Developing an environmental justice index for the Chesapeake watershed report card

22 April 2021

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What is Environmental Justice?

- EPA definition: "Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies."

- Why does environmental justice matter?

Developing an Environmental Justice Index

Pros- Education, scientific communication awareness, index for comparison

Cons- ground truthing, limited by data accessibility, lack of funding, bias, and misrepresentation

University of Maryland
CENTER FOR ENVIRONMENTAL SCIENCE

Potential Indicators of Environmental Injustice

MEES Program; Environment & Society foundation

Marine Estuarine Environmental Sciences Graduate Program

Environment and Society

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Traditional course | Issue study group

Increase student knowledge	**Primary Goal**	Co-produce science product
Instructors impart knowledge to students	**Instructor/Student Relationship**	Instructors facilitate and learn together with students
Syllabus with multiple topics (instructor-led)	**Course Structure**	Student led product design, development, dissemination
Exams + assignments	**Course Assessment**	Contribution to final product

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Instructors

Dr. Bill Dennison
UMCES

Dr. Vanessa Vargas-Nguyen
UMCES

VANESSA VARGAS-NGUYEN

The role of socio-environmental report cards in transdisciplinary collaboration and adaptive governance for a sustainable future

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Guest lecturers

Dr. Sacoby Wilson
UMD Public Health

Rona Kobell
MD Seagrant

Matt Lee
US EPA

Kristin Saunders
Ches Bay Prog

Liz van Dolah
UMD Anthropology

John Wolf
Ches Bay Prog

Briana Yancy
Ches Bay Prog

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Integration & Application Network support

Steven Guinn
GIS and databases

Dylan Taillie
GIS and indicators

Joe Edgerton
Blogs and indicators

Crystal Nichols
Video editing

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Students

Imani Black *UMCES HPL*

Haoyu Chen *UMCES IMET*

Amber Fandel *UMCES CBL*

Taylor Gedeon *UMD E&S*

Shakira Goffe *UMES*

Sarah Jones *UMCES CBL*

Katrina Kelly *UMES*

Jehnae Linkins *UMD Engr*

Nylah McClain *UMES*

Andrea Miralles-Barboza *UMD E&S*

Megan Munkacsy *UMCES CBL*

Chelsea Richardson *UMES*

Amanda Rockler *UMD E&S*

Ashley Silver *UMES*

Isabel Sullivan *UMD Biology*

Faith Taylor *UMD E&S*

Imani Wilburn *UMES*

Olivia Wolford *UMD Anthropology*

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Reviewed key papers

Expanding the Chesapeake watershed report card

Social vulnerability Index provides potential indicators for a socioenvironmental report card

2018 Social Vulnerability Index

A. Socioeconomic status

B. Household composition and disability

C. Housing and transportation

D. Minority status and language

SVI (Flanagan et al. 2011) from https://svi.cdc.gov; Analysis using R Studio Vargas-Nguyen, 2020

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Several tools available, e.g., EJSCREEN

EPA United States Environmental Protection Agency

Environmental Topics   **Laws & Regulations**   **About EPA**

EJSCREEN: Environmental Justice Screening and Mapping Tool

Launch the EJSCREEN Tool
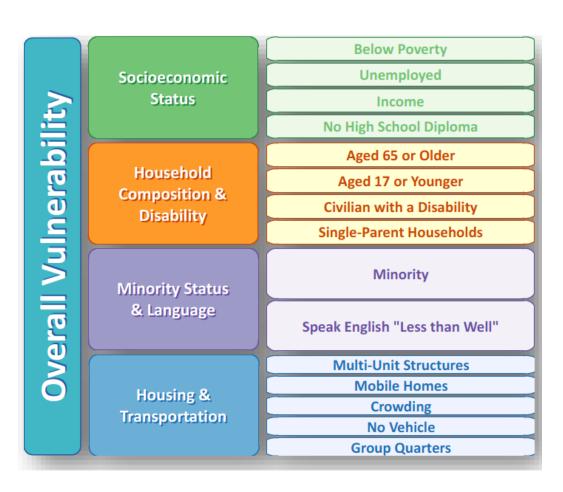
Explore EPA's environmental justice screening and mapping tool

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Environmental justice indicators

- Proximity to hazards
- Access to nature   vs.
- Restoration funding
- Management & governance

Proximity to Wastewater Treatment Plants

Nylah McClain:

University of Maryland Eastern Shore

Student Blogs

Black Lives (And Environmental Journalism) Matter

Andrea Miralles-Barboza · **24 February 2021** | MEES 718 Spring 2021 | 💬 10 comments
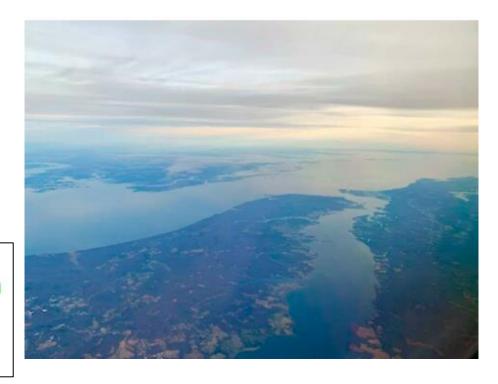
Into the Void of Environmental Justice Data

Katrina Kelly · **9 April 2021** 💬 4 comments

We Blacks Don't Trust Us Scientists: Helping to Bridge a Gap Between Two Communities I am a Part of

Shakira Goffe · **9 April 2021** 💬 6 comments

Where Data Falters, Communication Flies

Nylah McClain · **19 March 2021** 💬 7 comments

Why Now? A Critique of the Chesapeake Bay Program's Diversity, Equity, Justice and Inclusion Action Plan

Faith Taylor · **10 March 2021** | MEES 718 Spring 2021 | 💬 7 comments

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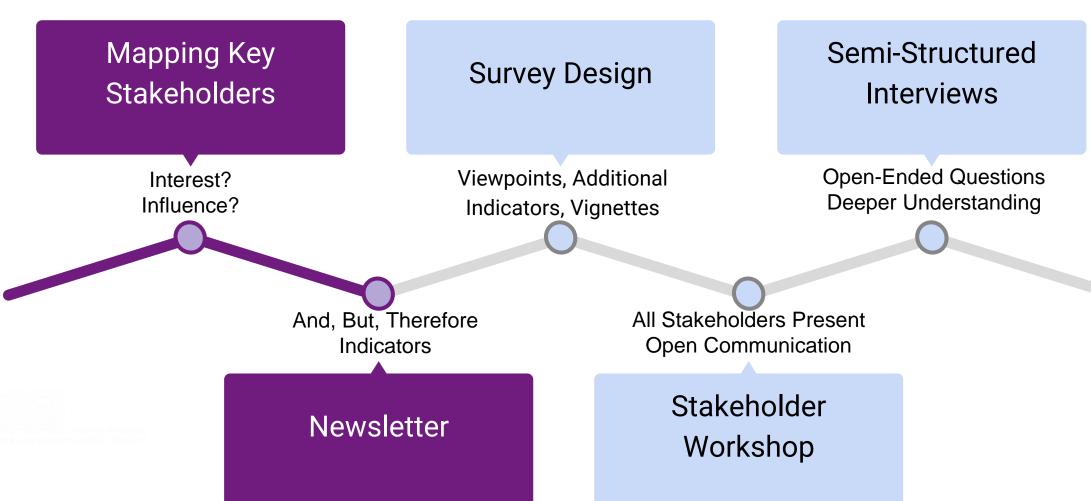
Meaningful Stakeholder Engagement

INCREASING STAKEHOLDER INFLUENCE ON THE RESEARCH →

	INFORM	CONSULT	INVOLVE	COLLABORATE	EMPOWER
STAKEHOLDER PARTICIPATION GOAL	Researchers provide stakeholders with balanced and objective information to assist them in understanding the research.	Researchers obtain stakeholder feedback on the research.	Researchers work directly with stakeholders to ensure that stakeholder concerns and aspirations are consistently understood and considered in the research.	Researchers partner with stakeholders for salient aspects of the research.	Researchers assist stakeholders in conducting their own research.
PROMISE MADE TO STAKEHOLDERS BY RESEARCHERS	We will keep you informed.	We will keep you informed, listen to and acknowledge your concerns and aspirations and provide feedback on how your input influenced the research.	We will work with you to ensure your concerns and aspirations are directly reflected in the research and we will provide feedback on how your input influenced the research.	We will look to you for advice and innovation in designing and conducting the research and incorporate your advice and recommendations to the maximum extent possible.	We will provide advice and assistance as requested in line with your decisions for designing and conducting your research, as well as for implementing the findings.

Engagement Process & Progress

Mapping Key Stakeholders

Interest? Influence?

Survey Design

Viewpoints, Additional Indicators, Vignettes

Semi-Structured Interviews

Open-Ended Questions Deeper Understanding

And, But, Therefore Indicators

Newsletter

All Stakeholders Present Open Communication

Stakeholder Workshop

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Next Steps: Multi-Phased Approach for Co-Producing an EJ Index

Phase 1: REPRESENTATIVE INDICATOR DEVELOPMENT

↓

Phase 2: MEANINGFUL STAKEHOLDER ENGAGEMENT

↓

Phase 3: PROGRESSIVE INTEGRATED ACTION

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Phase 1: REPRESENTATIVE INDICATOR DEVELOPMENT

Phase 1 Steps

- **Initial conversations** with multiple stakeholders.
- **Survey** finalization & dissemination.
- **EJ newsletter** finalization & dissemination (multi-lingual).
- **Communicate** Phase 1 findings to international partners in COAST-Card project.

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Phase 1:
REPRESENTATIVE
INDICATOR
DEVELOPMENT

Phase 2:
MEANINGFUL
STAKEHOLDER
ENGAGEMENT

Phase 2 Steps
- **Continued MEES courses** for developing EJ index.
- **Data Collection**: Semi-structured interviews; meet ups and deep listening sessions.
- **Co-production** of EJ index with stakeholders.
- **Collaborative Evaluation**: by monitoring, adapting and finalizing EJ index.

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Phase 1:
REPRESENTATIVE
INDICATOR
DEVELOPMENT

Phase 2:
MEANINGFUL
STAKEHOLDER
ENGAGEMENT

Phase 3:
PROGRESSIVE
INTEGRATED
ACTION

Phase 3 Steps
- **Collaborative Action** plan development with stakeholder input
  - Reaching out to federal/state agencies, discussions on reparations and how to continue supporting EJ communities, communication.
- **Data Calls**: Make calls for essential missing data to better inform and measure EJ issues
  - Calls to universities, government, NGOs to support and conduct data collection.
  - Community science

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Q&A

Why is environmental justice important?

Because our science does nothing to protect or conserve if that protection and conservation is only done for some at the expense of others.

for health of planet

Everyone not impacted equally

Environmental progress without justice is not true progress

Injustice creates imbalances that proliferate throughout structures and systems.

Environmental quality is only as good as the most vulnerable communities experience

EJ is important to ensure that the smallest voice of a community is not taken advantage of or harmed by the stride of environmentalism.

Equal rights to all classes and diversities

Environmental justice is important for equity amongst communities, furthering environmental science research/policy, keeping companies accountable for their actions, including stakeholders and communities in decision-making

Because Black Lives Matter and other people of color should not have to be disproportionately exposed to risk

EJ is important because environmental issues must be considered from and with the perspectives of who they impact most

Environmental justice is important because everyone that is effected by the environment, its changes and implications towards it, it's important for everyone to have the resources and education

Environmental justice is important to keep everyone informed of environmental disparities faced.

Everyone deserves fair treatment across the board

Historical inequality, detrimental health, economic, etc impacts

If the environment impacts all, then all should be able to speak on how it impacts them. Therefore it is important to express all opinions, to better the environment as a whole & not be biased.

Environmental health and human Heath are inextricably linked

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What are the benefits of having an environmental justice index?
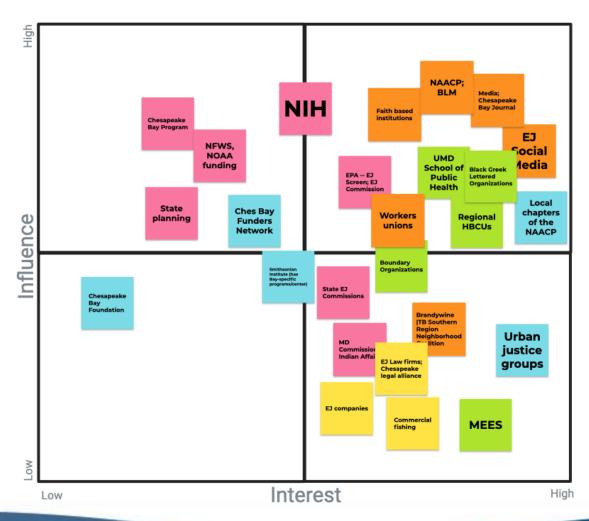
What are the challenges in developing an environmental justice index?

Stakeholder Engagement: Mapping Key Stakeholders

Stakeholder Engagement: Newsletter

Environmental issues; images

Blog materials

Multi-lingual

Conceptual diagram using Vargas-Nguyen dissertation base

Map(s) with hazards (rural and urban)

And/But/Therefore statement (summary)

Presentation slide desk: Intro WHY, Who we are, Our approach, Topical slides

Discuss scale of what we are doing and how it fits into larger picture

Long-term engagement approach

Social media links

List our collaborators

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Stakeholder Engagement: Survey Design

Do you have home insurance/flooding insurance?

Are you comfortable answering questions about this issue?

Personal charactistics: age, gender ID, racial ID, education level, location, occupation, income range

How long have you lived in your present location?

Do you have access to environ education facilities or materials?

Have you had any health problems over the past 2 years?

Do have health insurance? Do you feel that it appropriately covers your needs?

closed ended/open ended questions

ranking questions (scale 1-5)

table of indicators for ej, rate how important/how well it captures ej? scale of 1-5, N/A as option

ranking indicators in order

engagement questions: do you get involved in decision making process? (involvement/engagement/voice heard in these process)

Survey

Group 2- The least meaningful form of engagement, but the most ideal for engaging with large amounts of people. The least ethically risky

Group 2- Processing the data from these surveys will be time consuming.

Group 2- Consent message needed at start of survey

Group 2- How can we make this accessible to people disabilities?

Are you aware of any EJ initiatives?

Have you experienced any environmental injustices?

Have you participated in a survey on environmental justice or climate justice before?

What do you think about when you hear the term EJ?

Provide EJ definition

What environmental hazards are you aware of in your location?

Rank these potential EJ indicators as to their importance

In the past 2 years, have you participated in a clean up, demonstration or group enviro activity?

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Stakeholder Workshop

Group 2- Hosting a workshop might not be feasible in the upcoming month.

Group 2- How many people would be in the workshop? Who would be participating? What are the outputs we want from the workshop? Will it be one large group?

Group 2- Having a reflective exercise that has people sort out there ideas beforehand, so their concepts do not get lost in the shuffle

Group 2- Reflections with conversations during the workshop and then look at how the responses have changed at the end

Group 2- Do we really make workshop or are we using a focus groups?

Group 2- Will need more than one workshop? Who will facilitate these? Should the workshops cater to differ stakeholders?

Group 2- Will there be a time for stakeholders to provide feedback about the process?

Group 2- Consider partnering with community orgs for the workshops

Group 3: Multi-stakeholder workshops

Group 3: Bring list of potential indicators, asking stakeholders for input, ranking- ask whats missing, whats most important?

Group 3: post-workshop surveys to inform next workshop/for report write up

Group 3: Mentimeters/more anonymous engaging techniques within workshops

How can we persuade people come to our workshop?

Collective workshop after individual workshops

How to introduce us? Using what name? University? Workshop? or just ourself?

Group 1: Including different stakeholders at the same workshop. Example: community members sharing knowledge with g and industry

Need members to be comfortable, and previously engaged in order to have meaningful conversations. And bring donuts.

Specific and general workshops. On the coast versus inland etc.

Stakeholder Engagement: Semi-structured Interviews

Semi-structured interviews

Questions

Group 2- There needs to be more transparencies with the IRB

Do you think that your community would feel empowered if it had access/knowledge on ways to address EJ?

Group 3: Share photos and prompt responses? Personal stories?

Group 3: What does environmental justice look like?

Group 3: How would you define/explain what an environmental justice indicator is/looks like/encompasses?

Group 3: How is environmental justice useful in addressing the issues in your community?

Use photos and ask what they think about the image (could use photos collected with vignettes)

Community-level engagement & those who are most impacted

Do you know where to go if an environmental injustice occurs? What resources would you need to appropriately address envi injustice?

What kind of changes to your community can make you happier

What words do you think of when you hear, "Envi Justice", "Chesapeake Bay", "climate change", etc.

NGO's in the area

Group 2: Is this an appropriate method for our time frame?

Group 2: Very few people are CITI trained, so it seems as though the grunt of this work will fall onto very few people

Group 2: This seems like least feasible method

Group 3: What parts of environmental justice are important to you?

Group 3: How does environmental justice work in our community and what needs to change?

Group 3: Tell me about yourself?

Have you noticed any changes within your community in the past X years?

Do you think your community leaders support EJ initiatives?

Do you pick up your pet waste?

Do you know of any friends or family who has been affected by environmental injustice?

What type of environment you would like to live?

Group 3: What do you think of when you hear the term 'Environmental Justice'?

Group 3: Can you share any experiences you have had with environmental injustice?

Group 3: How would you like to be engaged with/involved with the development of an EJ index in your area?