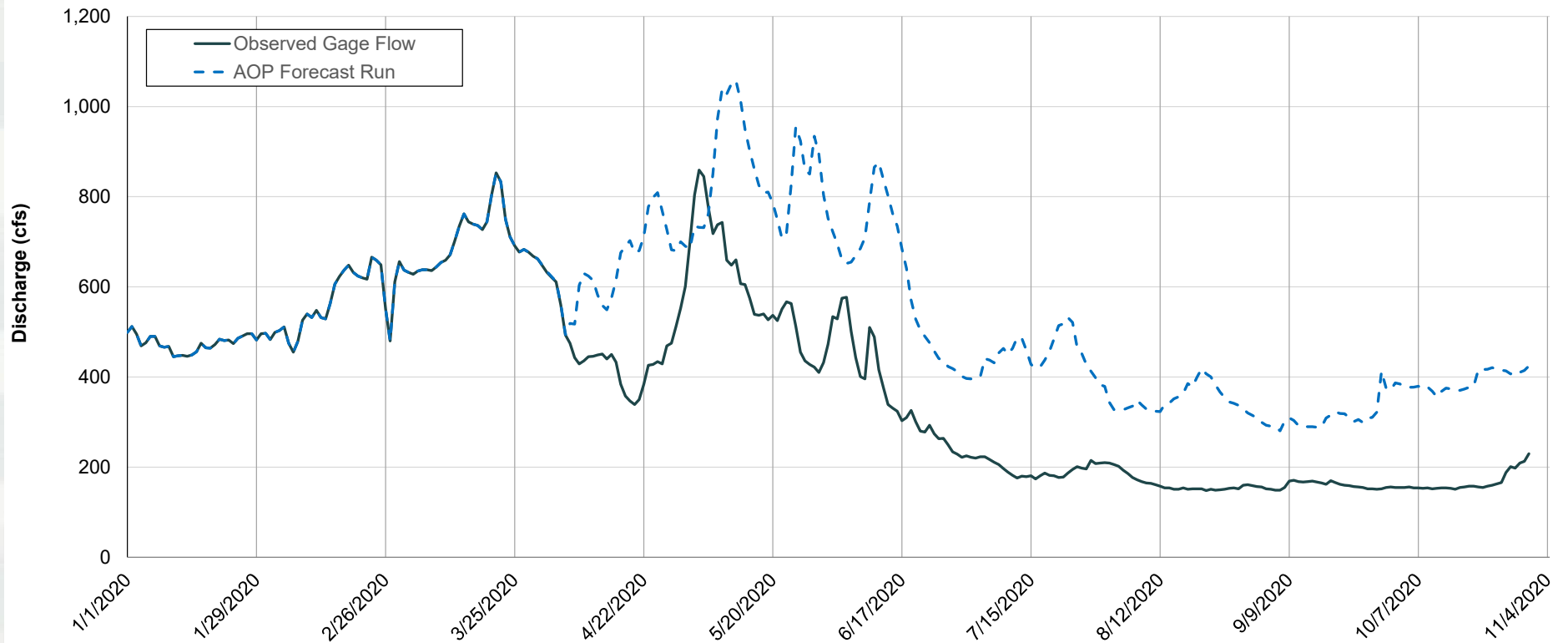


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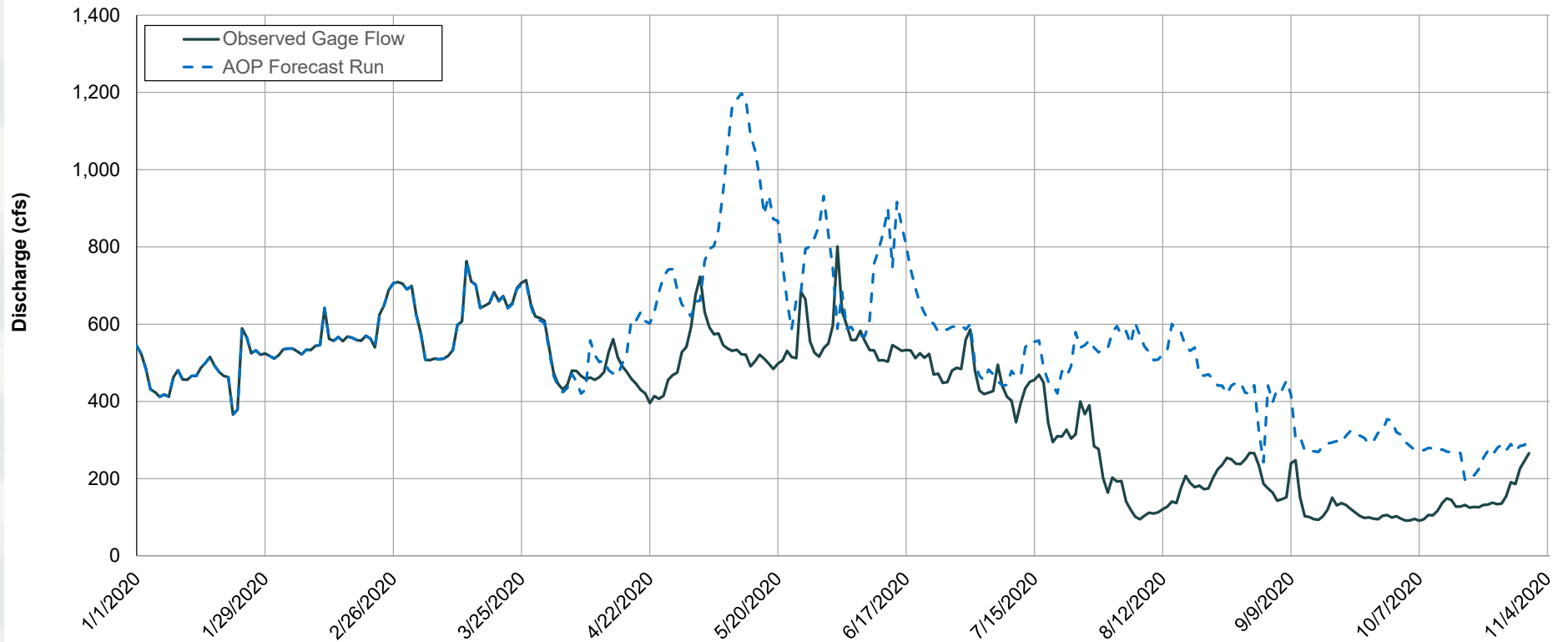
Rio Grande Water Operations

Rio Grande at Embudo



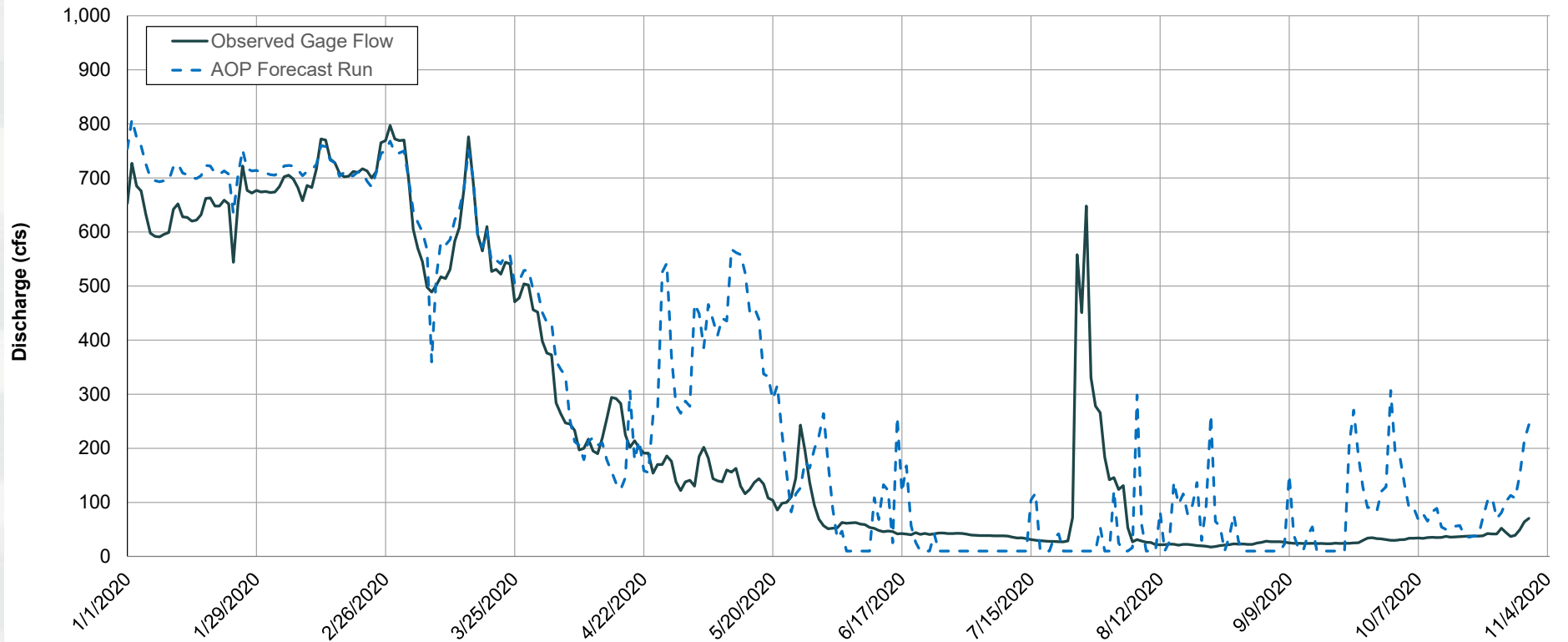
Rio Grande Water Operations

Rio Grande at Central



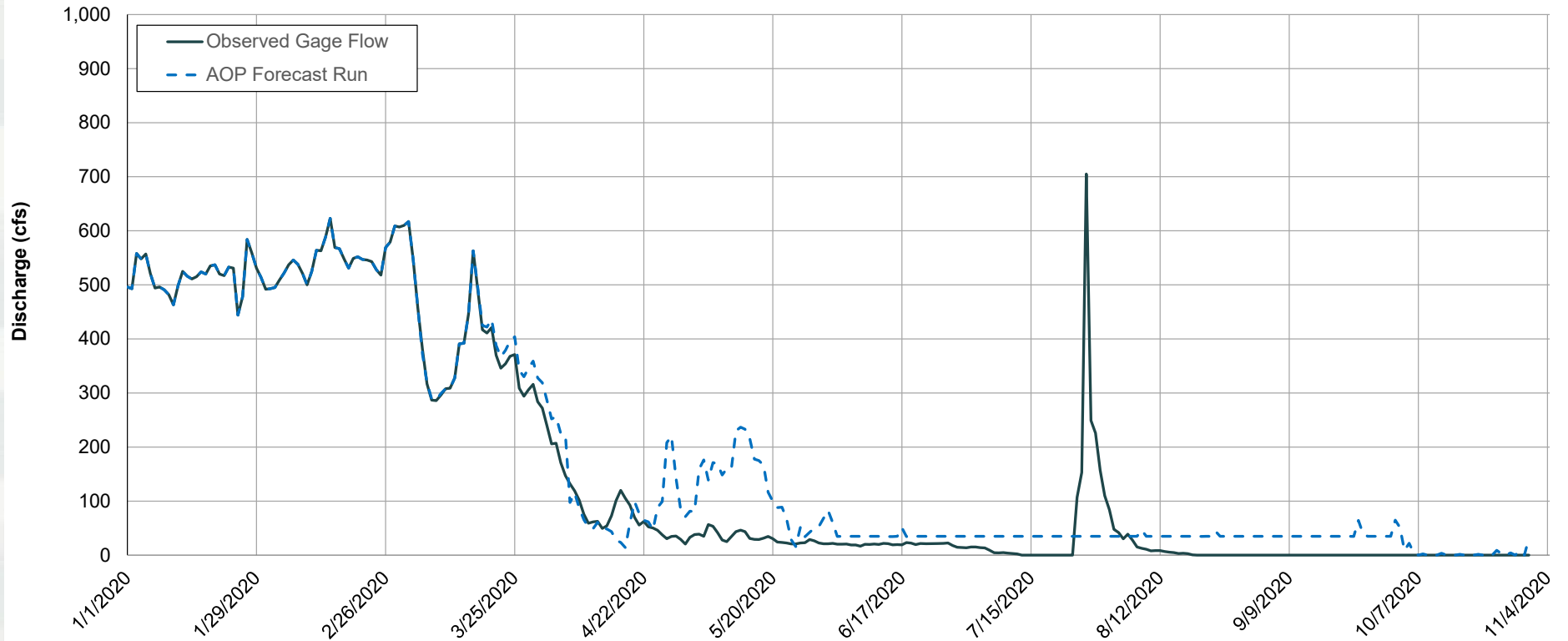
Rio Grande Water Operations

Rio Grande at San Acacia



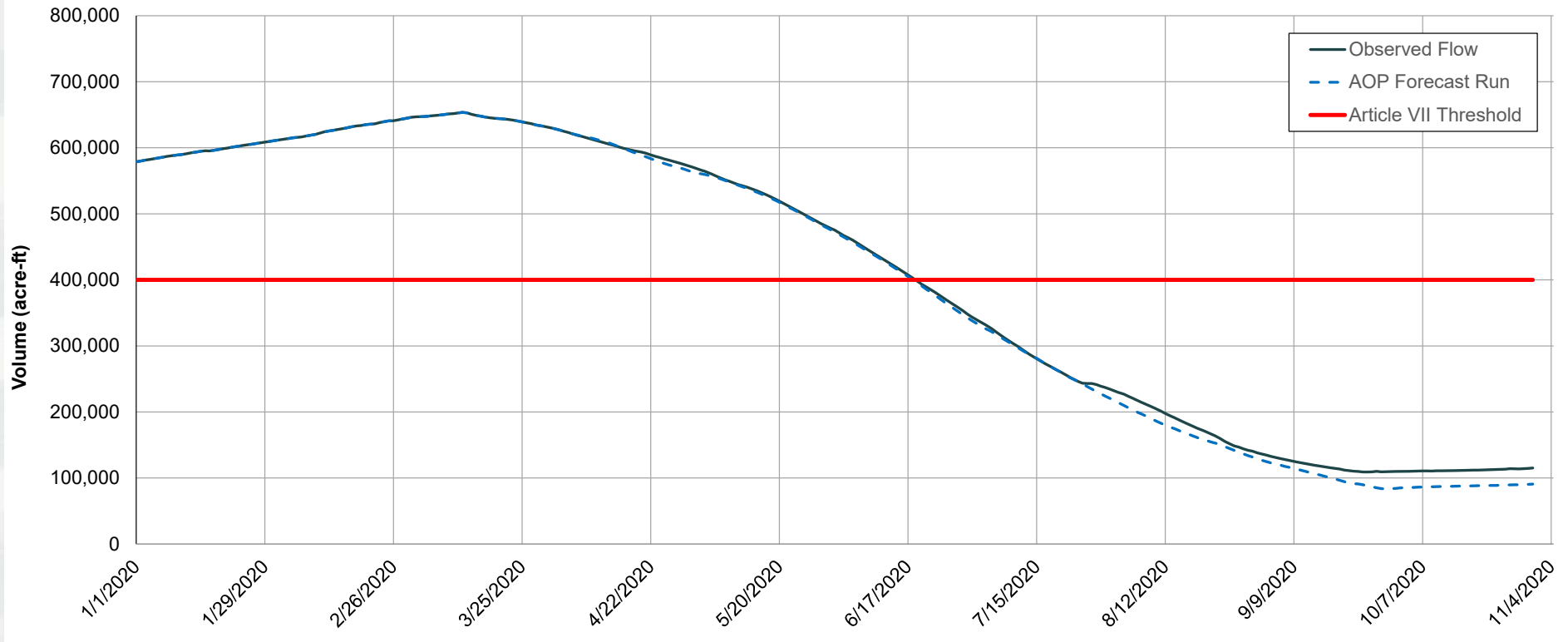
Rio Grande Water Operations

Rio Grande at San Marcial



Rio Grande Water Operations

Usable Storage



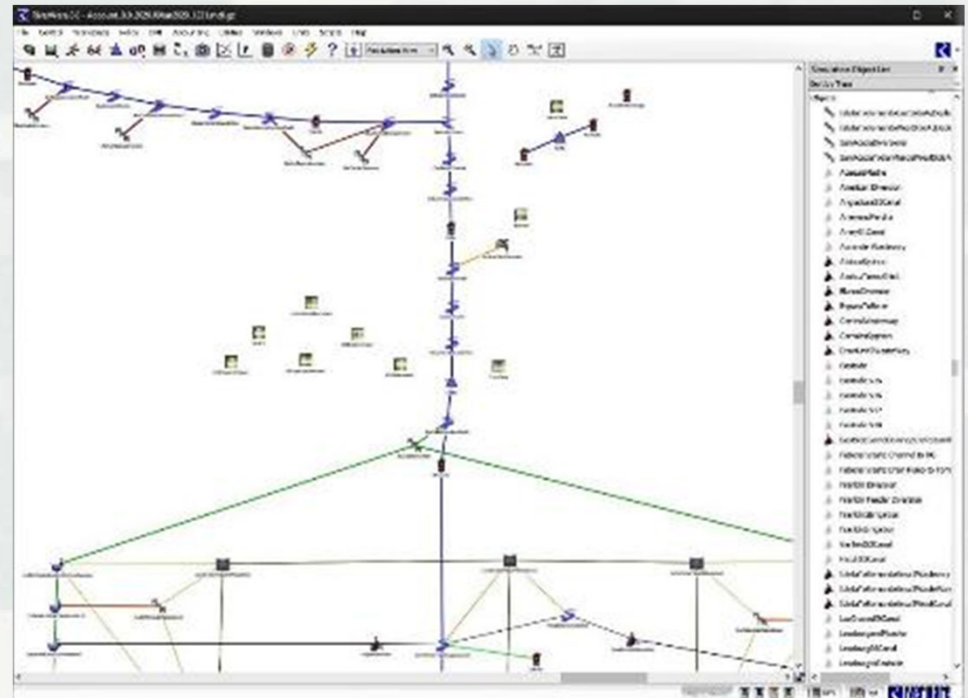
URGWOM Training and Personnel Development

Bi-Weekly Training Session:

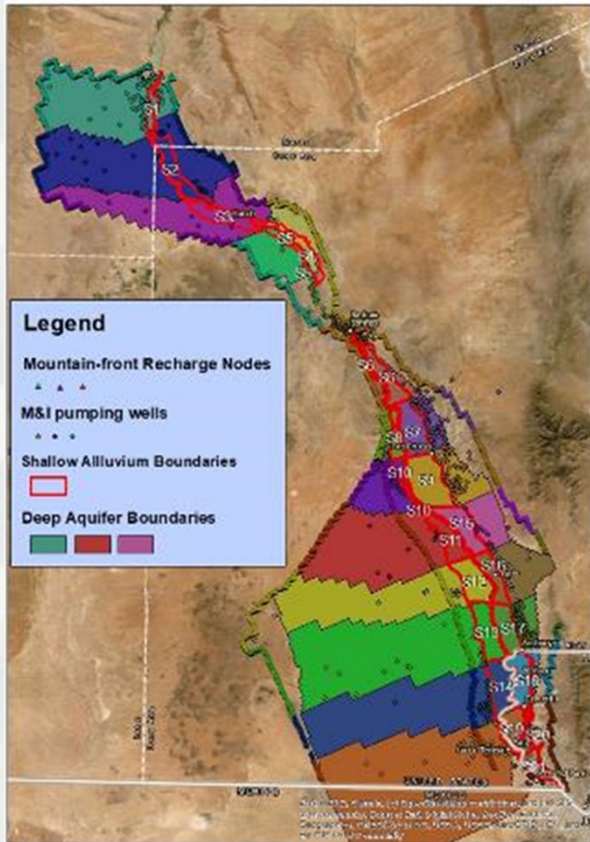
- Marc Sidlow (USACE) provided training one-hour sessions on a bi-weekly basis for the URGWOM Technical Team. Each session covered a different aspect of operation the URGWOM model. The USBR hosted the training sessions and participants included NMISC, ABCWUA, USGS and some Consultants.

Joint Venture Training and Development Program:

- USACE and USBR are collaborating on a more extensive training program designed to be web-based and open to more interested parties.



URGWOM Model Updates:



URGWOM Database Advancement*:

- Updating database with the most recent available data which included: weather, gaged/ungaged flows, diversions, account storage data, and evapotranspiration and evaporation rates;
- Combined the CO, MRG, and LRG databases into a single database;
- Compilation of seepage data for the Rio Grande and the adjacent riverside drains throughout the MRG and the LRG.

Physical Model and Accounting Model*:

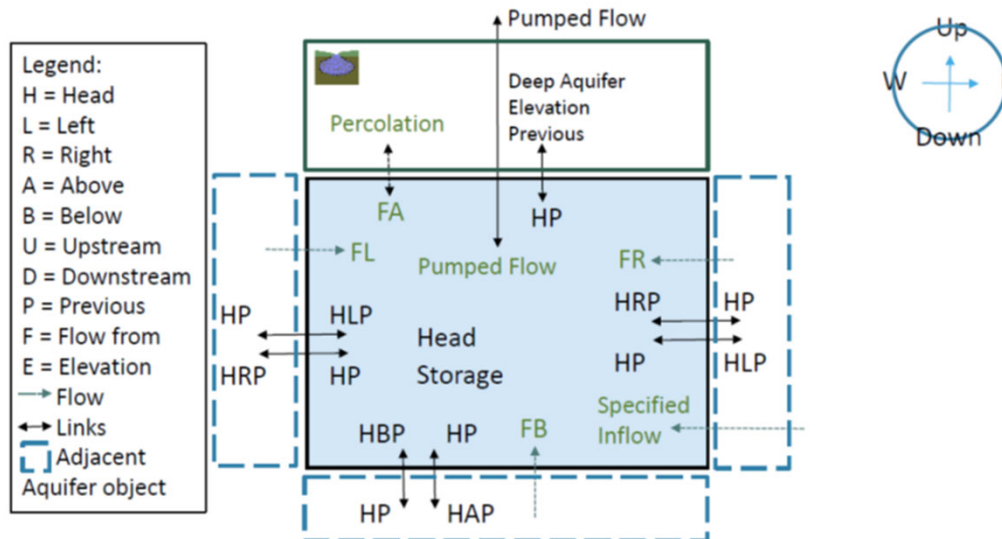
- Expanded URGWOM model into Hudspeth, Texas and Juárez, Mexico;
- Added deep aquifer head objects for the MRG and LRG portions of the model.
- Added more of the riverside drain network along the Middle Rio Grande to calibrate properly;
- Updated the database with M&I pumping rates for both the MRG and the LRG.

**Will be incorporated into the official model at a later date.*



RiverWare Software Updates

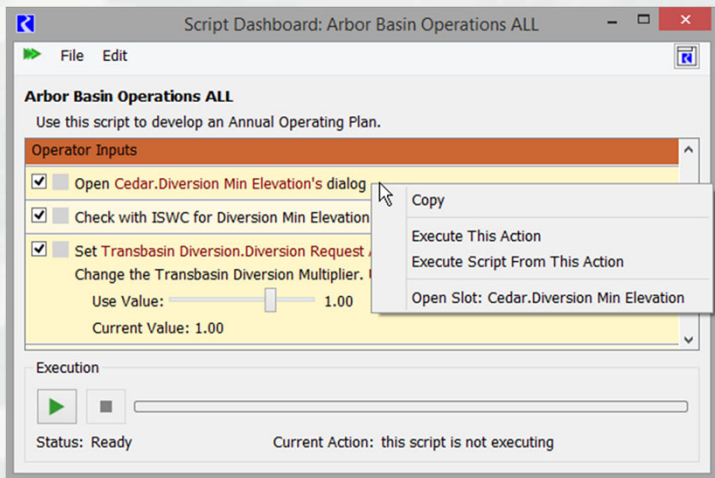
Aquifer below Groundwater



Updates from CADSWES:

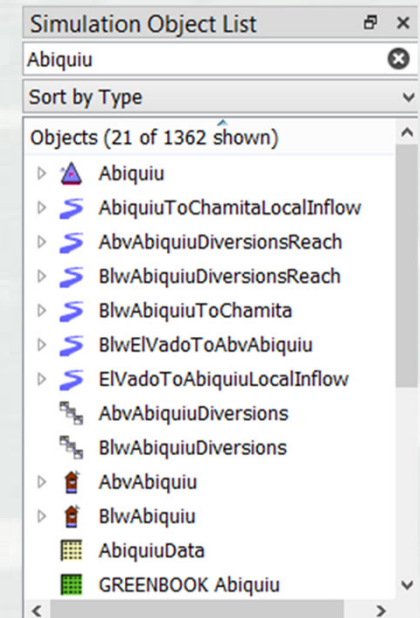
- New Aquifer Objects:
 - Models deep saturated GW flow
 - Connects in up to 6 directions
 - Can solve at any timestep but does not need the entire model to solve at the same timestep to function.
- Eliminates the need for the MODFLOW model and will no longer require both models to account for deep groundwater interactions.

RiverWare Software Updates



Updates from CADSWES:

- Corps Water Management System (CWMS) Advancements on integration with RiverWare for future modeling;
- Color coded RPL warning statements highlights a new debugging process to utilize color coded errors in the model to efficiently locate code source errors. This greatly reduces debugging time, especially on new rule sets.
- Execute single action items within a script.
- Added a 'Search' function within the Object List.



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FY 2021 Work Scheduled

- **Continued enhancement of deep aquifer objects into the official URGWOM model**
- **Development of URGWOM for Hudspeth*:**
 - Refinement of calibration for irrigation, groundwater, drains, and aquifer objects.
 - New operating rules for diversions and off-channel reservoir objects.
- **Hydrologic Improvements to URGWOM*:**
 - Collect lower Rio Chama data to recalibrate the diversion constants used in URGWOM.
 - Refinement of MRG and LRG crop types and consumptive uses to estimate local inflows between Cochiti and Elephant Butte and Elephant Butte and Fort Quitman.

**Will be incorporated into the official model at a later date.*



URGWOM Website

- Revised versions of the official documentation and changes to the URGWOM public site to increase accessibility for URGWOM.

The screenshot shows the URGWOM website home page. The navigation bar includes links for About, Business With Us, Missions, Locations, Careers, Media, Library, Contact, and Coronavirus. The main content area features a 'Menu' on the left with items like URGWOM Summary, Purpose and Need, Continued Development, Basin, Documentation, Data, Rulebased Simulation Runs, Recent Activities, Committee Notes, Technical Review, Other Websites, and URGWOPS. The 'URGWOM Summary' section contains text describing the model's development and use. A diagram is overlaid on the page, showing a central blue oval labeled 'URGWOM' with arrows pointing to a box labeled 'Data for Application' and another box labeled 'Resulting Flows, Storage Levels, etc.'.

The screenshot shows the URGWOM website documentation page. The navigation bar is the same as the home page. The main content area is divided into 'Menu' and 'Documentation' sections. The 'Menu' section lists items like URGWOM Summary, Purpose and Need, Continued Development, Basin, Documentation (highlighted with a red circle), Data, Rulebased Simulation Runs, Recent Activities, Committee Notes, Technical Review, Other Websites, and URGWOPS. The 'Documentation' section includes a 'User Manual' and 'Rules' sections, each with a brief description and a link to a PDF file.

<https://www.spa.usace.army.mil/Missions/Civil-Works/URGWOM/>



Questions?

Contact Information

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