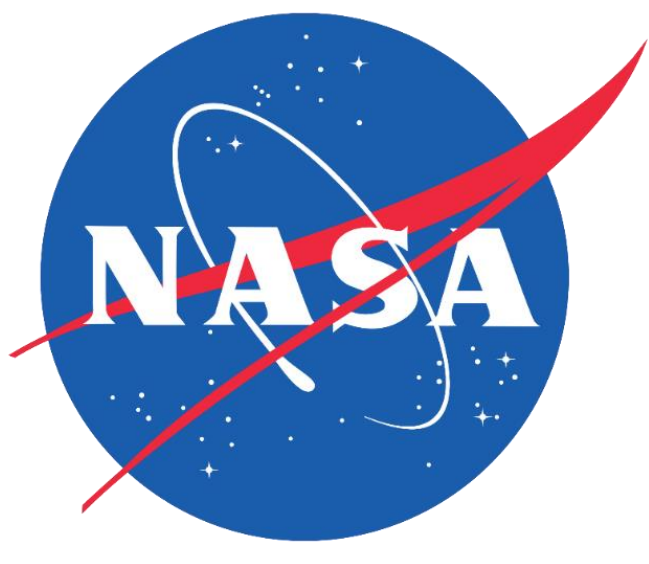


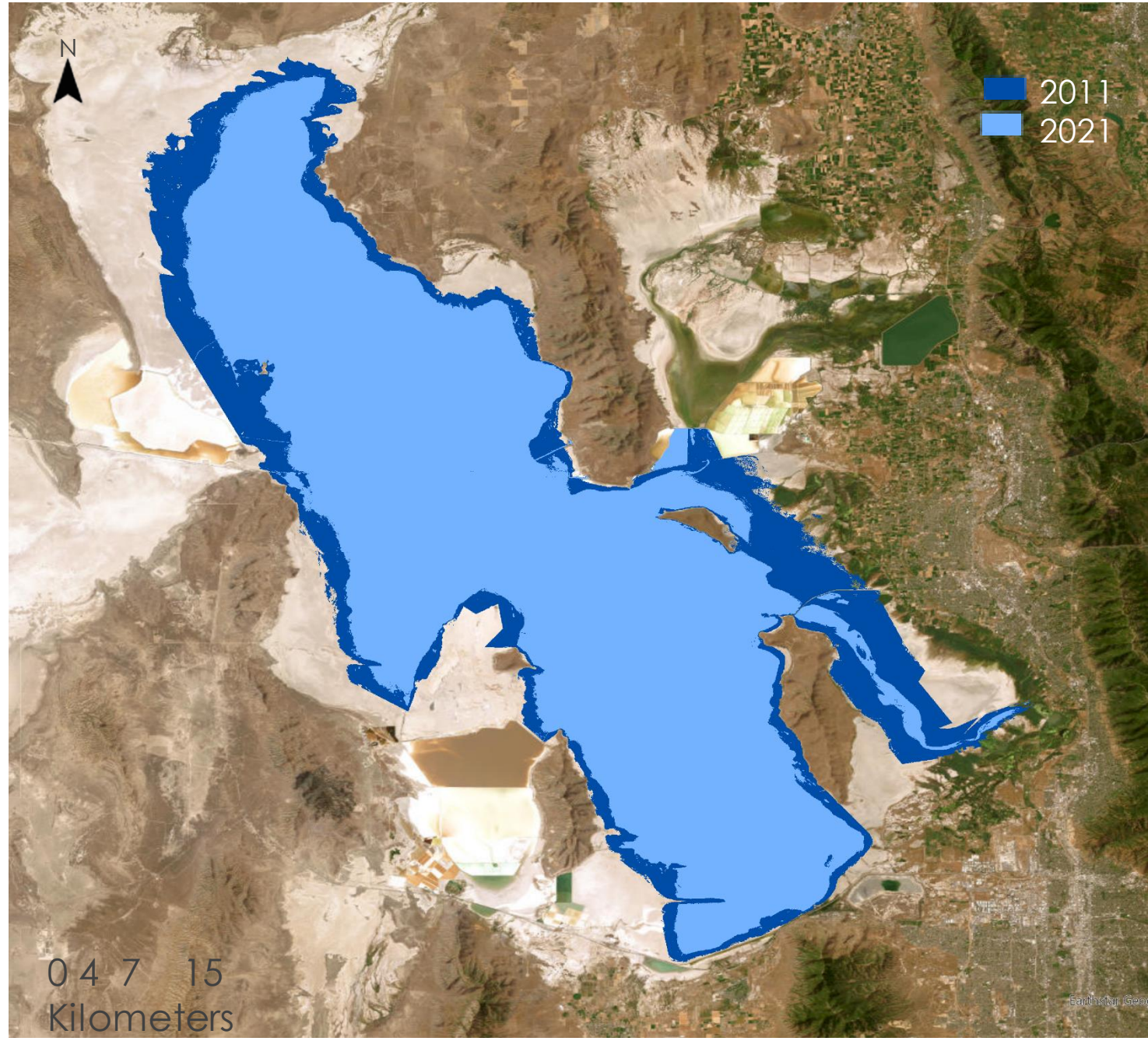


NASA DEVELOP'S Approach to Leveraging Earth Observations for Environmental Justice



Great Salt Lake Health & Air Quality

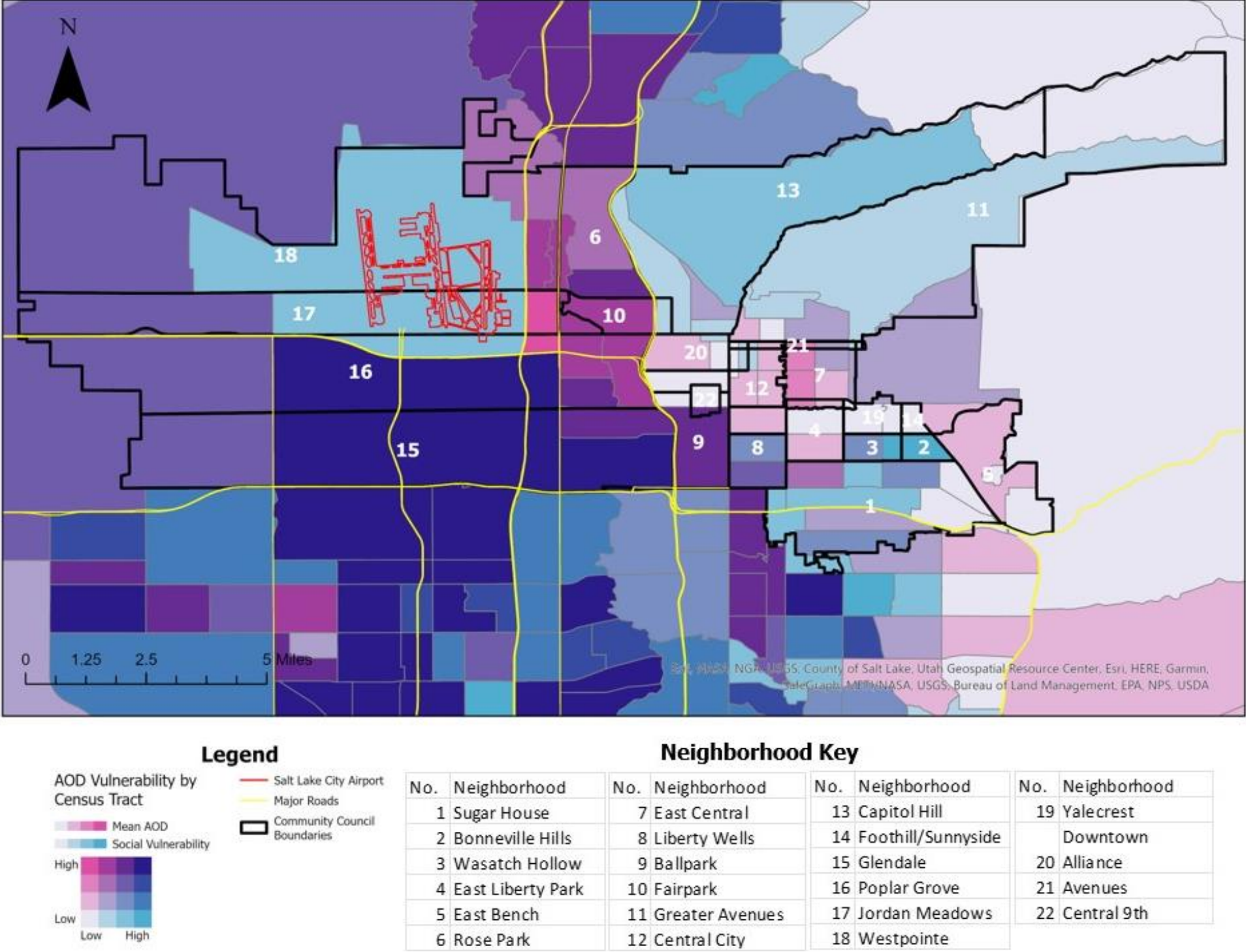
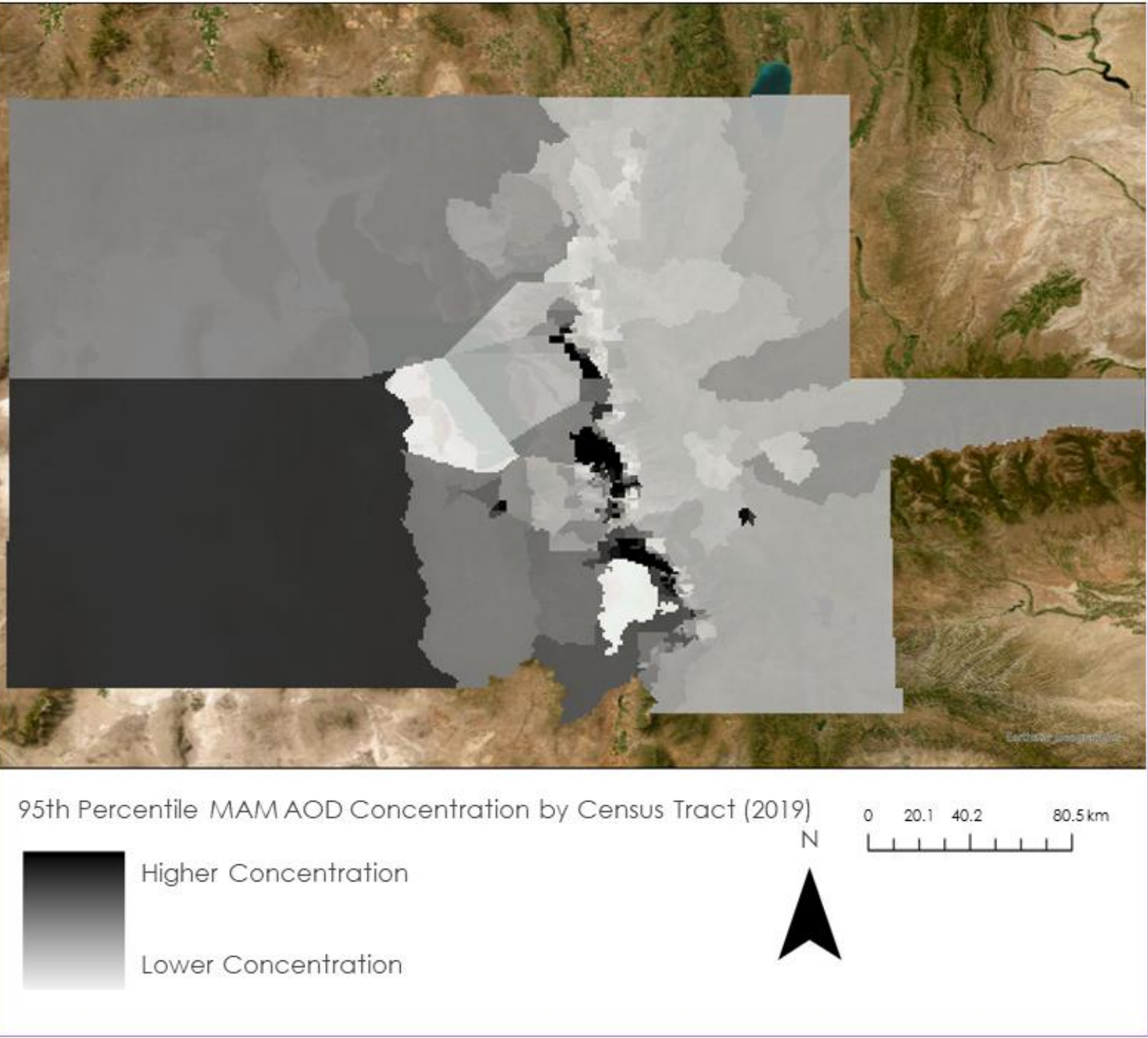
Monitoring Lakebed Exposure and its Impact on Air Quality and Environmental Hazards in the Great Salt Lake Watershed



Water inflow to the Great Salt Lake (GSL) has rapidly declined over the last forty years due to human withdrawals and climate change. Lowering lake levels have exposed over 50% of the lakebed, leading to increased frequency and intensity of regional dust storms caused by airborne lakebed dust under specific meteorological conditions.

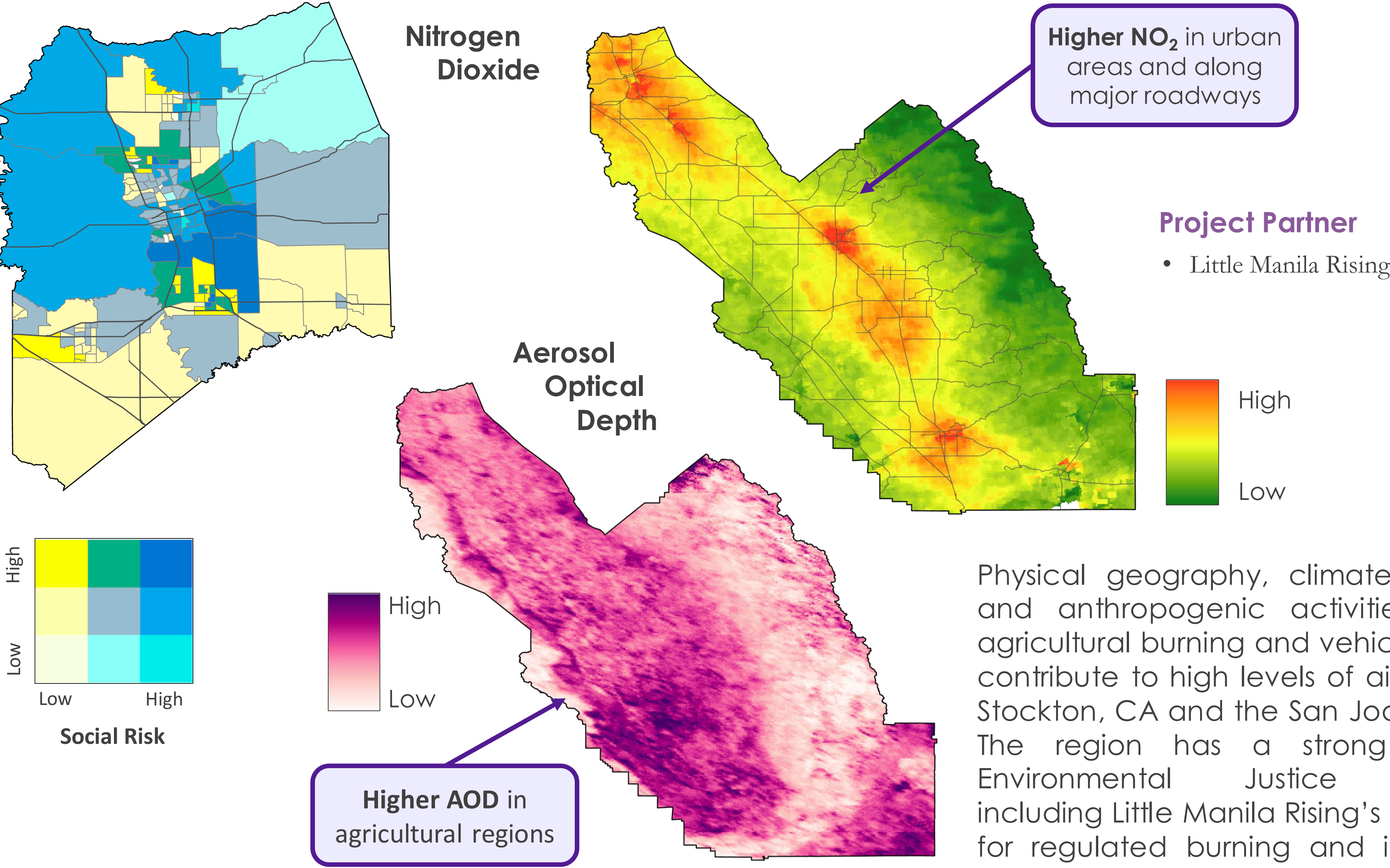
Project Partners

- Utah Department of Natural Resources, Division of Forestry, Fires, and State Lands
- Utah Department of Environmental Quality, Division of Air Quality
- Great Salt Lake Institute, Westminster University
- DUST²
- Great Salt Lake Coalition
- Utah Physicians for Healthy Environment
- Westside Coalition



San Joaquin Valley Health & Air Quality

Evaluating the Overlap of Social Vulnerabilities and Air Quality in the San Joaquin Valley Air Pollution District



Physical geography, climate conditions, and anthropogenic activities, such as agricultural burning and vehicle emissions, contribute to high levels of air pollution in Stockton, CA and the San Joaquin Valley. The region has a strong history of Environmental Justice advocacy, including Little Manila Rising's present fight for regulated burning and infrastructure growth to address air quality and public health challenges.

Acknowledgements

Spring 2023 Great Salt Lake HAQ Team



Summer 2023 San Joaquin Valley HAQ Team



Advisors: Bonnie Baxter, PhD (Great Salt Lake Institute); Maura Hahnenberger, PhD (DUST²); Kenton Ross, PhD (NASA LaRC); Travis Toth, PhD (NASA LaRC)

Advisors: Kenton Ross, PhD (NASA LaRC), Travis Toth, PhD (NASA LaRC), Lance Watkins, PhD (Arizona State University), Elizabeth Wiggins, PhD (NASA LaRC)

Program Structure

Dual Capacity Building

Participants

- Currently Enrolled Students
- Recent Graduates
- Early & Transitioning Career Professionals

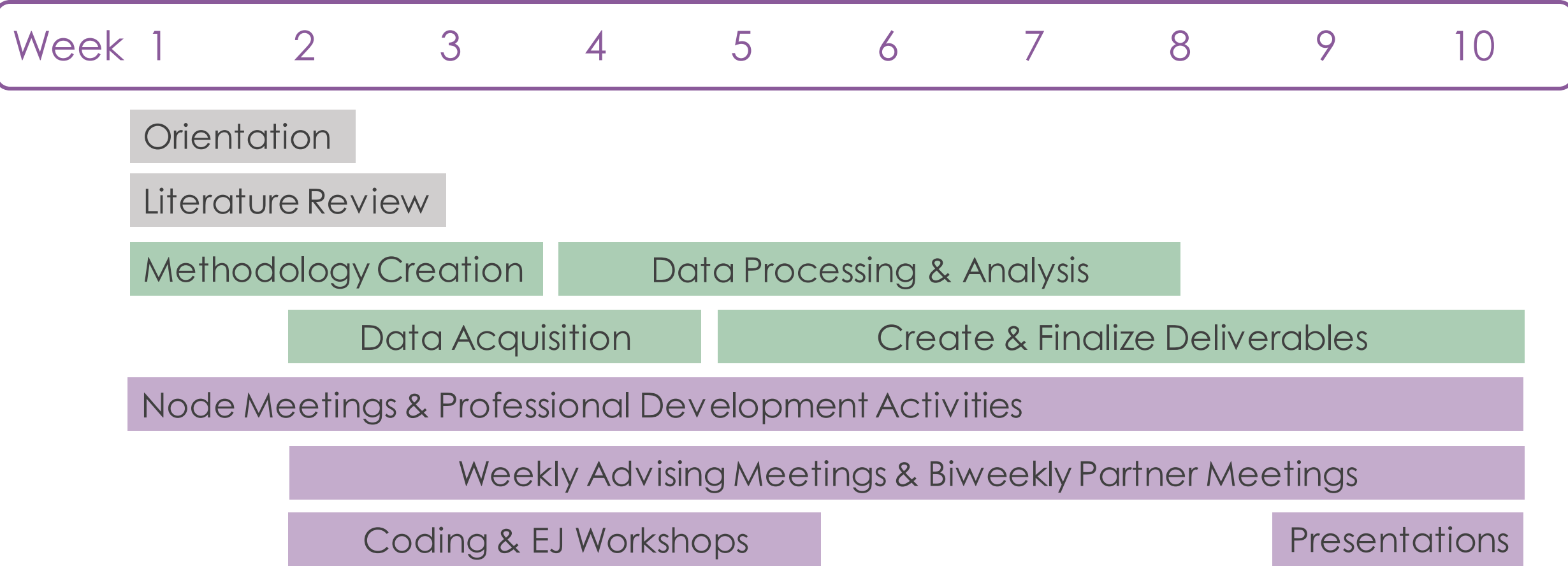
Partners

- Federal government
- State governments
- Local governments
- Private organizations
- Non-profits

NASA DEVELOP empowers partners and participants to gain experience with and confidence in **remote sensing**, **geospatial analyses**, and **science communication** in 10 application areas.

Fast-Paced, Hands-On Learning

Timeline



Outputs

- Technical Report
- Scientific or Impact Poster
- Short and Long Presentation
- Project Summary Document
- Custom set of maps, timeseries, or other analyses based on project and partner needs
- Video, flyer, brochure, or social media series
- Website thumbnail image
- Tutorial
- Code documentation

Project Structure

Empirical Analyses



Environmental Justice Analyses

In addition to drawing from literature, teams work with their partners and advisors to identify a set of possible indicators of vulnerability for their specific project. Often, EJ analyses include factors of race, ethnicity, linguistic isolation, income, public health metrics, and adaptive capacities. Teams also address the impacts of redlining, displacement, data aggregation, and language surrounding vulnerability.

Case Studies

Teams examine their data for temporally and/or spatially significant events, trends, and geographies. After additional exploration and analysis, they then compare these case studies against broader trends and community knowledge to help the partner tell the story of environmental (in)justice.