

City of Wilmington Green Jobs Program Impact Study

April 2025

*Prepared by
Martha Narvaez*

*In Coordination with
City of Wilmington
Department of Parks and Recreation*

Water Resources Center
Institute for Public Administration
Biden School of Public Policy & Administration
University of Delaware



UNIVERSITY OF DELAWARE
**BIDEN SCHOOL OF PUBLIC
POLICY & ADMINISTRATION**

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Program Overview

The Green Jobs Program is a six-week employment program that provides students residing in the City of Wilmington with hands-on outdoor environmental work, career exploration, and exposure to environmental issues. The program is coordinated by the University of Delaware's Water Resources Center (UDWRC) and led by Wilmington's Department of Parks and Recreation.



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Executive Summary

Since 2011, the City of Wilmington's Department of Parks and Recreation and the University of Delaware's Water Resources Center (UDWRC) have partnered to lead the City's Green Jobs Program. This Impact Study evaluated the City of Wilmington Green Jobs Program from 2011 to 2023 while providing program hosts, alumni, and interested parties with the history of the program, program statistics, and a summary of the survey results. This analysis was funded by the University of Delaware's Community Engagement Initiative's Wilmington Partnership Mini-Grants. The project was led by UDWRC in partnership with the City of Wilmington Department of Parks and Recreation. The project team collected and summarized program statistics, researched comparable national and local programs, developed survey instruments, coordinated the survey administration, analyzed survey responses, and summarized the findings.

Through the City's Department of Parks and Recreation's Youth Career Development Program, the City administers the program and the UDWRC establishes and oversees six weeks of programming. Participants must be fourteen to eighteen years old. Through an application and interview process, fourteen interns are selected. The program commences in late June and youth work twenty-five hours per week for six weeks and earn minimum wage.

The program has employed 174 interns from 2011 to 2023. The youth are residents of the City of Wilmington and represent thirty-seven different public, private, and charter middle and high schools throughout the City and New Castle County. Throughout the thirteen years of programming there have been forty-one organizations and an average of sixteen program hosts each summer, with no less than nine and most recently as many as twenty-one hosts. The hosts represent nonprofit, academic, private, and government entities.

Two survey tools, structured and semi-structured, were designed and administered for the study. The structured survey, developed through Qualtrics, was distributed to 120 of the total 174 program alumni. The response rate ranged from sixteen to twenty-three participants in the structured survey. The structured survey results were followed up with two semi-structured interviews. The survey aimed to collect participant feedback on the following key areas: demographics; education, occupation and outlook, and program evaluation; and youth and citizen development. Due to the low survey response rate, the responses may not truly represent the impact of the Green Jobs Program but provides a starting point for future survey and research efforts.

Of the survey responses, the Green Jobs Program was evenly divided among males and females with the majority (92%) of participants identifying as black or African American. Over half of the respondents are currently in high school. The Green Jobs Program introduces many City of

Wilmington youth into the world of work, with 83 percent indicating it was their first paid job of twenty or more hours per week. The participants' environmental sentiments ranked quite favorably to the environmentally focused statements presented, such as "I would clean up green areas in my neighborhood" (50%). The Green Jobs Program participants positively ranked the program, and the survey respondents are 100% likely to recommend the program. Based on the responses, the program provides job/workplace readiness and skills related to working in the outdoors/field work. Survey respondents agreed that the program provided participants with professional development exposure to work as part of a team and exposure to varied perspectives and views. The responses show an overall exposure of career opportunities in the environmental field but not specific to the groups engaging with the Green Jobs Program. Most were exposed to careers they were unaware of but still a large portion chose that they were not exposed to an environmental field they were unaware of prior to the program. The majority of respondents did not express a targeted interest in working in the environmental field based on the responses, yet the program seems to have a positive impact on awareness of outdoor recreation, natural areas and historic/cultural resources. Most respondents agree that the Green Jobs Program affected their understanding of the eight environmentally-related lifestyle choices listed in the survey.

Overall, the City of Wilmington Green Jobs Program is a highly performing environmentally focused youth labor program in Delaware. The survey respondents uniformly recommend the program and receive key messaging provided over the six-week program based on the survey responses. Additional program enhancements include increasing funding for the program administration and program hosts; enhancing the youth workforce development benefits of the program; strengthening the Green Jobs Program Alumni relations and connection opportunities; and conducting annual and multi-year assessments.

Introduction

Project Description

The City of Wilmington Department of Parks and Recreation established and supports the Youth Employment Program (YEP), which provides young people with a greater breadth of hands-on work experience, awareness of local and regional social and environmental issues, hope of how their lives can be enhanced via individual and collective action, and the tools to make substantive and sustainable change within their respective lives and surrounding communities. The Green Jobs Program, in alignment with YEP, aims to address some of the challenges the City's youth are experiencing. The University of Delaware Water Resources (UDWRC) strives to enrich the well-being and life outcomes of Wilmington residents through environmental expertise and partnerships. In 2023, the UDWRC, with funding provided by the University of Delaware's Community Engagement Initiative's Wilmington Partnership Mini-Grants, administered the first Green Jobs Program alumni survey to evaluate the impact of the City of Wilmington Green Jobs Program. The goals of this evaluation are to better understand participant outcomes and to improve the program for future program partners and participants.

The City of Wilmington's Green Jobs Program began in 2011 and has employed over 170 youth in the past 13 years of programming (2011–2023). The Green Jobs Program is administered by the City of Wilmington's Department of Parks and Recreation, as an internship program within the YEP, and UDWRC. The program is a true partnership between the City and UDWRC as well as the organizations that host the youth throughout the six-week program. For the past several years the City of Wilmington, UDWRC, and program partners have requested feedback on the program's impact and on the current education and professional activities of past participants. UDWRC and the City have aspired to conduct an inventory of the impact of the program on past participants. This report summarizes the history and impact of the City of Wilmington Green Jobs Program and provides a summary of the data collected.

The project team developed survey instruments, coordinated their administration, analyzed survey responses, and summarized the findings in this report. This project employed a theoretical and methodological approach that was used to assess the Delaware's Youth Conservation Corps (2022).

The City provided UDWRC with contact information for program participants, assisted with the distribution of the survey instruments to program participants, partnered with the UDWRC to review survey results, discussed program recommendations based on participant feedback and disseminated the project findings to City staff and leadership. Program partners believe the

methodological assessment proposed would be extremely valuable to the program's growth, development, and potential program refinement.

Program Description

Overview

The City of Wilmington Green Jobs Program is a summer employment program for City of Wilmington youth, ages 14 to 18 years old. The program is coordinated by the UDWRC and led by the City of Wilmington's Department of Parks and Recreation. The Green Jobs Program is the only environmentally focused work development program in YEP. In 13 years, 174 youth (City of Wilmington residents) from 37 schools have participated in the Green Jobs Program.

The program is a six-week paid internship (25 hours/week), and participants earn minimum wage. The Green Jobs Program integrates environmental stewardship and education, outdoor recreation, and workforce development by engaging City of Wilmington youth in activities throughout the city, state, and region. The program emphasizes natural resources, natural spaces, environmental education, career opportunities in the environmental field, and professional development. The Green Jobs Program facilitates five core components for each participant:

1. Develop a connection to the natural environment that will enable them to be better stewards of the land and natural resources
2. Understand a variety of careers in the environmental field
3. Explore academic paths and research opportunities in the environmental field
4. Develop hard and soft professional skills
5. Experience an enjoyable job opportunity

The core components of the program are implemented through activities and education developed and carried out by the Green Jobs Program host organizations. There have been 41 host organizations in 13 years. The program's activities vary from year to year and include activities such as: removing invasive plant species, planting trees, cleaning up communities, touring the City's water and wastewater treatment plants, touring engineering projects, testing water quality, tending to urban gardens, learning geospatial technologies, understanding and touring agriscience, engaging with academics, learning about research projects, canoeing, kayaking, and fishing.

Another key component of the internship program is professional development. For many participants the Green Jobs Program is their first job experience. The incorporation of following essential professional development skills contributes to the program's success:

- Teamwork

- Resume development
- Communication and presentation skills
- Financial literacy
- Meeting and talking to professionals
- Learning about new and different jobs and careers in the environmental field
- Being responsible and showing up on time
- Appropriate behavior
- Appropriate dress

Green Jobs Program participants also complete a work-based learning project. The intent of this project is to provide the youth with an opportunity to use the professional development skills and the subject matter they have learned over the six-week program to summarize and communicate their experience. The project culminates in a final presentation at the Green Jobs Program's closing ceremony. Groups of two to five work together to develop and deliver a presentation to friends, family, city staff, and dignitaries.

Through the six-week program, the youth are led by a Green Jobs Program Team Leader. The team leader supervises the youth as they participate in the hands-on outdoor environmental work and career exploration internship. Each day the team leader meets the group at the City of Wilmington Parks and Recreation Department and accompanies and oversees the group to their scheduled program location and activities. The team leader plays a key role to the program's success and serves as facilitator among the program administrators, daily program hosts, and youth.

Through participation in this program youth help to transform their communities into a greener, cleaner, safer places while experiencing meaningful employment and education opportunities and exposure to environmental careers.

Host Organizations

The Green Jobs Program collaborates with public and private sector agencies to expose the youth to natural spaces, teach about the environment and introduce students to environmental careers and academic pathways. Program hosts include private consulting firms, universities, nonprofit organizations, and government entities. Host organizations provide the interns with a deeper understanding of environmental issues in their communities and what personal impacts they can have. Every organization helps to give a range of hands-on, work-based, career exploration and learning experience to our students.

Each summer, the Green Jobs Program establishes a unique schedule of activities to engage the youth in the core components of the program. Each host organization donates staff time and resources. The specific content and activities of each day vary based on the participating host

organizations and the most current topics and areas of interest at the time of the program development. Some organizations host the youth for one day while others host for multiple days throughout the six-week program. Over the history of the program, the participating organizations, such as the Delaware Nature Society and the University of Delaware, have hosted for as many as four days of programming. Typically, program hosts work with the youth for one day of the six-week program.

Between 2011 and 2023, forty-one organizations have hosted the youth. The program welcomes an average of sixteen program hosts for each summer program, with no less than nine and most recently as many as twenty-one hosts. Table 1 outlines the organizations that have participated in the Green Jobs Program, the number of years each organization has been participating in the program, and the type of organizations. Tables 2 through 5 provide the program hosts for each year of the program. It is important to note that several partners have participated in the program since its inception in 2011:

- The City of Wilmington
- Delaware Nature Society
- University of Delaware Water Resources Center

Additionally, it is important to note, several program hosts that have participated in the program for 10 years or more:

- Delaware Center for Horticulture (12 years)
- Partnership for the Delaware Estuary (12 years)
- The Nature Conservancy (Delaware/Pennsylvania chapter) (11 years)
- Delaware Department of Natural Resources and Environmental Control (DNREC) (10 years)

The following program hosts have been with the program five years or more:

- Delaware Solid Waste Authority (9 years)
- Delaware State University (9 years)
- Mid-Atlantic Youth Anglers and Outdoors Program (7 years)
- The Challenge Program (6 years)
- Delaware National Estuarine Research Reserve (DNERR) (6 years)
- University of Delaware's College of Agriculture and Natural Resources and Cooperative Extension (6 years)
- Brandywine Red Clay Alliance (5 years)
- Delaware Sea Grant (5 years)
- PSE&G (5 years)
- RK&K (5 years)

Table 1. Green Jobs Program Host Organizations

Host Organization	Years Participated	Total	Sector
10+ years			
City of Wilmington	2011–2023	13	Government
Delaware Nature Society	2011–2023	13	Nonprofit
UD Water Resources Center	2011–2023	13	Academic
Delaware Center for Horticulture	2011–2022	12	Nonprofit
Partnership for the Delaware Estuary	2011–2021, 2023	12	Nonprofit
The Nature Conservancy (DE/PA Chapter)	2013–2023	11	Nonprofit
DNREC (Multiple Departments)	2011–2020	10	Government
5+ years			
DSWA (Delaware Solid Waste Authority)	2014–2021, 2023	9	Government
Delaware State University	2015–2023	9	Academic
Mid-Atlantic Youth Anglers and Outdoors Program	2015–19, 2021, 2023	7	Nonprofit
The Challenge Program	2011–2016	6	Nonprofit
Delaware National Estuarine Research Reserve (DNERR)	2015–19, 2023	6	Government
UD College of Agriculture and Natural Resources and Cooperative Extension	2014–17, 2020, 2023	6	Academic
Brandywine Red Clay Alliance	2019–2023	5	Nonprofit
Delaware Sea Grant	2019–2023	5	Academic
PSE&G	2013–2017	5	Private
RK&K	2015–2019	5	Private
Less than 5 Years			
Filasky's Produce	2014–2017	4	Private
Springmill Community	2014–2017	4	Nonprofit
Junior Achievement of Delaware	2018–19, 2023	3	Nonprofit
Straughan Environmental	2021–2023	3	Private
Stroud Water Research Center	2021–2023	3	Nonprofit
WSTW	2017–2019	3	Private
Delaware Food Bank	2022–2023	2	Nonprofit
Delaware State Parks	2013, 2020	2	Government
Healthy Food for Healthy Kids	2018–2019	2	Nonprofit
KCI Technologies	2018–2019	2	Private
Urban Environmental Center	2011–2012	2	Nonprofit

Host Organization	Years Participated	Total	Sector
Less than 5 Years			
The Village Tree, Inc.	2022–2023	2	Nonprofit
Academy of Natural Sciences	2022	1	Nonprofit
Camden Green Jobs Program (NJ)	2014	1	Nonprofit
Center for Inland Bays	2022	1	Nonprofit
Creative District	2017	1	Nonprofit
Delaware Interfaith Power & Light	2022	1	Nonprofit
Ecoplastics	2020	1	Nonprofit
Green Box	2021	1	Private
John Heinz National Wildlife Refuge	2023	1	Government
Lincoln University	2023	1	University
National Park Service	2022	1	Government
Tri-State Bird Rescue & Research	2014	1	Nonprofit
Wildlife Rehabilitators	2014	1	Nonprofit

Table 2. Program Hosts, 2011–2014

2011	2013
<ol style="list-style-type: none"> Challenge Program City of Wilmington City of Wilmington Parks & Recreation DE Center for Horticulture Delaware Estuary Delaware Nature Society (DNS) DNREC Watershed Assessment Partnership for DE Estuary University of Delaware Water Resources Center (UDWRC) Urban Environmental Center 	<ol style="list-style-type: none"> The Challenge Program City of Wilmington Parks & Recreation City of Wilmington Public Works Dept. Delaware Center for Horticulture Delaware Nature Society Delaware State Parks DNREC State Parks DNREC Watershed Assessment The Nature Conservancy (TNC) Partnership for the Delaware Estuary PSE&G UDWRC

2012	2014
<ol style="list-style-type: none"> 1. Challenge Program 2. City of Wilmington Parks & Recreation 3. City of Wilmington Public Works Department 4. Delaware Center For Horticulture 5. Delaware Nature Society (DNS) 6. DNREC Watershed Assessment 7. Partnership for the Delaware Estuary 8. University of Delaware Water Resources Center (UDWRC) 9. Urban Environmental Center 	<ol style="list-style-type: none"> 1. Camden Green Jobs Program 2. The Challenge Program 3. City of Wilmington Parks & Recreation 4. City of Wilmington Public Works Dept. 5. Delaware Center for Horticulture 6. Delaware Nature Society 7. DNREC Watershed Assessment 8. DSWA (Delaware Solid Waste Authority) 9. Filasky's Produce 10. The Nature Conservancy (TNC) 11. Partnership for the Delaware Estuary 12. Public Service Electric & Gas (PSEG) 13. Springmill Community 14. Tri-State Bird Rescue & Research 15. University of Delaware College of Agriculture and Natural Sciences 16. University of Delaware Water Resources Center (UDWRC)

Table 3. Program Host, 2015–2018

2015	2017
<ol style="list-style-type: none"> 1. The Challenge Program 2. City of Wilmington Parks & Recreation 3. City of Wilmington Public Works Department 4. Delaware Center for Horticulture 5. Delaware Nature Society 6. DNREC Delaware Coastal Program 7. The Delaware National Estuarine Research Reserve (DNERR) 8. Delaware Solid Waste Authority (DSWA) 9. Delaware State University 10. Filasky's Produce 11. MA Youth Anglers and Outdoors Program 12. The Nature Conservancy (TNC) 13. Partnership for the Delaware Estuary 14. PSEG 15. RK&K 16. Springmill Community 	<ol style="list-style-type: none"> 1. City of Wilmington (Dept. of Labor) 2. City of Wilmington Parks & Recreation 3. City of Wilmington Public Works Department 4. Creative District, Wilmington 5. Delaware Center for Horticulture 6. Delaware Nature Society (Coverdale & DEEC) 7. Delaware State University 8. DNERR 9. DNREC Delaware Coastal Program 10. DSWA (Delaware Solid Waste Authority) 11. Filasky's Produce 12. MA Youth Anglers and Outdoors Program 13. The Nature Conservancy (TNC) 14. Partnership for the Delaware Estuary/DNERR 15. PSEG 16. RK&K 17. Springmill Community

2015	2017
17. University of Delaware	18. University of Delaware
18. University of Delaware Water Resources Center (UDWRC)	19. University of Delaware Water Resources Center (UDWRC)
	20. WSTW/City of Wilmington
2016	2018
1. The Challenge Program	1. City of Wilmington Parks & Recreation
2. City of Wilmington Parks & Recreation	2. City of Wilmington Public Works Dept.
3. City of Wilmington Public Works Dept.	3. City of Wilmington Public Works Dept. (Wastewater Treatment)
4. Delaware Center for Horticulture	4. Delaware Center for Horticulture
5. Delaware Nature Society (DEEC)	5. DNERR
6. Delaware State University	6. DNREC Delaware Coastal Program
7. DSWA (Delaware Solid Waste Authority)	7. Delaware Nature Society (DEEC)
8. DNERR	8. DSWA (Delaware Solid Waste Authority)
9. DNREC Delaware Coastal Program	9. Delaware State University
10. Filasky's Produce	10. Healthy Food for Healthy Kids
11. MA Youth Anglers and Outdoors Program	11. Junior Achievement
12. The Nature Conservancy (TNC)	12. KCI Technologies
13. Partnership for the Delaware Estuary	13. MA Youth Anglers and Outdoors Program
14. PSEG	14. The Nature Conservancy
15. RK&K	15. Partnership for the Delaware Estuary
16. Springmill Community	16. RK&K
17. University of Delaware's Department of Geography and Spatial Sciences	17. University of Delaware Water Resources Center (UDWRC)
18. University of Delaware Water Resources Center (UDWRC)	18. WSTW

Table 4. Program Hosts, 2019–2022

2019	2021
1. Brandywine Red Clay Alliance	1. Brandywine Red Clay Alliance
2. City of Wilmington	2. City of Wilmington Parks and Recreation
3. City of Wilmington Parks & Recreation	3. City of Wilmington Public Works Dept.
4. City of Wilmington Public Works	4. Delaware Center for Horticulture
5. Delaware Center for Horticulture	5. Delaware Nature Society
6. DNERR	6. Delaware Sea Grant
7. DNREC Delaware Coastal Program	7. DSWA (Delaware Solid Waste Authority)
8. Delaware Nature Society (DEEC)	8. Delaware State University
9. Delaware Sea Grant	9. Green Box
10. Delaware State University	

2019	2021
<ul style="list-style-type: none"> 11. DSWA (Delaware Solid Waste Authority) 12. Healthy Food for Healthy Kids 13. Junior Achievement 14. KCI Technologies 15. MA Youth Anglers and Outdoors Partners 16. The Nature Conservancy 17. Partnership for the Delaware Estuary 18. RK&K 19. University of Delaware's Institute for Public Administration (IPA) Delaware Center for Civics Education 20. University of Delaware Water Resources Center (UDWRC) 21. WSTW 	<ul style="list-style-type: none"> 10. Mid-Atlantic Youth Anglers & Outdoors Partners 11. The Nature Conservancy 12. Partnership for the Delaware Estuary 13. Straughan Environmental 14. Stroud Water Research Center 15. University of Delaware IPA Delaware Center for Civics Education 16. University of Delaware Water Resources Center (UDWRC)
2020	2022
<ul style="list-style-type: none"> 1. Brandywine Red Clay Alliance 2. City of Wilmington Parks & Recreation 3. City of Wilmington Public Works Dept. 4. Delaware Center for Horticulture 5. DNREC 6. Delaware Nature Society (DEEC) 7. Delaware Sea Grant 8. DSWA 9. Delaware State University 10. Ecoplastics 11. The Nature Conservancy 12. Partnership for the Delaware Estuary 13. State Parks 14. University of Delaware IPA Delaware Center for Civics Education 15. University of Delaware Water Resources Center (UDWRC) 	<ul style="list-style-type: none"> 1. Academy of Natural Sciences 2. Brandywine Red Clay Alliance 3. Center for Inland Bays 4. City of Wilmington 5. City of Wilmington Parks and Recreation 6. City of Wilmington Public Works Dept. 7. Delaware Cooperative Extension 8. Delaware Food Bank 9. Delaware Interfaith Power & Light 10. Delaware Nature Society 11. Delaware Sea Grant 12. Delaware State University (DSU) 13. Mid-Atlantic Youth Anglers & Outdoors Partners 14. National Park Service 15. The Nature Conservancy 16. Partnership for the Delaware Estuary 17. Straughan Environmental 18. Stroud Water Research Center 19. University of Delaware Water Resources Center (UDWRC) 20. The Village Tree, Inc.

Table 5. Program Hosts, 2023

2023
1. Brandywine Red Clay Alliance
2. City of Wilmington Parks & Recreation
3. City of Wilmington Public Works Dept.
4. Delaware Center for Horticulture
5. University of Delaware Cooperative Extension
6. DNERR (Delaware National Estuarine Research Reserve)
7. Delaware Nature Society
8. Delaware Sea Grant
9. DSWA (Delaware Solid Waste Authority)
10. Delaware State University
11. Food Bank of Delaware
12. John Heinz National Wildlife Refuge
13. Junior Achievement of Delaware
14. Lincoln University
15. Partnership for the Delaware Estuary
16. Straughan Environmental
17. Stroud Water Research Center
18. University of Delaware Geography Department
19. University of Delaware Botanic Gardens
20. University of Delaware Water Resources Center (UDWRC)
21. The Village Tree, Inc.

Interns

Youth apply to the Green Jobs Program through the City's Youth Employment Program. All Green Jobs Program placements are seasonal positions. The Green Jobs Program interns work as part of a team to help create a cleaner greener City, expand their knowledge of the environment and natural spaces, and learn about academic programs and workforce opportunities in the environmental field.

Applicants must select the Green Jobs Program as their internship of interest. The applications are due to the City's Department of Parks and Recreation in mid- to late-April. Interns go through the interview process and final selections are determined in late May. Training and screening occur in May and June. The program begins in mid-June and ends in late-July or early-August.

The program has employed a total of 174 youth since 2011, the smallest cohort of eight youth occurred in 2020 during the Covid pandemic. The largest class of twenty-one youth occurred in

2018 (Table 6). The average number of youth, based on transportation and program host capacity, was fourteen. Over the thirteen years of programming the youth have come from thirty-seven schools in Delaware and range in grade level from elementary, middle, and high schools and colleges and universities (Table 7).

The youth are required to be City residents between 14 and 21 years of age to participate in the program. While the age range has varied slightly over the history of the program, the age limit has remained consistent at 14. From 2011 to 2017, the program was offered to youth 14 to 21 years of age. In 2018, the program was targeted to participants that were 14 to 20 years of age. Since 2019 through the current (2023) program administration, the program is offered to participants that are 14 to 18 years of age.

The participant's grade-level data was collected from 2011 to 2023 and shows that the largest portion of participants have completed ninth grade. The grouping for participants' grade-levels shows the greatest participation was in ninth grade followed by tenth, eighth, eleventh, and twelfth grades, respectively. The least number of participants have completed twelfth grade. In three instances there were high school graduates in their first and second year of college. It is important to note, the schools and grade-level data was collected for 10 of the 13 years of programming. Data are missing for the participants' schools and grade level for three years of the program: 2011, 2015, and 2020.

Table 6. Total Number of Interns by Year

Year	Number of Interns
2011	11
2012	10
2013	11
2014	15
2015	14
2016	15
2017	17
2018	21*
2019	14
2020	8*
2021	10*
2022	14
2023	14
Total Interns (2011–2023)	174

*In 2018, there were two groups in the program. In 2020 and 2021 the program was hybrid due to covid, and the program numbers were reduced for health and safety reasons.

Table 7. Schools Represented in the Green Jobs Program

Alexis I. du Pont High School	Great Oaks Charter School	St. Elizabeth High School
Appoquinimink High School	Gunning Bedford Middle School	St. Georges Technical High School
Brandywine High School	Howard High School of Technology	St. Mark's High School
Cab Calloway School of the Arts	Middletown High School	Tennessee State University
Charter School of Wilmington	Mount Pleasant High School	The John Dickinson School
Concord High School	Newark High School	Thomas Edison Charter School
Conrad Schools of Science	Northeast High School	Thomas McKean High School
Cumberland College	Odyssey Charter School	UrbanPromise Wilmington
Delaware Military Academy	Paul M. Hodgson Vocational Technical High School	Virginia State University
Delaware Technical Community College	Prestige Academy Charter School	West Chester East High School
Delcastle Technical High School	Salesianum School	William Penn High School
First State Montessori Academy	Sanford School	Wilmington Friends School
Freire Charter School Wilmington		

Green Jobs in Context to Youth Employment Programs

There are numerous youth environmental workforce programs throughout the United States and regionally. The information below provides a snapshot of several programs that are similar in mission and content to the City of Wilmington Green Jobs Program.

Youth Conservation Corps (YCC)

Website: <https://www.nps.gov/subjects/youthprograms/ycc.htm>

- A national youth employment program that engages young people in meaningful work experiences at national parks, forests, wildlife refuges, and fish hatcheries while developing an ethic of environmental stewardship and civic responsibility. YCC programs are generally eight to ten weeks, and members are paid at least the state or federal minimum wage (whichever is higher) for a forty-hour work week.
- Youth, fifteen to eighteen years old, who are permanent residents of the United States, are eligible for employment without regard to social, economic, racial, or ethnic backgrounds.
- YCC members work in an outdoor setting on a variety of projects including building trails, maintaining fences, cleaning up campgrounds, improving wildlife habitat, environmental education planning and teaching, stream restoration, historic building preservation, and more. The participants also attend educational field trips where they may see wildlife or explore history, hike and stand on a mountaintop, or gaze at an ancient ruin.

21st Century Conservation Service Corps

Website: <https://www.nps.gov/subjects/youthprograms/21st-century-conservation-service-corps.htm>

- A national program in which young people and veterans will accomplish meaningful work and gain important personal and professional skills while building a lifelong connection to the outdoors.
- The Corps Network provides leadership and support to over 130 of America's Service and Conservation Corps. Through advocacy, access to funding opportunities and expert guidance, The Corps Network annually enables over 24,000 Corps members to strengthen communities, improve the environment, and transform their lives through service.
- Corps members typically range from sixteen to twenty-five years old; some programs engage young people up to age thirty and veterans up to age thirty-five.

Student Conservation Association

Website: <https://thesca.org/join-the-crew>

- The Student Conservation Association (SCA) is a national organization that is the largest provider of hands-on environmental conservation programs for youth and young adults. Program participants protect and restore national parks, marine sanctuaries, cultural landmarks and community green spaces across the country. The SCA is devoted to building equitable access to nature, providing green job opportunities for young people and teaching members how to become environmental stewards. Below is a selection of SCA programs similar to the Green Jobs Program:
 - **Individual Placement** – This position is open to adults eighteen and older and carries a wide range of focuses, from monitoring sea turtle nests on Florida beaches to developing communication strategies in areas such as a sprawling wilderness preserve in remote Alaska. Participants work directly with experienced professionals, develop job readiness skills and make substantial contributions toward protecting the planet.
 - **National Crews** – These positions are focused on high schoolers and offer participants a chance to learn valuable skills and enjoy nature at its best.
 - **Conservation Corps** – These positions take place in remote areas where members build trails, prevent forest fires, or restore critical habitat. Teams typically live together in a cabin or other central location and work on short-term, focused work trips. Participants may live together at one site or work at individual sites within the same region.
 - **Urban Green** – This program advances innovative climate solutions, prioritizes environmental justice and youth development, and leverages the strength of public-private partnerships. The positions are paid innovative workforce development opportunities for youth and young adults underrepresented in the conservation field. The programs include single-day service projects, seasonal work and year-long internships or fellowships in major metropolitan cities.

Delaware State Parks Youth Conservation Corps (DSPYCC)

Website: <https://www.destateparks.com/youth-conservation-corps/>

- The DSPYCC program is a state program implemented through Delaware State Parks. The program provides paid, high-quality summer jobs and environmental opportunities for young people aged sixteen to twenty-one (select teams fourteen to sixteen) and leaders aged twenty to twenty-six.
- Corps members conduct meaningful environmentally and park-focused activities as a means of achieving personal growth. Through participation in this program youth gain skills, grow

in confidence, and see first-hand the benefit that their hard work makes in providing a lasting benefit for public lands and communities.

- The program is committed to engaging young people in important conservation and park projects while providing learning that fosters teamwork, self-esteem, social responsibility, and respect for the environment.

Delaware Nature Society's RENEW Program

Website: <https://www.delawarenaturesociety.org/activities/education/reaching-and-engaging-through-nature-to-empower-wilmington-renew/>

- The RENEW (Reaching and Engaging through Nature to Empower Wilmington) program is designed to “engage youth from black and brown communities in Wilmington outdoor education opportunities.” The RENEW program is a local program run through the Delaware Nature Society and works with youth to deepen their connections with Science, Technology, Engineering, and Math (STEM), utilizing activities that make learning about the outdoors relevant and fun. Anchored at the DuPont Environmental Education Center (DEEC) location, an urban nature center in the City of Wilmington, RENEW encourages and elevates participants’ comfort levels with the natural world. As a result, the youth develop deeper connections to the outdoors and learn about environmental career opportunities through enriching experiences that they can share with family, community members, and friends. The RENEW programs similar to the Green Jobs Program include:
 - **Trail Ambassadors Youth Development Program** – Eight high-school-aged Wilmington youth participate as Trail Ambassadors. In this year-round Youth Development Program, youth explore nature, learn to interpret and teach the outdoors to the community, explore careers, and complete environmental community service projects. Summer and school year stipends are paid with a bonus provided for completing the program.
 - **Summer Internship Opportunities** – Students from the community work in the summer to support the nature center’s services and education work. Many of these young people have previous involvement with one or more RENEW activities and have expressed an interest in pursuing an environmental career.
 - **Wilmington Youth Environmental Corps** – This program is a paid nine-session program for City of Wilmington residents ages fourteen to eighteen and provides career exploration and exposure to environmental issues. Participants complete after-school sessions. This program is run in partnership with the City of Wilmington Parks and Recreation Department.

Survey Instruments, Distribution, and Responses

In coordination with the City of Wilmington Department of Parks and Recreation, UDWRC developed structured and semi-structured survey tools to gain a better understanding of the impact of the Green Jobs Program. To develop the survey tools, UDWRC reviewed evaluation survey methods implemented in similar youth employment programs. The survey methods were then discussed with the City of Wilmington Department of Parks and Recreation to gather feedback and input from the City staff to ensure the survey methods were implementable and in line with the Green Jobs Program's program goals.

The survey instrument was distributed to program alumni. The Green Jobs Program has a total of 174 alumni from 2011 to 2023, aged fourteen and older. The City of Wilmington and DWRC had accumulated 120 email addresses for the 174 alumni. In total, 105 emails were distributed with the survey information due to fifteen returned emails.

The participants were divided into two categories prior to survey distribution, those under eighteen years old and those over eighteen. Due to data gaps, the participants' ages were not available so data analysts used the alumni's year of participation and potential age range to assume any participants that may be under 18. This resulted in forty-six alumni with the potential to be under 18. For those participants, guardians were sent an email with information about the survey and the potential to opt out.

The structured survey was designed to gather quantitative data about a variety of demographic and program evaluation topics from Green Jobs Program participants, with an online survey format used to maximize the number of responses. Requested demographic data included gender, race, age, and program participation year(s). Program evaluation questions addressed participants' overall satisfaction with the program; preparation for career readiness; development of professional skills; environmental awareness; appreciation for the outdoors; and future career goals. A copy of the structured survey instrument appears in Appendix A.

The semi-structured survey was designed to complement the data collected from the structured survey and allow for the collection of qualitative information that could illustrate key dimensions of outcomes experienced by Green Jobs Program participants. Conducted in a one-on-one phone interview format, the semi-structured survey provided an opportunity for respondents to provide extensive, open-ended feedback on the demographic and evaluative questions asked in the structured survey. The interview guide for the semi-structured survey appears in Appendix B.

For both survey instruments, DWRC designed the questions and formats with the aim of minimizing bias that could be introduced through forms, such as poorly crafted questions or response options, and survey length or timing issues that could lead to nonresponse. Further, the study team submitted the survey questions and protocol for review through the University of Delaware's Institutional Review Board (IRB) to ensure the protection of subjects in the implementation of this survey. Once the project team received IRB approval the structured survey and semi-structured interview invitations were prepared for distribution, with strict anonymity maintained throughout the data collection, sharing, and reporting process.

Structured Survey Distribution and Response

UDWRC used the online survey platform Qualtrics to administer the structured survey between February 5–26, 2024, to 120 email addresses of alumni. Prior to survey distribution, the City of Wilmington emailed the potential survey respondents to make them aware of the impact study, alert them to the impending launch of the survey, and encourage their voluntary participation in the survey. After this notice, UDWRC sent emails to the Green Jobs Program alumni mailing list compiled by UDWRC and the City of Wilmington. The email recruitment language explained the project goal and any survey risk (Appendix C). The Green Jobs Program alumni's participation in the survey was voluntary and anonymous. All information collected in the survey will be kept confidential. The information gathered was only used for the study purposes. Survey respondents had the right to refuse to answer any questions or to avoid participating at any time for any reason. The questionnaire had five sections and took five to ten minutes to complete.

UDWRC administered the survey to ensure confidentiality of responses by preventing the identification of responses with individuals, while also protecting against duplicate responses from individuals. UDWRC sent a total of four email reminders and one text reminder to encourage participation in the survey, with UDWRC offering a randomized give-away for five Amazon gift cards (\$50) as an incentive to fill out the online survey. The survey was distributed through a Qualtrics link in the body of the email. All online survey participation was voluntary and for those participants with the potential to be under 18 (46 individuals), a parental opt-out form was sent to the participants' guardians to provide consent for minor participation. The parent/guardian was given seven days to respond and have their child excluded from the survey pool. If the parent/guardian did not respond it was considered consent to participate. Their child received the survey through email and determined whether or not to fill it out. If the parent/guardian opted out, the child was not sent the structured or semi-structured survey. No parental opt out was received.

The email was distributed to 120 Green Jobs Program alumni based on available contact information. Fifteen of the 120 were returned due to incorrect addresses or closed accounts. A total of 105 emails were received by Green Jobs Program alumni. Of those sent, 23 survey responses were recorded.

Semi-Structured Survey Distribution and Response

For the semi-structured survey portion of this research, UDWRC aimed to conduct a series of phone interviews with program participants. UDWRC used the list of respondents from the structured survey (23) as potential participants to be contacted for interviews. Only those participants who filled out the structured survey were contacted to participate in the semi-structured survey. UDWRC sent an email directly to those alumni requesting their participation in a phone interview. Semi-structured survey participation was voluntary, and participants had to respond to the email to participate in a phone interview. A consent form was provided and agreed to prior to participating in the survey, and a \$20 Wawa gift card was provided as an incentive for completing the semi-structured survey. The semi-structured interview was to be conducted with eight to twelve participants following the deadline for the structured survey. Two online interviews were scheduled and completed.

Analysis of Survey Responses

This section of the report provides a detailed summary of the results from the structured survey distributed to the City of Wilmington Green Jobs Program alumni. The summary does not have identifiers that can attribute responses to an individual. Data are presented for all questions, with noteworthy distributions of responses indicated in the narrative. As appropriate, the narrative includes references to the two semi-structured interview responses to provide context for the survey results. The following subsections detail all the qualified responses to the 21 survey questions (Q1 – Q21). Due to the low response rate the responses may not truly represent the impact of the Green Jobs Program but provide a starting point for future survey and research efforts.

Respondent Demographics

The first questions dealt with the most basic information—the gender, race, and age of survey participants. The first question, Green Jobs Program participation, was used here to screen individuals who may have received the survey in error.

Q1. First, were you a participant in the City of Wilmington Green Jobs Program?

There were an initial twenty-eight total respondents and twenty-seven affirmed they had taken part in the Green Jobs Program. The survey mechanism prevented non-participants from proceeding further. Out of the twenty-seven initial responses, twenty-four continued in the survey and completed the full survey. The number of responses for each question varied ranging from sixteen to twenty-four. The number of respondents for each question is noted in the question response summary due to the variability in response rates. Question one was the only question that respondents were required to answer due to the basis of the question and necessity to have completed the program to participate in the survey.

Q2. Please characterize your gender.

The survey question gathered responses from twenty-four respondents, and the results are relatively equal numbers of men and women. Thirteen respondents indicated male, eleven indicated female, and none indicated non-binary.

Q3. Are you of Hispanic, Latino, or Spanish origin?

All respondents (twenty-four) answered no to this question.

Q4. How would you describe yourself?

Twenty-two of the twenty-four respondents (92%) described themselves as black or African American with two respondents (8%) identifying as white.

Q5. How old are you?

The twenty-three respondents trended toward “high school” age with nearly fifty percent reported an age of fourteen to seventeen years. About a quarter were eighteen to twenty-one years old and another quarter were twenty-two to twenty-five years old with only one respondent over the age of twenty-five (Table 8).

Table 8. Age of Respondents (n=23)

Age	Percent of Responses	Number of Responses
14–17	48%	11
18–21	26%	6
22–25	22%	5
> 25	1%	1
Total Responses	100%	23

Demographics Summary

The demographics portion of the survey shows an even divide among males and females. Based on the survey responses, the program appears to appeal to males and females. About half of the respondents are in the fourteen to seventeen age range. The majority of the respondents identify as black or African American at ninety-two percent, which represents a greater share of total respondents than they do across Wilmington overall (52% as of U.S. Census 2020 for Wilmington). Overall, this demonstrates a large engagement in the program from racial minorities. This can be considered a strength of the program in relation to diversifying the green workforce and providing workforce development to minority populations in the City of Wilmington.

Green Jobs Program Details

The second set of questions dealt with the program details—the respondents’ Green Jobs Program employment, including what program year the youth participated and whether this was their first paid job experience.

Q6. What program year were you in Green Jobs?

The respondents vary among all years of programming except there were no responses from participants in the following years of the program, 2011, 2013, and 2014. The largest participant responses were from the 2022 and 2023 program. Of note, there were thirty-six total responses from the initial twenty-three respondents, this was based on the eligibility

criteria for youth to participate in the program for up to two years, therefore several of the respondents participated in the program for more than one year (Table 9).

Table 9. Green Jobs Program Year (n=23)

Age	Percent of Responses	Number of Responses
2011	0%	0
2012	3%	1
2013	0%	0
2014	0%	0
2015	11%	4
2016	11%	4
2017	11%	4
2018	5%	2
2019	3%	1
2020	8%	3
2021	8%	3
2022	20%	7
2023	20%	7
Total Responses	100%	36

Q7. Was your Green Jobs experience your first paid job of 20 or more hours per week?

The majority of respondents experienced their first paid job of twenty-or-more hours through their participating in the Green Jobs Program. Nineteen (83%) of the twenty-three respondents experienced their first paid job by participating in the Green Jobs Program.

Green Jobs Program Details Summary

The majority of the youth responding to this survey were from the most recent years of the program, 2022 and 2023. With a good sample (twelve in total) from 2015, 2016, and 2017. The only years without representation are 2011, 2013, 2014. For the majority of the youth this was their first paid job experience.

Education, Occupation, and Outlook

The survey requested the respondents' current educational setting, attainment levels, and outlooks on job/career pathways and environmental choices.

Q8. Which of the following best describes your education status at present?

Thirteen of the twenty-three respondents (57%) are currently in high school. Of the remaining respondents, five respondents (22%) are in full-time college and two respondents (8%) are enrolled in part-time college, trade school, or a vocational program. The remaining three respondents (13%) are not enrolled in an educational program (Table 10).

Table 10. Current Education Status (n=23)

Education Status	Percent of Responses	Number of Responses
High school student	57%	13
Full-time college student	22%	5
Part-time college student	4%	1
Trade school or vocational program	4%	1
Not enrolled in an educational program	13%	3
Total Responses	100%	23

Q9. Which of the following best describes your employment status at present?

The majority of respondents (52%) are not working and looking for work. Four (17%) have a full-time job and seven (30%) have a part-time job.

Table 11. Employment Status (n=23)

Employment Status	Percent of Responses	Number of Responses
Full-time job	17%	4
Part-time job	30%	7
Not working – looking for work	52%	12
Not working – not looking for work	0%	0
Total Responses	100%	23

Q10. What is your present level of education or highest degree earned?

Of the twenty-two alumni who answered this question, the majority (45%) were in high school earning their degree. The next largest group (27%) was in college but had not yet completed their degree. Three (14%) had a high school degree or equivalent. The remaining three had a bachelor's degree or a trade school verification (Table 12).

Table 12. Education Status (n=22)

Education Status	Percent of Responses	Number of Responses
Less than a high school degree	45%	10
High school degree or equivalent	14%	3
Some college but no degree	27%	6
Associate degree	0%	0
Trade school certification	5%	1
Bachelor's degree	9%	2
Master's degree	0%	0
Doctoral or professional degree	0%	0
Total Responses	100%	22

Q11. Please indicate your level of agreement with the following statements:

Table 13 lists the statements and level of agreement expressed by the nineteen respondents to this question, with statements sorted from those generating strongest agreement to those generating least agreement.

Respondents expressed the lowest level of agreement with giving their “own money to help protect the environment.” All other questions have a high level (over 80%) of agree/strongly agree. The statements with the highest percentage of “strongly agree” responses were “I like to learn about the environment” (40%), and “I would clean up green areas in my neighborhood” (50%).

Table 13. Agreement with Statements of Environmental Awareness and Behavior (n=19)

	Strongly agree	Agree	Neither agree or disagree	Disagree	Strongly disagree
I like to spend time outside in nature.	35%	45%	0%	10%	10%
I like to learn about the environment.	40%	45%	0%	10%	5%
It is important to recycle.	35%	55%	5%	0%	5%
I would like to spend time working to fix environmental problems in nature.	35%	45%	5%	0%	15%
I am interested in learning new ways to help protect the environment.	25%	55%	10%	5%	5%

	Strongly agree	Agree	Neither agree or disagree	Disagree	Strongly disagree
I would give some of my own money to help protect the environment.	20%	35%	30%	5%	10%
I would help clean up green areas in my neighborhood.	50%	40%	5%	0%	5%

Bold cells indicate largest value(s) in a column; italicized cells indicate largest value(s) in row.

Education, Occupation, and Outlook Summary

Over half the respondents are in high school (thirteen of twenty-three) with the next largest group pursuing a degree in college. With twelve of the twenty-three not working but looking for work. The respondents have the least interest or agreement in giving their own money to protect the environment while the remaining environmental awareness and behavior statements vary in their range of agreement with a high level (over 80%) of “agree” or “strongly agree.” “I like to learn about the environment” (40%) and “I would clean up green areas in my neighborhood” (50%) are the highest “strongly agree.” The semi-structure interview provided support for the environmental awareness portion of the program through their response to the question, “Did your involvement in the program change your environmental awareness or appreciation for the outdoors in any way, positive or negative.” The response was “definitely a good way. It made me more appreciative of everything, and I didn’t take it for granted.”

Program Evaluation

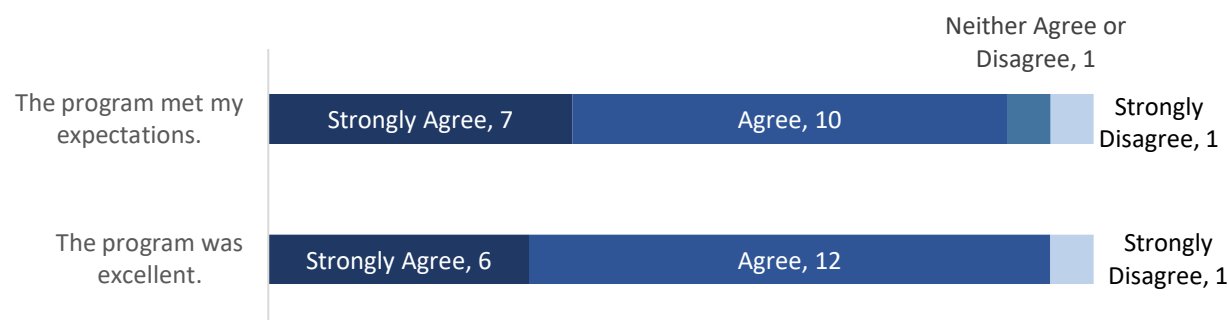
The survey next covered participants’ satisfaction with the Green Jobs Program and asked respondents to self-appraise the skills and abilities gained.

Q12. Please indicate the degree to which you agree with the following statements:

- *The program met my expectations.*
- *The program was excellent.*

Of the nineteen respondents, as shown in Figure 1, the two most common responses to this question were “agree” and “strongly agree” that the “program met expectations” (89%) and that the “program was excellent” (95%).

Figure 1. Green Jobs Program Met My Expectations or Was Excellent (n=19)



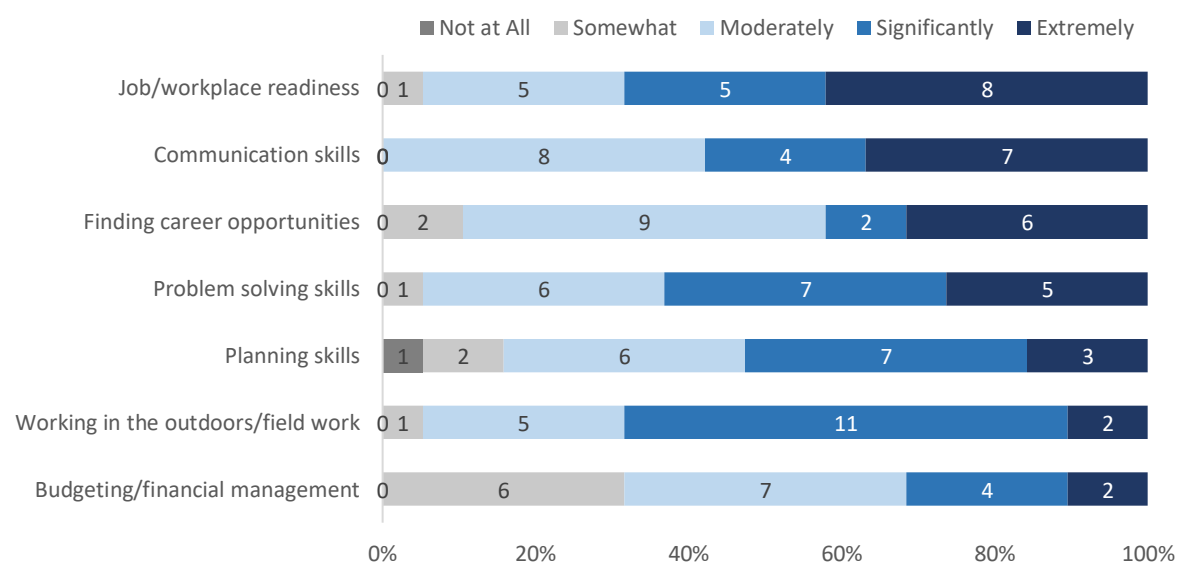
Q13. Based on your experiences, would you recommend the Green Jobs Program to a friend?

All nineteen respondents (100%) marked “yes,” they would recommend the Green Jobs Program to a friend.

Q14. To what degree did participating in the Green Jobs Program improve your skills in the following areas?

Based on the nineteen responses, the “extremely” and “significantly” rankings were highest in the “job/workplace readiness” and “working in the outdoors/field work” followed by “problem solving skills.” Lowest or somewhat and not at all are the “budgeting/financial management” and “finding career opportunities” areas of skills and professional development (see Figure 2).

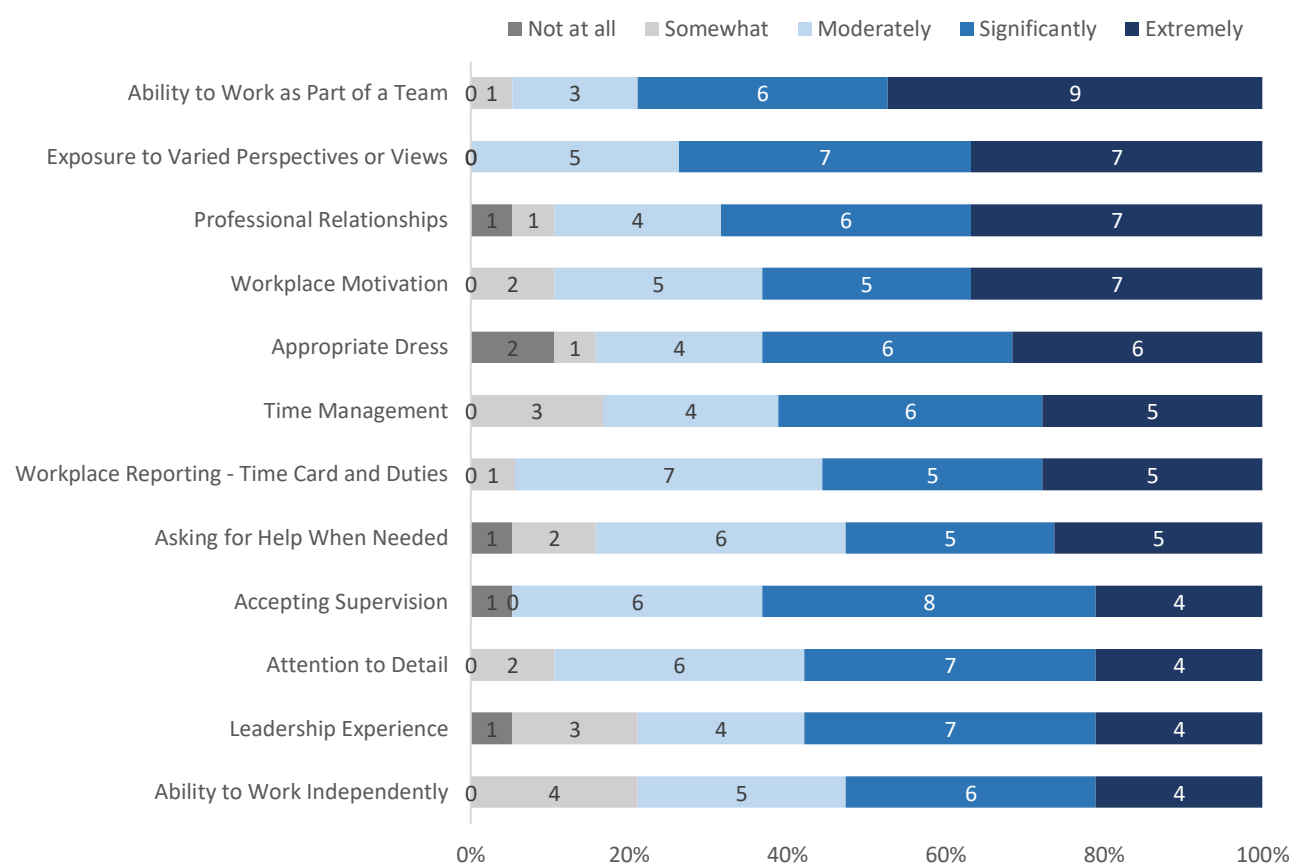
Figure 2. Skills Improvement based on the Green Jobs Program Experience (n=19)



Q15. To what degree did participating in the Green Jobs Program improve your abilities in the following areas?

Note that two of the statements in this question had eighteen responses, time management and workplace reporting, while all the remaining statements had nineteen responses (Figure 3). The statements with the highest number of “significantly” and “extremely” rankings are “the ability to work as part of a team” (15 of 19 responses) and “exposure to varied perspectives and views” (14 of 19 responses). The highest number of rankings for the “somewhat” or “not at all” are “ability to work independently” and “leadership experience.” The one statement with no “not at all” or “somewhat” was “exposure to varied perspectives or views.”

Figure 3. Professional Skills Improvement based on the Green Jobs Program Experience (n=19)



Program Evaluation Summary

The program met the participants’ expectations, and all youth would recommend the program to a friend. The respondents agreed that the program provided “job/workplace readiness” and “working in the outdoors/field work” yet ranked low in the “budgeting/financial management” and “finding career opportunities” areas of skills and professional development. The program

provided the participants exposure to “the ability to work as part of a team” and “exposure to varied perspectives and views” based on the responses.

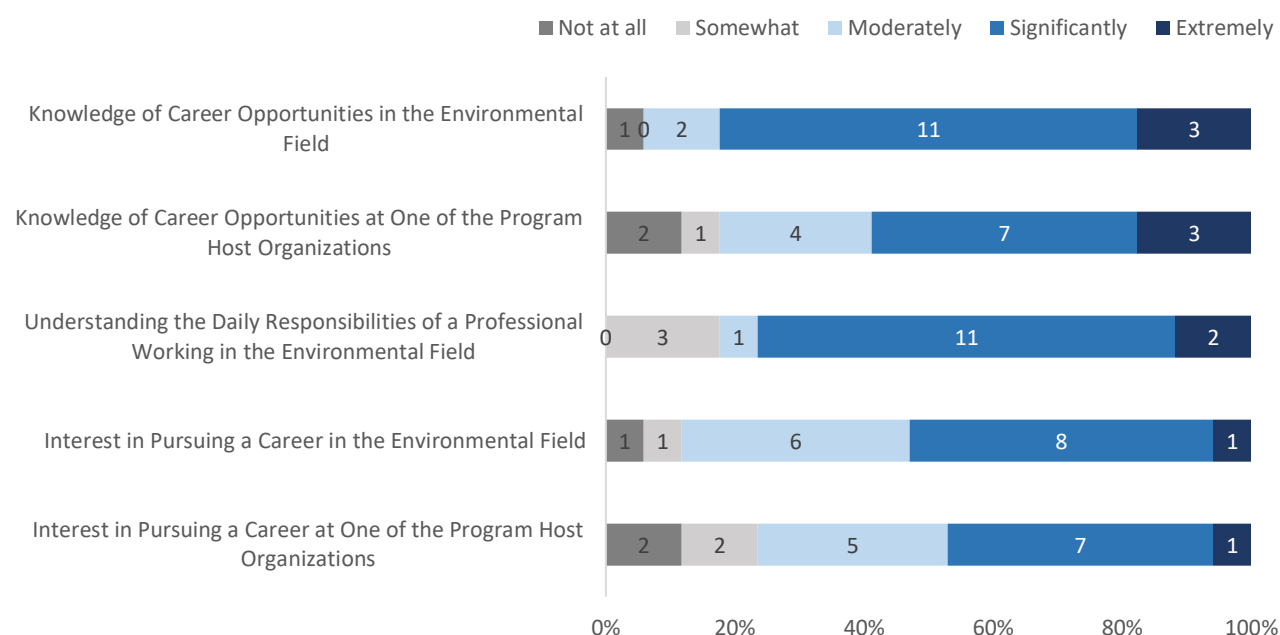
Youth and Citizen Development

Finally, the survey concluded by trying to measure the impact the Green Jobs Program may have had on participants’ understanding of career paths, their own career journey, their awareness of outdoor and recreational resources in Delaware and any impact on their propensity toward environmental stewardship.

Q16. From your experience with the Green Jobs Program, to what degree did you gain awareness in the following areas?

This question had seventeen responses (Figure 4). The statements with the highest ratings of “extremely” and “significantly” were “knowledge of career opportunities in the environmental field” and “understanding the daily responsibility of a professional working in the environmental field.” The lowest levels of interest gained from the participant’s Green Jobs Program experience were an “interest in pursuing a career at one of the Program Host organizations” and “knowledge of careers at one of the Program Host organizations.”

Figure 4. Gaining Career Awareness based on the Green Jobs Program Experience (n=17)



Q17. Did your Green Jobs Program experience expose you to any environmental careers you were previously unaware of?

Of the seventeen responses to this question, fifty-three percent selected “yes,” the program exposed them to an environmental career field that they were previously unaware of, and forty-seven percent selected no. For those that selected “yes,” when asked to specify the following responses were provided:

- Waste Management, Environmental Education, Non-Profit Management
- Water plants
- Radio
- Jobs at the Delaware Center for Horticulture, at the Nuclear Power Plant, and at parks.
- All of them especially at the watersheds and the river.
- Landscape engineers, water treatment plants.
- Water plant jobs.

Q18. Are you currently working in the environmental field?

This question had a total of eighteen responses. Fifteen respondents (83%) stated they are not currently working in the environmental field. This response was impacted by the fact that fifty-seven percent of the respondents were in high school and pursuing a high school degree (see survey question seven). Three of the respondents (17%) were working in the environmental field. Those asked to specify the environmental field noted, farmhand (present), DuPont Environmental Education Center (DEEC) intern (Summer 2023), and environmental health and safety specialist, noting, “while I do some environmental work, it is mostly data collection.”

Question nineteen was only displayed if the answer to question eighteen was yes. If the answer to question eighteen was no, the respondent was directed to question twenty.

Q19. What factors influenced your environmental career choice (select all that apply)?

Only survey participants who indicated that they worked in an environmental field were directed to reply to this question, which limited the number of responses to three. The respondents were able to select more than one factor. The Green Jobs Program was selected by all three respondents, with “personal interest” and “school/academics” selected by two respondents (see Table 14).

Table 14. Factors Influencing Your Environmental Field Choice

Environmental Field Choice Influence	Number of Responses
Personal interest/experience	2
Green Jobs Program	3
School/academics	2

Environmental Field Choice Influence	Number of Responses
Other work experience (not Green Jobs)	1
Other (please specify)	0

Q20. Are you interested in pursuing an environmental career?

Of the fifteen responses to this question, three chose “yes,” three indicated “no,” and the remaining nine said “maybe.” Of those who responded “yes,” when asked to specify the environmental career, two of the three responded with “possibly agricultural business” and “water company.”

Q21. To what extent did your Green Jobs Program experience increase your knowledge of Wilmington and Delaware’s outdoor recreational opportunities and natural areas?

Seventeen respondents provided multiple selections across the three choices: “outdoor recreation,” “natural areas,” and “historical/cultural.” Outdoor recreation awareness had the highest ranking with “significantly” selected while “natural areas” and “historical/cultural” received the highest “extremely” ranking. Overall, “significantly” and “extremely” have the largest percent of respondents for all three categories with “not at all” and “somewhat” ranking zero percent and six percent respectively (see Table 15).

Table 15. Reported Gains in Awareness of Delaware’s Outdoor Recreational Opportunities and Natural Areas

	Not At All	Somewhat	Moderate	Significantly	Extremely
Outdoor recreation	0%	6%	24%	47%	24%
Natural areas	0%	0%	12%	41%	47%
Historical/cultural	0%	6%	18%	35%	41%

Note: **Bold** cells indicate largest value(s) in a row.

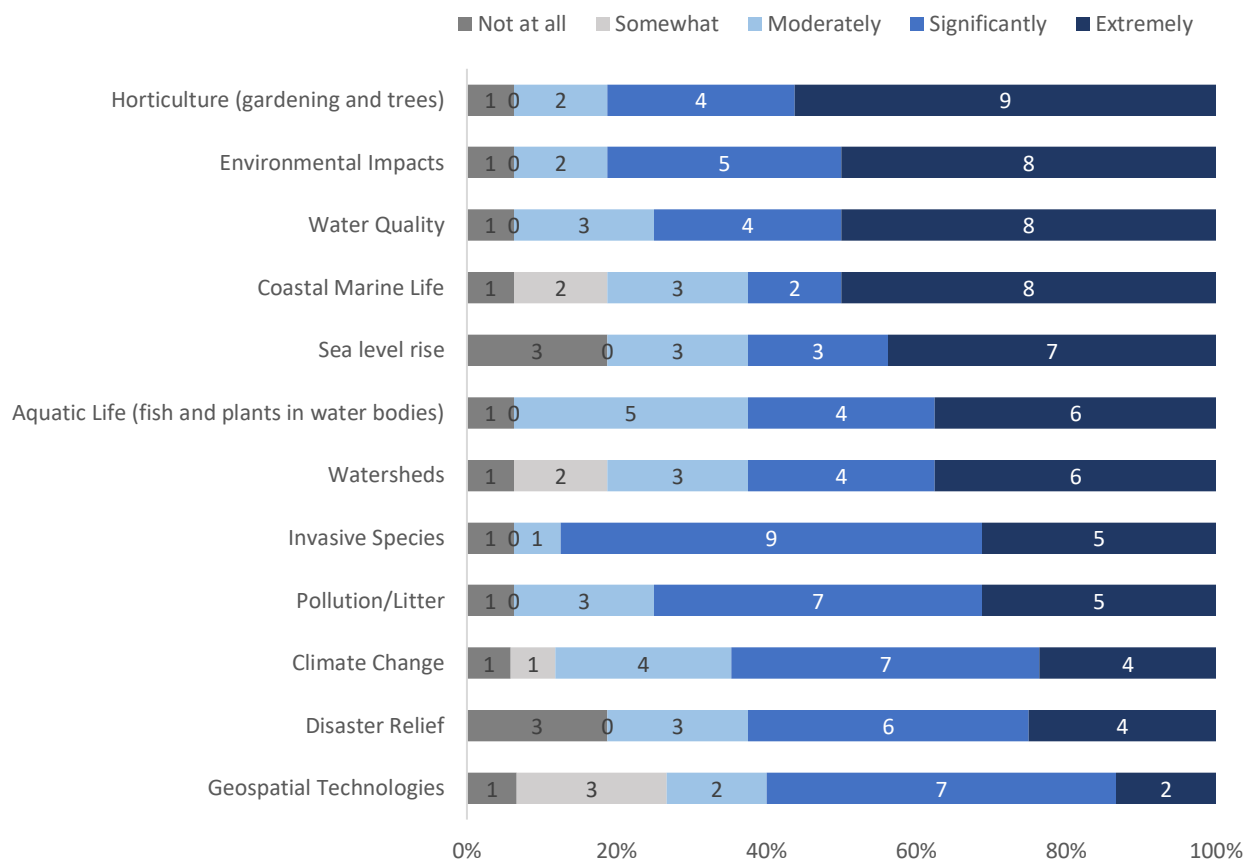
Q22. To what extent did the Green Jobs Program experience affect your understanding of the following environmental areas, topics, and issues?

Survey respondents ranked the impact of the Green Jobs Program across twelve variables, listed in Figure 5. The total number of respondents ranged from sixteen to seventeen on each of the twelve topics totaling 202 box checks. Geospatial technologies received fifteen responses and climate change received seventeen responses with the remainder receiving sixteen responses.

Overall, “significantly” and “extremely” were the most chosen levels of impact at thirty-one percent and thirty-six percent respectively. Every topic had sixty percent or higher of the

respondents selecting that the Green Jobs Program had a “significant” or “extreme impact” on the participant’s understanding of the specified topic. The topics with the highest impact were “invasive species,” “environmental impacts” and “horticulture (gardening and trees)” with eighty-seven percent, eighty-four percent, and eighty-four percent respectively.

Figure 5. Understanding of Environmental Areas, Topics, and Issues based on Green Jobs Program Experience (n=15–17)



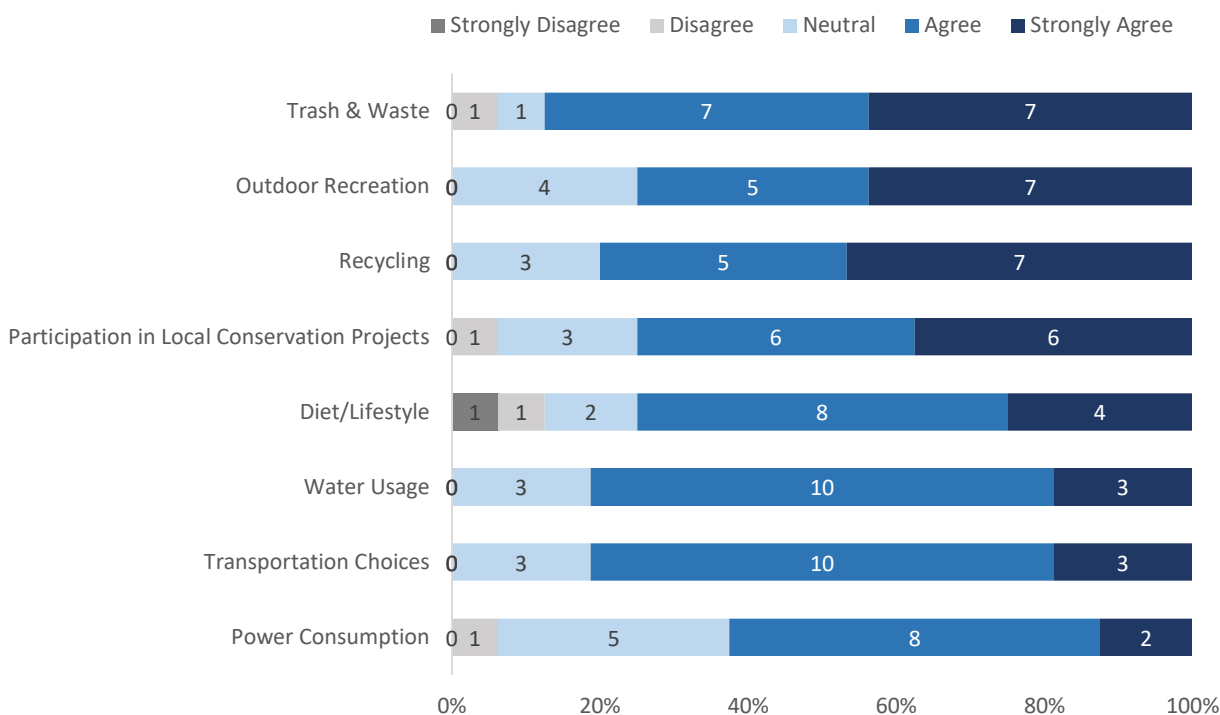
Q23. My Green Jobs experience has led me to be more sensitive with regard to my...?

As shown in Figure 6, sixteen respondents (fifteen respondents for “Recycling”) selected degrees of impact across eight lifestyle choices, for a total of 127 box checks. Overall, “agree” and “strongly agree” were the most popular choices for all eight lifestyle choices, with forty-six percent and thirty-one percent of all responses respectively. The “disagree” and “strongly disagree” responses received zero to one responses for all eight lifestyle choices, with only three percent and one percent respectively of all responses for all eight lifestyle choices.

“Trash and waste” was one of the lifestyle choices that respondents ranked highly in “agree” and “strongly agree.” “Outdoor recreation,” “recycling,” “transportation choices” and “water usage” had no respondents indicate that the Green Jobs Program had little to no impact on the

lifestyle choices presented. On the low impact side, the “diet/lifestyle choice” had the most “disagree” and “strongly disagree” responses (two) yet only an increase from one to two as compared to “participation in local conservation projects,” “trash & waste” and “power consumption.” Overall, the categorized responses are less pronounced, possibly due to low response rate, but still a valuable tool for future analysis.

Figure 6. Lifestyle Choices Impacted by the Green Jobs Program Experience (n=15–16)



Youth and Citizen Development Summary

The youth and citizen development portion of the survey sought to measure the Green Jobs Program’s impact on overall career paths and overall environmental awareness. The responses showed an overall exposure of career opportunities in the environmental field but not specific to the groups engaging with the Green Jobs Program. Most were exposed to careers they were unaware of but still a large portion chose “no” they were not exposed to an environmental field they were unaware of. When asked to specify the careers to which they were exposed, of the seven responses, the careers listed are directly related to the activities conducted throughout the program. Most of the respondents were not currently working in the environmental field, which may be impacted by the majority (57%) of the respondents currently attending high school. The majority of respondents did not express a targeted interest in working in the environmental field based on the responses. The program seems to have a positive impact on awareness of outdoor recreation, natural areas, and historic/cultural resources. The

environmental topics with a slightly higher impact on the respondents from the list provided were “invasive species,” “environmental impacts” and “horticulture (gardening and trees).” The majority of respondents “agree” and “strongly agree” that the Green Jobs Program affected their understanding of the eight lifestyle choices listed with “trash & waste” ranking slightly highest of the eight choices.

The two semi-structured respondents provided two supportive comments to the program’s impact on career paths and environmental awareness. One respondent noted, “Green jobs opened my eyes to different agricultural stuff so it made me choose my next program because I knew that I would enjoy it. I didn’t really know anything about agriculture before Green Jobs.” Additionally, the second interviewee expressed that the Green Jobs Program was a “good gateway to opening yourself to different opportunities and a good networking program. You are making connections with other people who are interested in what you’re interested in.”

Conclusion and Opportunities for Program Enhancement

The City of Wilmington Green Jobs Program Impact Study provided a detailed overview and analysis of the Green Jobs Program. The overview described the history of the program with information on total participants, program hosts, and details of the program since its inception in 2011. Results from the structured and semi-structured survey indicated that the program was the first job experience for the majority of the youth participating, and it provided participants with workplace readiness, experience in working in the outdoors, exposure to problem solving skills, and the opportunity to work as part of a team. The data collected through this evaluation process presented an opportunity to consider program enhancements and future evaluation efforts that would improve program feedback for the future development and success of the program.

In 2024, WE Strategies and the Chesapeake Bay Program (CBP) conducted a [Workforce Development Landscape Analysis](#) to assess and understand the experiences of professionals eligible for or employed in green or emerging jobs. Based on the barriers identified in that analysis, WE Strategies and the CBP developed a series of recommendations to recruit and sustain a diverse green jobs workforce, including:

- Create shared knowledge of career opportunities
- Establish mentorship opportunities and clear pathways for progression
- Provide support services to reduce employment barriers
- Partner with community-based organizations to meaningfully engage with underrepresented groups
- Work with training providers to better align employer needs with employee skills (WE Strategies, 2024)

The following program enhancements and opportunities are recommended for consideration for the continued and future success of the City of Wilmington Green Jobs Program.

Funding

National, state, and local funding resources need to continue to fund and enable youth employment and environmental education programs, especially in underrepresented communities. Funding must continue from a multitude of sectors to enable public, private, nonprofit, and academic organizations to continue to invest in the next generation's workforce development and youth environmental education programming.

The success of this program is dependent upon the City of Wilmington's Department of Parks and Recreation program funding sources as well as the funding resources that enable the host organizations and program partners to commit their time and resources to the program. These

groups contribute staff time and resources to ensure that their participation in the Green Jobs Program is impactful and mission aligned. Participating organizations expose the City of Wilmington's youth to environmental issues, careers, and resources while providing professional development skills and training. It is critical for the future of this program to continue funding these types of programs and similar initiatives to encourage the next generation to help protect and restore the local and national environment.

Strengthen Green Jobs Program Alumni Relations and Connection Opportunities

The clearest piece of information from this impact study was the low response rate and lack of responses from participants. In the beginning years of the program, it was not a top priority for UDWRC to collect participant contact information and data. Over the past several years, this has become a priority and will continue to be a priority to continue future outreach to program alumni and improve future studies and measures of the impact of the program. The Green Jobs Program will benefit from developing stronger alumni relations and building an alumni network with past and present participants and Green Jobs Program leads and host organizations. Many established youth employment programs and youth environmental programs have an alumni network that provides a multitude of benefits to the participants and contributes to program design, implementation, and future evaluations. Potential program enhancements to improve future research and alumni follow-up could include:

- Create an action plan to get contact information and retain contact information so it is accessible and in a method that alumni will respond to currently and in the future
- Develop an alumni database that provides updated contact information, education status, and professional statistics for Green Jobs Program alumni
- Create an alumni mentoring program, which may include training for mentors and interns, tutorials, and in-person or online communication
- Produce a resource (online) that spotlights Green Jobs Program alumni, lists their year of participation in the Green Jobs Program, education focus, and/or career path and highlights any connections and benefits gained from participation in the Green Jobs Program

Enhance the Youth Workforce Development Benefits of the Program

Nationally, youth employment programs often provide a first job experience for youth that helps them develop crucial soft skills that are critically important for professional development and future career interests. The survey results indicated that the Green Jobs Program was the

first job for eighty-three percent of the respondents, and participants acquired a variety of work readiness and soft skills through their experience in the program. For example, in the semi-structured survey portion of the assessment, a Green Jobs Program participant stated, “The Green Jobs Program helped me gain knowledge of environmental careers. Different sites that stick out to me are working with urban gardens in the city, the wastewater treatment facility, public policy making (electric bus), the overnight orientation, and talking about the engineering side at the UD Lewes campus. This helped me learn a lot of different careers.”

While the ability to offer a first job is highly valuable, program design to strengthen this first job experience may make it more valuable for participants. Potential program enhancements could include:

- Conduct a pre- and post-program workforce skills assessment, such as the ACT WorkKeys® assessments, so that youth gain a more detailed understanding for the skills and ability they developed through the Green Jobs Program
- Develop and provide all program participants with an exit packet that provides detailed documentation of their work assignments; appraisals of their work; trainings completed; lectures attended; information on relevant community organizations and career opportunities; resume template data; and/or contact information for professionals that can serve as a reference

Enhance Career Opportunities and Exposure

Based on the results of the survey the participants did not have a high recall of the career opportunities presented by the program hosts or through the exposure to the activities conducted throughout the six-week program. Strengthening this component of the program could include:

- Emphasize career opportunities, especially with program hosts and in Delaware
- Conduct a structured career panel each year. The career panel will include a diversity of participants, sectors (government, nonprofit, academic, private), and types of work opportunities in the environmental field.
- Connect with alumni to serve on programming that includes career panels and professional skill development
- Identify an established alumni group that can provide networking resources to Green Jobs Program graduates entering the workforce and/or connect skilled alumni with local jobs

Conduct Annual and Multi-Year Assessments

The City of Wilmington Green Jobs Program has established annual evaluation tools to collect data. These tools provide valuable annual data related to participant satisfaction and program design. The annual evaluation tool is beneficial and should continue to be used while enhancements could include:

- Conduct participant interviews at the time the annual evaluations are conducted. The interviews conducted would be similar to the semi-structured interview conducted in this study. Participant interviews would provide a tool to gather qualitative data from the respondents. Exit interviews can provide a deeper understanding on an individual level of the program's impact. Participant interviews can give the Green Jobs Program participants the opportunity to get feedback on how the program changed the participant's knowledge and understanding of the environment in a deeper way as well as additional information based on that year of programming and the program goals.
- Develop an annual report that provides a snapshot of the year's program such as demographics, participant education and employment status, alumni highlights, projects and partners. The Vermont Youth Conservation Corps Program published a 2020 Gratitude Report (www.vycc.org/wp-content/uploads/2024/05/VYCC_2020_Gratitude_Report.pdf) that exemplifies a useful reporting tool and annual summary and review.
- Conduct evaluations on a multi-year basis. Regularly assess the program with an alumni evaluation and survey every five years. Regular polling may increase the number of responses and lead to a bigger pool of respondents over time. Regular multi-year evaluation may include input and feedback from the alumni and input from program providers, funders, participants, and technical experts. Multi-year surveys can provide valuable quantitative and qualitative information for program implementors and funders and provide comparisons on a multi-year basis.
- Work to share the findings and continue to develop and strengthen the program. Learn from other programs working to engage youth in environmental issues, spaces, and careers.

In closing, research suggests that today's youth may understand the threats to the environment on a global scale, but their connection to their local environment and understanding of their role in it is diminishing over time. Broader environmental concepts are taught, but the value of a personal experience in one's local environment is often overlooked or neglected. Focusing on getting youth outside and touching, feeling, and seeing what is in their neighborhood and backyard can make great strides to awakening an appreciation for and connection to the outdoors and the environment.

This impact study demonstrated that the Green Jobs Program is achieving the goals of the program and is having a positive impact. The positive impact is reflected in participant feedback during the impact study interview process where the interviewee commented, “I recommend this program to my friend. It’s helpful, if you don’t know what you want to do it gives you options for things you can do. It’s a fun and good experience.” In an effort to continue to have a positive impact and engage youth and recruit and sustain a diverse green jobs workforce, the Green Jobs Program will continue to share knowledge of career opportunities that are available, partner with community-based organizations to meaningfully engage with under-represented groups, pursue new technologies and areas of interest in the environmental field, and work together at the highest level to provide an opportunity for the next generation’s awareness and opportunities in the environmental field.

Works Cited

- Balanoff, J., & Shimansky, J. (2021). *Youth Conservation Corps - 2021 Season Report*. A. W. W. Alliance.
<https://awwatersheds.org/wp-content/uploads/2021/12/YCC-Report-2021.pdf>
- Bellotti, J., Rosenberg, L., Sattar, S., Esposito, A. M., & Ziegler, J. (2010). Reinvesting in America's Youth: Lessons from the 2009 Recovery Act Summer Youth Employment Initiative. *Mathematica Policy Research, Inc.*
- Conservation Corps Minnesota & Iowa. (2022). *Conservation Corps Minnesota & Iowa*.
<https://conservationcorps.org/>
- DeCoursey, W., Mix, T., & Narvaez, M. (2022). *Delaware State Parks Youth Conservation Corps Impact Study*.
- Greene, J., & Seefeldt, K. (2021). Learning From Youth: Using Positive Outcomes to Evaluate Summer Youth Employment Programs. *Journal of Adolescent Research*.
<https://doi.org/10.1177/07435584211043295>
- Library of Congress. Congressional Research Service. (2017). *Background and federal efforts on summer youth employment*. Congressional Research Service.
<https://crsreports.congress.gov/product/pdf/R/R44746>
- Pennsylvania Department of Conservation & Natural Resources. (2022). *Pennsylvania Outdoor Corps*.
<https://www.dcnr.pa.gov/outdoorcorps/pages/default.aspx>
- Ross, M., & Kazis, R. (2016). Youth summer jobs programs: Aligning ends and means. *Washington, DC: Brookings Institution*.
- Student Conservation Association (2024). *Youth Conservation Jobs*. <https://thesca.org/join-the-crew>
- The Nature Conservancy. (2022). *The Sociological and Environmental Impacts of Climate Change*.
<https://www.nature.org/en-us/about-us/where-we-work/united-states/illinois/stories-in-illinois/youth-environmental-interns/>
- U.S. Conference of Mayors. (2015). *Summer Youth Programs & Financial Education*.
<https://www.usmayors.org/wp-content/uploads/2020/02/2015-Summer-Youth-Publication.pdf>
- U.S. Department of Labor. (2022a). *Job Corps*. @USDOL. <http://www.dol.gov/agencies/eta/jobcorps>
- U.S. Department of Labor. (2022b). *WIOA Youth Formula Program*. @USDOL.
<http://www.dol.gov/agencies/eta/youth/wioa-formula>
- U.S. Department of Labor. (2022c). *Youth Programs*. <https://www.dol.gov/general/topic/training/youth>
- U.S. National Park Service. (2022). *Youth Conservation Corps*.
<https://www.nps.gov/subjects/youthprograms/ycc.htm>
- U.S. National Park Service. (2024). *21st Century Conservation Service Corps*.
<https://www.nps.gov/subjects/youthprograms/21st-century-conservation-service-corps.htm>

University of Delaware Water Resources Center. (2022). *Green Jobs Program*.
<https://www.wrc.udel.edu/education/outreach/green-jobs-program/>

Vermont Youth Conservation Corps. (2022). *Gratitude Report*.
https://issuu.com/vycc/docs/vycc_2020_gratitude_report

Virginia Department of Conservation and Recreation. (2022). *Youth Conservation Corps*.
<https://www.dcr.virginia.gov/state-parks/youth-conservation-corps>

WE Strategies. (08/02/2024). *CHESAPEAKE BAY PROGRAM Workgroup 8: Landscape Analysis*.
https://drive.google.com/file/d/1DxJEYEGeVYqRrhEyG0ue3U-_4pVxL5yO/view?mc_cid=c1ee9eac31&mc_eid=cb9cae0e8a

Appendix A. Structured Survey

Green Jobs Impact Survey

Introduction

Thank you for taking a few minutes to take the **City of Wilmington Green Jobs Program** survey. The survey should take no more than ten minutes and will provide the City of Wilmington and the University of Delaware with invaluable insights about its program and the participant experience.

The first question set covers: **basic background information on yourself and your participation.**

1) First, were you a participant in the City of Wilmington Green Jobs program?

- ☐ Yes
- ☐ No

Skip to end of survey if first question is "No."

Background Info

2) Please characterize your gender

- ☐ Male
- ☐ Female
- ☐ Non-binary/third gender/fluid/other
- ☐ Prefer not to say

3) Are you of Hispanic, Latino, or Spanish origin?

- ☐ Yes
- ☐ No
- ☐ Prefer not to say

4) How would you describe yourself?

- ☐ White
- ☐ Black or African American
- ☐ American Indian or Alaska Native
- ☐ Asian
- ☐ Native Hawaiian or Pacific Islander
- ☐ Multiple Races

5) How old are you?

- ☐ 14-17
- ☐ 18-21
- ☐ 22-25
- ☐ Over 25
- ☐ Prefer not to say

6) What year(s) were you in the Green Jobs Program (check all that apply)

- ☐ 2011
- ☐ 2012
- ☐ 2013
- ☐ 2014
- ☐ 2015
- ☐ 2016
- ☐ 2017
- ☐ 2018
- ☐ 2019
- ☐ 2020
- ☐ 2021
- ☐ 2022
- ☐ 2023

7) Was your Green Jobs experience your first paid job of 20 or more hours per week?

- ☐ Yes
- ☐ No

8) Which of the following best describes your education status at present?

- ☐ High School Student
- ☐ Full-time College Student
- ☐ Part-time College Student
- ☐ Trade School or vocational program
- ☐ Not enrolled in an educational program

9) Which of the following best describes your employment status at present?

- ☐ Full-time job
- ☐ Part-time job
- ☐ Not working - looking for work
- ☐ Not working - not looking for work

10) What is your highest degree earned?

- ☐ Less than a high school degree
- ☐ High school degree (or equivalent)
- ☐ Some college but no degree
- ☐ Associate degree
- ☐ Trade school certification
- ☐ Bachelor's degree
- ☐ Master's degree
- ☐ Ph.D. or professional degree

11) Please indicate your level of agreement with the following statements:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I like to spend time outside in nature.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I like to learn about the environment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is important to recycle.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would like to spend time working to fix environmental problems in nature.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am interested in learning new ways to help protect the environment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would give some of my own money to help protect the environment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would help clean up green areas in my neighborhood.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The next section covers: your satisfaction with the Green Jobs Program.

12) Please indicate the degree to which you agree with the following statements:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The program was excellent.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The program met my expectations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

13) Based on your experiences, would you recommend the Green Jobs Program to a friend?

- ☐ Yes
- ☐ No
- ☐ Unsure (specify) _____

The next section covers: **skills and professional development.**

14) To what degree did participating in the Green Jobs Program improve your skills in the following areas?

	Not at all	Somewhat	Moderately	Significantly	Extremely
Working in the outdoors/field work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Job/workplace readiness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Communications skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Finding career opportunities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Problem solving skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Planning skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Budgeting/financial management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

15) To what degree did participating in the Green Jobs Program improve your abilities in the following areas?

	Not at all	Somewhat	Moderately	Significantly	Extremely
Exposure to varied perspectives or views	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Accepting supervision	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Time management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Appropriate dress	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Asking for help when needed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Attention to detail	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Leadership experience	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ability to work independently	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ability to work as a part of a team	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Workplace motivation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Professional relationships	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Workplace reporting - time card and duties	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The next section covers: [the Green Jobs Program's impact on your career pathway.](#)

16) From your experience with the Green Jobs Program, to what degree did you gain awareness in the following areas?

	Not at all	Somewhat	Moderately	Significantly	Extremely
Knowledge of careers at one of the Program Host organizations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interest in pursuing a career at one of the Program Host organizations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Knowledge of career opportunities in the environmental field.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interest in pursuing a career in the environmental field.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Understanding the daily responsibilities of a professional working in the environmental field.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

17) Did your Green Jobs Program experience expose you to any environmental careers you were previously unaware of?

- ☐ Yes (please specify) _____
- ☐ No

18) Are you currently working in the environmental field?*

- ☐ Yes (please specify) _____
- ☐ No

19) What factors influenced your environmental career choice? (Select all that apply)

- ☐ Personal interest/experience
- ☐ Green Jobs Program
- ☐ School/academics
- ☐ Other work experience (not Green Jobs)
- ☐ Other (please specify) _____

20) Are you interested in pursuing an environmental career?

- ☐ Yes (please specify) _____
- ☐ No
- ☐ Maybe

**Display question 19 if answer to question 18 is yes. Display question 20 if answer to question 18 is no.*

The last section covers: the Green Jobs Program's impact on your personal awareness of environmental issues and recreational facilities/opportunities.

21) To what extent did your Green Jobs Program experience increase your knowledge of Wilmington and Delaware's outdoor recreational opportunities and natural areas?

	Not at all	Somewhat	Moderately	Significantly	Extremely
Outdoor recreation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Natural areas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Historical/Cultural	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

22) To what extent did your Green Jobs Program experience affect your understanding of the following environmental areas, topics, and issues?

	Not at all	Somewhat	Moderately	Significantly	Extremely
Climate change	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pollution/litter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sea level rise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Invasive species	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Disaster relief	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Coastal marine life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Water quality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Horticulture (gardening and trees)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Environmental impacts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Geospatial technologies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Watersheds	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Aquatic life (fish and plants in water bodies)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please specify)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

23) My Green Jobs experience has led me to be more sensitive with regard to my?

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Water usage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Power consumption	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Transportation choices	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Diet/lifestyle	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Trash & waste	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recycling	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Participation in local conservation projects	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Outdoor recreation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

24) **Participants who complete the survey can submit their contact information to be entered into a raffle to receive a \$50 Amazon gift card. Gift card winners will receive the gift card electronically at the email provided by March 1, 2024.**

25) Would you like to add your information to be entered into our Amazon raffle? Your survey responses will not be associated with your information.

☐ Yes

☐ No

26) Name

27) Email Address

Appendix B. Semi-Structured Survey: Interview Guide

Procedure

The City of Wilmington and UDWRC collected 120 of the 174 alumni's email addresses. UDWRC researchers will email all participants to invite them to participate in a twenty-minute or less phone interview. The participants will receive a \$20 Wawa gift card. No more than eight to twelve interviews will be conducted. A conference line will be used to conduct the interviews, allowing for subjects to participate without divulging contact information.

A consent form is emailed and read prior to the start of the interview. This consent form informs the participant about the study, including its purpose, what the participant is being asked to do if they decide to take part, and the risks and benefits of being in the study. All subjects will be assigned a random numeric code unconnected with any personally identifiable information (PII). The researchers will take notes on the interviews in documents assigned a particular subjects random code.

Goals

- Understand the impact of the City of Wilmington Green Jobs Program by hearing feedback from participants on their experiences in the program.
- Complement the data collected from the structured survey and allow for the collection of qualitative information that could illustrate key dimensions of outcomes experienced by Green Jobs Program participants.
- Put structure survey findings in broader context.
- Gain a deeper understanding of the Green Jobs Program and its impacts.

Questions

- When did you participate in the City of Wilmington Green Jobs Program?
- Did you participate in the program for one or two years? If one year, why one? If two years, why two?
- What is your current status: are you in school, working, both, or other?
- If you are working, did the City of Wilmington Green Jobs Program influence your career choice?
- If you are a student, did the City of Wilmington Green Jobs Program influence your program/degree choice?
- Did your involvement in the City of Wilmington Green Jobs Program change your environmental awareness or appreciation for the outdoors in any way—positive or negative?
- Reflecting on where you are now, did the City of Wilmington Green Jobs Program help you get there or influence you in any way?
- Can you name a good and bad or best and worst experience during the Green Jobs Program?

- Do you have any recommendations for improvement of the program?
- Would you recommend that others participate in the City of Wilmington Green Jobs Program? Why or why not?

Appendix C. Email to Green Jobs Program Alumni and Parents

2024 Green Jobs Impact Study

Email Recruitment Language

Hello City of Wilmington Green Jobs Program Alum,

This summer, the City of Wilmington completed the 13th year of the Green Jobs Program and we would like to get participants' feedback on the program. In partnership with the University of Delaware, the City of Wilmington has developed a brief survey to better understand the impacts of the Green Jobs Program. You will be receiving this survey by email within the week.

If you were a Green Jobs Program participant, we want to hear from you!

Upon completion of the survey, you will be given the opportunity to be entered into a drawing for a \$50 Amazon Gift Card. If your name is chosen, the gift card will be emailed to you at the name and email provided at the completion of the survey.

If you have received this email as the parent or guardian of a Green Jobs Program Alumni, we would appreciate you forwarding this email to the participant or providing updated contact information to Martha Narvaez (mcorrozi@udel.edu).

The Green Jobs alumni's participation in this survey is entirely voluntary, you will remain completely anonymous, and all information collected in this survey will be kept strictly confidential. The information gathered will only be used for the study purposes. You have the right to refuse to answer any questions or to avoid participating at any time for any reason. This questionnaire has 5 sections and will take 5-10 minutes to complete.

If you are receiving this email and are the parent or guardian of a Green Jobs Program Alumni who is **under 18**, there are no known risks to your child from participating in this study. Your child will not directly benefit from this research, however their participation may benefit others by informing development of future City of Wilmington Youth Employment Programs. This research is anonymous. No names or other identifying information will be collected. If a report of this study is published or presented at a professional conference, only group results will be communicated and not individual responses. If you **allow** your child to participate, no further action is necessary. If you **do not allow** your child to participate, please reply to Martha Narvaez (mcorrozi@udel.edu) by February 2, 2024 with the subject line "Opt Out", and include your name, your child's name, and your child's email address in the message.

The research team is happy to answer any questions you have about the study. If you have questions, please contact Martha Narvaez at mcorrozi@udel.edu.



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