Observing a Global Pandemic from Space: Evaluating Participatory Geographic Information Systems (PGIS) during the SARS-CoV-2 Pandemic

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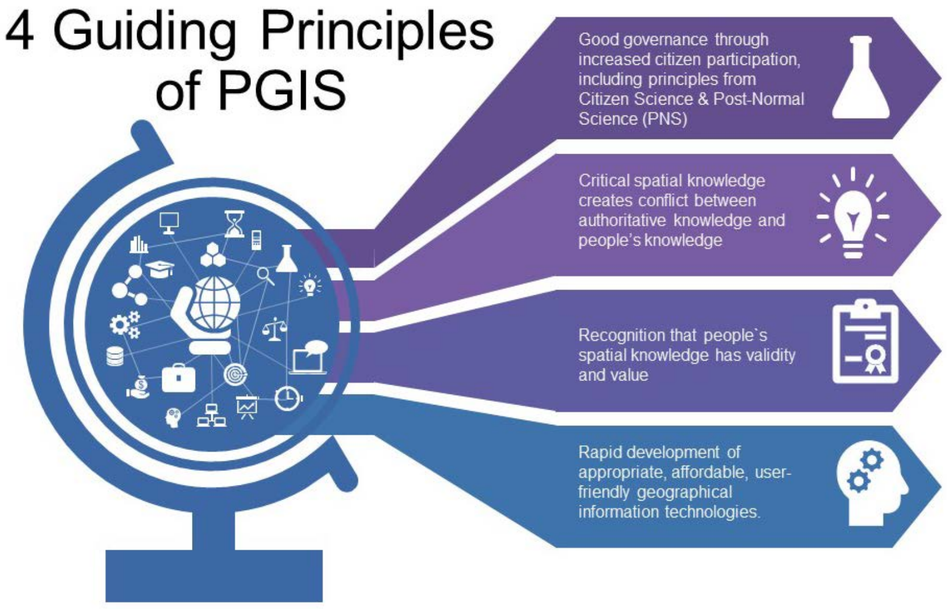
PARTICIPATORY GIS

PGIS refers to maps (representations of spatial information) made using participatory processes by a community or groups of people. They are grounded in local interests and needs and (spatial) knowledge, and they employ an array of different mapping and elicitation tools[1].



APPLYING SWOT TO PGIS[2]

Strengths, Weaknesses, Opportunities, Threats

S

- Incorporate local knowledge that is not normally available in ordinary geographic information datasets
- Improvements on existing power relations by enhancing public access to information and facilitating public participation in the decision-making process

W

- Problems concerning how public opinion can be incorporated into decision-making processes
- Adopted *as a means to* coerce public support, e.g. understanding that people may be less likely to oppose decisions if they have been involved in the process

O

Greater accountability in decisions made is seen as an important opportunity for participatory GIS

T

Consider relative positions of power in respect to different stakeholder groups within the decision-making process as an issue that threatens the potential of PGIS

BACKGROUND

- In 2020, WHO warned that Covid-19 is suffering from a massive infodemic (excess of information).
- PGIS has expanded due to the accessibility of data and open-source spatial analysis software.
- A proliferation of web-based maps utilizing PGIS have appeared depicting many different aspects of the spread of the novel coronavirus (SARS-CoV-2).
- These maps demonstrate a lack of expertise e.g. sociopolitical context can be easily misinterpreted.

PROBLEMS

1. **What are the issues surrounding PGIS projects presently?**
2. **What are potential directions for future developments in analysis of participatory mapping data during the SARS- CoV-2 Global Pandemic?**

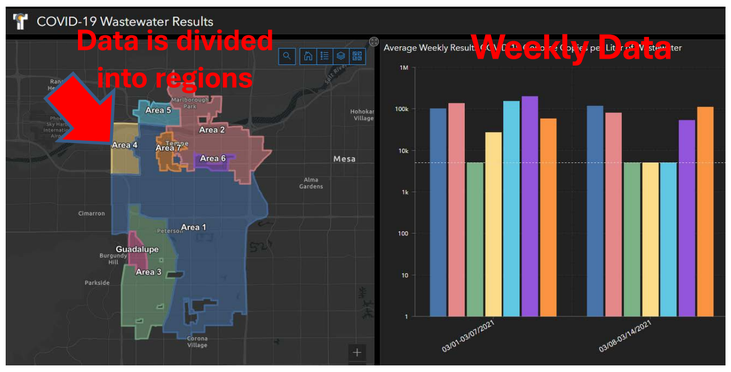
PGIS DURING COVID: Exploring COVIDPoops19

COVIDPoops19 Dashboard

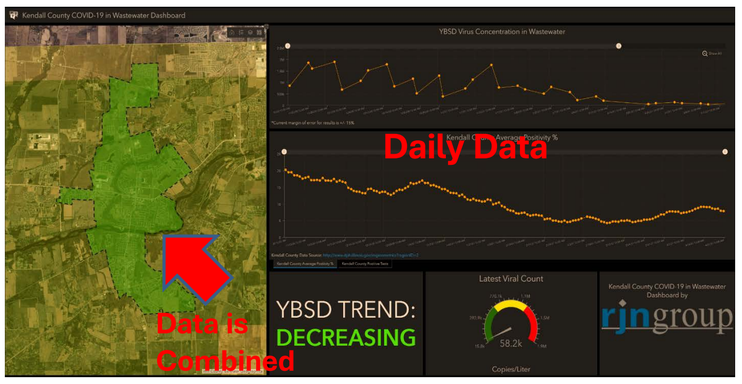
https://www.covid19wbec.org/covidpoops19

@COVIDPoops19

GOAL: to provide a global map of SARS-CoV-2 wastewater testing so the public can easily see where testing is happening in their area.

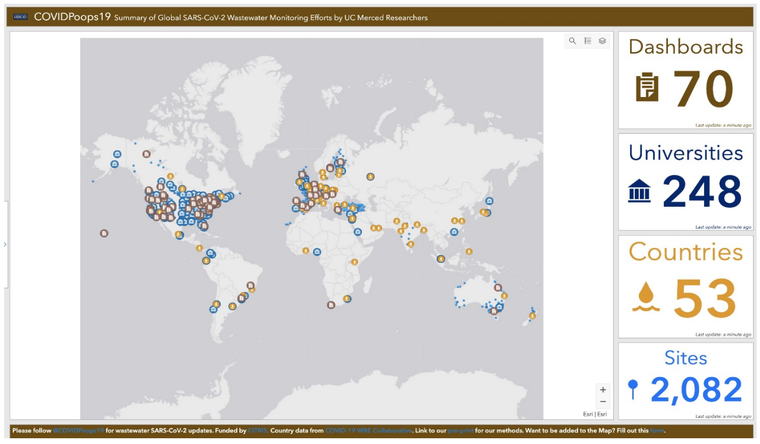


Wastewater Treatment Dashboard from Tempe, Arizona

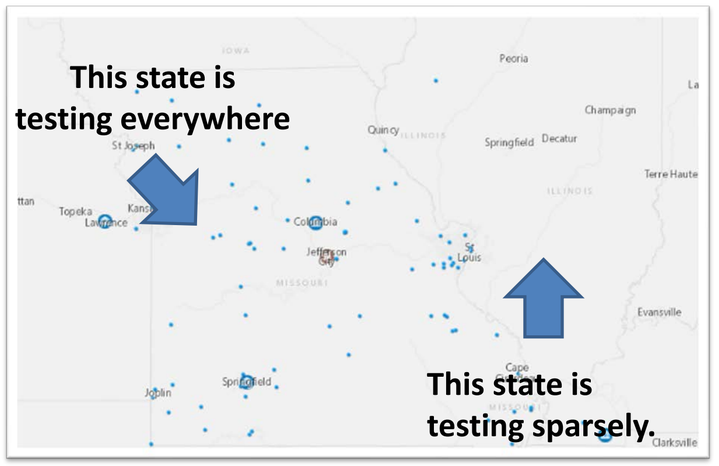


Wastewater Treatment from Kendall County Health Department in Yorkville, IL

Conclusion: Given multiple ways of geographic storytelling, this multiplicity may confuse casual readers.



COVIDPoops19 Dashboard



COVIDpoops19 Dashboard zoomed on 2 states

GEOVISUALIZATION QUESTIONS

1. Is this useful information?
2. Regional Specifications?
3. How are the data obtained?
4. Who are the stakeholders?
5. What is this map trying to accomplish?
6. Are the data standardized?

FUTURE DIRECTIONS FOR PGIS

- Policy- and decision-making needs to be guided by all stakeholders (health, government officials, geographers, GIS community, and data visualization experts etc…) to develop guidelines for technical communications
- PGIS will benefit from being reflexive and interrogating reasons behind intentionality, purpose, and rationale regarding participation or lack thereof.
- By reducing parochialism, limited social and geographical coverage of the participation in the mappings, the significance of the outputs should be improved.
- Knowledge events are mapped at particular points in time and therefore they are not representative over a longer time period. Reducing the ephemerality will allow for a more holistic map.
- Remember that a strength of PGIS is not that it is democratic; the strength of PGIS is that it is exceptionalist, extra-ordinary, and informed.

References

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