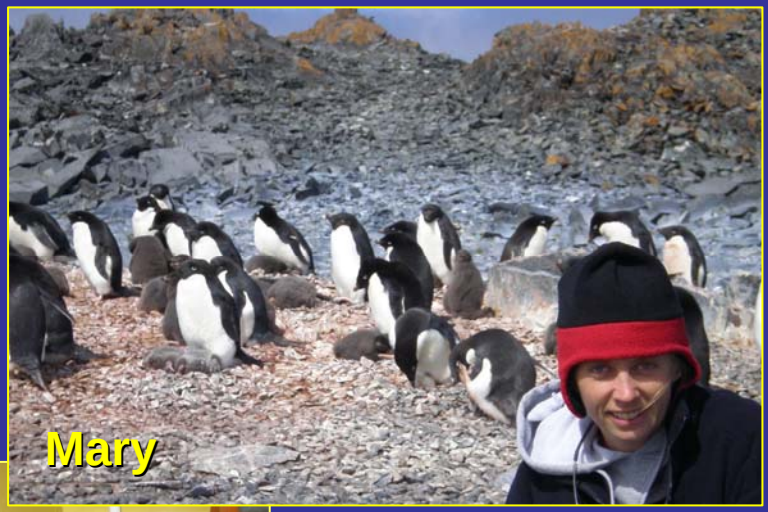


Welcome to GG101 DYNAMIC EARTH

Jenny Engels, POST 713B
956-8489, engels@hawaii.edu

01: MWF 11:30-12:20
03: TR 9:00-10:15
POST 723


Mary


Barkley

How I spend my time…


With Doug at Denali


June, 2005


December, 2006

How do you spend your time…?











…homework #1

Textbook options (GG101): ***"Essentials of Geology, 9e", Lutgens & Tarbuck***

UH Bookstore new:	**$91.80**
UH Bookstore used:	**$69.80**
www.safarix.com/0131497499 (150-day subscription)	**$49.20**

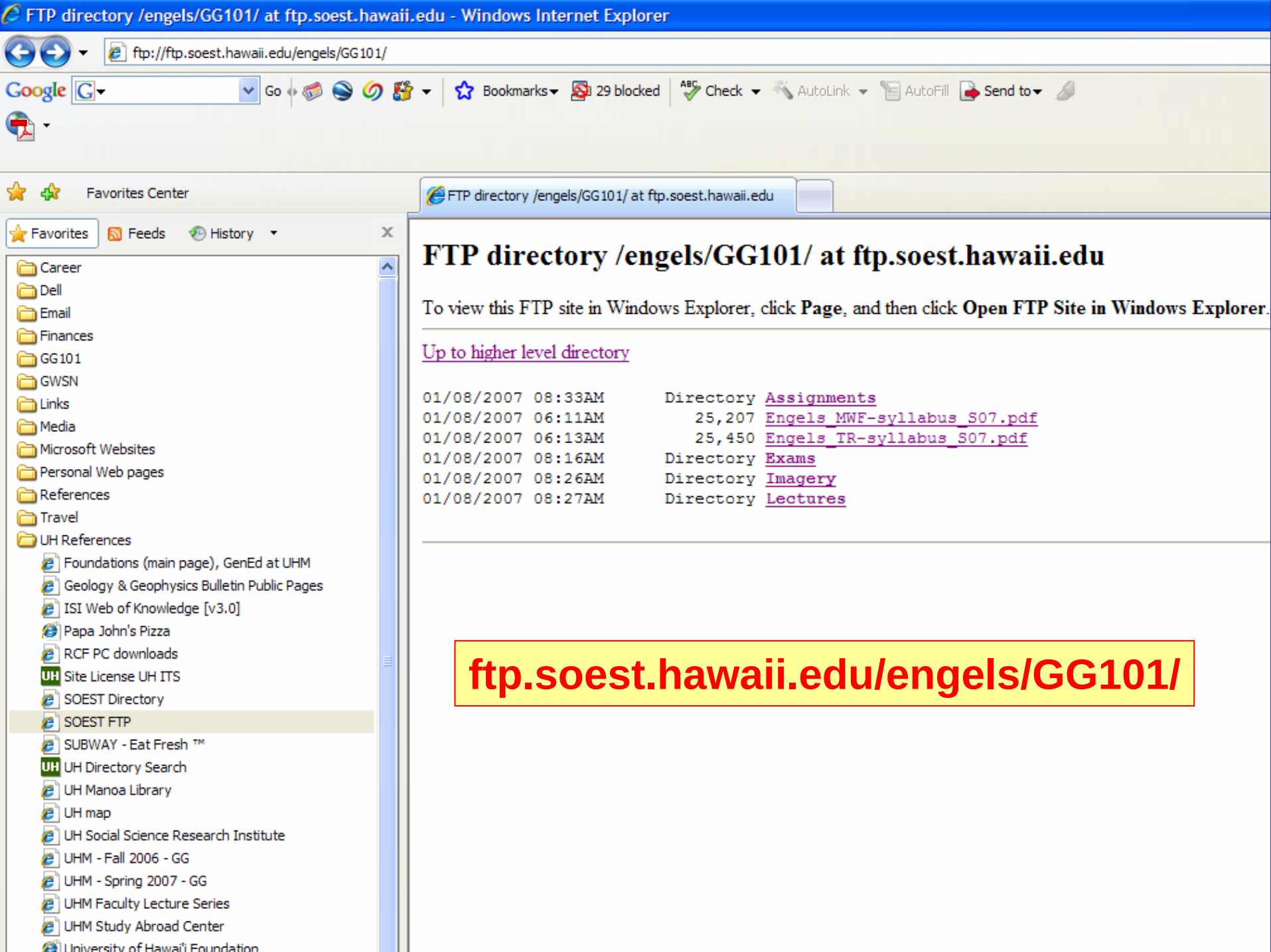
Lab workbook options (GG101L): ***"Laboratory Manual for Physical Geology, 4e", Jones***

UH Bookstore new:	**$76.35**
UH Bookstore used:	**$58.05**
G&G Department used: (POST 701, while supplies last)	**$40.00**

SCHEDULE

Week	Topic
1	Intro, Origin of solar system
2	Early Earth, Plate tectonics
3	Plate tectonics, Minerals
4	Minerals, Exam I review
Feb 1 & 2	Exam I
5	Igneous rocks
6	Volcanoes, Weathering
7	Sedimentary rocks
8	Metamorphic rocks, Exam II review
Mar. 1 & 2	Exam II
Mar. 2-4	*BIG ISLAND FIELD TRIP!*
9	Relative & radiometric dating
10	Geologic time scale
11	Folds and faults, mountain building
Mar. 26-30	*SPRING BREAK!*
12	Earthquakes, Exam III review
Apr. 9 & 10	Exam III
13	Groundwater, Surface water
14	Glaciers, paleoclimatology
15	Global warming
16	Coastal processes, coastal management
May 8 & 11	Final Exam

Grading:	#	% final grade
Exams (I, II, III, Final)	4	60%
In-class activities/homework	15	40%
Optional extra credit report	1	up to 5%


FTP directory /engels/GG101/ at ftp.soest.hawaii.edu - Windows Internet Explorer
ftp://ftp.soest.hawaii.edu/engels/GG101/
Favorites Center
FTP directory /engels/GG101/ at ftp.soest.hawaii.edu
Favorites
Feeds
History
Career
Dell
Email
Finances
GG101
GWSN
Links
Media
Microsoft Websites
Personal Web pages
References
Travel
UH References
Foundations (main page), GenEd at UHM
Geology & Geophysics Bulletin Public Pages
ISI Web of Knowledge [v3.0]
Papa John's Pizza
RCF PC downloads
Site License UH ITS
SOEST Directory
SOEST FTP
SUBWAY - Eat Fresh ™
UH Directory Search
UH Manoa Library
UH map
UH Social Science Research Institute
UHM - Fall 2006 - GG
UHM - Spring 2007 - GG
UHM Faculty Lecture Series
UHM Study Abroad Center
FTP directory /engels/GG101/ at ftp.soest.hawaii.edu
To view this FTP site in Windows Explorer, click Page, and then click Open FTP Site in Windows Explorer.
Up to higher level directory
01/08/2007 08:33AM Directory Assignments
01/08/2007 06:11AM 25,207 Engels_MWF-syllabus_S07.pdf
01/08/2007 06:13AM 25,450 Engels_TR-syllabus_S07.pdf
01/08/2007 08:16AM Directory Exams
01/08/2007 08:26AM Directory Imagery
01/08/2007 08:27AM Directory Lectures
ftp.soest.hawaii.edu/engels/GG101/

Field trips: Big Island Field Trip March 2-4



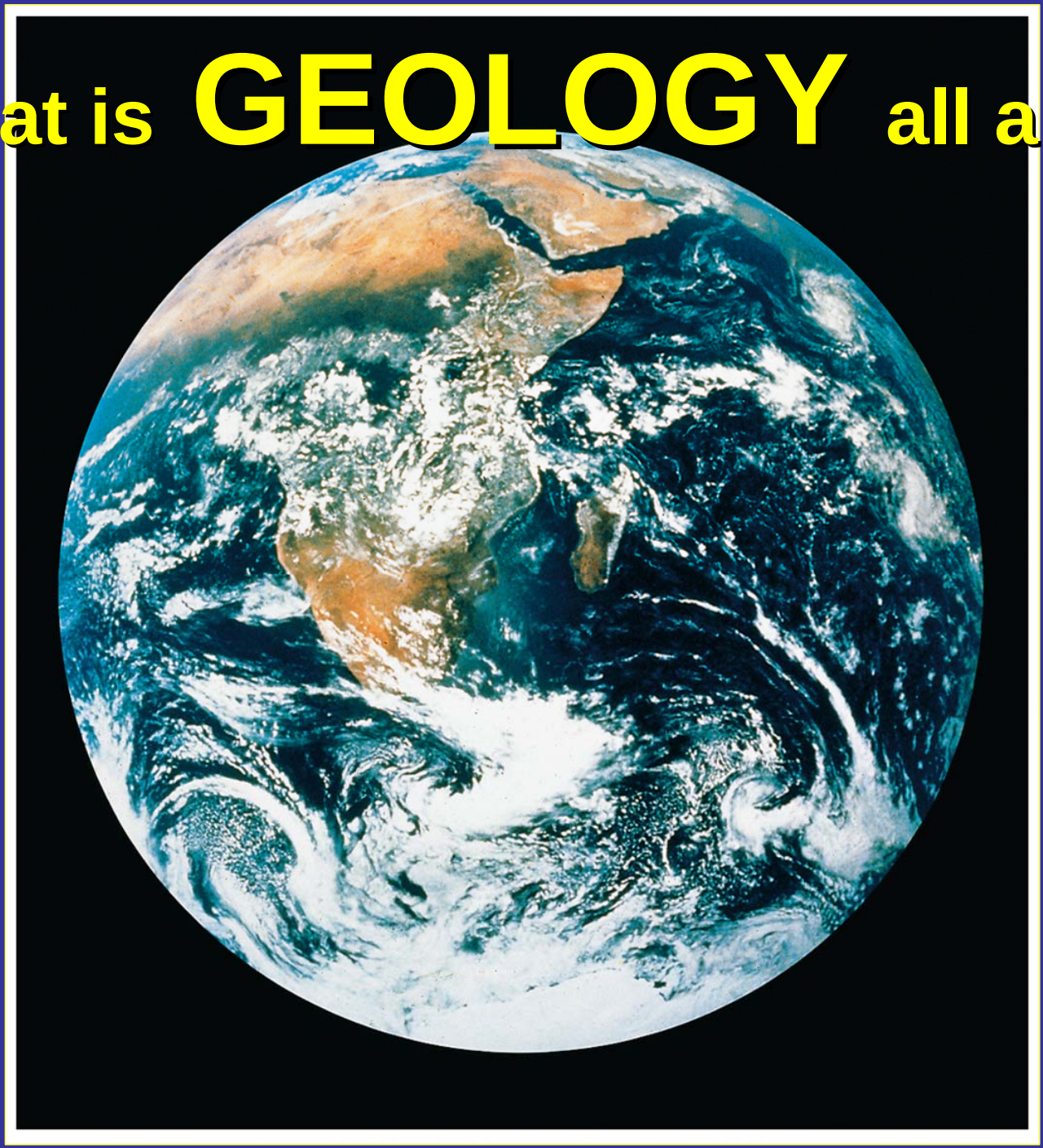






UH's R/V Kilo Moana

so what is GEOLOGY all about?



GEOLOGY



Geo – “Earth”

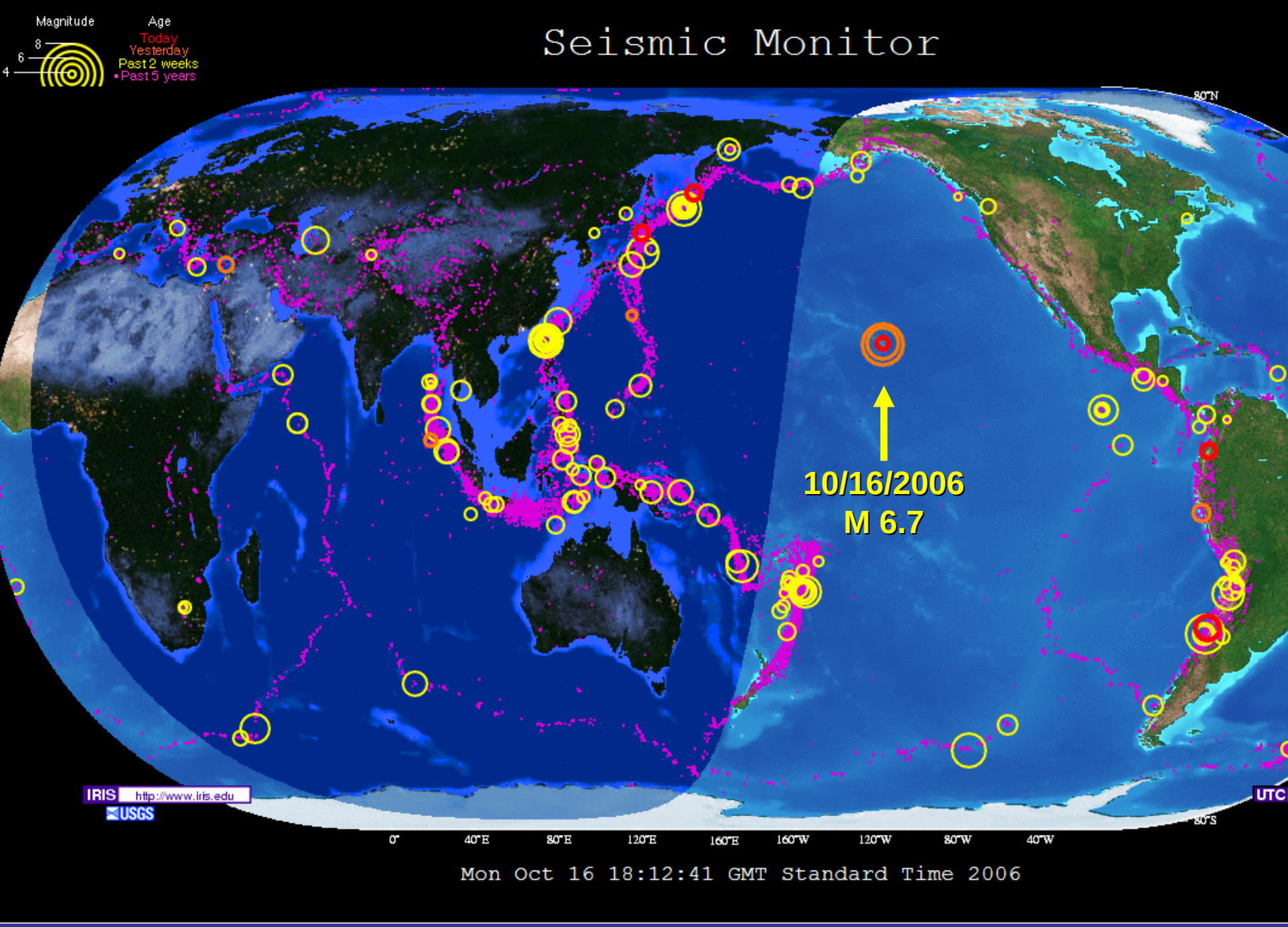
Logos – “discourse”

Scientific study of Earth and other planets

Hawaiian Geology

2006

?


Magnitude
8
6
4
Age
Today
Yesterday
Past 2 weeks
Past 5 years
Seismic Monitor
10/16/2006
M 6.7
IRIS
http://www.iris.edu
USGS
UTC
80°N
80°S
0°
40°E
80°E
120°E
160°E
160°W
120°W
80°W
40°W
Mon Oct 16 18:12:41 GMT Standard Time 2006







Structural Damage

Infrastructure Impacts











Road Damage





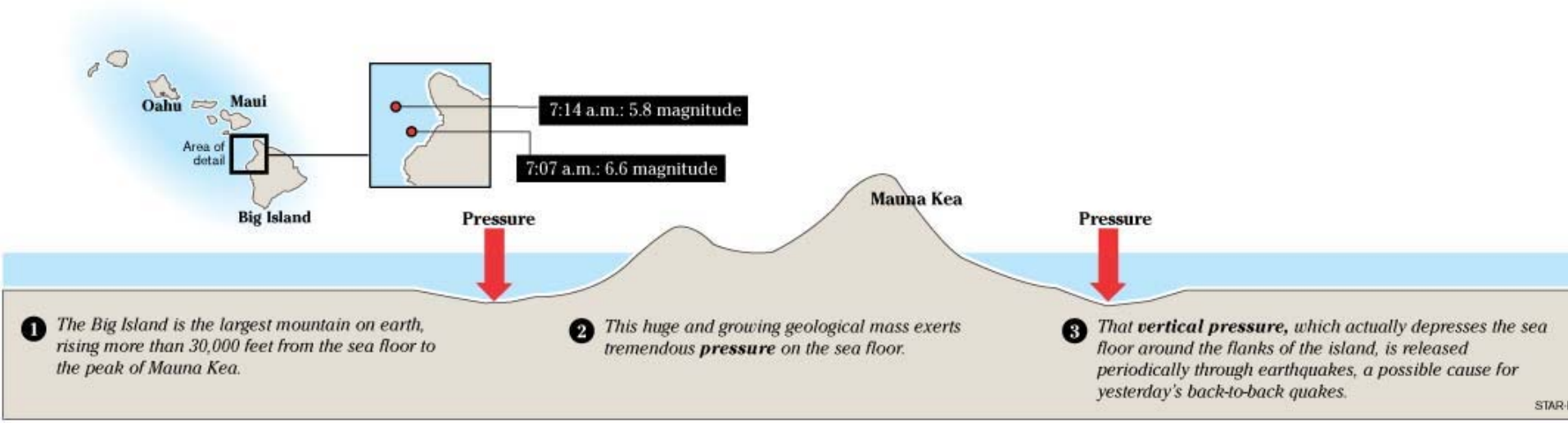


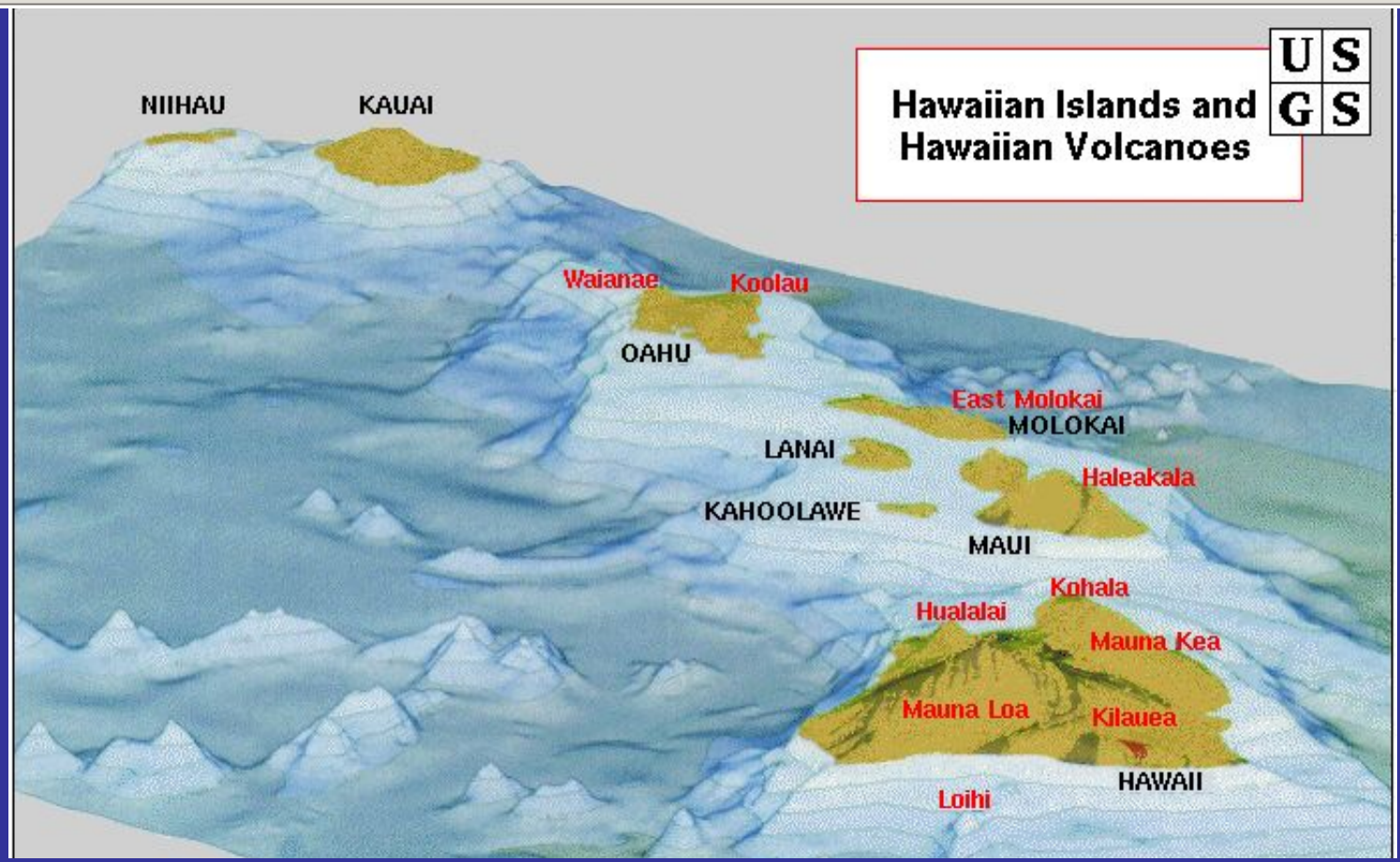
Food Distribution

How much does lava weigh?

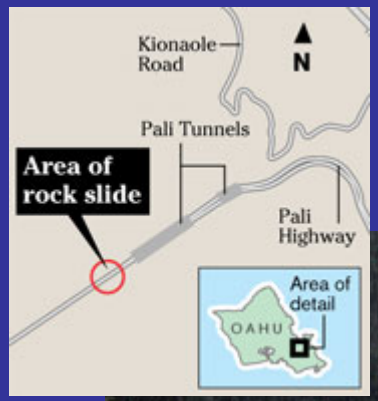





Oahu
Maui
Area of detail
Big Island
7:14 a.m.: 5.8 magnitude
7:07 a.m.: 6.6 magnitude
Pressure
Mauna Kea
Pressure
1 The Big Island is the largest mountain on earth, rising more than 30,000 feet from the sea floor to the peak of Mauna Kea.
2 This huge and growing geological mass exerts tremendous pressure on the sea floor.
3 That vertical pressure, which actually depresses the sea floor around the flanks of the island, is released periodically through earthquakes, a possible cause for yesterday's back-to-back quakes.


Hawaiian Islands and Hawaiian Volcanoes
USGS
NIIHAU
KAUAI
Waianae
Koolau
OAHU
East Molokai
MOLOKAI
LANAI
Haleakala
KAHOOLAWE
MAUI
Kohala
Hualalai
Mauna Kea
Mauna Loa
Kilauea
HAWAII
Loihi

November 1, 2006
Pali Landslide

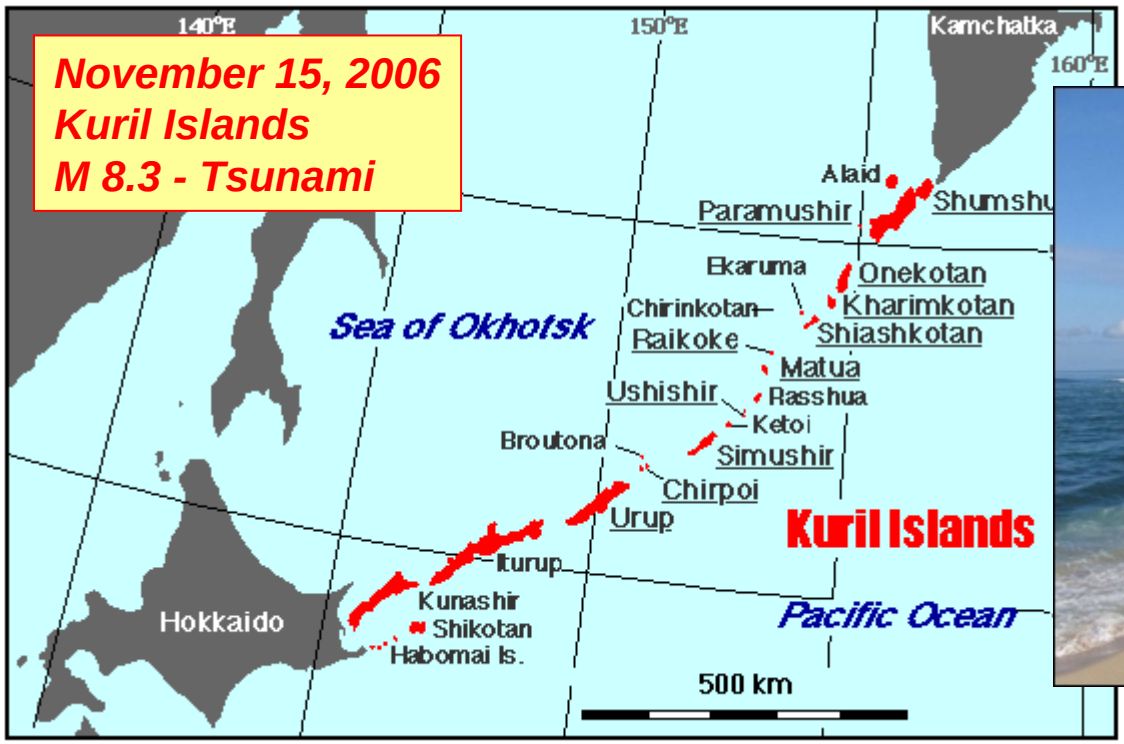




Lani's North Shore Oahu





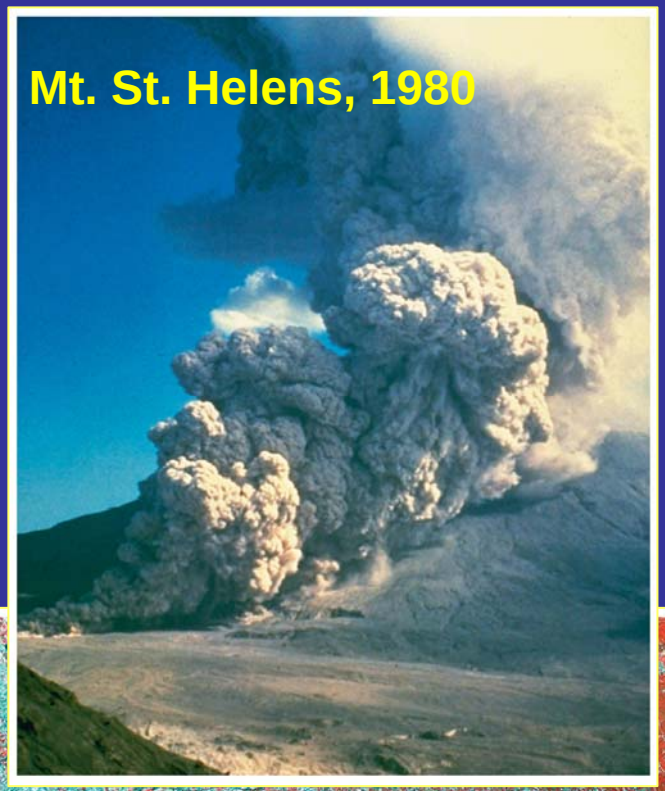




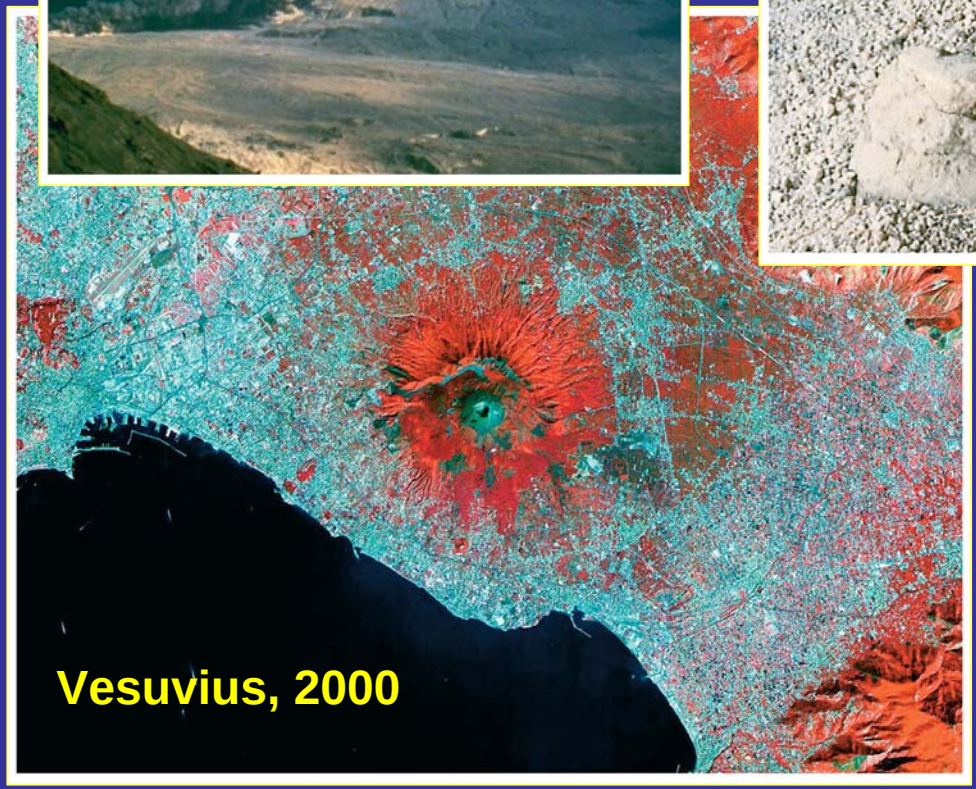
So what does a geologist DO anyway?

So what does a geologist DO anyway?

1. Natural hazards mitigation
2. Resource identification/extraction
3. Environmental clean-up
4. Research/Education





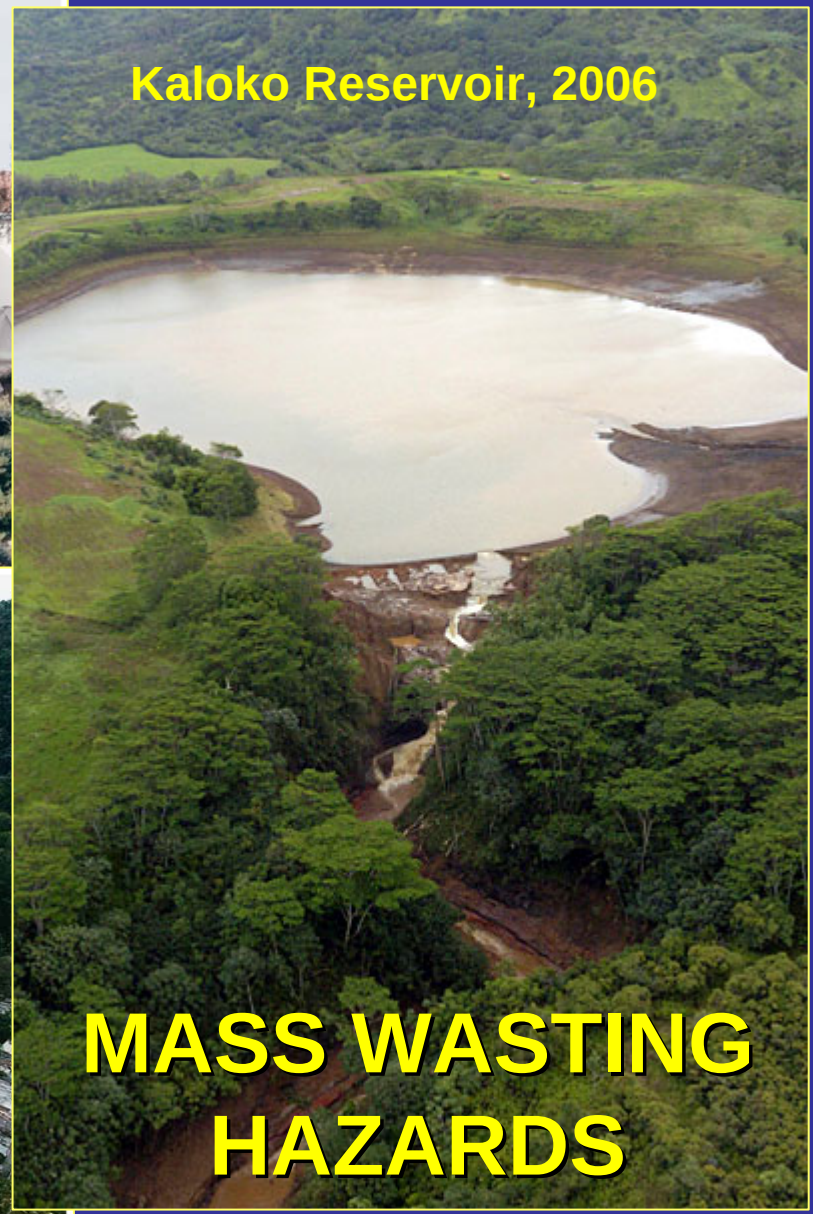




VOLCANIC HAZARDS







MASS WASTING HAZARDS







EARTHQUAKE HAZARDS





TSUNAMI HAZARDS





FLOODING HAZARDS

So what does a geologist DO anyway?

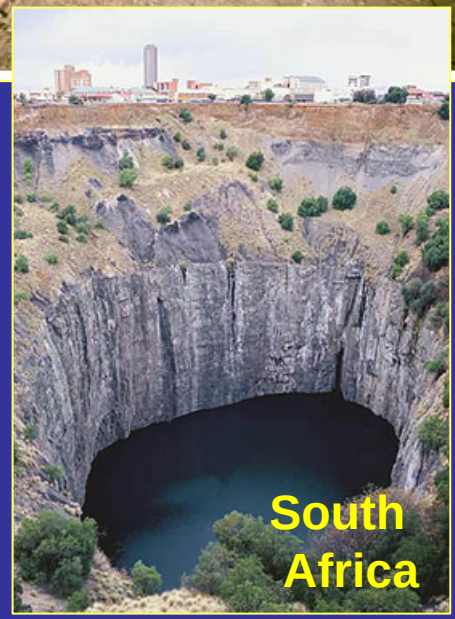
1. Natural hazards mitigation
2. Resource identification/extraction
3. Environmental clean-up
4. Research/Education

MINING











PETROLEUM





HYDROELECTRIC ENERGY









GEOTHERMAL ENERGY

So what does a geologist DO anyway?

1. Natural hazards mitigation
2. Resource identification/extraction
3. Environmental clean-up
4. Research/Education







OIL SPILLS

LANDFILLS



NUCLEAR WASTE



So what does a geologist DO anyway?

1. Natural hazards mitigation
2. Resource identification/extraction
3. Environmental clean-up
4. Research/Education

RESEARCH/EDUCATION

INTEGRATED OCEAN DRILLING PROGRAM
JOI ALLIANCE

INTERNATIONAL – Integrated Ocean Drilling Program

USGS
science for a changing world

FEDERAL – U.S. Geological Survey

STATE – Department of Land and Natural Resources



AGU

PROFESSIONAL – American Geophysical Union

UNIVERSITY OF HAWAI'I AT MĀNOA
School of Ocean and Earth Science and Technology
Department of GEOLOGY & GEOPHYSICS

ACADEMIC – University of Hawaii Geology and Geophysics