

## Project Year-End Summary Report 2021

Title of Project: Ecoriparian Hydrology of the Middle Rio Grande

*Begin answering in the shaded box right beside or below each question and it will expand to accommodate as you type. Use up to a total of two pages. More detailed presentations, articles or posters are welcome separately\* (See final instructions at the end of this form.)*

1. Organization name or Individual who received the grant: Marina Hein

2. Amount of Grant: \$

4. Was additional outside funding obtained? (check box that applies) Yes      No

Other funding source(s) if you checked "yes."

New Mexico Geologic Society grant

5. Briefly, how was the grant money from the Carter Conservation Fund used?

For travel expenses between field sites and equipment

6. Write an abstract or summary of the activities performed and the progress that was made this year on your project. Save any conclusions, lessons learned, and benefits achieved for the final sections, 7&8.

Over the summer of 2021, approximately 35 vegetation surveys were completed along 60 miles of riparian habitat of the Middle Rio Grande Conservancy District. Surveys used a modified version of Bosque Ecological Monitoring Program's point-intercept vegetation survey method. Re-surveys at a subset of survey locations occurred in early September to look at phenology and for any post-monsoon growth.

7. State how your project furthers a Native Plant Society mission area. Pick the best fitting area: achieves plant or ecological education, contributes to conservation/restoration of native plants and habitats, adds to botanical research, or promotes appropriate use of native plants to conserve water, land and/or wildlife.

This project furthers the Native Plant Society mission of adding to botanical research with the wealth of data collected in this survey effort. Through the training of 2 interns to aid in this project, this project also furthered plant and ecological education - 1 intern has transferred to New Mexico Institute of Mining and Technology to pursue a biology degree as a result of their internship experience with this project.

8. State any other conclusions. Include any lessons learned that would assist others. What benefit to you, the community or the environment resulted or do you hope will result from your use of this grant?

Of all species observed over the course of the survey effort, 26 were phreatophytic, 12 were facultatively phreatophytic, 19 were surface-water dependent, 2 were hemi-parasites obtaining water from their host plants, and the remaining 11 species water strategies could not be identified in the literature. Invasive tamarisk and Russian olive comprised 15% of all non-native species observed and approximately 9% of all species observed in total.

This effort helped create an accurate vegetation classification map using remote sensing depicting vegetation along the study area by its relationship to groundwater and will continue to aid this effort as I make a more detailed vegetation classification. These surveys also detailed the extent and density of invasive tamarisk and Russian olive trees in the study area - 61% of all phreatophytic individual plants observed were one of these non-native species.

I hope to use these results to test if invasive phreatophyte trees, particularly tamarisk species, contribute to water conveyance losses in the Middle Rio Grande.

## Final Instructions

**Please send your completed form in MS Word as an email attachment to [cartergrantapps@gmail.com](mailto:cartergrantapps@gmail.com) by November 31.**

*\* To remain in good standing for any future funding from the Native Plant Society of New Mexico, plan to write an article (600-1000 words, illustrations welcome) for our newsletter, **or** create and present a poster at our annual state conference, **or** send us a copy of or link to a published article connected with the past year's work, **or** work with a local chapter of NPSNM to make an educational and visual presentation to a group.*

*What are your intentions in this regard?*

*Our next state conference is scheduled for August, 2022 in Albuquerque. Contact our Albuquerque chapter if you wish to contribute in that way. Write to [cartergrantapps@gmail.com](mailto:cartergrantapps@gmail.com) at any time with questions.*