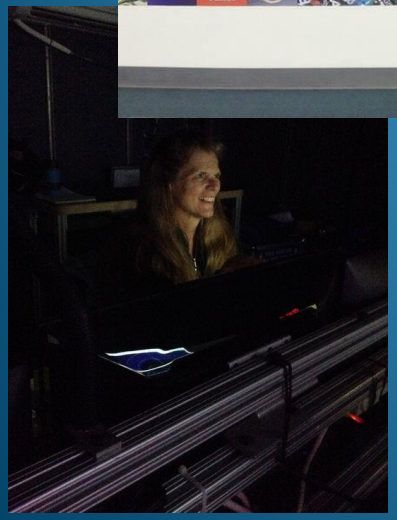
Welcome SMILE!

Mapping Hydrothermal Venting Ecosystems



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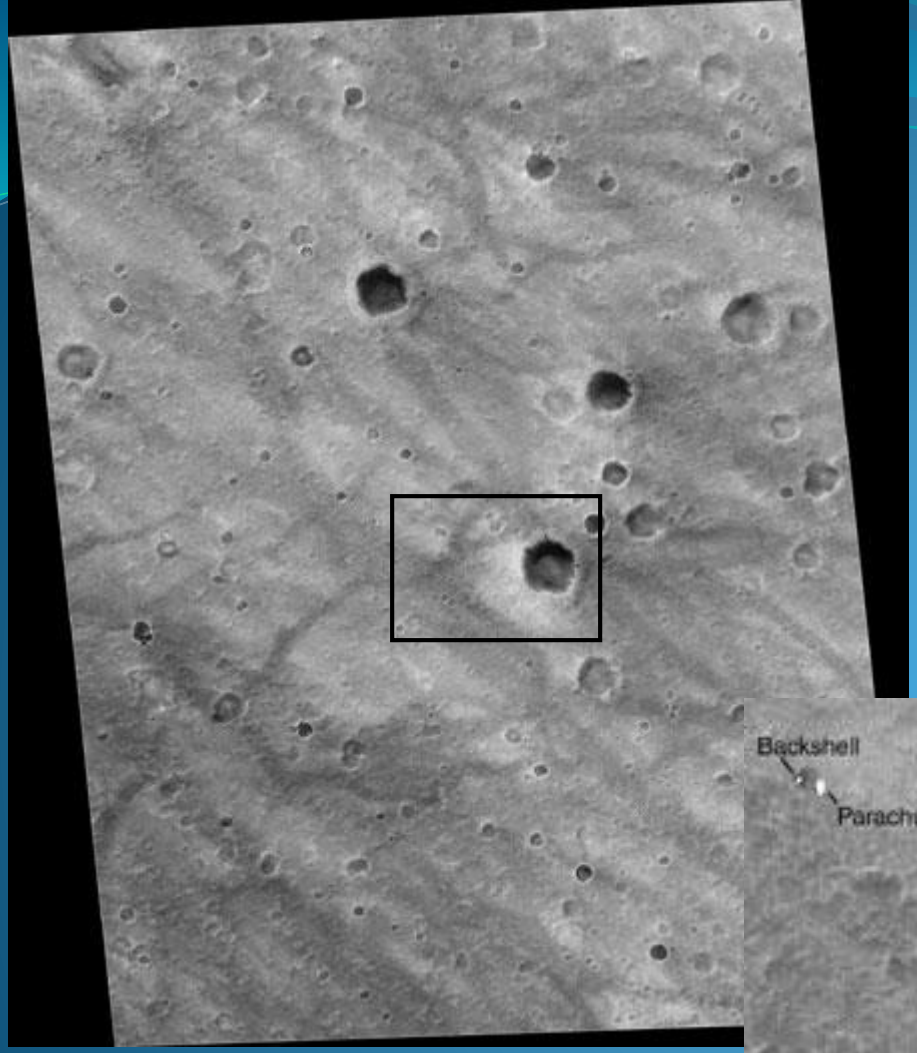
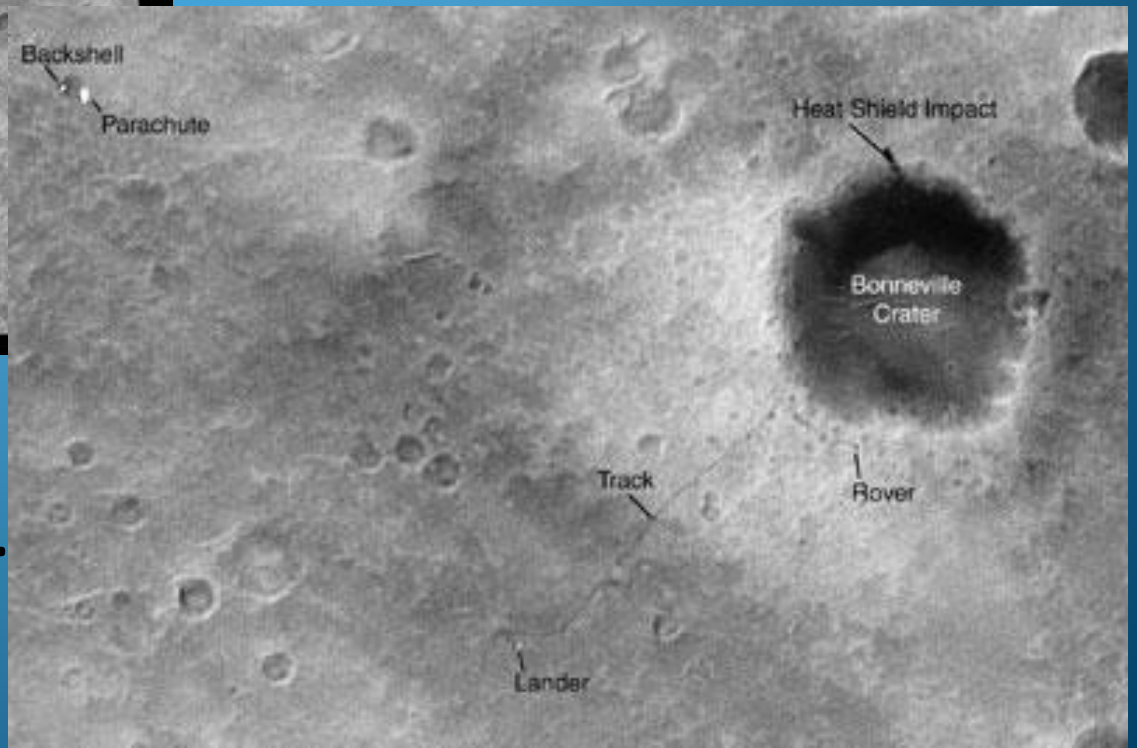


We have much better maps of other planets than of the ocean floor:

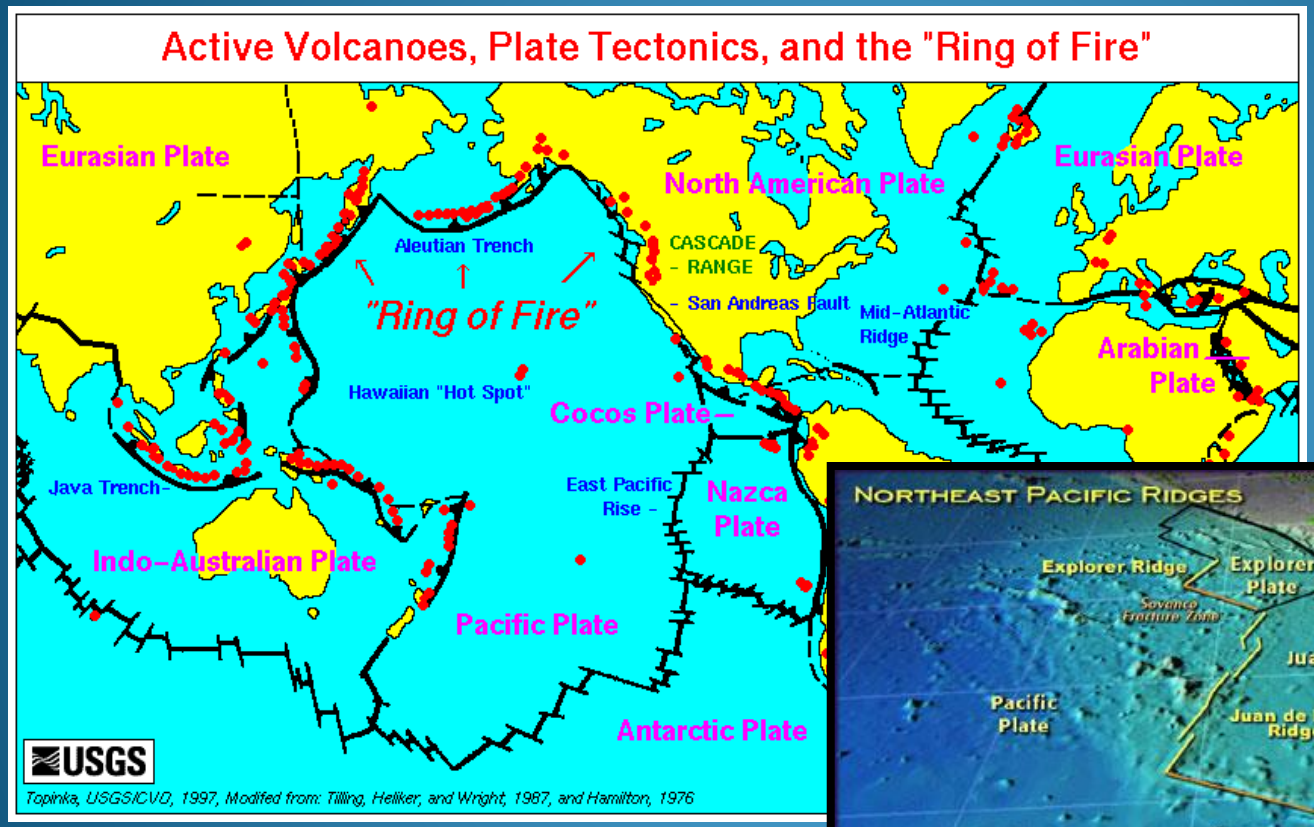
Only 5% of the seafloor is mapped in detail.

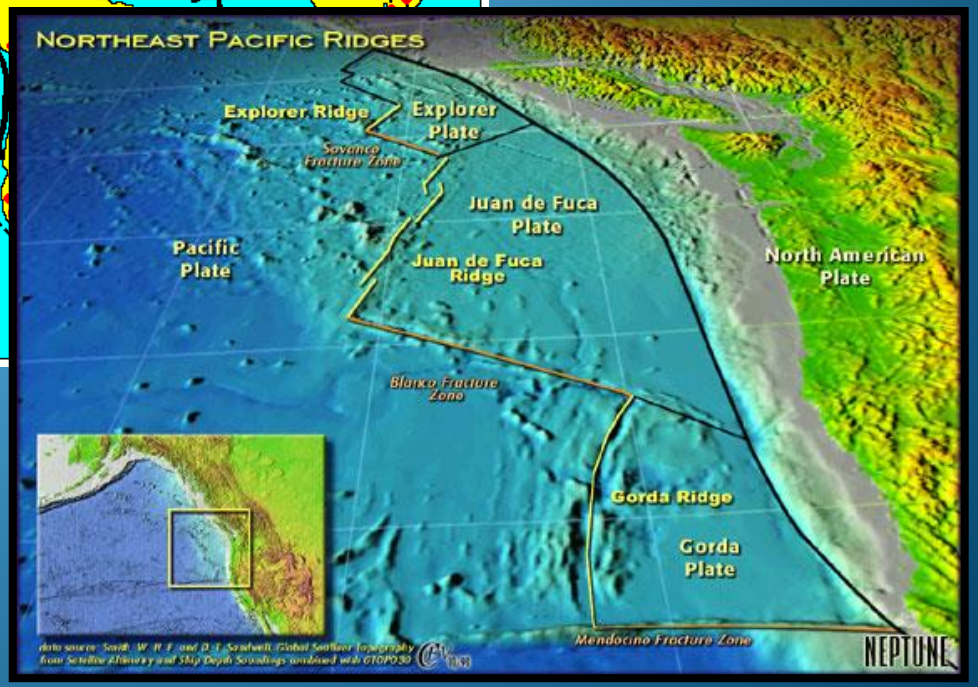


80% of the earth's volcanic activity occurs in the ocean.

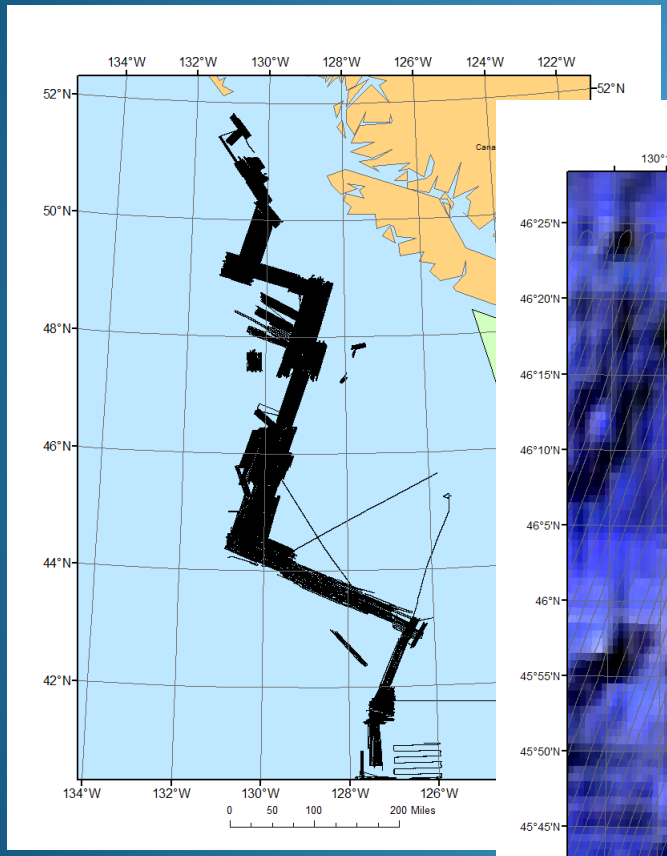
Where we work-

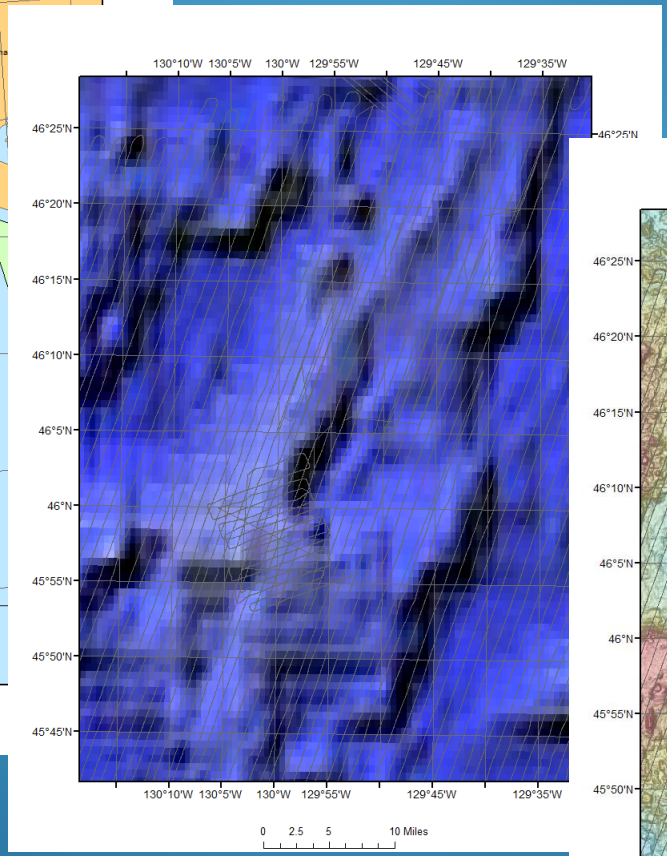
Hydrothermal Vents occur on seafloor spreading ridges

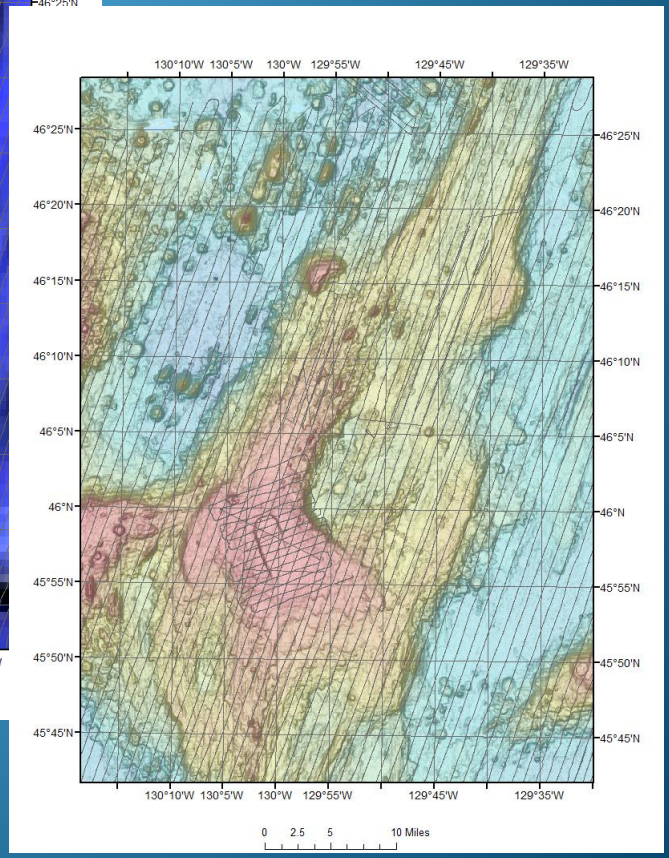




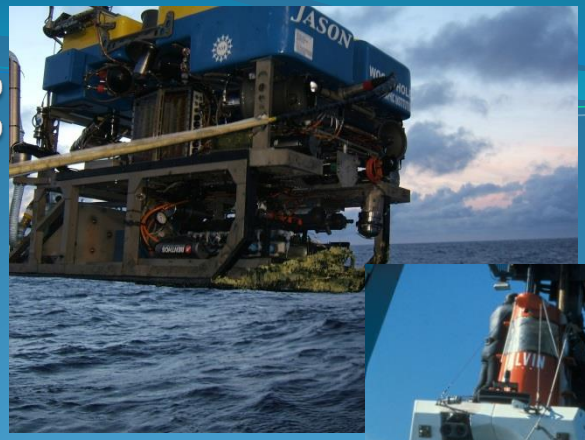
Bathymetric Mapping - first you need a map to know where to go explore!

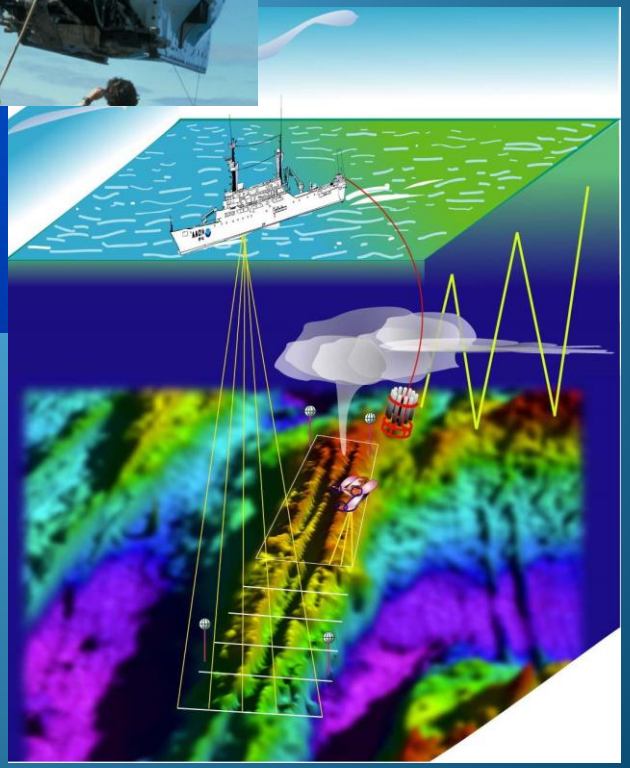


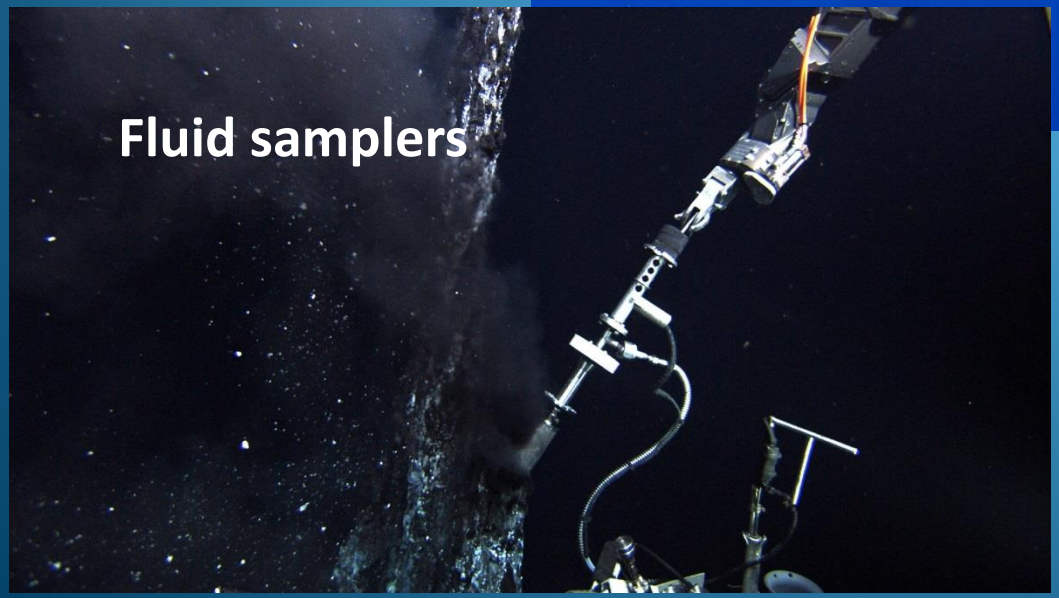




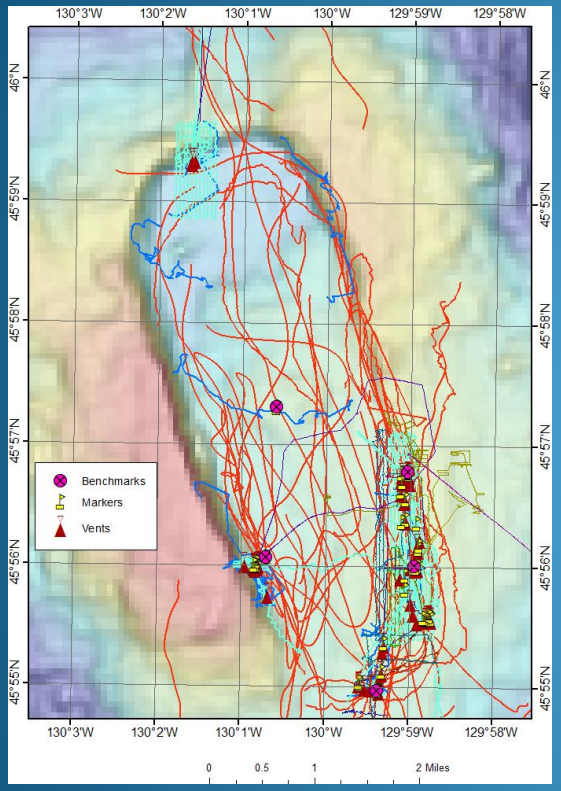
Today's tools:



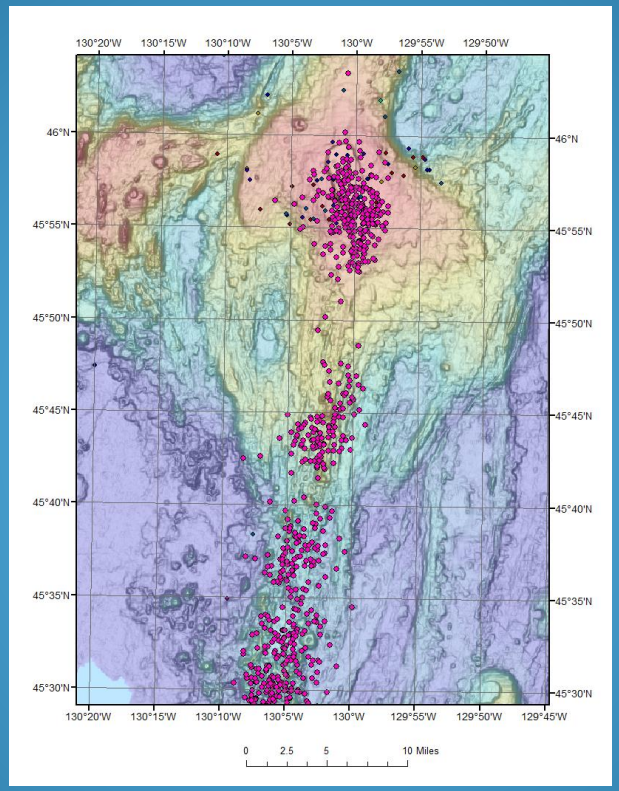




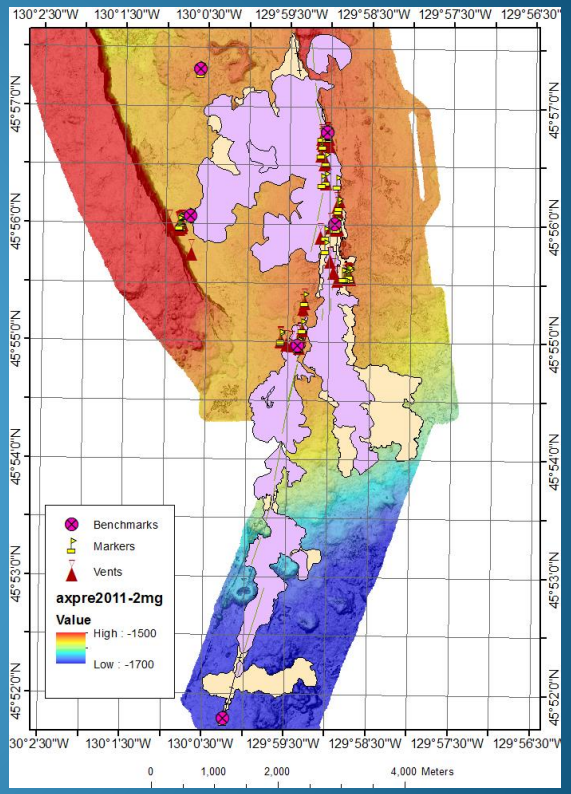
Using Maps-GIS on a deep-ocean volcano:



Vehicles find vents, take samples, put out markers, make observations.



Eruption at Axial!



Mapping out the lava flows (which devour instruments, markers and vents).

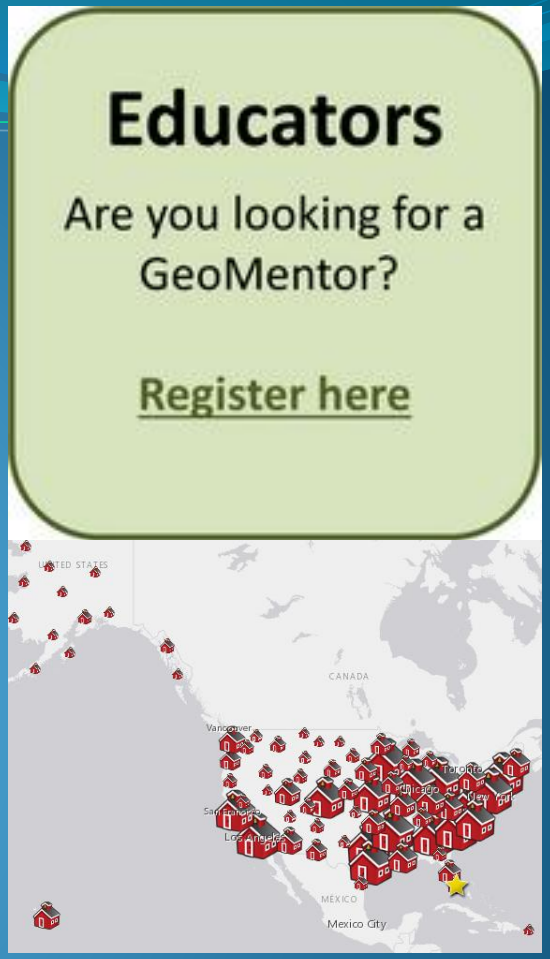
GIS used throughout the phases of exploration:

DATA INTEGRATION without layers of paper maps!

GIS analyst humor: “We don’t need navigation, I just want to go to the vent.”

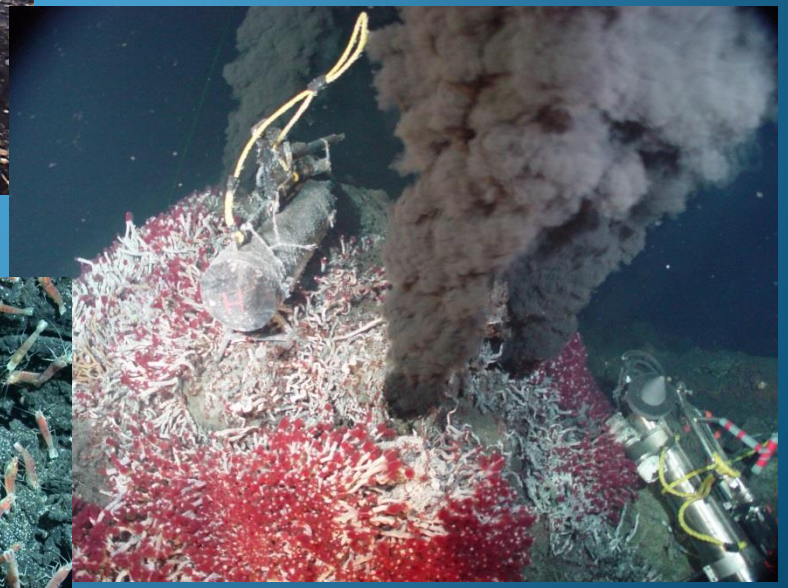
Resources for Educators:

ConnectED & GeoMentors (geomentors.net):
Network of GIS professionals to mentor your class – FREE!

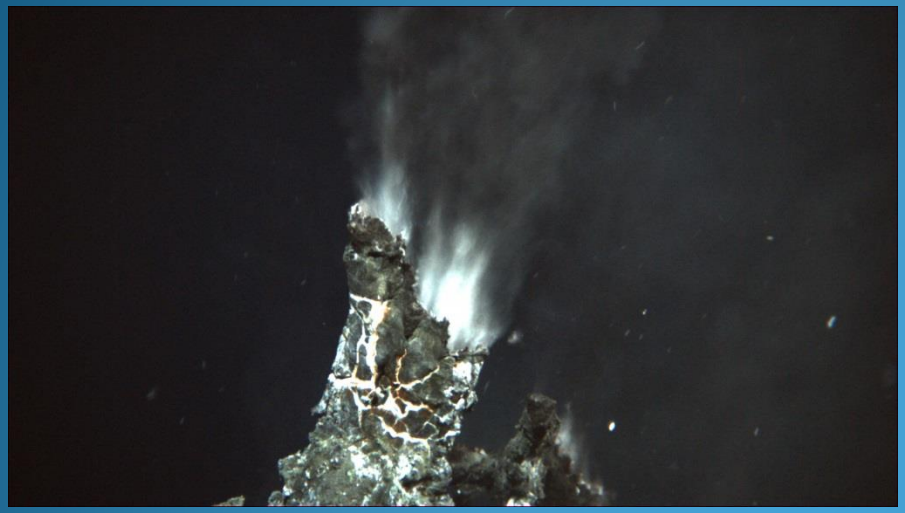


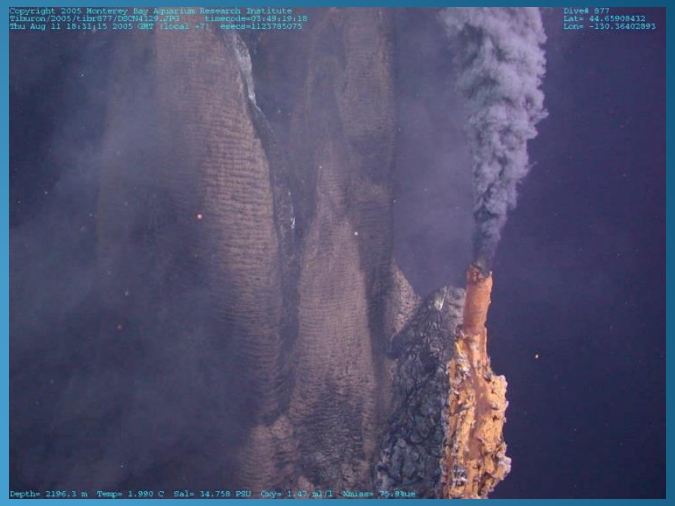
ESRI (GIS ArcMap software/resources):
(www.esri.com/en-us/industries/education/overview)
Kids can makeFREE!

Deep Sea Biology



Smokers




Copyright 2005 Monterey Bay Aquarium Research Institute
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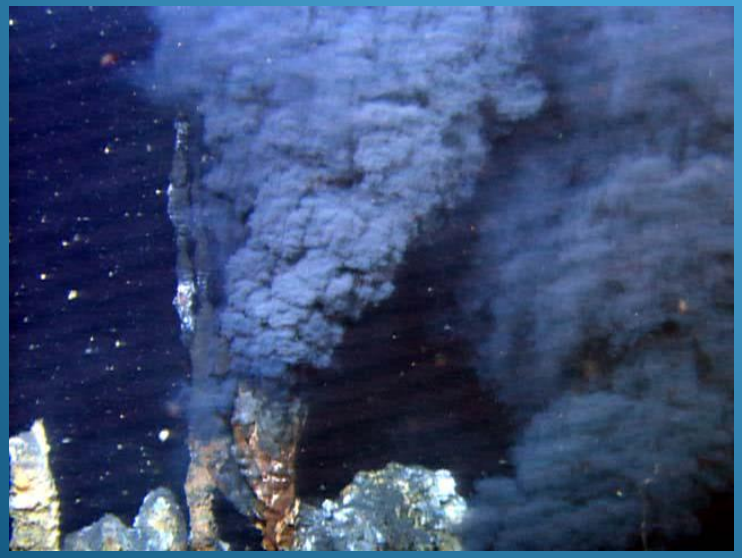
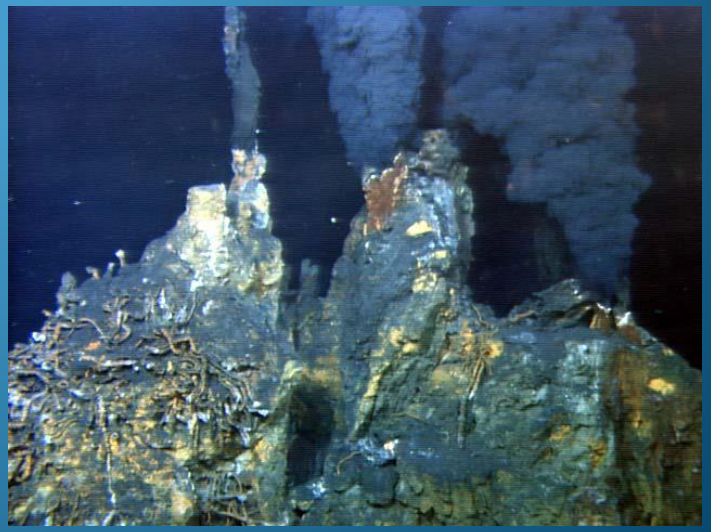
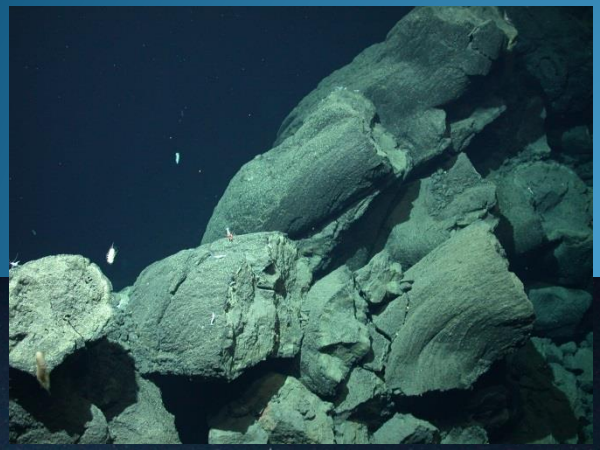
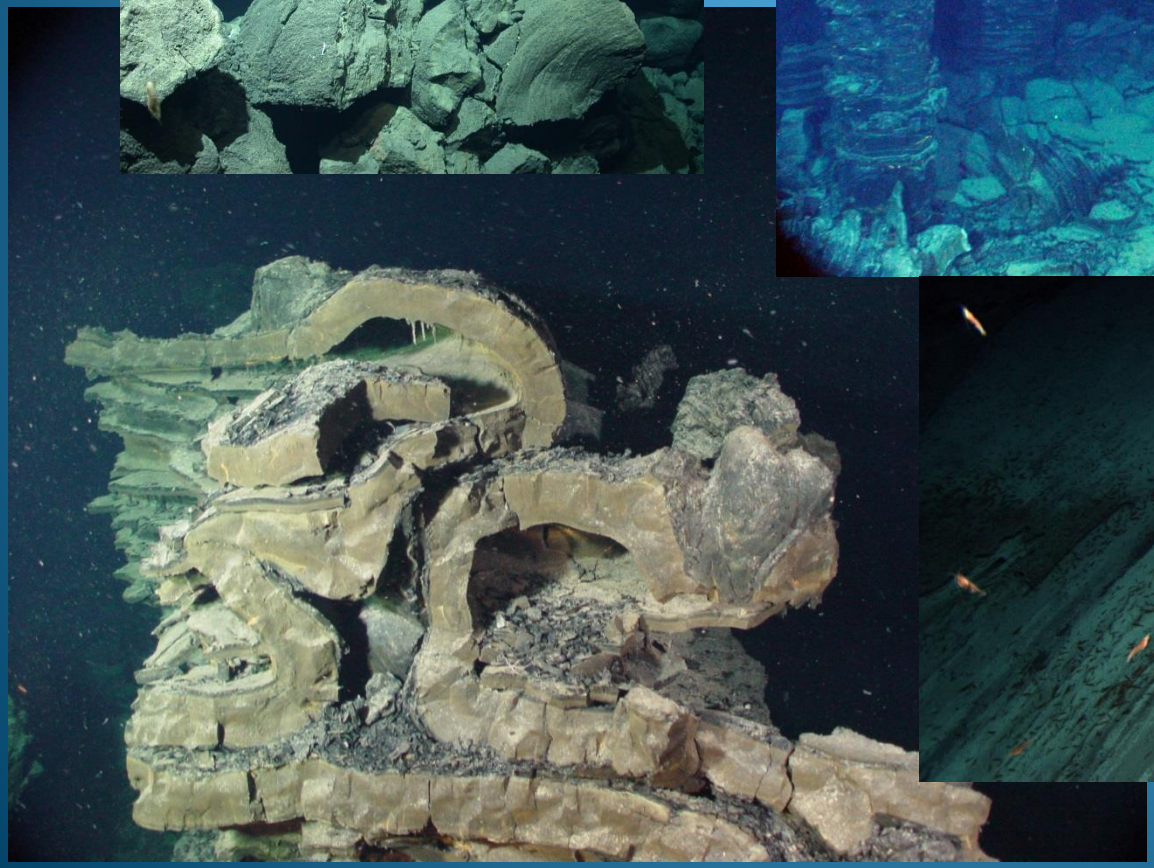
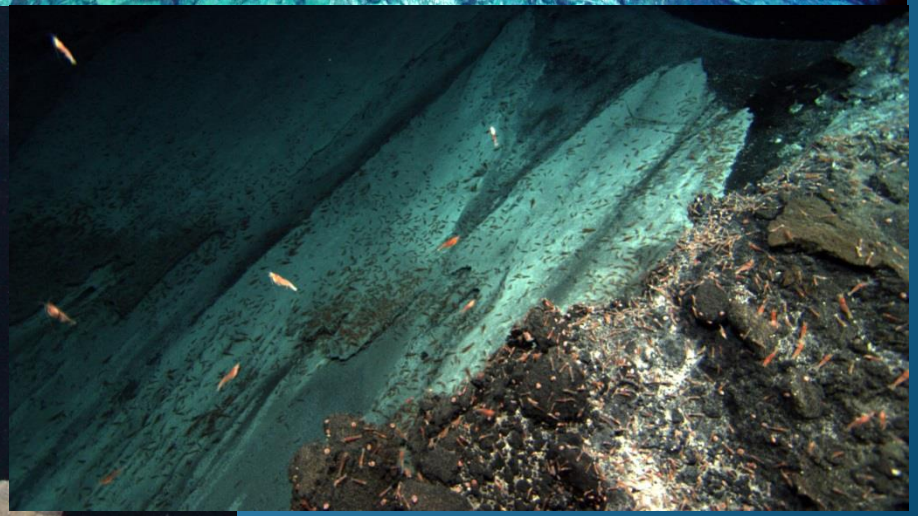




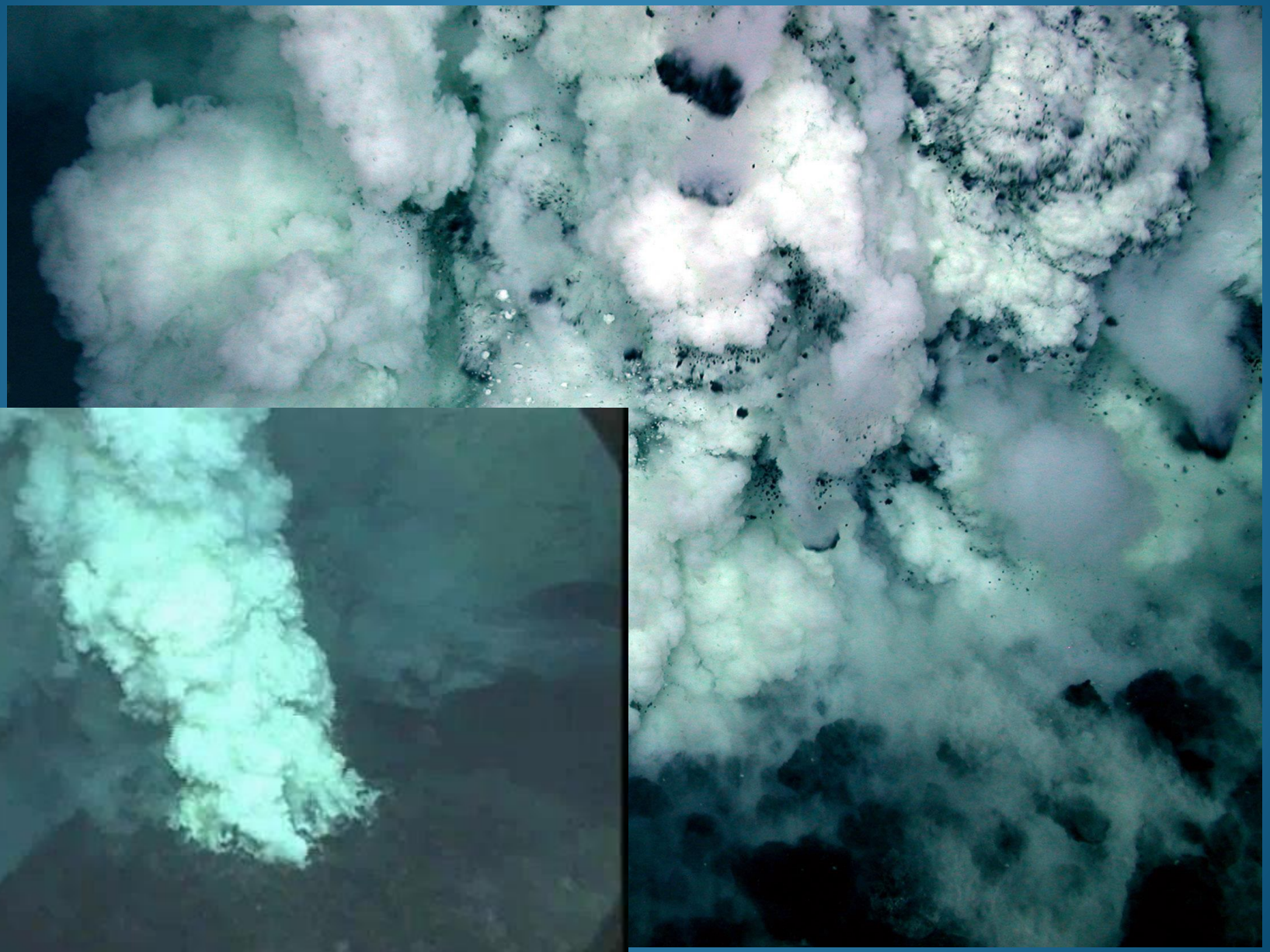
Geology







First real-time observed eruption: April, 2006



First sample of molten Submarine lava!
Jason ROV