

Role of Geospatial Technologies in OneAquaHealth

📅 26.04.2024 ⌚ 15:00 PM CET - 16:30 PM CET Host: SYNYO GmbH

Dr. Este Geraghty, Chief Medical Officer at Esri
Prof. Eleni Kokinou, Hellenic Mediterranean University, Greece

OneAquaHealth 

 **IEEE
EMBS**
IEEE Engineering in Medicine & Biology Society



Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Research Executive Agency. Neither the European Union nor the granting authority can be held responsible for them.

AGENDA

Key information

Time	Topic	Presenter
15:00 - 15:05	Introduction to the webinar and expected results	Alexander Nikolov SYNYO GmbH, Austria
15:05 - 15:15	OneAquaHealth project	Alexander Nikolov SYNYO GmbH, Austria
15:15 - 15:45	Waters of Change: GIS Solutions for Climate Challenges and Community Health	Dr. Este Geraghty Chief Medical Officer at Esri
15:45 - 16:00	The role of geospatial technologies in Community & Urban Health: Lining up Earth Observation with Stream Health and Agricultural Activity	Prof. Eleni Kokinou Hellenic Mediterranean University
16:00 - 16:25	Open discussion	All participants
16:25 - 16:30	Final remarks	Alexander Nikolov SYNYO GmbH, Austria

HOUSEKEEPING RULES



The session will be **entirely recorded** and published on the OneAquaHealth Open Information Hub.



All participants except speakers and moderators will be **muted by default**.



Feel free to post your questions in the **chat**.



If you would like to **speak, raise your hand** and wait for the moderator to give you the floor.

FACTS AND FIGURES

Key information

Programme

Horizon Europe

Project Type

Research and Innovation Action

Project duration

48 months (01/01/2023 – 31/12/2026)

Partners

13 from 10 countries

Budget

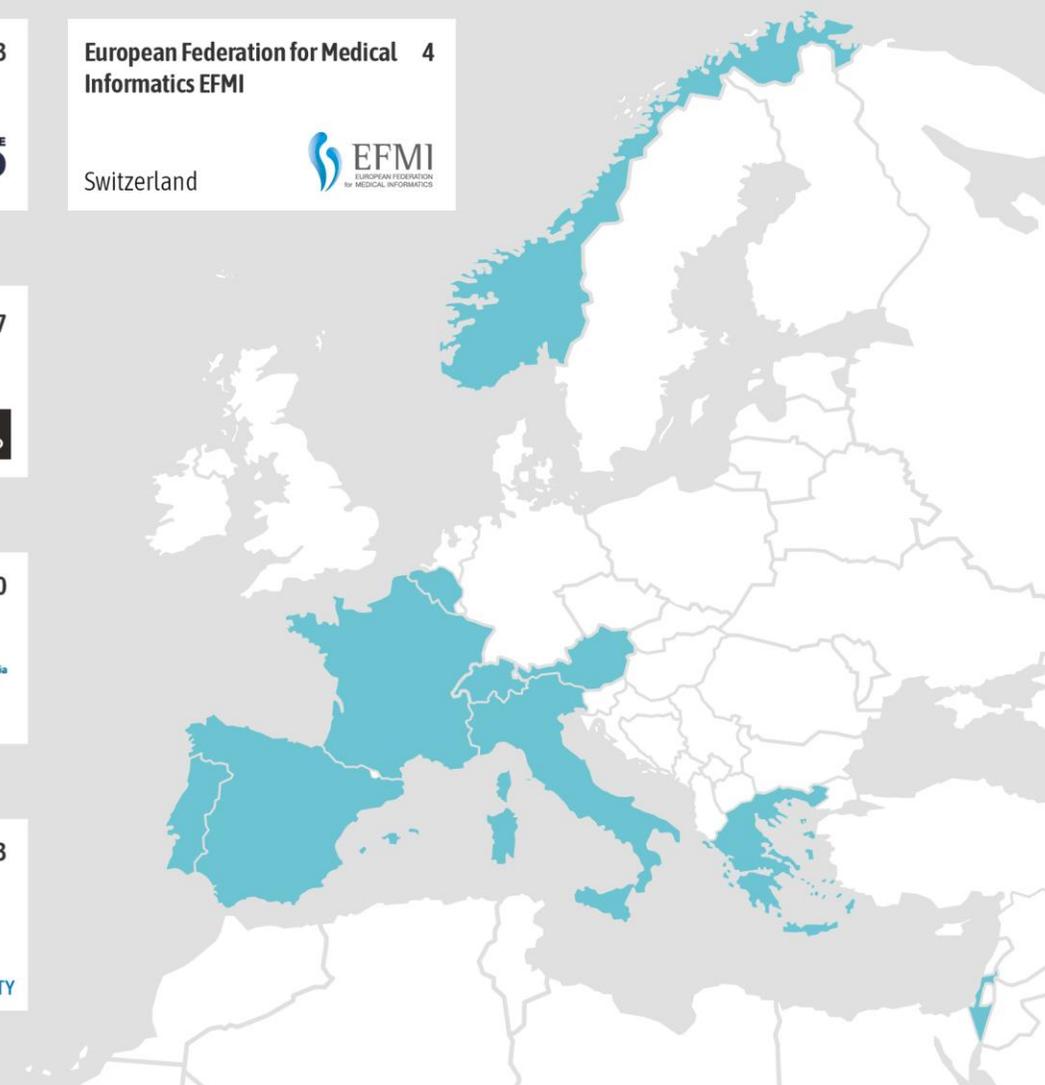
€4,939,558

Project is expected to (Extract)

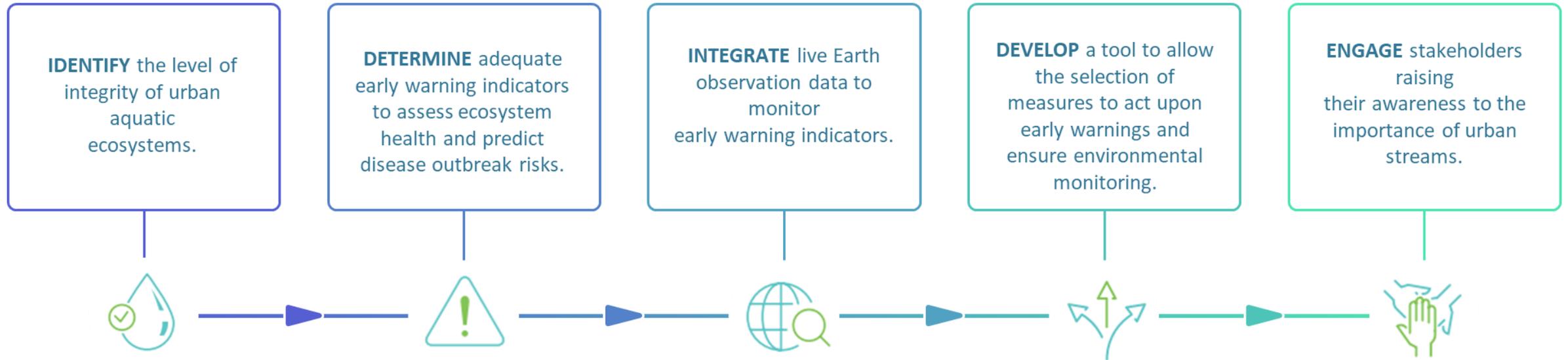
„ The proposal should build on the **holistic integrative concept of ‘One Health’** that includes not only the health of humans, but also of animals, soil and plants including ecosystems and environmental health. ”

„A specific focus of the proposal should be on the **monitoring of the evolution of ecosystem barriers in densely populated, industrialised or agricultural areas.** The proposal should also investigate how environmental observations could provide information that can contribute to improving the effectiveness, sustainability and resilience of these ecosystem barriers in facing emerging diseases. The proposal should **include the reanalysis of long time series of environmental observations and their correlation with the emergence or spread of diseases.**”

“It should also work on the **concept of alert or early warning systems** based on observation that would contribute informing governments and authorities, and finally operators, on the health risks related to the **destruction of ecosystems and biodiversity with a One Health approach**”



University of Coimbra UC 1 Portugal 	SHINE2Europe SHINE 2 Portugal 	Institut National Polytechnique de Toulouse INPT 3 France 	European Federation for Medical Informatics EFMI 4 Switzerland 
University of Oslo UiO 5 Norway 	ENORA Innovation ENORA 6 Greece 	SYNYO GmbH SYNYO 7 Austria 	
Wise Angle WISE 8 Spain 	National Research Council of Italy CNR 9 Italy 	University of Naples Federico II UNINA 10 Italy 	
Holon Institute of Technology HIT 11 Israel 	Health Level Seven International HL7 Foundation HL7 12 Belgium 	University of Ghent UGent 13 Belgium 	



Predictive models



The models will use machine learning approaches such as multilayer perceptron-artificial neural networks and discriminant function models. Their adaptation will require new machine learning methods.

Open Information Hub



The Hub will contain all the project information and allow the visualization of outputs and support tools for decision making.

City dashboards



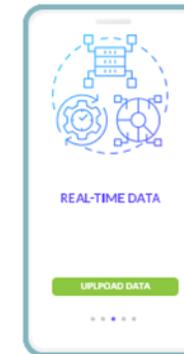
The dashboards represent web applications that enable citizens and public institutions to access the data and their statistics through an optimized search graph and a graphical visualization.

Decision Support System (DSS)

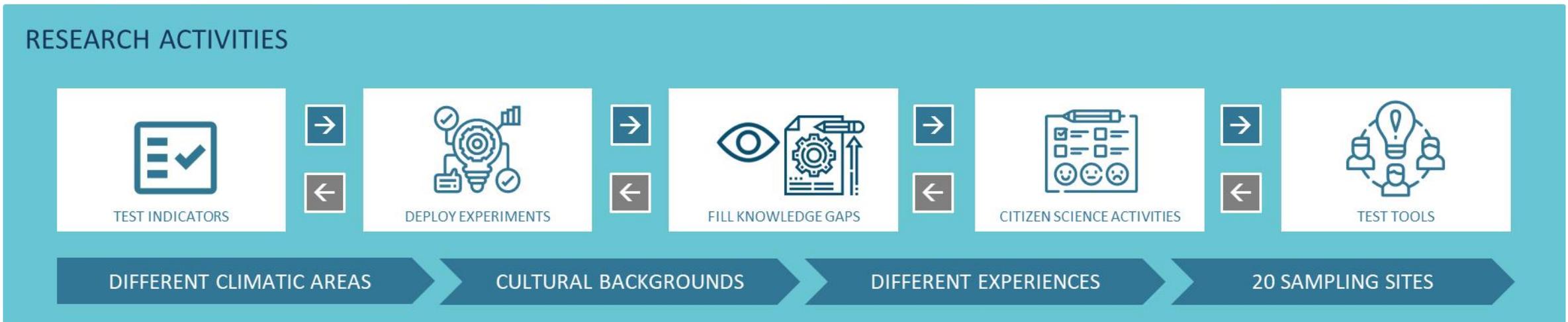


The DSS will be implemented through a web server system and use data provided by ESA's Copernicus Program and NASA's Landsat images. The DSS is based on R packages conceived to implement PROMETHEE methods and support the Multiple Criteria Decision Analysis (MCDA).

Citizen Science Application



A mobile and desktop application for environmental observation will be designed and supported by a back-office, which will enable citizens and public institutions to access data and statistics through an optimized search graph and a graphical visualization.





Better insights in how to foster the **use of environmental observation in** the large domain of **One Health** and the areas within this domain that could benefit the most from environmental and Earth observation.



An **increase of the capacity to trace environmental parameter changes** on how they impact on the emergence of diseases.



Monitoring of the evolution of ecosystem barriers and reinforcement of their sustainability, specifically in densely populated or intensively used areas.



Contributing to **understanding the emergence and tackling the spread of new infectious diseases** affecting human, animal or plant health, and the interlinkages that may exist between them and building up of more resilient ecosystems.



Better **insights into the concept of alert and early warning systems**, including, where possible, the next steps taken (e.g. exploitation/scaling up) in working with the outcomes of the EIC Horizon Prize on Early Warning for Epidemics.

Waters of Change: GIS Solutions for Climate Challenges and Community Health

Este Geraghty, MD, MS, MPH, CPH, GISP

Chief Medical Officer, Esri

April 26, 2024

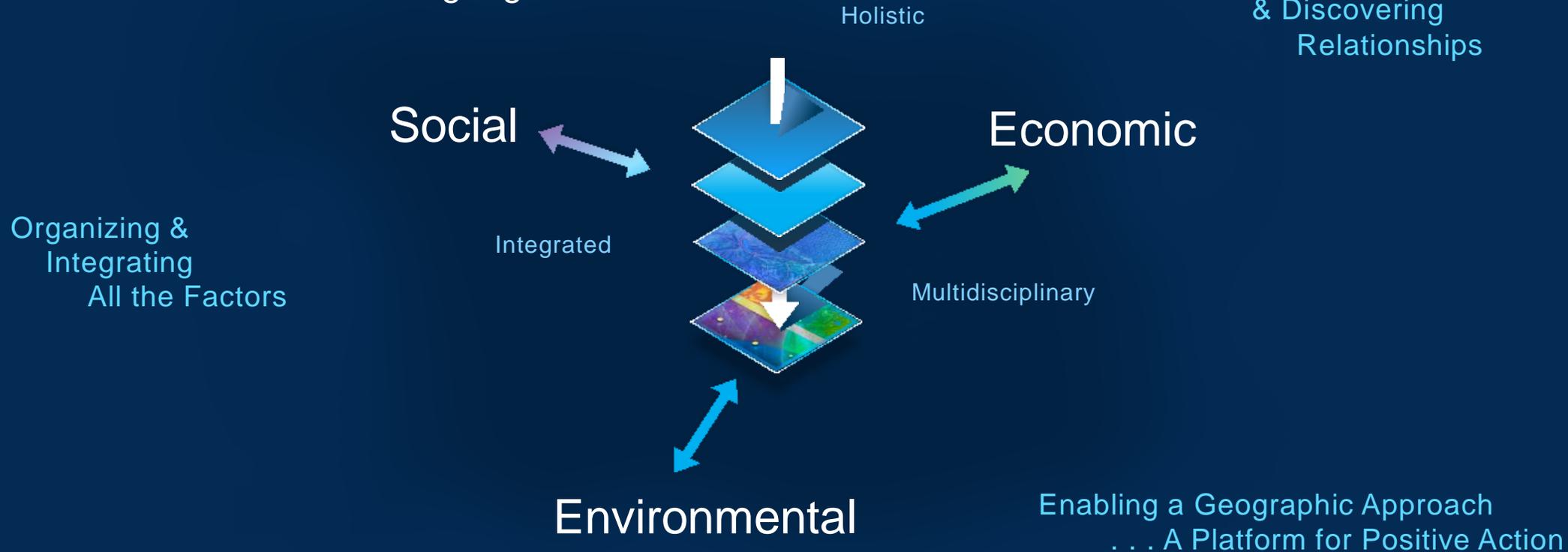


About the Geographic Approach

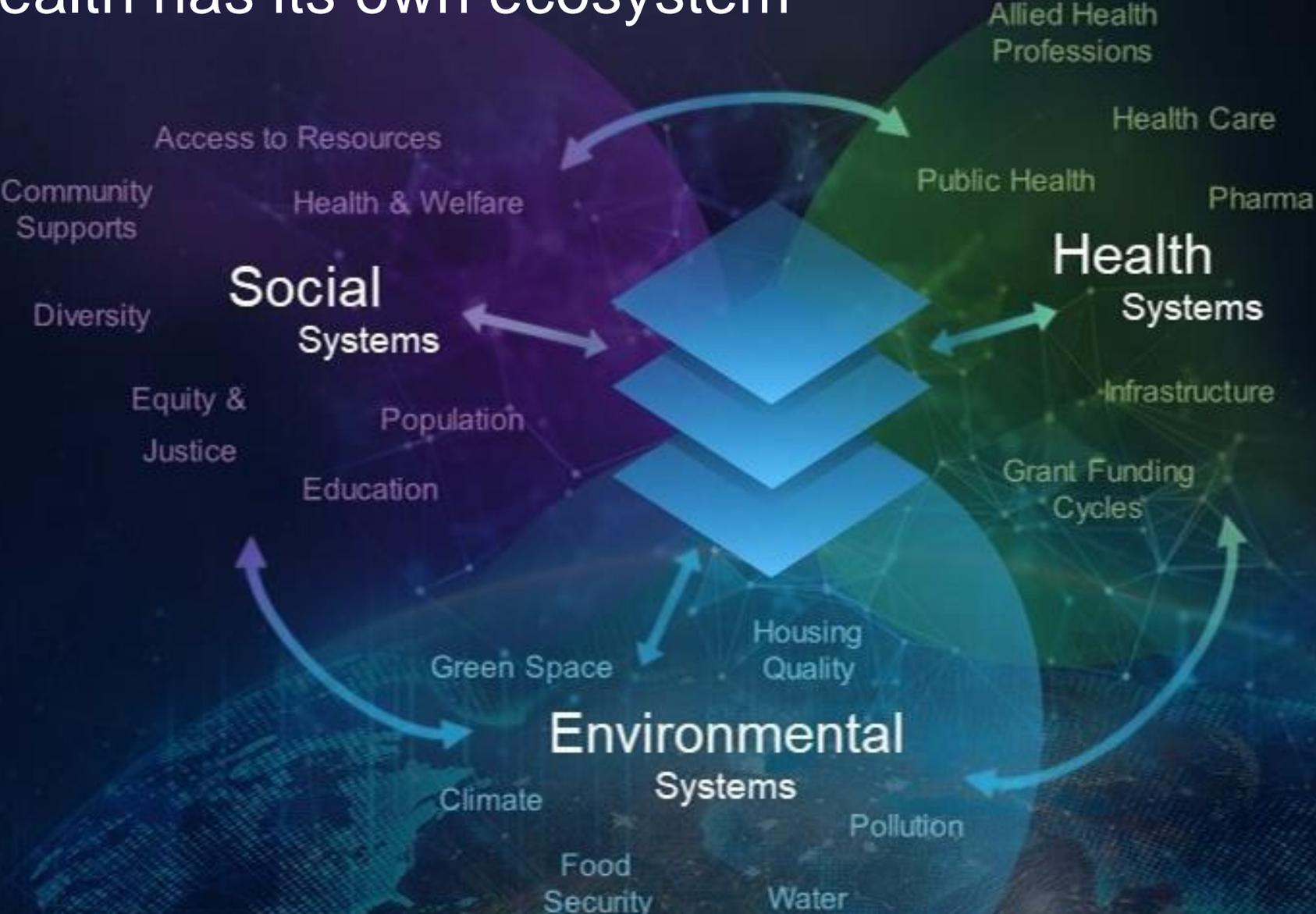
Seeing the World as One Single Ecosystem

Geography Provides the Science &
Fundamental Language

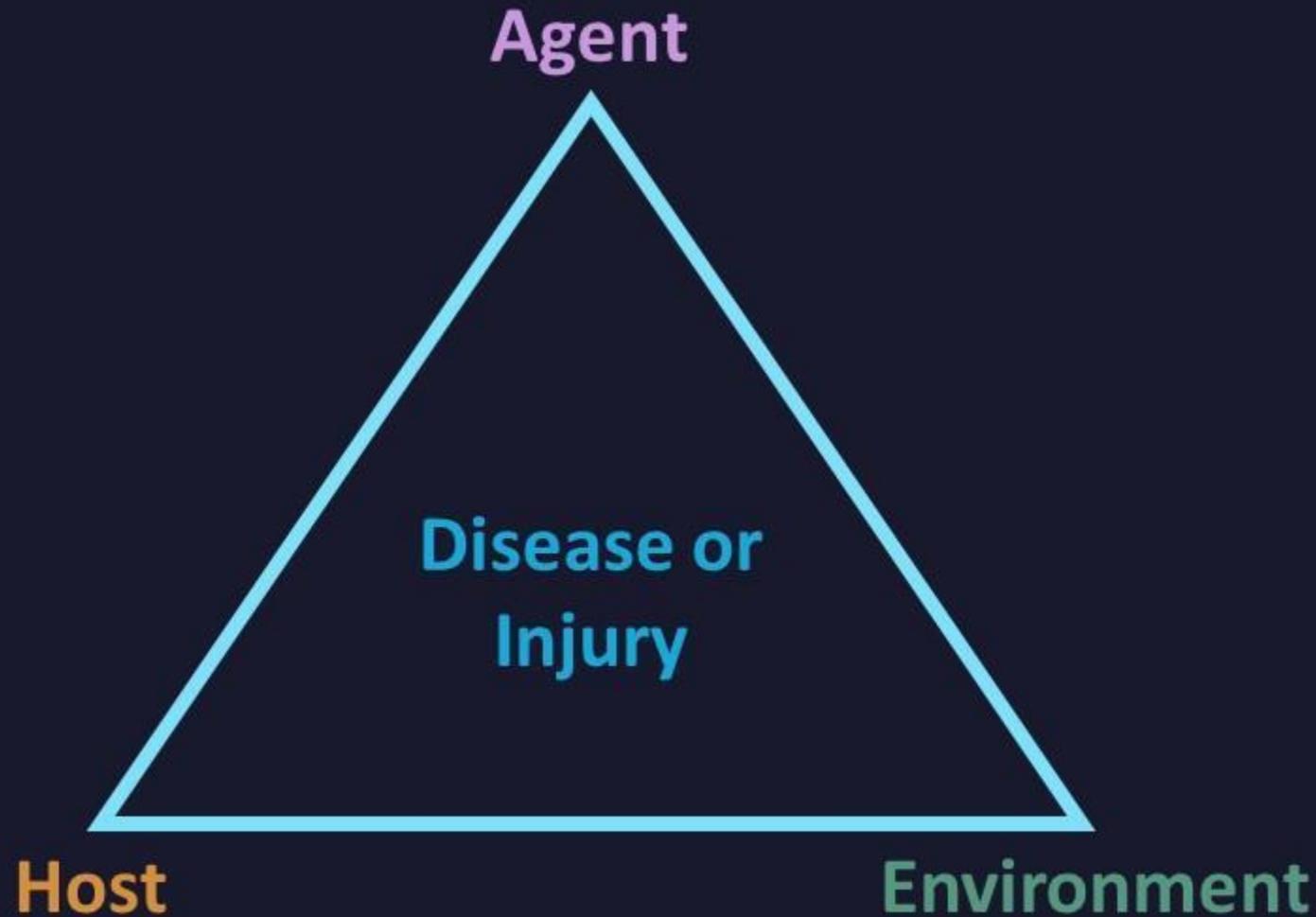
Illuminating Patterns
& Discovering
Relationships



Health has its own ecosystem



Epidemiologic triad



Agent

Causal factors
Risk factors
Environmental exposures
Toxicity levels
Virulence

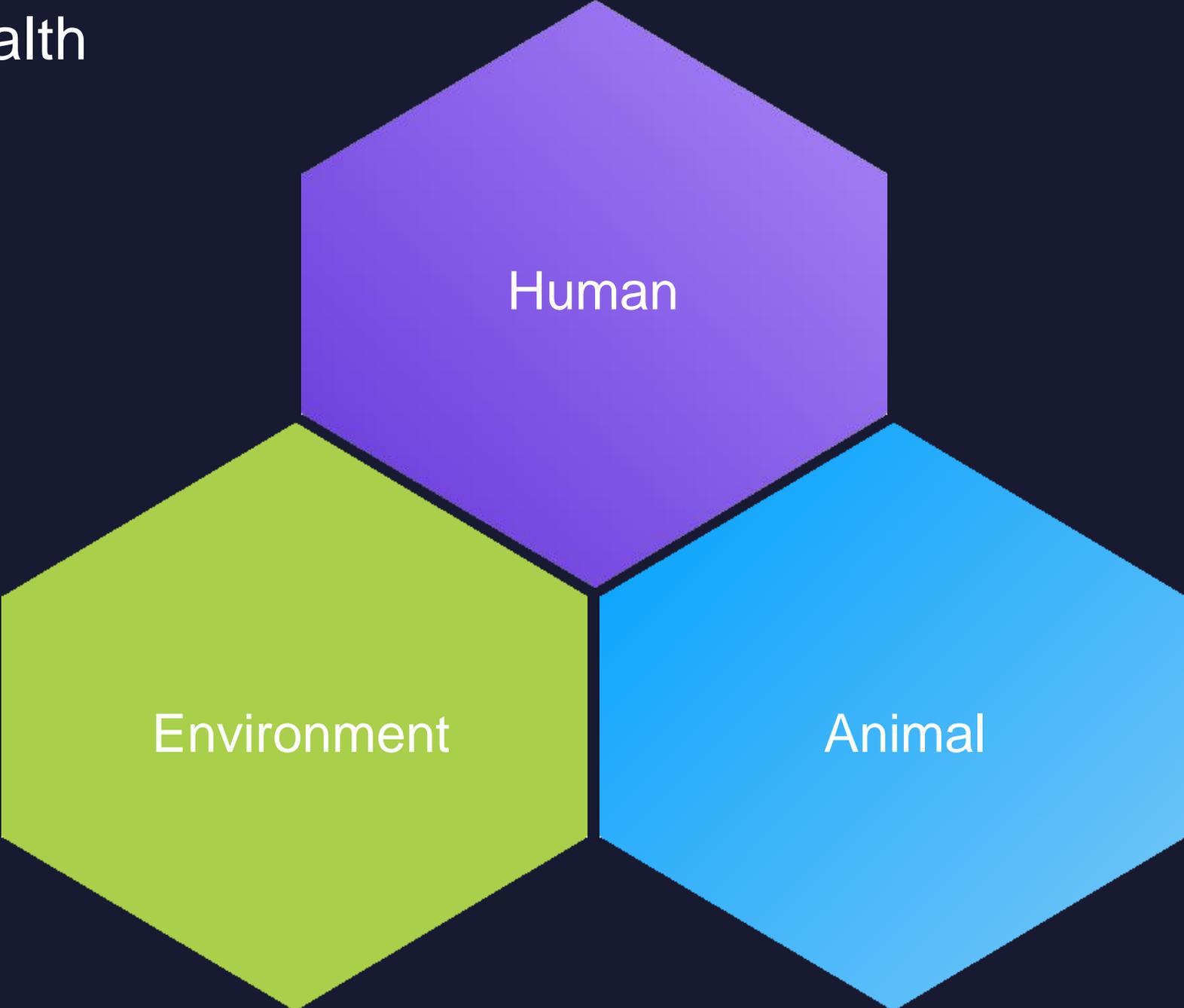
Host

Personal characteristics:
age, immunity, genetics,
previous exposures,
nutrition
Population demographics

Environment

Place characteristics:
biological, physical and
psychological
environments (social
determinants of health),
climate, population
density, social structures

One Health



Context Matters



Data Collection

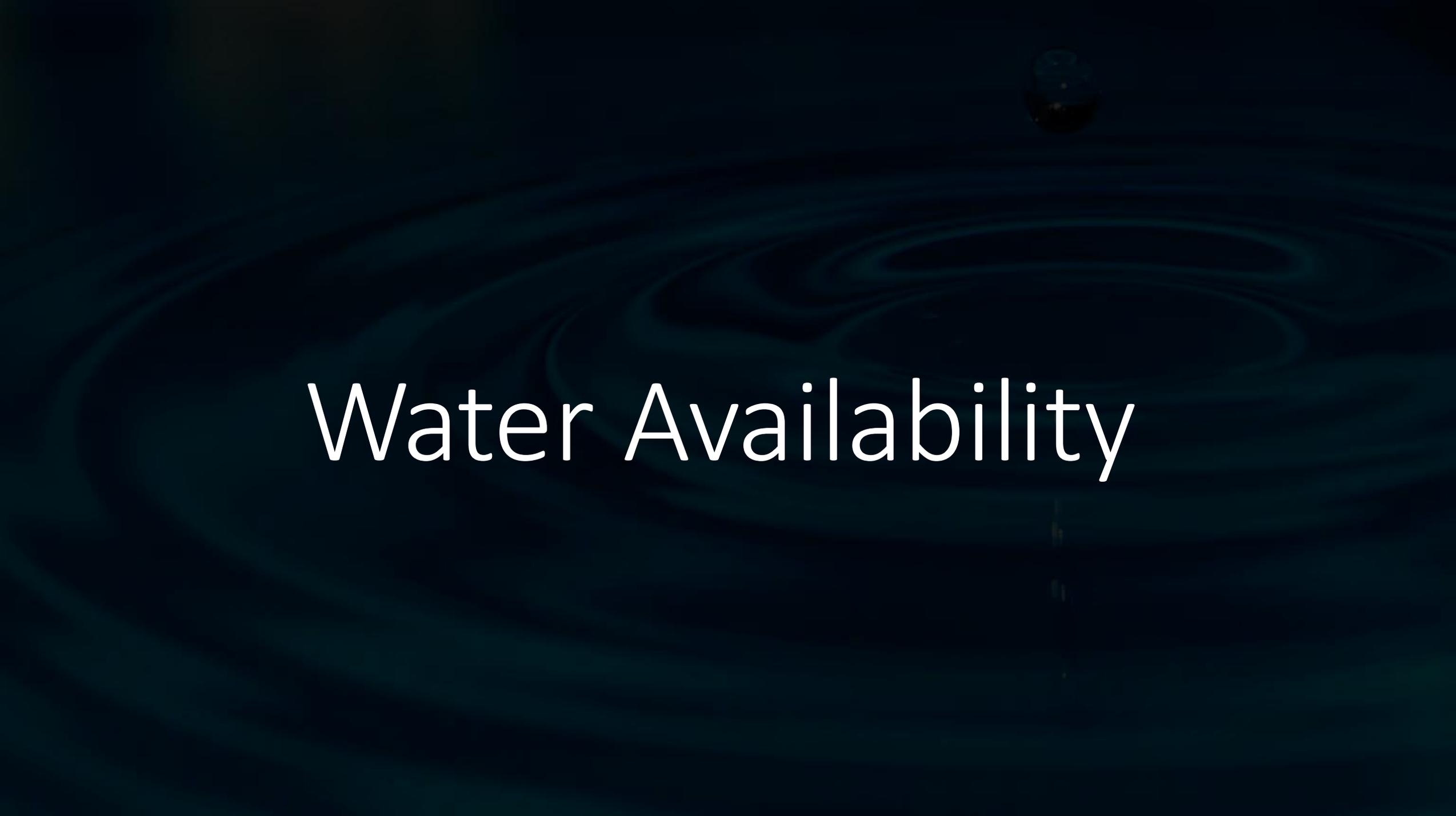
Visualization & Mapping

Analysis & Modeling

Planning & Design

Decision Making

Action & Evaluation



Water Availability

The logo for World Vision, featuring an orange triangle with a white starburst shape inside, positioned in the top right corner of the slide.

World Vision[®]

“Dangerously soft hearted.
But just the right kind of dangerous.”

I'm on the
map...therefore
I am!

SOGIS, BP 6091
Kigali, Rwanda



The Unmapped



High resolution population data

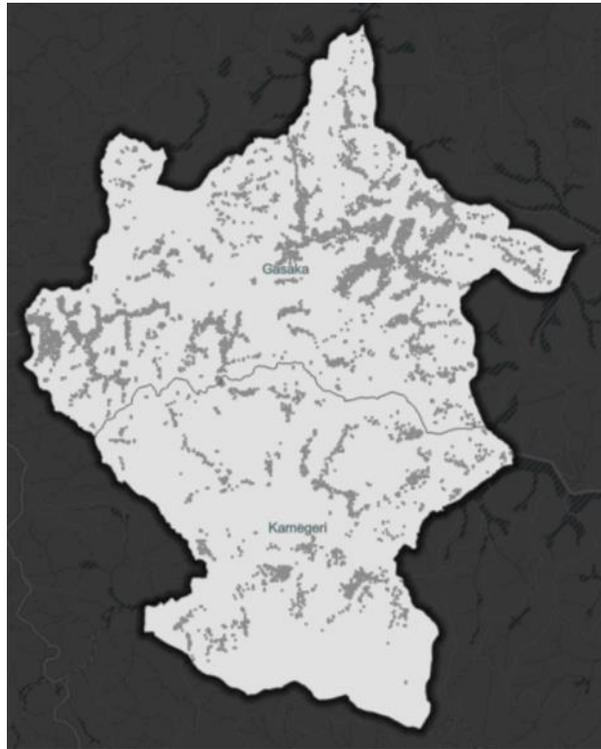


The old way

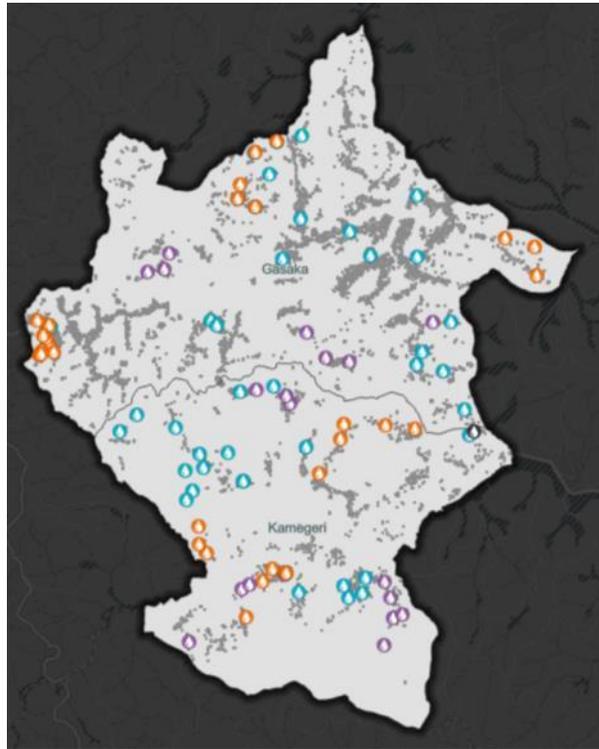


The modern way

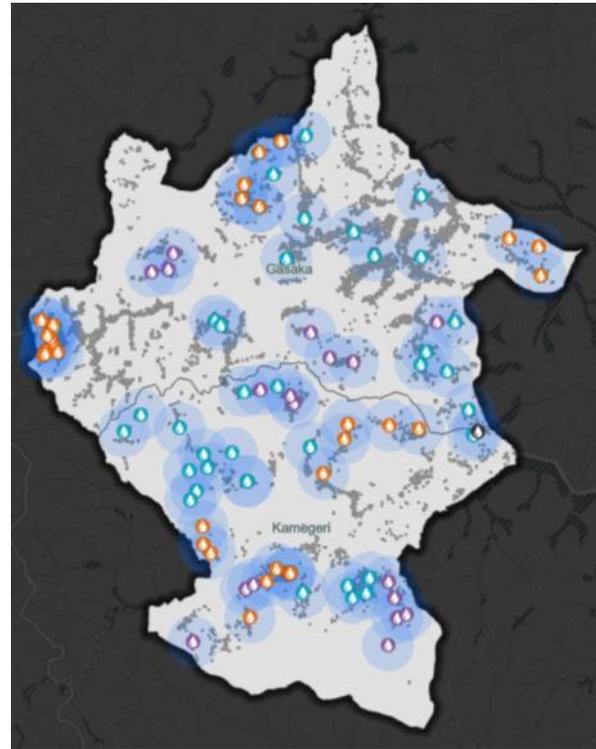
Identify areas for intervention



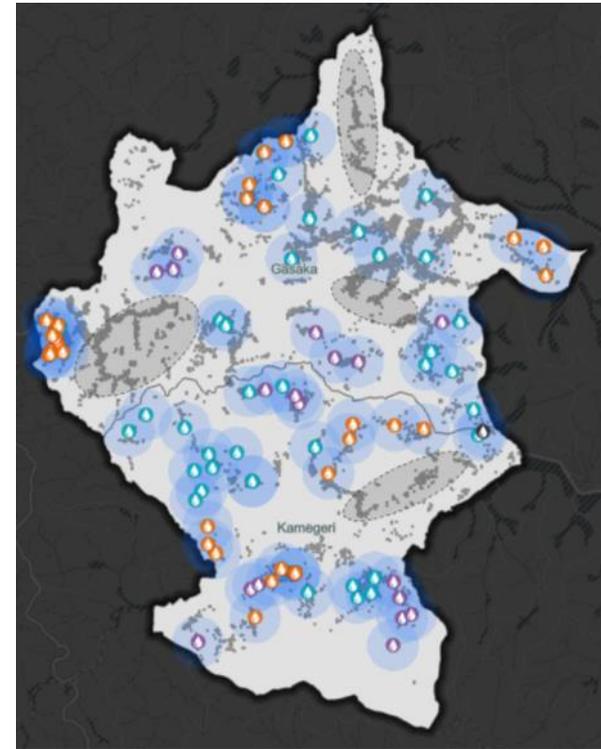
Population
Density



Water
Pumps

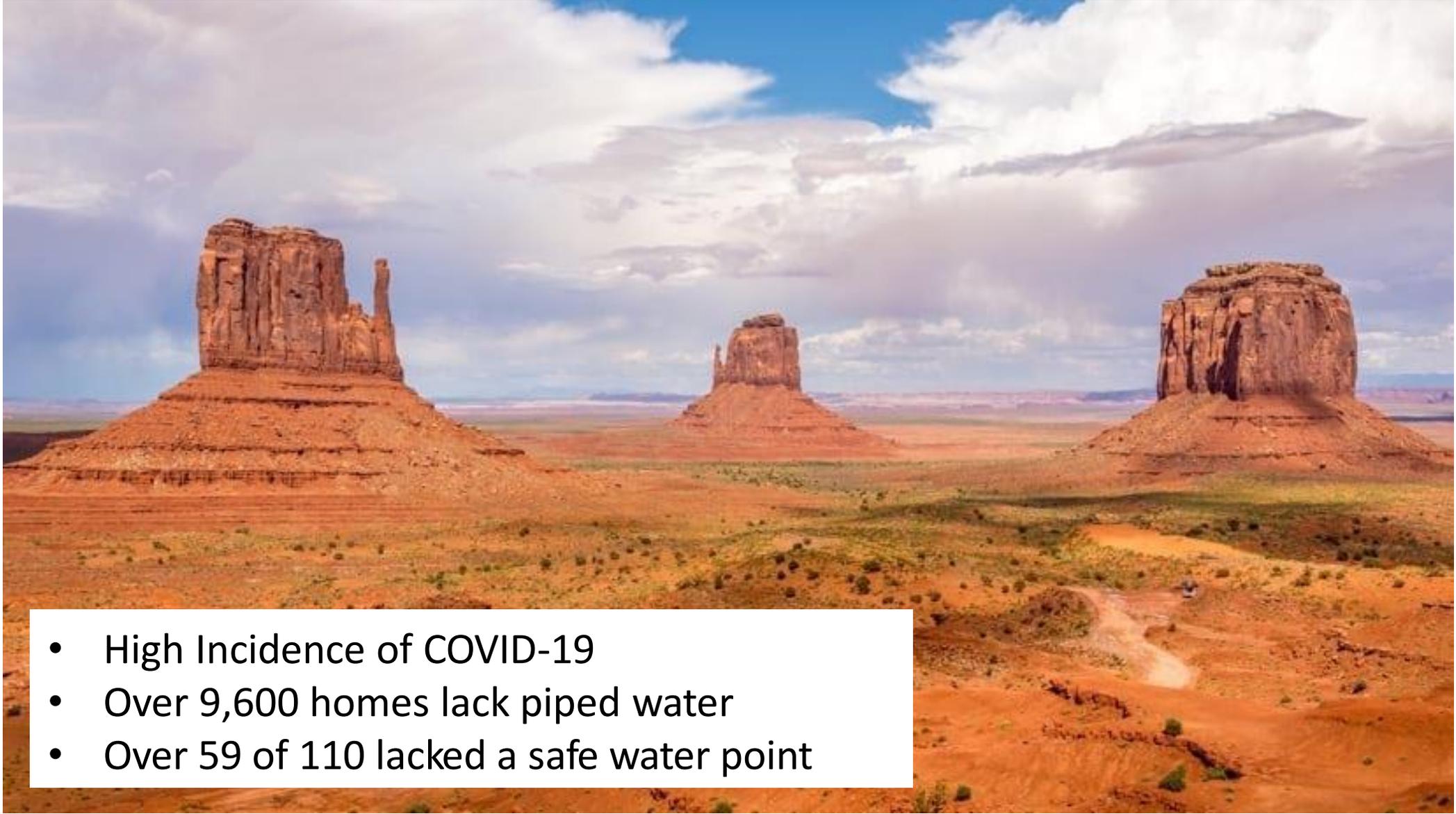


500 m
Buffer



Low Access
Areas

Navajo Safe Water Access Mission

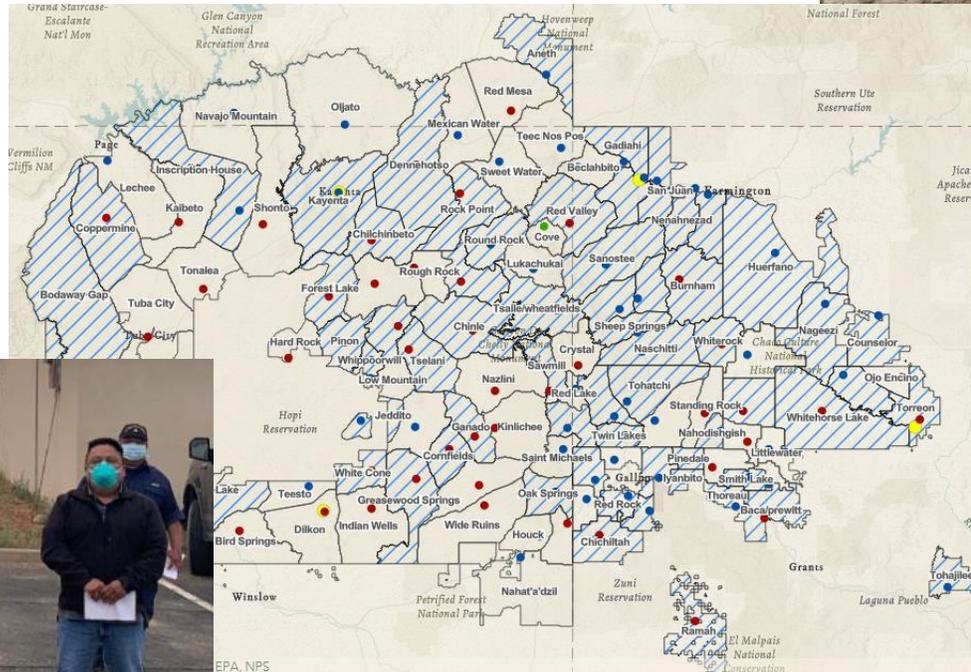


- High Incidence of COVID-19
- Over 9,600 homes lack piped water
- Over 59 of 110 lacked a safe water point

How GIS was deployed



Plan new water point locations



Construction begins



Mobile survey tools to assess need and existing access sites

The results



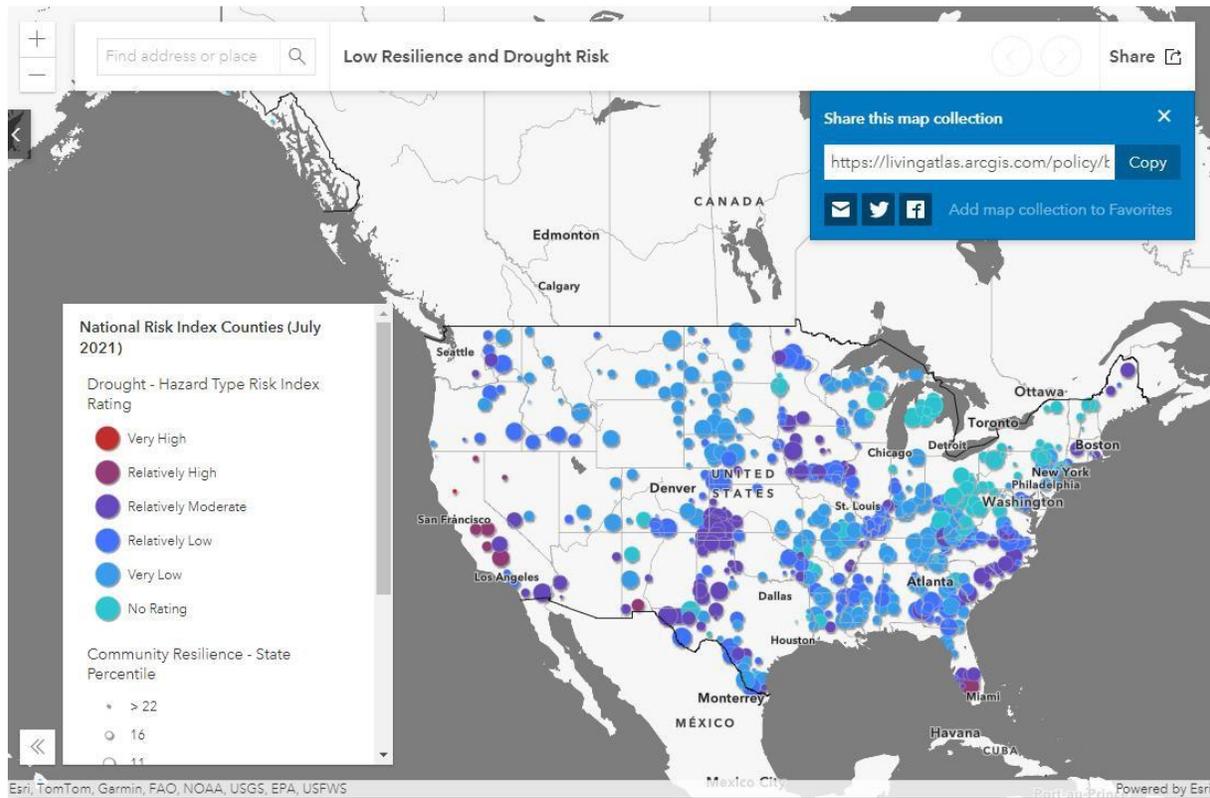
- Increased the number of Safe Water Points
- Improved accessibility from 52 to 17 miles round trip travel
- Lowered economic barrier to access
- Provided access to safe water hauling and storage tools
- Public outreach

Climate and Weather

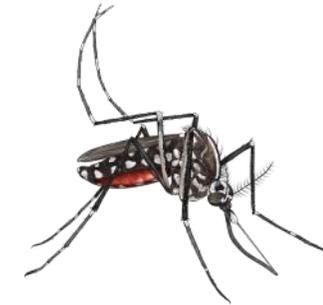
Mapping urban heat islands in Prague, Czech Republic



Food insecurity, mental stress, & disease risk



Powassan virus



Chikungunya fever



Vibriosis

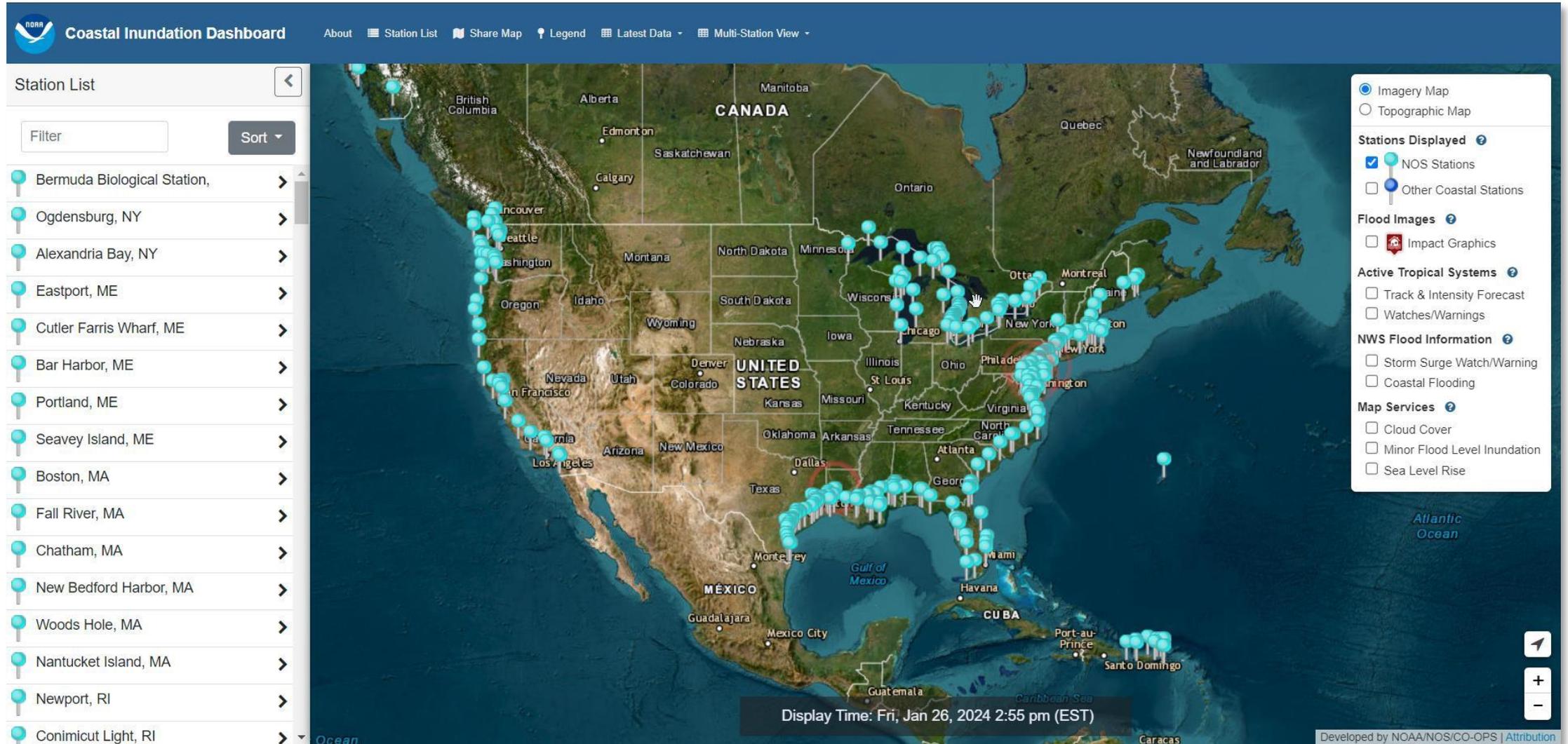


Chagas' Disease

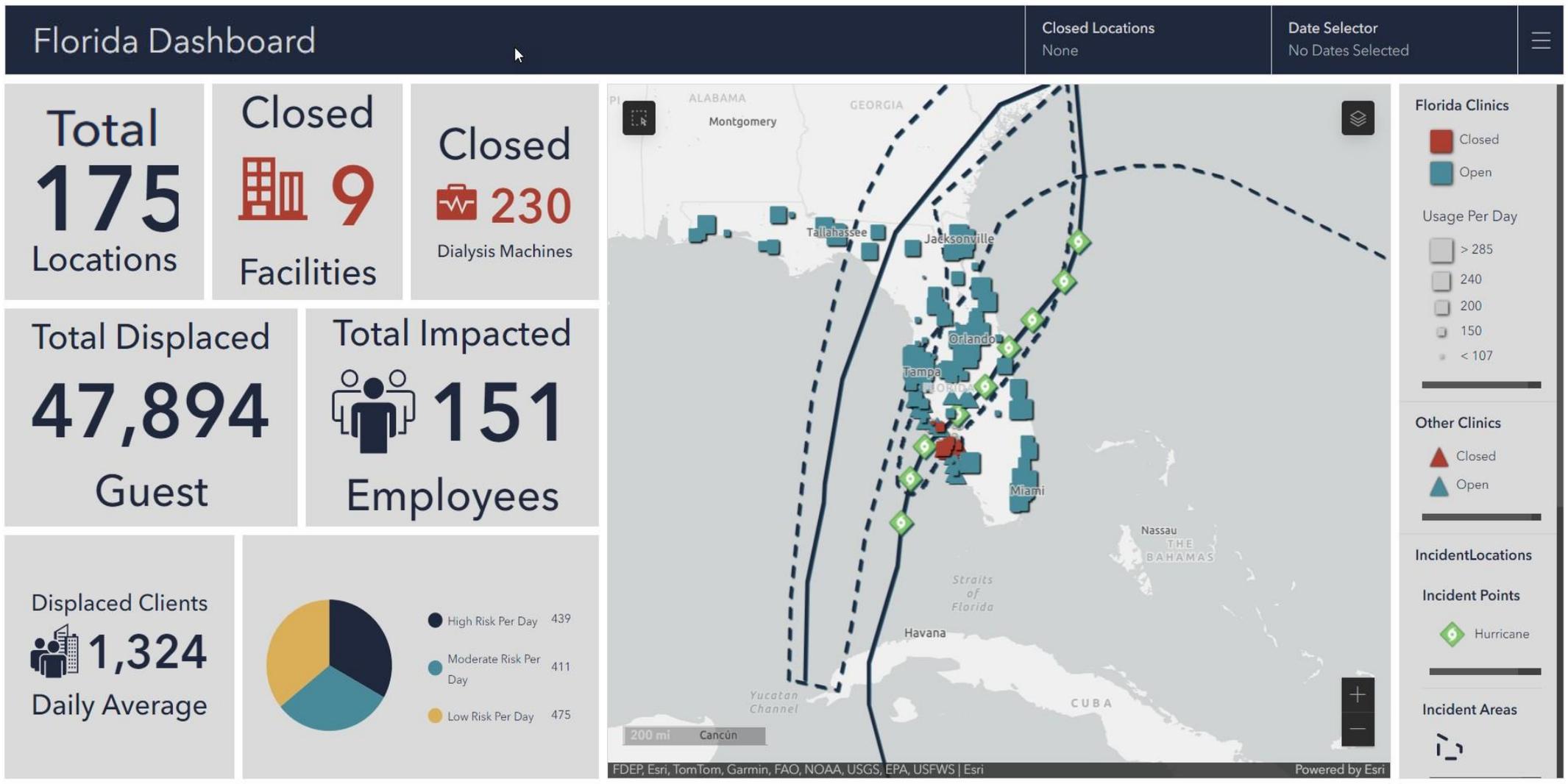


Valley fever

Sea level risk, coastal inundation



Planning for care continuity



Drawing Order

- Mosquito Suitability
- Dark Gray Rderence
- YearlongSuitability
- Exploratory query

- Annual Mean Temperature
- Altitud" Data
- World Population Estimate 2016
- Min le'mperatur" of Coldest Month
- Precipitation of Driert Month
- Precipitation of Wetttest Month
- Annual Precipitation
- Landcov (GlobCover 2009 Data)
- Landcover (GtobCover 2009 Data)
- Annual Pril:ciptation
- Precipitation of Wetttest Month
- Pril:ciptation of Dri6 t Month
- Min Temperature of Coldest Month
- World Population Estimete 2016
- Altitude Data
- Annual Mean Temperature
- Dark Grity Base



Suitability Modeler

Settings Suitatly Locate Sources

Parameters Environments

Criteria

Input Rasters	Weight
Annual Mean Temperature	1
Attitude.Data	
World Population Estimate 2016	
Min Temperature of Coldest Month	

Expbre model through queries

Where $\text{landcover}(\text{GlobCover 2009 Data}) \text{value} \cdot \text{Indicator} \text{ greater than } 0$

$\text{landcover}(\text{GlobCover 2009 Data}) \text{value} \cdot \text{Indicator} \text{ greater than } 0$

And $\text{Precipitation} = \text{Indicator}$

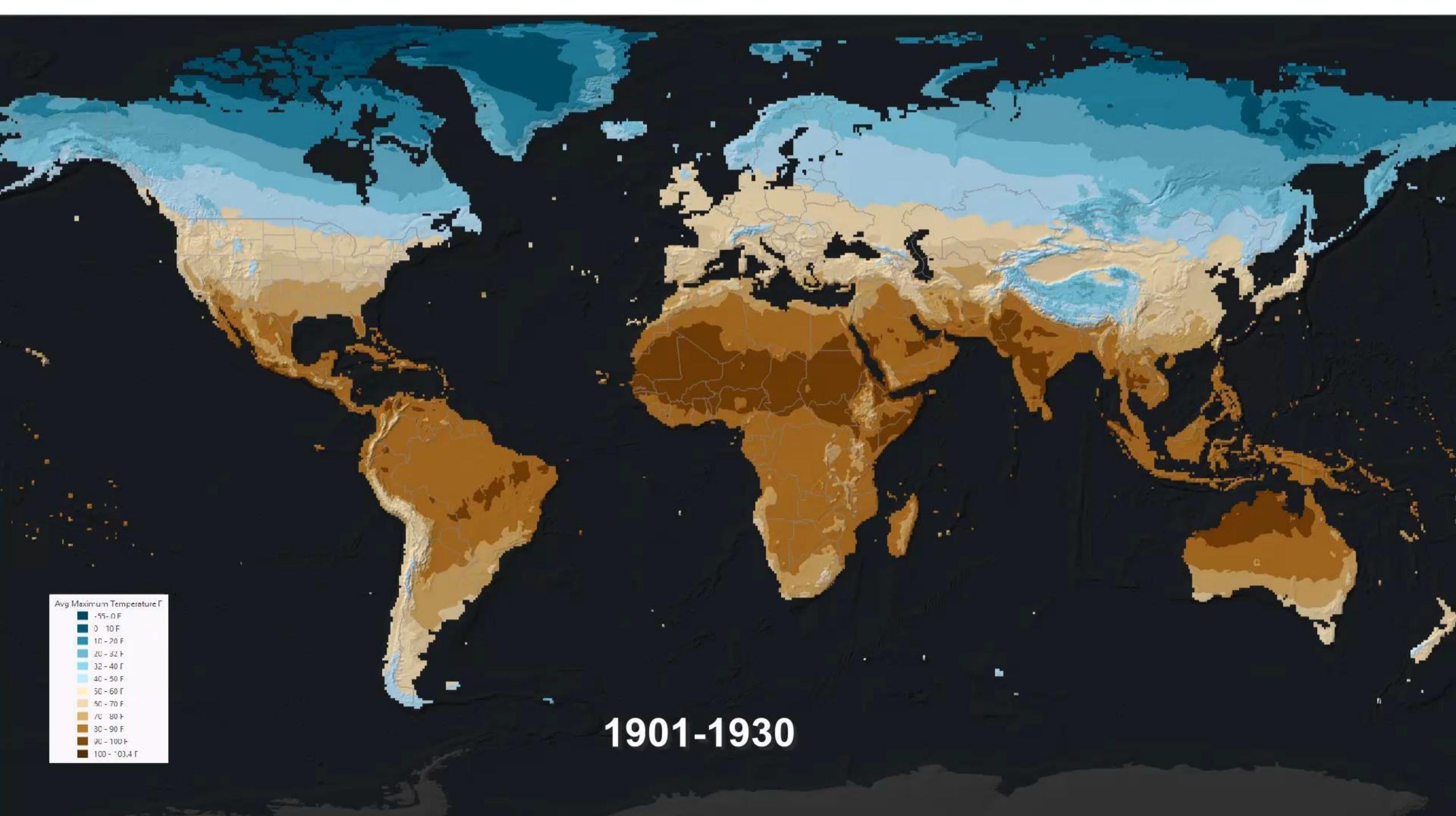
And $\text{Precipitation} = \text{Indicator}$

+ Add use.

Apply Clear

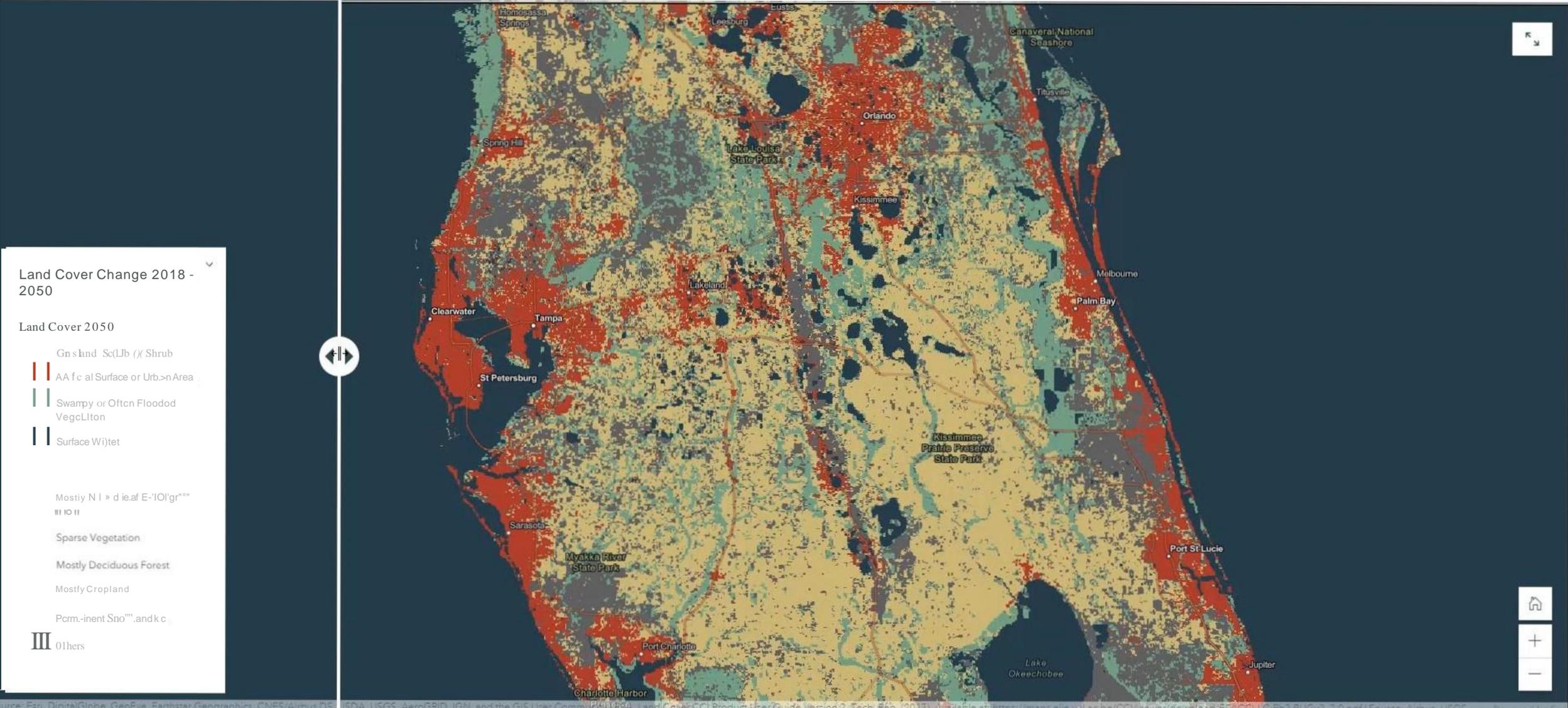
Output type

Raster dataset



1901-1930

Land Cover Change 2018-2050



Florida Land Cover Change 2018 to 2050

A dark blue background with concentric ripples emanating from a point in the upper right, suggesting a drop of water hitting a surface. The ripples are lighter blue and create a sense of movement and depth.

Water Quality

Rohingya Refugees



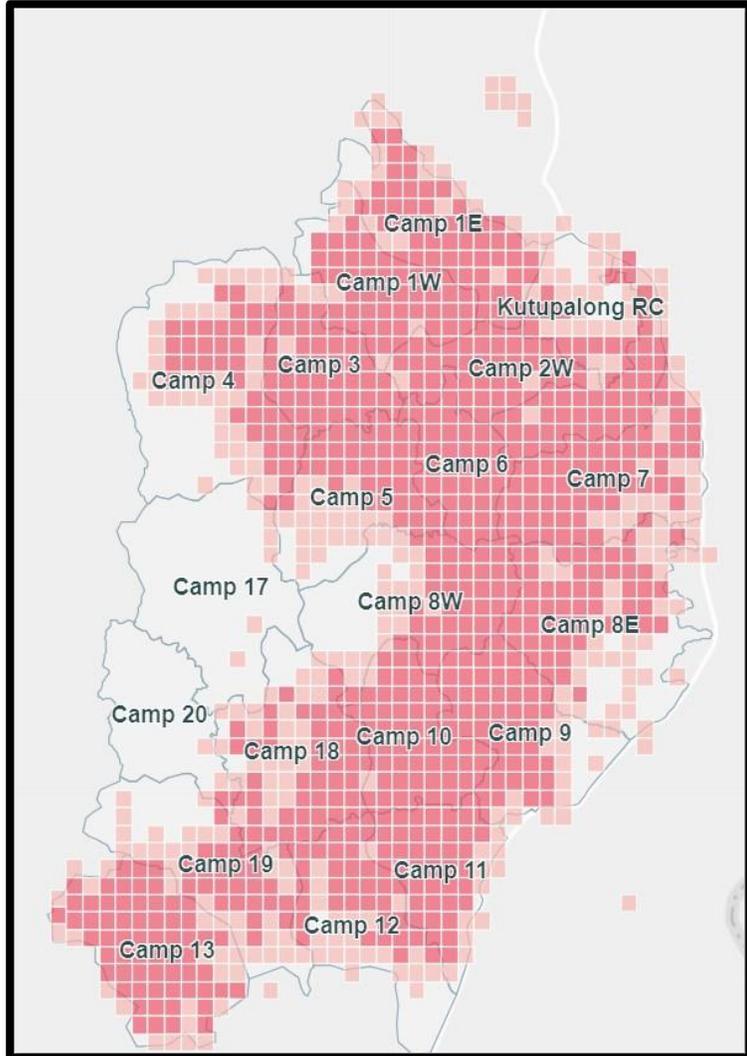
700,000 Rohingyan's fled Myanmar to Bangladesh



The Kutupalong-Balukhali Expansion Site



Overcrowding



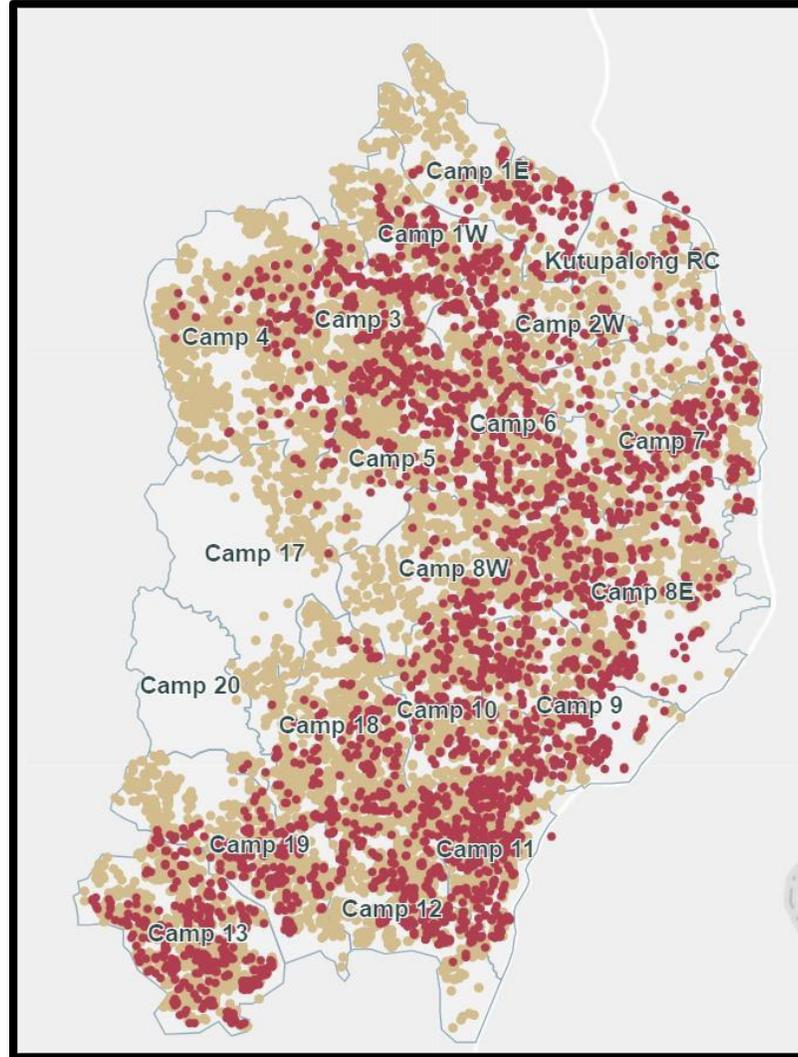
Consequences:

- Infectious disease spread
- Stunted growth in children
- Mental stresses

The standard
45 sqm/person

Actual
93% of population lives
within 8 sqm/person

Clean Water

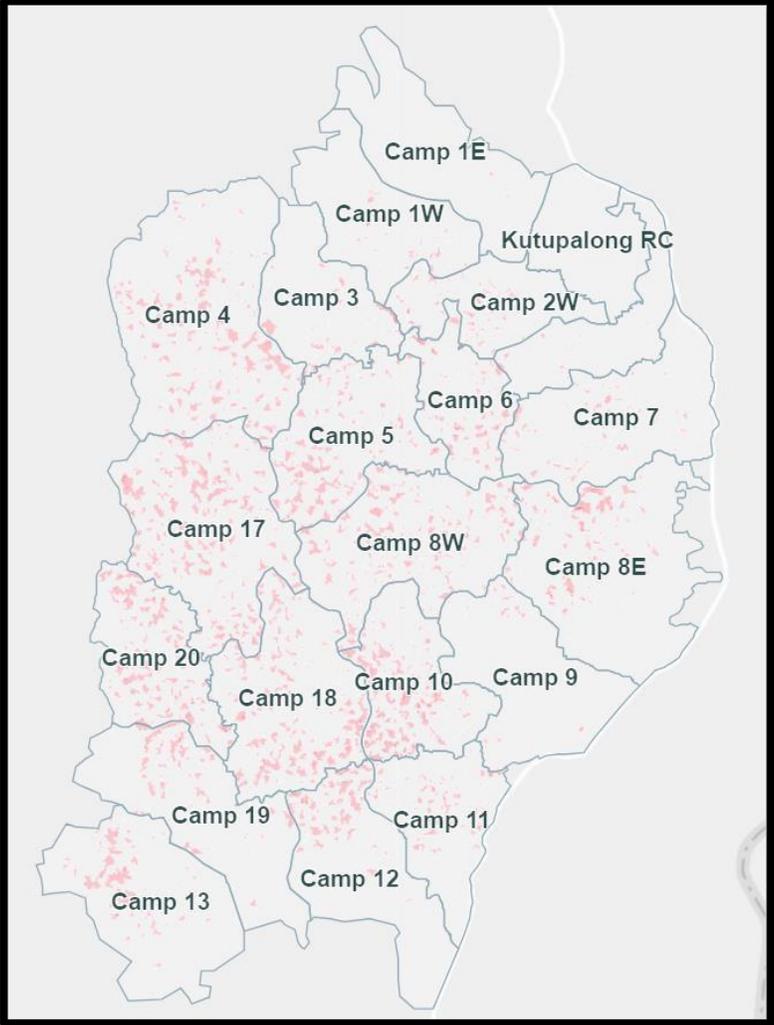


- Latrine
- Water pump

Risk for cholera
and diarrheal
diseases

- 15% of latrines are closer than 10 m to a water pump
- 42% of water samples are contaminated with e-coli

Natural Disasters & Accessibility



Landslide risk area



Flood risk area

Salinas, California

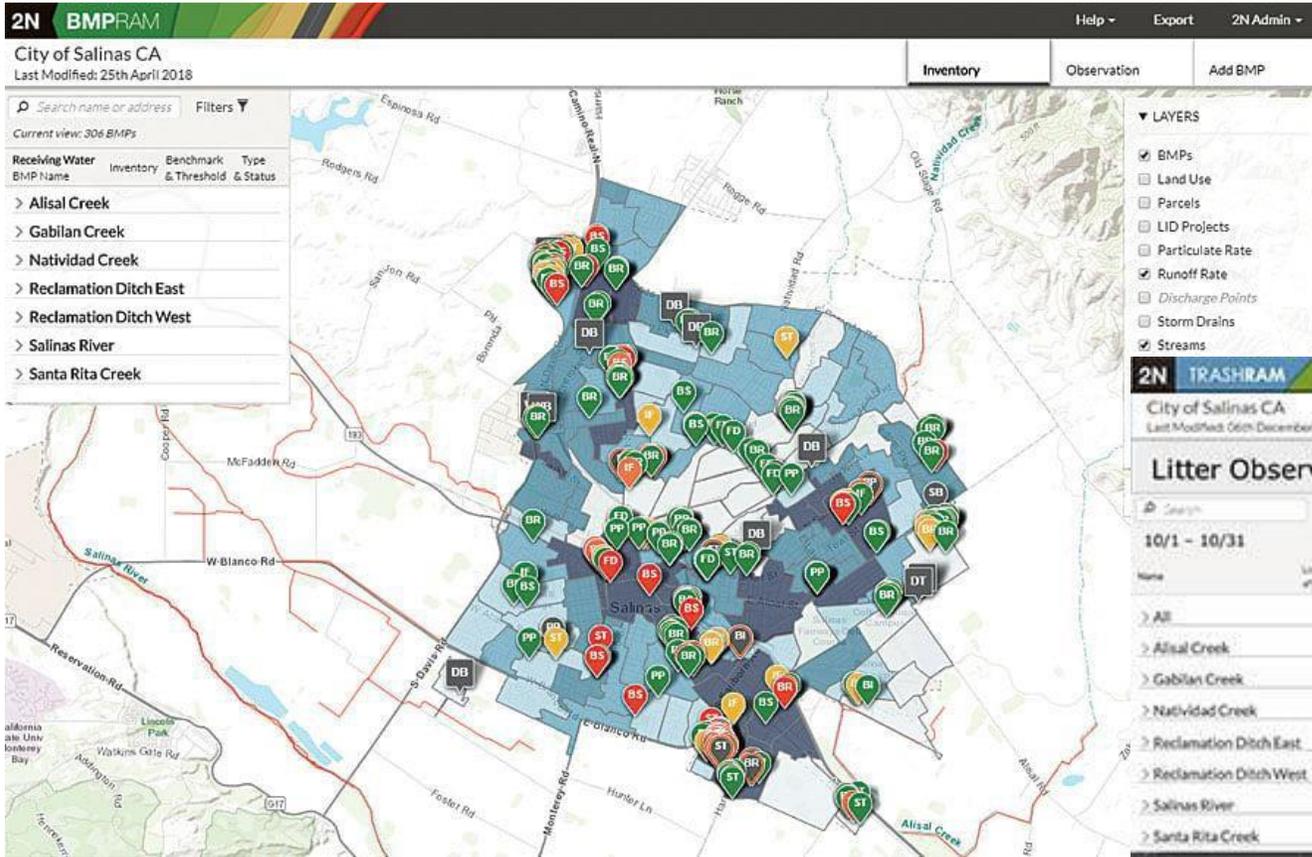


Agriculturally oriented

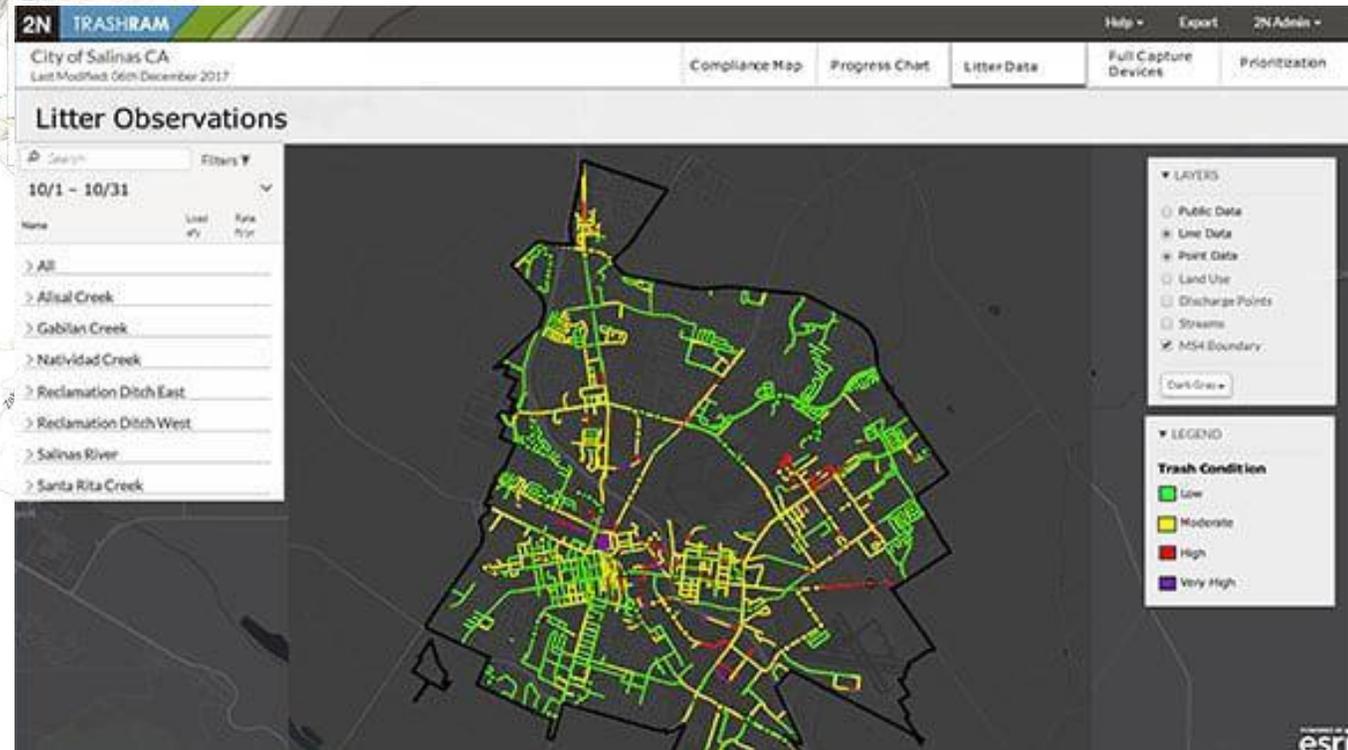
Densely populated



Adhere to best practices and monitor pollution



Litter observations with mobile digital tools and real-time web maps

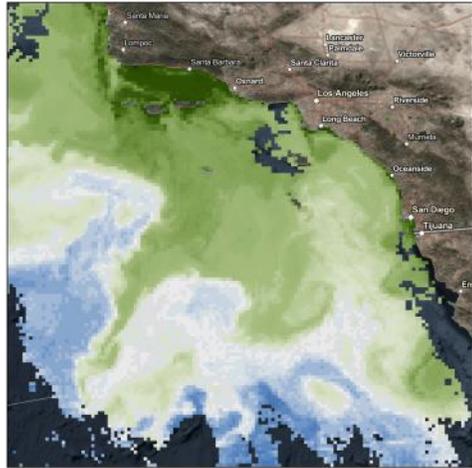


Staff perform rapid assessments and monitor system performance

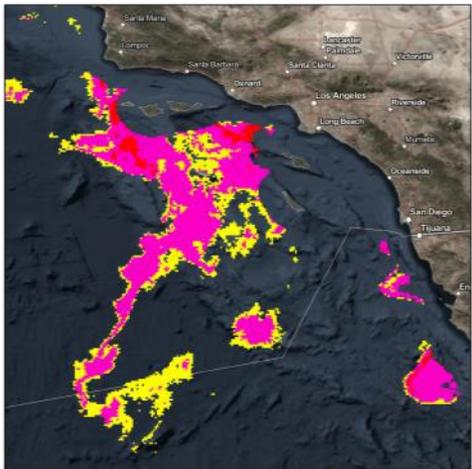
Harmful algal blooms



Satellite imagery and spatial analysis



Chlorophyll concentration
low high



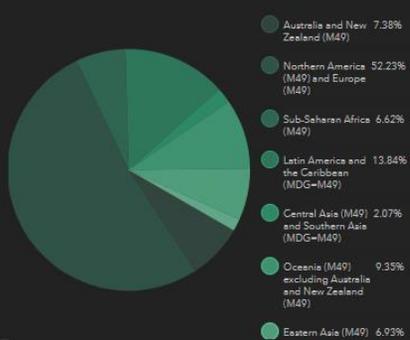
Algal bloom index
moderate high extreme

SDG 14.1.1a Coastal Eutrophication Reporting

Colombian Exclusive Economic Zone

Country: Colombia
Region: Latin America and the Caribbean (MDG=M49)

Sub-indicator 1: Monthly Deviations by Region

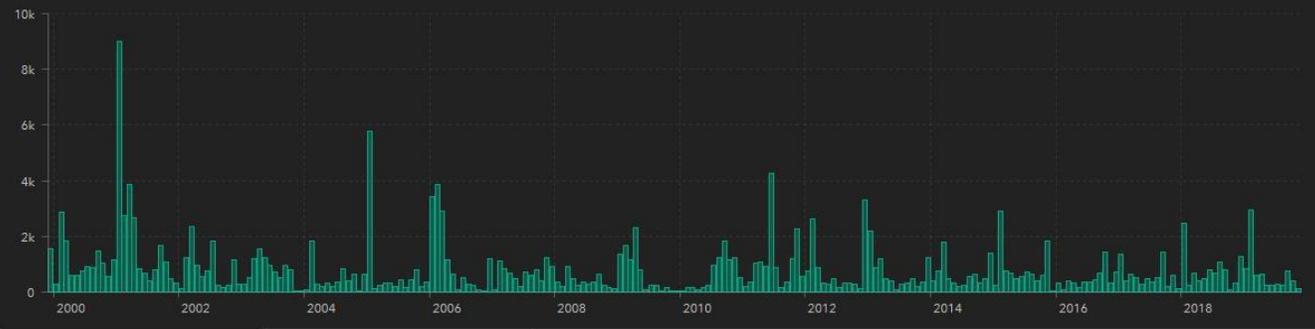


Sub-indicator 1: Deviation



Esri, Maxar, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community | Esri, HERE, Garmin, FAO, NOAA, USGS

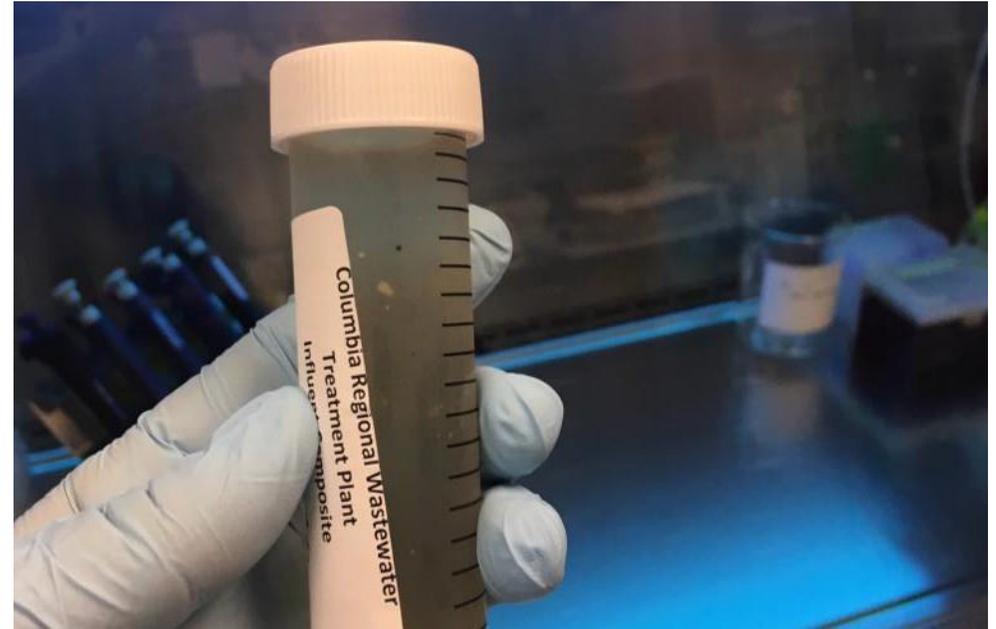
Sub-indicator 1: Monthly Deviation



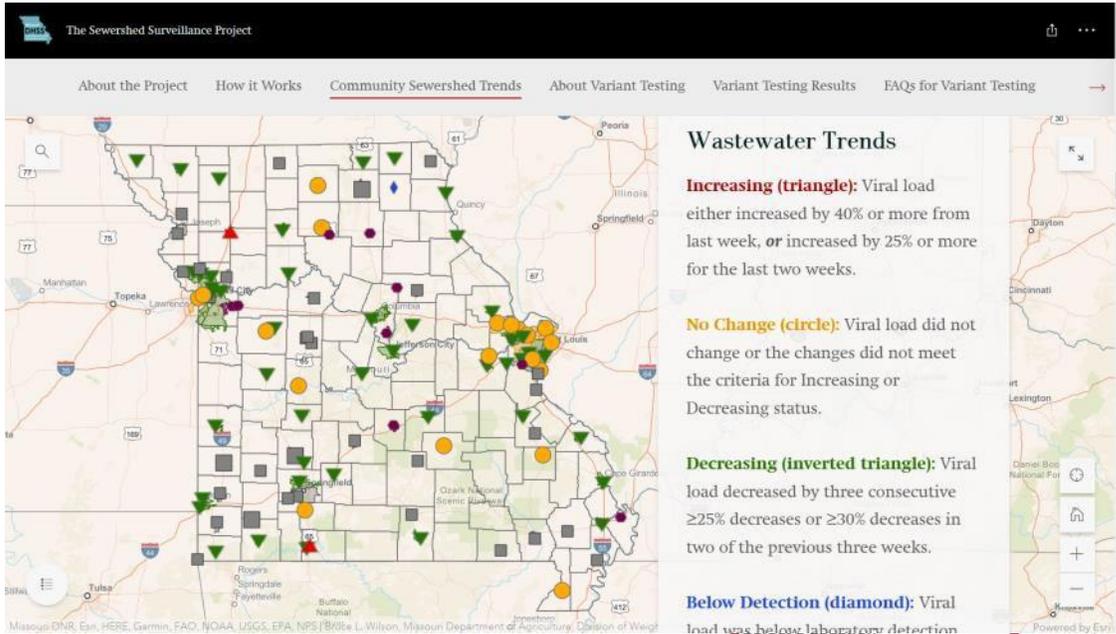
Sub-indicator 1: Monthly Deviation Sub-indicator 2: Monthly Frequency

Wastewater testing

- Efficient – broad population testing
- 80% of US population served by municipal wastewater system
- Doesn't require symptomatic disease
- Advanced warning improves risk communication and decisions



State of Missouri and COVID-19 testing



Wastewater Trends

Increasing (triangle): Viral load either increased by 40% or more from last week, or increased by 25% or more for the last two weeks.

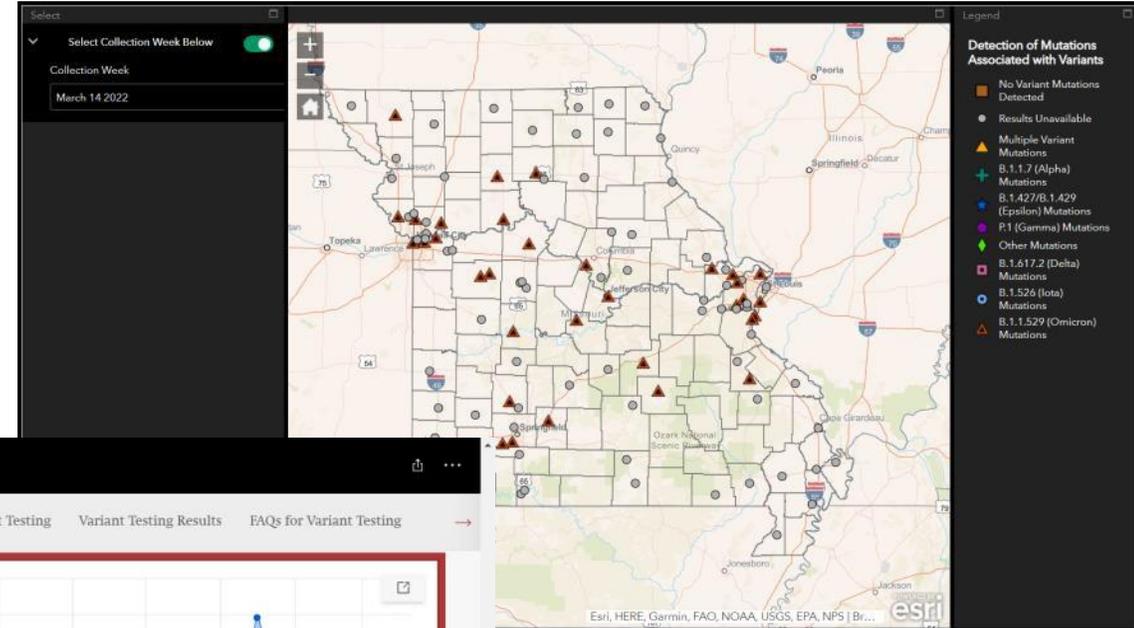
No Change (circle): Viral load did not change or the changes did not meet the criteria for Increasing or Decreasing status.

Decreasing (inverted triangle): Viral load decreased by three consecutive $\geq 25\%$ decreases or $\geq 30\%$ decreases in two of the previous three weeks.

Below Detection (diamond): Viral load was below laboratory detection

- ▼ Albany WWTF
- Ashland WWTF
- Blue Springs, Sni A Bar WWTF
- Bolivar WWTF
- ▼ Bonne Terre Northwest WWTF
- ▲ Branson Compton Drive
- ▼ Branson Cooper Creek
- Brookfield WWTF
- ▲ Cameron WWTF
- ▼ Canton WWTF
- ▼ Cape Girardeau Municipal WWTF
- ▼ Carrollton WWTF
- ▼ Carthage WWTF
- ▼ Cassville WWTF
- Centralia WWTF

Last update: a minute ago



SARSCoV2 shedding

Genetic variants



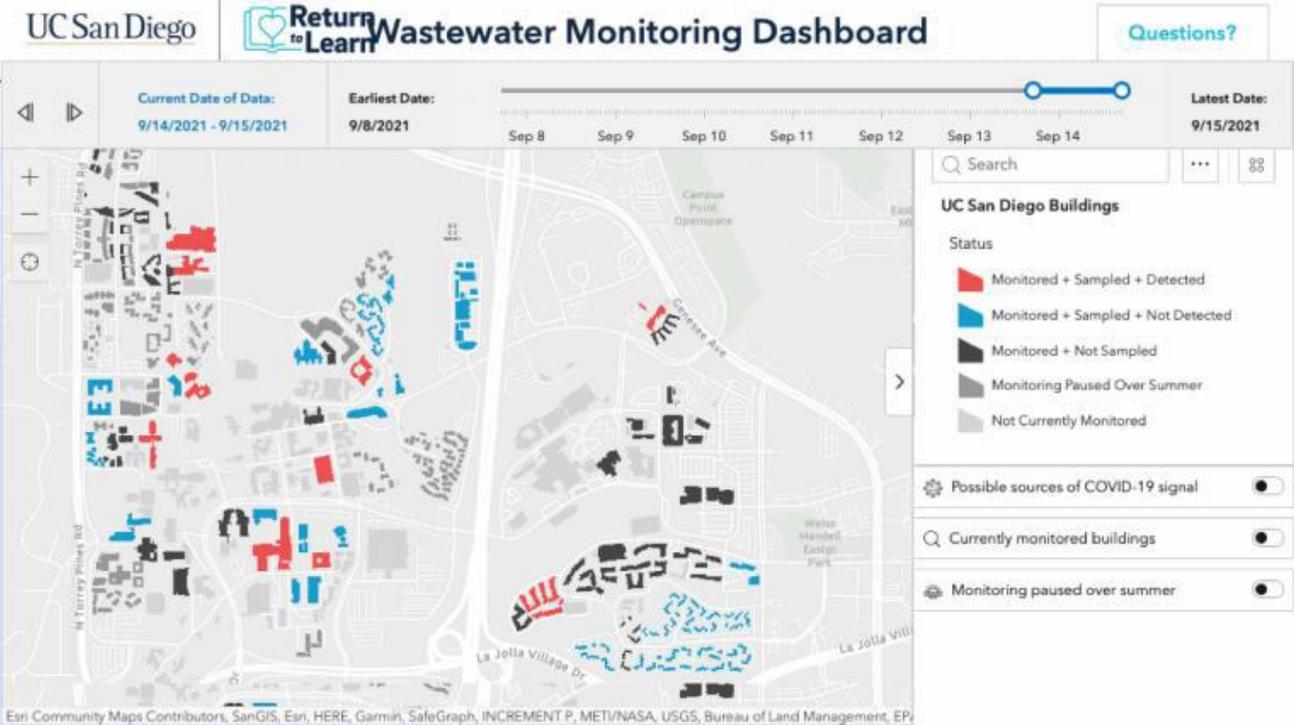
Trends for each location

University of California, San Diego

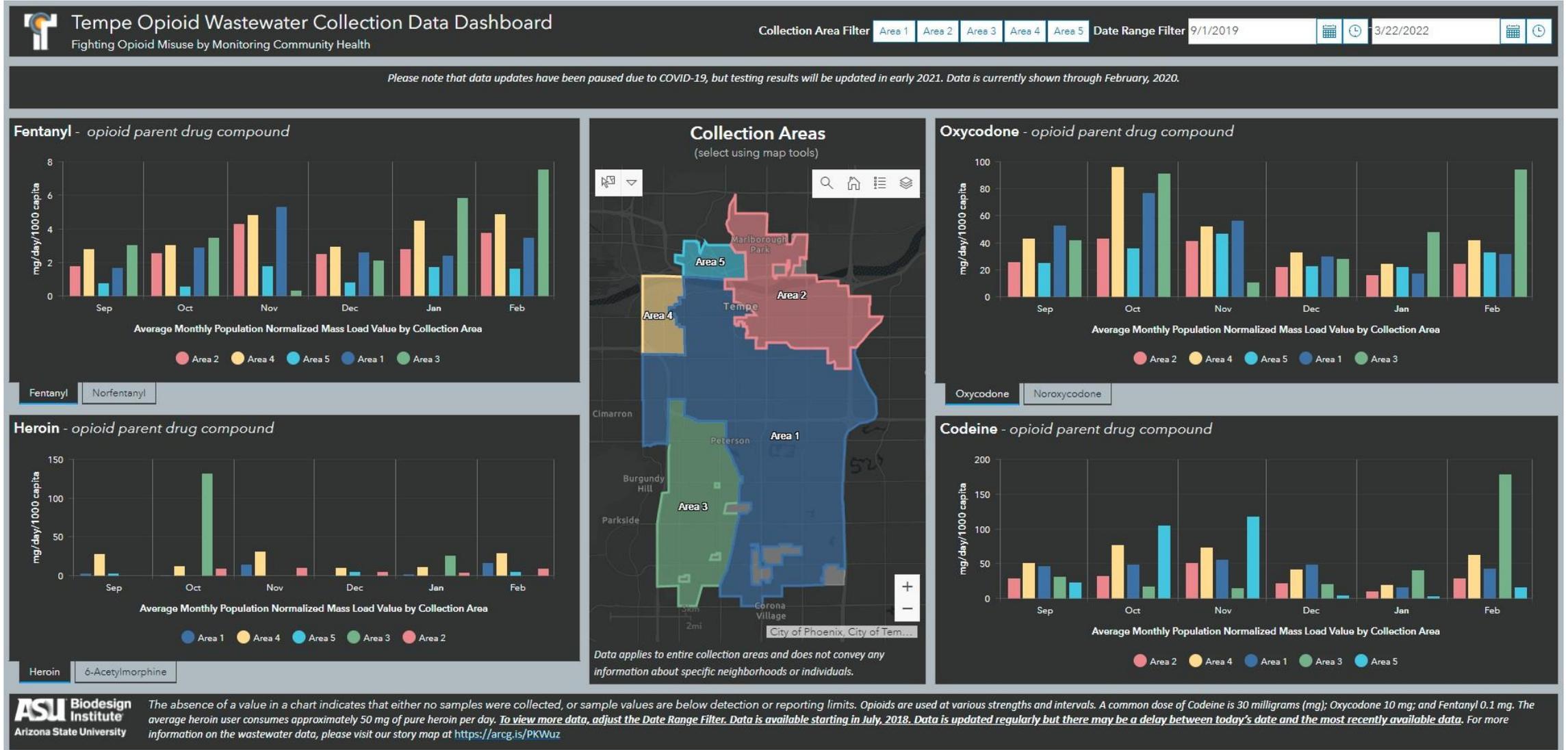


Testing locations

Building-level monitoring



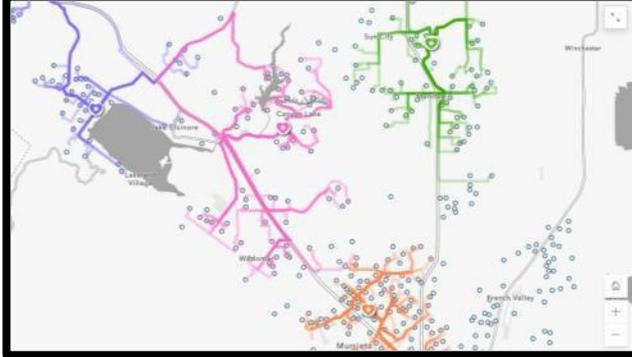
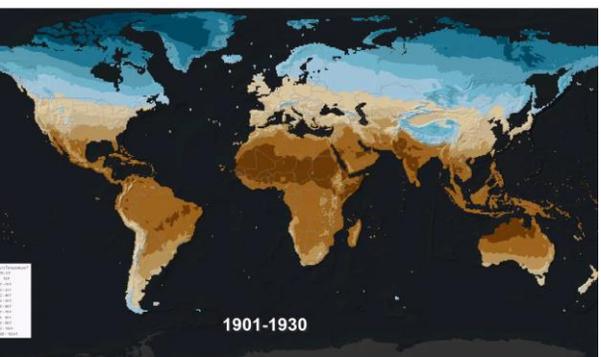
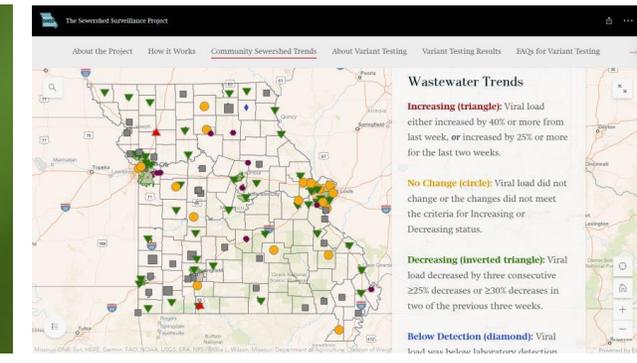
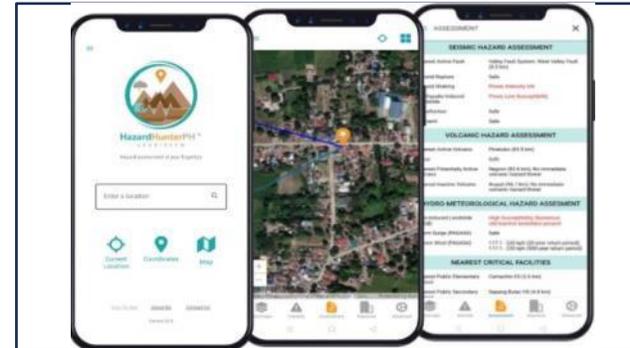
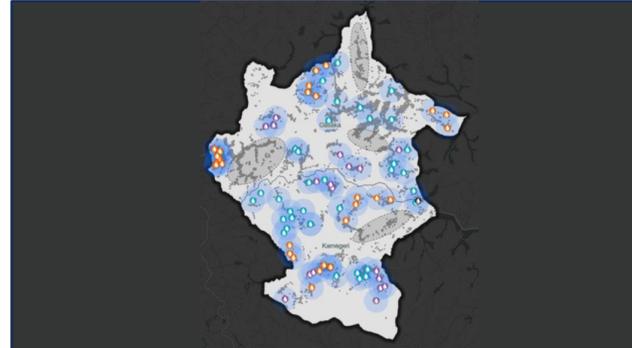
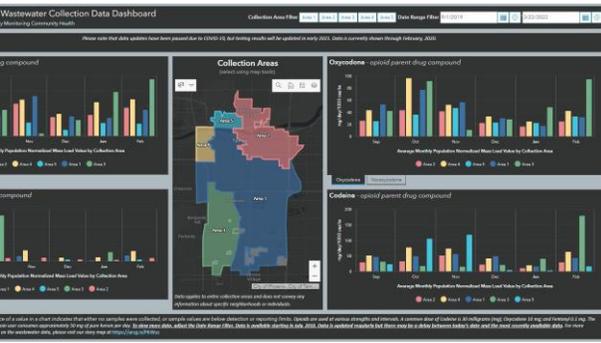
Tempe, Arizona and opioids



ASU Biodesign Institute Arizona State University

The absence of a value in a chart indicates that either no samples were collected, or sample values are below detection or reporting limits. Opioids are used at various strengths and intervals. A common dose of Codeine is 30 milligrams (mg); Oxycodone 10 mg; and Fentanyl 0.1 mg. The average heroin user consumes approximately 50 mg of pure heroin per day. [To view more data, adjust the Date Range Filter. Data is available starting in July, 2018. Data is updated regularly but there may be a delay between today's date and the most recently available data. For more information on the wastewater data, please visit our story map at https://arcg.is/PKWuz](https://arcg.is/PKWuz)

The Stories of Geospatial for OneAquaHealth



Resources to get Started

- Free Health GIS [Curriculum](#)
- [Trial software](#) license (21 days) or [personal use license](#) (\$100)
- Authoritative data – [The Living Atlas of the World](#)



Wa

Centers of Change: GIS solutions for climate challenges and community health

Este Geraghty

egeraghty@esri.com



The role of geospatial technologies in Community & Urban Health

Lining up Earth Observation with Stream Health and Agricultural Activity

Eleni Kokinou, Professor

1. Department of Agriculture, Hellenic Mediterranean University, Estavromenos, 71410 Heraklion, Greece

2. HL7 Europe, Square de Meeûs 38/40, 1000 Brussels, Belgium

<https://sites.google.com/site/kokinouwebpage>



What is geospatial?

- Geospatial means “Any data that is indicated by or related to a geographic location”
- Geospatial technology collects and analyses the geospatial data.

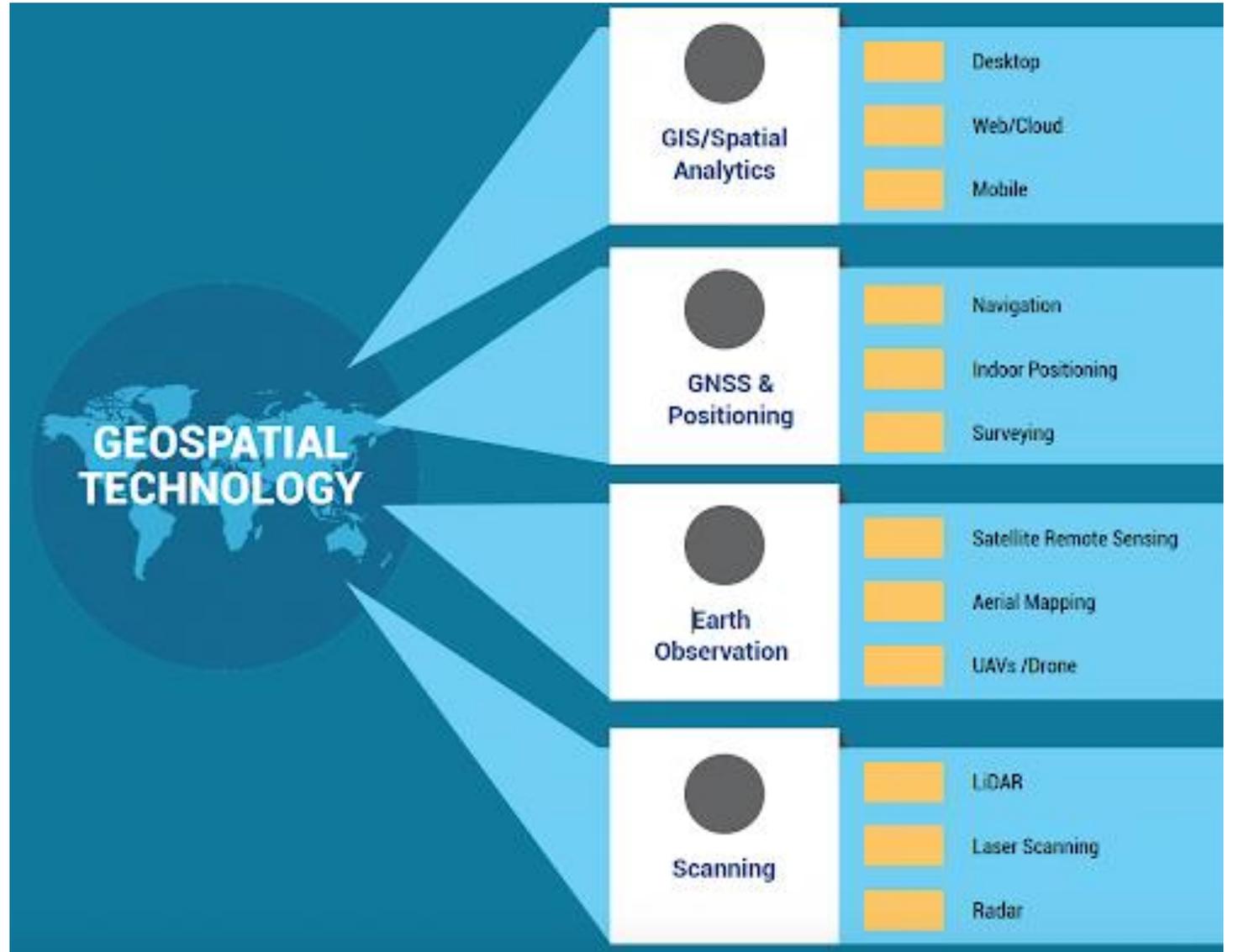
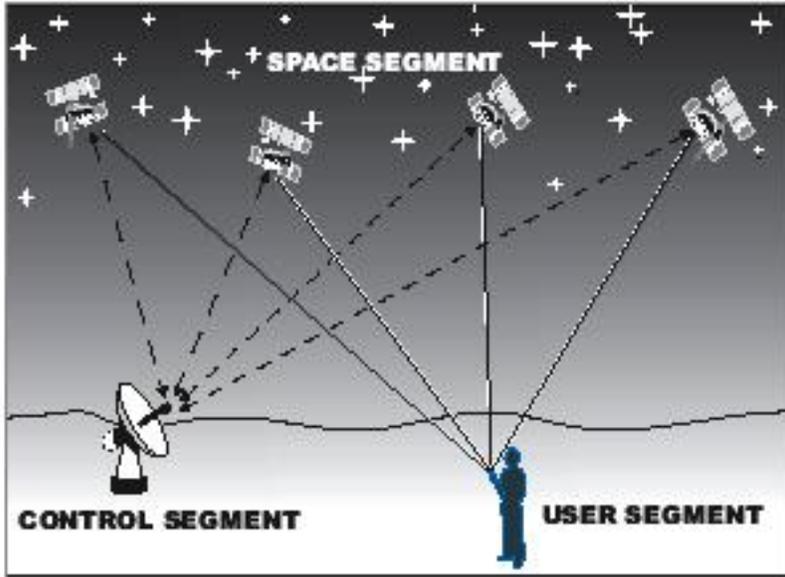
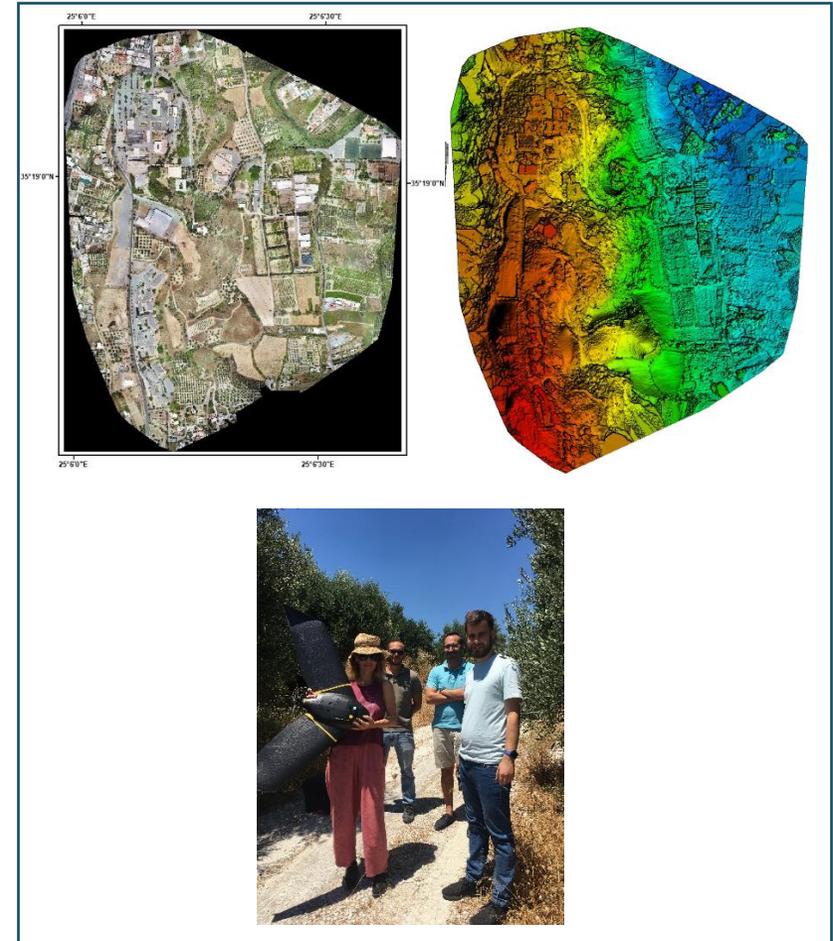


Image from [Geospatial World](#)

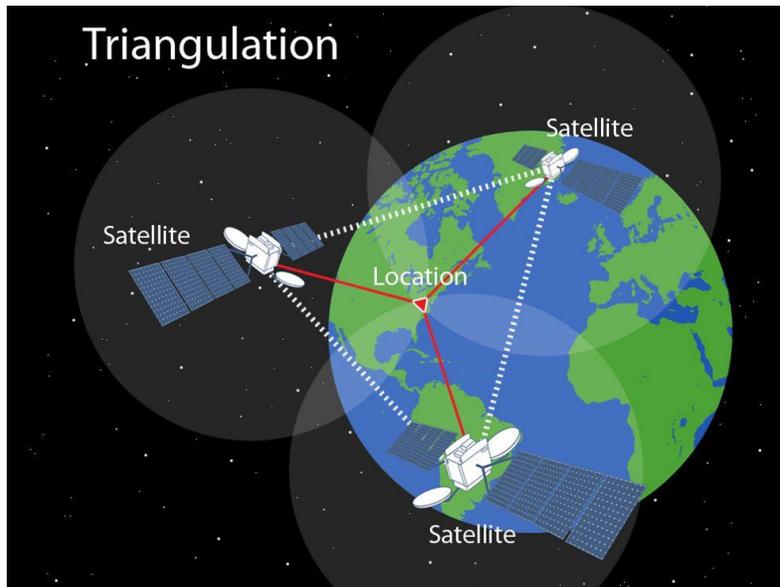
Some Examples of geospatial technologies (1)



Basic operation of GPS
(Blewitt, 1997)

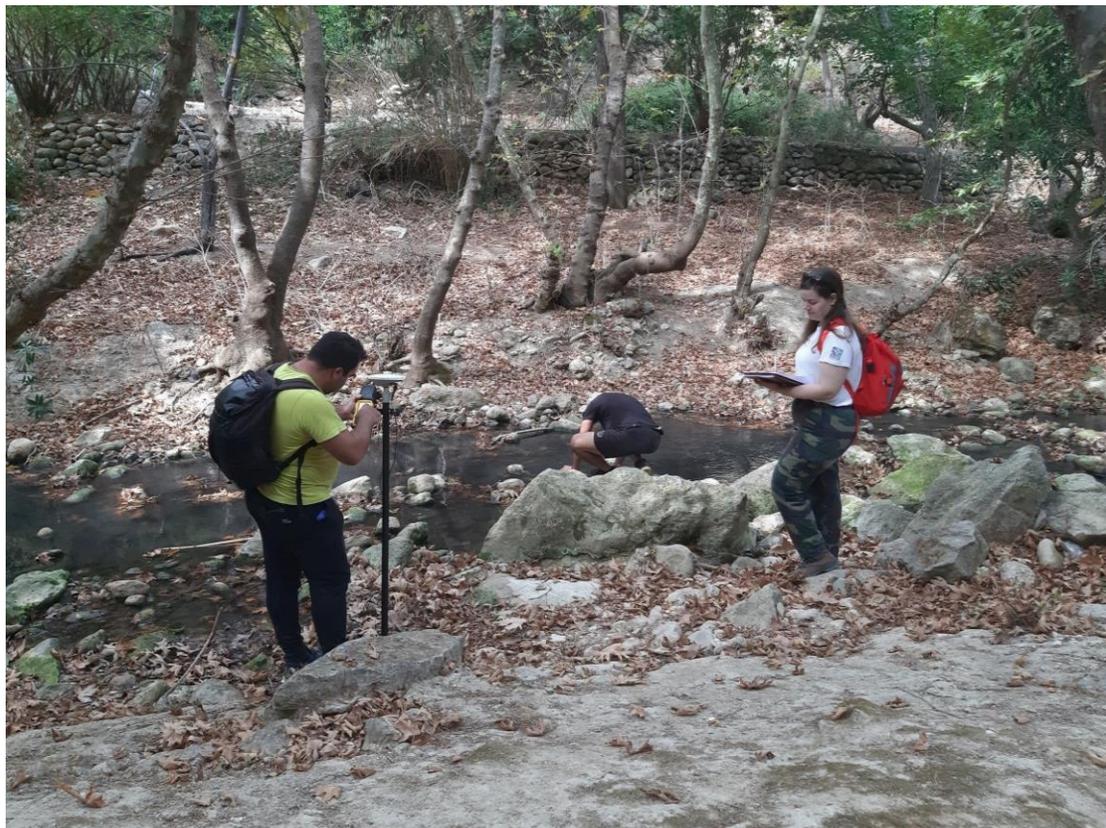


Mapping an area using UAV
(Unmanned Aerial Vehicle)



<https://www.nationalgeographic.org/photo/triangulation-sized/>

Some Examples of geospatial technologies (2)



Water sampling in an urban stream and GPS location



Mapping conductivity in an agricultural field near to a stream using GEM-2 sensor and GPS

Here are some typical examples of how geospatial technology is applied:

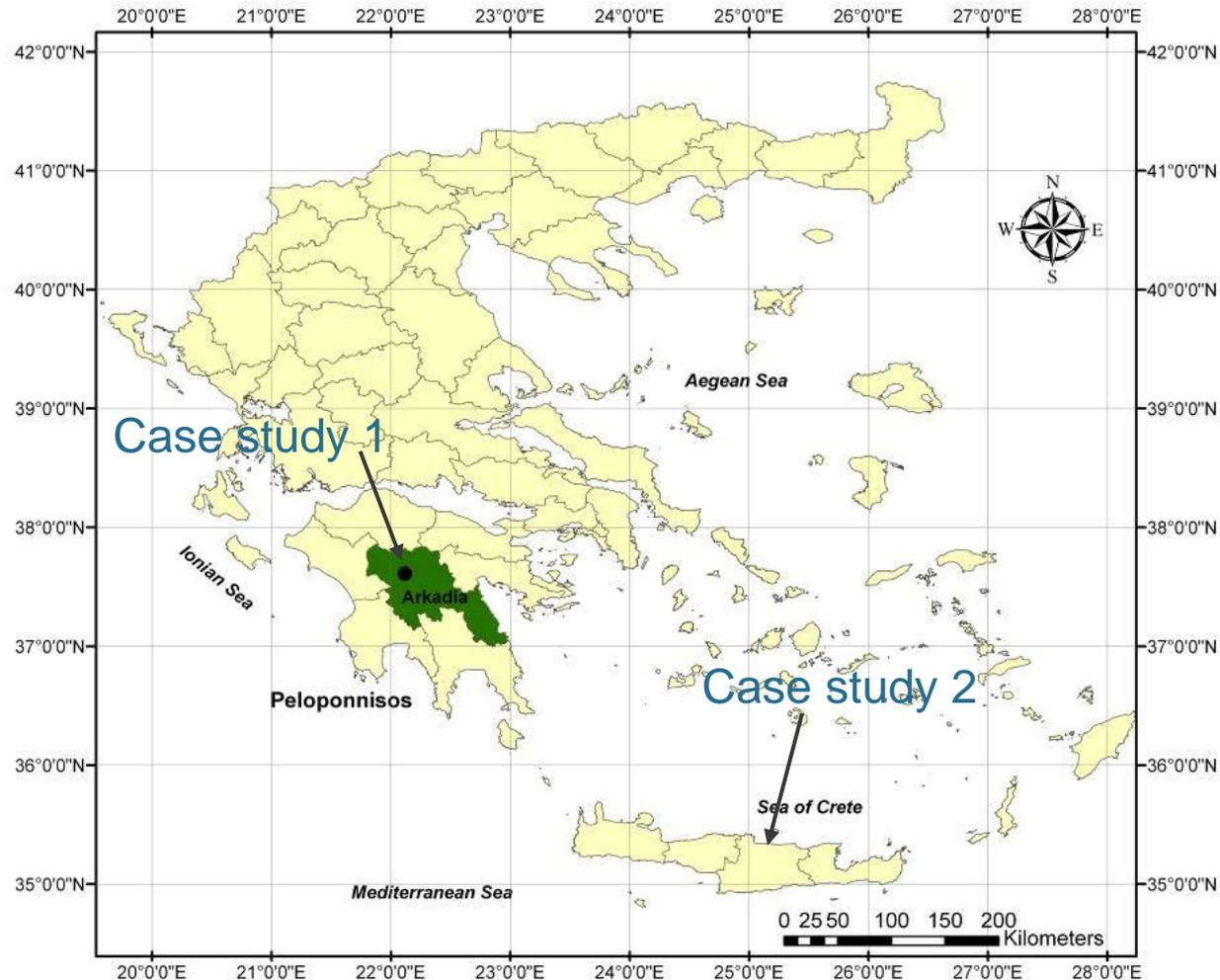
- Military Use
- Logistics (tracking goods and ensuring their quality)
- Transportations (identifying location and time of arrival, route making, and navigation)
- Environmental use (forest fires spread, the rate of ocean warming, sea floor mapping, coastline changes, weather tracking (like hurricanes or flooding), volcanic eruptions, cities expanding, land use)
- Meteorology (weather forecasts)
- Agriculture (assessing vegetation state)
- Healthcare (monitoring areas of epidemic outbreaks, for example COVID-19 global pandemic)
- Ecology (tracing species populations)
- Marketing and advertising
- Real estate (visualizing and analysing real estate objects remotely)
- Insurance (managing risks in questioned areas)

Why healthy streams?..

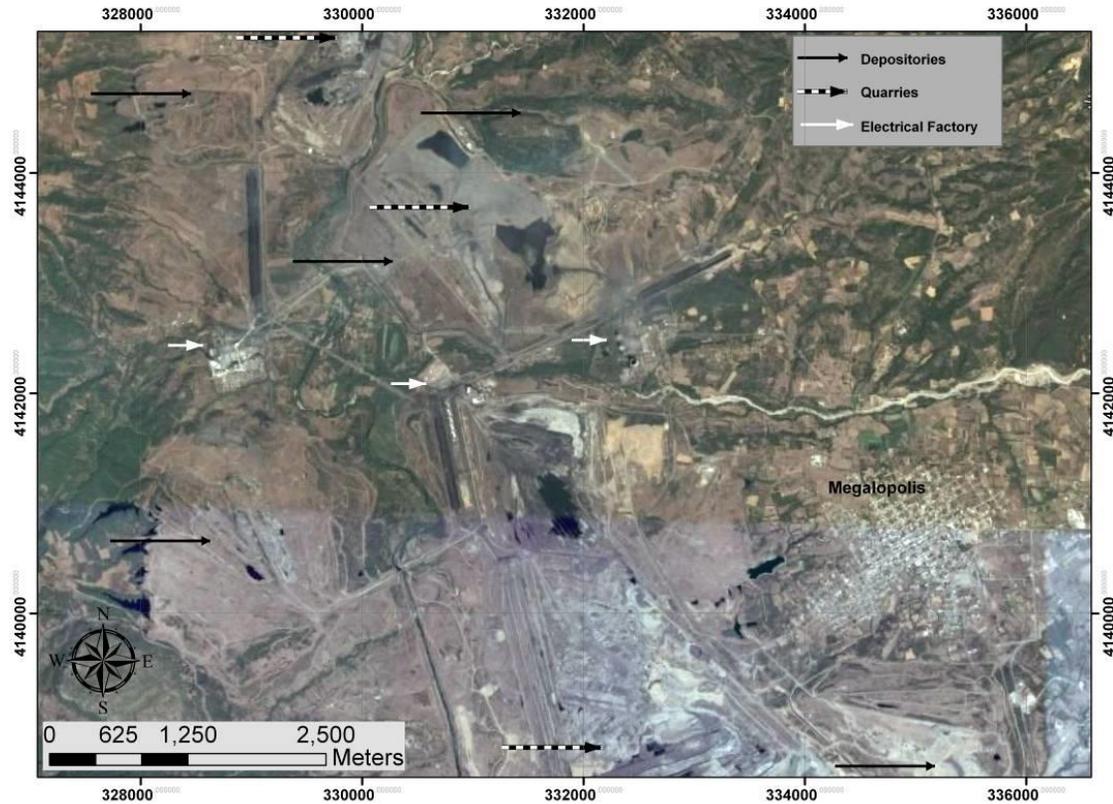
- Provide clean water for drinking, agriculture, recreation, and industry
- Help filter pollutants from storm water and anthropogenic activities that flow into the stream
- Provide habitat for wildlife
- Invite fishing, kayaking, exploration, or just quiet listening as the water flows...

Lining up Earth Observation with Stream Health and Agricultural Activity

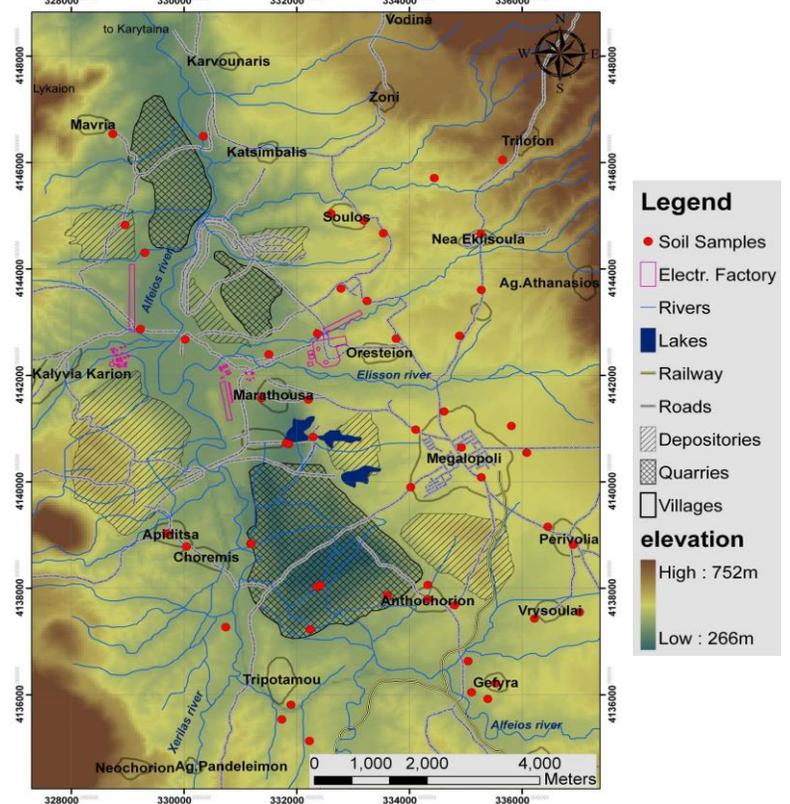
Two (2) cases studies from Greece (Eastern Mediterranean)



Case study 1: Environmental study for pollution in the area of the Megalopoli power plant (Peloponnesus, Greece)

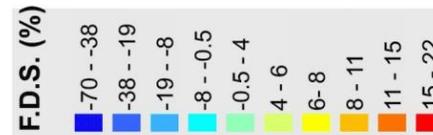
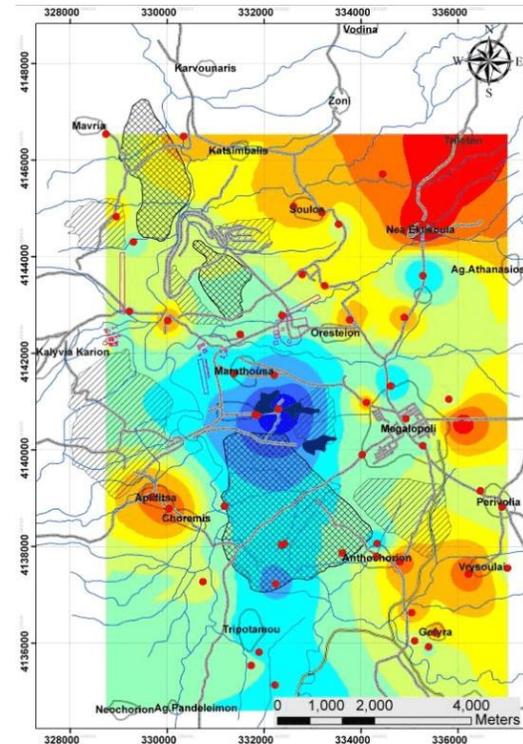


Satellite imagery from Google Earth showing the wider area of interest (right). The town of Megalopolis (central east side of the map), the power plant and the mines are clearly shown in the image

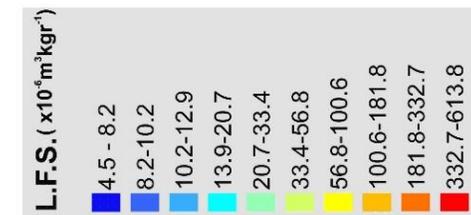
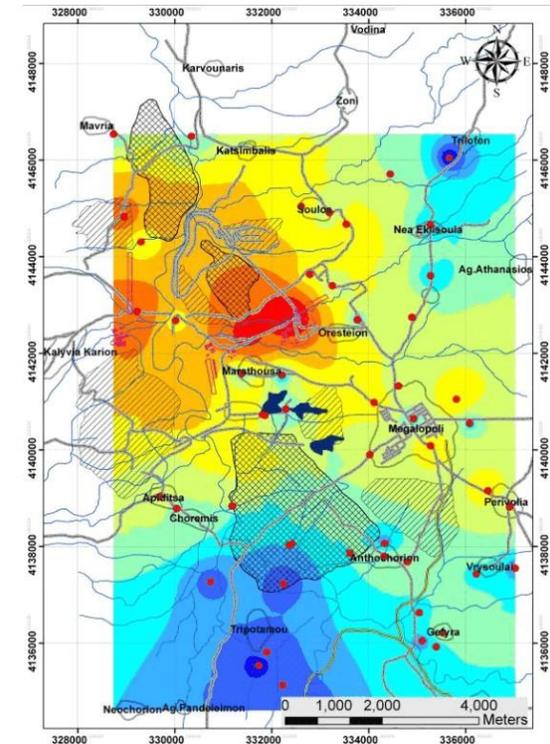


Topography map of the region around the power plant of Megalopolis. The Megalopoli's basin comprises an almost flat area with slopes mainly ranging between 0 and 25%, showing an extended drainage network (Alfeios River). The high order branches of the drainage network are generally oriented NW-SE

The main purpose of the present study is to
a) investigate the suitability of magnetic properties in correlation to geochemical measurements as a pollution monitoring tool and
b) study the metal transmission factors in an area around a major local source, namely a lignite burning power plant.



(a)



(b)

Mapping of (a) frequency dependent susceptibility (F.D.S.) and (b) low field magnetic susceptibility (L.F.S.)

Some results from case Study 1:

- The main transmission factors in the study area are the drainage network and the wind. High values of the magnetic susceptibility χ are orientated NW-SE that is the orientation the wind blows.
- Magnetic properties of the examined soil samples agree that the metal pollution reveals high values around the quarries and depositories and is generally orientated along a NW-SE direction.
- High linear correlation factors were observed between Fe and Ni, K, Rb, Y concentrations .
- The highest values in Pb, Zn and Mn exist in the area of Megalopolis village.
- The results of case study 1 generally confirm that magnetic susceptibility measurements provide the basis for an environmental study in polluted areas.

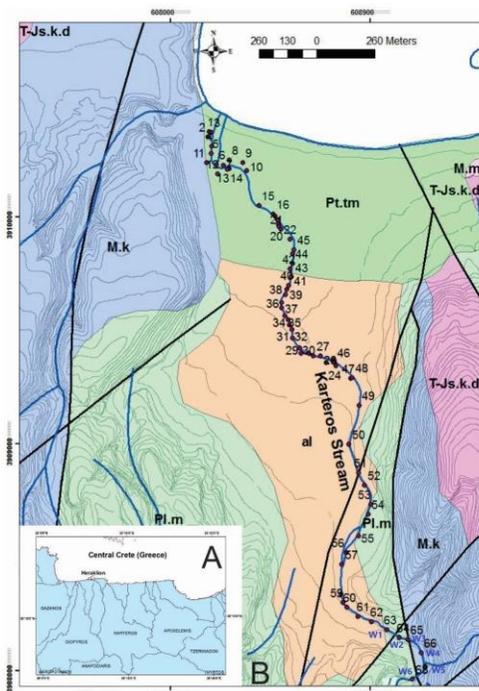
Case study 2: Earth observation and ground techniques for rapid assessment of stream soil and water patterns in Karteros and Gazanos Streams (Heraklion, Crete Greece) OneAquaHealth



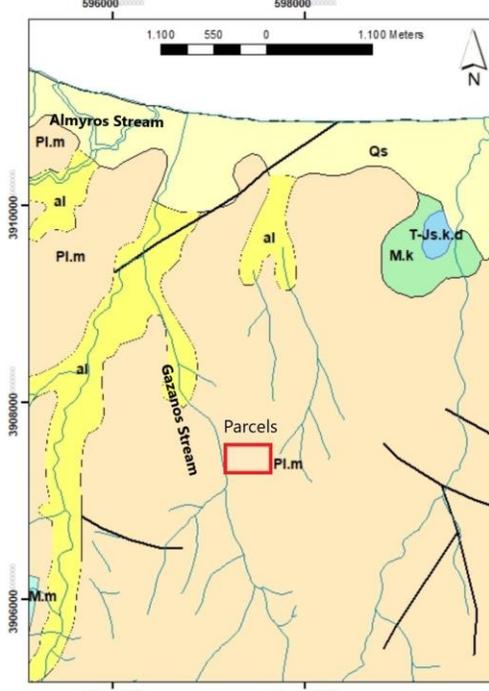
(a)



(b)



(c)



(d)

a) Google Earth map showing the location (red arrow) of the study area in the central part of Crete (Greece), Eastern Mediterranean Sea, b) Google Earth satellite map, red polygons indicate the selected areas I and II, c) A presents part of the watersheds in Central Crete (Greece) while B corresponds to the geological details of the wide area around Karteros Stream (area I) according to the geological map of IGME and d) geological map of Gazanos Stream (area II) with red polygon indicating the agricultural land investigated in this study



(a)



(b)



(c)



(d)

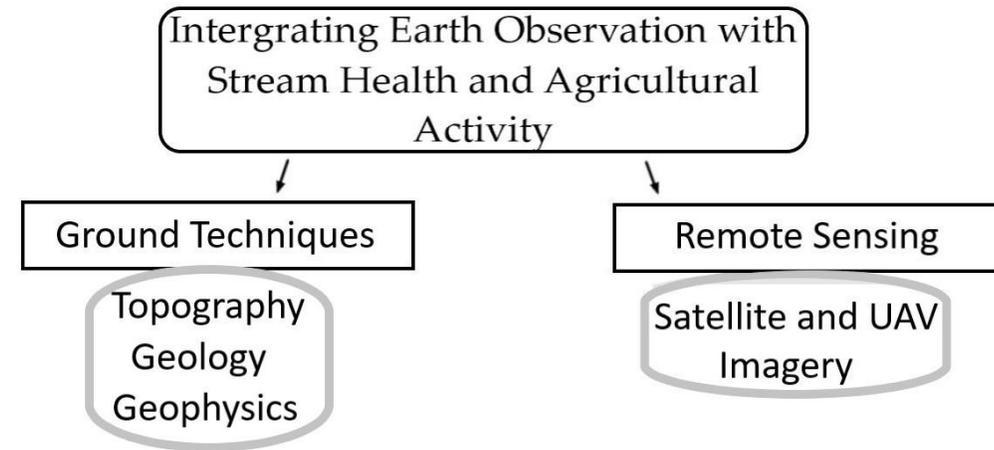


(e)



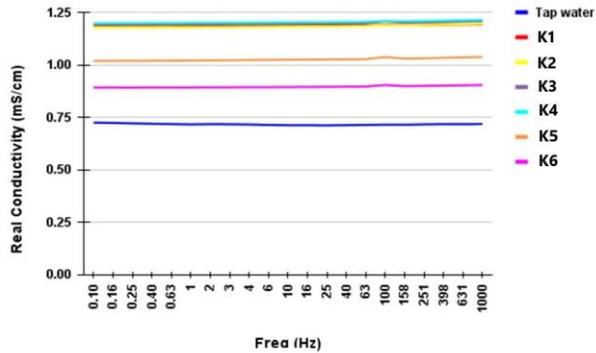
(f)

The natural environment of this study, a-d, corresponds to Karteros Stream while e, f to Gazanos Stream

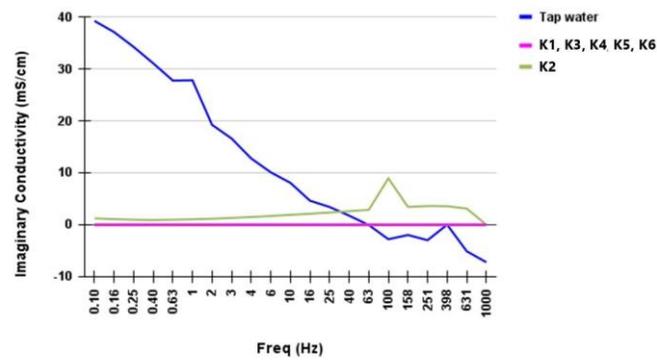


Flow chart of the methodological steps

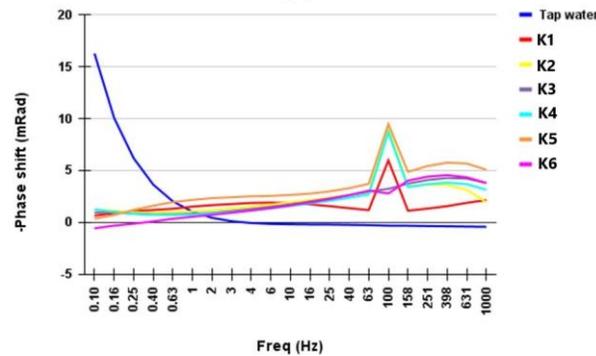
Some experimental results for case study 2



(a)

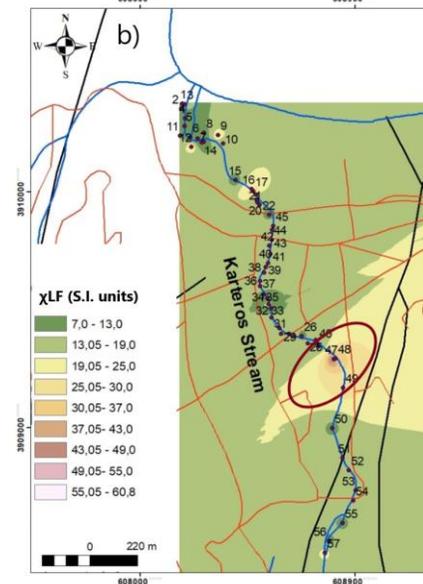
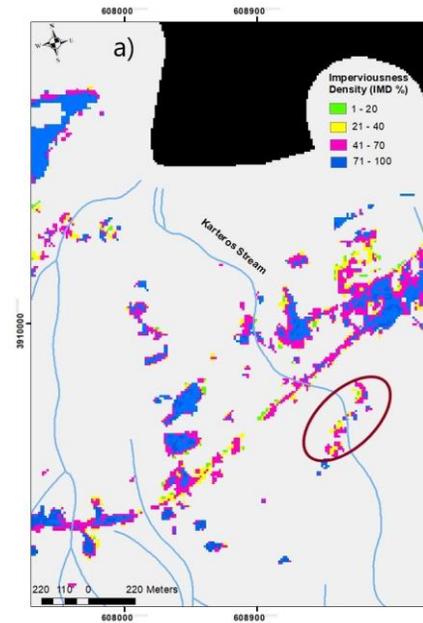


(b)



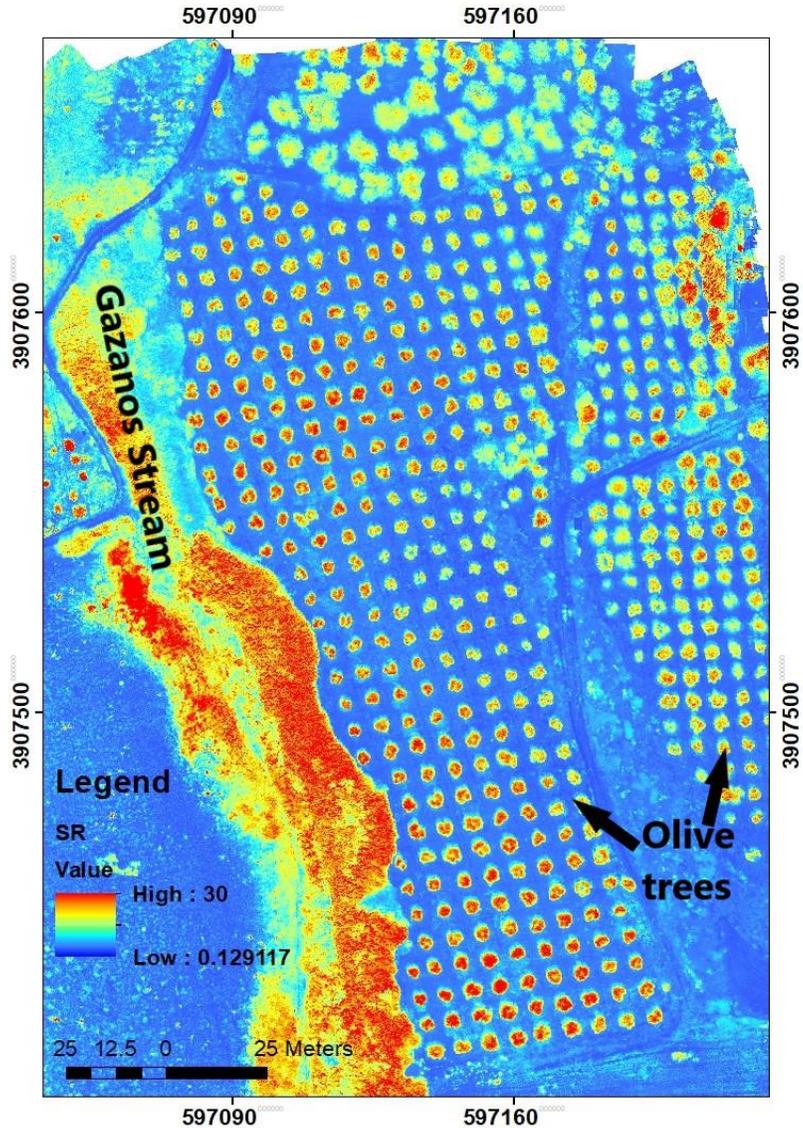
(c)

SIP response of the six (6) water samples from Karteros Canyon (area I, Figure 1b), tap water analysis included for comparison, (a) and (b) real and imaginary conductivity versus frequency, (c) frequency versus phase



Comparison of a) imperviousness density (IMD %) and b) low-field magnetic susceptibility (LFS) in part of Karteros Stream (area I). Red ellipse indicates the site of Karteros Stream (area I) showing both relatively higher values of IMD and LFS. The traffic network is indicated by orange line while the geological faults with black line

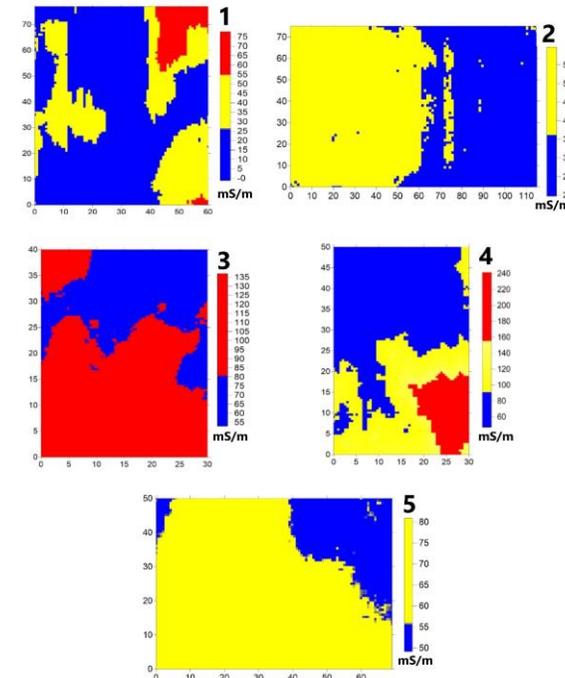
Some experimental results for case study 2



The Simple Ratio (SR) index in Gazanos Stream, area II (UAV flight, DJI Mavik 3M, 22 August 2023)



Distribution of (a) the soil conductivity for the agricultural parcels shown in the upper part of figure (a) (National Cadastre, <https://www.ktimatologio.gr/en>) in Gazanos Stream



Some results from case Study 2:

- Topography is one of the most important factors affecting the aquatic environment and agriculture.
- The combination of spectral induced polarization and magnetic susceptibility using remote sensing seems ideal for rapid and cost-effective environmental monitoring.
- Agricultural land west of Heraklion is dominated by intra-parcel soil variability. It is strongly recommended that intra-parcel soil variability be considered prior to any agricultural activity to support the rational use of inputs (water, pesticides, fertilizers) and further protect the aquatic environment.
- Topographic attributes such as slope and aspect, imperviousness density, vegetation indices, soil apparent electrical conductivity, soil magnetic susceptibility, and the spectral induced polarization response of water (real and imaginary components, phase) are robust indicators for a rapid and cost-effective environmental investigation of rural and suburban areas bordering streams before conducting specific analyses.

In Conclusion:

- Geospatial technology is a major scientific discovery that raises the possibilities of humanity to a whole new level.
 - The use of geospatial technology is comparatively inexpensive and simple, while its possibilities are almost unlimited.
- Applications of geospatial technologies can be found in almost all sectors, industries or research areas where location is important.

Future of Geospatial Technology:

- Geospatial AI
- Autonomous Vehicles
- High resolution mapping as a service
- Drones

References

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3. Chatzidavid, D.; Kokinou, E.; Kokolakis, S.; Karagiannidou, M. Integrating Earth Observation with Stream Health and Agricultural Activity. *Remote Sens.* 2023, 15, 5485. <https://doi.org/10.3390/rs15235485>
4. Sarris ,A., Kokinou, E., Aidona, E., Kallithrakas-Kontos, N., Koulouridakis, P., Kakoulaki G., Droulia, K., Damianovits, O., 2009, Environmental study for pollution in the area of the Megalopoli power plant (Peloponnesus, Greece), *Environmental Geology*, 58(8), 1769-1783, DOI:10.1007/s00254-008-1676-3.
5. <https://www.aaas.org/programs/scientific-responsibility-human-rights-law/overview-geospatial-project>



Questions & Answers

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Protecting Urban Aquatic Ecosystems to Promote One Health

Background
Urban aquatic ecosystems are extremely relevant connectors between people, animals and plants, making cities more **biodiverse and sustainable**. Yet, these ecosystems are often confronted with lack of space, cuts of **vegetation, artificialization, and other urbanisation processes**. This degradation can lead to numerous **disadvantages to humans** in regard to emerging pathogens, decreasing **disease resistance**, climate change impacts and other **health concerns** in cities.

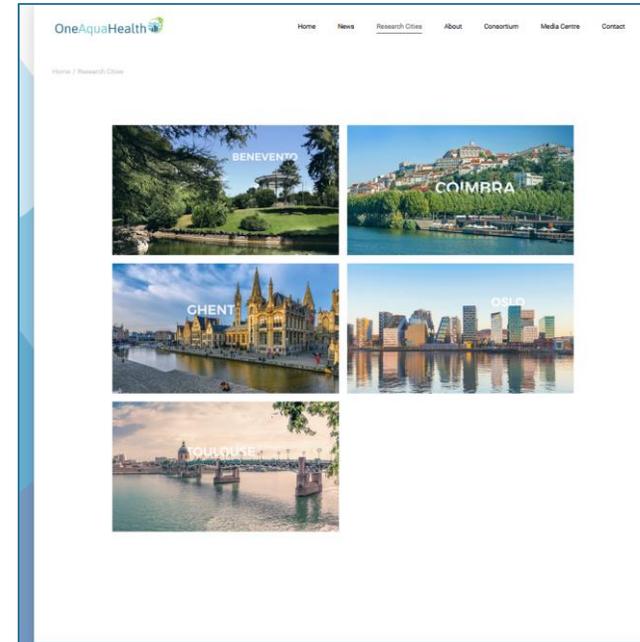
Goal
OneAquaHealth aims to improve the **sustainability and integrity of freshwater ecosystems** in urban environments. By investigating the **interconnection of ecosystem health and human wellbeing**, the project will identify **early warning indicators and enhance environmental monitoring** with AI-assisted tools. As a result, the project will support decision-makers in finding **adequate and timely decisions** as well as **effective measures** to restore aquatic ecosystems health and promote **OneHealth**.

Concept
By filling knowledge gaps and by adopting the **One Digital Health (ODH)** principles, policy instruments for the management of urban aquatic sites can be improved substantially. The project will develop **digital tools** – an Environmental Surveillance System, a Decision & Support System and a CitizenScience App to raise **awareness** and to **engage all relevant stakeholders** to jointly achieve **thriving ecosystems and healthier communities** for the future.

Subscribe to our Newsletter!
Discover our latest updates and news about the OneAquaHealth project. [Click Here](#)

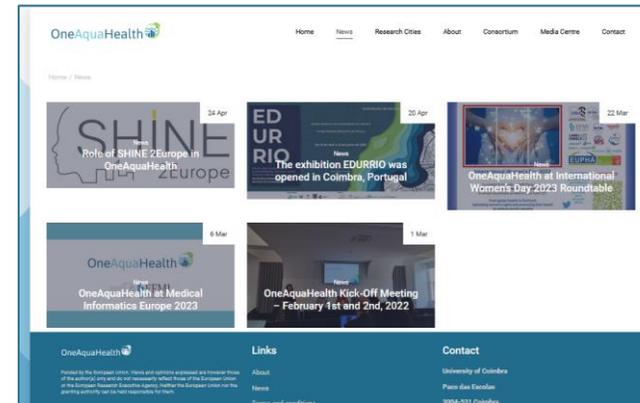
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- 24 Apr: Role of SHINE 2Europe in OneAquaHealth
- 20 Apr: The exhibition EDURRIO was opened in Coimbra, Portugal
- 22 Mar: OneAquaHealth at International Women's Day 2023 Roundtable
- 6 Mar: OneAquaHealth at Medical Informatics Europe 2023
- 1 Mar: OneAquaHealth Kick-Off Meeting – February 1st and 2nd, 2022



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 **OneAquaHealth** @OneAquaHealth · 3. Mai
Stream ecologists in action 🌿💧

@OneAquaHealth project coordinator from #UCoimbra demonstrates how to monitor the wellbeing of urban stream ecosystems

#biodiversity #EcosystemMonitoring #OneHealth



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 **OneAquaHealth** @OneAquaHealth · 25. Apr.
Exhibition **EDURRIO** opened in Portugal!
First stop, until 16 June: #Coimbra 🇵🇹

Learn about the role of urban streams for the #sustainability of cities and #bestpractices to protect their #ecosystems 🌿🏙️

Organised by #UCoimbra researchers.
Details: ineews.eu/universidade-d...



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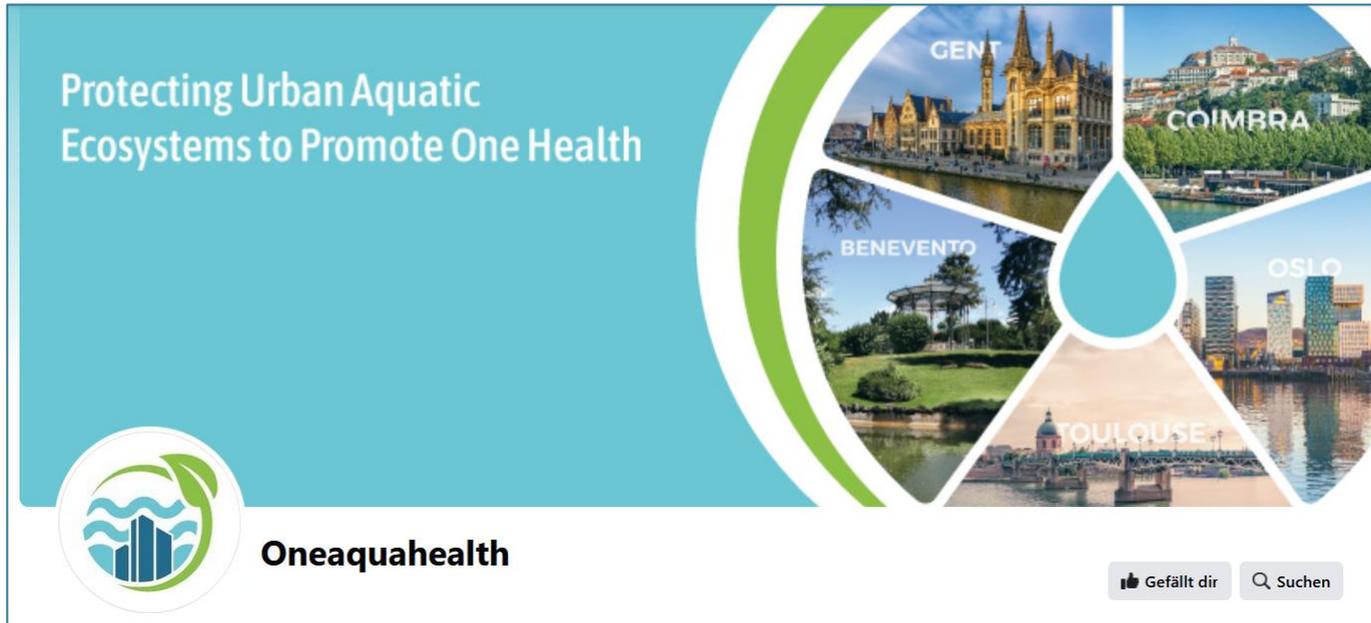
It's time to introduce our ambitious and multidisciplinary consortium - not only the brains but also the hearts of @OneAquaHealth

13 partners from 10 countries share their expertise and motivation 🙌
learn more about them here: oneaquahealth.eu/consortium/



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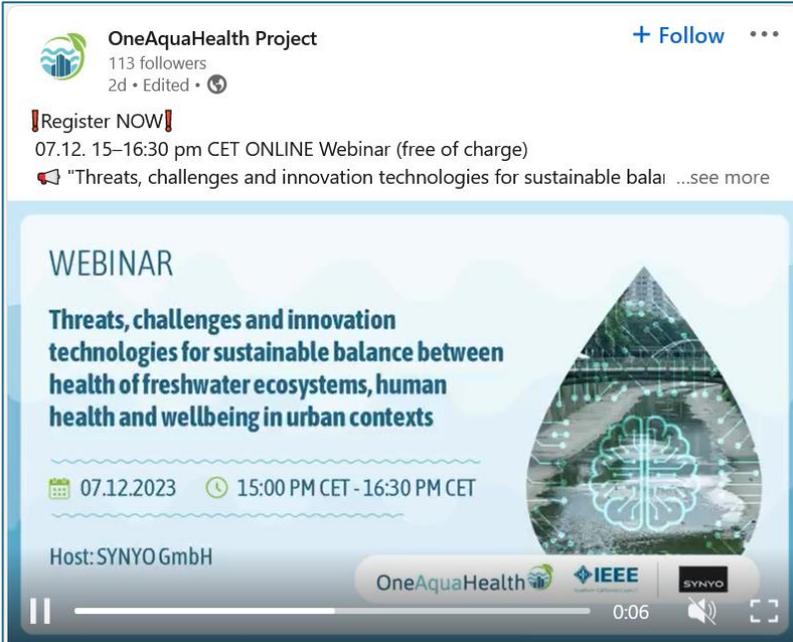
Protecting Urban Aquatic Ecosystems to Promote One Health

OneAquaHealth Project

EU-funded project to protect #UrbanAquaticEcosystems to promote #OneHealth



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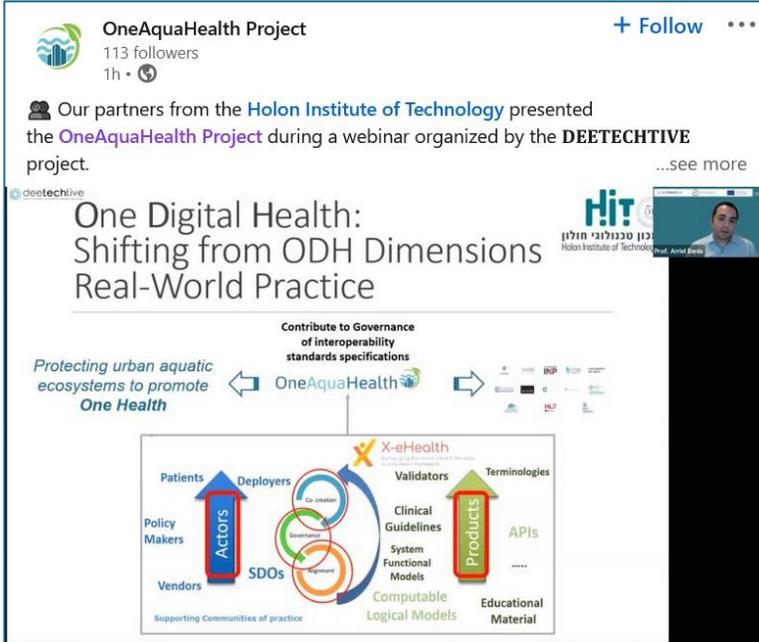
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WEBINAR
Threats, challenges and innovation technologies for sustainable balance between health of freshwater ecosystems, human health and wellbeing in urban contexts

07.12.2023 15:00 PM CET - 16:30 PM CET

Host: SYNYO GmbH

OneAquaHealth IEE SYNYO



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Our partners from the **Holon Institute of Technology** presented the **OneAquaHealth Project** during a webinar organized by the **DEETECHTIVE** project. ...see more

One Digital Health: Shifting from ODH Dimensions Real-World Practice

Contribute to Governance of interoperability standards specifications

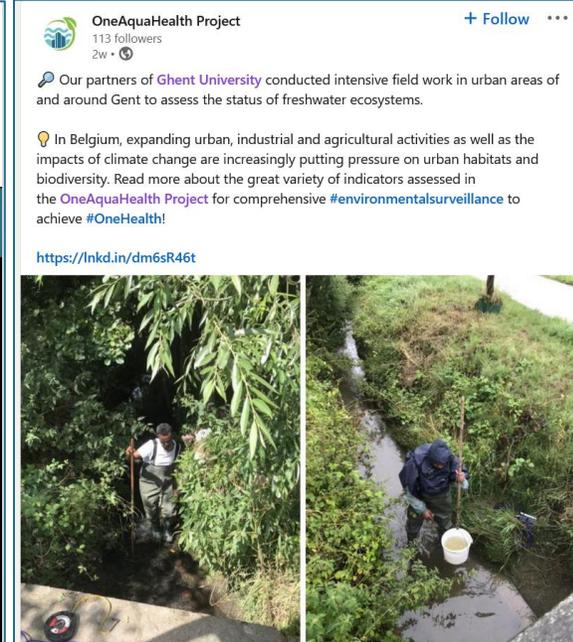
Protecting urban aquatic ecosystems to promote One Health

OneAquaHealth

X-eHealth

Patients, Deployers, Validators, Terminologies, Policy Makers, SDOs, Clinical Guidelines, System Functional Models, Products, APIs, Vendors, Computable Logical Models, Educational Material

Supporting Communities of practice



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Our partners of **Ghent University** conducted intensive field work in urban areas of and around Ghent to assess the status of freshwater ecosystems.

In Belgium, expanding urban, industrial and agricultural activities as well as the impacts of climate change are increasingly putting pressure on urban habitats and biodiversity. Read more about the great variety of indicators assessed in the **OneAquaHealth Project** for comprehensive **#environmentalsurveillance** to achieve **#OneHealth!**

<https://lnkd.in/dm6sR46t>



Upcoming events

WEBINAR

Citizen Science in environmental observation and health research

 21.05.2024  11:00 AM – 12:30 PM CET

Organiser: Wise Angle Consulting S.L.



OneAquaHealth 

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