

**Public Libraries Advancing
Community Engagement (PLACE):
Final Report**

Submitted to:
Paula MacKinnon, CALIFA
Meighan Maloney, Dawson Media Group
Karen Brown, Dominican University

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PREPARED BY:
Karen Gareis, Ph.D.

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Executive Summary

The *Public Libraries Advancing Community Engagement (PLACE)* project (NOAA #NA15SEC0080008) provided librarians in rural and under-resourced urban areas with professional development and paired them with NOAA/NWS scientists to provide adult programming on adaptation planning and climate resilience. Programs used popular books and human interest videos to stimulate discussion and critical thinking, and attendees were introduced to NOAA's Climate Resilience Toolkit, with the aim of enhancing environmental literacy specific to the local geography, vulnerabilities, and threats.

Findings

- PLACE librarians were quite experienced with adult programming, programming with partners, and participating in professional development.
- PLACE programs drew audiences differing somewhat from those at typical adult programs, including drawing more men, younger people, and people interested in science or climate.
- About a third of libraries held additional PLACE-related events beyond the Change, Community, and Strategy events.
- The most commonly presented Climate Resilience Toolkit resources were the *State of the Climate* report, the Sea Level Rise Viewer, and the Seasonal Time Series tool.
- Librarians found the PLACE PD very effective, including in helping them understand enough about adaptation planning and climate resilience to implement PLACE programming.
- Three-quarters of librarians rated their NOAA/NWS scientist partnerships as *very* or *extremely* successful, and just over a quarter plan to work with the scientists again.
- A third of librarians also involved community-level risk planners, resilience coordinators, or the like in their PLACE programming.
- Librarians rated the PLACE programming as *successful*, particularly in engaging attendees.
- Three-quarters of attendees rated PLACE programs as *very good* or *excellent*; those who had attended more PLACE events were especially favorably disposed.
- The majority of librarians felt *very* or *extremely* successful in engaging audiences, supporting audience learning, and coordinating/planning programs.
- Smaller numbers of librarians felt *very* or *extremely* successful in supporting Resilience Toolkit use and helping patrons find information about adaptation and resilience.
- Librarians reported extremely large gains in awareness, knowledge, and understanding, particularly in knowledge of — and ability to support patrons in using — climate resilience tools, awareness of local resilience efforts, and likelihood of involving their libraries in those efforts.
- Librarian gains in understanding climate change effects on families and communities were smaller, but these were areas where librarians had the greatest pre-existing knowledge.
- Three-quarters of librarians planned future climate-related events or activities beyond PLACE.
- The majority of attendees reported that after attending PLACE events, they were more knowledgeable about adaptation planning, climate resilience, the Resilience Toolkit, and local community resilience efforts.

- Audience knowledge ratings were fairly modest after PLACE, but compared to baseline knowledge levels, the gains were striking.
- Audiences gave fairly high ratings to Resilience Toolkit resources, particularly in terms of their usefulness and ease of use.
- The majority of attendees reported increased concern about climate threats and their community's resilience planning as a result of attending PLACE events.
- About half of attendees reported gains in self- and community efficacy around climate resilience as a result of attending PLACE events, though a very small number reported *lowered* efficacy.
- The majority of PLACE attendees reported greater intentions to act individually or collectively to build climate resilience in their communities as a result of attending PLACE events.

Recommendations

- The PLACE programming model has a number of components that are challenging to fit into 90 minutes. GRG recommends considering including a brief overview of the NOAA tools, with a more in-depth, hands-on workshop as a follow-up for interested participants.
- GRG recommends that the PLACE team consider involving local science partners instead of faraway NOAA/NWS science partners. Librarians could be provided additional training in how to locate and establish ongoing partnerships with local scientists.
- GRG recommends providing some brief training and orientation to scientist partners in order to engage them and to clarify their role and the expectations of them.
- GRG recommends that the PLACE team provide additional training for librarians in building ongoing relationships with local groups, organizations, and advocates who are doing adaptation planning and resilience work to sustain the momentum created by the programming.

Introduction

The PLACE Project

The *Public Libraries Advancing Community Engagement (PLACE)* project built on the idea that librarians can play a significant role in increasing a community's climate resiliency — the ability to recover quickly from or plan for and anticipate weather impacts. PLACE paired librarians in rural and under-resourced urban communities across the U.S. with local NOAA/NWS scientists to engage adults in a series of public library programs tailored to the local geography. The programs used popular books and human interest videos to stimulate discussion and critical thinking about resilient responses to environmental changes and extreme weather events, as well as introducing relevant NOAA tools and resources for data access and resiliency planning. For both audience members and librarians, PLACE aimed to enhance environmental literacy specific to their own region's geography, vulnerabilities, and threats, toward the longer-term goal of helping to build local resilience. PLACE was funded by the National Oceanic and Atmospheric Administration (NOAA #NA15SEC0080008), working in partnership with the National Weather Service, Califa Library Group, Dawson Media Group, and Goodman Research Group.

PLACE Programming

PLACE utilized a “book club meets science café” model, as developed in PTL, a prior NSF-funded project (NSF ISE #DRL-1010577). PLACE program attendees read popular fiction and non-fiction books and watched human interest videos about real people developing resilient strategies for facing climate challenges, and participated in exploration and discussion co-facilitated by a librarian and a NOAA/NWS scientist.

The “Pushing the Limits” (PTL) program videos range from 13:37-17:19 minutes long. The topics are:

- **Change:** Asks viewers to consider how climate change and extreme weather may affect their local or regional economy and jobs. One way to adjust to these environmental changes is by seeking a career in a sustainable field, or — even better — in a field that builds resiliency and protects the environment. Discussion explores ways for communities to develop innovative, solution-oriented ideas for building resiliency.
- **Community:** Explores how communities are adapting to more frequent and volatile fires caused by rising temperatures and drought conditions, and how the effects of those fires can reach far beyond the forests and into urban areas hundreds of miles away. Discussion develops ideas about how families and communities can be better prepared for the future by working together.
- **Strategy:** Shares adaptive strategies for managing environmental challenges like extreme heat and water scarcity that affect viewers' homes and communities. Discussion generates ideas that can take root in viewers' backyards and how they can find partners, grants, and long-term opportunities to build resiliency and adaptation strategies.

Resources for Librarians

PLACE librarians received \$1,000 for programming expenses, participated in an orientation webinar, and were given access to a website (www.pushingthelimits.org) with PD and programming resources and an online peer-to-peer community. The NOAA Office of Education identified and recruited a relatively local NOAA/NWS scientist partner for each library to work with librarians to finalize book selections, customize programs to respond to that community's interests and needs, and help to infuse NOAA data and research through the discussion.

The online PD includes videos and resources designed to help librarians gain foundational knowledge of climate change, community adaptation, and building resilience; explore and use NOAA data, tools, and related resources; and expand their understanding of the emerging role of libraries as a center for promoting environmental literacy and community engagement around climate change issues.

The PD was rolled out on March 27, 2017; each of the following 6 units was live for 2 weeks:

1. Supporting Environmental Literacy in Your Library
2. Climate Change, Extreme Weather Events, and Their Impact on Your Community
3. Your Library as a Community Resource During Times of Crisis
4. Planning and Collaborating to Promote Your Programs
5. Facilitating Engaging Program Discussions
6. Building Community Resilience through Library Programs

GRG's Evaluation of PLACE

Goodman Research Group, Inc. (GRG), a Cambridge, Massachusetts research firm with extensive experience evaluating informal science education projects — including multi-media projects, climate change education, and library-based STEM education programs — conducted external project monitoring and formative and summative evaluation for the PLACE project:

- GRG's external monitoring involved tracking and reporting on the project's delivery of promised project components and achievement of performance benchmarks, including outputs, objectives, and outcomes.
- As part of the process of developing the professional development (PD) materials, GRG conducted formative evaluation on the proposed PD content and format from experienced librarians.
- GRG's summative evaluation assessed the effectiveness of the project in meeting its goals for participating librarians and PLACE program audiences.

GRG’s evaluation activities and timeline are summarized in Table 1 below. Librarian outcomes were assessed using an online survey administered after all PLACE programming was complete, using retrospective pre-test (RPT) items to estimate baseline knowledge. To assess audience outcomes, a subset of libraries was randomly selected to administer anonymous paper-and-pencil audience surveys before the start of Event #1 (baseline data) and after the end of Event #3 (post-programming data). Baseline and post-programming data were compared in the aggregate¹. Audience members were free to attend any or all events at their libraries, so by the end of Event #3, survey respondents could have attended anywhere between 1 and 3 PLACE programs. Where appropriate, we assessed the impact of number of events attended on audience outcomes.

Table 1. Evaluation Activities and Timeline

	Date	N	Response Rate
<i>Formative Evaluation (Appendix A)</i>			
Draft Materials Review	January 20, 2017	4	N/A
<i>Librarians (Appendix B)</i>			
Post-Programming Survey	November 14-December 4, 2017	38/41 ^a	93%
<i>Audiences^b (Appendix C)</i>			
Event #1 Survey	August 5-October 14, 2017	193 (20 libraries)	<i>Unknown</i>
Event #3 Survey	October 12 – July 10, 2017	163 (19 libraries)	<i>Unknown</i>

^aOf the original 44 libraries, one closed, one withdrew, and one delayed its programming past the evaluation endpoint, for a total of 41.

^bOf the original 25 randomly selected libraries, one closed, one delayed programming past the evaluation endpoint, and one did not return any audience surveys, for a total of 22 in the subsample. 17 libraries provided audience surveys from both Event #1 and Event #3.

¹ Surveys were anonymous, so baseline and post-programming responses were compared in the aggregate rather than as individual pre-post change scores.

Formative Evaluation Findings

The PLACE program was modeled on a prior NSF-funded project, *Pushing the Limits (PTL): Making Sense of Science* (NSF ISE #DRL-1010577). In the formative evaluation, GRG sought feedback from 4 past PTL participants on the PLACE materials, leveraging their expertise as experienced users of similar online PD materials and providers of similar book- and video-based adult STEM programming co-facilitated with science content partners.

The 4 librarians reviewed a rough draft of the website with the first 4 PD units and all 3 program videos. All videos were rough cuts with scratch voiceovers. Reviewers were asked to rate the clarity, usefulness, and likely effectiveness of the PD materials and whether they had any suggestions for improvement.

Overall, the librarians rated the materials — especially the program videos — very favorably. They found the subjects and their stories engaging, and appreciated that the stories were flexible enough to allow a variety of topics and angles for discussion.

Based on suggestions from the reviewers, the PLACE team added additional information to PD Unit 1 to further disambiguate the constructs of resilience, adaptation, mitigation, and sustainability. They also worked with NOAA staff to re-record the video demonstrations of the NOAA tools to improve the technical quality.

Implementation of PLACE

PLACE Librarians

The PLACE team solicited applications from public libraries located in rural² and under-resourced urban³ communities. Librarians with some prior experience with STEM-related programming were prioritized, though no specific prior content knowledge was assumed. Of 121 applicants, 57 were judged most suitable to participate; of these, 44⁴ were successfully paired with a NOAA/NWS scientist.

PLACE librarians were quite experienced with adult programming in a variety of content areas, partnering with other professionals to present programming, and seeking out professional development opportunities:

- 92% had held at least one adult program in the past year, and 69% had held more than 10.

² The federal government uses many definitions of the term “rural.” The PLACE team wanted to use a continuum that illustrated a library’s access to resources, so loosely defined “rural” as a population of less than 25,000, a population density of less than 1,000 people per square mile, and a distance from an urban area of more than 25 miles.

³ “Urban” is defined as a geographic area of 50,000 or more people with a population density of at least 1,000 people per square mile. “Under-resourced” indicates an area lacking access to any of the following: sufficient funding for infrastructure, public schools, and libraries; resources such as fresh food, stores, internet; local businesses; community volunteers; and healthcare.

⁴ Of the original 44 libraries, one closed, one withdrew, and one delayed its programming past the evaluation endpoint. Of the remaining 41, 3 librarians did not complete surveys, so this report includes findings from up to 38 libraries.

- 69% had done adult programming in partnership with a non-librarian professional⁵.
- 95% had participated in at least one PD program for librarians in the last 2 years, and 38% had participated in more than 5 such programs.

PLACE Audiences

Based on results from the subset of libraries that surveyed audiences, on average, 9 people attended each PLACE program, with a range from 3 to 23 people. Librarians seemed pleased with these figures; for example:

“Most of our adult events are not well attended. This drew in 8-9 adults for each session and brought faces we had never seen before. Normally it is children’s programming that has success at our branch, so I’m really pleased with this number.”

As with adult library programming in general, audiences skewed female (76%) and older (57% 65 or older; 30% 50-64), most librarians (89%) reported that PLACE audiences were less skewed than usual, and that they had been at least *somewhat successful* in drawing new audiences, including more men, more younger people, and more people who were interested in science and/or in climate issues. For example,

“We had a much more even gender split that is usual, and attracted graduate students.”

“The program seemed to attract more people in their 20s and 30s than other adult programs generally do. Locals who are passionate about climate change attended this program series.”

PLACE audiences’ pre-existing interest in climate issues was also borne out on the audience surveys, with 65% reporting being *very* or *extremely* concerned about climate-related threats in their area at baseline, before the beginning of Event #1.

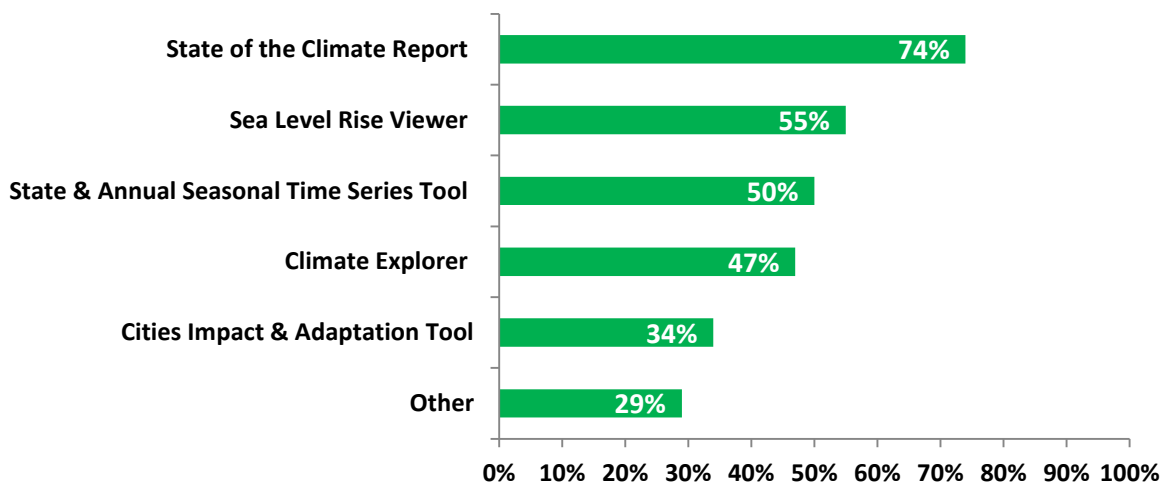
⁵ Note that much of this programming did not appear to be science-based; see Appendix B, Q23.

PLACE Programming

As noted earlier, PLACE programming consisted of 3 programs with the themes Change, Community, and Strategy. About a third (32%) held, sponsored, or publicized additional PLACE-related events, including introductory sessions, invited guests from local agencies or advocacy groups, screenings, author talks, and “how-to” sessions on topics such as preparedness, solar energy, rain barrel workshops, and homeowner landscaping.

The most commonly selected books for each topic were *Zeitoun* by David Eggers for Change, *Isaac’s Storm* by Erik Larson for Community, and *The Water Knife* by Paolo Bacigalupi for Strategy. The majority of librarians introduced and discussed the State of the Climate report, as shown in the figure below. Half or more presented the Sea Level Rise Viewer and the State and Annual Seasonal Time Series tool during their PLACE programming.

Figure 1. Resilience Toolkit Resources Used During PLACE Programming



N=37

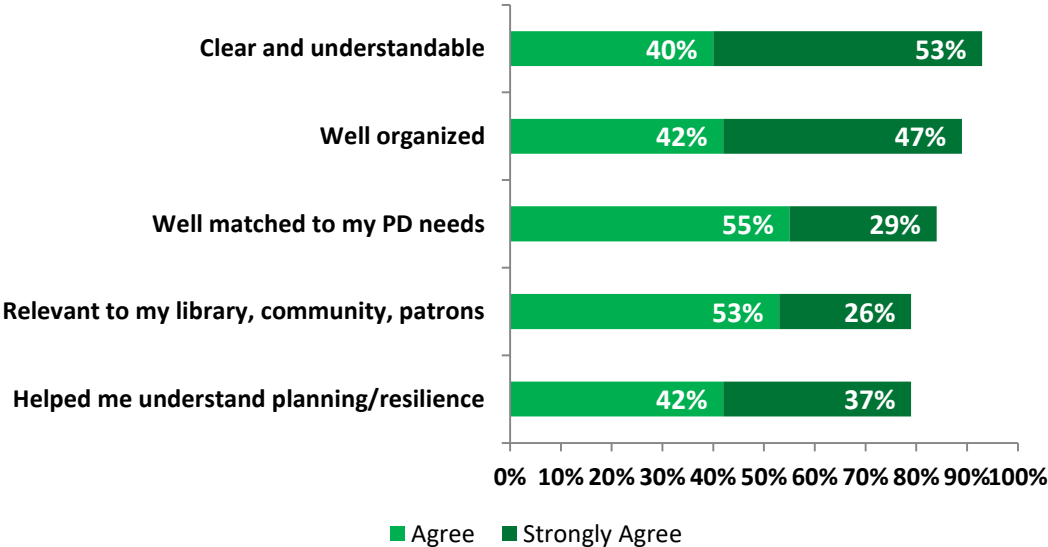
Note: Bars represent percentages who reported presenting the resource.

Assessments of PLACE Project

Effectiveness of Professional Development

Librarians gave high ratings to the PLACE PD, as shown in the figure below, with three-quarters (76%) *agreeing* or *strongly agreeing* with all items below. In terms of specific content, most librarians (79%) agreed the PD had helped them understand enough about adaptation planning and climate resilience to co-facilitate programs with their science partners. However, as shown later in this report (see Figure 6), it appears that some librarians could have used more training on the Resilience Toolkit.

Figure 2. Ratings of PLACE Professional Development



N=38

Response scale: 1=strongly disagree, 2=disagree, 3=neither agree nor disagree, 4=agree, 5=strongly agree

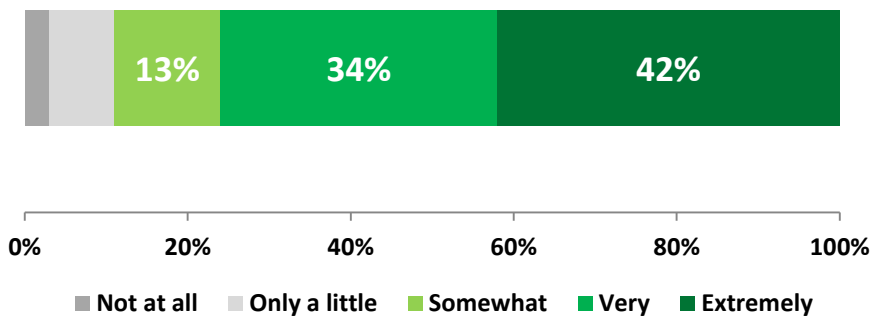
Success of Partnership Model

Fully 76% of librarians rated their partnerships with the NOAA/NWS scientists as *very* or *extremely* successful, as shown in the figure below. Comments included the following:

“Having an expert in the room was amazing. Our audience was thrilled when [our partner] introduced IRMA to us, in person! I will encourage partnering with scientists going forward. The opportunity to ask direct questions was truly wonderful.”

“My NOAA partner was extremely helpful throughout the process and very invested in each of the programs. She came very prepared to share information and said she will remain a resource after the programs.”

Figure 3. Success of Partnership with NOAA/NWS Scientist



N=38

Just over a quarter of librarians (26%) plan to work with their scientist partners again. For those who do not plan to do so, reasons were primarily logistical; for example, the science partners were extremely busy, or had to travel long distances to reach the libraries.

There were, however, a few (n=4, or 11%) partnerships described as *not at all* or *only a little* successful, largely due to unresponsiveness, especially during the planning phase. Worse, one science partner brought data purporting to prove that climate change is not occurring locally, seriously undermining the PLACE programming.

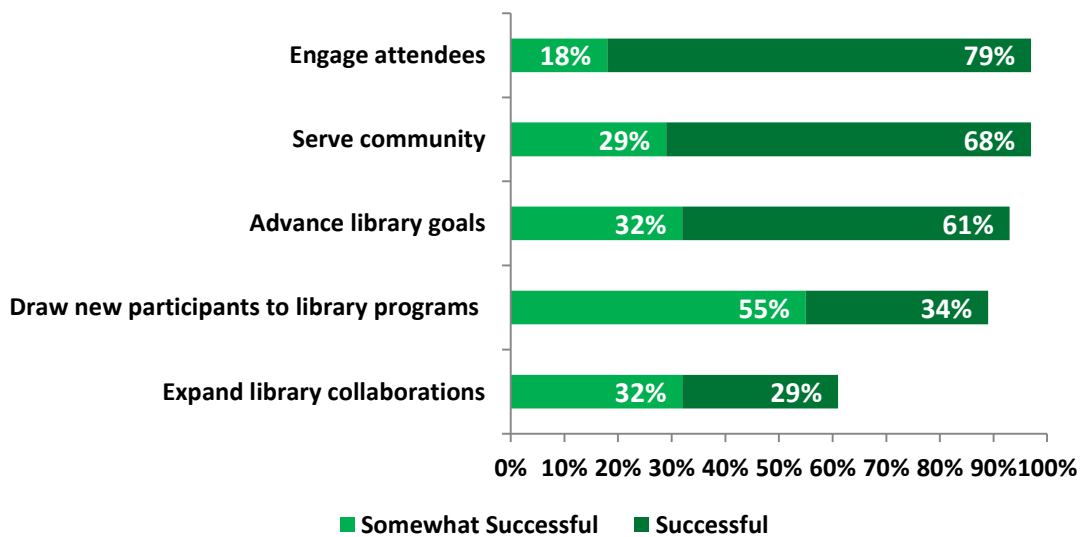
Aside from the science partners, 32% of librarians also involved community-level risk planners, resilience coordinators, or similar in the PLACE programming.

Assessments of Programming

Librarians rated the PLACE programming as *successful* on a number of fronts, particularly in engaging attendees. As one librarian noted,

“They were more serious and more interested in discussion. Usually those who attend our programs want me or the speaker to ‘put on the program,’ but this was much more collaborative.”

Figure 4. Success of PLACE Programming at Meeting Library Goals

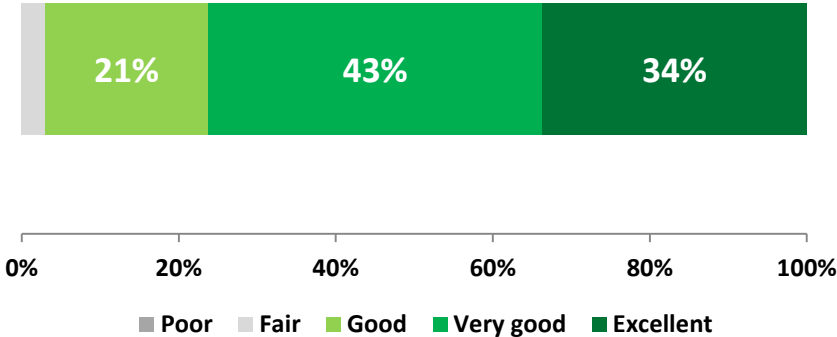


N=38

Response scale: 1=unsuccessful, 2=somewhat unsuccessful, 3=neither successful nor unsuccessful, 4=somewhat successful, 5=successful

Results from the subset of audience-survey libraries were also quite favorable (see figure below). This was especially true of those who attended a larger number of PLACE events⁶. This may indicate that those who attend more PLACE events get more out of them (although it may also reflect a tendency of respondents who are favorably disposed to choose to attend more PLACE events).

Figure 5. Audience Rating of PLACE Events

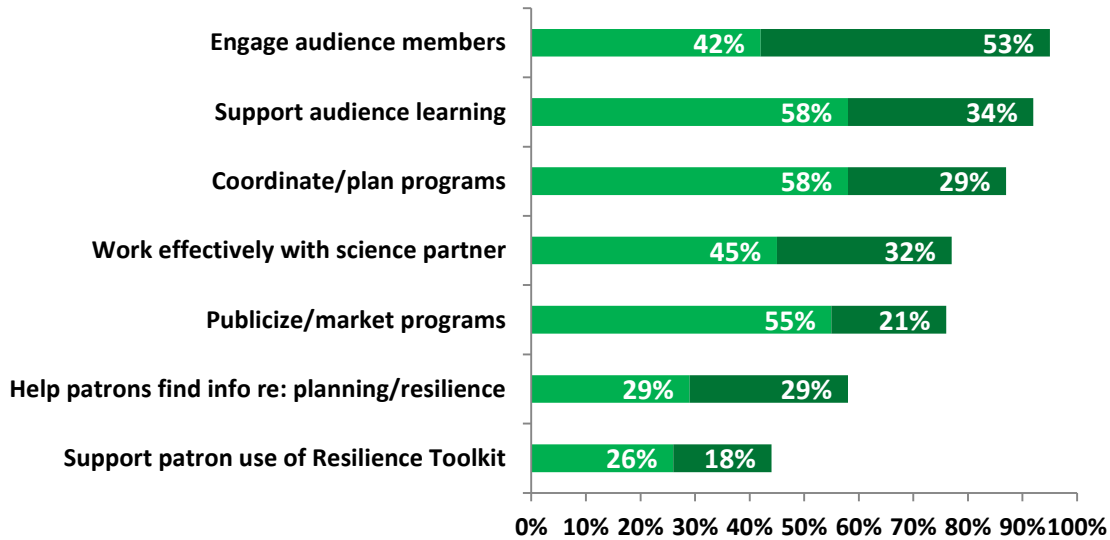


N=150

⁶ After Event #3, respondents who had attended more PLACE events gave statistically significantly higher ratings to Event #3; $r = .204$; $p < .05$.

As shown in the figure below, in terms of their own performance, the greatest number of librarians felt *very* or *extremely* successful in engaging audiences, supporting audience learning, and coordinating/planning the programs, as befits their status as highly experienced program providers.

Figure 6. Librarian Perceptions of Own Success



N=38

Response scale: 1=not at all successful, 2=only a little unsuccessful, 3=somewhat successful, 4=very successful, 5=extremely successful

The fewest felt *very* or *extremely* successful in supporting Resilience Toolkit use and helping patrons find information about adaptation and resilience. As one noted,

“[I]t would be helpful to include the use of climate tools in the video programming that we watched. Bringing in some of the tools during or after the video to show how they can be used would be effective. [Neither] myself nor my weather partner [had] ever used some of the tools, and so we were hesitant to show them to participants. We gave them the links, but said it may be a lot of information to digest.”

However, some librarians may have felt less successful at supporting patron Toolkit use for other reasons; for example, because they ran out of time during the programs, or because many patrons did not follow up with the tools.

Summative Evaluation Findings

Librarian Outcomes

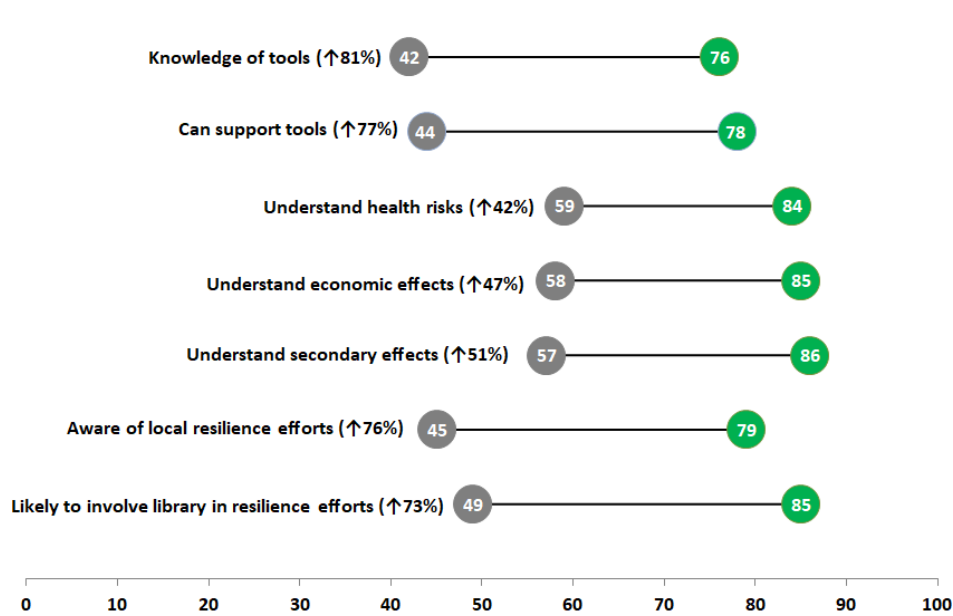
Librarian Awareness, Knowledge, and Understanding

Librarians reported extremely large gains in awareness, knowledge, and understanding, as shown in the figure below. These gains were particularly dramatic, on the order of 70% or more, for:

- Knowledge about climate resilience tools and resources and ability to support patrons in using these tools
- Awareness of local community resilience building efforts and likelihood of involving their libraries in those efforts

There were smaller gains, ranging from 42-51%, in understanding of how climate conditions, including extreme weather events, may affect families and communities, but these were the areas in which librarians started out with the greatest knowledge.

Figure 7. Librarian Self-Ratings of Awareness, Knowledge, and Understanding



N=37-38

Response scale: How would you rate yourself in the following areas on a scale from 0-100

Note: Grey dots show retrospective pre-test ratings; green dots show ratings after all PD and programming have been completed. All means are significantly different at the $p < .01$ level.

Librarian Plans for Future Programming

Most encouragingly, 76% of librarians had plans to hold, sponsor, or publicize future climate-related events or activities after the third PLACE Event, including trainings and talks, continued readings and discussions, organizing local projects, citizen science activities, supporting an advisory group, facilitating community advocacy efforts, and more. Some notable plans are as follows:

“A new advisory group established itself as the result of PTL. We plan to support that group with climate-related program offerings.”

“The citizen's Climate Lobby will come back to do a full program.”

“We are planning to invite the state climatology, the local / county people in charge of planning, someone from the Iowa flood mitigation project as a start.”

“We have already scheduled, with our NOAA science partner, a ‘climate conversation’ ... [to] help community members understand their personal strategies a bit more as well as ways in which they can approach local governing bodies about policy change ... [T]his event will be an open invitation to those who participated in the book club as well as our city's environmental committee and our City Council.”

“We have an upcoming maps symposium, part of which will examine water level change over time in the area surrounding the St Johns River and how that change affects development, past, present, and future.”

“We would like to build off of discussion about how to let community members know about their local emergency operations plans, either through one-time programming or as liaison between town and residents.”

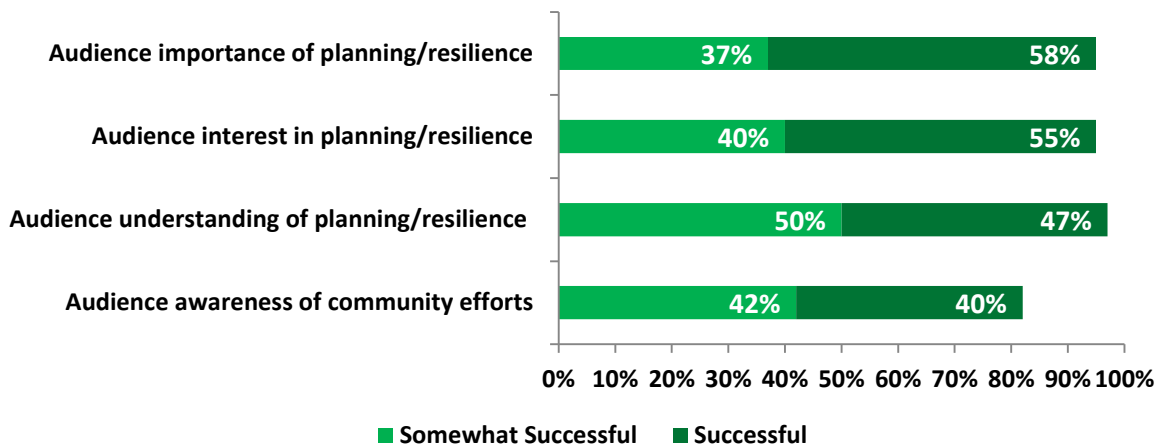
“We would like to work with our partner libraries and other community stakeholders to put together a climate change toolbox or resource kit that community members can access for information and action.”

Audience Outcomes

Audience Awareness, Knowledge, and Understanding

Librarians at all libraries rated the PLACE programs as at least *somewhat successful* in helping audiences see the importance of, piquing their interest in, and enhancing their understanding of adaptation planning and climate resilience, as well as promoting awareness of local community efforts to adapt and build climate resilience, as shown in the figure below.

Figure 8. Success of PLACE Programming in Affecting Audience Attitudes



N=38

Response scale: 1=unsuccessful, 2=somewhat unsuccessful, 3=neither successful nor unsuccessful, 4=somewhat successful, 5=successful

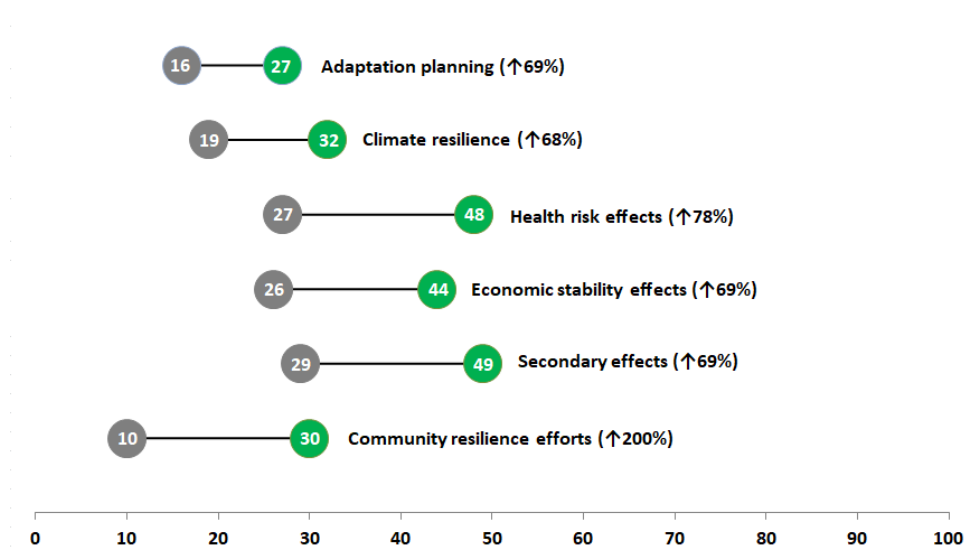
The majority of attendees self-reported changes in their knowledge and awareness as a result of attending PLACE events; specifically:

- 73% said they are more knowledgeable about adaptation planning and climate resilience.
- 63% said they are more knowledgeable about the Climate Resilience Toolkit resources from that day's event.
- 66% said they are more aware of existing efforts to adapt and build climate resilience in their communities.

A somewhat more objective way to assess knowledge gains is to ask groups to rate their current knowledge at two different time points, one before attending the programming and the other afterwards. The measure is still a self report, but without the potential demand bias of asking whether knowledge has changed as a result of programming.

As shown in the figure below, attendees surveyed after Event #3 reported being better informed about adaptation planning, climate resilience, the ways that climate conditions (including extreme weather events) may affect families and communities, and local resilience efforts than were attendees surveyed before Event #1. All of these differences were statistically significant. Post-programming self-ratings were fairly modest, but considering where audience members began, the gains were striking. This was especially true for awareness of local resilience efforts (200%), but other gains were still quite large, ranging from 68-78%. There did not appear to be additional knowledge gains for those who attended a larger number of PLACE events.

Figure 9. Audience Self-Ratings of Awareness, Knowledge, and Understanding



N=158-192

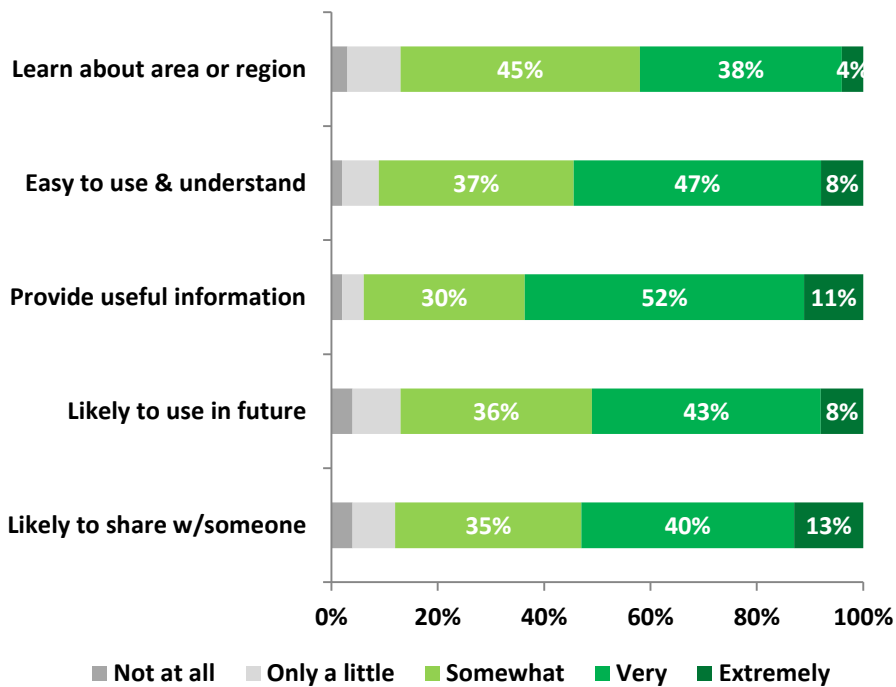
Response scale: How well informed are you about these topics on a scale from 0-100

Note: Grey dots show baseline (before Event #1) ratings; green dots show post-programming (after Event #3) ratings. All means are significantly different in the aggregate at the $p < .01$ level.

Audience Ratings of Resilience Toolkit Resources

Audiences gave fairly high ratings to the Resilience Toolkit resources presented to them, particularly in terms of their providing useful information and being easy to use and understand (see figure below). Attendees were asked to give overall ratings of whatever set of resources was presented at that day’s program, and attendees at programs that presented more resources gave the set higher ratings of usefulness, ease of use, and helpfulness in learning about their area or region⁷.

Figure 10. Audience Ratings of Resilience Tools Presented

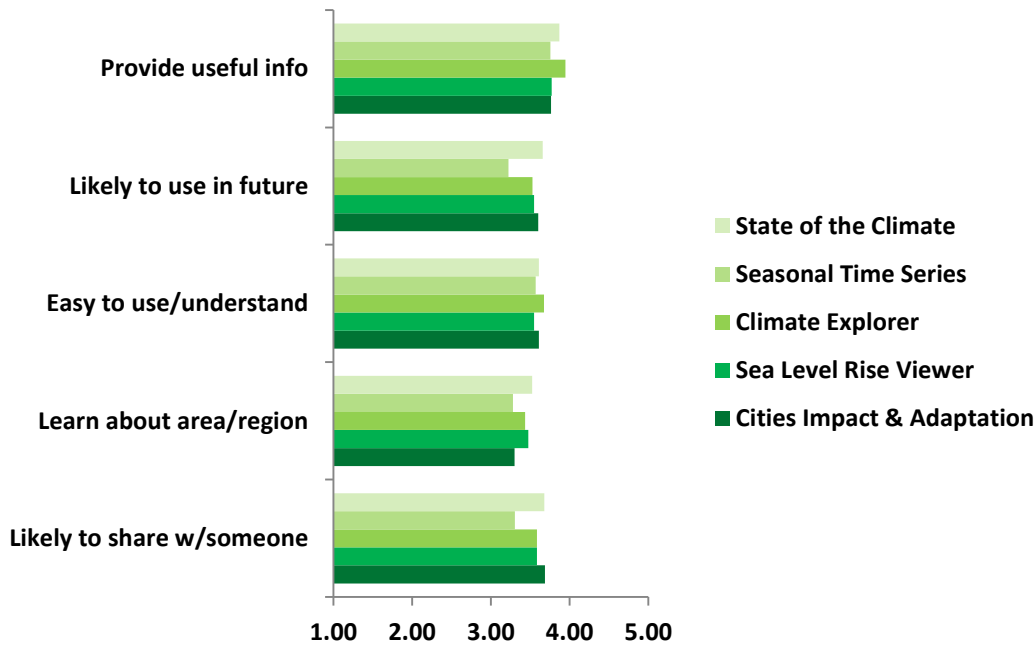


N=114-122

⁷ After Event #3, there were statistically significant correlations between the number of resources presented and learning ($r = .542; p < .01$) and usefulness ($r = .614; p < .01$), as well as a marginally significant correlation between number of resources and ease of use ($r = .390; p < .10$)

Audience ratings did not vary much by resource, as shown in the figure below.

Figure 11. Audience Ratings by Resilience Tool



N=53-57 for State of the Climate and Sea Level Rise Viewer, 36-39 for Seasonal Time Series and Climate Explorer, and 15-20 for Cities Impact & Adaptation

Response scale: 1=not at all, 2=only a little, 3=somewhat, 4=very, 5=extremely

Note: Bars show means separated by whether each tool was presented at that day's program.

Audience Attitudes about Climate Issues

The majority of attendees reported changes in their level of concern about climate threats and resilience planning as a result of attending PLACE events; specifically:

- 65% said they are more concerned about climate-related threats.
- 69% said they are more concerned about their community's adaptation planning and community resilience-building efforts.

About half of attendees reported gains in self- and community efficacy around resilience as a result of attending PLACE events:

- 53% said they are more confident they/their families can act in ways that will increase their community's resilience to climate-related threats.
- 50% said they are more confident their community can act to increase resilience to climate-related threats.

A small number of attendees reported *lowered* self- and community efficacy as a result of attending PLACE events (4% and 11%, respectively).

Audience Behavioral Intentions

The majority of attendees reported greater intentions to act individually or collectively to build climate resilience as a result of attending PLACE events:

- 65% said they are more likely to develop and implement personal strategies to adapt and build climate resilience in their homes, properties, or businesses.
 - 20% reported already having done so, and 33% reported planning to do so within the next few months.
- 71% said they are more likely to seek information about their community's efforts to adapt and build climate resilience.
 - 19% reported already having done so, and 58% reported planning to do so within the next few months.
- 58% said they are more likely to get involved in community efforts to adapt and build climate resilience.
 - 37% reported already having done so, and 43% reported planning to do so within the next few months.

Summary

PLACE Implementation

- PLACE librarians were quite experienced with adult programming in a variety of content areas, partnering with other professionals to present programming, and seeking out professional development opportunities.
- PLACE programs drew audiences, and these audiences differed somewhat from those at typical adult programs.
 - PLACE programs drew an average of 9 attendees, with a range from 3 to 23 people.
 - Audiences skewed female (76%) and older (57% 65 or older; 30% 50-64), but at most libraries, audiences were less skewed than usual.
 - Most librarians (89%) found PLACE programs at least *somewhat successful* in drawing new audiences, including more men, more younger people, and more people who were interested in science and/or in climate issues.
 - About two-thirds (65%) of PLACE attendees were *very* or *extremely* concerned about climate-related threats in their area even before Event #1.
- About a third of libraries (32%) held, sponsored, or publicized additional PLACE-related events, including introductory sessions, invited guests from local agencies or advocacy groups, screenings, author talks, and “how-to” sessions.
- Popular book choices included *Zeitoun* by David Eggers, *Isaac’s Storm* by Erik Larson, and *The Water Knife* by Paolo Bacigalupi.
- The majority of librarians presented the State of the Climate report to PLACE audiences, and half or more presented the Sea Level Rise Viewer and the Seasonal Time Series tool.

Assessments of PLACE

- Librarians found the PLACE PD very effective, especially in its clarity and organization. Most (79%) also agreed the training helped them understand enough about adaptation planning and climate resilience to co-facilitate PLACE programs.
 - Some librarians would have benefited from more training on the Resilience Toolkit.
- Three-quarters of librarians (76%) rated their NOAA/NWS scientist partnerships as *very* or *extremely* successful, and just over a quarter (26%) plan to work with the scientists again.
 - A few partnerships (11%) were rated as *not at all* or *only a little* successful, largely due to unresponsiveness.
 - In addition to science partners, 32% of librarians also involved community-level risk planners, resilience coordinators, or similar in the PLACE programming.
- Librarians rated the PLACE programming as *successful* on a number of fronts, particularly in engaging attendees and serving their communities.

- Three-quarters of attendees (77%) rated PLACE programs as *very good* or *excellent*; those who had attended more PLACE events were especially positive.
- In terms of their own performance, the greatest number of librarians felt *very* or *extremely* successful in engaging audiences, supporting audience learning, and coordinating/planning the programs, as befits their status as highly experienced program providers.
 - The fewest felt *very* or *extremely* successful in supporting Resilience Toolkit use and helping patrons find information about adaptation and resilience, whether because they did not understand them well or for other reasons.

Librarian Outcomes

- Librarians reported extremely large gains in awareness, knowledge, and understanding, particularly in knowledge of (and ability to support patrons in using) climate resilience tools, awareness of local resilience efforts, and likelihood of involving their libraries in those efforts.
 - Gains were smaller for understanding of how climate conditions may affect families and communities, but these were areas in which librarians started with the greatest pre-existing knowledge.
- Three-quarters of the librarians (76%) had plans to hold, sponsor, or publicize future climate-related events or activities, including trainings and talks, readings and discussions, organizing local projects, citizen science activities, facilitating community advocacy efforts, and more.

Audience Outcomes

- Librarians reported that the PLACE programs were at least *somewhat successful* in engaging and teaching audiences about adaptation planning and climate resilience.
 - Audience members agreed, with majorities reporting that after attending PLACE events, they were more knowledgeable about these topics and about the Climate Resilience Toolkit, as well as saying they had gained awareness of existing community resilience efforts.
 - Audience self-ratings of their post-PLACE knowledge were fairly modest, but considering their baseline level of knowledge, the gains were striking, ranging from 68-200%.
- Audiences gave fairly high ratings to Resilience Toolkit resources, particularly in terms of their providing useful information and being easy to use and understand.
- The majority of attendees reported increased concern about climate threats and their community's resilience planning as a result of attending PLACE events.
- About half of attendees reported gains in self- and community efficacy around climate resilience as a result of attending PLACE events. A small number (4-11%) reported *lowered* self- and community efficacy.
- The majority of PLACE attendees (58-71%) reported greater intentions to act individually or collectively to build climate resilience in their local communities as a result of attending PLACE events.

Recommendations

- Librarians noted that it was difficult to fit discussion of the book, the video, the NOAA tools, and the adaptation planning and climate resilience content into a single 90-minute session. In fact, a few librarians mentioned skipping videos or NOAA tools due to time constraints. GRG recommends reconsidering the programming model. Perhaps the main event could include the book, video, and content discussion, with a very brief overview of the NOAA tools. Interested participants could be invited to attend a more in-depth, hands-on workshop on the tools as a follow-up.
- Several librarians mentioned that their NOAA/NWS scientist partners had to travel long distances to reach them, and that some scientists were disappointed at the relatively small turnout that typifies many rural library programs. GRG recommends that the PLACE team consider involving local science partners instead. It would also be helpful to provide librarians with additional training on how to locate, vet, and establish ongoing partnerships with local scientists.
- GRG recommends providing some brief training and orientation to scientist partners in order to engage them and to clarify expectations about their role in planning the programming, tailoring it to the local geography and climate threats, presenting information at the appropriate lay level, and co-facilitating discussions.
- Librarians reported that participants were very engaged around climate issues, and a number were interested in ways to take action and to get involved in local collective efforts around adaptation and resilience planning. Librarians were not always sure how to support such involvement beyond presenting information and resources. GRG recommends that the PLACE team flesh out the training for librarians in how to find and build ongoing relationships with local groups, organizations, and advocates who are doing this work.

List of Appendices

Appendix A: Formative Evaluation Findings

Appendix B: Annotated Librarian Survey

Appendix C: Annotated Audience Surveys

Goodman Research Group, Inc.

Main Office

929 Massachusetts Avenue, Suite 02A
Cambridge, Massachusetts 02139

Tel: (617) 491-7033

Fax: (617) 864-2399

info@grginc.com

www.grginc.com

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