THE SAN ANTONIO INVADERS
An Eradication Pilot Program

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Abstract

In November 2008, a group of Alamo Area Master Naturalists attended an Invaders of Texas Citizen Scientist Workshop held in San Antonio, Texas. The workshop was sponsored by the Native Plant Society of San Antonio. Lady Bird Johnson Wildflower Center (LBJWC) staff presented the training and a list of Bexar County invasive plants. Participants of the workshop were taught how to detect and report invasive plant species. These participants became the founding members of the San Antonio Satellite.

The satellite group asked the City of San Antonio Natural Areas division of Parks and Recreation if they could assist in the City's effort to map and eradicate exotic invasives. The group began organizing and recruiting volunteers. Work would initially focus on Rancho Diana, a 1300-acre Natural Area owned by the City of San Antonio.

Working on their own, the San Antonio Invaders meet at Rancho Diana once a week and have set up large volunteer workdays on the weekends in the spring and fall. To date, they have identified and recorded 9 different invasive species and have eradicated over 4,000 invasive plants. They have recruited 28 volunteers and have contributed over 240 volunteer hours. This group hopes that their work will result in the restoration of sensitive biological communities and benefit native flora and fauna in the Natural Area.

Purpose (Objective, Aim, Goal)

The goal of this project is to identify, mark, and remove all exotic invasive species on the City of San Antonio Natural Areas in an attempt to restore sensitive biological communities and reduce competition with native species.

Introduction (Background)

Exotic invasive species or species not native to an ecosystem can have serious consequences on that ecosystem. Since the beginning of European settlement in North America, 50,000 species of plants and animals have been introduced. Of these species, a small percentage have escaped cultivation. To date, 4,200 introduced plants have escaped cultivation. These plants have formed free-living and self propagating populations in the wild (Westbrooks 2004). These introduced species pose a serious threat to native biodiversity and disturb ecosystem structure and function (Smith and Knapp 2001).

For several years, the City of San Antonio has been documenting and removing exotic invasive plant species on Natural Areas properties. The City has involved volunteer groups such as the Alamo Area Master Naturalist as well as local universities to form volunteer workdays to help eradicate large clusters of invasives. In the fall of 2008, a few committed volunteers attended the Invaders of Texas Citizen Scientist workshop in San Antonio. They were taught how to detect and report invasive plant species. This group has become the driving force behind the eradication of exotic invasives in the Natural Areas.

Methods

City of San Antonio staff held a brief training session for the San Antonio Invaders which covered GPS and compass training. The group was then given all relevant material and equipment including handtools, herbicide, and maps with GPS coordinates of already located exotic invasives. The group then began meeting once a week at Rancho Diana, a 1300-acre City of San Antonio Natural Area (Fig 1). The work often times involves hiking and scrambling through rough terrain with a great deal of time spent on their hands and knees and under fallen trees. Work is conducted in inclement weather including oppressive heat and chilly winter days. Herbicide is not sprayed on rainy days or days where there is a high probability of rain occurring immediately following spraying. Once the team has arrived at the site, the team first records the species they have found followed by the GPS coordinates, the time and date, whether or not pictures were taken, and if the species had been removed or needs a larger tool such as a chainsaw (to be removed by City staff) (Fig. 2 and 3).

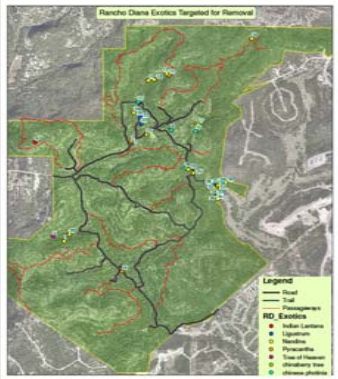

Figure 1. Location of exotic invasive species at Rancho Diana. All species on map are targeted for removal by staff and/or SA Invaders.

Figure 2. SA Invaders, Diane Fey and Lonnie Shockely, record GPS coordinates and other relevant information as they stand in the middle of a nandina forest at Rancho Diana.

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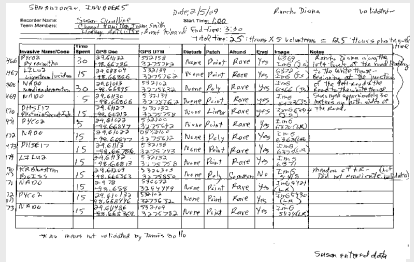

Figure 3. Data sheet filled out by SA Invaders. Lists species, GPS coordinates, removal, and other relevant information.

Once the team has recorded all relevant information, they cut the exotic invasive at the base with a lopper, handsaw, or hand pruner. The stump is then immediately sprayed with a strong dilution of round-up (Fig 4). If the exotic cannot be removed due to its size or due to a future workday project or the rain, it is flagged with bright flagging tape and will be removed at a later date.

Figure 4. SA Invaders, Diane Fey and Lonnie Shockely, removing nandina at the base and spraying with round-up.

Results

To date, the San Antonio Invaders have documented more that 4,100 exotic invaisves and have eradicated more than 4,000 of those plants. They have recruited 28 volunteers and have contributed over 240 volunteer hours. They have identified nine different species of exotic invasives at Rancho Diana including nandina (*Nandina domestica*), Chinese photinias (*Photinia serrulata*), Chinese pistachio (*Pistacia chinensis*), giant reed (*Arundo donax*), King Ranch Bluestem, (*Bothriochloa ischaemum var. songarica*), ligustrum (*Ligustrum japonicum*), pyracantha (*Pyracantha coccinea*), indian lantana (*Lantana camara*), and Chinaberry (*Melia azedarach*) (see pictures of speciemns below).

Results

Conclusions (Summary)

- The introduction of exotic plants has posed a major threat to native ecosystems and has disrupted biodiversity.
- Without aggressive management, native biodiversity could be lost
- Relationship formed with SA Invaders is invaluable to the Natural Areas.
- Because they are able to focus their work, SA Invaders have targeted more exotics than staff has been able to get to.

References

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Westbrooks, R.G. 2004. New Approaches for Early Detection and Rapid Response to Invasive Plants in the United States. Weed Technology 18:1468-1471.

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