

Building Climate Resilience at Dickinson College and in Central Pennsylvania Progress Report for Year 1, 2023

Jan 30, 2024

Table of Contents:

Progress Highlights for 2023	1
1. Introduction	1
2. The Climate Resilience Working Group	3
3. Scope of Work and Approach	3
4. Background Papers for the Resilience Initiative	4
4.1. Changing Climate Hazards in Cumberland County	4
4.2. Social Vulnerability, Resilience, and Equity	4
5. Assessment of Climate Resilience	5
6. Community Engagement	5

Progress Highlights for 2023

- The Climate Resilience Working Group was established and includes community members of Dickinson, Carlisle, and Cumberland County.
- A website was created for the initiative and a climate resilience newsletter was launched with 370 subscribers.
- A scope of work, approach, and timeline for the resilience initiative were developed and adopted by the Working Group.
- Background papers on changing climate hazards in Cumberland County and social vulnerability and equity were written and published on the initiative website.
- Dickinson students completed an assessment of climate risks and resilience in Carlisle and Cumberland County and their reports were published on the website.
- A community workshop, held in December 2023 and facilitated by Dickinson students and staff, was attended by 50 community stakeholders.
- Student research assistants were recruited to assess climate resilience of Dickinson College and began their work in January 2024.

1. Introduction

Acting on a resolution passed by the Dickinson faculty, President John E. Jones signed the Resilience Commitment of Second Nature in December 2022. Second Nature is a non-profit benefit corporation

that initiated and coordinates the Resilience Commitment, a program that engages over 100 colleges and universities in working to make their campuses and communities resilient to climate change.

Dickinson's responsibilities as a signatory, which are to be completed within three-years of signing, are to establish structures and a joint campus-community working group to guide and coordinate the climate resilience initiative, assess climate risks and resilience at Dickinson and the wider community, evaluate strategies for building climate resilience, develop and adopt a climate resilience plan for the college that includes indicators and metrics for monitoring progress, and integrate climate resilience in Dickinson's curriculum and other learning experiences. It is intended that the work be done in partnership with community stakeholders from Carlisle and Cumberland County.

Following are milestones for planning and tracking progress on the initiative.

Milestones for Year 1 (2023):

- Launch the initiative and establish a campus-community Climate Resilience Working Group to guide and coordinate the initiative.
- Develop a scope of work and approach for the initiative.
- Develop and publish background papers about changing climate hazards and vulnerabilities in our region.
- Initiate and complete work to assess climate risks and resilience in Carlisle and Cumberland County and produce and disseminate reports from this work.
- Engage campus and community stakeholders in conversations about climate risks and resilience in our region.

Milestones for Year 2 (2024):

- Initiate and complete work to assess climate risks and resilience of Dickinson College.
- Synthesize information from the Dickinson, Carlisle, and Cumberland County assessments and produce and publish reports from this work.
- Initiate work to evaluate strategies for building climate resilience at Dickinson and in Carlisle and Cumberland County.
- Engage campus and community stakeholders in conversations about strategies for building climate resilience.

Milestones for Year 3 (2025):

- Continue and complete work to evaluate strategies for building climate resilience at Dickinson and in Carlisle and Cumberland County and produce and publish reports on this work.
- Continue to engage campus and community stakeholders in conversations about strategies for building climate resilience.
- Develop a draft climate resilience plan for Dickinson College, that includes indicators and metrics for monitoring progress, with input from Dickinson and wider communities.
- Submit Dickinson's draft climate resilience plan to Dickinson's All-College Committee on Planning & Budget for their consideration and action.
- Work with community partners in Carlisle and Cumberland County to support and encourage them to develop and adopt their own climate resilience plans.

Milestones Beyond Year 3:

- Begin implementation of Dickinson’s climate resilience plan in 2026, which should include processes to monitor, evaluate, and improve implementation of plan strategies.
- Report progress annually to Second Nature, the Dickinson Campus, and the Carlisle and Cumberland County communities.
- Review, revise, and resubmit the climate action plan every five years.

This report documents progress on the Year 1 milestones.

2. The Climate Resilience Working Group

The Climate Resilience Working Group was established as a subcommittee of the President’s Commission on Environmental Sustainability (PCES) in spring 2023. The Working Group includes Dickinson students, faculty, and staff, a representative of the Carlisle Borough Manager’s Office, and a representative of the Planning Department of Cumberland County. The Working Group is co-chaired by Neil Leary, Director of Dickinson’s Center for Sustainability Education (CSE), and Ken Shultes, Dickinson’s Associate Vice President for Sustainability and Facilities Planning.

Other members include Marisa Arreola ’24 (student), Allyssa Decker (ENST faculty), Elizabeth Grant (Cumberland County Planning Department), John Henson (BIOL faculty), Caroline Krauth ’26 (student), Lauren Lasater (Compliance & Risk Management), Lindsey Lyons (CSE staff), Jillian Mann ’26 (student), Lindsay Mintz (Student Life staff), Sara Markowitz (Clarke Forum staff), Olivia Ngai ’26 (student), Sumaiya Quayum (CSE staff), Hanna Roman (FREN faculty), Kristin Strock (ENST faculty), Jill Swartz (Public Safety), and Jared Woolston (Carlisle Borough Manager’s Office).

The Working Group launched the initiative [*Building Climate Resilience at Dickinson and in Central Pennsylvania*](#) with an open meeting in April 2023 that included campus and off-campus community members. In summer 2023, the Working Group produced a scope of work, an approach for assessing resilience, and a review of evidence for changing climate hazards in the County.

3. Scope of Work and Approach

The scope of work for the initiative was developed and adopted by the Climate Resilience Working Group in June 2023. It describes the need, purposes, principles, general approach, scope, and timeline for *Building Climate Resilience at Dickinson and in Central Pennsylvania*.

Access the Scope of Work online: [Scope of Work](#).

The approach of the assessment was developed by the Working Group over summer 2023, drawing on guidance and methods documents from Second Nature, the U.S. Climate Resilience Toolkit, and other sources. Climate risks and resilience are being assessed for Dickinson, Carlisle, and Cumberland County. The assessment work is being conducted largely by Dickinson students with guidance from the Center for Sustainability Education.

The assessment is following the general approach recommended by Second Nature for a [Campus-Community Resilience Assessment](#). The approach includes identifying and understanding campus and community exposures to climate and other stressors, vulnerabilities from climate stressors, strengths and weaknesses that provide capacities or pose obstacles for responding effectively to climate stressors, strategies for building climate resilience; developing indicators and metrics for evaluating current resilience and progress in building resilience; collecting and using data to establish values for selected metrics; and synthesizing information to characterize climate resilience. These steps are being carried out for five dimensions of resilience – social equity and governance; health and wellbeing; ecosystem services; infrastructure, utilities, and services; and economy and finances.

Access the assessment approach online: [Approach of the Assessment](#).

4. Background Papers for the Resilience Initiative

Two background papers were produced in 2023 for the resilience initiative, one on changing climate hazards in Cumberland County and one on social vulnerability and equity.

4.1. Changing Climate Hazards in Cumberland County

A review of evidence for changing climate hazards in the County was written to present current knowledge about Cumberland County’s climate and climate hazards, how they are changing, and how they are likely to change in the future. It is intended to serve as a resource and starting point for the climate resilience initiative. The information presented is drawn from peer-reviewed scientific sources, including the 6th Assessment Report of the Intergovernmental Panel on Climate Change, the 4th National Climate Assessment of the U.S. Global Change Research Program, and the 2021 Pennsylvania Climate Impacts Assessment from the Pennsylvania Department of Environmental Protection. Climate projections for Cumberland County are sourced from the dataset that was used by the USGCRP for the 4th National Climate Assessment.

Access online: [Changing Climate Hazards](#).

4.2. Social Vulnerability, Resilience, and Equity

Climate hazards and climate change do not and will not impact all people and communities equally. The impacts are strongly shaped by social, economic, demographic, and other factors that influence exposures to hazards and the sensitivities, vulnerabilities, and resilience of people and communities that influence the harms that are suffered from exposures. A framework developed by the Centers for Disease Control for measuring social vulnerability to natural hazards, research on determinants of vulnerability and resilience to climate, and county level data were used to examine who may be vulnerable and resilient to climate hazards in our community and where vulnerable and resilient populations reside in the Cumberland County.

Access online: [Social Vulnerability, Resilience, and Equity](#).

5. Assessment of Climate Resilience

The assessment of climate risks and resilience has been completed for Carlisle and Cumberland County. Students who participated in the fall 2023 Baird Sustainability Fellows practicum course with Neil Leary conducted the assessment, collecting information through written sources and interviews with over 40 Carlisle and Cumberland County community stakeholders, and integrating and analyzing the collected information to produce reports for the initiative. The students' reports are available online. The papers provided useful context for a community workshop the students facilitated at the end of the semester, which is described later in this document in the section on community engagement.

Access online: [*Climate Resilience in Carlisle and Cumberland County*](#).

- [Social Equity and Governance](#), Kathryn Hickey '24
- [Health and Wellbeing](#), Heidi Beardsley '25
- [Ecosystems](#), Kristen Beach '24
- [Infrastructure, Utilities, and Services](#), Christian Polk '24
- [Economy and Finances](#), Isabella Moes '24

Assessment of climate resilience of Dickinson College began in January 2024 and will continue through spring 2024. Three students have been recruited to work with Neil Leary as research assistants on the project. They are Sebastian Valdez '26, Rahma Semma '25, and Aidan Ray '25.

6. Community Engagement

Members of Dickinson, Carlisle, and Cumberland County communities were engaged in the initiative in 2023 through an electronic newsletter, a number of community events, interviews of community stakeholders, a community survey, and publication and dissemination of reports and other documents of the initiative via a webpage created for the initiative, [Climate Resilience](#).

The electronic newsletter is distributed to a list of 370 subscribers, who include staff and leaders of community organizations and businesses, public officials, county residents, and Dickinson students, faculty and staff. The newsletter was launched in September 2023 and two issues were distributed in the fall. Interested community members can subscribe to the newsletter online: [Join the Climate Resilience Contact List](#).

Community engagement events and activities in 2023 include:

Community Workshop, Climate Resilience in Cumberland County and Carlisle, PA, December 15, 2023. The workshop was attended by 50 community stakeholders from across the county seeking to learn from each other and share their perspectives about climate risks in our region, strategies for building climate resilience, and priorities for action. The 3-hour workshop, facilitated by Dickinson

students and staff, began with short presentations about climate risks and resilience in the County, moved into a series of small group discussions to explore selected climate resilience topics, and closed with a conversation among all workshop participants to share important ideas from the small groups and identify commonalities and differences across the groups.

The workshop conversations and a post-workshop survey revealed that risks from climate-related hazards are concerns to county residents for all five of the impact categories that were discussed: social equity and vulnerable populations, health and wellbeing, the environment, infrastructure, and the economy. Among these, health and wellbeing and the environment ranked as the highest concerns in the post-workshop survey, closely followed by social equity and vulnerable populations and infrastructure. Protecting many of the county's assets from climate-related hazards were rated as high and very high priorities. Rated as the highest priorities are protecting drinking water, people who are highly vulnerable to climate hazards, streams, lakes, and watersheds, wildlife and biodiversity, farms, farmers and agriculture, forests, and human health. Protecting infrastructure of various types, recreation, and businesses were rated as greater than medium priorities. More details of the workshop conversations can be found in the workshop summary report.

Access online: [Community Workshop Summary Report](#)

Faculty Gathering on Climate Resilience, April 25, 2023: 14 faculty members and the directors of the Center for Sustainability Education and the Center for Civic Learning and Action gathered to discuss ways in which climate resilience might be incorporated in teaching, research, and practices at Dickinson.

Climate Resilience Open Meeting, April 11, 2023: An interactive, open meeting for Dickinson, Carlisle, and Cumberland County community members was held in Dickinson's Social Hall and attended by 22 people, including Dickinson students, faculty, and staff and members of Carlisle-area communities.

Sustainability Expo, March 31, 2023: The Working Group co-chairs participated in the Sustainability Expo to share information about the climate resilience initiative. Over 300 people attended the Expo, scores of whom were engaged in conversation about the resilience initiative.

Submitted by the Climate Resilience Working Group Co-Chairs, Neil Leary (learyn@dickinson.edu) and Ken Shultes (shultes@dickinson.edu).