Mapping Environmental Justice

ENVIRONMENTAL SOLUTIONS INITIATIVE

What's in this module?

Activities

5 readings
11 activities
3 project
options

Key Resources:
- EJAtlas
- EJScreen

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.
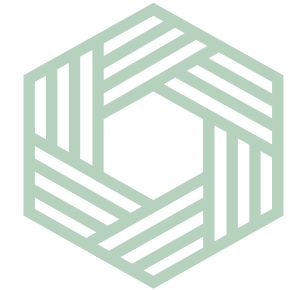
Agenda and Learning Objectives
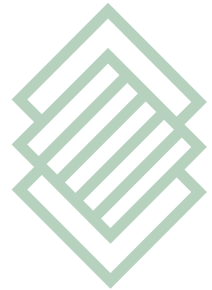
Learn basic mapping practices using different tools

**Identify** how environmental justice can be explored through mapping

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

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

Introduction: Mapping Environmental Justice (EJ)

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

- People using geospatial data can track, and then ultimately manage and measure, the effects of climate change (Ordnance Survey).

- Mapping environmental justice allows one to track things like: environmental risk, air pollution, landscape change, and more.
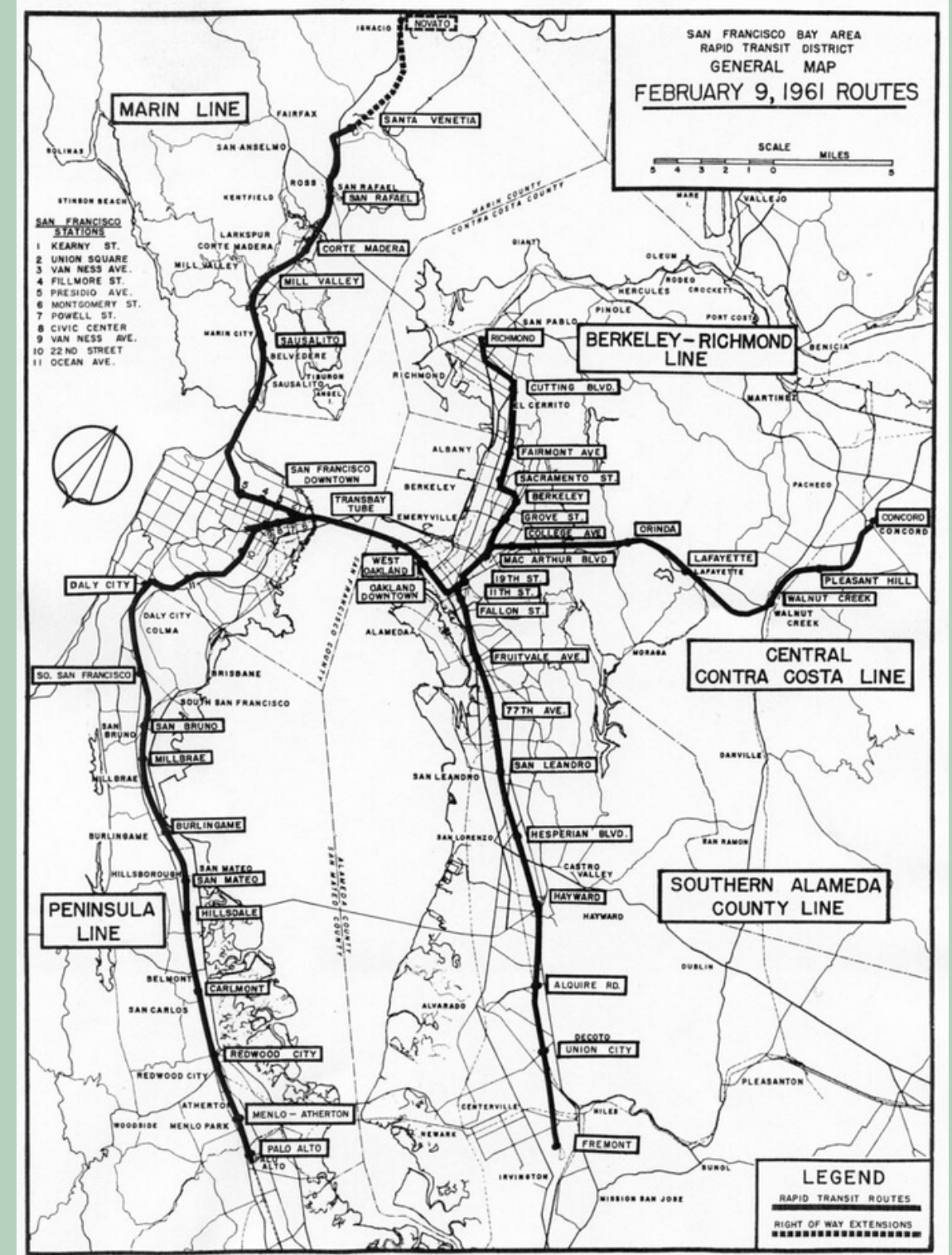
Introduction: Mapping Environmental Justice (EJ)

- Mapping geospatial data, alongside demographic data provides a better understanding of the social issues that occur in different areas as well.

- This allows 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.

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Introduction: Mapping Environmental Justice (EJ)

The two landmark studies that were said to start the field of EJ examined the inequitable placement of environmental harms on communities of color; take a second to look at the EPA's timeline of these <u>cases</u>:

    a. <u>Siting of Hazardous Waste Landfills and Their Correlation with Racial and Economic Status of Surrounding Communities (General Accounting Office, 1983)</u>

    b. <u>Toxic Waste in the United States</u> (United Church of Christ, 1987) - this report coined the term "environmental racism"

Activity 1: Read and Present

Split up into 6-10 groups. Each group will read 1 section of "Mapping ecological distribution conflicts: The EJAtlas", and then give a 2 minute mini-presentation/summary to the class about your reading.

Mapping ecological distribution conflicts: The EJAtlas

Joan Martinez-Alier ✉

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Highlights

- There is a world movement for environmental justice.

- Over 3300 ecological distribution conflicts are recorded in the atlas of environmental justice.

- Such conflicts particularly occur at the frontiers of commodity extraction and waste disposal.

- Political ecology studies such conflicts, and should be placed at the centre of politics.

Activity 2: Activist Perspectives on Mapping

Charles Lee is an Environmental Justice activist and works for the EPA

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?

Esri Blog | Equity and Social Justice | June 30, 2021

Charles Lee: Environmental Justice Leader Uses Maps to Reveal Injustices

By Margot Bordne and Clinton Johnson

1 The EJAtlas

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Overview of 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

With over 3800 (and counting) cases uploaded to EJAtlas, EJAtlas documents social, often invisible, conflicts around environmental issues worldwide.

Users can explore the page by kinds of issues, country maps, and more.
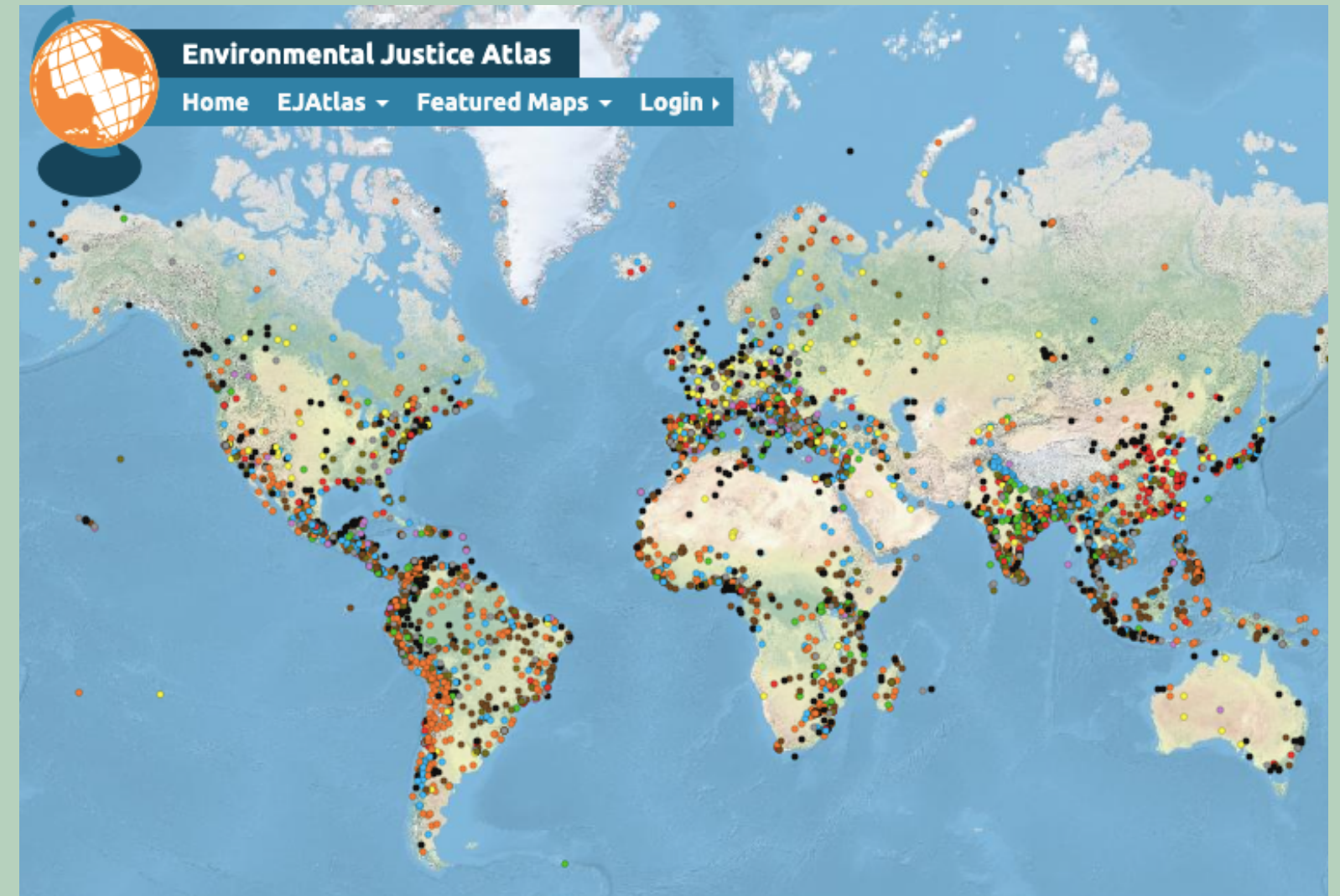
A screen shot of EJAtlas
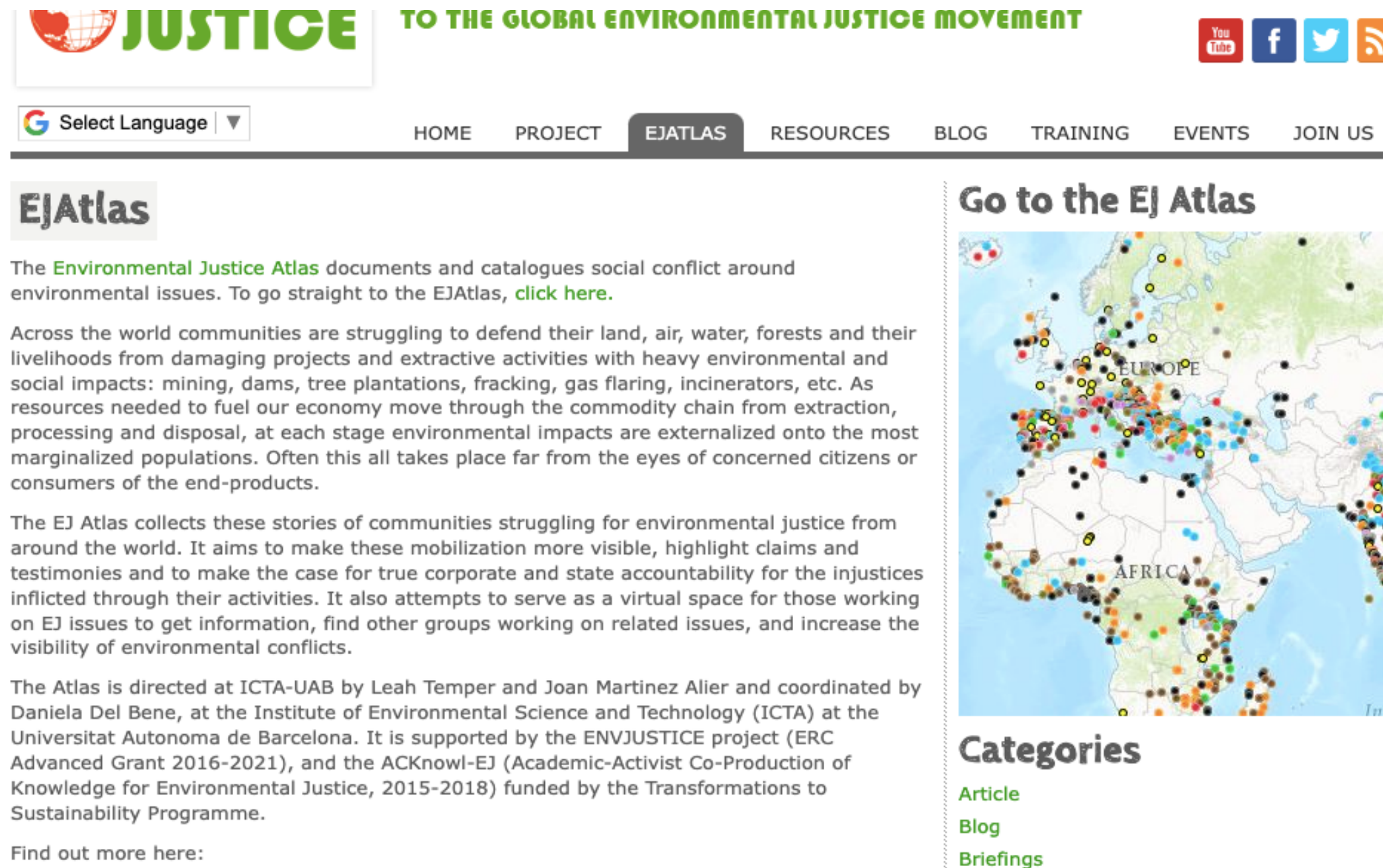
Overview of EJAtlas

'Across the world communities are struggling to defend their land, air, water, forests and their livelihoods from damaging projects and extractive activities with heavy environmental and social impacts: mining, dams, tree plantations, fracking, gas flaring, incinerators, etc.'

'The EJ Atlas collects these stories of communities struggling for environmental justice from around the world. It aims to make these mobilization more visible, highlight claims and testimonies and to make the case for true corporate and state accountability for the injustices inflicted through their activities.'

("Envjustice." EJAtlas. Accessed August 12, 2023. http://www.envjustice.org/ejatlas/.)

Overview of EJAtlas

Take a few minutes, as a class, to read about the EJAtlas <u>here</u>.

Activity 3: Explore EJAtlas!

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?

Environmental Justice Atlas

Home   EJAtlas ▾   Featured Maps ▾   Login ▸

Diwalwal Mineral Reservation on indigenous land in Monkayo, Compostela Valley, Philippines   ✕

In 2004, indigenous groups successfully reclaimed their land from outside mining interests by forming their own mining corporation and securing ownership rights. Violence continues as local leaders are murdered to cause tension among the tribes. *See more*

Mineral Ores and Building Materials Extraction

Activity 4: Country Maps + Mini-Presentation

- Split up into groups of 3, and pick a country to explore more deeply. Take 20-30 minutes to take more detailed look at the case studies that pop up, and see what trends you find across the country.

- With your group of 3, you'll have a mini-share out on your findings to the rest of the class. Share at least one case study, and then discuss the trends.

- To divide by country, click on 'Featured Maps', and 'Country Maps'.

Countries

3805 cases have been reported so far

AR CN EN ES FR IT TR

> Legend

> by Country

Sort alphabetically

India 350	Ghana 14	Denmark 4
United States of America 209	Montenegro 14	Jamaica 4
	Bosnia and Herzegovina 12	Georgia 4
Mexico 204	Papua New	Iceland 3
Brazil 175	Guinea 12	Greenland 3
China 165	Nepal 12	Libya 3
Colombia 134	Nicaragua 12	Malawi 3
Indonesia 111	Republic of Korea 11	Botswana 3
Spain 103	Ethiopia 11	Maldives 3
Peru 97	Slovenia 10	Jordan 3
Nigeria 90	Syrian Arab	Kosovo 3
Philippines 87	Republic 10	Gambia, The 3
Canada 83	Cameroon 10	Israel 3
Russian Federation 76	Hungary 10	Yemen, Rep. 3
Argentina 70	Puerto Rico 10	Armenia 2
France 65	Lao PDR 10	Trinidad and Tobago 2
Ecuador 63	Iraq 10	Czech Republic 2
South Africa 61	Taiwan 9	Lithuania 2
Turkey 60	Sierra Leone 9	Chad 2
Chile 60	Austria 9	Lesotho 2
Myanmar 51	Finland 9	Haiti 2

Activity 5: Picking a Case Study + Dyad!

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') then consider:

a. Why did you choose this case?

b. What environmental injustice struggle is happening? Why? What role does power at play in this case?

c. 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?

d. What aspect of environmental or climate justice did you learn while investigating this case?

Go to the next slide for the dyad activity...

Engaging in a Dyad

As a follow up to this activity, 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 4: Shareout/ Class Discussion!

1. Why is (or why not) is the EJ Atlas an important tool to address global and environmental issues?
2. What suggestions might you have for improving a tool like EJ Atlas?
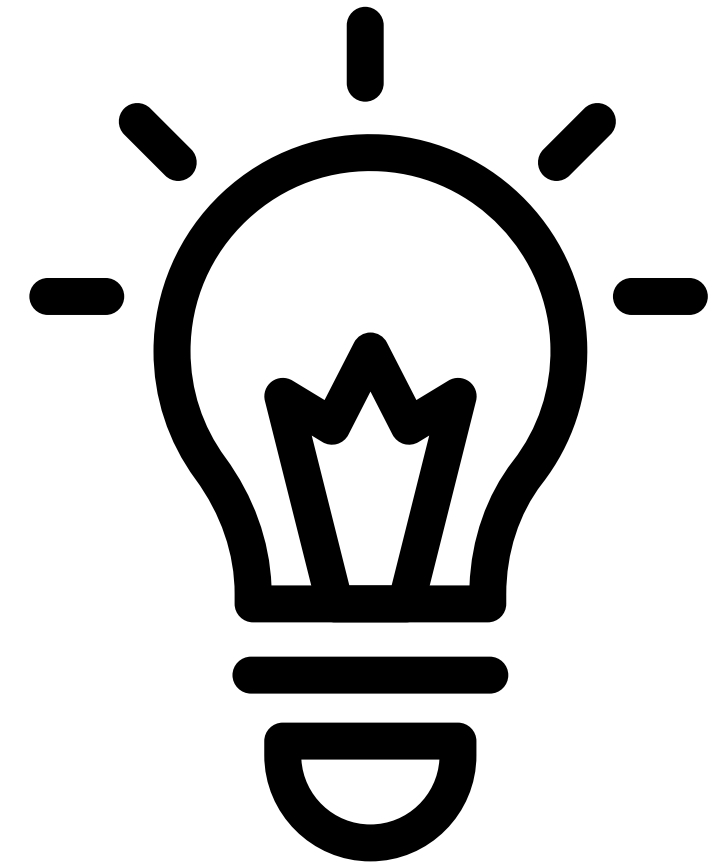
"Globe" by apbeatty is licensed under CC BY 2.0.

2 **EJScreen**

Overview of 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.
- EJScreen users choose a geographic area the tool then provides demographic socioeconomic and environmental information for that area.
- 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.'
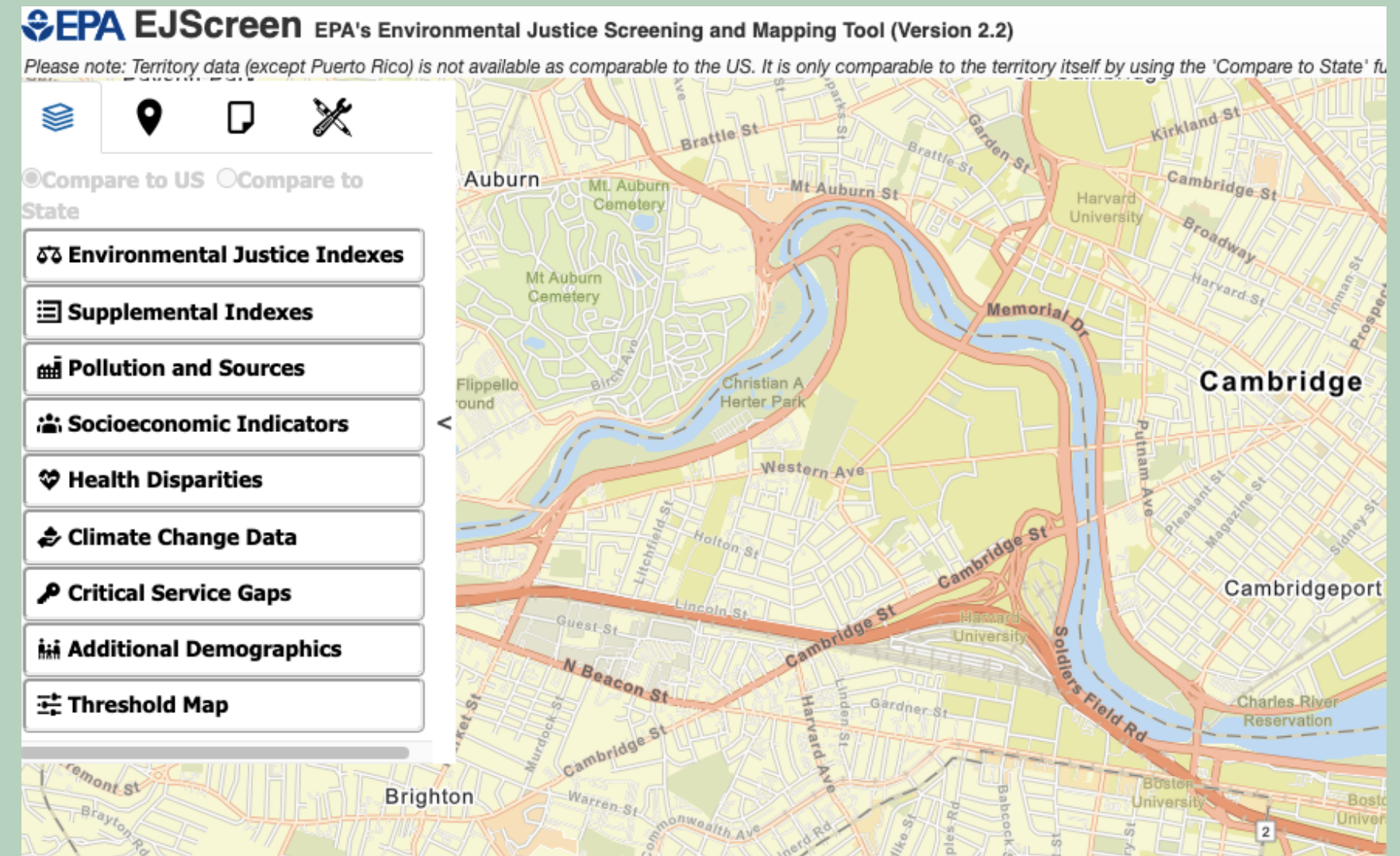
Activity 6: EJScreen Mapping in Action

1. Spend a few minutes reading this article that shows EJScreen in Action: 'Environmental Justice in the Narragansett Bay Region'. Under 'Methods', take a look at how the authors of this article sourced data from EJScreen.

2. Skim through this EPA website that teaches you how to use EJScreen.

Environmental Justice in the Narragansett Bay Region

Indelible patterns in our landscape and waters reveal the inequitable benefits and burdens on our communities—legacies of our shared history

Activity 7: Explore EJ Screen Tools

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?
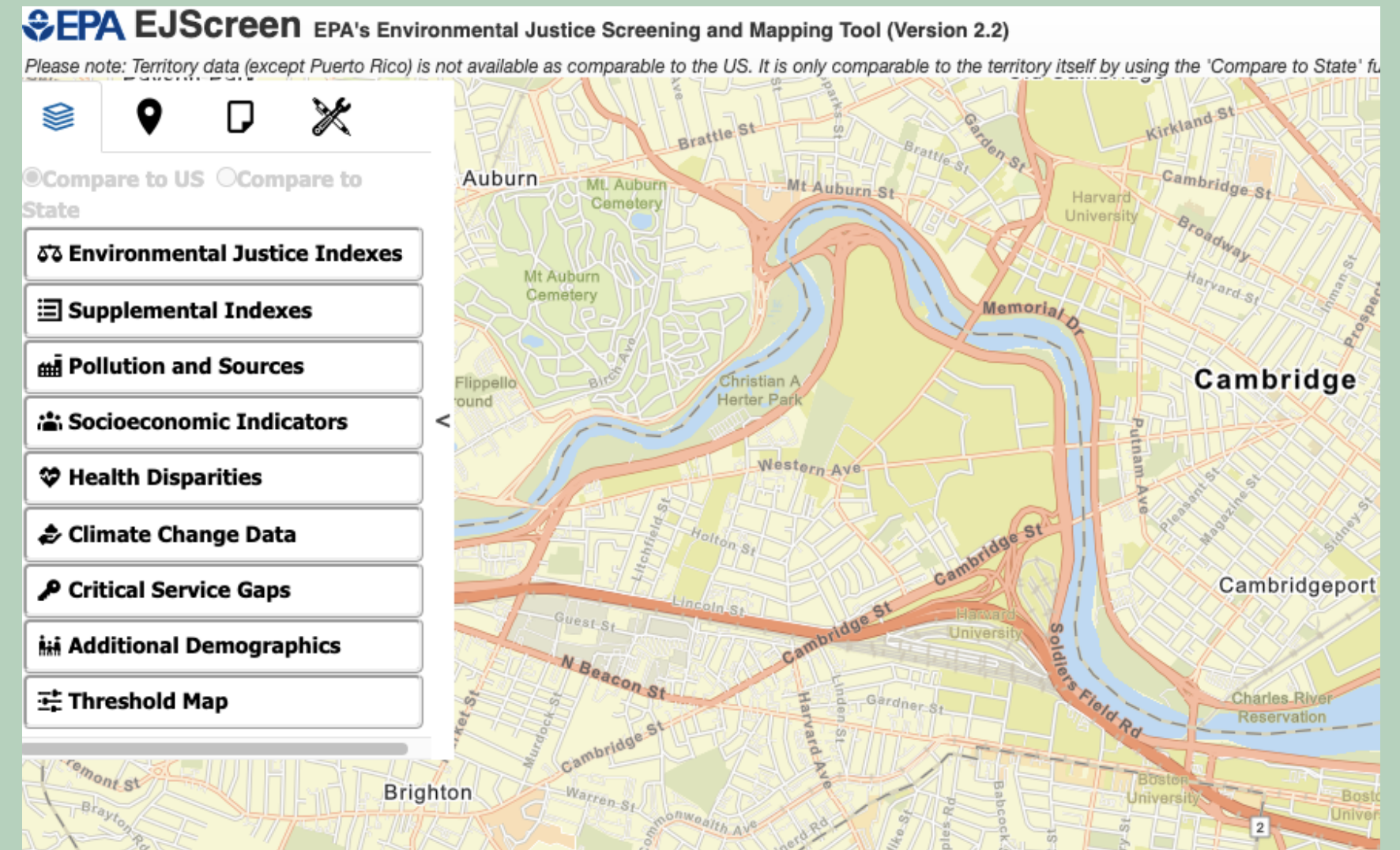
Activity 8: Case Studies + Class Presentation

Split up into 3 groups and pick a case to take a deep dive into.

Option 1: **Superfund Sites in Woburn, Massachusetts**

Option 2: **Air Toxics Cancer Risk in Suffolk County, Massachusetts**

Option 3: **Hazardous Waste in Middlesex County, Massachusetts**

With your group, explore these case studies and be prepared to share out. Refer to the next slide for questions...
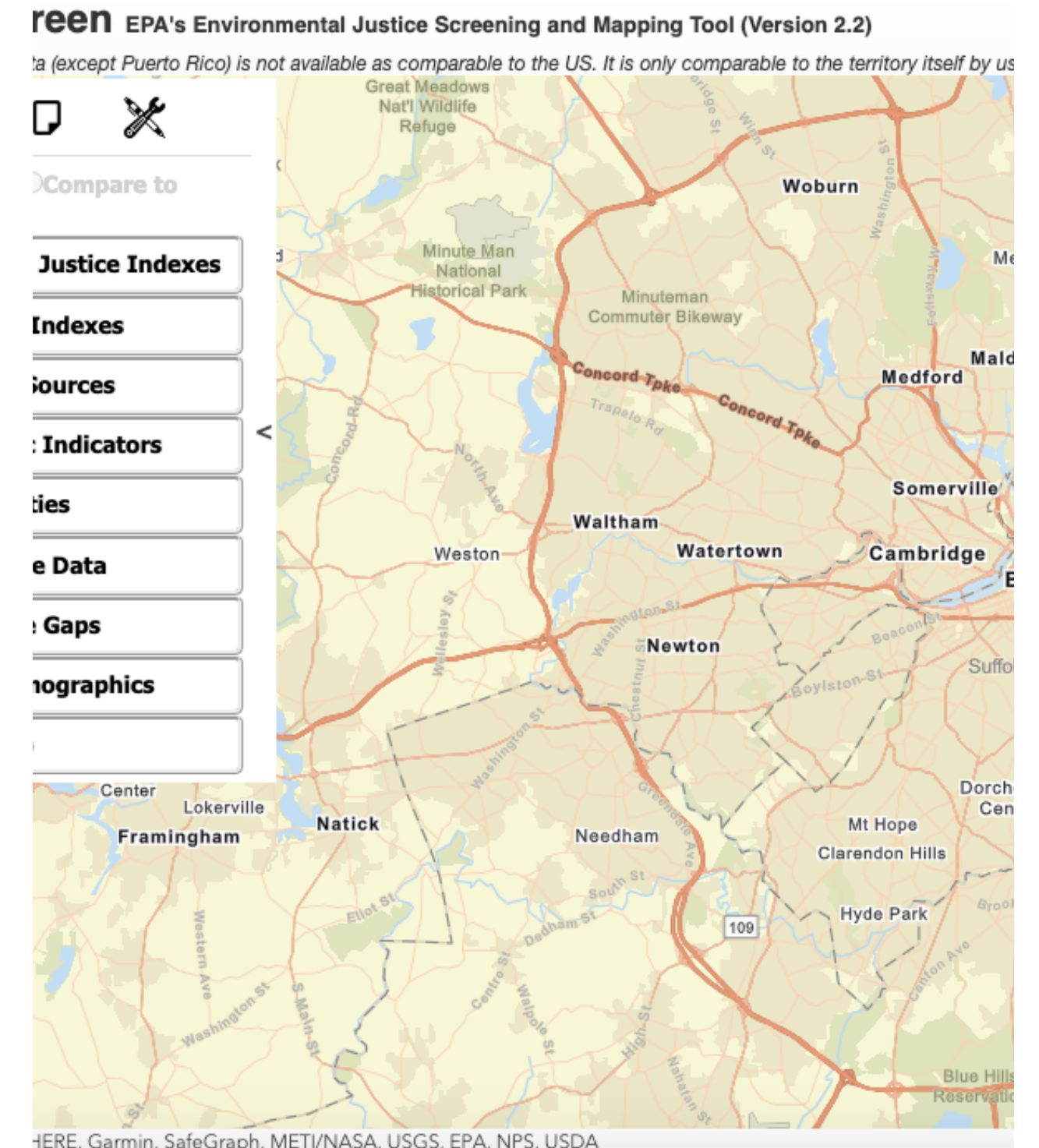
Activity 8: Case Studies + Class Presentation

Considerations to make while curating 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!

Optional Activity: A Critique of EJScreen

Take a look at this article that highlights some of the limitations and problems EJScreen poses for indigenous tribes: <u>Indigenous Peoples and the Justice40 Screening Tool: Lessons from EJSCREEN</u>.

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?

Indigenous Peoples and the Justice40 Screening Tool: Lessons from EJSCREEN

Haley Mullen 🆔 , Kyle Whyte 🆔 ✉ , and Ryan Holifield 🆔

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Abstract

The Biden-Harris administration has focused considerably on environmental justice (EJ), including the Justice40 Initiative and renewed White House Council on Native American Affairs. This work has included financial investments in Tribal economies, prioritizing Tribal health care, and major Tribal infrastructure investments as part of current passed bills and active proposed legislation. The Justice40 Initiative aims at delivering at least 40% of the benefits of federal investments in climate and energy to disadvantaged communities, including many Tribes. The recent White House Tribal Nations Summit Progress Report discusses Justice40 and its potential benefits related to climate, energy, transportation, housing, pollution, and infrastructure. The report leaves open the question of how Tribes will benefit from Justice40. Currently, the White House Council on Environmental Quality is developing a new Climate and Economic Justice Screening Tool for identifying disadvantaged communities who qualify for Justice40 investments. Executive Order 14008 references how this new screening tool should be based on lessons learned from EJSCREEN. For Tribes, however, EJSCREEN does not adequately represent infrastructure and other EJ needs relevant to the goals outlined in Justice40. In this article, we will discuss issues with EJSCREEN that must be addressed in the forthcoming screening tool that was released in prototype form for public comment on February 18, 2022. Major gaps in EJSCREEN include ones in data regarding mining, energy extraction, cultural landscapes, meaningful spatial boundaries, and qualitative data in general, as well as the fundamental issue of engaging with Tribes. These concerns must be addressed if Tribes are to be accurately represented by the tool such that they may fully benefit from Justice40 investments. However, there may be ethics and sovereignty issues that will make some data unavailable at the national scale, or shortages in the United States and Tribal capacity to coordinate the formation of data sets.

Activity 8: Reflection, Post-Presentation

- 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?

3 Beyond the Module

Taking Action

- Think about: What are the different ways in which EJAtlas and/or EJScreen can help us with understanding problems of Environmental Justice?
- 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!
- 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?
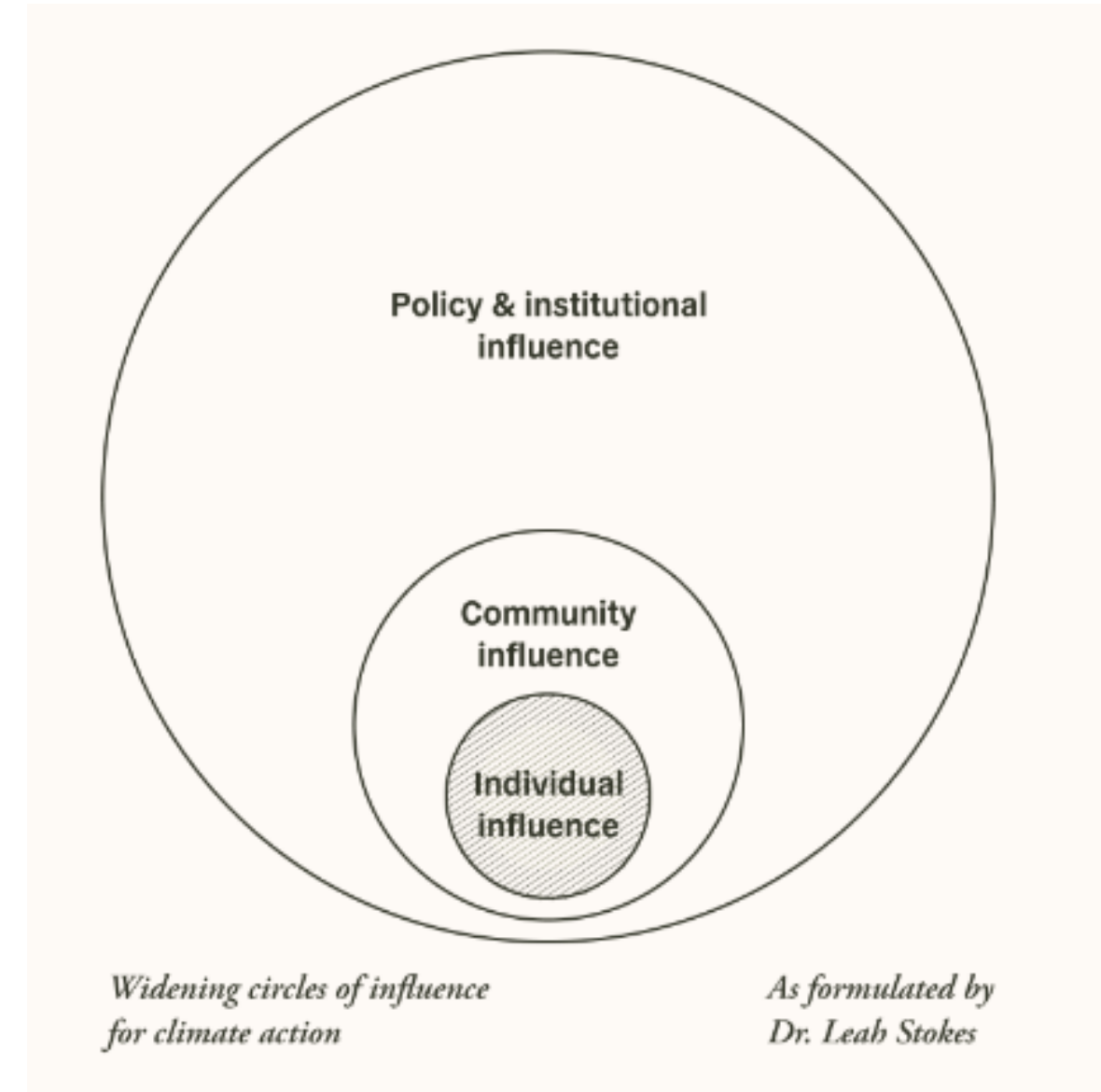

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Taking Action: EJAtlas

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. In the case study you create:

- Consider how MIT (or your institution) can do better to mitigate the problem you are researching. 'What would it look like for your school to be in alignment with a just and livable future? Who has the power to make that so? Are there any efforts already working towards this outcome? How could those efforts be expanded?'

From https://www.allwecansave.earth/assignments-to-spark-action

"For Educators." The All We Can Save Project. Accessed August 17, 2023. https://www.allwecansave.earth/for-educators.

Taking Action: EJScreen

Using EJScreen, take a look at some issues in the Cambridge area/ near MIT (or potentially another area)

- Learn about MIT's impact. (You could also focus on the impact of any institution or organization)
  - Research how MIT relates to or engages with the issue you researched. If they don't, research how they can get involved.
  - Prepare a short presentation of your findings, and share it with the class.
- Make a recommendation for how MIT can advance climate solutions to this issue.
  - Tap into the power of radical imagination: What would it look like for your school to be in alignment with a just and livable future? Who has the power to make that so? Are there any efforts already working towards this outcome? How could those efforts be expanded?
  - Write an open letter presenting your proposal. Be sure to include what you learned in the first point in the assignment, about the area of impact you researched.

This activity was adapted from https://www.allwecansave.earth/assignments-to-spark-action

Additional Mapping Resources

ArcGIS: User friendly interactive mapping site; easy for making and sharing maps, and for collaboration.

'Connect people, locations, and data using interactive maps. Work with smart, data-driven styles and intuitive analysis tools. Share your insights with the world or specific groups.'

StoryMaps: 'Transport your readers to any place at any time. With StoryMaps, you get access to the world's leading mapping technology to guide your readers to your favorite places, illustrate trends or even take them on an interactive tour.'

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