GOAL: Containment of COVID19 up to 8 days in advance, for communities using waterways as sewers.

Made with 💝 from Tarragona, Catalonia (ES) 📍 on May 2020, by:

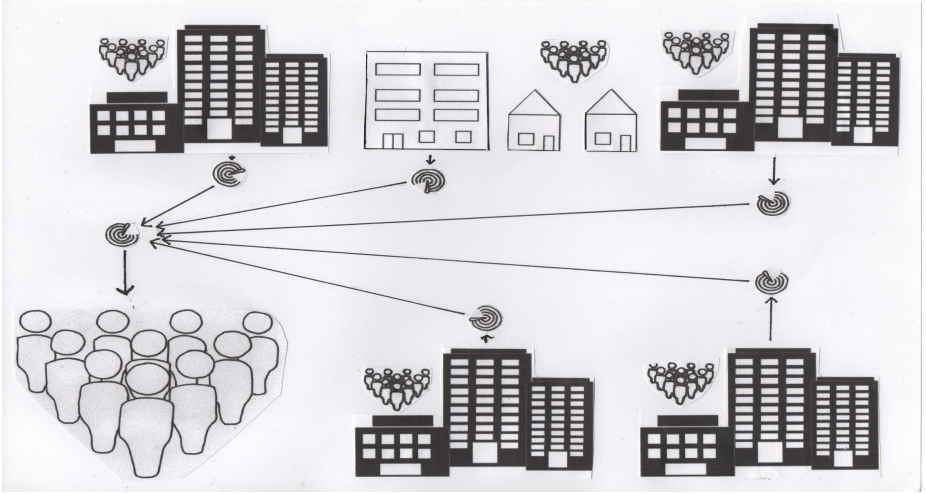
- ★ Luis Ulloa - Architect.
- ★ Miguel Guerrero - Economist.
- ★ Santiago Frias - Tech Developer.

👉 https://github.com/sfrias/pandemials

Foundations for collective screening using sewage

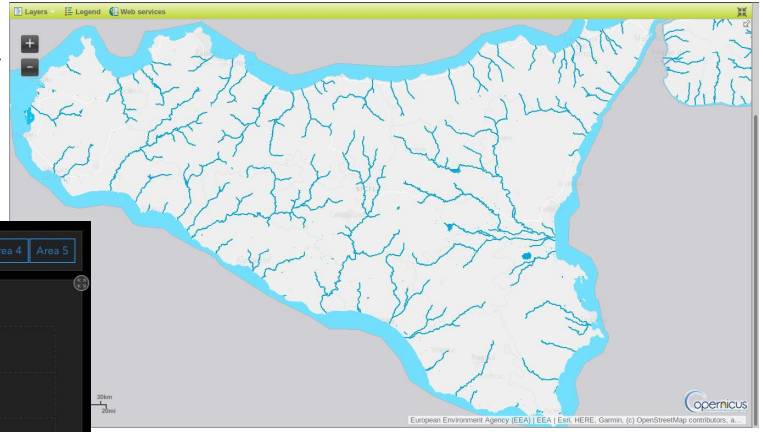
Studying sewage for public health information is known as Wastewater-based epidemiology(WBE).

A Method to establish faster, better points for the sample collection without sewage system info.

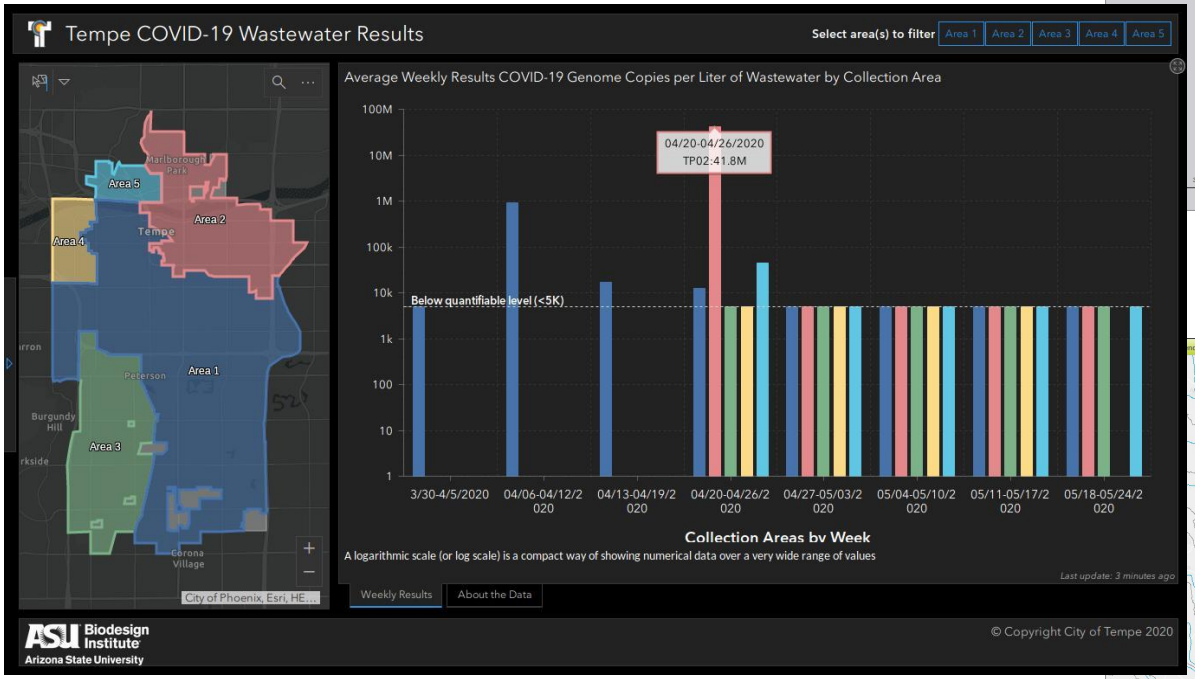


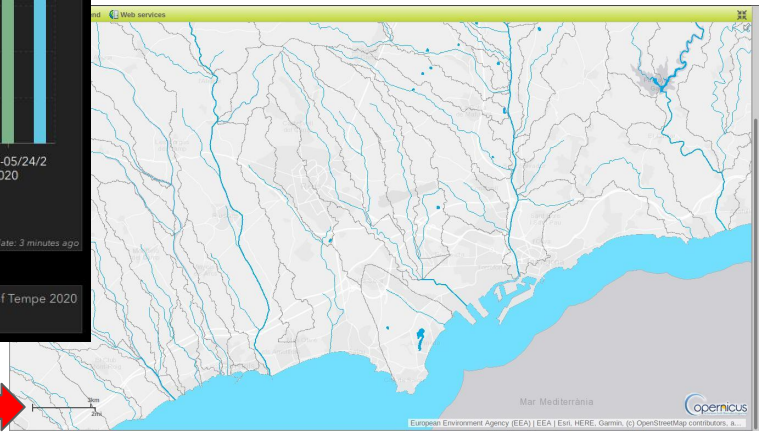
Best selection or the sample collection without sewage system info around world.

For global zones, sewage paths are near superficial water



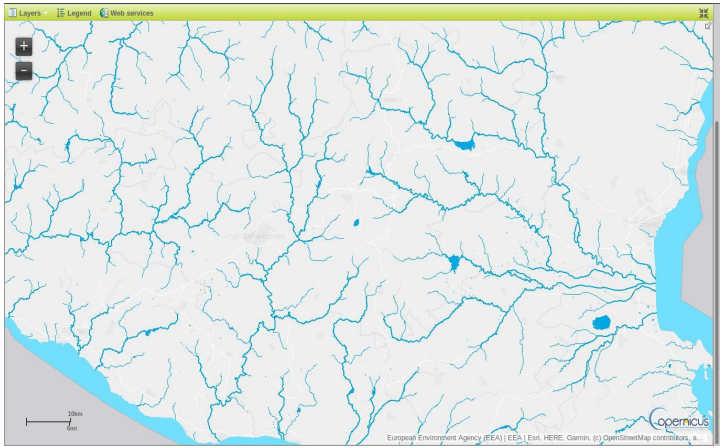
Urban zones have collectors where can be sampled infections



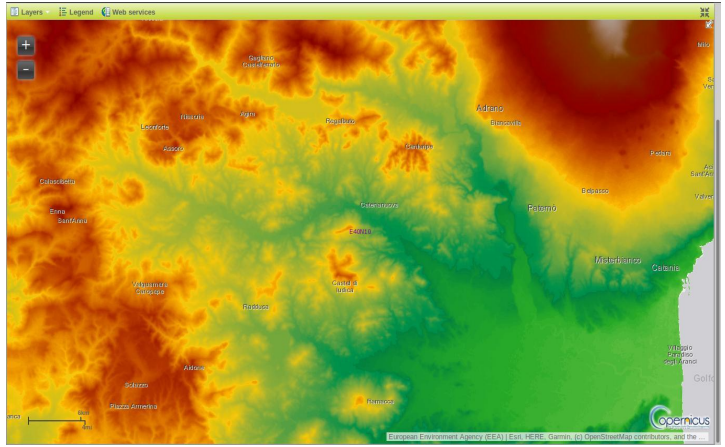


For select sample points if complex, drainage zones are the key

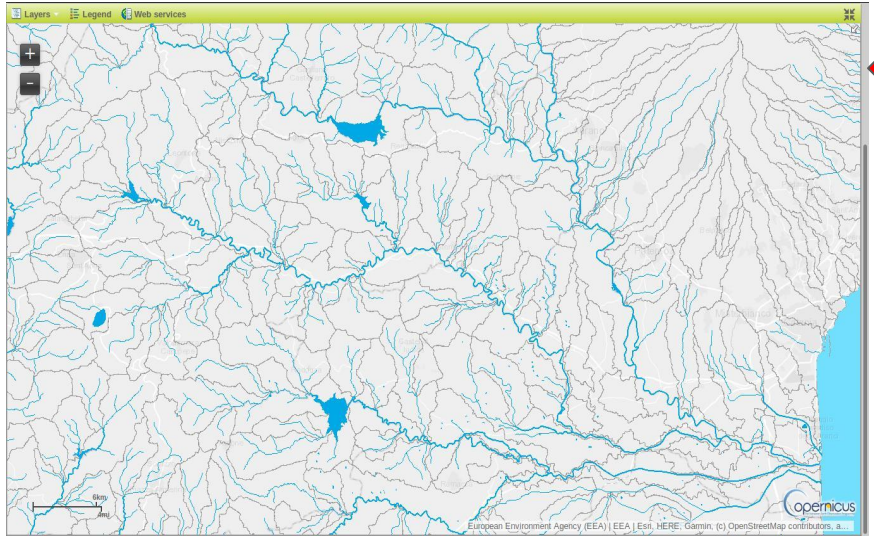
Benchmark selection for sample points splitting: several scopes prevent non optimal(I)



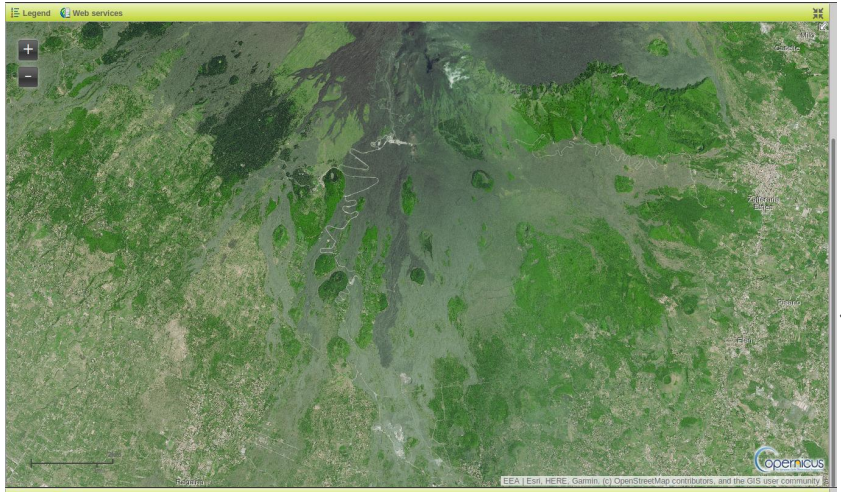
Superficial water paths at 1:10K



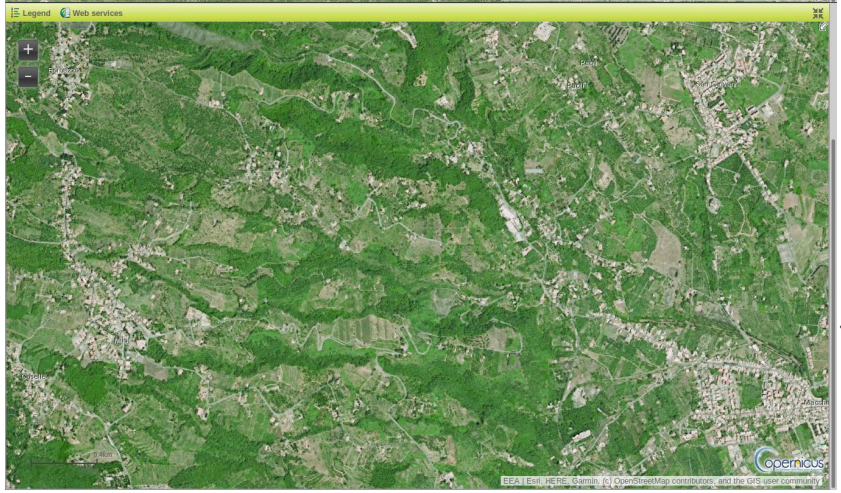
1:6K with drainage zones and elevation



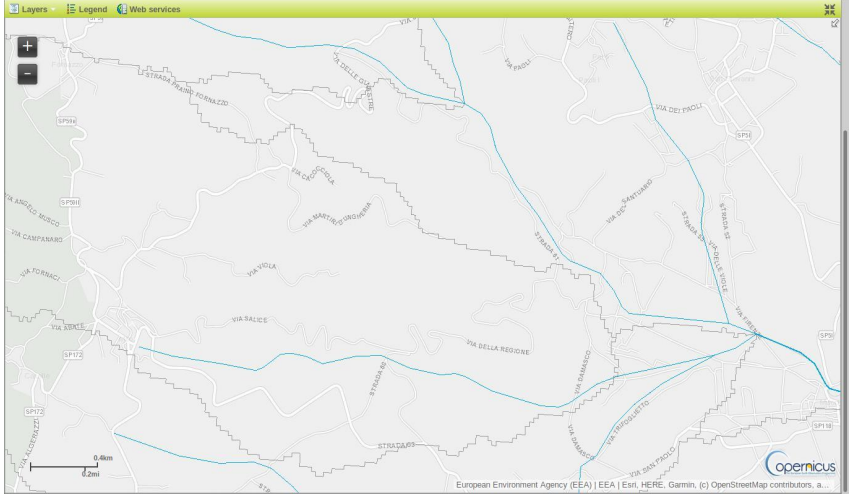
Benchmark selection for sample points splitting: several scopes prevent non optimal(II)



1:2K



1:400



Conclusion

This Proof of Concept, has shown that combining satellite imagery with data analysis, in order to accurately **determine the watersheds where waterways used as sewers converge**, can be a cost-effective way to mitigate COVID19 outbreaks, giving up to 8 days in advance notice to implement containment measures.

NASA SPACE APPS CHALLENGE