

# RECLAMATION

*Managing Water in the West*

## Joint Biological Assessment

**Bureau of Reclamation and Non-Federal Water  
Management and Maintenance Activities  
on the Middle Rio Grande, New Mexico**

**Middle Rio Grande Project, New Mexico  
San Juan-Chama Project, New Mexico  
Upper Colorado Region**



## Mission Statements

The U.S. Department of the Interior protects America's natural resources and heritage, honors our cultures and tribal communities, and supplies the energy to power our future.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.



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## **Executive Summary**

**Middle Rio Grande Project, New Mexico  
San Juan-Chama Project, New Mexico  
Upper Colorado Region**

**Submitted to the U.S. Fish and Wildlife Service**

**Rio Grande Silvery Minnow**

**Southwestern Willow Flycatcher**

**Pecos Sunflower**

**Interior Least Tern**



# Executive Summary

This biological assessment (BA) includes the Bureau of Reclamation's (Reclamation), the Middle Rio Grande Conservancy District's (MRGCD), and the State of New Mexico's (State) water management actions taken in the Middle Rio Grande (MRG), as well as State actions in the Upper Rio Grande. The BA also includes the Middle Rio Grande Endangered Species Collaborative Program Recovery Implementation Program (RIP) as a conservation measure, as well as descriptions of specific conservation measures referenced in the RIP and proposed by Reclamation, the MRGCD, the State and the Albuquerque-Bernalillo County Water Utility Authority (Authority). The information presented in this BA is divided into four parts:

- Part I: Reclamation's and MRGCD's specifically-described water management actions, and conservation measures referenced in the RIP and proposed by Reclamation, the MRGCD and the Authority (originally submitted to the U.S. Fish and Wildlife Service (Service) on July 31, 2012 and amended on January 15, 2013);
- Part II: A programmatic description of Reclamation's River Maintenance Program, as well as a description of specific maintenance actions on riverside drains taken in conjunction with the State and MRGCD maintenance actions on diversion structures and riverside delivery systems (originally submitted to the Service on July 31, 2012 and amended on January 15, 2013);
- Part III: The State's specifically-described water management actions and conservation measures (originally submitted to the Service on August 15, 2012 and amended on January 15, 2013); and
- Part IV: The RIP as a conservation measure with the foundational documents: Program Document; Action Plan; and Long Term Plan.

The BA analyzes effects on listed species in the project area: the Rio Grande silvery minnow (*Hybognathus amarus*; silvery minnow), the Southwestern willow flycatcher (*Empidonax traillii extimus*; flycatcher), the Pecos sunflower (*Helianthus paradoxus*, sunflower), and the interior least tern (*Sternula antillarum athalassos*, tern). The approach to this consultation differs in several ways from the approach of the 2003 consultation, which resulted in the March 17, 2003, Biological Opinion (2003 BiOp). In the 2003 consultation, Reclamation and the U.S. Army Corps of Engineers (Corps) prepared a joint BA, which used a total river depletions-based analysis that looked only at the amount of water reaching the species and critical habitat. It did not examine each action taken, the effect of discrete actions, or the extent of discretion exercised by each entity.

For this BA, Reclamation set out more specifically to identify and describe each of its actions, the actions of several non-Federal members of the Middle Rio Grande Endangered Species Collaborative Program (Collaborative Program) and proposed RIP, and the nature and extent of discretion attendant with each action. Reclamation determined that it does not have the discretion to operate the MRG Project diversion structures for several reasons, including that Reclamation does not and has never held any interest in the right to divert water for lands within the MRGCD.

The action area for Parts I and II extends from Heron Reservoir and Willow Creek downstream from Heron Dam, the Rio Chama downstream from the confluence with Willow Creek, and in the Rio Grande from Velarde, New Mexico, downstream to San Marcial above the full reservoir pool of Elephant Butte Reservoir. Reclamation and MRGCD have no actions that are considered in this analysis upstream of Velarde. Similarly the River Maintenance that occurs between Elephant Butte Dam and Caballo Reservoir was not included in the analysis. The scope of River Maintenance activities within this reach is not consistent with activities that occur within the Middle Rio Grande and occur under a different authority. Additionally, no endangered species currently are present in this reach.

The action area for the State's actions included for Part III extends from the Colorado state line to near San Marcial above the full reservoir pool of Elephant Butte Reservoir.

This BA evaluates the effects of the following water management actions and conservation measures for Reclamation, the MRGCD and the State, and offers conservation measures for the Authority and the RIP:

1. Reclamation proposes the following water management actions:
  - a. Operation of Heron Dam and Reservoir as part of the San Juan-Chama Project (SJC Project) to deliver water to downstream users; and
  - b. Operation of El Vado Dam and Reservoir to store and release water, including response to requests by MRGCD, and in accordance with the State of New Mexico as authorized by NM Office of the State Engineer Permit number 1690.
2. MRGCD proposes the following water management actions:
  - a. Operation of the MRG Project Diversion Dams to deliver water to meet the agricultural demand of lands with appurtenant water rights, including the lands of the Six MRG Pueblos;<sup>1</sup> and

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<sup>1</sup> Cochiti, Santo Domingo, San Felipe, Santa Ana, Sandia and Isleta Pueblos (the Six MRG Pueblos or Pueblos).

- b. Operation of irrigation drains and wasteways to return water to the river.
3. The State proposes the following water management actions as described in Part III of this BA.
4. Reclamation, the MRGCD and the State propose the following maintenance activities:
  - a. Reclamation proposes a programmatic strategy for River Maintenance activities that will provide efficient water delivery and protect infrastructure along the Middle Rio Grande;
  - b. Reclamation proposes maintenance activities for the Low Flow Conveyance Channel and former State Drains in coordination with the State; and
  - c. MRGCD proposes to continue maintenance activities for their diversion dams and associated conveyance channels and facilities.

Specific conservation measures that have been developed and are offered by Reclamation, the MRGCD, the State, the Authority and the RIP, and described in the BA are as follows:

1. Reclamation's conservation measures:
  - a. To purchase or lease from willing parties, water, water rights or the right to store water for use in the Rio Grande to provide supplemental flows to the Rio Grande;
  - b. To lease water from SJC Project contractors, depending on environmental conditions, water availability, funding, and the willingness of contractors to enter into leasing agreements;
  - c. To use pre-1907 surface water rights acquired from Price's Dairy to benefit listed species;
  - d. To release Supplemental Water Program water as needed, to meet downstream flow targets, while supplies last;
  - e. To seek to enter into water acquisition agreements and/or water management agreements with SJC contractors and other interested parties;
  - f. To release water stored pursuant to the Emergency Drought Water Agreement or other similar agreements, as is made available by the State of New Mexico, consistent with the Compact and with State and Federal law;
  - g. To utilize its Supplemental Water Program water only when native flow management is insufficient to meet ESA requirements by

exchanging leased SJC Project water with native Rio Grande water;

- h. To authorize temporary waivers, which allow SJC Project contractors to take their water deliveries in the following calendar year, if such waivers will benefit the United States and not impact delivery into Heron Reservoir; and
- i. To pump and convey water from the Low Flow Conveyance Channel to the Rio Grande, including the operation of an outfall near Escondida, New Mexico.

2. The MRGCD's conservation measures:

- a. Continuation of enhanced coordination of water operations with Reclamation and other water management agencies;
- b. Continued operation, and expansion of metering and monitoring stations throughout the MRGCD canal system to enhance the understanding of water movement and use in the MRG;
- c. Continued efforts to increase operational efficiency, which may reduce the need for Supplemental water, expand options for flow management, and minimize the effects of irrigation water storage on spring flow peaks;
- d. Development of an Operating Plan to promote the efficient management and delivery of irrigation water with appurtenant benefits to species water management for survival and recovery;
- e. Cooperation with State and Federal agencies in their creation and operation of a 30,000 af supplemental water pool in Abiquiu Reservoir for endangered species management purposes;
- f. Work toward completion of agreements with Authority to store up to 50,000 acre-feet of supplemental irrigation water at Abiquiu Reservoir, and conjunctive management of releases with other water management entities to maximize flexibility in Rio Chama water operations for species and other benefits;
- g. Management of diversions and outfalls, when surplus water in excess of MRGCD needs is available, to return excess flows to the Rio Grande for habitat areas and other designated sites, or conveyance of water to these areas and sites;
- h. Cooperation and assistance with the creation and enhancement of specific habitat areas near MRGCD surface water outfalls to the Rio Grande;

- i. Construction of the Bernardo Siphon to enhance management options for San Acacia dam;
  - j. Construction of a return flow collection system at its southern boundary, with the assistance of the Bosque del Apache National Wildlife Refuge, to deliver excess water back to the Rio Grande for species purposes, to enhance Rio Grande Compact delivery options, and to provide more consistent water delivery for the Refuge;
  - k. Coordination with the Corps (subject to the limits of the Corps' Cochiti Reservoir Water Control Manual) to reduce the use of supplemental species water use during recession management for RGSM following precipitation-induced increases in flow;
  - l. Active participation in the creation of habitat to benefit the lifecycle of the RGSM;
  - m. Cooperation with efforts allowing groundwater users within the MRGCD with pre-1907 or pre-basin rights to offer water for lease to Reclamation or other entities for the express purpose of providing flows from wells for endangered species; and
  - n. Execution of a research agreement providing funding for current RIP population viability analysis and statistical data analysis efforts.
3. The Authority's conservation measures:
- a. Additional storage of native water;
  - b. Conservation Storage Agreements;
  - c. Lease Supplemental Water;
  - d. Continued efforts towards water conservation; and
  - e. Continued coordination with water releases and diversions.
4. The State's conservation measures as described in Part III of this BA.
5. The RIP, as a conservation measure, includes commitments for the following:
- a. RGSM spawning and survival of larvae;
  - b. RGSM post-spawning survival;
  - c. RGSM propagation and augmentation;
  - d. Supporting additional wild self-sustaining populations of RGSM;
  - e. SWFL territory establishment and nesting success;
  - f. SWFL populations outside of the RIP boundaries; and

g. RGSM and SWFL research, monitoring, and adaptive management.

The status of the RGSM and SWFL has been variable in the last decade since the initiation of the 2003 BiOp. RGSM abundance was at its lowest levels in 2003, 2012 and 2013, and highest in 2005. The RGSM abundance has decreased from 2005 levels in recent years. This is likely due to a series of low runoff years. SWFL abundance has increased since the initiation of the 2003 BiOp due to the dense vegetation that established from several years of overbank inundation. Pecos sunflower are actively managed on the La Joya State Wildlife Area (SWA) and also were planted at a new location. The Pecos sunflower population appears to be stable to increasing within the Middle Rio Grande. The population variation for RGSM and SWFL is mainly driven by high flow events, while the main portion of the Pecos sunflower population on La Joya SWA is influenced by management activities that provide water through the irrigation system.

The overall effect of water management-related activities is to modify the volume, timing, and distribution of flows in the Rio Grande through the Action Area, resulting at times in a decreased flow in particular subreaches from what would occur in the absence of the Proposed Action and at times in an increased flow in particular subreaches from what would occur in the absence of the Proposed Action. Maintenance activities all have short-term direct negative effects to species and their habitat, although long-term (indirect) effects are mixed and dependant on the actions. Components of the Proposed Action are likely to adversely affect all species. Conservation measures have been developed to attempt to mitigate these adverse effects.

During 2012, Reclamation, the MRGCD, the State, the Authority and other Collaborative Program participants began taking steps toward development of the RIP, which includes an adaptive management-based approach designed to make progress towards recovery of endangered species. On July 18, 2013, the Collaborative Program's Executive Committee (EC) endorsed the foundational documents for the RIP, and thereby each participating agency has taken a substantial step toward committing to participate in the RIP. Formal commitment to participate in the RIP occurs once an agency executes the RIP Cooperative Agreement, which is expected to occur mid-February 2014, after the Service issues the final Biological Opinion (BO).