Project EDDIE Spring 2023 Final Products

Description

Components of original material

Module Adaptation

Module Used in Its Entirety as embedded activity in module on Voluntary Geographic Information: Heard, M. J. (2023). [Assessing the Risk of Invasive Species Using Community Science Data](http://dx.doi.org/10.25334/J3GM-W132). QUBES Educational Resources. [doi:10.25334/J3GM-W132](http://dx.doi.org/10.25334/J3GM-W132)

New Material

New Material Developed for Module on Voluntary Geographic Information

Topic of Material: Geography, Volunteered Geographic Information, and Citizen Science

Context for use

Instructional Setting

To be used as a several week or end of semester project that can be used across curriculum to create educational outreach opportunities for events such as Citizen Science Month, Earth Day, GIS Day, Geography Awareness Week, and similar.

Material Audience

Developed for undergraduates but can be adapted for all age groups

Activity Length

Developed to take about twelve hours overall but can be adapted to a day or 1/d day long activity

Other materials or resources

Embedded with other open educational resources (OER), media, text, and assignments.

Instructor notes

Learning Environment is a computer lab or access to Citizen Science apps and video on phone or device.

Change notes

**Instructor Information**

Instructor Name

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Institution

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**Instructor Story: Creating a Deeper Understanding of Big Geospatial Data and Volunteered Geographic Information (VGI) by embedding and Implementing the Project EDDIE Module on Assessing the Risk of Invasive Species Using Community Science Data in Global Citizen Science Month.**

Introductory Statement

I used the Project Eddie Module Assessing the Risk of Invasive Species Using Community Science Data developed by Heard, M. J. (2023) to create a deeper understanding of big geospatial data and volunteered geographic information (VGI) by embedding and Implementing the Project EDDIE Module on Assessing the Risk of Invasive Species Using Community Science Data in Global Citizen Science Month and Earth Day events as a cross-cutting curriculum for undergraduate students. Students in the upper-division courses completed the module while adapting it for a campus and community citizen science month activity.

Relationship of EDDIE Module to Course

As an instructor of geography courses, I was always on the lookout for innovative ways to engage my students and enhance their understanding of geospatial concepts. When I came across the Project EDDIE Module on Assessing the Risk of Invasive Species Using Community Science Data, I saw a fantastic opportunity to integrate citizen science, volunteered geographic information (VGI), and Global Citizen Science Month into my curriculum.

I decided to incorporate the Project EDDIE Module into multiple geography courses that semester, including Introduction to Geospatial Methods and Urban Geography. In Introduction to Geospatial Methods, which focuses on GISc and geospatial technology, the module seamlessly fit into the section on QGIS and Big Data. In Urban Geography, the topic of invasive species, citizen science, and public policy align perfectly with discussions on urbanization and urban problems.

To ensure a comprehensive integration of the module, I invited professors from other courses to implement relevant parts of the Project EDDIE Module into their own classes. I encouraged discussions and reflections from geography students to identify potential topic areas where the module could be applied.

The goal of geography courses is geo-literacy or teach students to develop a geospatial lens, or to encourage applying geospatial concepts and geoinquiry to their own lives and professions. I chose to use the Project EDDIE Module [Assessing the Risk of Invasive Species Using Community Science Data](https://qubeshub.org/publications/4252/1), which uses Citizen Science, as part of semester focus across geography courses leading up to official participation in Global Citizen Science Month and Earth Day events. Geospatial data is considered critical to climate change approaches and some of the longest continuously collected climate change large datasets are collected using geographic methods, yet students and their professors are often unaware of geography’s role in big data collection, assessment, analysis, ethics, and impacts. I embedded the entire Project Eddie Module [Assessing the Risk of Invasive Species Using Community Science Data](https://qubeshub.org/publications/4252/1) into a course module I created on Citizen Science and QGIS. The pre-existing module gave structure and scaffolding to develop deeper geospatial and geography context. For each pre-existing module goal presented, I added a geographic information science component, any necessary skills needed such as using available QGIS training/certification, and geospatial reflection. Further, I was able to incorporate regional geography into the module through the topic of invasive species mapping.

Teaching Details

In terms of teaching details, I embedded the entire Project EDDIE Module into a course module I created on Citizen Science and QGIS. By doing so, I provided structure and scaffolding for deeper geospatial and geography context. For each goal presented in the module, I added a geographic information science component and necessary skills training, such as using available QGIS resources and certification. Additionally, I incorporated regional geography into the module by focusing on invasive species mapping. I worked with the students to reflect and give feedback on the module adaptation to be used in future projects.

**Creating a Deeper Understanding of Big Geospatial Data and Volunteered Geographic Information (VGI) by embedding and Implementing the Project EDDIE Module on Assessing the Risk of Invasive Species Using Community Science Data in Global Citizen Science Month.**

Module with lessons, activities, discussion, and embedded media is available as a slide deck:

Tiny URL: <https://tinyurl.com/3fkvk6wc>

Original URL: [https://www.canva.com/design/DAFiDfF9p6Q/WwauwjeVbDNO4DsyJdpJEQ/view?utm\_content=DAFiDfF9p6Q HYPERLINK "https://www.canva.com/design/DAFiDfF9p6Q/WwauwjeVbDNO4DsyJdpJEQ/view?utm\_content=DAFiDfF9p6Q&utm\_campaign=designshare&utm\_medium=link&utm\_source=publishsharelink"& HYPERLINK "https://www.canva.com/design/DAFiDfF9p6Q/WwauwjeVbDNO4DsyJdpJEQ/view?utm\_content=DAFiDfF9p6Q&utm\_campaign=designshare&utm\_medium=link&utm\_source=publishsharelink"utm\_campaign=designshare HYPERLINK "https://www.canva.com/design/DAFiDfF9p6Q/WwauwjeVbDNO4DsyJdpJEQ/view?utm\_content=DAFiDfF9p6Q&utm\_campaign=designshare&utm\_medium=link&utm\_source=publishsharelink"& HYPERLINK "https://www.canva.com/design/DAFiDfF9p6Q/WwauwjeVbDNO4DsyJdpJEQ/view?utm\_content=DAFiDfF9p6Q&utm\_campaign=designshare&utm\_medium=link&utm\_source=publishsharelink"utm\_medium=link HYPERLINK "https://www.canva.com/design/DAFiDfF9p6Q/WwauwjeVbDNO4DsyJdpJEQ/view?utm\_content=DAFiDfF9p6Q&utm\_campaign=designshare&utm\_medium=link&utm\_source=publishsharelink"& HYPERLINK "https://www.canva.com/design/DAFiDfF9p6Q/WwauwjeVbDNO4DsyJdpJEQ/view?utm\_content=DAFiDfF9p6Q&utm\_campaign=designshare&utm\_medium=link&utm\_source=publishsharelink"utm\_source=publishsharelink](https://www.canva.com/design/DAFiDfF9p6Q/WwauwjeVbDNO4DsyJdpJEQ/view?utm_content=DAFiDfF9p6Q&utm_campaign=designshare&utm_medium=link&utm_source=publishsharelink)

Module Overview:

This VGI module aims to explore the use of big spatial data in the context of climate change and citizen science, with a specific focus on geospatial data and volunteered geographic information (VGI). The module utilized QGIS and Geographic Information Science (GISc) techniques to analyze and visualize spatial data. Participants learned about volunteered geographic information (VGI) and its role in community engagement and citizen science initiatives. The module used certificate training, hands-on exercises, discussions, and reflection as part of Global Citizen Science Month and Earth Day activities.

Introduction to Big Spatial Data and Climate Change

Definition and characteristics of big spatial data.

Overview of the relationship between climate change and spatial data.

Discussion on the importance of spatial data in climate change research and mitigation.

Group discussion on the benefits and challenges of geospatial data collection.

Introduction to citizen science and its role in collecting spatial data.

Overview of volunteered geographic information (VGI) and its contributions to scientific research.

Discussion on the opportunities and challenges of using citizen science data

Assessing the Risk of Invasive Species Using Community Science Data

Introduction to QGIS software and its features.

Hands-on exercises to familiarize participants with QGIS tools for data import, manipulation, and visualization.

Techniques for spatial analysis and querying using QGIS.

Geographic Information Science (GISc) and Climate Change

Exploration of community science data sources for invasive species monitoring.

Use Project Eddie Module for hands-on exercises to analyze and visualize community science data using QGIS.

Discussion on the implications of invasive species and the importance of public engagement in monitoring efforts.

Group Discussion and case studies

Active participation and contribution to group discussions.

Discussion on the relationship between urbanization, climate change, and spatial data.

Examination of the intersection between VGI, public policy, and student areas of study.

Ability to analyze and interpret real-world case studies related to climate change and invasive species using spatial data.

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