SoCal Urban Wildlife Refuge Project:
2020-2021 Project Impact Report | Pivot to Virtual Delivery

Submission Cover Sheet

Title	SoCal Urban Wildlife Refuge Project: 2020-2021 Project Impact Report | Pivot to Virtual Delivery
Abstract	When schools swiftly transitioned to virtual learning, program partners across this established out-of-doors environmental education project were challenged to rethink and retool the learning experiences from place-based programs to virtual learning, as most Project-supported programs were delivered outside of the traditional classroom. Meeting these COVID-related challenges head-on, program partners worked to modify programs and continue their efforts to connect community members of all ages with nature. While the delivery has changed during this extraordinary time, the Project's impact has been sustained. This summary report highlights the Project's collective impact during the COVID-19 pandemic. The featured accomplishments are made possible through the work of 13 funded partners and their USFWS mission-aligned programs. It also summarizes actions taken by the Project and its partners to sustain this work during the pandemic. The intent is to highlight high-potential strategies for virtual delivery while also identifying best practice that can be leveraged for program success regardless of the learning space.
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SoCal Urban Wildlife Refuge Project
2020-2021 Project Impact Report | Pivot to Virtual Delivery

Realizing the U.S. Fish & Wildlife Service's Urban Wildlife Conservation Program Mission Through Community Engagement and Education

Key Findings

Aggregated pre-to-post program survey responses conducted during virtually delivered SoCal Urban Wildlife Refuge Project programs demonstrate the following differences:

↑ amounts of nature-related talk with family and friends

↑ levels of knowledge about local animals and how to help them.

↑ levels of ascribed import for nature refuges

↑ levels of intent to engage in conservation behaviors

↑ percentage of participants indicating an interest in a science-related career is greater following their programs

Since 2014, urban wildlife refuge managers throughout Southern California have been responding to a challenge issued by United States Fish and Wildlife Service's (USFWS) leadership to connect the urban dwelling population in the region with wildlife and urban refuges.

Through a competitively awarded $1 million in annual funding, the team has supported a suite of partners who have effectively leveraged high-impact strategies to engage local communities and reach a demographic reflecting the region's changing racial and ethnic mix.

Yet, even with this success, the SoCal Urban Wildlife Refuge Project (the Project) and its program partners couldn't have anticipated the challenges brought by the COVID-19 pandemic.

When schools swiftly transitioned to virtual learning, program partners were immediately challenged to rethink and retool the learning experiences from place-based programs to virtual learning, as the majority of Project-supported programs were delivered outside of the traditional classroom. While this retooling was similar to what classroom teachers faced, the majority of Project-supported programs were delivered outside of the traditional classroom. Pivoting to virtual instruction therefore brought additional challenges of bringing to life online something that was always intended to be experienced out-of-doors.

Meeting these COVID-related challenges head-on, program partners worked to modify programs and continue their efforts to connect community members of all ages with nature. While the delivery has changed during this extraordinary time, the Project's impact has been sustained.
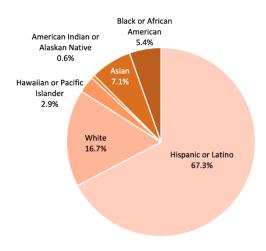
This summary report highlights the Project's collective impact during the pandemic. Specifically, it covers the 2020 and 2021 program years. The featured accomplishments are made possible through the work of 13 funded partners and their USFWS mission-aligned programs. It also summarizes actions taken by the Project and its partners to sustain this work during the pandemic. The intent is to highlight high-potential strategies for virtual delivery while also identifying best practice that can be leveraged for program success regardless of the learning space.
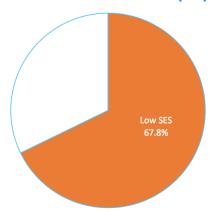
Who We Reach

The Project serves the second largest metropolitan area in the United States with over 17 million people, and with a demographic that reflects the nation's projected racial and ethnic mix in 2060.

Launched in 2014, the Project has engaged more than 100,000 people in conservation programs, refuge visits, and educational and skill-building activities—most recently in the virtual space. Through its program partners, the Project targets communities surrounding refuges, from San Diego to Los Angeles. Demographic figures demonstrate the breadth of the Project's reach—and the diversity of the participants.
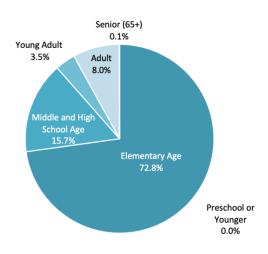
Reported Participant Ethnicities

- Black or African American 5.4%
- American Indian or Alaskan Native 0.6%
- Asian 7.1%
- Hawaiian or Pacific Islander 2.9%
- White 16.7%
- Hispanic or Latino 67.3%

Reported Audience Demographics: Low Socio-Economic Status (SES)

- Low SES 67.8%

Reported Participant Ages

- Senior (65+) 0.1%
- Young Adult 3.5%
- Adult 8.0%
- Middle and High School Age 15.7%
- Elementary Age 72.8%
- Preschool or Younger 0.0%

SoCal Urban Wildlife Refuge Project: By the Numbers

11,284 Number of Participants in this Pandemic-time Reporting Period

23,728 Number of Contact Hours in this Pandemic-time Reporting Period

100,736 Number of People Reached by the Project Since 2014

Key Outcome 1:
Participants indicate that they are engaging in greater amounts of nature-related talk following their programs.

SoCal Urban Wildlife Refuge Project participants indicated the frequency with which they "talk about what you know about nature" with their friends and family using a five-point frequency scale.

A comparison of weighted responses received pre- and post-program found:

- An additional 12% of participants indicating they were engaging in nature-related talk with family at least once a week and 12% fewer indicating never.

- An additional 11% of participants indicating they were engaging in nature-related talk with friends at least once a week and 18% fewer indicating never.

> While most programs were delivered virtually, the results for this COVID-19-influenced year continued the trend of significant differences between pre- and post-survey response percentages.
>
> For example, this year, there was an additional 12% of participants engaging in nature talk with family, while in 2017-2019, growth indicated an additional 19%. For nature talk with friends, virtual program outcomes had 11% growth, while the traditional delivery prompted an additional 23% of participants engaging in nature talk with friends following their programs.
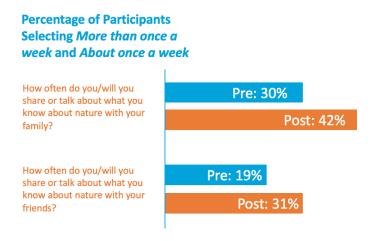
Data Analysis:
Participants were asked to describe their nature talk frequency by selecting one of the following descriptors: *More than once a week, About once a week, A few times a month, Less than once a month,* or *Never.*
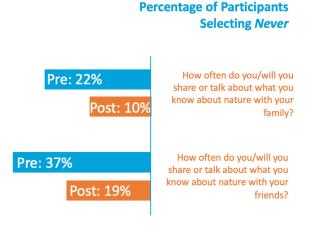
Increases for those Selecting Highest Frequencies
The percentage of participants selecting *More than once a week* and *About once a week* increased from pre-to-post.
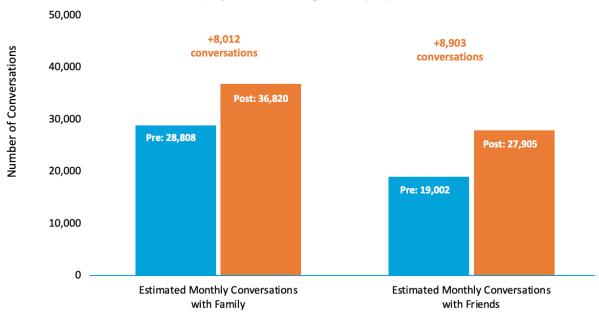
Decreases for those selecting *Never*
The percentage of participants selecting *Never* decreased from pre-to-post.

Percentage of Participants Selecting *More than once a week* and *About once a week*

How often do you/will you share or talk about what you know about nature with your family?
- Pre: 30%
- Post: 42%

How often do you/will you share or talk about what you know about nature with your friends?
- Pre: 19%
- Post: 31%

Percentage of Participants Selecting *Never*

How often do you/will you share or talk about what you know about nature with your family?
- Pre: 22%
- Post: 10%

How often do you/will you share or talk about what you know about nature with your friends?
- Pre: 37%
- Post: 19%

Number of Nature-focused Monthly Conversations
Before and Following Funded Programs
(Projected for 11,284 Program Participants)

Using weighted sample response percentages for each of the five conversation frequency categories, we projected a conservative estimate to represent the number of nature-focused conservations occurring before and following program engagement. On average, for the 11,284 Project participants during the 2020-2021 reporting period, there would be a projected additional 8,012 monthly conversations with friends and a projected additional 8,903 conversations with family.

Key Outcome 2:
Participants indicate higher levels of knowledge about local animals and how to help them following their programs.

Participants self-assessed and indicated their levels of knowledge about local animals and avenues for supporting the conservation of these animals.

A comparison of weighted responses received pre- and post-program indicates:

- an additional 13% of participants rated their knowledge level about local animals in the two highest categories, while 4% fewer indicated no knowledge.
- an additional 9% of participants rated their knowledge level about how to help local animals in the two highest categories, while 2% fewer indicated no knowledge.

During the pandemic, and through virtual versions of traditionally "in-place" programs, participants continued learning about local animals and how to help them.

Following largely virtual programming, an additional 13% of participants indicated knowledge of local animals, relative to a 19% increase in 2017-2019. Similarly, an additional 9% of participants indicated knowledge about how to help local animals, while the 2017-2019 period saw growth of an additional 20% of participants.

Data Analysis:
Participants were asked to describe their local animal knowledge by selecting one of the following descriptors: *I'm an expert, Quite a bit, Some, Very Little,* and *Nothing.*
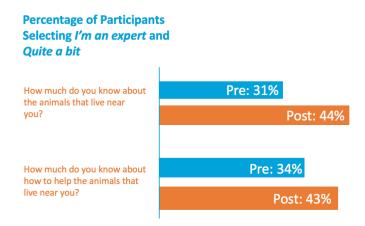
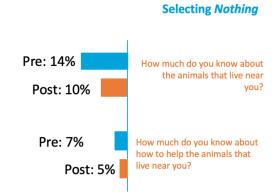### Increases for those Selecting Highest Levels
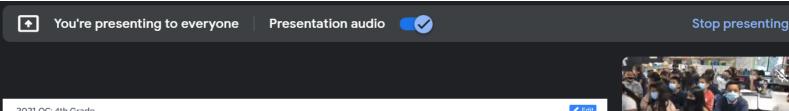The percentage of participants selecting *I'm an expert* and *Quite a bit* increased from pre-to-post.

Decreases for those selecting *Nothing*
The percentage of participants selecting *Nothing* decreased from pre-to-post.
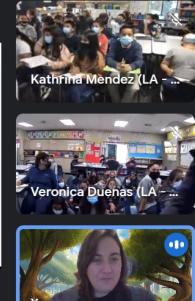
Percentage of Participants Selecting *I'm an expert* and *Quite a bit*

How much do you know about the animals that live near you?
- Pre: 31%
- Post: 44%

How much do you know about how to help the animals that live near you?
- Pre: 34%
- Post: 43%

Percentage of Participants Selecting *Nothing*

- Pre: 14%
- Post: 10%

How much do you know about the animals that live near you?

- Pre: 7%
- Post: 5%

How much do you know about how to help the animals that live near you?

Key Outcome 3:
Participants indicate higher levels of importance for their refuge following their programs.

Participants assigned a level of importance to their community's wildlife refuge using a five-point scale.

A comparison of weighted responses found an additional 9% of participants indicating high levels of importance for their community's refuge following their programs.
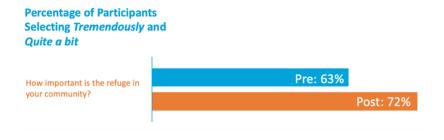
Virtual programs returned almost identical growth for Key Outcome 3 when compared to the traditional "in person" versions. Across 2017-2019 programs, an additional 12% of participants indicated heightened importance for their community's refuges.

Data Analysis:
Participants indicated their beliefs about the importance of the community refuge by selecting one of the following levels: *Tremendously, Quite a Bit, Some, Very Little,* and *Not at All.*

Increases in Refuge Importance, in Spite of High Pretest Levels
The percentage of participants selecting *Tremendously* and *Quite a bit* increased from pre-to-post.

Percentage of Participants Selecting *Tremendously* and *Quite a bit*

How important is the refuge in your community?
Pre: 63%
Post: 72%

Key Outcome 4: A slightly greater number of participants indicate an intent to engage in two conservation behaviors following their programs.

Participants were asked to indicate their likelihood of participating in three different conservation efforts.

A comparison of weighted responses received pre- and post-program indicates:

- an additional 3% of participants would volunteer to plant a tree;
- 2% fewer would volunteer to clean-up a habitat; and,
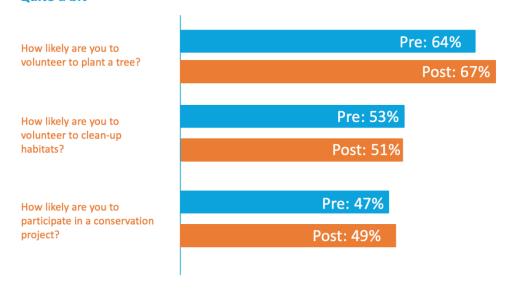- an additional 3% would participate in a conservation project.

Key Outcome 4 is the primary area where virtual programs returned smaller differences between pre- and post-survey responses relative to the "in-person" program versions. The above virtual program numbers can be compared to 2017-2019 results where an additional 7% would volunteer to plant a tree; an additional 12% would volunteer to clean-up a habitat; and, an additional 13% would participate in a conservation project.

Data Analysis:

Participants indicated their projected participation in future conservation efforts by selecting one of the following descriptors: *Tremendously, Quite a Bit, Some, Very Little,* and *Not at All.*

Increases for those Selecting Highest Likelihood of Future Action, in Spite of High Pretest Levels

The percentage of participants selecting *Tremendously* and *Quite a bit* increased from pre-to-post.

Percentage of Participants Selecting *Tremendously* and *Quite a bit*

How likely are you to volunteer to plant a tree?
Pre: 64%
Post: 67%

How likely are you to volunteer to clean-up habitats?
Pre: 53%
Post: 51%

How likely are you to participate in a conservation project?
Pre: 47%
Post: 49%

Finding 5:
A slightly greater number of participants indicate interest in a science-related career following their programs.

A comparison of weighted responses received pre- and post-program found that, when asked "How interested are you in a career that involves some aspect of science?" an additional 1% of participants indicated the highest level of interest following their programs.

This rate, projected across the 1,739 elementary, middle, and high school aged participants, equates to an estimated **17** additional individuals expressing an interest in a science-related career.
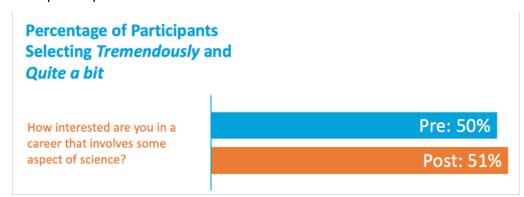
Key Outcome 5 is the final area where virtual programs returned smaller difference between pre- and post-survey responses relative to results from "in-person" programs. The 2017-2019 "in-person" program results found an additional 7% indicating interest in a science-related career.

Data Analysis:
Participants indicated their interest levels in a science-related career by selecting one of the following descriptors: *Tremendously, Quite a Bit, Some, Very Little,* and *Not at All.*

Increases for those Selecting Highest Likelihood of Science-related Career
The percentage of participants selecting *Tremendously* and *Quite a bit* increased from pre-to-post.

Percentage of Participants Selecting *Tremendously* and *Quite a bit*

How interested are you in a career that involves some aspect of science?

Pre:	50%
Post:	51%

Going Virtual While Staying Wild:
Lessons Learned in the Shift to Virtual Programming

In 2020, positive Project outcomes were unfortunately threatened by the emergence of COVID-19. The pandemic disrupted operations of the established and thriving SoCal Urban Wildlife Refuge Project. As the pandemic's effects increased, Project partners assessed their existing programs and developed plans to transition to virtual delivery.

Virtual delivery has been executed with increasing success throughout the 2020-2021 school year, and will likely continue, at least to some degree, into the future. Further, in a non-pandemic time, virtual delivery holds promise as a means for extending program reach and increasing targeted outcomes. Key Outcome data presented in this report suggest success in maintaining program quality and impact, despite the pivot to virtual delivery.

Given that these extraordinary program transition efforts and the experience of delivering virtual programs would yield innovation, it was important to document the pivot to virtual across participating programs. To accomplish this, detailed interviews with a key representative from each program were conducted. Transcribed interview results were then analyzed to uncover recurring strategies and approaches that aligned with successful transitions.

Strategies and Innovations Overview

Five common strategies, presented in the accompanying figure, were identified through the analysis of partner interview data. These powerful, frequently occurring strategies facilitated the successful shift from face-to-face to virtual delivery in response to the pandemic. Each of the strategies could be relevant to any program. However, partners underscore the importance of individual program context and needs dictating the "relevant and right" use of any strategy.

The following pages offer descriptions and recommendations specific to each identified strategy.

1. Live Experiences, Virtually

This strategy found partners maintaining their real-time presentations while shifting to online delivery. Most partners who successfully shifted their programming online created live, virtually delivered experiences for their participants—thus, essentially replacing their traditional in-person experiences. Whether the live session included a guided lesson or activity, an animal encounter, or a virtual tour of an outdoor space, organizations provided interactive learning opportunities that approached the in-person activities they would normally present.

Like the technologies employed, the live experiences conducted virtually varied by partner and included the following approaches:

- Live, virtual classroom visits
- Hosted activities or demonstrations
- Animal encounters
- Live, virtual field trips
- Guided lessons
- Google Hangouts and discussions

Program leaders described their use of diverse technologies such as Zoom, Google Meet, and Jam Boards to implement and enhance the educational lessons delivered to students and members of the community.

2. Social Media

Several partner organizations turned to social media to increase their reach in the virtual space. One organization described its social media efforts as "[using] social media as a portal to try to get people outside" to reinforce its ultimate mission of encouraging outdoor learning.

Facebook, Facebook Live, Facebook 360 Videos, and YouTube were cited as mediums the organizations employed to promote and broadcast their content—not only to their usual target participants, but to broader demographics. Based on interviews with program leaders, social media benefitted their work by increasing reach, engaging new audiences, and providing flexibility for viewers to experience content at their leisure.

Sandra Puentes (IH – Classroom Teacher)

You

11:34 AM | Ocean Connectors Presentation

Leave call

3. Flexible Content Access

The most common strategy employed in the move to virtual was the creation of pre-recorded video programming. Seven of the nine organizations successfully shifted to virtual programming with the use of pre-recorded lessons and video content. This strategy, though time consuming, provided teachers, students, and community members with seamless and flexible access to their educational materials. With the help of professional videographers, as well as the participation of program staff, these organizations found new and creative ways to build asynchronous video tours and guided lessons.

Pre-recorded curriculum included but was not limited to:
- Video tours
- Demonstrations and tutorials
- Guided classroom lessons
- Discussions with expert panelists
- Animal encounters

4. Supplemental Resources

In addition to video content and guided lessons, whether synchronous or asynchronous, several partner organizations provided additional resources to supplement and enhance current and future learning experiences for participants. The objectives of these sources varied from organization to organization. For example, one focused on engaging community members beyond the classroom, while another focused on creating evergreen content to supplement future in-person experiences.

- Quizzes
- Board games
- Articles and podcasts
- At-home kits and workbooks
- Supplemental curricula for teachers
- Written recommendations and guides
- Designated websites
- Digital journals
- "Top 10" lists and tips
- Apps

5. Community Engagement

As partner organizations searched for new and innovative ways to engage their student and teacher participants through technology in the classroom, they also successfully found new ways to engage with those beyond the classroom, including students' families and other community members.

Community engagement activities included the following:
- Video sessions and webinars with experts and wildlife professionals;
- Tutorials, best practices, and how-to guides; and,
- At home demonstrations and experiments.

In this new model, partners also moved beyond their traditional participants and brought nature experiences to even more members of their community—whether locally or nationally.

Pivot to Virtual: Examples of Strategies in Action

LA Audubon understands the importance of making nature "very real and accessible" to children in the highly urban area it serves. Thus, they made the best of their new virtual environment by utilizing live Zoom sessions to successfully engage students. Observation and teaching students to use drawings as a tool to become better observers, are priority program outcomes. In the shift to virtual modalities, in-person observation programming—in a classroom or outside on a school yard—pivoted to a "carefully paced, highly visual, guided lesson" that maintained the same goal of using drawing as a form of observation. Audubon instructors had students take photos "on their [iPhone], in their front yard" and then asked them to draw what they saw. Students connected to nature and realized that "even if you can't go outside, if you peek out your window, you [can experience nature]."

The Living Coast began designing a virtual field trip experience in 2020 and made its recorded video material available through YouTube. With an official launch in January 2021, they began conducting virtual field trip programs. Today's virtual field trip consists of a one hour-long Zoom session delivered live as participants hike the refuge or view an animal encounter—both made relevant through alignment to the standards and curriculum being taught in a participating class and grade. Teachers are also provided with "added resources" in the form of professionally produced videos shown before and after the live experience. The pre- and post-experience resources are provided to teachers who have the flexibility to "build it into their curriculum" as they see fit.

Outdoor Outreach exists to "connect youth to the transformative powers of the outdoors." Yet, COVID-19 forced the organization to "shift operations dramatically" and find new ways to "best show up for the youth they were engaging." They turned to the power of social media to find new ways to engage their participants. Using Facebook Live, program participants were able to connect with outdoor professionals, land managers, law makers, and athletes to discuss topics like outdoor equity and access. Use of social media allowed them to connect with speakers like Sophia Danenberg, the first African American and the first Black woman to climb to the summit of Mount Everest. In their quest to meet the "real-time needs of [their] youth community," the new virtual environment encouraged Outdoor Outreach to innovate in ways they "never would have."

Though the shift to virtual challenged the San Diego Zoo Wildlife Alliance and "required much more staff time," there were positive outcomes not available through the traditional program. For example, the move to virtual allowed the team to interact with students on multiple occasions, as opposed to a one-time field trip visit. Additionally, the shift to virtual allowed the team to broaden program reach beyond the southern California region. Professional development expanded to teachers in Hawaii, without the physical barriers of distance and travel. The team observed that while the shift to virtual "[did] not replace face to face," it was still successful and "opened up opportunities [and] helped break down some barriers."

SoCal Urban Wildlife Refuge Project Partners

To maximize the impact of programs focused on connecting urban communities with the great outdoors, the SoCal Urban Wildlife Refuge Project includes the San Diego National Wildlife Refuge Complex at the south end of the Southern California region, the greater Los Angeles area via the Los Angeles Urban Wildlife Refuge Partnership, and Ventura County and portions of Santa Barbara County through the participation of the Hopper Mountain National Wildlife Refuge Complex.

The SoCal Urban Wildlife Refuge Project funded the work of the following nature-based community organizations and programs during the reported program period.

Program Evaluation Methodology

During the 2020-2021 school year, we continued to field the Cross-Project Survey even as most Project partners pivoted to virtual programs. The survey instrument employed selected response questions to cover the following constructs:

- Cross-program content-related knowledge
- Affective domains such as beliefs and values
- Actions such as talking to others about nature and conservation behaviors

Fewer Project partners were able to implement the survey instrument due to the COVID-19 pandemic. Five of eleven Project partners provided pre- and post-survey data. It must be noted that respondent identifiers were not permitted. Therefore, depicted comparisons have been made using the complete pre- and post-survey datasets received from each Project partner. To support equivalency of pre- and post-survey groups to the extent possible, the analysis included only surveys where the number of post-surveys was at least 50% relative to pre-surveys. In addition, where school names were provided on survey responses, only school groups with both pre- and post-survey responses were included. A final sample of 1,749 pre-surveys and 1,256 post-surveys were analyzed.

To address varying sample sizes across programs, weights were applied to all individual responses by program. The weighted, analyzed sample has been adjusted to equally represent the six programs that conducted the pilot survey—regardless of the number of survey responses received.

This analysis approach provides a global view of the Project's outcomes and collective impact, assuming an equal number of individuals were assigned to each of the programs that collected data.

To conservatively predict the number of conversations reported in Finding 1, the following numbers of monthly conversations were assigned to each response category: Never = 0 conversations, Less Than Once a Month = 0 conversations, A Few Times a Month = 3 conversations, About Once a Week = 4 conversations, More Than Once a Week = 8 conversations. Weighted response percentages for each category, from pre- and post-program surveys, were then applied to the total number of participants to estimate total monthly conversation totals.

Demographic figures are estimates based on figures available to Project partners. For example, in some cases, available percentages represented schoolwide demographics, while program participants were limited to a single grade or grade band. In these and similar cases, percentages were applied proportionately to the participating population to compute estimates for key demographics reported here.

Amid one of the most trying times our country has faced in recent history, educators and community members such as those in the FWS partner organizations have risen to the occasion by adjusting to ever-changing and virtual environments. To continue best serving their students and community members, these organizations found new and exciting ways to bring engaging and cutting-edge curriculum to their participants, who consequently learned how to continue to appreciate nature—from the confines of their own homes.

In analyzing the Project partners' pivots to virtual program delivery, the program evaluation effort established an overall preservation of program outcomes previously only accomplished through "in-person" delivery. In addition, several key strategies critical to virtual program delivery were identified. Together, they can inform the work of future programs—when virtual instruction is required, and when virtual instruction can best complement traditional face-to-face programming. The innovations, born of lessons learned over the past year, hold promise as best practice that can be applied to blended program delivery.

Though the COVID-19 pandemic challenged these organizations in myriad ways, the resulting virtual programming that emerged from each unique program resulted in new strategies, new types of content, and new levels of accessibility for these organizations.