

RESTORATION

Restoration of Riparian Trees and Shrubs on the Rio Grande Canalization Project



In June 2009, the International Boundary and Water Commission, US Section (USIBWC) signed the Record of Decision (ROD) on River Management Alternatives for the Rio Grande Canalization Project. The ROD outlined USIBWC's commitments for sustainable management of the Rio Grande river corridor over a 10-year implementation period. As part of the ROD, USIBWC committed to restoring 553 acres along the Rio Grande Canalization Project (RGCP). The RGCP covers 105.6 miles from Percha Diversion Dam in New Mexico to the international boundary in El Paso, Texas and Ciudad Juarez, Chihuahua.



KEY ISSUES ADDRESSED

In riparian ecosystems across the Southwest, saltcedar (*Tamarix* species), drought, and water-use practices have degraded the physical and biological characteristics that support native wildlife and their habitats. USIBWC developed an Environmental Impact Statement on river management of the RGCP to comply with the National Environmental Policy Act (NEPA). Under the resulting ROD, USIBWC must meet statutory requirements for flood control and water delivery, while operating and maintaining the river corridor in an environmentally sustainable manner. Habitat restoration plans were developed to address these issues and to comply with the Endangered Species Act (ESA) for the endangered southwestern willow flycatcher (SWFL) and the threatened yellow-billed cuckoo (YBCU).

PROJECT GOALS

- Implement habitat restoration to reduce saltcedar, increase native riparian vegetation, and develop a mosaic of habitat types to support the SWFL and YBCU
- Partner with the US Fish and Wildlife Service (USFWS) and other entities

PLANTING AT SCALE

From 2011 to March 2019, USIBWC partners and contractors planted a total of 110,770 trees and 11,987 shrubs.



Riparian Tree Poles/USIBWC

PROJECT HIGHLIGHTS

Scale of Restoration: USIBWC implemented restoration at 22 sites (9 by USFWS and 13 by environmental contractors) covering 509 acres. Twelve sites (95 acres) were intended to provide flycatcher habitat.

Site Preparation: Prior to planting, teams removed saltcedar using mechanical and chemical methods. At some sites, USIBWC and partners excavated swales in the floodplain to improve drainage and groundwater conditions near plantings.

Depth to Groundwater: Using well monitoring data, USIBWC determined that native riparian tree poles need to be planted to a depth of at least 10 feet to survive groundwater fluctuations.

Planting Methods: Planting methods varied by restoration team and site conditions. They included augering holes for poles, excavating trenches for planting poles, and transplanting willows with root balls and topsoil intact into trenches dug down to groundwater level (8-10 feet).

Monitoring: From 2013 to 2019, USFWS and contractors visited restoration sites to qualitatively assess restoration success and abundance of key species. Monitoring for SWFL and YBCU at sites began in 2010.

Collaborators

- USIBWC (funding entity)
- US Fish and Wildlife Service
- SWCA
- Gulf South Research Corporation
- American Conservation Experience

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LESSONS LEARNED

When planting cottonwood (*Populus deltoides* ssp. *Wislizeni*) or willow (*Salix gooddingii*) poles in augered holes, success was greatest when holes were completely backfilled with minimal air pockets. Cottonwoods did better in sandy than clayey soils.

Success varied for poles planted in trenches, likely dependent on effective backfilling. When poles survived, tree density was higher than for auger methods. Trench planting willows harvested with root balls had near 100% success and resulted in faster growth and higher density and coverage than other methods.

Shrubs grown in specially-grown extra tall pots (about two feet deep) had higher success rates than standard tall pots (about 1 foot deep).

NEXT STEPS

- Work with USFWS to finish construction improvements
- Continue irrigating sites and plant additional trees to meet target densities
- Monitor restoration success and saltcedar regrowth
- Train USIBWC staff to take over operations and maintenance
- Implement aquatic habitat restoration

PROJECT RESOURCES

For more information on this project, Elizabeth Verdecchia: elizabeth.verdecchia@ibwc.gov

For additional project resources and case studies, scan the QR code below or visit the CCAST website:

WWW.DESERTLCC.ORG/RESOURCE/CCAST



Saltcedar Removal/USFWS