

## Final Report (May 2022 – April 2023) New Mexico Wildlife Wonders: A 2<sup>nd</sup> Grade Lesson Module

### Project Summary

The Asombro Institute for Science Education developed and delivered a three-part lesson module on New Mexico wildlife to 40 2<sup>nd</sup>-grade classes (799 students) in the 2022-2023 school year. The multidisciplinary module increased students' knowledge about New Mexico wildlife conservation and habitats and helped address learning losses caused by the COVID-19 pandemic.

### Development and Refining the Lesson Module

Between May and August 2022, Asombro staff developed the New Mexico Wildlife Wonders lesson module using our 15-step development process. This includes brainstorming, creating and testing materials, screening for NM STEM Ready standards alignment and diversity, equity, and inclusion criteria, science review (by Dr. Virginia Seamster with the New Mexico Game and Fish Department), pilot testing, and revisions.

In the three-part lesson, students explore two different habitats (the Chihuahuan Desert and New Mexico Mountains) and learn about the types of wildlife that need protection in those habitats.

- 1) Pre-lesson activity – Asombro staff members send teachers instructions and student worksheets for this activity that takes place before Asombro staff visit the classroom. Students draw the habitat in their schoolyard, look for signs of wildlife, and hypothesize about other ways to determine what animals live in the schoolyard.
  
- 2) Classroom lesson – Asombro science educators teach this one-hour lesson. The lesson begins with a 10-minute activity to engage students and activate their existing knowledge about animal habitats. Next, educators introduce students to habitats in New Mexico, focusing on the Chihuahuan Desert and the New Mexico Mountains. During most of the lesson, students play the role of wildlife biologists and visit hands-on activity stations (four modeling the Chihuahuan Desert and four modeling the NM Mountains habitat). Stations model the various tools wildlife biologists use to learn what wildlife is in an area – camera traps, binoculars, cover boards, and nets. Students use the tools to look for particular animals in each habitat, recording data on their worksheets. After they have finished the investigation at each station, students receive a trading card featuring the animal found at the station. Students then come together to graph their data, draw conclusions based on their findings, and discuss why habitat protection is so important in New Mexico and worldwide.



- 3) Post-lesson activity – Students return to the schoolyard with their classroom teacher and the trading cards they collected during the classroom lesson. They think about the habitat needs of one of these species and determine what features or resources would need to be added to the schoolyard to make it suitable habitat for that species. Finally, students write a postcard explaining why protecting wildlife and their habitats in New Mexico is important.

### Education Standards Addressed

The New Mexico Wildlife Wonders lesson module was designed to address multiple education standards in science, language arts, and math for 2<sup>nd</sup> grade. These include:

- Next Generation Science Standards 2-LS4-1. Make observations of plants and animals to compare the diversity of life in different habitats. It addresses the Science and Engineering practices of (a) developing and using models, (b) planning and carrying out investigations, and (c) analyzing and interpreting data.
- Common Core State Standards (CCSS) Math 2.MD.10. Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put together, take-apart, and compare problems using information presented in a bar graph.
- CCCS Language Arts 2.W.7 Participate in shared research and writing projects (e.g., read a number of books on a single topic to produce a report; record science observations).
- CCCS Language Arts SL.2.1. Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups.

### Lesson Delivery

During the 2022-2023 school year, Asombro educators delivered the New Mexico Wildlife Wonders lesson module to 40 classes of 2<sup>nd</sup>-grade students in the Las Cruces, Hatch Valley, and Gadsden School Districts in southern New Mexico. While we estimated in our proposal that this would translate to approximately 1,000 students (assuming a pre-pandemic average of 25 students per class), class sizes were considerably smaller, resulting in 799 students reached.

Date	School	School District	# of classes	# of students
8/5/22	Mesilla Elementary	Las Cruces Public Schools	2	50
8/26/22	Desert Hills Elementary	Las Cruces Public Schools	4	76
8/31/22	Booker T. Washington Elem.	Las Cruces Public Schools	2	30
9/28/22	Garfield Elementary	Hatch Valley Public Schools	1	12
11/7/22	Chapparal Elementary	Gadsden Independent Schools	2	60
12/14/22	Mesilla Park Elementary	Las Cruces Public Schools	2	45
1/19/23	Hillrise Elementary	Las Cruces Public Schools	3	58
2/10/23	Columbia Elementary	Las Cruces Public Schools	2	30
2/13 & 2/14	Monte Vista Elementary	Las Cruces Public Schools	5	105
2/28 & 3/1	Sonoma Elementary	Las Cruces Public Schools	8	150
4/12/23	Hermosa Heights	Las Cruces Public Schools	3	60
4/13 & 4/14	Tombaugh Elementary	Las Cruces Public Schools	6	123
	<b>TOTALS</b>		<b>40</b>	<b>799</b>

### Evaluation of Impact

Our goal was to increase participating students' knowledge of New Mexico wildlife and habitats and their excitement about science. We assessed the accomplishment of these objectives with post-lesson, anonymous evaluations filled out by the students' classroom teachers. Teachers are knowledgeable and reliable judges of their students' knowledge and interest. The evaluation asks teachers to provide feedback on five prompts on a scale of 0 (very strongly disagree) to 10 (very strongly agree). The high average scores on these prompts shows that we accomplished our objectives:

- My students increased their science content knowledge: **9.9**
- My students can better use scientific practices: **9.9**
- My students are more excited about science: **10.0**
- Asombro educators interacted well with students: **10.0**
- I want to participate in future Asombro programs: **10.0**

In an open-response section of the evaluation form, teachers added more about what they loved about the lesson module:

- “Information (content) is presented in a very interactive and engaging way. Presenters, activities, materials are great.”
- “Interactive science had students highly engaged! Taught about NM - our science book is generic. Most students have an idea about NM habitats but this was incredible.”
- “Loved the program! Students were engaged and learned a lot!”
- “Best day ever!”

A teacher from Sonoma Elementary School called us the day after we had delivered the new lesson module to her students. She told our Education Director that several parents had called her after school to let her know that **their children were so excited about the lesson that they told their parents they now wanted to be scientists!** We are so grateful to the Share with Wildlife program for the funding to provide this amazing opportunity to hundreds of 2<sup>nd</sup> graders this year.

### **Project Continuation**

The New Mexico Wildlife Wonders module will continue to be part of Asombro’s menu of grade-specific lessons offered to teachers and students. We will update it as needed to keep it current with science discoveries and methods. This lesson module will therefore continue to excite students and help them learn about New Mexico wildlife for years to come.

### **For More Information, Please Contact:**

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