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Earth Information System (EIS)

Monthly Highlights

March 2023

EIS Open Source Science via VEDA Dashboard

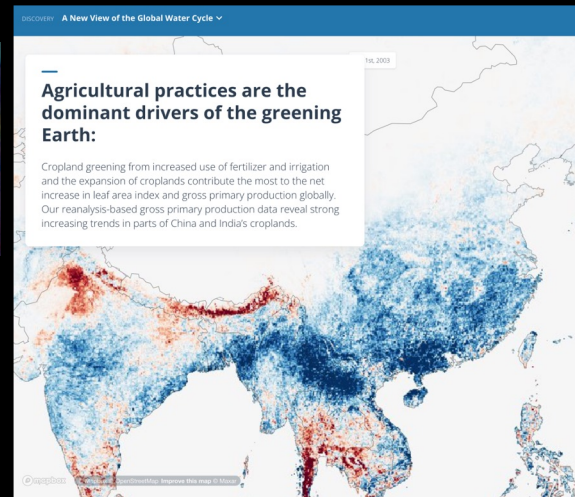
- EIS developed four interactive Discovery science stories, linked to datasets and analysis tools in the cloud.
- These include notebook-style science workflows allowing users to reproduce analysis on new 2i2c-VEDA cloud JupyterHub with the click of a button.
- Open public discussion around each Discovery is hosted on GitHub, allowing users to participate in Open Source Science.



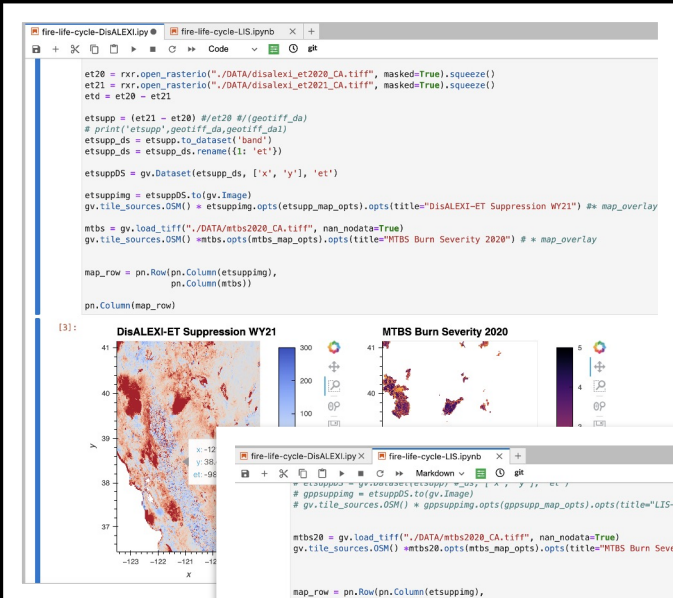
A New NASA Model Brings Open Science to Target Water Quality Problems

This EIS project is the first effort to integrate NASA's Land Information System with a globally used process-based water quality simulation model - Soil & Water Assessment Tool.

Comparing model results with ground observations shows the ability of this framework to predict water quality at high resolution river network-scales across the Mississippi River. As a generalizable open science design, this framework is reproduced for other major basins of the world.



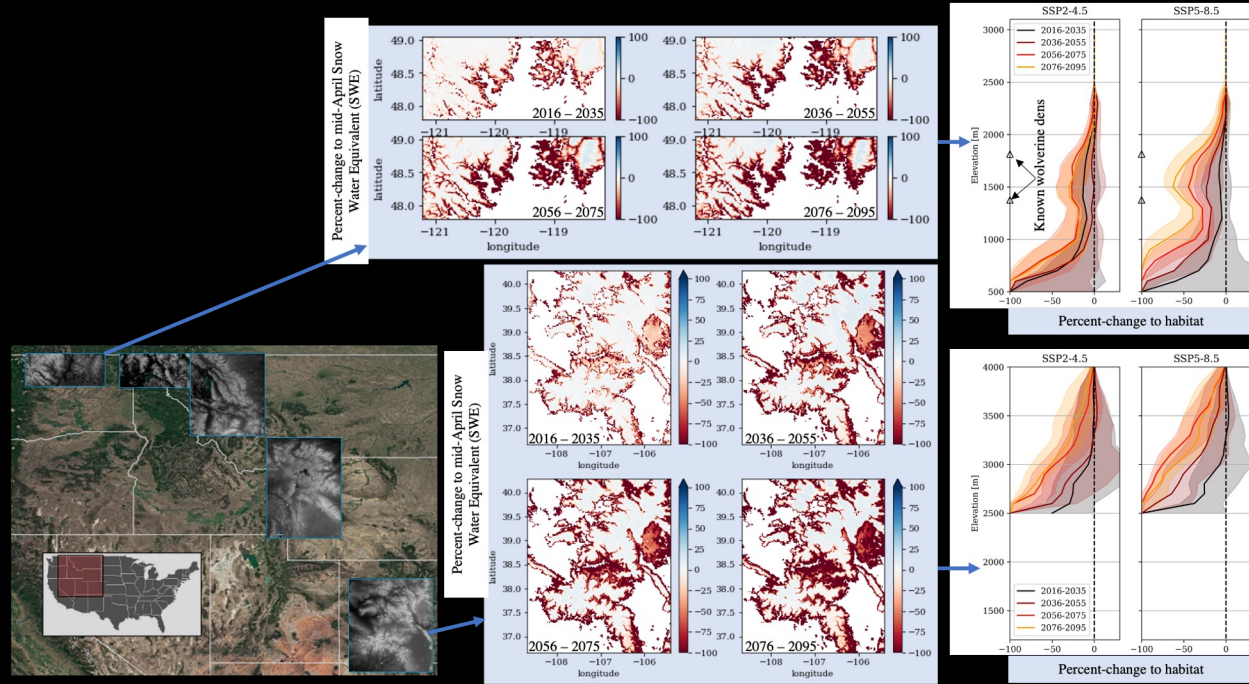
EIS Cloud-based Interactive Notebooks



- EIS provides a platform and standard format for Jupyter notebooks on 2i2c-VEDA cloud JupyterHub
- Shared workspaces and computing power for reproducible analysis and wide outreach
- Without EIS, our code is 'open' but not easily replicated without expert knowledge

EIS + NASA Earth Exchange: Snow Projections for Assessing Future Habitat

- We used NASA-downscaled CMIP6 climate projections and the LIS framework to simulate the change to snow water resources to 2100 for 5 montane domains
- US Fish and Wildlife is using this product to support an assessment of wolverine habitat and it may be used for upcoming species habitat assessments (not public yet)
- Our results show close agreement with other projections at low-to-mid elevations, but dampened snow losses at the highest elevations



EIS Engagements in March

Organization/ Meeting	Thematic Area	Outcome
Commodity Classic '23	Water, Agriculture	Discussions with Acres and partners re: data sharing and collaboration on models
UN Water Conference	Water	
WMO @ UN Water Conference	Water	Will contribute EIS global hydrology shifts to global Annual Water Report in 2023 and forward
3rd SMD and ETD Workshop on A.I. and Data Science	AI and Data Science	
Drought Assessment in a Changing Climate Technical Workshop, NOAA NIDIS + USDA Climate Hubs	Water	Collaboration with Montana Climate Office initiated

Other

- EIS HQ demo recording - [Earth Information System \(EIS\) project updates to HQ-20230315_123241-Meeting Recording.mp4](#)
- Draft of the [EIS strategic plan](#)
- Draft of the [EIS five year project plan](#)