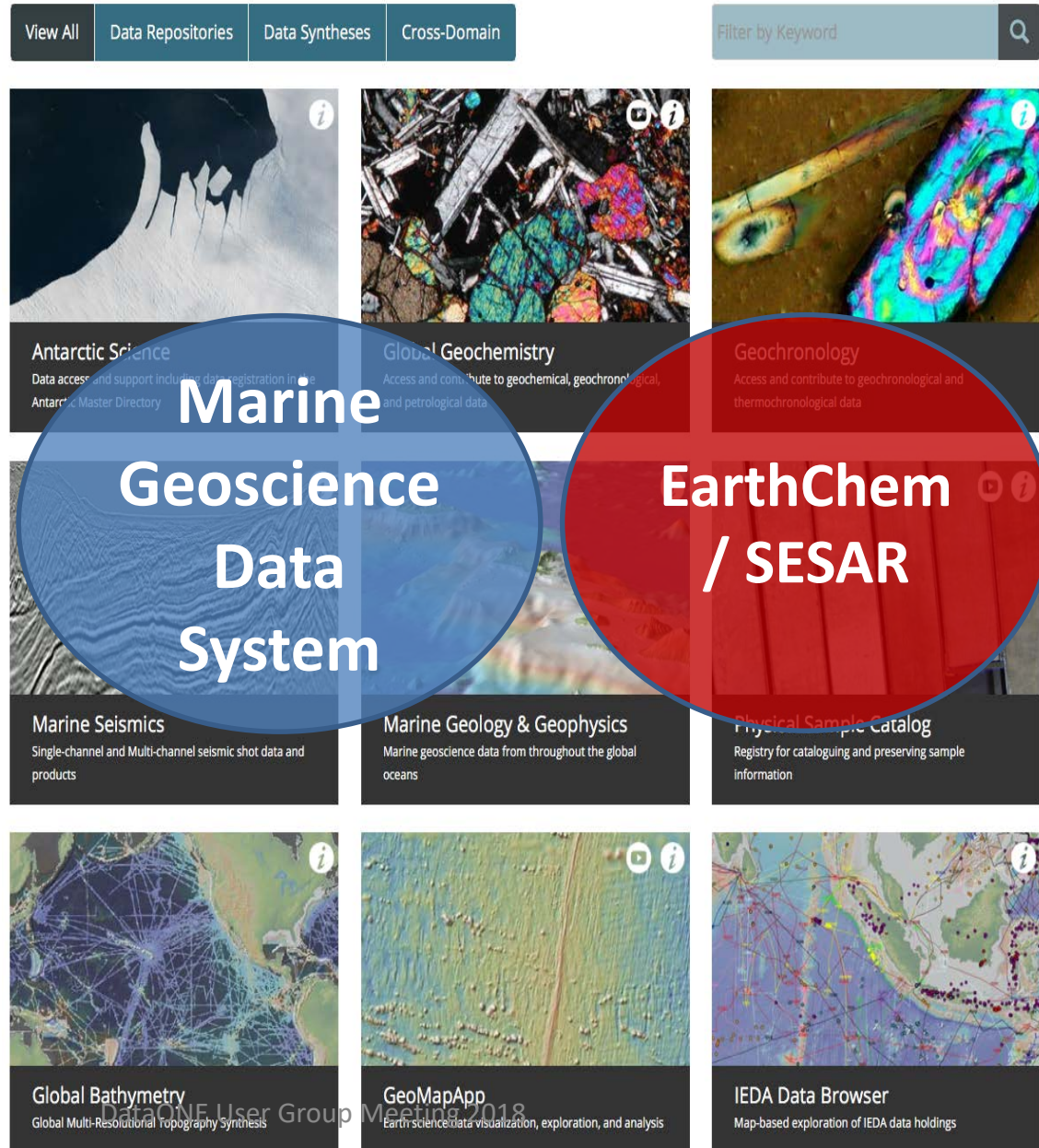


<http://www.iedadata.org>

Data Repositories & Syntheses



The screenshot shows the IEDA Data Repositories & Syntheses interface. At the top, there are navigation tabs: "View All", "Data Repositories", "Data Syntheses", and "Cross-Domain". To the right is a search bar labeled "Filter by Keyword". Below the navigation is a grid of data categories, each with a representative image and a title:

- Antarctic Science**: Data access and support including data registration in the Antarctic Master Directory.
- Global Geochemistry**: Access and contribute to geochemical, geochronological, and petrological data.
- Geochronology**: Access and contribute to geochronological and thermochronological data.
- Marine Seismics**: Single-channel and Multi-channel seismic shot data and products.
- Marine Geology & Geophysics**: Marine geoscience data from throughout the global oceans.
- Physical Sample Catalog**: Registry for cataloguing and preserving sample information.
- Global Bathymetry**: Global Multi-Resolutional Topography Synthesis.
- GeoMapApp**: Earth science data visualization, exploration, and analysis.
- IEDA Data Browser**: Map-based exploration of IEDA data holdings.

GeoPRISMS Data Management

Andrew
Goodwillie and
the IEDA Team
@LDEO

GeoPRISM Data Catalog

Marine Geoscience Data Library

*Metadata Catalog and
Geophysical/Geological Data Repository*

*MARGINS Data Collection, Academic
Seismic Portal*

EarthChem Libraray

SESAR

External Data
Repositories e.g. IRIS,
UNAVCO

GeoMapApp

Global Multi-
Resolution
Topography
Synthesis

EarthChem
DB

Data Visualization

Data Syntheses

Benefits of Accessible Community Data Resources

- Support scientific reproducibility
- Enable data re-use including for unanticipated purposes
- Aggregate collections enable new science

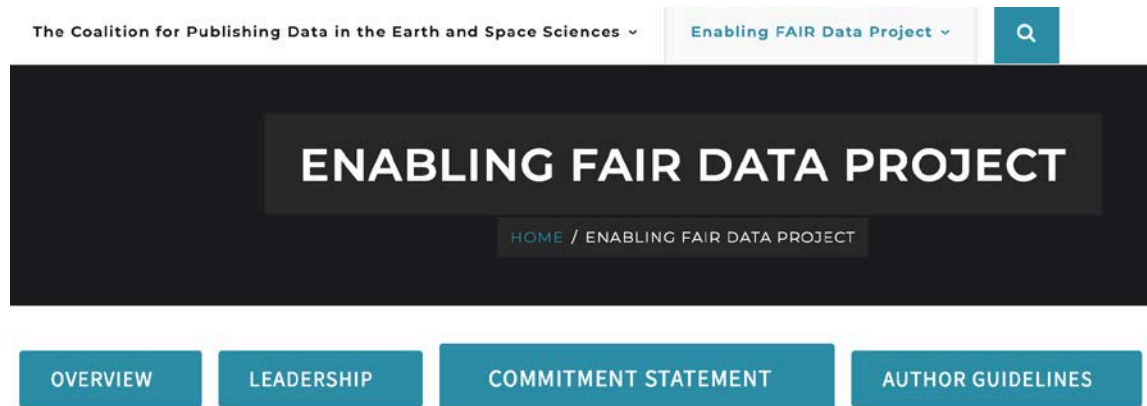
Preservation of Unique Observations

- Expensive facilities & instrumentation
- Remote locations
- Non-repeatable events



Support Scientist Responsibilities

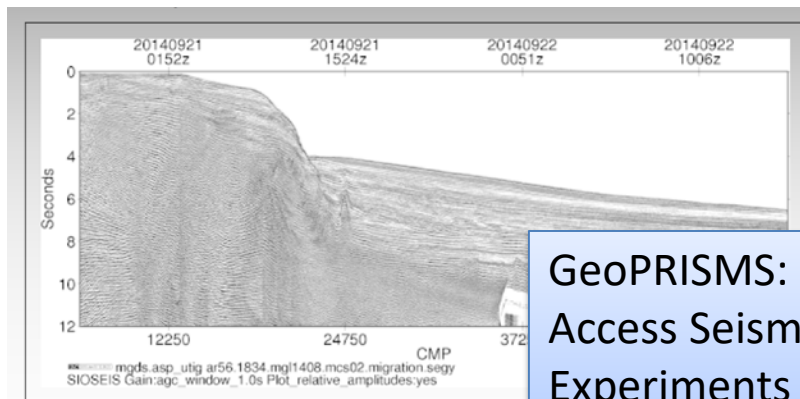
- NSF funding requirements
- Journal requirements for data access
- Professional Societies (AGU) promoting FAIR data principles *



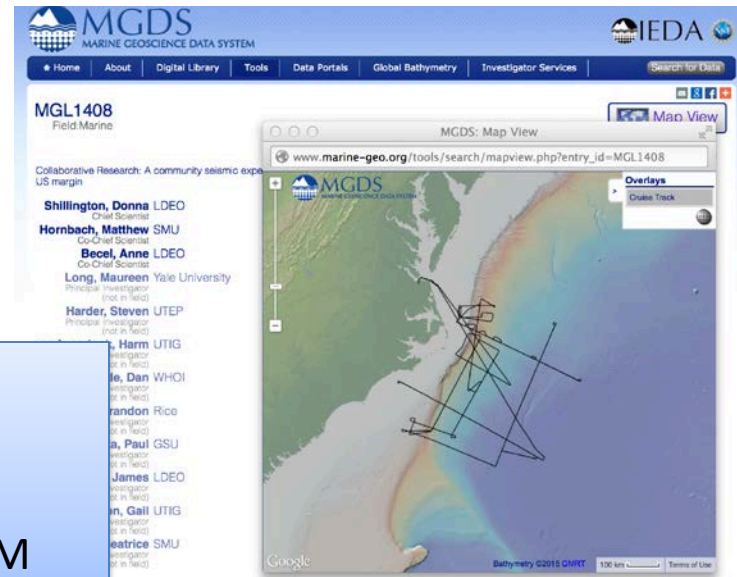
*Enabling FAIR Project: <https://eos.org/agu-news/enabling-fair-data-across-the-earth-and-space-sciences>

IEDA services support GeoPRISMS research in other ways

- GP Catalog: Data preservation serves NSF funding and Journal requirements, GP program legacy
- GP Catalog: Open Access for Community Experiments
- GP Catalog, Syntheses, GeoMapApp: Supports data use by a multi-disciplinary community, resources for GP synthesis efforts



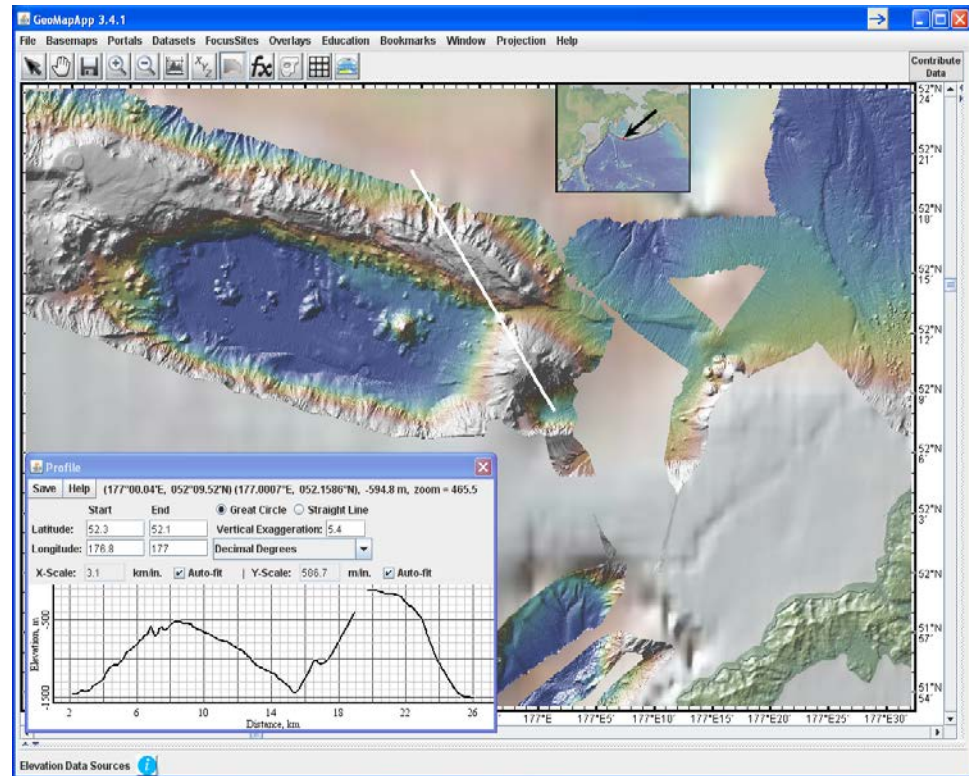
GeoPRISMS: Open Access Seismic Experiments at Cascadia and ENAM



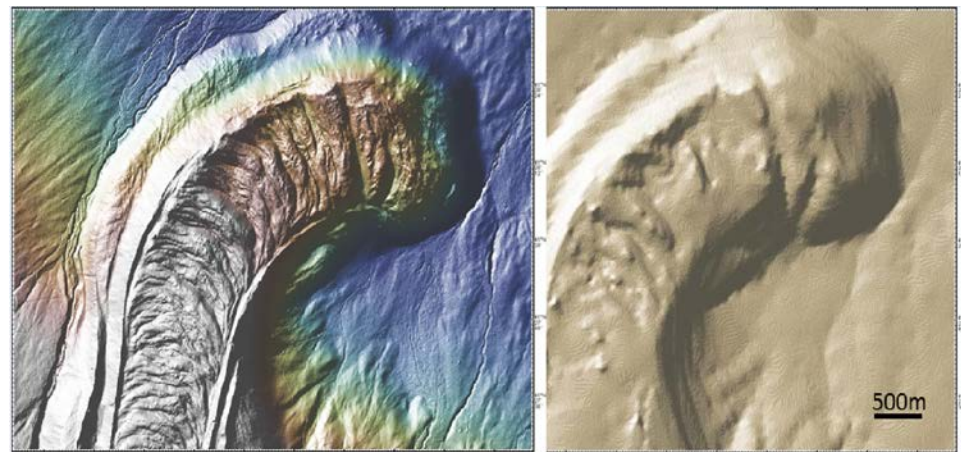
GeoPRISMS Data Portal

Information and data hosted includes:

- **Active source seismic surveys and other geophysical and geological data** (e.g. magnetotelluric data from Okmok volcano; ambient noise tomographic data from Cascadia; rock friction experimental data; East African Rift geodetic velocity solutions and magnetic field data).
- Large collection of **legacy/other program geophysical and bathymetry data** for each of GeoPRISMS Primary Site.
- **Geochemical data** from **some GP programs** at Cascades and Aleutian arc volcanoes, and legacy geochemical data for all primary sites.
- **GeoPRISMS bibliographic database:** Links GeoPRISMS-funded research papers to data sets and field program information.









Gene Yagodzinski, Scott White: Aleutians 50m bathymetry, TN182. Displayed in GeoMapApp.



Mount Shasta lava flow: 3m LiDAR elevation data; 10m USGS NED data

Access to Data – GeoPRISMS Awards page

	FY13	T. Lopez	1250148	Geochemical constraints on the source, flux, migration, and seismic signature of volcanic fluids, Katmai Volcanic Cluster, Alaska	SCD	Alaska & Aleutian	✓		Geochemical constraints on the source, flux, migration and seismic signatures of volcanic fluids, Katmai Volcanic Cluster, Alaska
	FY13	R. Harris	1249552	Thermal structure of the Cascadia subduction zone, Grays Canyon Discovery Corridor, Washington	SCD	Cascadia Alaska & Aleutian	✓		
	FY12	Y. Shen	1144771	Developing a comprehensive model of subduction and continental accretion at Cascadia	SCD	Cascadia			Developing a comprehensive model of subduction and continental accretion at Cascadia

Access to Data – GeoPRISMS Bibliography page

Salmi et al., 2017

Related Data Sets

Thermal Environment of the Southern Washington region of the Cascadia Subduction Zone

Schaen et al., 2016

Evolution of the Delarof Islands, Aleutian Arc

Shillington et al., 2015

Related Data Sets

Link between plate fabric, hydration and subduction zone seismicity in Alaska
doi: [10.1038/ngeo2586](https://doi.org/10.1038/ngeo2586)

Shillington et al., 2016

Related Data Sets

Acquisition of a Unique Onshore/Offshore Geophysical and Geochemical Dataset in the Northern Malawi (Nyasa) Rift
doi: [10.1785/0220160112](https://doi.org/10.1785/0220160112)

Spotila et al., 2015

Potential for Geologic Records of Coseismic Uplift and Megathrust Rupture along the Nicoya Peninsula, Costa Rica
doi: [10.2112/JCOASTRES-D-14-00151.1](https://doi.org/10.2112/JCOASTRES-D-14-00151.1)

Straub and Esposito, 2013

Related Data Sets

Influence of water and sediment supply on the stratigraphic record of alluvial fans and deltas: Process controls on stratigraphic completeness
doi: [10.1002/JGRF.20061](https://doi.org/10.1002/JGRF.20061)

Werner et al., 2017

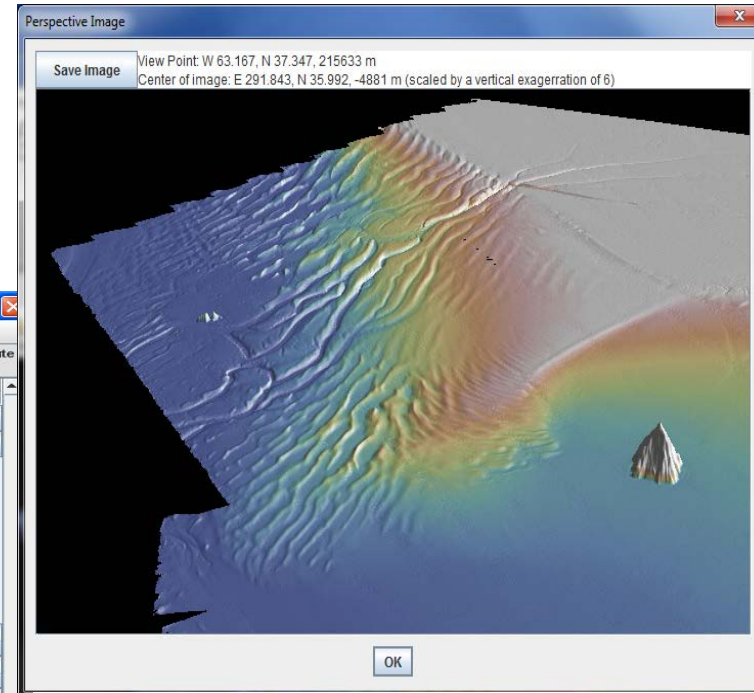
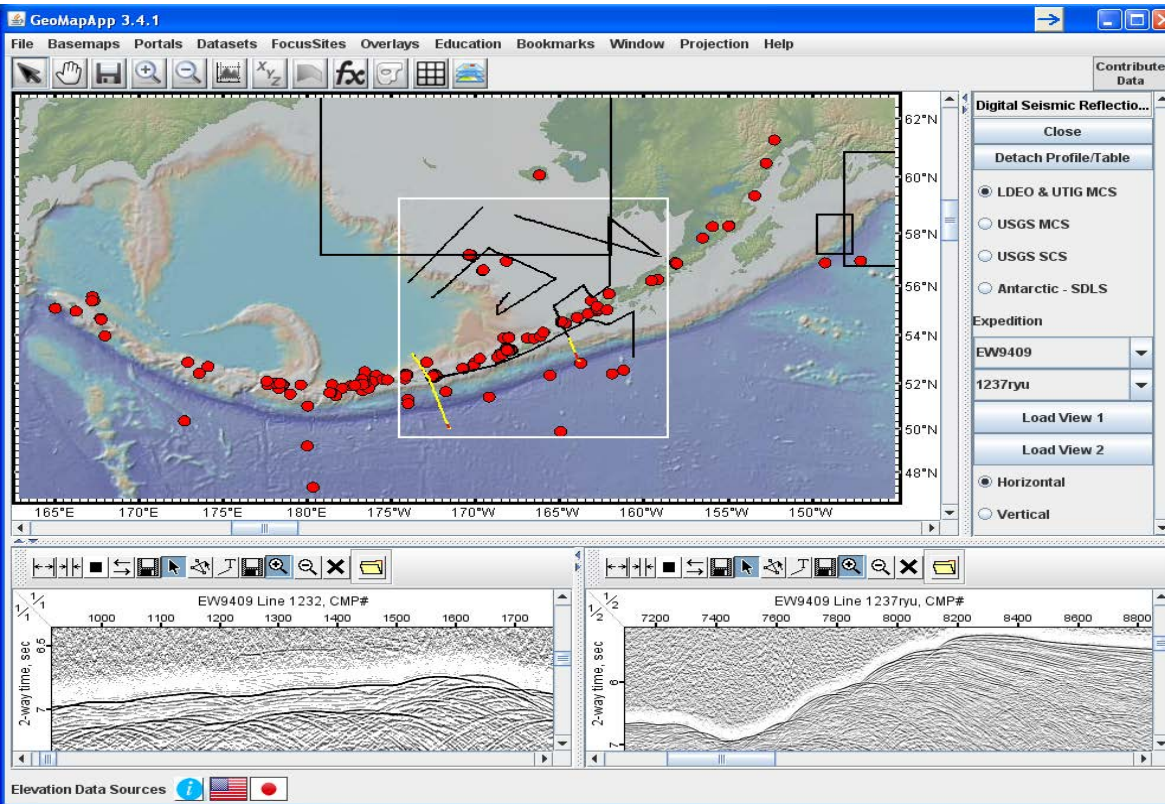
Related Data Sets

Magmatic degassing, lava dome extrusion, and explosions from Mount Cleveland volcano, Alaska, 2011-2015: Insight into the continuous nature of volcanic activity over multi-year timescales
doi: [10.1016/j.jvolgeores.2017.03.001](https://doi.org/10.1016/j.jvolgeores.2017.03.001)

**79 GeoPRISMS papers:
25 (32%) linked to data**

Access – GeoMapApp

- Support multi-disciplinary community access
- Access to relevant legacy and GP Program data sets



Perspective view across the ENAM Hatteras Outer Ridge

Aleutians legacy data: Processed multi-channel seismic profiles

GeoPRISMS Data: Cascadia – Geophysics

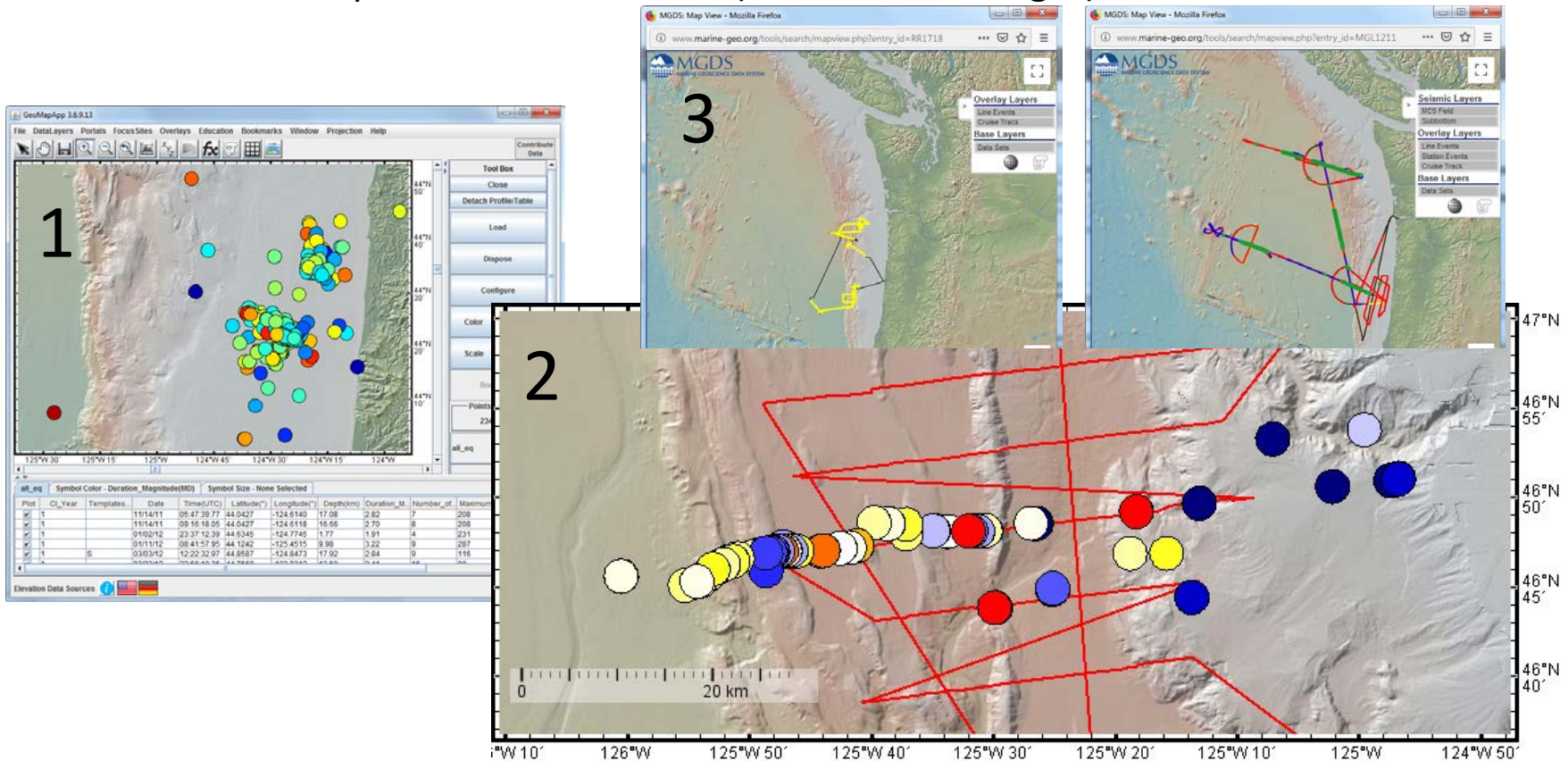
(1) Earthquake microseismicity catalogues from CI array – Morton, Bilek, Rowe

(2) Heat flow, CTD data – Johnson, Solomon, Harris, Salmi (AT26-04)

(3) Multi-channel Seismic/OBS data – COAST (Holbrook et al), MGL1211 (Carbotte/Canales), RR1718 (Tominaga et al)

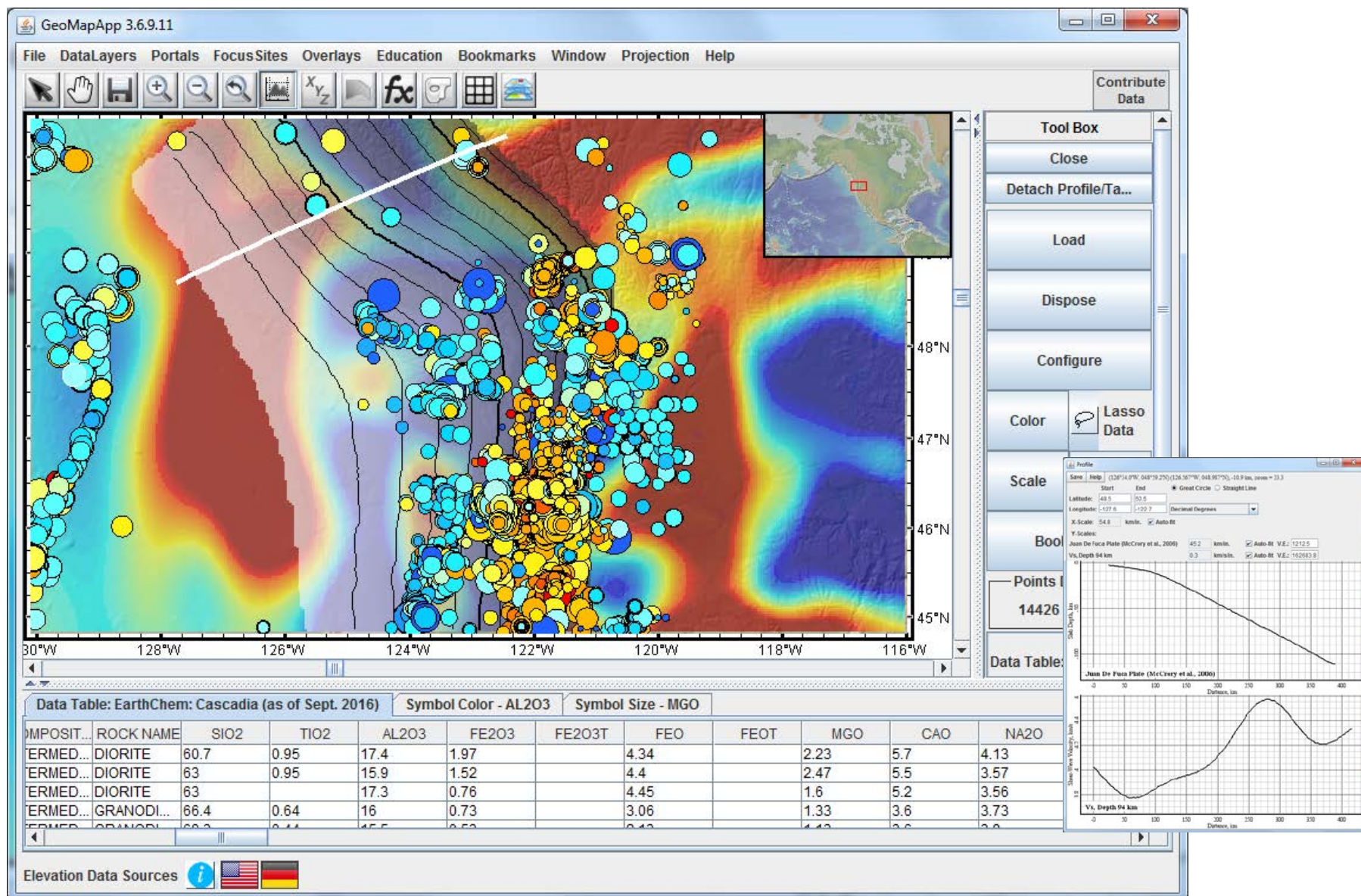
OBS-derived Seismic receiver functions – Janiszewski, Gaherty, Abers

CHIRP sub-bottom profiler data – TN265 (Romsos, Goldfinger)



GeoPRISMS Data: Cascadia – Geophysics

Ambient wave seismic tomography – Gao and Chen



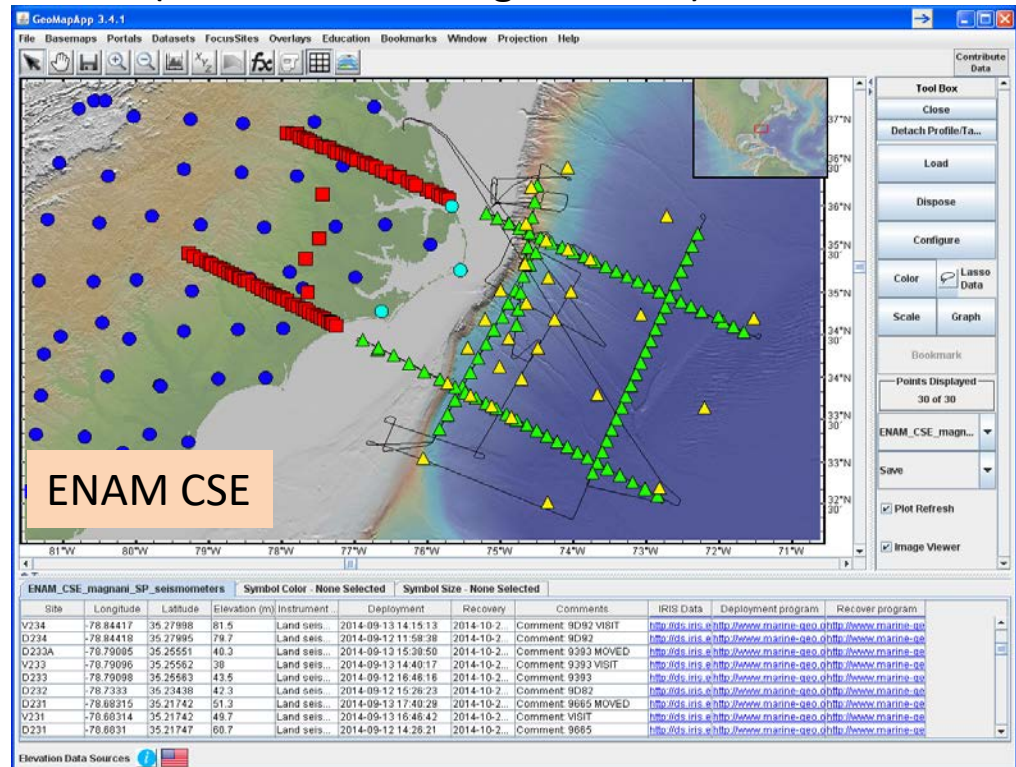
GeoPRISMS Data: ENAM – Geophysics

Hydro-acoustic data (MGL1510) – Crone *et al.*

Sub-bottom profiler data (MGL1514) – Key, Evans

Multi-Channel Seismic reflection shot data,
seismic navigation, ship nav:

- MGL1405/MGL1510 New Jersey margin survey – Mountain *et al.*
- ENAM Community Seismic Experiment (MGL1408, Shillington *et al.*)
- Links to IRIS for OBS/onshore



GeoPRISMS Data: EARS – Geophysics

SEGMeNT Lake Malawi

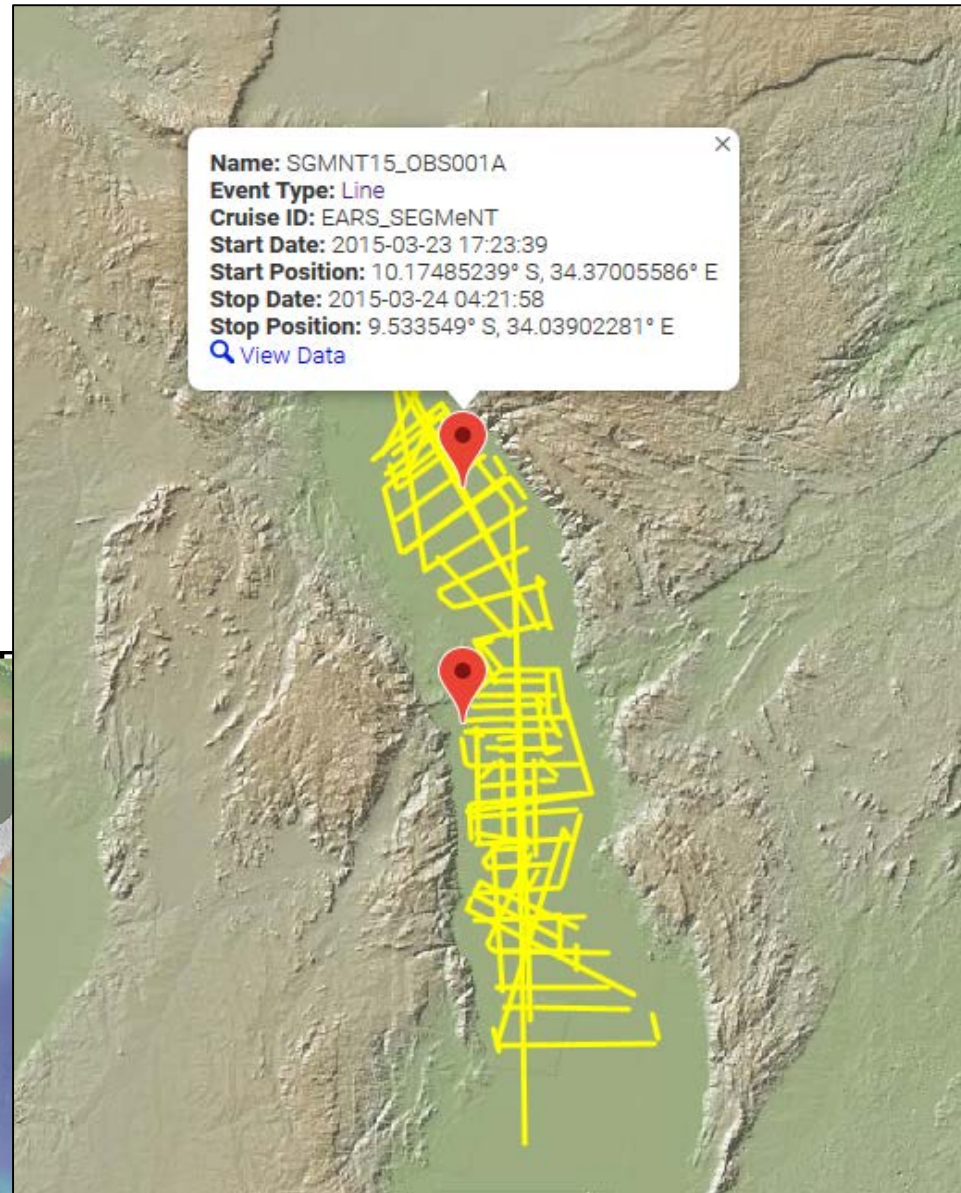
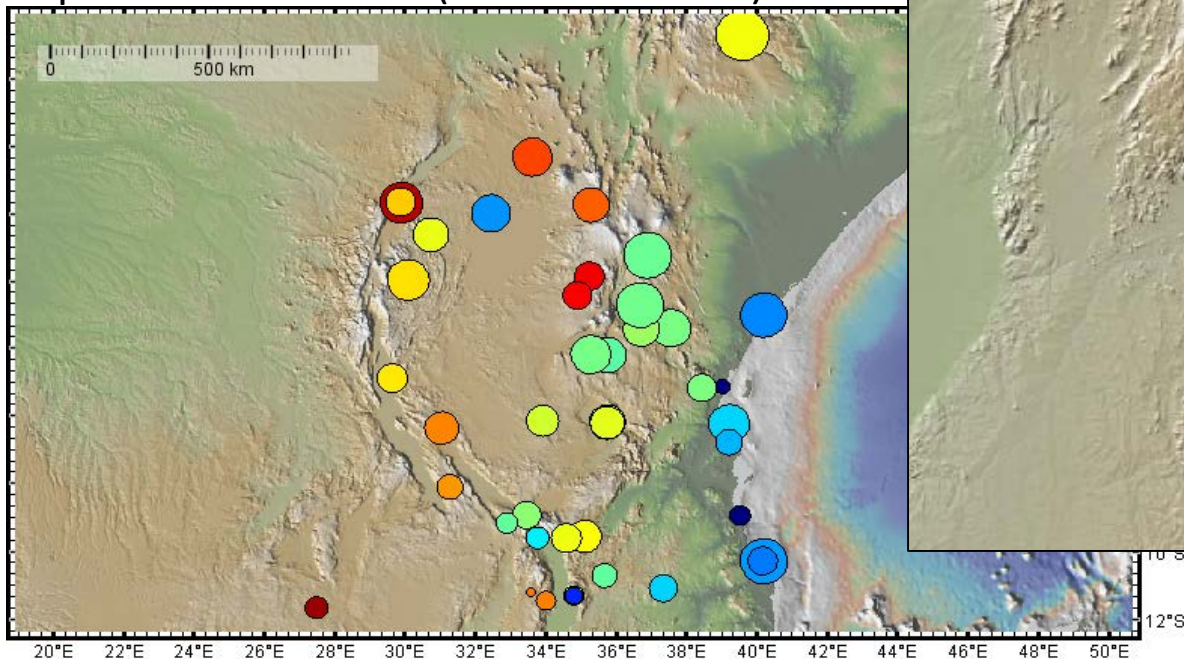
multi-channel seismic data –

Shillington *et al.*, 2015 survey.

Geodetic velocities – King, Floyd, et al

Total Magnetic Intensity (TMI) grids for
Malawi, Botswana (Atekwana *et al.*)

Electrical Resistivity Tomography (ERT)
profiles for Malawi (Atekwana *et al.*)



GeoPRISMS Data: New Zealand – Geophysics

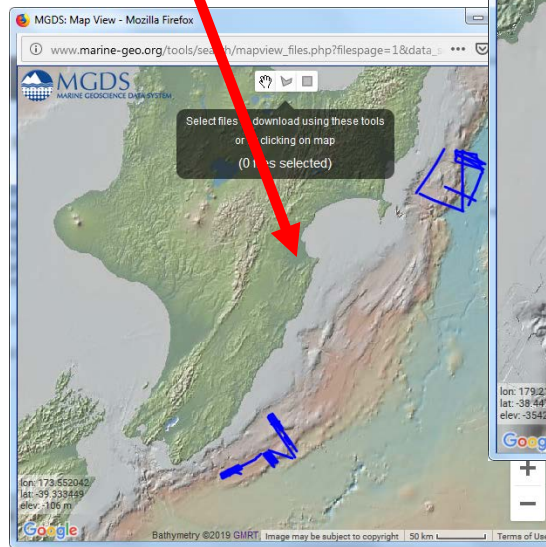
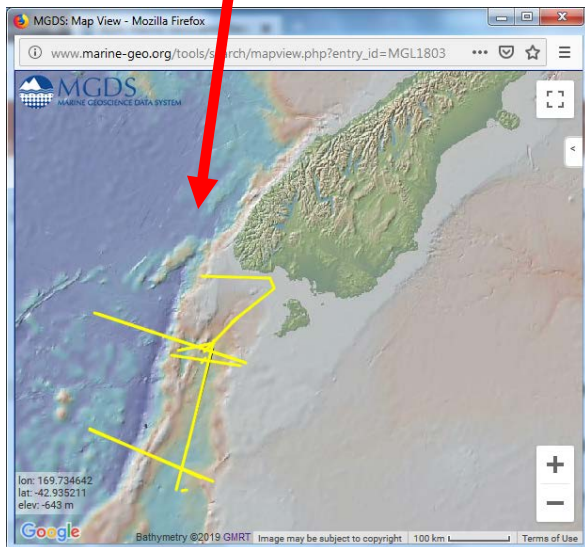
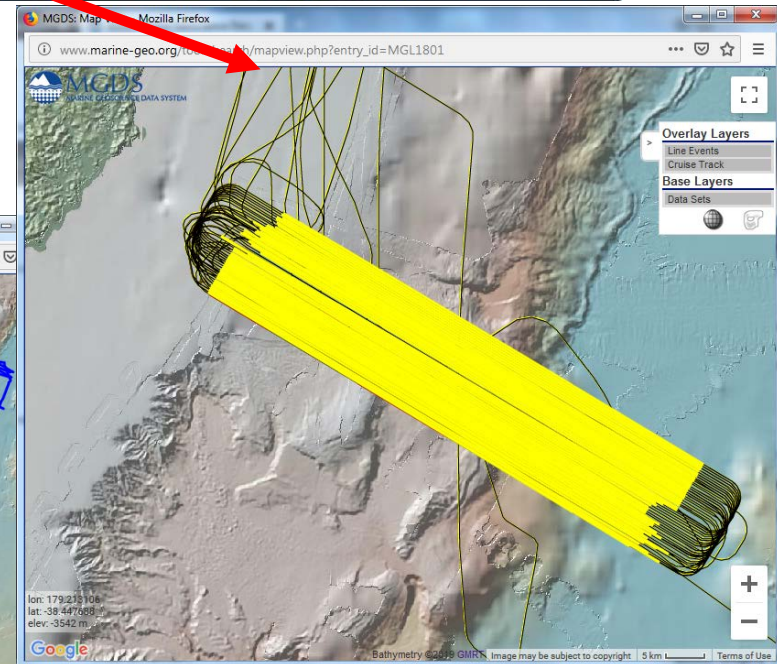
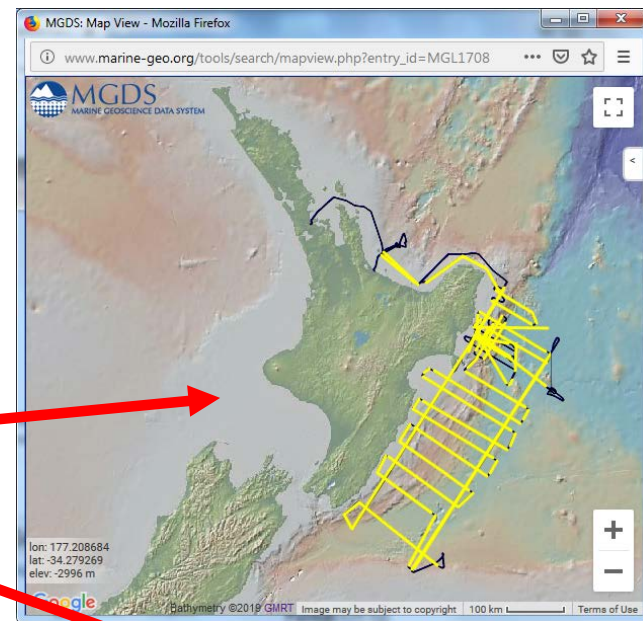
Multi-Channel Seismic reflection shot data,
seismic navigation, ship nav:

Hikurangi

- SHIRE (MGL1708, Bangs *et al.*)
- NZ 3-D (MGL1801, Bangs *et al.*)
- STINGS (RR1508, Harris, Trehu, Fisher)
+ heat flow

Puysegur – MRC

- SISIE (MGL1803, Gurnis *et al.*)



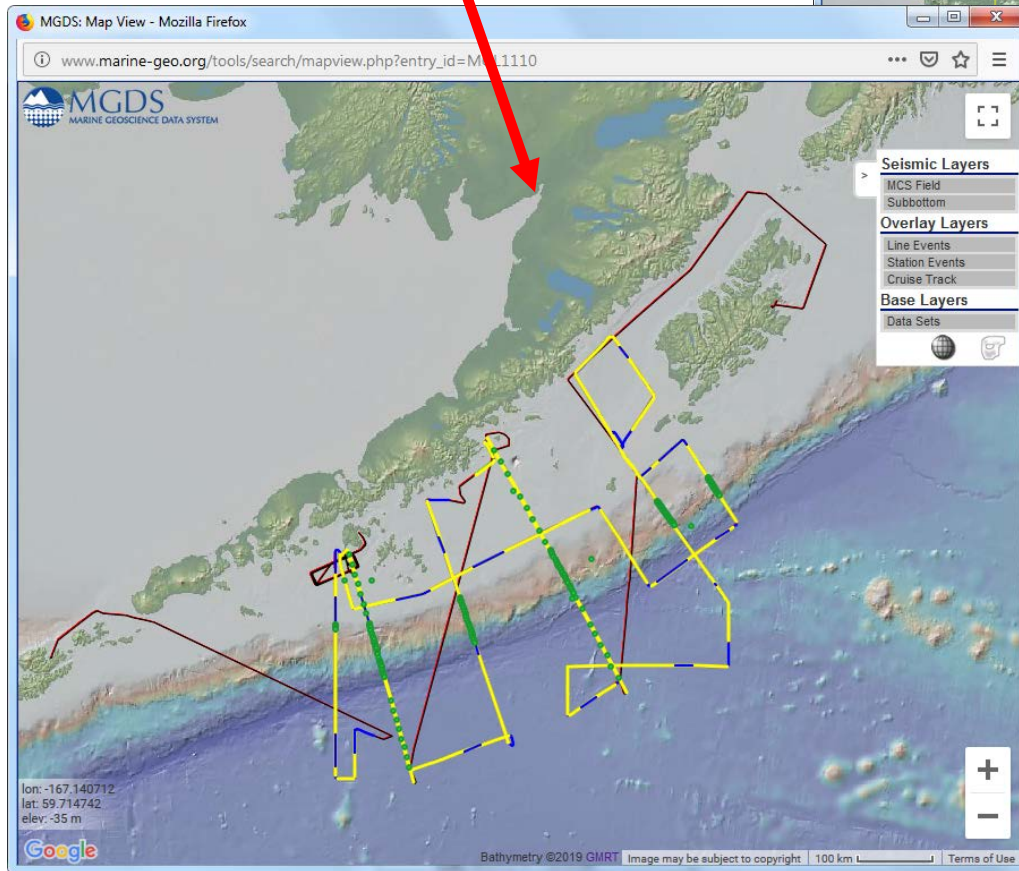
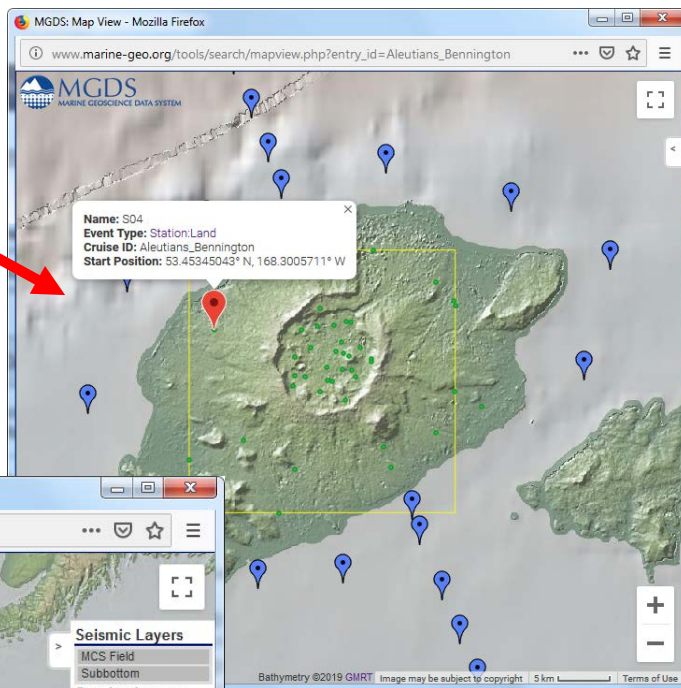
HOBITSS RR1509 u/w geophysics
– Wallace *et al.*

GeoPRISMS Data: Alaska/Aleutians – Geophysics

Magneto-telluric (MT) data (Key, Bennington)

MGL1110 – Multi-Channel Seismic reflection shot and nav data, XCTD, XSV, multibeam data (Shillington *et al.*)

Links to IRIS



GeoPRISMS Data: Alaska/Aleutians – Geochemistry

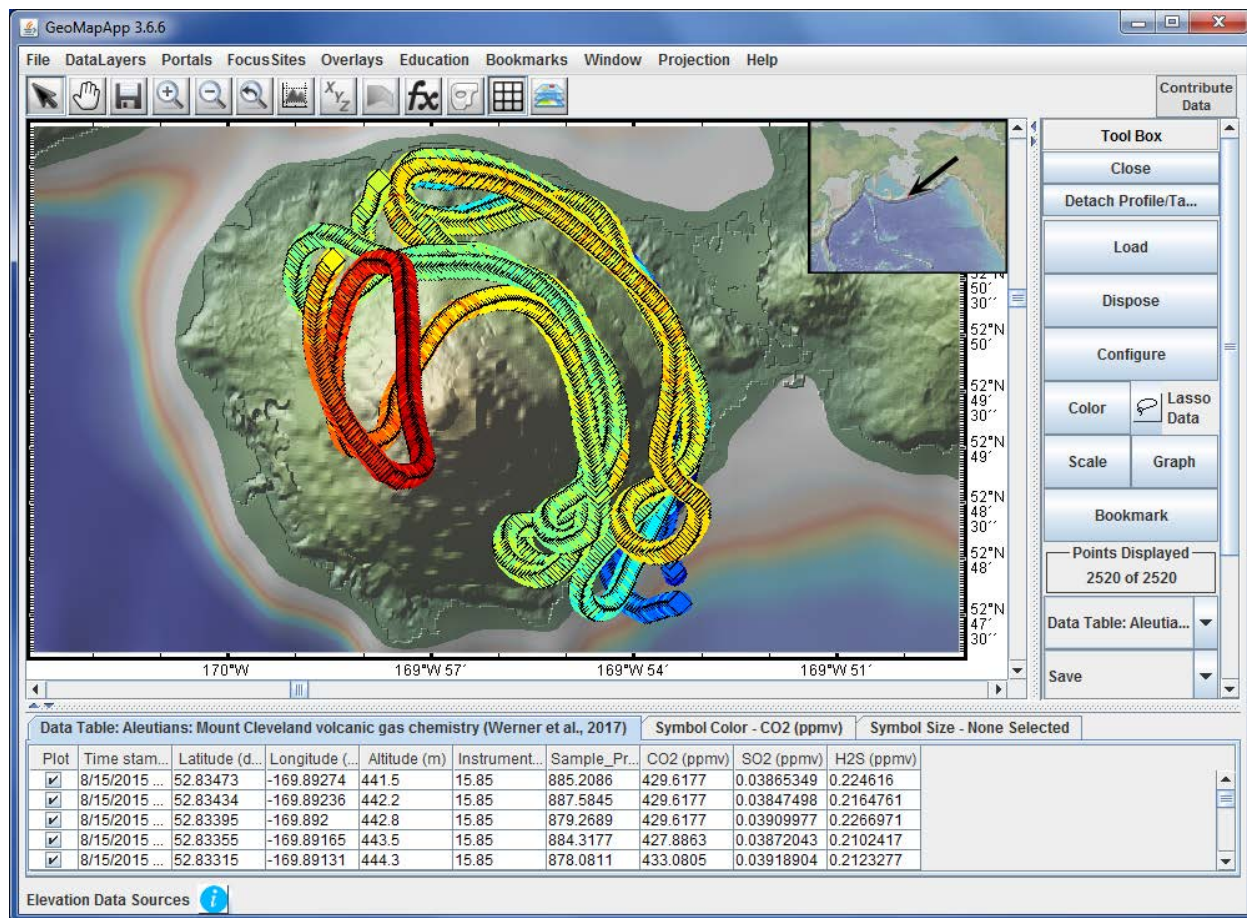
Fluid chemistry – Taryn Lopez

Rock geochemistry – Kelemen *et al.*

Mt Cleveland volcanic trace gas chemistry – Werner, Roman, Plank

EarthChem database updated with high-priority Aleutian Arc data from > 60 publications

Helicopter flight path, colors show CO₂ concentration (red = high)



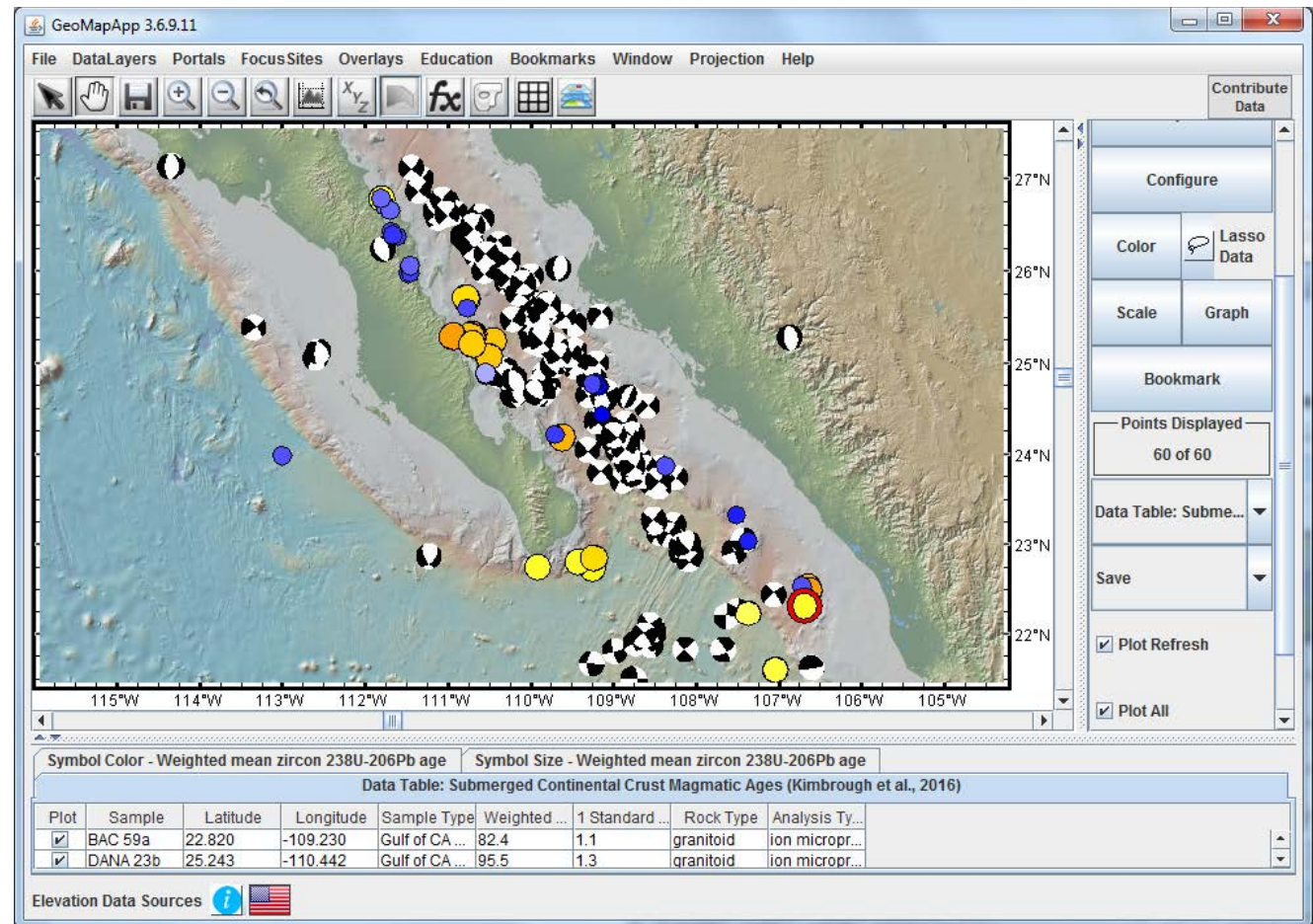
GeoPRISMS Data: Non-Focus Site Geochemistry, experimental

Multi-cycle carbon sediment chemistry (Alaska, NZ, Cascadia) – Blair, Childress

Fluvial system sediment tank experimental modelling – Straub

Rock physical properties experimental modelling – den Hartog

Geochronology data, Gulf of California – Kimbrough, Grove, Lonsdale



GeoPRISMS Data Catalog: Current status

Number of individual research awards so far: 118 (3 others for Office)

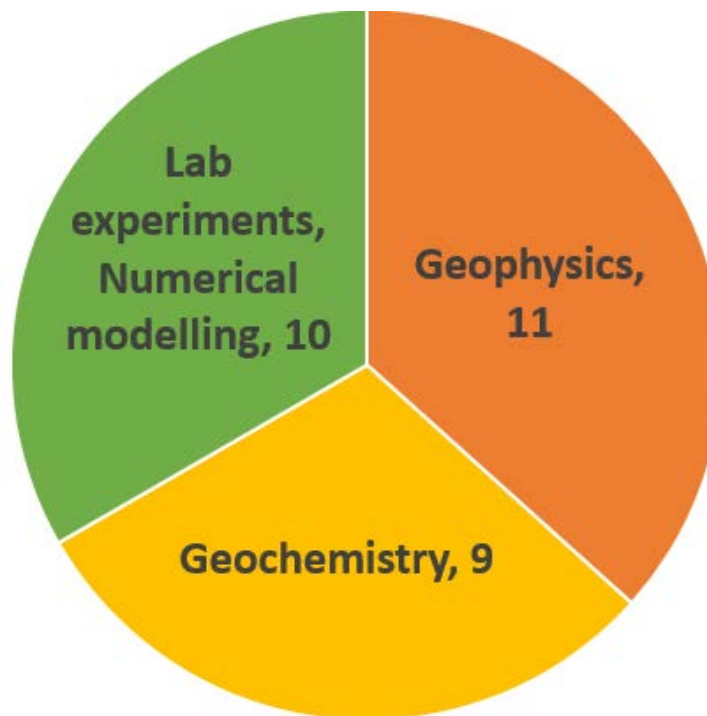
Number of expired awards: 62

Number of expired awards with data records (one or more) inventoried in GeoPRISMS Data Catalog: 32 (= 52%)

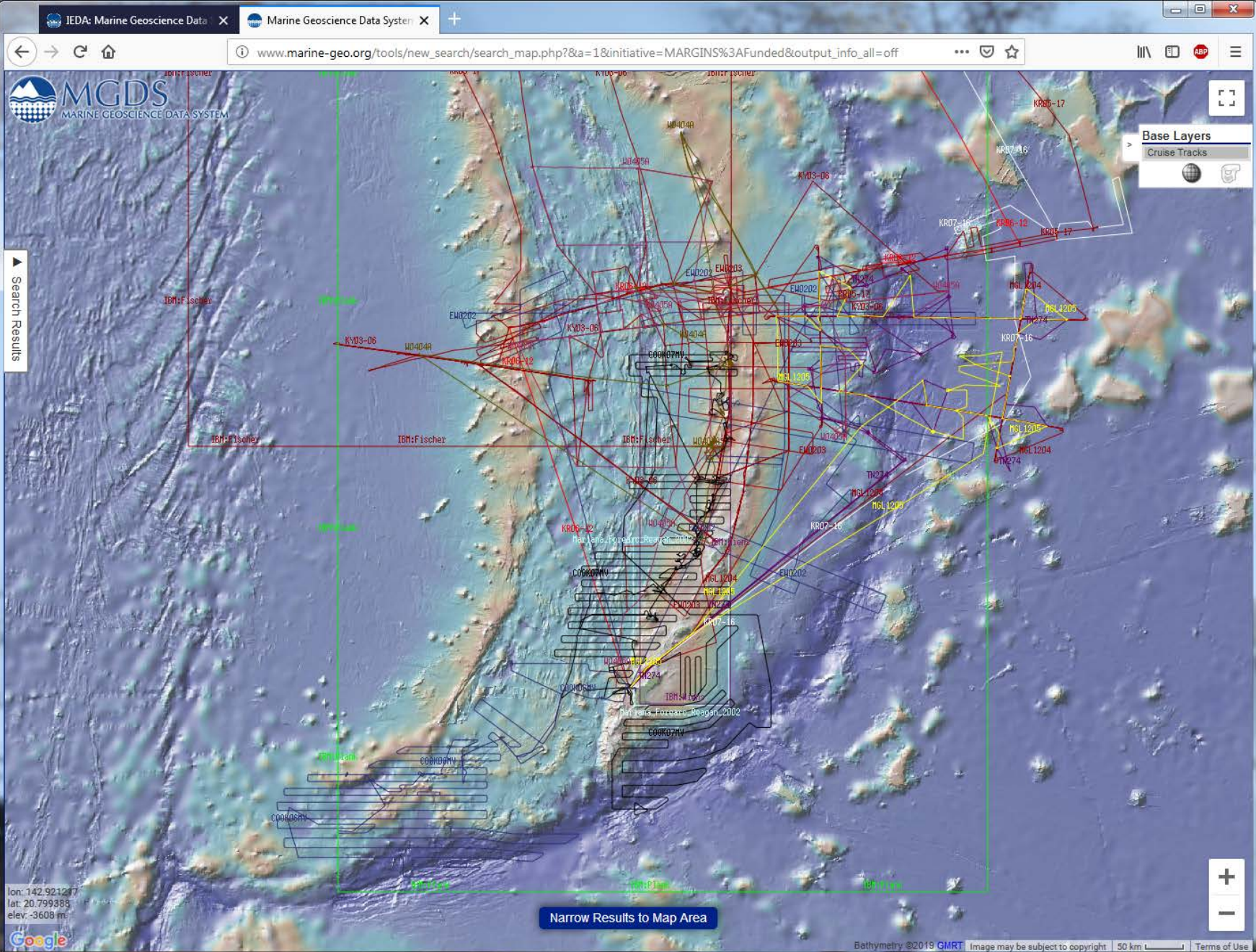
Number of active awards with data records in the GP Data Portal: 2

Number of expired awards with no Data Portal links to data:

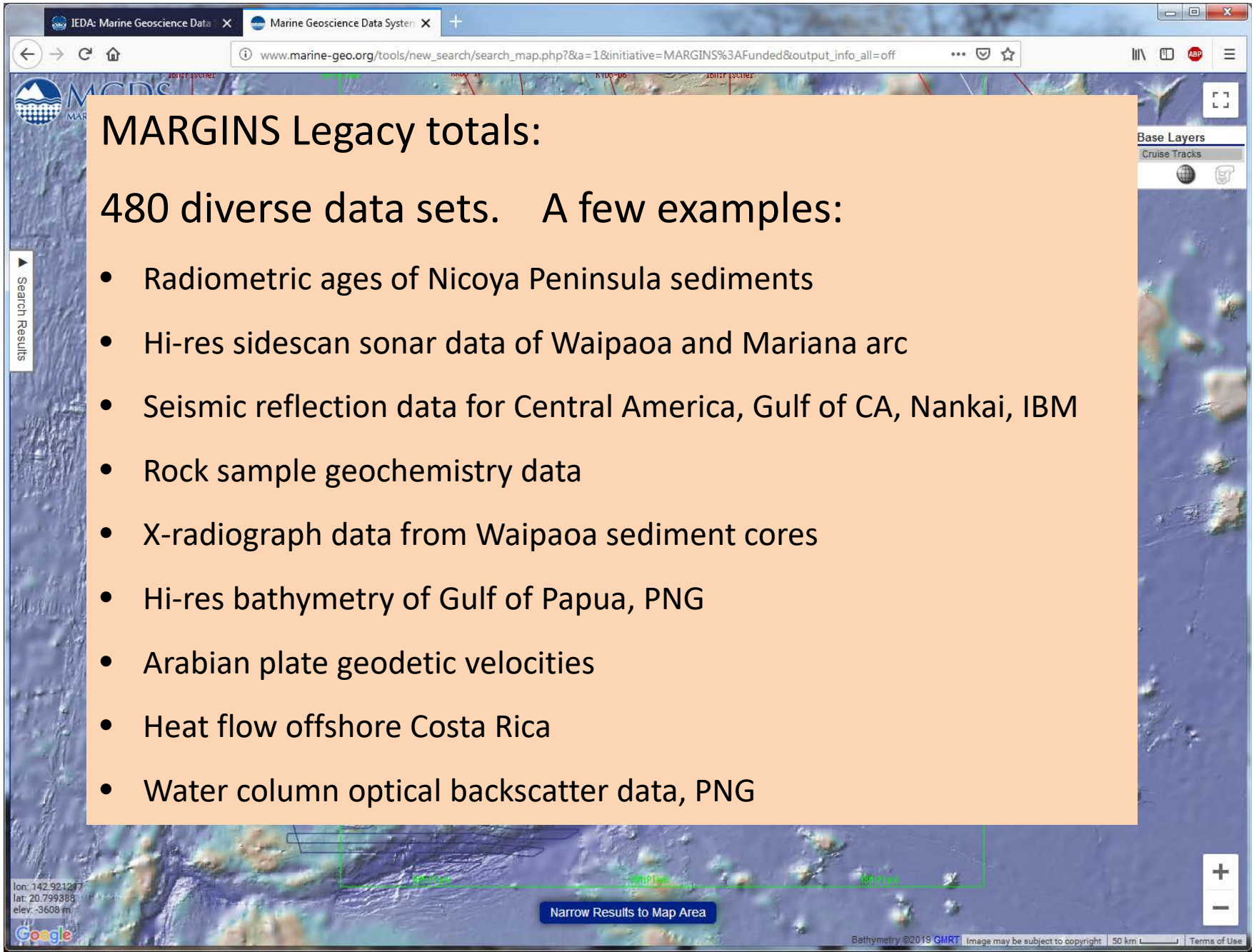
~170 Data sets inventoried



MARGINS Legacy Data



MARGINS Legacy Data



The image is a screenshot of a web browser displaying the MARGINS Legacy Data website. The browser's address bar shows the URL: www.marine-geo.org/tools/new_search/search_map.php?&a=1&initiative=MARGINS%3AFunded&output_info_all=off. The page features a bathymetric map of the ocean floor with various data layers overlaid. A large orange semi-transparent box is overlaid on the map, containing the text "MARGINS Legacy totals: 480 diverse data sets. A few examples:" followed by a bulleted list of data sets. The list includes: Radiometric ages of Nicoya Peninsula sediments; Hi-res sidescan sonar data of Waipaoa and Mariana arc; Seismic reflection data for Central America, Gulf of CA, Nankai, IBM; Rock sample geochemistry data; X-radiograph data from Waipaoa sediment cores; Hi-res bathymetry of Gulf of Papua, PNG; Arabian plate geodetic velocities; Heat flow offshore Costa Rica; and Water column optical backscatter data, PNG. The website interface includes a search bar on the left, a "Base Layers" and "Cruise Tracks" panel on the right, and a "Narrow Results to Map Area" button at the bottom. The Google logo is visible in the bottom left corner, and the text "Bathymetry ©2019 GMRT" is in the bottom right corner.

MARGINS Legacy totals:
480 diverse data sets. A few examples:

- Radiometric ages of Nicoya Peninsula sediments
- Hi-res sidescan sonar data of Waipaoa and Mariana arc
- Seismic reflection data for Central America, Gulf of CA, Nankai, IBM
- Rock sample geochemistry data
- X-radiograph data from Waipaoa sediment cores
- Hi-res bathymetry of Gulf of Papua, PNG
- Arabian plate geodetic velocities
- Heat flow offshore Costa Rica
- Water column optical backscatter data, PNG

GeoPRISMS Data Catalog

Goals: Link every research award to data

**Build data resources to support GeoPRISMS
synthesis efforts.**

We need **your help** to identify and locate **missing** GeoPRISMS data sets and datasets needed for synthesis studies

Contact us at: info@marine-geo.org

