FOUNDATIONAL MODULE

Mapping

Environmental Justice
What’s in this module?

Contents
This module uses mapping to demonstrate explore issues of environmental justice. It is divided into three parts. Part 1 and 2 focus introducing and exploring features from the EJAtlas and EJScreen tools. Part 3 provides assignment and projects for applying concepts from this module in future study.

Activities
3 parts
5 readings
9 activities
2 project options

Key Resources
- EJAtlas
- EJScreen
Learning Objectives

01 Learn basic mapping practices using different tools

02 Identify how environmental justice can be explored through mapping

03 Consider EJ case studies from around the world, and more locally

04 Develop a working understanding of EJ Atlas and/or EJ Screen
Introduction

Mapping geospatial data centering environmental justice plays a huge part of understanding how to mitigate climate injustices.

Mapping geospatial data can:

- Track, and then ultimately manage and measure, the effects of climate change (Ordnance Survey).
- Track things like environmental risk, air pollution, landscape change, and more.
- Provide a better understanding of the social issues that occur in different areas as well.
- Allow us to understand not only environmental concerns, but issues of environmental injustice—we learn what groups are most affected, and how we might mitigate these consequences.
Introduction

The two landmark studies that started the field of EJ

- Siting of Hazardous Waste Landfills and Their Correlation with Racial and Economic Status of Surrounding Communities (General Accounting Office, 1983)
- Toxic Waste in the United States (United Church of Christ, 1987) – this report coined the term "environmental racism"

Both of these studies examined the inequitable placement of environmental harms on communities of color.

For more, see the Introduction to Climate Justice module
LEARNING ABOUT AN IMPLICATION OF EJATLAS

Activity #1

Group and assign
Split into 5 or 10 small groups. Assign either 1 or 2 sections (from sections 2 through 11) to each group. If there are 5 groups, each group gets 2 sections. If there are 10 groups, each group gets 1 section.

Read
Read the introduction and your group’s assigned section(s) from Mapping ecological distribution conflicts: The EJAtlas.

Present
Give a 2 minute mini-presentation to the class summarizing the section(s) that your group read.
ACTIVIST PERSPECTIVES ON MAPPING

Read
Charles Lee: Environmental Justice Leader Uses Maps to Reveal Injustices

Discuss with a partner
- How are EJ and CJ leaders using maps?
- How do maps highlight critical areas for environmental justice?
- How is this perspective different than the previous academic article?
EJAtlas

PART 1
Overview of EJAtlas

What is the EJAtlas?
The EJAtlas is an online platform and tool developed to make visible and systematize contemporary struggles against environmental injustice worldwide—with and for affected groups. EJAtlas documents social, often invisible, conflicts around environmental issues worldwide. Users can explore the page by kinds of issues, country maps, and more.

Learn more about the EJAtlas
Take a few minutes as a class to read about the EJAtlas here.
ACTIVITY #3

EXPLORING EJATLAS

Explore
Take 15 minutes to look through the EJAtlas to familiarize yourself with the platform.

Initial guiding questions
- What kinds of case studies does the platform show in the legend?
- Are there any important ones you can think of that aren't on EJAtlas already?
- What trends and patterns do you notice? One trend might be that certain countries see a certain kind of problem more prominently.
- What qualifies as an EJ conflict or not?
Take 20–30 minutes to take more detailed look at the case studies that pop up for your country, and see what trends you find across the country.

**Group and select a country**
Split up into groups of 3, and pick a country to explore more deeply. To filter by country, click on 'Browse Maps' and then 'Country'.

**Explore**
Take 20–30 minutes to take more detailed look at the case studies that pop up for your country, and see what trends you find across the country.

To the rest of the class, present:
- Your findings
- At least one case study
- Any trends that you discovered
CASE STUDY RESEARCH AND DYAD

Choose a case study
Choose a case study that interests you from around the world. Spend 10 minutes looking through it, looking at news stories from it (under 'Sources and Materials').

Consider
- Why did you choose this case?
- What environmental injustice struggle is happening? Why? What role does power at play in this case?
- What are the potential solutions to this case, what tools from your current course/major of study would be helpful in addressing the problems? Why?
- What aspect of environmental or climate justice did you learn while investigating this case?

Engage in a dyad
Participate in a 2 minute dyad, where in pairs you will each have 2 minutes to talk about your thoughts about these questions. Listeners should not interject, and instead focus on being an active listener.
Activity #6

Class Discussion

Discussion Questions

• Why is (or why not) is the EJ Atlas an important tool to address global and environmental issues?
• What suggestions might you have for improving a tool like EJ Atlas?
EJScreen

PART 2
Overview of EJScreen

What is the EJScreen?
EJScreen is an EPA's environmental justice mapping and screening tool that provides EPA with a nationally consistent dataset and approach for combining environmental and demographic socioeconomic indicators.

All of the EJScreen indicators are publicly-available data. EJScreen simply provides a way to display this information and includes a method for combining environmental and demographic indicators into EJ indexes.

How to use EJ Screen
Choose a geographic area and the tool will provide demographic, socioeconomic, and environmental information for that area.
ACTIVITY #7

EJSCREEN MAPPING IN ACTION

Read

*Environmental Justice in the Narragansett Bay Region*

Pay attention to the Methods section, which describes how the authors of this article sourced data from EJScreen.

Learn how to use EJScreen

Skim through this EPA website that teaches you how to use EJScreen.
**ACTIVITY #7**

**EXPLORE EJSCREEN TOOLS**

- Environmental Justice Indexes
- Supplemental Indexes
- Pollution and Sources
- Socioeconomic Indicators
- Health Disparities
- Climate Change Data
- Critical Service Gaps
- Additional Demographics

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**Explore EJScreen**

Spend 10–15 minutes exploring EJScreen. Try to use as many tools as you can.

**Guiding Questions**

- What kinds of indexes and subsections does the platform show in the legend?
- Are there any important climate-related ones you can think of that aren't on EJScreen already?
- What are some benefits of using certain types of indexes for certain types of research?
CASE STUDIES AND CLASS PRESENTATION

Choose a case study
Split up into 3 groups and pick a case to take a deep dive into.
1. Superfund Sites in Woburn, Massachusetts
2. Air Toxics Cancer Risk in Suffolk County, Massachusetts
3. Hazardous Waste in Middlesex County, Massachusetts

Questions to consider for your presentation
- How is this a problem of environmental justice? What resources are being utilised? Who is most affected?
- Trace the problem back—where did the case study you chose originate? Who/what were factors/perpetrators?
- Use other indexes to help! Take a look at schools, prisons, hospitals, in areas around where your study is located, etc, and see what you find (Click on the location icon entitled 'places'). Whatever can help inform your research is great!
A CRITIQUE OF EJSCREEN

Read

*Indigenous Peoples and the Justice40 Screening Tool: Lessons from EJSCREEN*

Discuss

- What were the problems highlighted in the article?
- What are the implications of the article?
- What are other ways the EJ Screen may be flawed?

Reflection questions

- What personal reflections do you have about your research with one of these EJ Mapping Tools?
- Do you feel that you have a better understanding on how EJ mapping works?
- What additional features might EJScreen add that would be beneficial for your research/future users?

*Indigenous Peoples and the Justice40 Screening Tool: Lessons from EJSCREEN*

Healey Mullen, Kyle Whyte, and Ryan Holifield

Published Online: 6 Mar 2023 | https://doi.org/10.1089/env.2022.0045

Abstract

The Biden-Harris administration has focused considerably on environmental justice (EJ), including the Justice40 Initiative...
Beyond the Module

PART 3
EJAtlas Case Study

Prompt suggestion
On EJAtlas, create your own case study, using resources from MIT—this might include D-lab, research done by MIT professors in the area, or even research you have done in a previous class.

Consider how MIT (or your institution) can do better to mitigate the problem you are researching.
Use EJScreen to Examine Local Issues and Impact

Prompt suggestion

Look at some issues in the near MIT (or near your institution). Learn about your institution’s impact on the issue. Make a recommendation for how your institution can advance climate solutions to this issue.

Prepare a short presentation of your findings and share it with the class or write an open letter presenting your ideas for solutions.
Taking Action

Questions for further thought and/or discussion

- What are the different ways in which EJAtlas and/or EJScreen can help us with understanding problems of Environmental Justice?
- How could these mapping tools relate to/assist your work in your major/academic discipline?
- How could these mapping tools help us take action at an individual, social or political level?

Personal research

Use EJAtlas and/or EJScreen to explore a research question close to your research interests. It could be a question related to your home, a class that you're in—anything that is relevant and important to you!

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Additional Resources

- **ArcGIS**: User friendly interactive mapping site
- **StoryMaps**: Use mapping technology to guide your readers to your favorite places, illustrate trends or even take them on an interactive tour
For more resources on climate and environmental justice: **Please explore other modules in the Climate Justice Instructional Toolkit.**
Module References

- "Delhi - Urban Air Pollution" by jenspie3 is licensed under CC BY 2.0.
- "Talking to womens groups about Menstrual Cups" by Sustainable sanitation is licensed under CC BY 2.0.
- "2011 Student Research Fellows" by NWABR is licensed under CC BY 2.0.
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- "Tracking Drought" by U.S. Geological Survey is marked with Public Domain Mark 1.0.