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# CRESCENT Products for Earthquake Hazard Science and Resilience

*Tools, Datasets, and Dashboards for Research, Modeling, and Hazard Planning*

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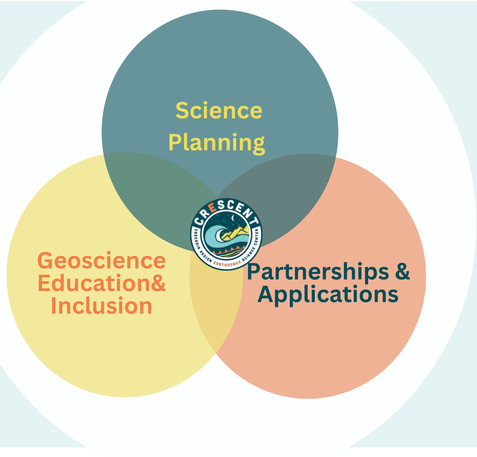
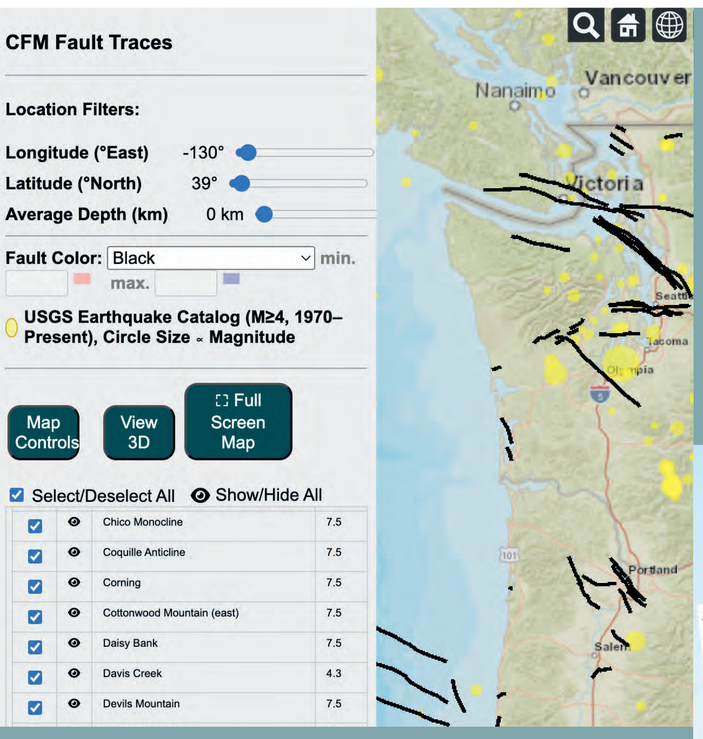
## CRESCENT's Mission

The Cascadia Region Earthquake Science Center (CRESCENT) is NSF funded and has the broad mission to advance the understanding of seismic hazards in Cascadia and improve regional resilience through scientific discovery, knowledge synthesis, community partnership, and geoscience education.




CRESCENT is committed to producing open source tools, datasets, and products that conform to FAIR data science principles (https://www.go-fair.org/fair-principles/): **F**indable, **A**ccessible, **I**nteroperable, and **R**eusable

## Existing Products - available at https://cascadiaquakes.org/products/

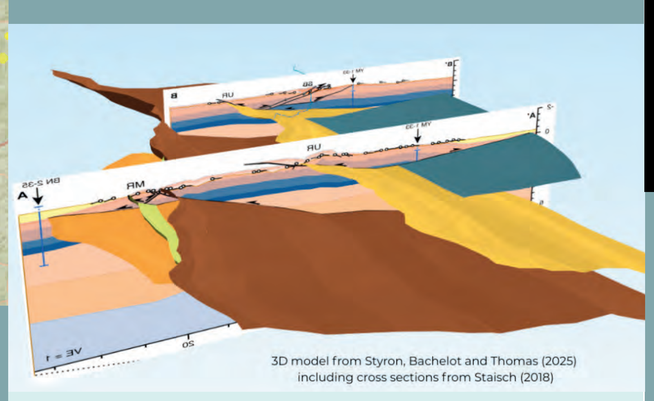



### Community Fault Model Viewer

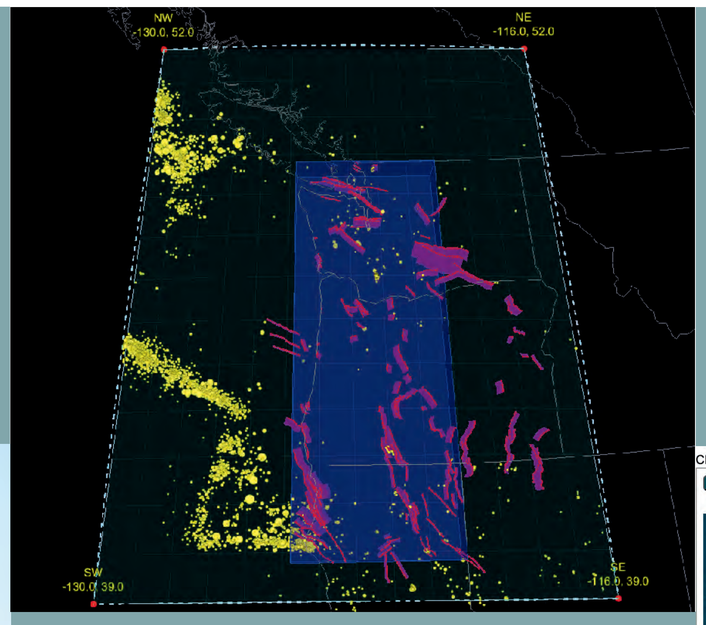
- Interactive 2D+3D visualization of Cascadia fault system models
- Includes onshore/offshore crustal faults, terrain, and seismicity information
- Filter (e.g. by location and depth) and export data in multiple formats

### 3D Fault Construction QGIS Toolkit

- Fully open-source framework to build realistic 3D fault surfaces directly in QGIS using three interoperable plug-ins
- Use standard geologic/geophysical inputs (geologic maps, cross-sections, seismic images, earthquake hypocenters)




*Screenshots from CRESCENT's open source viewers, left to right: CFM Viewer, 3D Fault Construction QGIS toolkit, CVM Viewer, and CPAL Viewer*

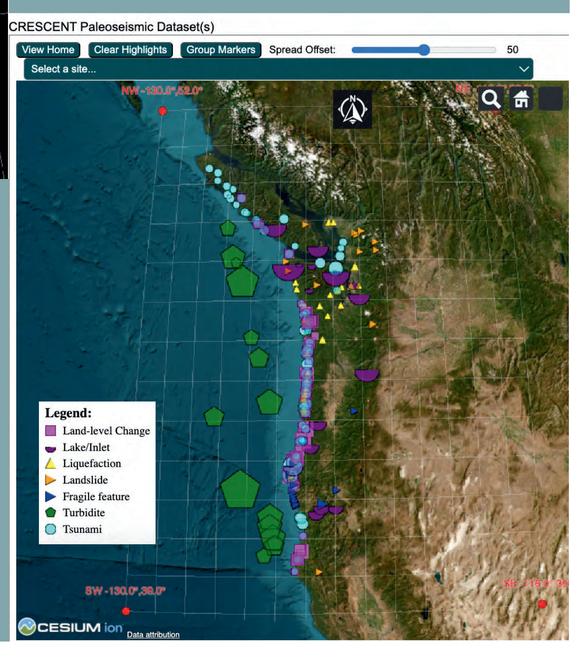



### Community Velocity Model Viewer

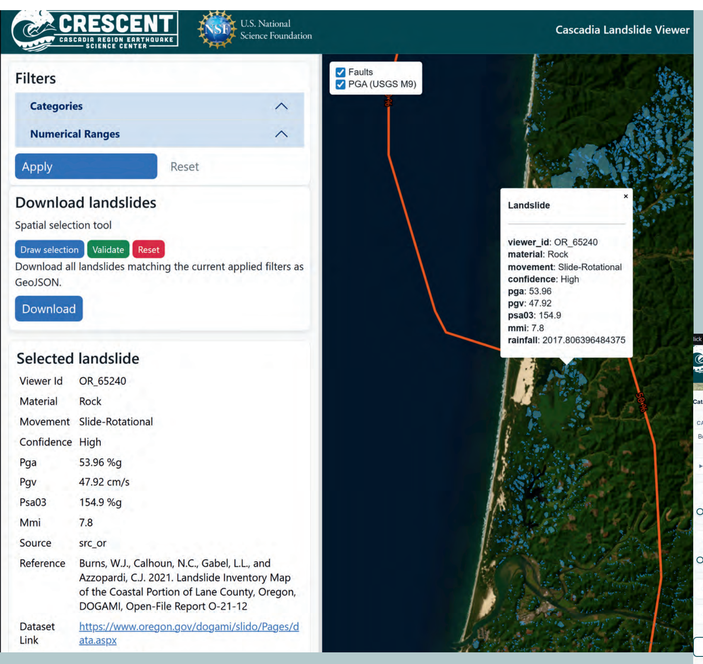
- Visualize and explore 3D models of seismic wave velocities and densities in the Cascadia region
- View model cross sections, depth profiles, and horizontal slices
- Filter, extract, and download data in multiple formats

### Paleoseismology Viewer

- View compiled USGS/CPAL proxy data for past earthquake activity: Land-level Change, Lake/Inlet, Liquefaction, Landslide, Fragile feature, Turbidite, Tsunami
- Filter by evidence type, location, age control quality, and source mechanism certainty




## Tools in Development and Other Resources

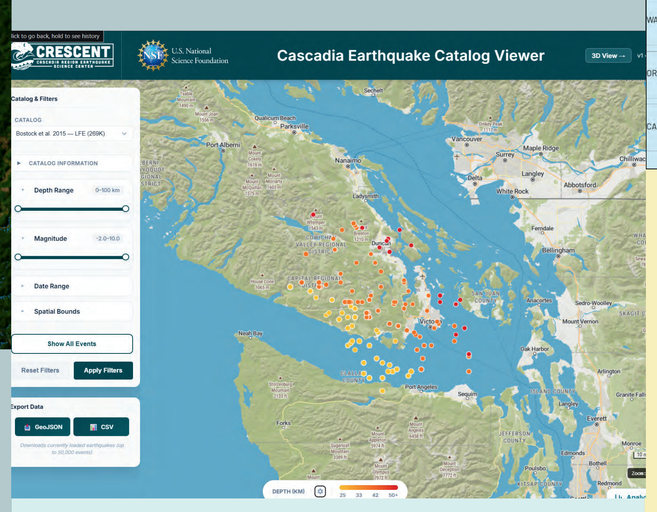



### Ground Failure Viewer

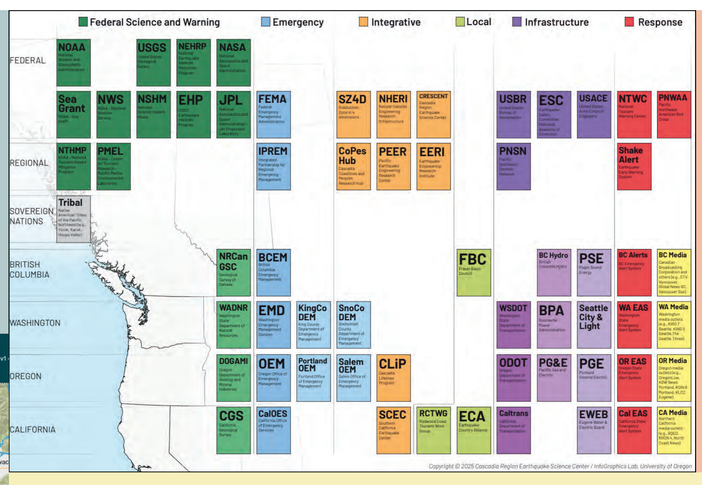
- Interactive visualization of landslides and ground-failure features in PNW
- Includes open-source data from CA, OR, WA, and BC; download by user-defined region and attribute filtering
- Filters include shaking intensity metrics, mean annual precipitation, and landslide types

### Earthquake Catalog Viewer

- Interactive 2D + 3D viewer to explore and compare earthquake catalogs within the Cascadia Subduction Zone and surrounding regions.




*Left: screenshot from the CRESCENT Ground Failure Viewer (in beta), middle: screenshot from the Cascadia Earthquake Catalog Viewer (in beta), right: concept infographic for the Cascadia Connections Dashboard*




### Cascadia Connections Dashboard

- Visual directory of cross-disciplinary organizations involved in earthquake hazard research and resilience
- Shows key roles, datasets, resources, and contacts for each organization
- Interactive mapping of organizational relationships

### Other CRESCENT Resources

- General questions: cascadiaquakes@uoregon.edu
- CRESCENT Github: https://github.com/cascadiaquakes
- Cascadia Lifelines Program (CLiP) Webinars - monthly webinar series on seismic resilience research and innovation
- *Seismic Moment* - Quarterly Newsletter
- CRESCENT events: Technical Short Courses, Topical Workshops, Partnerships & Applications Annual Workshop, Annual Meeting
- Seed Grants, Geoscience Education travel stipends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