

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

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## 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:

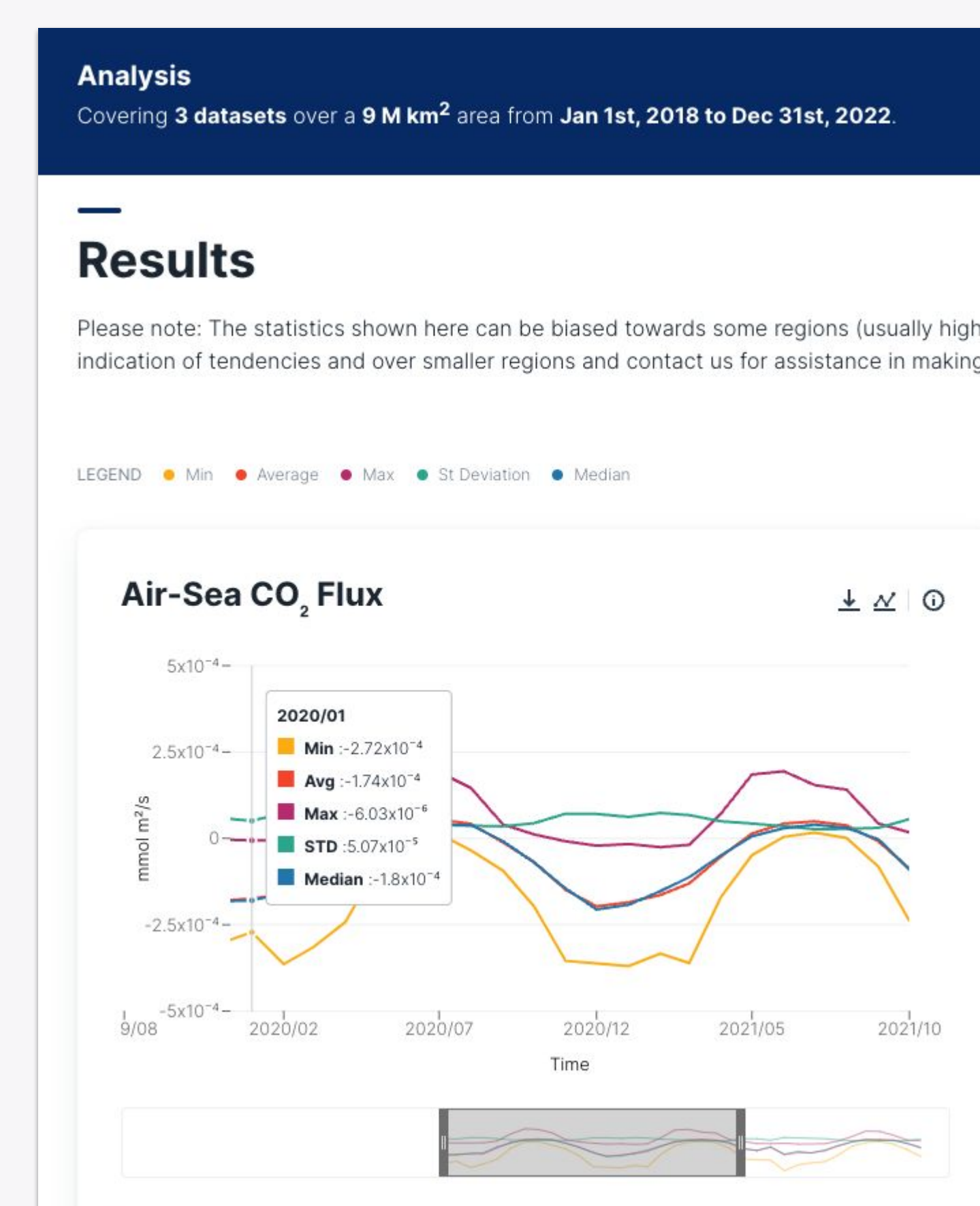
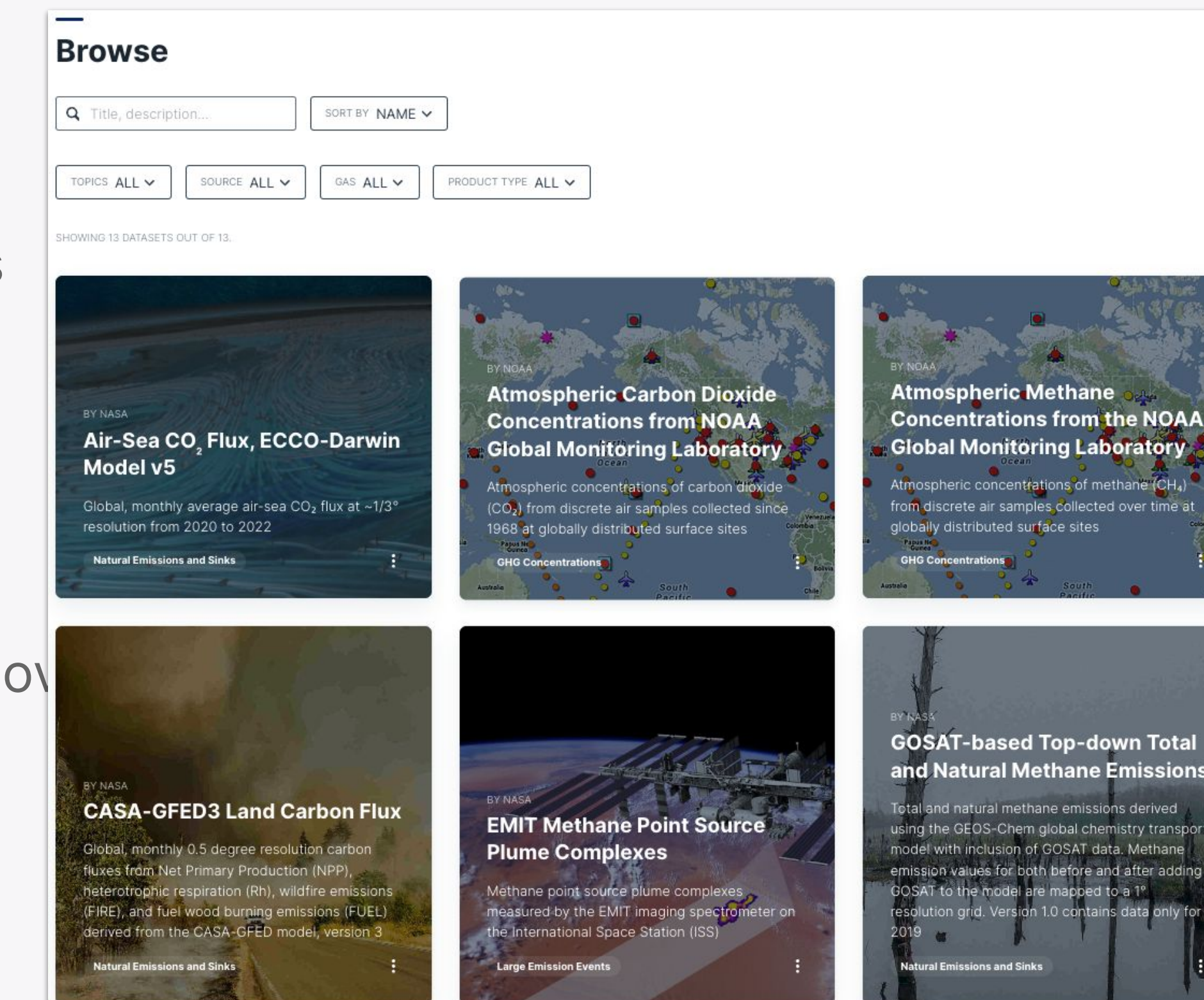
- User-friendly tools for visualizing complex datasets
- Enhances accessibility and understanding of greenhouse gas data
- Empowers stakeholders through evidence-based decision-making
- Adaptive strategies for combating climate change

### 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.

