



# Resolving the Quivira NWR Impairment

Big Bend Groundwater Management District No. 5

November 2019

Big Bend Groundwater Management District No. 5 (“District”) continues to be an advocate for utilizing the most accurate science available to guide decision-making in the region. For nearly three decades, the District has actively strived to assist in providing sustainable water resources for Quivira National Wildlife Refuge (“Refuge”). Throughout this time, the District has focused significant financial and technical resources toward investigating the surface/groundwater relationship in and around the Rattlesnake Creek region. The District, with technical assistance and peer review, contracted with Balleau Groundwater Inc. to develop a high-resolution hydrologic model of the District. BBGMDMOD is the most comprehensive and scientific tool available to determine the proper course of action for long-term sustainability of water resources throughout this region.

## What is happening in the region?

In February, the District submitted a plan to the Chief Engineer to implement a sustainable remedy for the Quivira NWR impairment claim. In July, the proposed plan was rejected by the Chief Engineer in favor of issuing direct administration in the region. In September, the Chief Engineer outlined a direct administration plan that would be phased in over the next three years which involved nearly 1400 area water rights of all types of use. This administration plan proposed to reduce area water users by 20-50% of their authorized water rights.

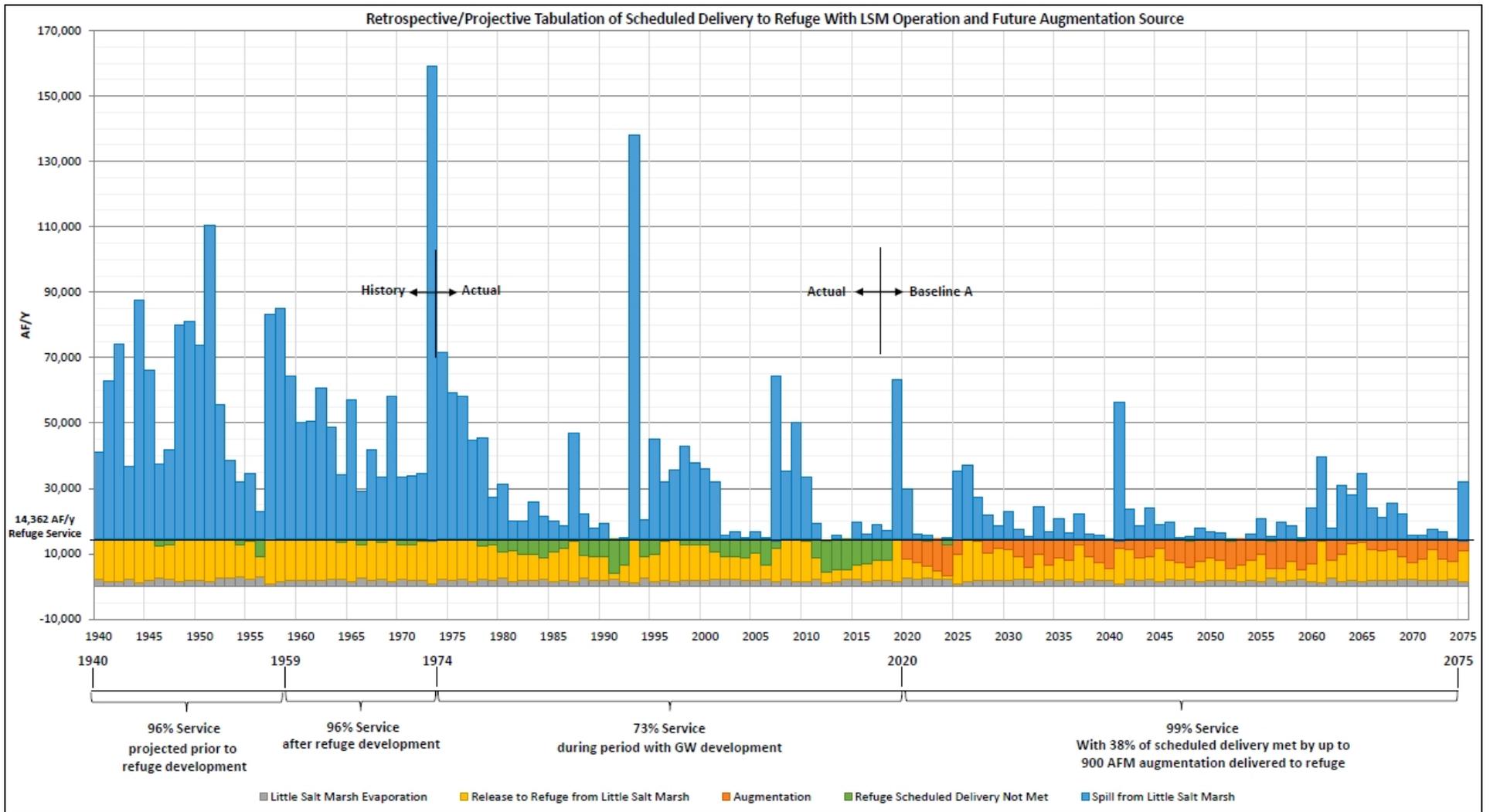
The USFWS provided the region with more time to find a “... local, voluntary, collaborative and non-regulatory solutions, including augmentation, to address the water needs...” for the region. The District is taking the lead role in crafting these solutions in coordination with the USFWS.

## Why does the District believe that augmentation alone solves the problem?

The concept of augmenting streamflow with pumped groundwater has been an agreed-upon objective in the Rattlesnake Creek region for nearly two decades. Based on the analysis conducted by Balleau Groundwater Inc. and peer reviewed by Keller-Bliesner Inc, the intent of augmentation is to provide an additional water source to enhance the unique habitat the Refuge provides for various endangered species. The ability to utilize underground water in times of need further protects the biological integrity, diversity and environmental health of the Refuge. The area surrounding the Refuge has a significant quantity of water that can be appropriated in a sustainable manner. The sources supporting the augmentation wellfield have been examined in BBGMDMOD as was done in the impairment analysis. The augmentation wellfield yield is supported by induced capture of evapotranspiration from adjacent water-logged soils and wetland vegetation, in addition to sources captured from formerly-rejected recharge by making space available in the aquifer. Rattlesnake Creek is to be augmented by waters that are now lost to the atmosphere, bypassed as storm runoff in Peace Creek, or discharged as brackish baseflow to the east. This further supports the concept of augmentation as a remedy for the impairment complaint at the Refuge.

## Where can you go for more information?

The District maintains a webpage dedicated to the background and current activity regarding the Quivira NWR impairment complaint at <https://gmd5.org/proposed-rsc-lema>. Feedback and comments can be submitted directly from that webpage or by contacting Orrin Feril, District manager, at [oferil@gmd5.org](mailto:oferil@gmd5.org).



The chart above shows how prior to the establishment of the Refuge (1959) and prior to the groundwater development in the area, the Refuge only ever had access to 96% of its demand met. However, the District's plan with its various components, primarily streamflow augmentation, improves the Refuge's ability to meet its water needs more frequently than before the Refuge was established in the 1950's.