

**Final Report – Year 1 (Through January 2026)**  
**NM Wildlife Conservation Teacher Training: Engineering Design in Action**  
**Professional Services Contract #25-516-0000-00020**

**Project Objective and Summary of Accomplishments**

The NM Wildlife Conservation Teacher Training: Engineering Design in Action project will help 3<sup>rd</sup> through 5<sup>th</sup>-grade teachers teach their students about New Mexico wildlife conservation using engineering design standards. Forty teachers and approximately 800 students will engage in hands-on lessons featuring Species of Greatest Conservation Need (SGCN) through teacher workshops, classroom lessons, and public events.

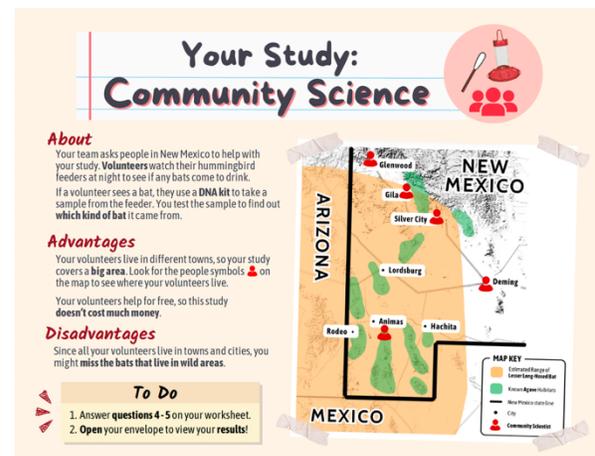
Our tasks for the first year of the 22-month project included: developing hands-on lessons for 3<sup>rd</sup>-5<sup>th</sup> grade students, delivering a workshop for teachers, and hosting a public event at Asombro’s outdoor classroom, the Chihuahuan Desert Nature Park. We successfully completed all of these tasks (detailed below) and are ready to work on the final phases of the project.

**Year 1 Accomplishments**

- **Developed four 3<sup>rd</sup>-5<sup>th</sup> grade activities that focus on NM wildlife** (each lesson includes one SGCN) and address the following NM STEM Ready engineering standards for 3<sup>rd</sup> through 5<sup>th</sup> grades: (1) ETS1-1. Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost; (2) ETS1-2. Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem; (3) ETS1-3. Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.

Each of the four lessons was designed with Asombro’s 15-step lesson development process, which includes screening for standards alignment, pilot testing (which occurred in April and May 2025), and revisions. Lessons include:

- **Bats and Agave: Using Science to Protect the Lesser Long-Nosed Bat** - In this one-hour lesson, students learn that Lesser Long-Nosed Bats (a SGCN) feed on nectar from agave flowers as they migrate from southwest New Mexico to Mexico in the fall. However, the agave habitats they rely on are often threatened by human activities. Students read handouts (one shown at right) to learn about one of three bat study methods and view a map showing where their study detected Lesser Long-Nosed Bats. They use this information to select agave habitats on the map that they would want to protect. Students learn how different study methods reveal different information and why sharing data and looking at the results from multiple studies is so important in science.



*Information card from the Bats & Agaves lesson*

- **Gray Vireos: Using Science to Protect a Threatened Species** (modification of a 2018 lesson) - In this one-hour lesson, students play the role of scientists working for the New Mexico Department of Game and Fish. They work through four steps with the goal of conserving the Gray Vireo (a SGCN) in New Mexico: (1) using a model to survey two habitats for Gray Vireos, (2) learning what scientists already know about the species, (3) choosing a limited number of



- 9:00 Welcome and icebreaker about Species of Greatest Conservation Need
- 9:35 Introduction to Asombro and the engineering design process depicted in the Next Generation Science Standards
- 9:45 **Sponge Salamander** lesson preview and demonstration
- 10:30 Guest speaker (Stephanie Haan-Amato from the Amphibian and Reptile Conservancy who studied the Sacramento Mountain Salamander for her Master’s Degree from New Mexico State University)
- 11:00 **Gray Vireo** lesson preview and demonstration
- 11:45 Preview of the Endless Forms card game and class sets of cards in the teachers’ kits
- 12:00 Lunch
- 12:45 **Bats and Agave** lesson preview and demonstration
- 1:45 Guest speaker (Rachel Burke from Bat Conservation International)
- 2:05 **Playa Shrimp** lesson preview and demonstration
- 3:05 Evaluations, distribute stipends and kits
- 3:30 End of day

Teachers all received a \$100 stipend and those who traveled from more than 75 miles away also received \$100 in travel support.

On post-workshop evaluations, 100% of the teachers agreed or strongly agreed with the following prompts:

- I will use knowledge that I gained to inform my teaching.
- I will use one or more activities from the workshop with my students.
- The material was aligned with the Next Generation Science Standards.
- The material in this workshop was presented clearly.
- I would like to participate in future Asombro Institute programs.

In addition, 100% of teachers reported that the workshop increased their knowledge of New Mexico Species of Greatest Conservation Need; four of them reported the largest knowledge gain possible, with no knowledge before the workshop and substantial knowledge after the workshop. Sixteen of the 18 teachers (88%) reported increased knowledge of teaching engineering design standards using conservation examples. The other two reported that they already had substantial knowledge before the workshop. They added many other comments, including:

- “The activities and concepts are directly applicable to the students I work with. It’s very helpful to have more program ideas/materials that relate to NM species rather than more exotic species.”
- “This workshop was amazing! Had a great time doing the hands on activity and listening to guest speakers.”
- “I loved all of the lessons. The binders and materials are greatly appreciated. These lessons are well-organized and FUN!!”
- “I especially enjoy the Spanish support since I teach in Spanish. Thank you!”
- “The pacing and quality of this workshop was fantastic. Thank you so much for all the work you’ve put into it. Having access to digital copies and physical copies of handouts and lessons/materials is very useful.”
- “This training was fantastic – it was engaging, informative, & really kept me wanting to know more!”

- **Planned and hosted a Wildlife Conservation Day public event on August 30, 2025** – Asombro staff, one teacher from the workshop, and 12 other volunteers hosted Wildlife Conservation Day at the Chihuahuan Desert Nature Park. Sixty-one people attended the event and participated in 8 hands-on activity stations to learn about New Mexico wildlife. Stations included:
  - Bats and agave – using components of the new lesson developed for this project

- Salamanders – using components of the new lesson developed for this project
- Desert shrimp – using components of the new lesson developed for this project
- Gray vireo – using components of the new lesson developed for this project
- Mammals and birds of New Mexico – run by the New Mexico State University Wildlife Museum
- New Mexico reptiles – run by the Tortugas Reptile Rescue
- Endless Forms – showcasing the trading card game that teaches about desert species, habitats, and interactions
- Conservation action – Showing visitors what they can do to help protect New Mexico wildlife

Although only one workshop teacher was able to attend the event, teachers were very helpful in sharing information about the event to their students and students' families.



- **Finalized date and venue for the second teacher workshop** – We decided to host the second teacher workshop for the project in Albuquerque to allow more teachers from central New Mexico to attend. The workshop will be held on March 21, 2026, at the New Mexico Department of Game and Fish office in Albuquerque. Karen Gaines and Storm Usrey have been very helpful in assisting us with finding and reserving the space.

### Next Steps (February – November 2026)

In the final 10 months of the project, we will do the following:

- Assemble kits of supplies for all four lessons – These will be given to teachers in the Albuquerque workshop on March 21.
- Plan and host teacher workshop on March 21, 2026, in Albuquerque.
- Host a second public program on Wildlife Conservation at the Chihuahuan Desert Nature Park on the evening of Friday, October 16. The event will emphasize nocturnal wildlife species with a special focus on SGCN like the Lesser Long-Nosed Bat.
- Compile results from the teacher workshop and public event and submit the final project report.

### Acknowledgements

Funding for this project was provided by the Share with Wildlife program of the New Mexico Department of Game and Fish, Contract #24-516-0000-00027.

**For More Information:** Please contact Asombro Executive Director, Dr. Stephanie Bestelmeyer at [stephanie@asombro.org](mailto:stephanie@asombro.org) or 575-524-3334.