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# Shiny Happy People Sharing Geospatial Data

Bobby Sayers and Melissa Albino Hegeman

# Disclaimer

The opinions represented here are our own and do not reflect NYS policy.

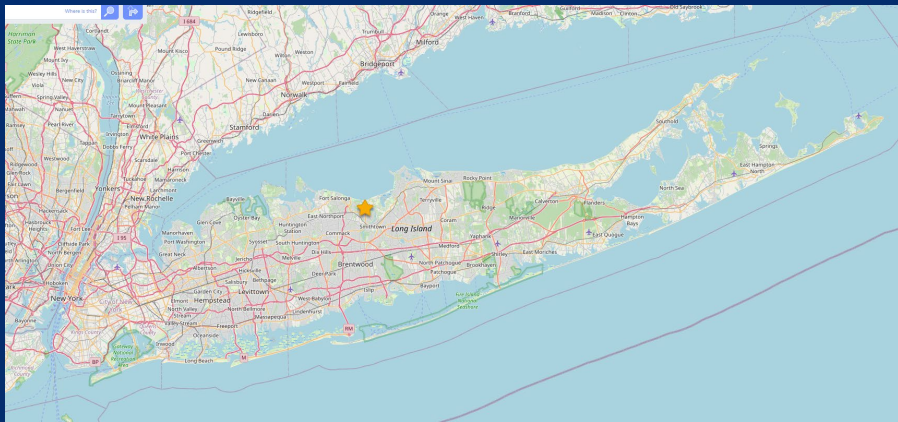


# Who we are

Melissa Albino Hegeman

Bobby Sayers

- Map nerds
- Marine Biology/Fisheries Management
- Esri users
- R/Python/SQL users



# Overview

- Challenges and limitations of viewing spatial data with your coworkers
- Potential solutions using open-source software to create custom apps
- App demo
- Summary and questions



# Some Common Roadblocks

- Expensive servers and hosting solutions 💰
- Proprietary software 💾
- Complex installation processes 🧩
- Ongoing maintenance 🔧



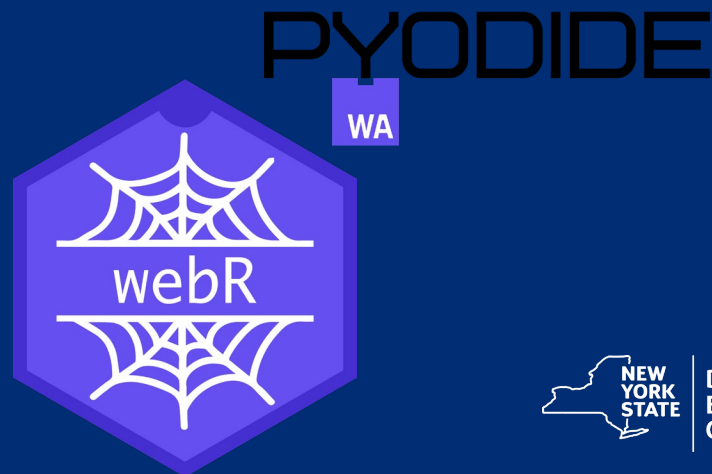


- Web application framework
- Available in both R and Python





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# Web Assembly

- Enables code written in other languages to run in web browsers
- Allows near-native performance
- Runs in a secure sandbox
- Permits R and Python applications to run without a server



# The Challenge

- Make an interactive map 🌐
- Compare two data sources 💻
- Keep it private 🔒
- Keep it consistent ✅



# Free and Open-Source Options

- Prioritized free and open-source software
  - Reduces up front costs
- Acknowledge difficulties of using free and open-source software
  - Lack of local IT support
  - Lack of technical expertise





# Shinylive

- Creates interactive applications
- Leverages WebAssembly technology
- Allows creation of lightweight, serverless apps
- Supports both R and Python





# Requirements

- Runs entirely in the browser
- Supports file uploads
- Integrates with popular libraries (e.g., leaflet)



# The App



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# Demo

[WebR example](#)

[Pyodide example](#)





# Results

## Pros

- Provide a consistent analytics environment
- Access advanced geospatial tools through a web browser
- Upload and analyze personal data securely
- Collaborate easily by sharing a single URL/file

## Cons

- Can't access network resources (such as a SQL server)
- Dependent on internet connection to access Web Assembly components
- Dependent on the speed of your local machine





# Next Steps

- Use public web feature services
- Export results as pdf or table
- Add additional files types (.csv, .shp, etc.)
- Calculate distance or create a buffer



# Questions?

**Melissa Albino Hegeman:** [melissa.albino@dec.ny.gov](mailto:melissa.albino@dec.ny.gov)

**Bobby Sayers:** [robert.sayers@dec.ny.gov](mailto:robert.sayers@dec.ny.gov)

Presentation slides:

[https://github.com/mhegeman/2024\\_scgis\\_webr](https://github.com/mhegeman/2024_scgis_webr)



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