



Teaching Resilience and Environmental Democracy

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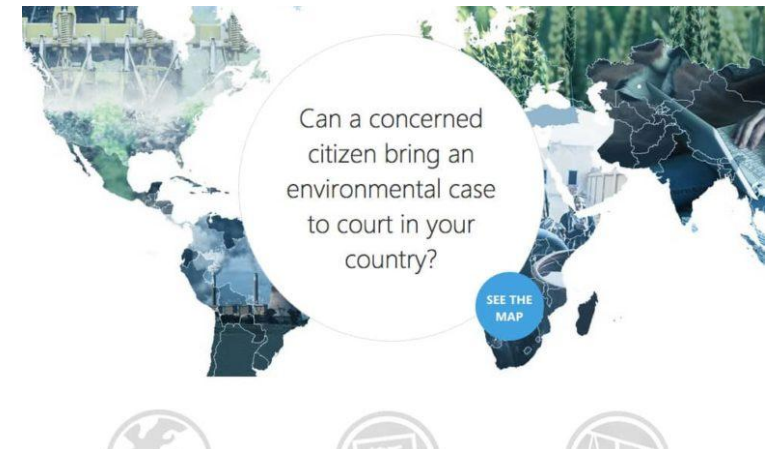


Teaching Resilience and Environmental Democracy



TREnD (Teaching Resilience and Environmental Democracy) is an **Erasmus+ Cooperation Partnership** that develops new ways to teach and learn about sustainability, resilience, and environmental democracy through collaborative and immersive education.

TREnD brings together universities, research institutes, and media-learning specialists across Europe to create innovative learning pathways based on **virtual exchanges, collaborative mapping, and digital content creation**. Such immersive learning technologies are embedded into **Education for Sustainable Development (ESD)**.





Teaching Resilience and Environmental Democracy



Universiteit
Leiden



UNIVERSIDAD
COMPLUTENSE
MADRID

Media & Learning



HELSINGIN YLIOPISTO
HELSINGFORS UNIVERSITET
UNIVERSITY OF HELSINKI



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA



EMORY
UNIVERSITY



Roosevelt
Institute for
American
Studies



GRAND VALLEY
STATE UNIVERSITY





Teaching Resilience and Environmental Democracy

TREN develops a teaching methodology built on three pillars:

1. Staff training

The project trains academic staff in the use of Virtual Exchange, Virtual Reality, digital mapping, and collaborative learning for sustainability education. The training programme helps educators design common learning goals, shared teaching materials, and adaptable modules that can be integrated into existing courses.

2. Virtual Exchanges

Students from different countries work together online in international teams. Through collaborative assignments, digital mapping, and comparative research, they identify places of ecological distress, investigate local responses, and analyse how environmental democracy works in practice. These exchanges make the classroom porous. Students in different regions can think together, map together, and learn from each other without the environmental and financial costs of constant travel.

3. VR/XR and immersive learning

Drawing on students' collaborative research, TREN produces immersive learning experiences, including virtual and extended reality materials. These outputs allow students to explore sites of environmental change, resilience, and democratic action through accessible digital experiences.





- Where do you see the main opportunities for teaching innovation in your institutions?
- What is your experience with Erasmus+, and how do you understand its role in higher education?
- What kind of support or training would you need to further develop innovative teaching practices?

Session 1: Teaching Resilience and Environmental Democracy



In this session, **Kelly Tzoumis** (DePaul University / Johns Hopkins University) introduces the use of Virtual Exchanges for Global Learning.

How can virtual exchanges help students collaborate across borders, cultures, and disciplines? COIL method and other evidence-based approaches help to design meaningful online international learning experiences.

Drawing on years of teaching, research, and networking, the session explores practical tools, intercultural competencies, assessment strategies, and best practices for building impactful virtual exchanges that prepare students to think critically, communicate empathetically, and engage with global challenges.

Session 2: Integrating Critical Mapping into Higher Education



Session 3: Virtual and Extended Reality in Higher Education



Session 4: Virtual Exchanges for Sustainable Education





- Are you familiar with Virtual Exchanges (VEs)?
- What are the most common challenges to put a VE together?



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-  10. Windfarms
-  09. Aquaculture
-  08. Wildlife risk areas
-  07. Industrial Farming
-  06. Toxic contamination
-  05. Dams, ports, naval installations
-  04. Floods, Storm Surges, and Landfalls
-  03. Salt intrusion
-  02. Freshwater
-  01. Climate Change and Sea Level Rise



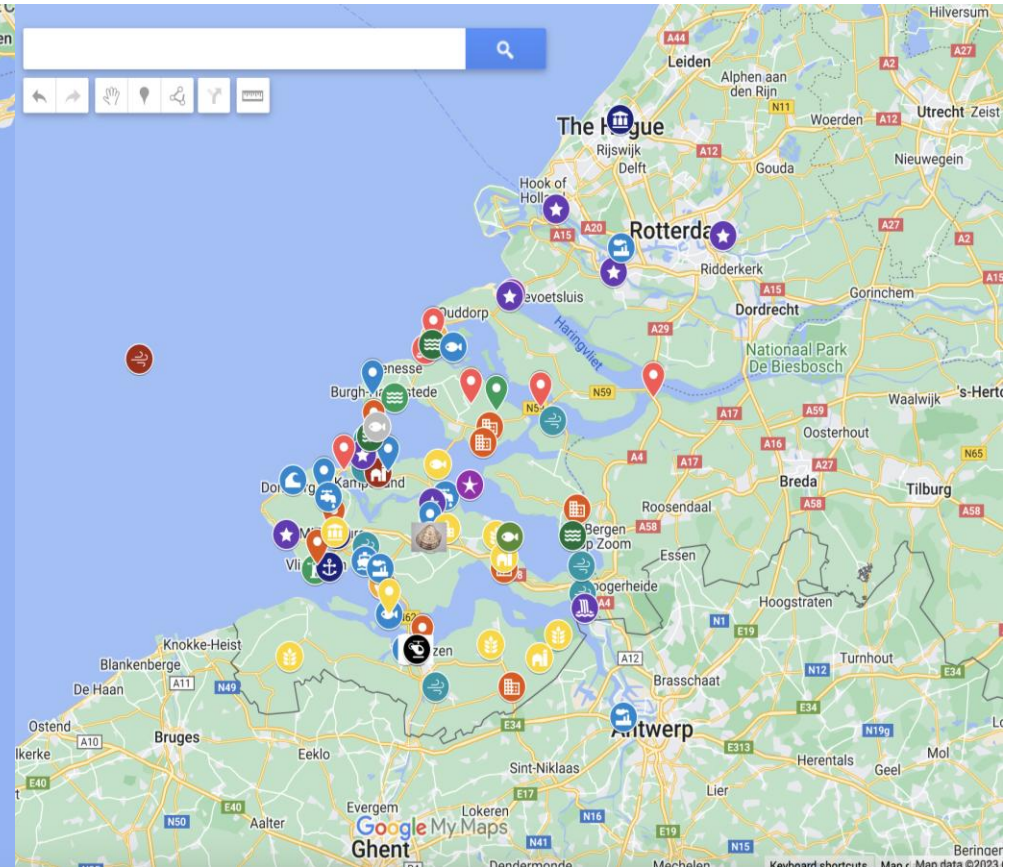
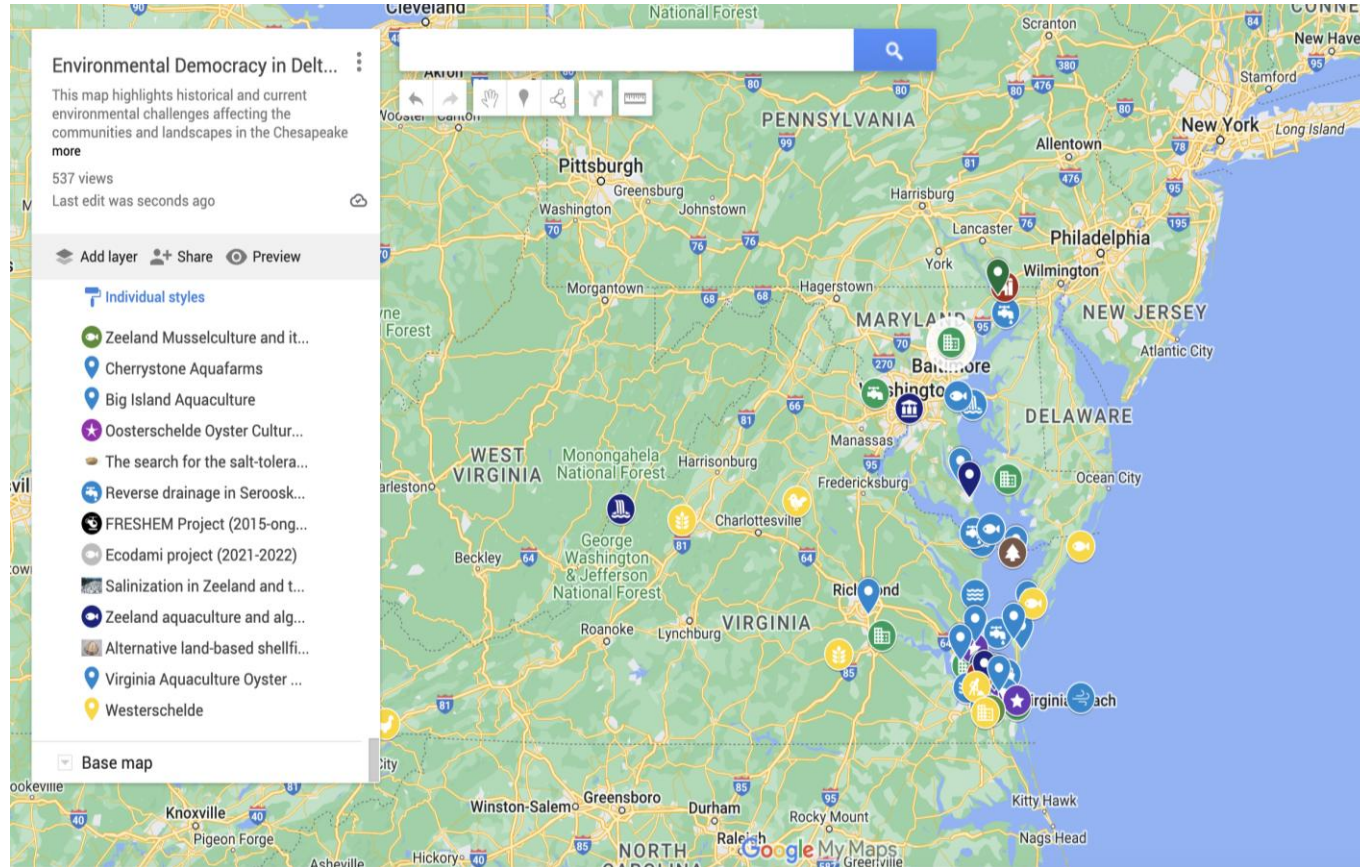
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- What are VE best practices?
- Which assignments can be devised for a successful VE?

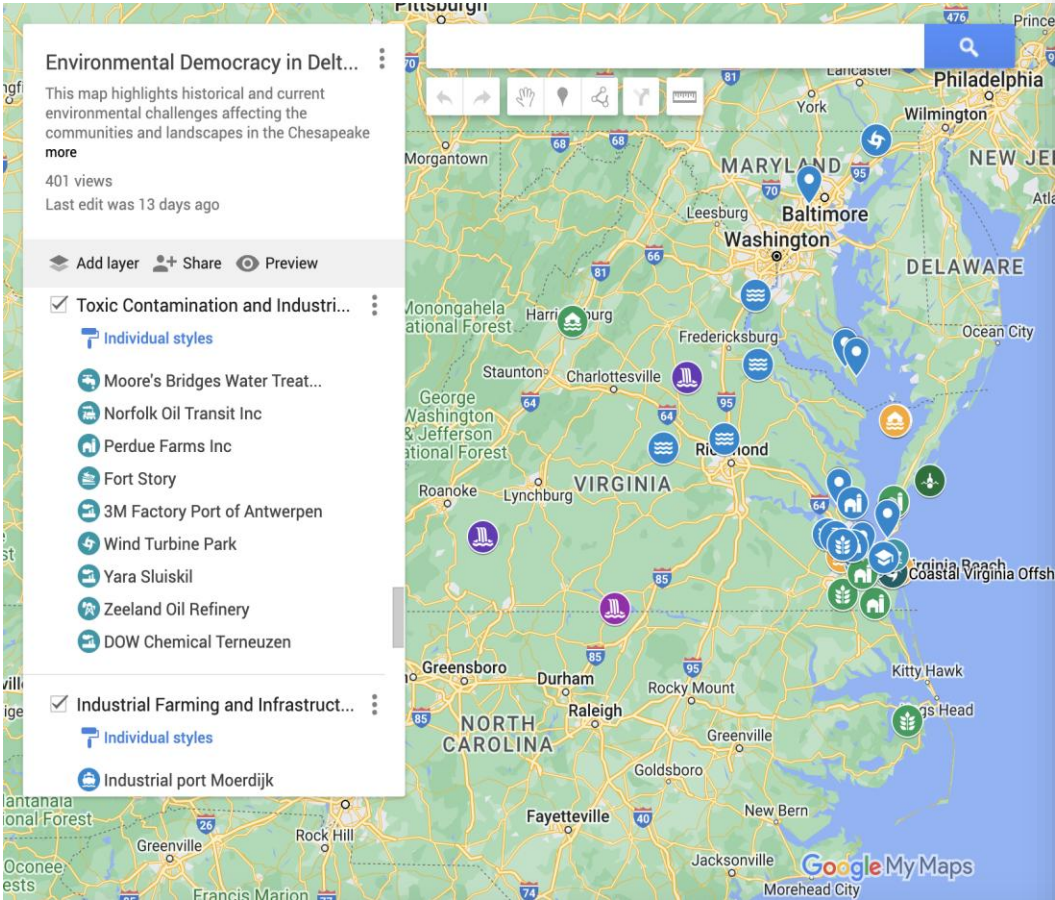
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DOW Chemical Terneuzen



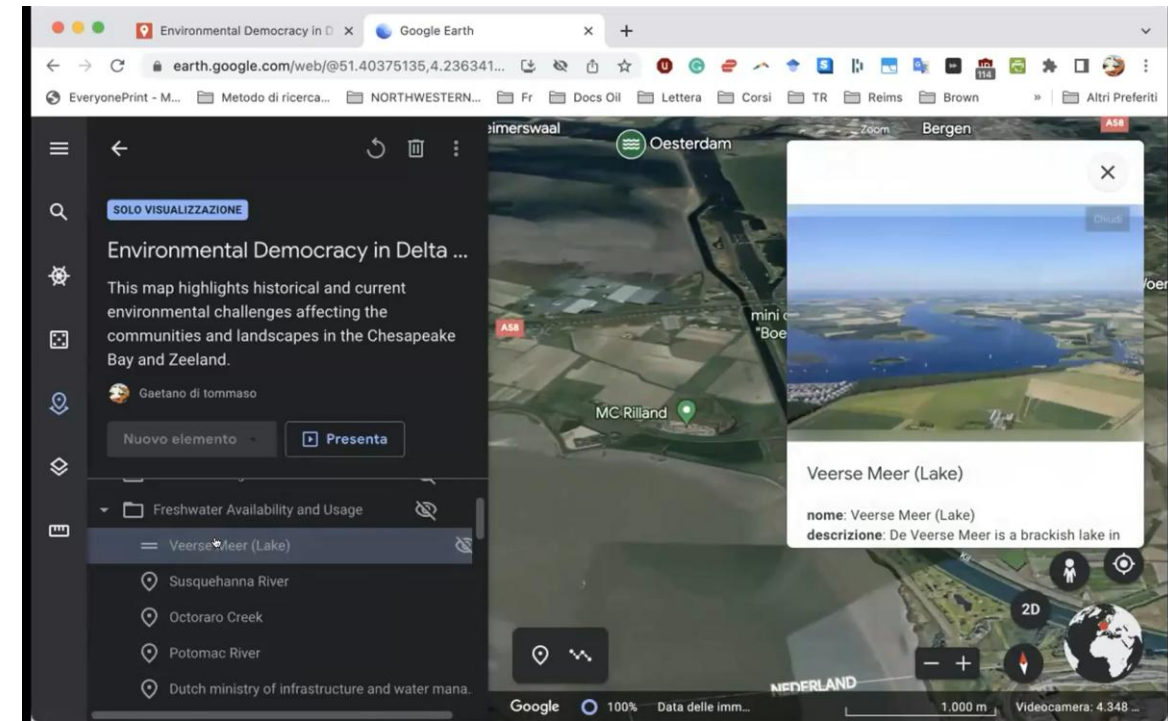
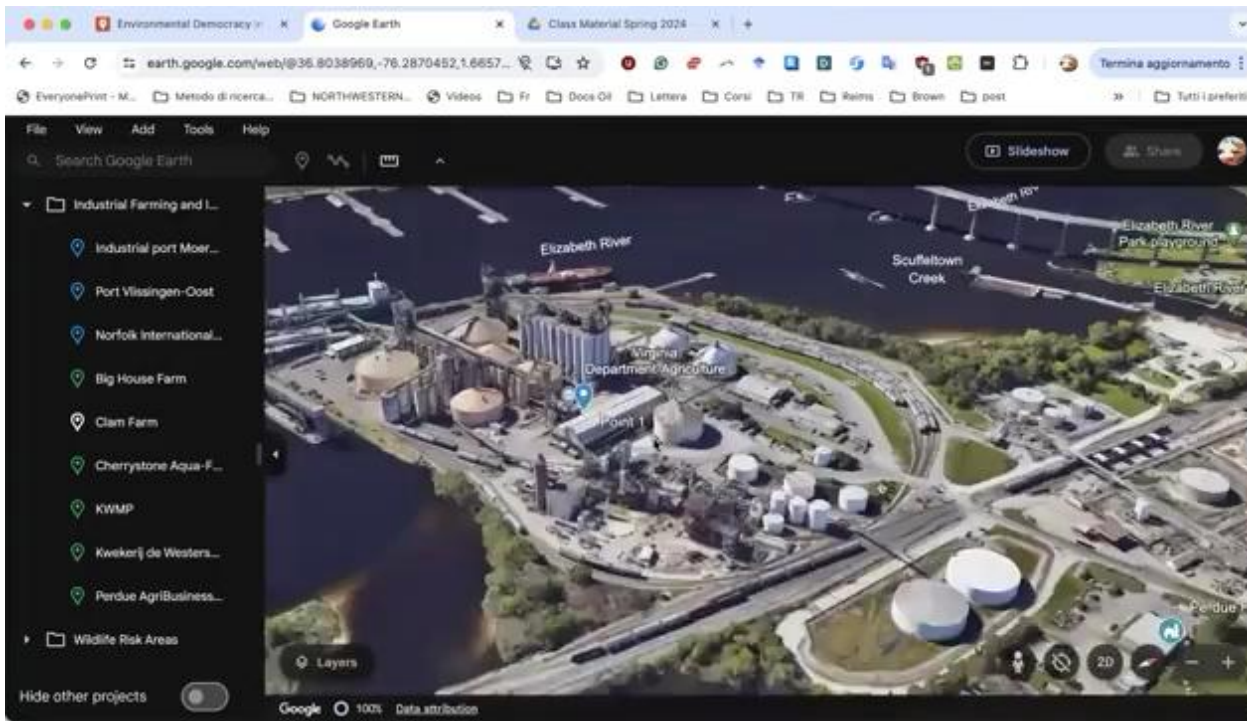
This is a chemical plant of DOW Chemicals, one of the biggest chemical producers in the world. DOW Terneuzen has been leaking dangerous amounts of zinc into the Westerschelde. Although zinc in low amounts does not pose a health threat to

51.3432, 3.7843



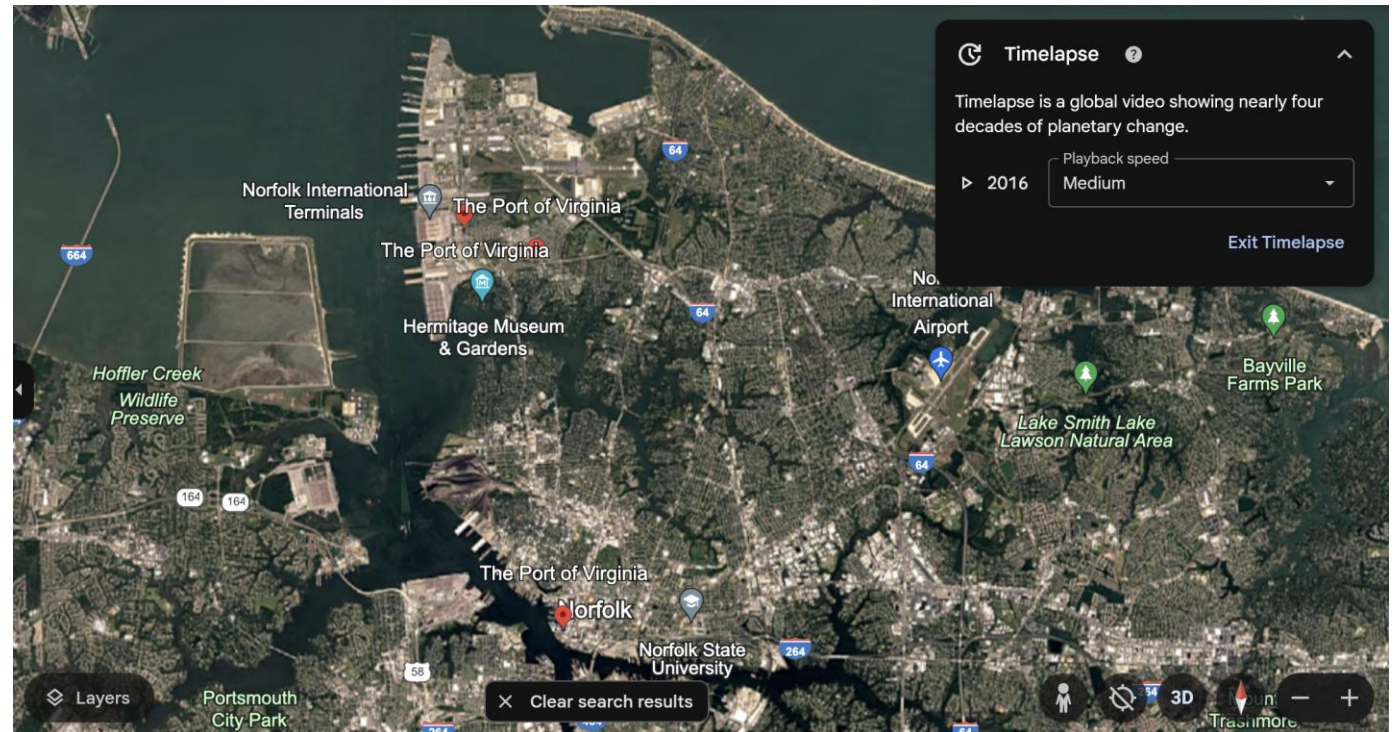


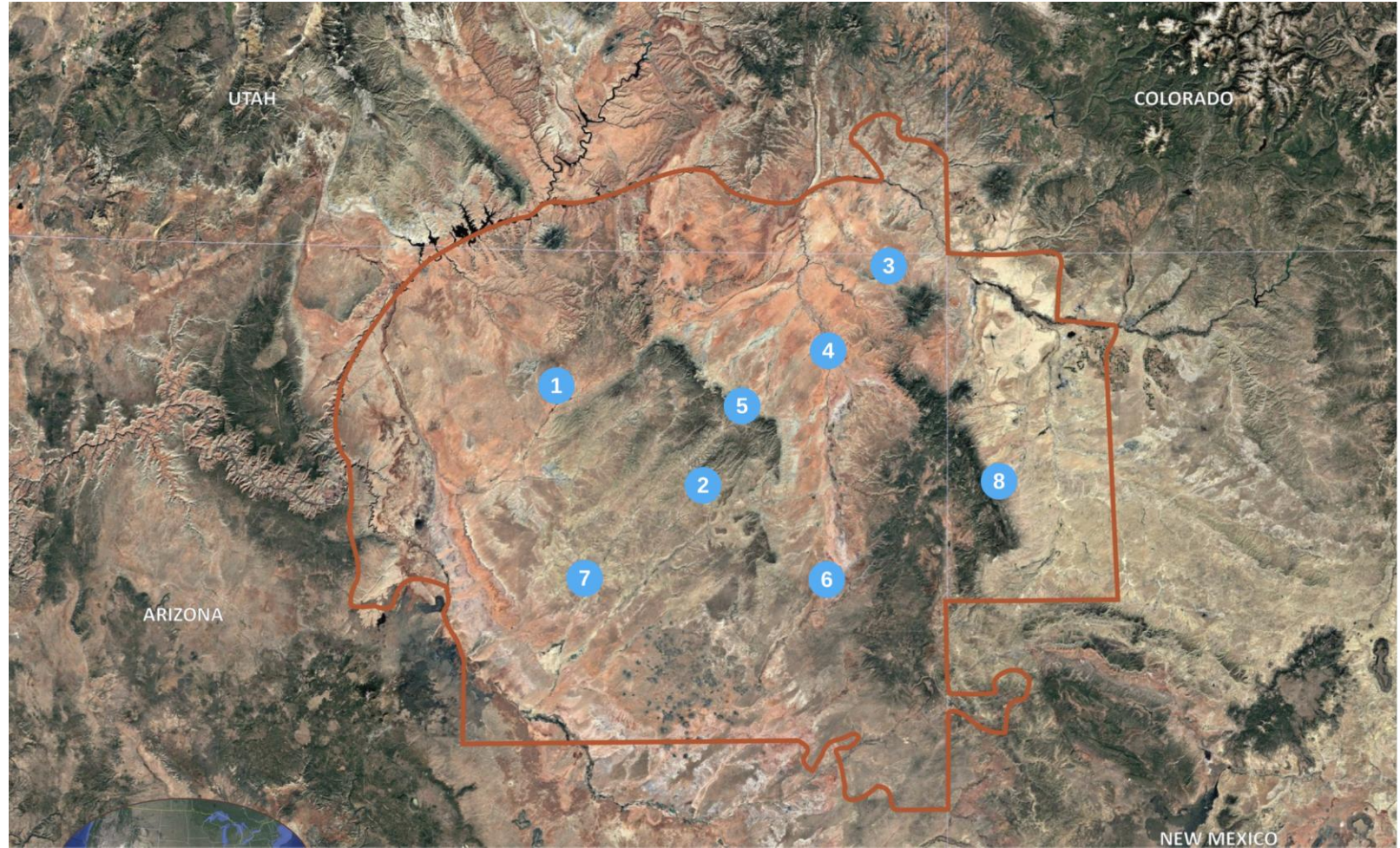
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- Do you have experience with XR tools and immersive learning?
- How to integrate XR in VE?







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The process of mapmaking was incredibly fun, and not something I have done before. The google map made it accessible to put a lot of information in an orderly way in a format. The little icons helped to categorise the places we put in. It was also very easy to add information to a place and even add pictures.

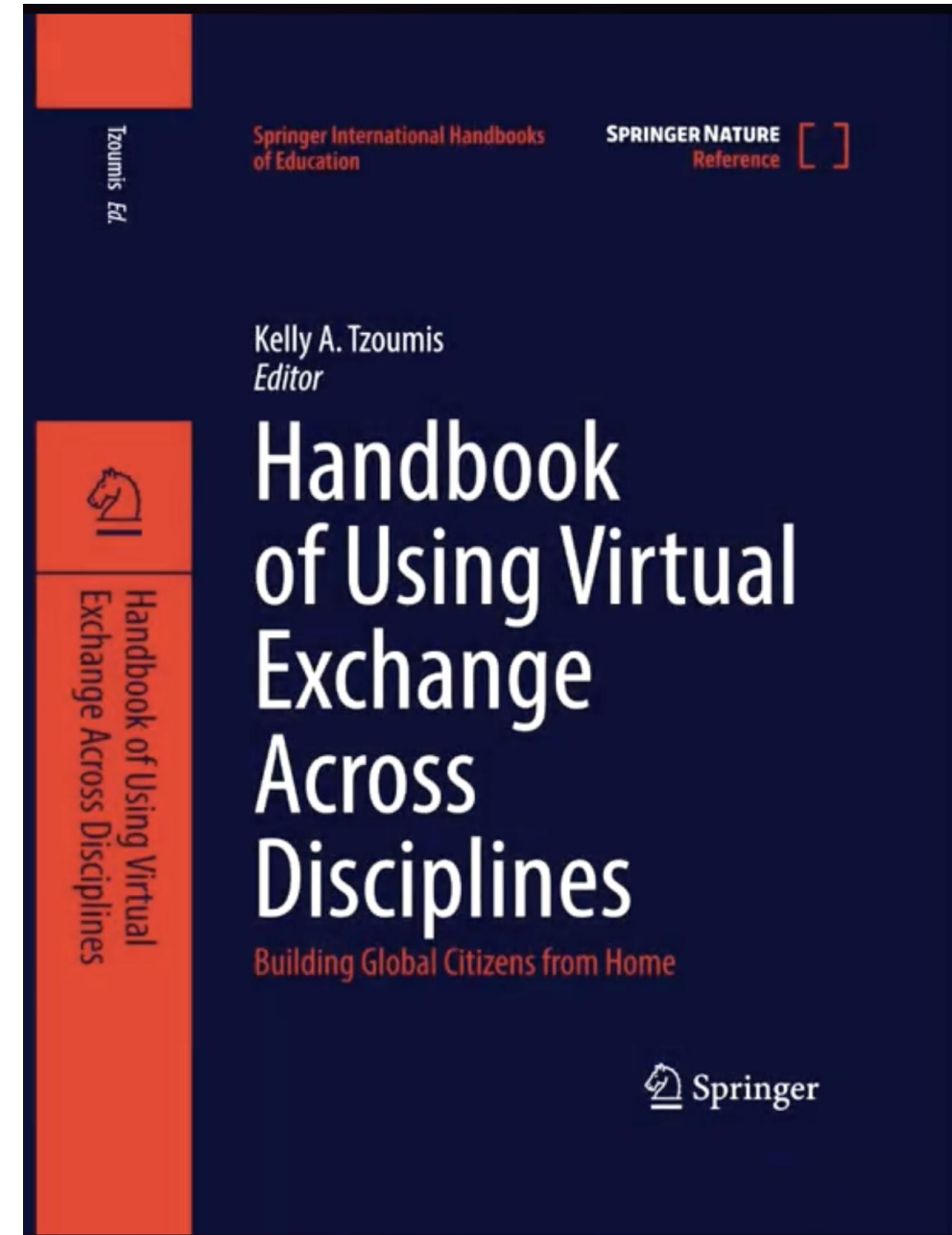
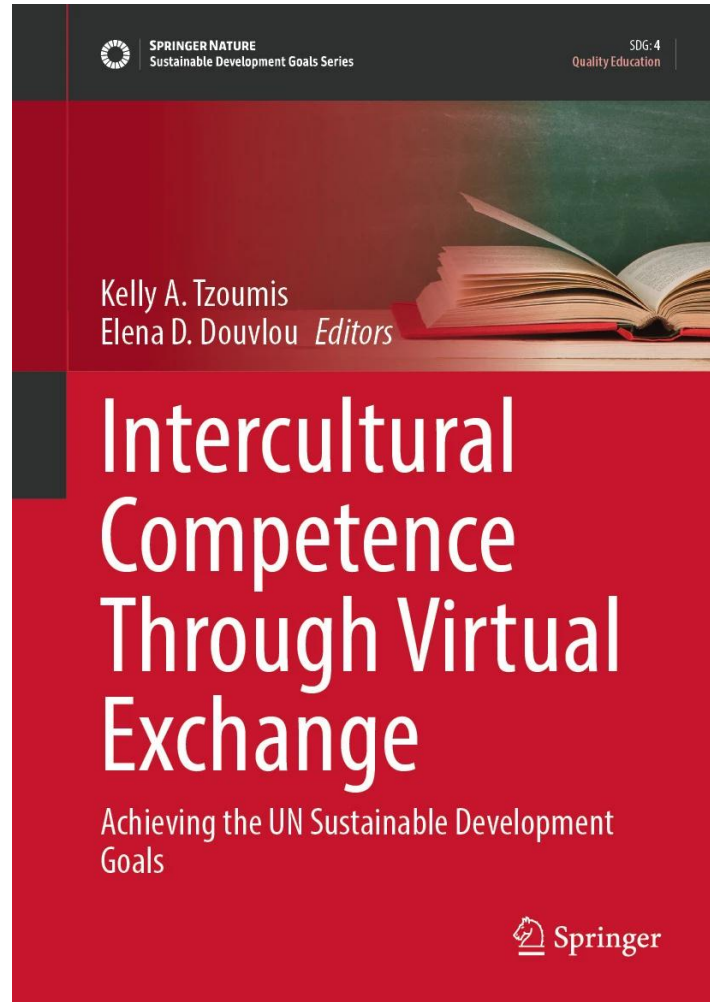
My view on environmental democracy has evolved to see it as a dynamic field that requires active participation from all societal levels, informed by diverse cultural insights and collaborative governance. This course has solidified my belief in the power of international cooperation in advancing sustainable environmental policies. I would always recommend intercultural exchanges, and if people were interested in this particular course, I would certainly recommend it if it was in their area of interest.

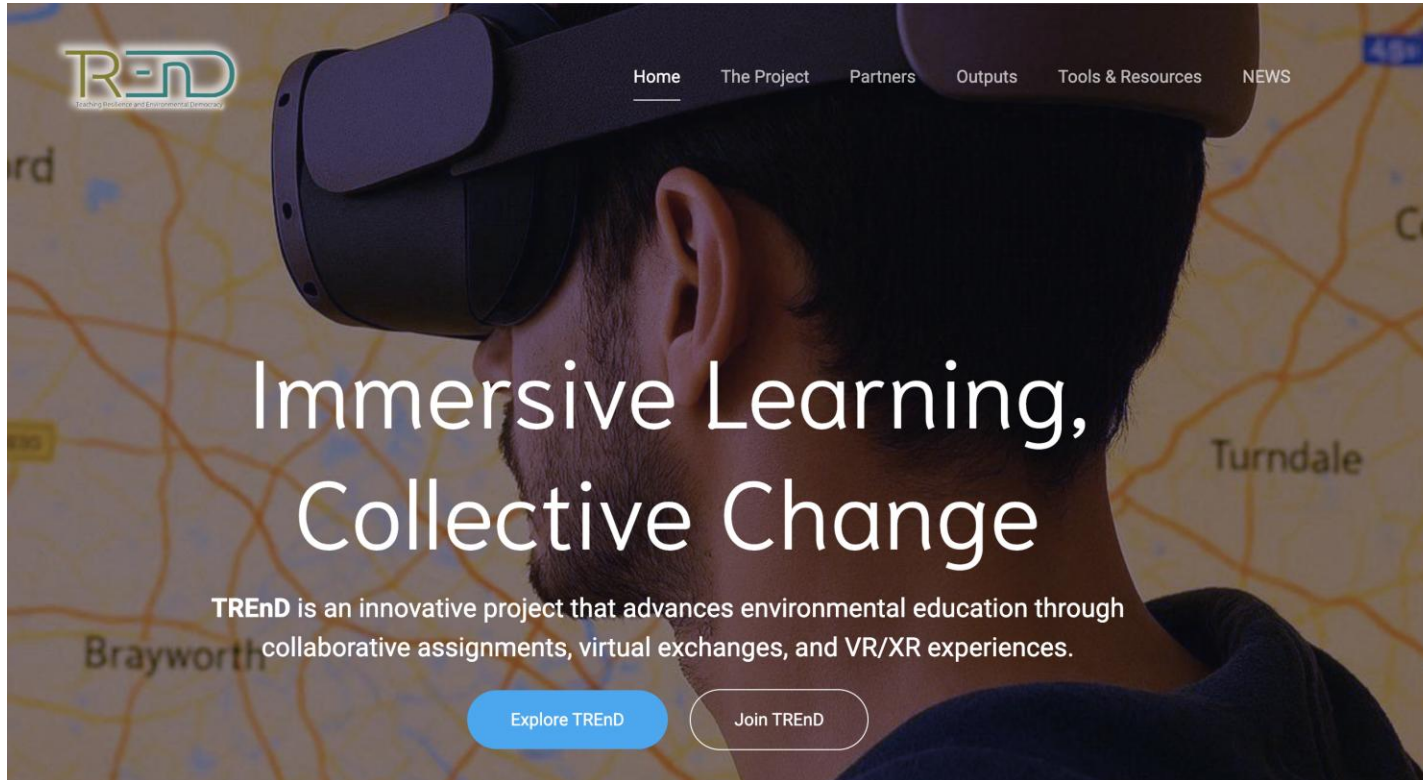
I really enjoyed the map-making activity! It was interesting to find the exact locations that lead to significant pollution in our bays, and it was especially fun to play around on cool websites that had all of the information about each location. I was genuinely surprised at some of the biggest polluters and what industry the pollution came from. For this project, my group decided it would be easiest to

My view of environmental democracy grew significantly because of this course. I knew next to nothing about it when the course began. When the course began I did not understand the importance of environmental democracy and had no idea how to define it. Throughout the course, I began to develop my definition. Environmental Democracy is citizens having the right to participate in environmental decision-making processes that affect their lives and communities. Without it all societies would be worse off.



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Thank You!