

Native Plant Society of New Mexico 2017 Grant Report
GIS Support for the Yerba Mansa Project
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December 2017

Project Background:

The Yerba Mansa Project is a community service project intended to create awareness about medicinal plants with threatened habitats and to take restorative action. Our all-volunteer organization focuses on active restoration, educational programs, and bringing people into the Bosque.

This endeavor began in late 2014 when the City of Albuquerque Open Space accepted our initial proposal to embark on the Yerba Mansa Project. Over the winter of 2014-15 many site visits were conducted throughout the Middle Rio Grande Valley Bosque to evaluate the remaining stands of Yerba Mansa (*Anemopsis californica*), to observe the plant's habitat requirements, and to identify areas suitable for native plant restoration (including Yerba Mansa) within the Albuquerque area. In the spring of 2015 we began restoration work at our selected adoption site along Tingley Drive, south of Central. In its first year, the program collected GPS data for over 1,000 individual invasive non-native Ravenna Grass (*Saccharum ravennae*) plants, removed hundreds of them, prevented many hundreds more from reseeding, and also reintroduced Yerba Mansa by replanting two new colonies. Additionally the project provided many hours of free and low cost educational programs for kids and adults on the ecological importance of native plant habitats in our area. The second year of the project focused on caring for and maintaining last year's plantings, continuing with the Ravenna Grass removal, reseeding the area with native grasses and herbs, offering more free educational events, and launching the Plants of the Middle Rio Grande Bosque Field Guide youth project. In 2017, the Yerba Mansa Project's third field season included taking GPS points for new Ravenna Grass growth, removing large remaining Ravenna Grass stands threatening native Coyote Willows, continuing the reseeding work from the prior year, and ongoing maintenance of the growing Yerba Mansa plantings. We also further developed our youth educational programs with Amy Biehl High School, Chinook Spirit Children's Academy, South Valley Academy Middle School, and the homeschool community. Find out more at <http://yerbamansaproject.org/>.

Milestones and Accomplishments:

- a dramatic reduction in the presence of non-native invasive Ravenna Grass with over 1,000 plants removed by hand
- the reestablishment of Yerba Mansa in the area through live planting
- a resurgence of other native plants in the absence of invasive competitors
- reseeding over 8,000 sq. ft. with native grasses and medicinal forbs to increase biodiversity
- the collection of baseline GIS data for long-term ecological monitoring

- the establishment of a collaborative community project that had over 1300 hours of volunteer service in the Bosque during its first 3 years
- launching the youth-created Plants of the Middle Rio Grande Bosque Field Guide project to provide ethnobotanical research opportunities for kids and the creation of a free and fully searchable field guide for Bosque hikers available online and via a free mobile phone app
- ongoing educational outreach about the importance of robust native plant populations for healthy habitat through partnering organizations such as City of Albuquerque Open Space, Gutierrez Hubbell House, and various local schools
- presentations at Plant Healer conferences: Yerba Mansa and the Rio Grande Bosque (2015), Herbal Activism Through Conservation and Restoration (2016), Drought, Climate Change, and the Future of Medicinal Plants (2017), and Rivers, Restoration, and Hope for Medicinal Plants (2017)
- recipient of a 2017 grant from the Native Plant Society of New Mexico
- publishing our project methodology in *The Journal for Medicinal Plant Conservation*
- recipient of the 2017 Champions of the Herbal World prize for activism and advocacy for medicinal plants presented by Plant Healer

Putting Our NPSNM Grant Into Action:

Our Native Plant Society of New Mexico grant provided funding for the Yerba Mansa Project to purchase a GPS unit and laptop computer for GIS analysis (Geographic Information System). This has enabled our project to continue its work of collecting baseline vegetative data as well as new data about changes to vegetation at our site. We have collected GPS points to document numbers and distributions for each individual pre-existing Ravenna Grass plant at our site, additional points for newly emerging Ravenna Grass plants, points for removed Ravenna Grass plants, and areas where we have re-vegetated with seed mix or live plants. This information will enable us to evaluate how Ravenna Grass spreads through our area of the Bosque, how successful our Ravenna Grass removal efforts are, and how effective our re-vegetation work is. The NPSNM grant will provide data on questions regarding the spread and management of this emerging invasive species along with strategies for reintroducing and facilitating growth of native species in a rapidly changing Bosque environment.

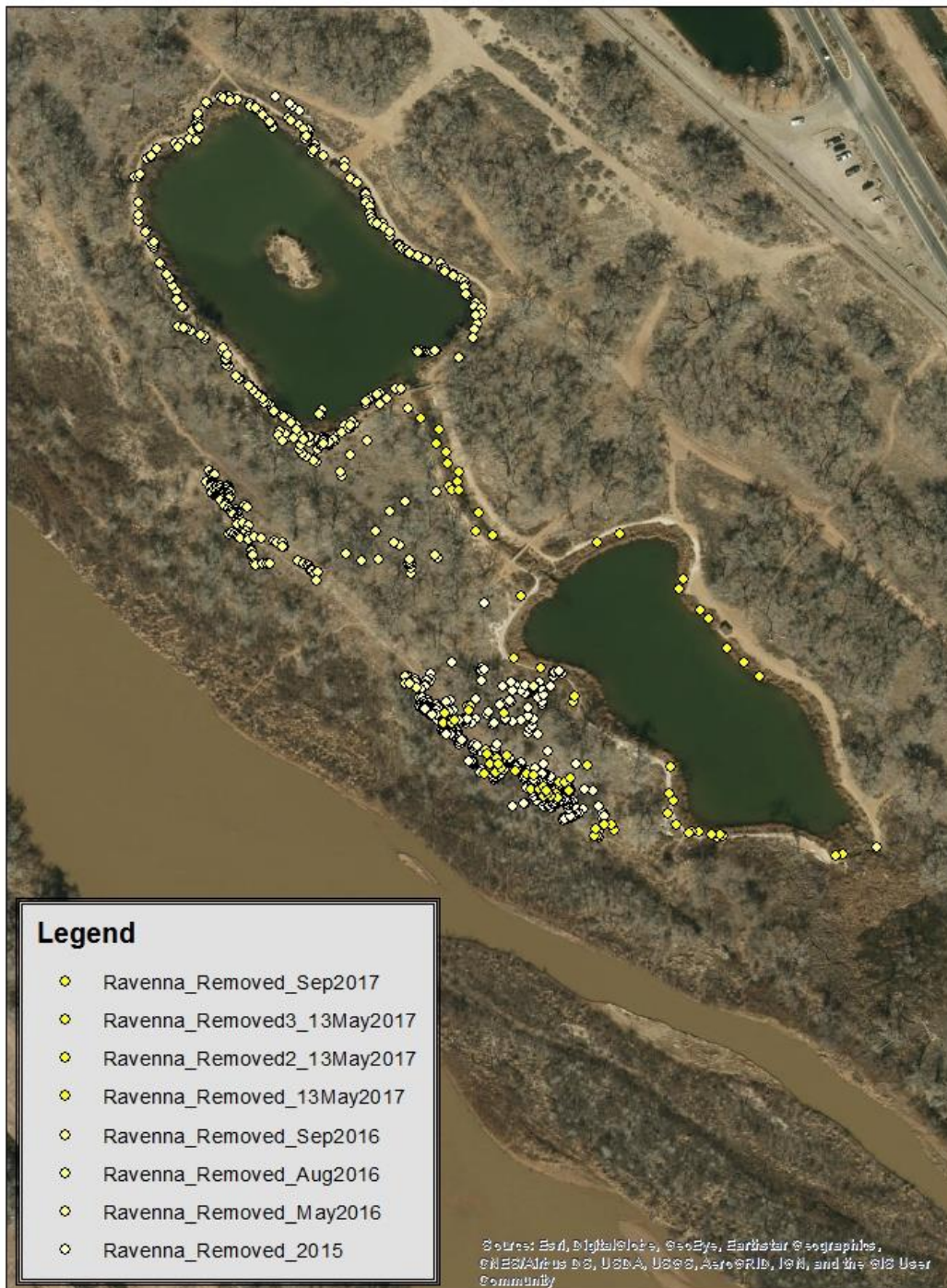
Maps created through our NPSNM grant include data through September 2017. We are currently processing data from our final workdays of the 2017 field season and will continue to update our maps as new data sets become available. The following maps illustrate a) Ravenna Grass removed during our first two and a half field seasons (over 1,000 plants), b) areas reseeded with native seed mix, and c) remaining Ravenna Grass at our site as of September 2017 (prior to the conclusion of our work for this year) showing both mature (red dots) and newly sprouted plants (turquoise dots). These and other map analysis show the original pattern of Ravenna Grass establishment in this area of the Bosque, where new Ravenna Grass plants from the existing seed bank are emerging, and where we need to direct our future efforts. These maps also indicate that our efforts at hand-removal of Ravenna Grass have been effective and Ravenna Grass is not returning in those areas. Newly emerging Ravenna grass plants are found in areas where a large seed

bank was previously established, the parent plants were removed, and native vegetation is sparse or absent. These maps also suggest that new Ravenna Grass plants are not re-emerging along the ponds or in other areas where native vegetation is established. Our NPSNM grant is providing the data necessary for effective evaluation of our work to improve the health of native plant communities and vegetative biodiversity while highlighting insights regarding the spread and management of invasive plant species in the Bosque.

Acknowledgements:

We are grateful to the Native Plant Society of New Mexico for providing this grant and the data collection, analysis, and monitoring that it enables. We hope that our work through this grant will be a valuable contribution to public land managers and riparian restoration projects. The NPSNM logo appears on our website along with our other major supporters.

Ravenna Removed 2015-2017



Reseed Areas 2016-2017



New and Existing Ravenna 2017

