



Being an Invasive Volunteer



Welcome to the
Arizona-Sonora Desert Museum's
INVADERS OF THE SONORAN DESERT REGION
EARLY DETECTION AND REPORTING PROGRAM

Welcome to the Arizona-Sonora Desert Museum (ASDM) Invaders of the Sonoran Desert Region volunteer citizen scientist team! You are part of an exciting new national program titled, "Invaders: Citizen Scientists Combat Invasive Species," developed by ASDM in partnership with Sea Studios Foundation, National Geographic and Vulcan Productions. This innovative initiative was launched with the April, 2005 premiere of National Geographic's Strange Days on Planet Earth TV series on PBS. The opening episode of this new series is all about Invaders.

Invasive, non-native species – organisms that evolved in one area of the world and have been introduced to and invaded other areas (invaders) – are becoming increasingly worrisome. One reason behind the worry is that we, humans, are major intentional and/or unwitting agents of transportation for these marauding plants and animals. How serious is the problem? What do we stand to lose? As renowned biologist E. O. Wilson states, "On a global basis...the two great destroyers of biodiversity are, first, habitat destruction and second, invasion by exotic species." These invasive species aggressively overtake or displace native species, and their ecological and economic impacts can be enormous. Experts estimate the annual cost of invasive species to the US economy alone is in the billions.

Invaders: Citizen Scientists Combat Invasive Species is an innovative campaign whereby volunteer "citizen scientists" are trained using a specially developed Invasive Species Early Detection and Reporting Kit. The intent of this kit is to empower the public to become involved as citizen scientists in order to more effectively slow the spread of harmful invasive species and reduce their economic damages. With this kit, volunteers can help detect invaders' arrival and dispersal in their own local areas. You will be working in the INVADERS of the Sonoran Desert Region program to help detect local invasives and enter the data into a national database hosted by USGS through a local ASDM web-based data entry form. Through partnerships, the data you collect will be shared with managers on the ground for use in invasive species control and management.

You will be learning to identify the invasive, non-native species that are the focus of this program as well as many other species, to use GPS units, and to enter your data through the internet. The following nine species are the initial focus of the Invaders of the Sonoran Desert Region program:

Buffelgrass (*Pennisetum ciliare*)
Fountaingrass (*Pennisetum setaceum*)
Natalgrass (*Melinis repleans*)
Sahara mustard (*Brassica tournefortii*)
Tamarisk (saltcedar) (*Tamarix chinensis*)
Athel tree (*Tamarix aphylla*)
Onionweed (*Asphodelus fistulosus*)

Red imported fire ants (*Solenopsis invicta*)
Argentine cactus moth (*Cactoblastis cactorum*)

Your participation in this initiative will benefit the Sonoran Desert Region and will help us work towards the goal of mapping invasive species nationwide. Volunteers in other parts of the country are working in their local areas to accomplish the same task. Our data are pooled together to create national maps that are used by local, state, regional, and federal agencies and organizations to address the invasive species issue throughout the country.

Being an Invaders Volunteer

We hope you will find volunteering in the Invaders Program an opportunity to learn as much as possible about the Sonoran Desert Region and the Museum's efforts to work toward its conservation through citizen science and public education on invasive, non-native species. We have goals for the outcomes of our program efforts as well as goals for your own development as volunteers. We will measure the former in an evaluation process throughout the program. To measure the latter, we have established a series of certification benchmarks that you will be able to follow as you progress through your training and subsequent fieldwork.

Goals of the Desert Museum's Invaders Program

- Develop a baseline map of the scope of our target invasive species in our region.
- Refine methods and materials for data collection and reporting online.
- Support the efforts of our agency and organization partners.
- Continue developing partnerships with regional resource management agencies to guide us toward sites where we can focus our early detection and reporting efforts.
- Provide information to these partners that helps lead to the control and/or eradication of invasive species where possible, and through these connections, provide our volunteers an opportunity to help in these eradication efforts.

We value your contribution and welcome any insights you might have about how we might improve in these efforts. Please see Invaders Program coordinators' contact information at the end of this section.

Invaders Volunteer Certification Benchmarks

As volunteer citizen scientists in the Invaders Program, we will have the opportunity to measure your training and volunteer accomplishments against a series of certification benchmarks. The levels of certification and requirements for each are:

1. Apprentice: Has completed the formal lab and field training at ASDM and is ready to start data collection and reporting.
2. Intermediate: Reaches 50 hours of time working as an Invaders volunteer (including training hours).
3. Expert: Has submitted five species-specific identification photos that are verified as positive. Will no longer need to send an identification photo for that species with subsequent data reports.

Beyond the Invaders Program

Finally, we hope that you will share what you learn with friends, family, and neighbors and take your interest to new levels. For those whose interest extends beyond early detection and reporting, we will continue to form partnerships with institutions and agencies that are doing eradication projects and hope to provide opportunities whereby Invaders volunteers may assist in the eradication of some of the species we track.

Other Invasive Species Volunteer Opportunities

The Sonoran Desert Weedwackers have been eradicating buffelgrass and fountaingrass in Pima County's Tucson Mountain Park since 2000. To date they have removed over 57,000 pounds of these invaders! They meet every second Friday and third Saturday of each month. For more information check their website at http://aznps.org/html/exotics_weedwackers.html.

Invaders Program Contact Information

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See the handout with contact information for your fellow Invaders volunteers.

INVADERS Volunteer Position Description

Position Title and Department: Invasive Species Field Researcher, Center for Sonoran Desert Studies.

Reports to (name & Title): Yajaira Gray, INVADERS Volunteer Coordinator
Tani Hubbard, INVADERS Program Manager

Overview of position: Volunteers will conduct surveys in the field to look for invasive species. They will be trained in the identification and reporting of these species. Field surveys will be conducted throughout Arizona.

Primary Specific Tasks:

1. Search for and record data on invasive species around the state.
2. Use GPS units, digital cameras, and handheld PCs to collect data. Upload data on Museum website.
3. Function as a "team leader" to train and direct future volunteers in field surveys of invasive species.

Day(s) of week volunteer(s) work in this position: 2 days/month (8-10 hour days including travel time and fieldwork) with opportunities for additional fieldwork as available.

Hours: Approximately 20 hrs./month

Duration (specify period or minimum # of months): On-going.

Number of individuals in this position: 20

Qualifications:

Physical requirements: Hiking skills, field-worthiness, ability to walk on uneven terrain and work in all weather conditions. Ability to handle all situations in the field, including map reading, trail-finding, first-aid situations, etc.

Skills/knowledge required: Ability to use (or be willing to be trained to use) digital cameras, GPS units, handheld PC, and online data entry system.

Background/experience desired: Preferred background in natural history with an emphasis in plant/animal identification. Familiarity with Sonoran Desert ecosystems helpful.

Other Requirements: Availability for training and work projects on weekdays. Ability to provide own transportation to field sites.

Benefits to the volunteer: Contribute to a nationwide citizen science initiative monitoring and preventing the spread of invasive exotic species.

Name(s) of incumbent volunteer(s): None.
Drafted by: Robin Kropp and Tani Hubbard

updated: 12-06-06