

Global, Local, Coastal Final Evaluation Report

**Global, Local, Coastal:
Preparing the Next Generation for a Changing Planet**

Final Evaluation Report

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1. Introduction

The changing climate poses a wide range of socio-economic and ecological challenges. Communities that face these challenges need knowledge about the causes and consequences of the climatic changes in order to manage the emerging risks. Groundwork Hudson Valley (GWHV) has engaged a particularly important component of at-risk communities, low-income youth in school districts that have limited resources, in its project *Global, Local, Coastal: Preparing the Next Generation for a Changing Planet*. The project was designed to prepare the participants to play active roles in mitigating climate change and helping their communities to adapt to a rapidly changing environment. This report evaluates the project's achievements in three areas: advancing the students' knowledge, influencing their attitudes toward actions that can mitigate climate change and improve adaptation, and motivating the students to act.

Global, Local, Coastal, funded by the National Oceanic and Atmospheric Administration's (NOAA) Environmental Literacy Program, engaged 544 high school students, from the Yonkers Public School system (YPS), in Yonkers, NY, in an educational program that addresses the causes and impacts of climate change as well as mitigation and adaptation strategies. The unique curriculum integrates the capacities and materials available at three environmental education centers in Yonkers: Groundwork Hudson Valley's Science Barge and EcoHouse facilities, and project partner Sarah Lawrence College's Center for the Urban River at Beczak (CURB). The project also aimed to have a broader impact on residents in the *project region* through public education modules, and *beyond the Yonkers area*, through distance learning developed by education directors and staff at Groundwork Hudson Valley and CURB.

The evaluation assesses the educational effectiveness of the program in the two school years during which GWHV implemented the curriculum in YPS high schools, 2016/17 and 2017/18. A different cohort of students participated in the program in each year, and the curriculum that each cohort received was very similar. We evaluate the effectiveness of the program separately for each cohort of students. In addition, we evaluate the educational effectiveness of Groundwork Hudson Valley's Green Team Summer Youth employment and education program in the summer of 2018, which included, aspects of the *Global, Local, Coastal* curriculum. We offer recommendations for designing and delivering effective education about climate change, mitigation, and adaptation to similar target populations by the project partners and/or other environmental educators.

We find that the *Global, Local, Coastal* program improved students' knowledge in a number of areas that are the main priorities in the program curriculum in both years. Perhaps most importantly, the program succeeded in developing the students' understanding of their own role in the process of climate change. Students' awareness that their families contribute to climate change and how they can reduce that contribution increased significantly more among students who participated in the program than it did in the control group. Also, more participating students learned why climate change is happening and what people can do to reduce climate change than did students in the control group. The program at CURB was particularly effective in the second year in

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teaching students about effects of climate change in the Hudson Valley, improving knowledge relative to the control group.

In the second year, the program appears to have motivated the students to translate learning about their contribution to climate change into action, which is a particularly impressive outcome in the short term. More students who participated in the program began to recycle at home, and they increased the number of actions that they took to conserve water at home relative to the control group. More participating students also engaged in learning about climate change outside of school compared to the control group.

The areas in which the program had less influence on knowledge include understanding impacts of climate change and actions that people can take to adapt. The program does not seem to have influenced attitudes about public initiatives to mitigate climate change or adapt to it. Also, the program does not yet seem to have influenced the students' perception that they can engage in mitigation or adaptation efforts outside their home or their awareness or interest in related career paths.

The effects of the program on learning are broadly consistent across the two years of the program but fewer dimensions of knowledge show a statistically significant improvement in the second year than in the first year. The reason is most likely **not** that the program performed less well in the second year, but rather that the approach to the evaluation was different in the two years. In the second year, we were able to isolate the effect of the program itself, though not perfectly, from the effect of learning from other sources. In the first year, on the other hand, the effect of the program, which we report, includes the total increase in relevant knowledge that students obtained from *all* sources during the school year. Students learned about the material that the program covers from multiple sources, and the improvement in knowledge that resulted from all sources combined, which we report for the first year of the program, may have exceeded the improvement that can be ascribed to the *Global, Local, Coastal* program, which we report for the second year.