

Engaging future conservation leaders: Audubon's Outdoor Field Science Program

*New Mexico Department of Game and Fish: Share with Wildlife Final Report
January-June 2021*

Description of Work

Over the past two decades, thousands of Santa Fe youth have benefited from exposure to natural environments, hands-on science curriculum, and experiential learning opportunities as part of the *Outdoor Field Science* program through Audubon Southwest (ASW, formerly Audubon New Mexico) and the Randall Davey Audubon Center (RDAC). Our goal is to engage low-income 3rd, 4th, and 5th graders with standards-aligned, inquiry-driven science field trips and in-class programs, spanning 9 hours of contact time. The program's objectives include providing targeted classes with engaging, hands-on, standards-aligned activities and high-quality outdoor experiential education programs focused on topics such as New Mexico wildlife, habitat, conservation, and inquiry.

Studies indicate that effective programming relies on repeated engagement over an extended period of time. By providing multiple contact points with students, including school visits, on-site field trips, and virtual/distance learning opportunities, RDAC staff are employing innovative education techniques that develop deeper understandings and personal relationships with Audubon and our conservation initiatives. The fourth grade *Outdoor Field Science* program is also one part of a three-year partnership between ASW, the Santa Fe Botanical Garden, and the Santa Fe Watershed Association. Also known as the Santa Fe Outdoor Education Collaborative, this partnership ensures that low-income students in the Santa Fe Public School district receive three consecutive years of high-quality, standards-aligned, outdoor education programming. Curriculum is shared across the three organizations and strategically designed to build on concepts from the previous year, providing students with greater understandings of our local flora, fauna, and ecosystems.

Additionally, the *Outdoor Field Science* program provides teachers with additional materials to help extend their learning into classroom lessons. Currently, elementary teachers lack life science curriculum that is both aligned to the recently adopted NM STEM Ready Standards and locally relevant to the ecology of Northern New Mexico. While NGSS-aligned lessons are available online, few if any of these curricula address New Mexico-specific ecosystems, wildlife, or the unique challenges facing the state. Audubon Southwest is uniquely positioned to leverage its knowledge and understanding of the new science standards with our expertise of local conservation issues and access to natural spaces.

Success in the 2020-2021 School Year

Audubon Southwest's *Outdoor Field Science* program has continued to be a memorable and successful method of engaging Santa Fe Public School students in hands-on, outdoor education.

Due to the ongoing challenges of the COVID-19 pandemic, Audubon educators once again adapted materials to fit a distance-learning model. While we were unable to welcome students to the Randall Davey Audubon Center, we found new ways to engage and educate students from afar. During the 2020-21 school year, **a total of 22 Title 1 classrooms received virtual field trip programs from an Audubon educator**. Due to NMDGF's Share with Wildlife Program, **Audubon educators had direct contacts with 750 Santa Fe Public School students** through scholarship-funded digital programs (see Appendix I for program details).

Of the 2020-21 student participants, 100% attended Title 1 schools (50-100% of the school's student households are considered low or very-low income), with an extrapolated 88% of students qualifying for free/reduced lunch. We were unable to collect demographic data on student participants due to pandemic limitations. Audubon SW continues to prioritize these students and schools due to their under-served populations and to address the systemic exclusion of people of color from the outdoor and conservation movement. Although Santa Fe boasts incredible outdoor recreation opportunities, an overwhelming number of students comment that the trip to RDAC is their first time in a forest. In 2016, 49% of Americans participated in outdoor recreation, but less than 30% were participants of color, and only 12% of those were Hispanic (Outdoor Foundation). Audubon has made a commitment to expanding access to include the full diversity of New Mexico residents.

Despite the challenges of delivering outdoor science education via video conferencing, Audubon educators adapted several modules of existing programs into virtual field trips. Components of the Animal Adaptations, Birds of a Feather, and Habitat Investigations programs were modified to include high-quality visuals as well as hands-on and off-screen activities. While nothing can replace the experience of exploring a Piñon-Juniper woodland, students were still able to learn about some of our local species, as well as create personal connections with birds and ongoing conservation work through stories and activities.

[Program Assessment and Student Evaluation](#)

Before attending their first program in the fall, students usually complete a pre-program assessment with their classroom teachers. Students are assessed on content knowledge, perceptions of science, and personal connections to nature, wildlife, and conservation. Typically, students would complete the same assessment as a post-program evaluation, following the final field trip in the Spring. Due to the COVID-19 disruption, comparative student assessments were not able to be completed for the 2020-2021 school year.

Following each in-person or field trip program, teachers are asked to complete an evaluation to assess the effectiveness of the program's activities, educator's teaching abilities, and other components. Due to teachers' limited capacity and ability to communicate, as well as the extraordinary circumstances of the pandemic, ASW decided to forego formal evaluations and instead collect qualitative data and anecdotes. Some of these comments from SFPS teachers included:

"Thank you Sally!! That was fun, the kids enjoyed it and they learned about bird adaptations!"

Realignment of programs to New Mexico STEM Ready! Standards

In addition to student programs, part of ASW's contract with Share with Wildlife included time for realigning the program portfolio. This year, ASW educators refined and realigned three modules that were delivered as virtual field trips for the Outdoor Field Science program. We were able to build off the success and momentum from last year's realignment work and focus on a few offerings suitable for digital learning. Just as we collaborated with teachers in the spring of 2020, we once again reached out to classroom educators for practical feedback regarding their and their students' needs. Their input led to the development of several distance-learning modules that were appropriate for either at-home or independent at-school learning.

As in the past, collaboration with NMDGF staff also contributed to stronger and better-aligned programming connected to conservation issues that will serve students and teachers for several years to come.

In conclusion, Audubon is grateful for the support and flexibility of the Share with Wildlife funds and staff. We are very proud that we were able to still engage a large population of Santa Fe students, despite the ongoing challenges of the pandemic, and look forward to working with students in-person in the future.

**Appendix I. Randall Davey Audubon Center, Outdoor Field Studies Program Data,
2020-2021**

All programs were delivered virtually due to COVID-19 restrictions.

**Outdoor Field Studies programs that were outside the scope of funding for Share with Wildlife.*

Date	School Name	Grade level	Number of students	Topic
9/17/2020*	El Camino Real Academy	4th Grade	15	Animal Adaptations
9/17/2020*	El Camino Real Academy	4th Grade	15	Animal Adaptations
9/24/2020*	El Camino Real Academy	4th Grade	15	Animal Adaptations
1/22/2021	El Camino Real Academy	2nd Grade	17	Santa Fe Bird ID & Observation
1/29/2021	Piñon Elementary	2nd Grade	20	Habitat Investigation
1/29/2021	El Camino Real Academy	4th & 5th Grades	55	Santa Fe Bird ID & Observation
1/29/2021	El Camino Real Academy	4th & 5th Grades	27	Animal Adaptations
2/10/2021	Nava Elementary	4th Grade	19	Santa Fe Bird ID & Observation
2/19/2021	Piñon Elementary	5th Grade	20	Habitat Investigation
3/5/2021	STEAM Day SFPS	3rd, 4th, & 5th Grade	270	Santa Fe Bird ID & Observation
3/8/2021	STEAM Day SFPS	3rd, 4th, & 5th Grade	65	Santa Fe Bird ID & Observation
3/12/2021	El Camino Real Academy	2nd Grade	17	Habitat Investigation
4/6/2021	Piñon Elementary	4th Grade	22	Backyard Habitat Investigation
4/6/2021	Nina Otero	4th Grade	15	Animal Adaptations
4/7/2021	Piñon Elementary	4th Grade	22	Backyard Habitat Investigation
4/8/2021	Piñon Elementary	4th Grade	22	Backyard Habitat Investigation
4/9/2021	Piñon Elementary	4th Grade	20	Backyard Habitat Investigation
4/9/2021	Ramirez Thomas Elementary	4th Grade	17	Animal Adaptations
4/12/2021	Ramirez Thomas Elementary	4th Grade	22	Animal Adaptations
4/16/2021	Ramirez Thomas Elementary	4th Grade	21	Animal Adaptations
4/16/2021	El Camino Real Academy	2nd Grade	17	Animal Adaptations
4/19/2021	Ramirez Thomas Elementary	4th Grade	17	Animal Adaptations
Total			750	