

# Advancing Climate Research Through the U.S. Greenhouse Gas Center, and the VEDA Open Science Platform

Slesa Adhikari, Siddharth Chaudhary, Vishal Gaur, Abdelhak Marouane, Caden Helbling, Jeanné le Roux, Deborah Smith, Jonas Solvsteen, Brian Freitag, Manil Maskey

## Introduction: US GHG Center

- The US GHG Center is a pioneering initiative by the U.S. government.
- Aims to centralize and curate greenhouse gas data for broader accessibility and collaboration.
- Collaboration involves esteemed organizations: EPA, NASA, NIST, NOAA.
- Serves as a centralized hub for greenhouse gas data.

## The VEDA Open Science Platform

- GHGC developed using the open-science platform VEDA.
- VEDA is open-source and adaptable across multiple applications.
- Open-source nature streamlined development and expedited release.
- Leverage of an existing platform allowed a focus on critical aspects like dataset curation and validation.

## Acknowledgements

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## Key Features

### Cloud optimized data store:

- Data that has been converted from traditional formats to cloud optimized format
- Available in the cloud
- Can be downloaded from the website

### Data Discovery:

- Comprehensive suite for discovering greenhouse gas data
- Data catalog assembled through successful interagency collaboration

### Data Visualization and Exploration:

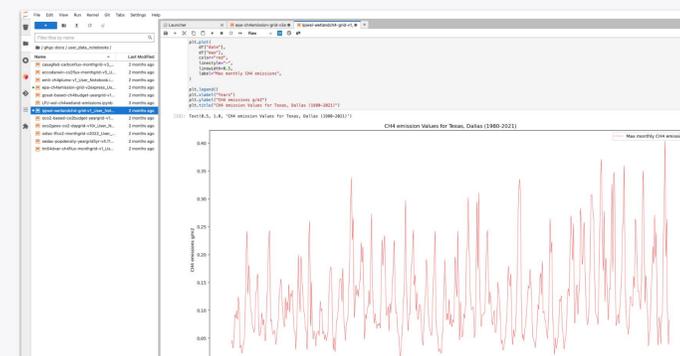
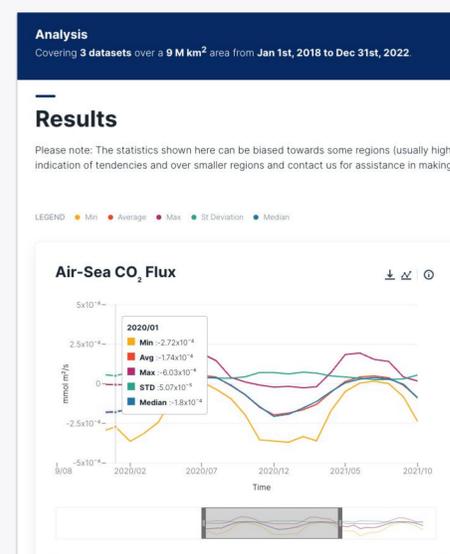
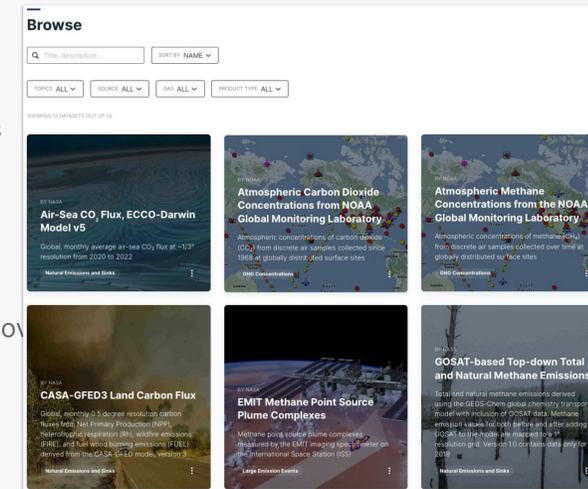
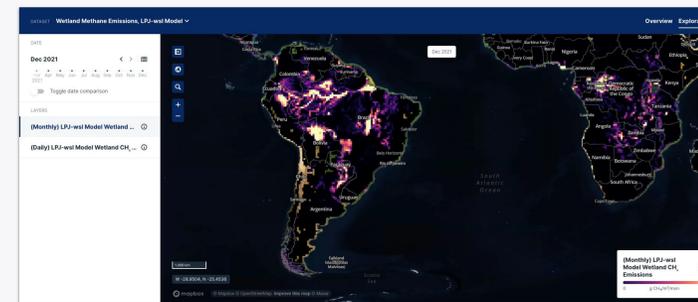
- User-friendly tools for visualizing complex datasets
- Enhances accessibility and understanding of greenhouse gas data
- Empowers stakeholders through evidence-based decision-making
- Adaptive strategies for combating climate change

### Data Analysis:

- Web analysis tool for time-series analysis of data
- JupyterHub analytics platform for advanced users and scientists that provides direct data access for complex data analysis
- Catalog of user data notebooks for each dataset

### Data Insights:

- Guided narratives created by scientists themselves
- Includes insights about greenhouse gas measurement, changes over time, events and human-related causes and contributions



Visit the US GHG Center website!

## Open Science Principles

- GHG Center is committed to open-source and open-science principles
- Contribution to the community by embracing open-source practices
- Use of open-source tools
- Publicly available datasets, source code, transformation code, verification reports
- Open Geospatial Consortium and Community standard public APIs for visualization and cataloging
- Commitment to transparency

## Conclusion

- GHGC's potential to drive evidence-based decision-making.
- Commitment to open-science empowers researchers and policymakers worldwide.
- Comprehensive exploration of GHGC's features showcases its role in advancing climate research.
- Inspires collective efforts toward a sustainable and resilient future.

