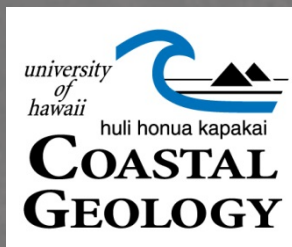


COASTAL DATA EXCHANGE

COASTAL GEOLOGY MAPS AND DATA



Matthew Barbee, Cartographer

UH SOEST

Coastal Geology Group

Chip Fletcher

3 types of data available

- In-house generated products
 - Grants and contracts deliverables
- Re-served Data and Information
 - requested, common, relevant
- Links to data
 - Large data
 - imagery and elevation data
 - Hawaii coastal zone data outside of coastal geology



Planners use my data for

- ☒ County Plans
- ☒ General Plans
- ☐ Conservation District Use Permits
- ☒ Setbacks
- ☐ Shoreline Certification
- ☐ Shoreline Permits
- ☐ Building Permits
- ☐ Special Area Management Permits
- ☐ Flood Zones
- ☐ Discussion



Planners could also use my data for

- ☒ County Plans
- ☒ General Plans
- ☐ Conservation District Use Permits
- ☒ Setbacks
- ☐ Shoreline Certification
- ☐ Shoreline Permits
- ☒ Building Permits
- ☒ Special Area Management Permits
- ☒ Flood Zones
- ☒ Discussion



Coastal Geology Website

<http://www.soest.hawaii.edu/coasts/>

Main page

Four sections

- Website navigation
- Current news and slideshow
- Showcase
- Header links and search*



Coastal Geology Website

<http://www.soest.hawaii.edu/coasts/>

Main page

Current news and slideshow

- RSS feeds
- slideshows



Coastal Geology Website

<http://www.soest.hawaii.edu/coasts/>

Main page

Showcase

- Recent publications



Coastal Geology Website

<http://www.soest.hawaii.edu/coasts/>

Main page

Website Navigation

- Coastal FTP
- Links



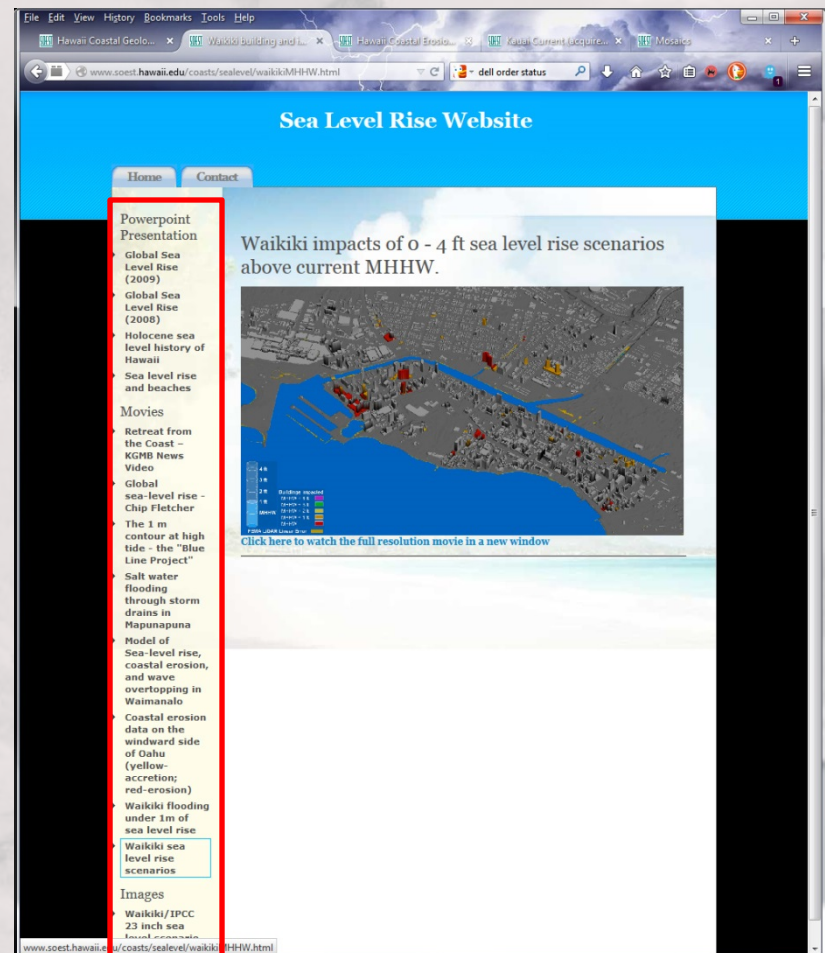
Coastal Geology Website

<http://www.soest.hawaii.edu/coasts/>

Sea level rise Hawaii

Links

- Synopsis of sea level rise science
- Regional Products
- Presentations and visualizations - Movies and Images



Coastal Geology Website

<http://www.soest.hawaii.edu/coasts/>

Main page

Website Navigation

○ Hawaii Coastal Erosion



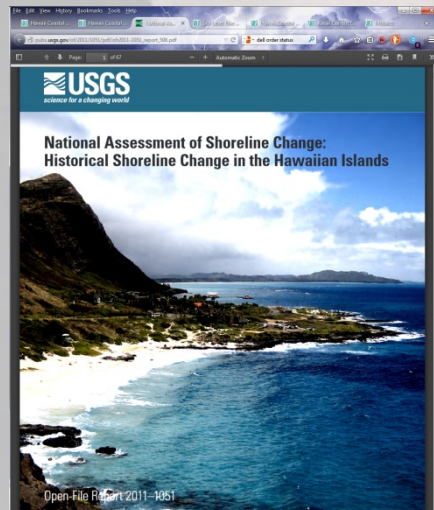
Coastal Geology Website

<http://www.soest.hawaii.edu/coasts/>

Hawaii Coastal Erosion

Synopsis of Shoreline Change in Hawaii

- Links to Literature and Publications
- Island Data Products

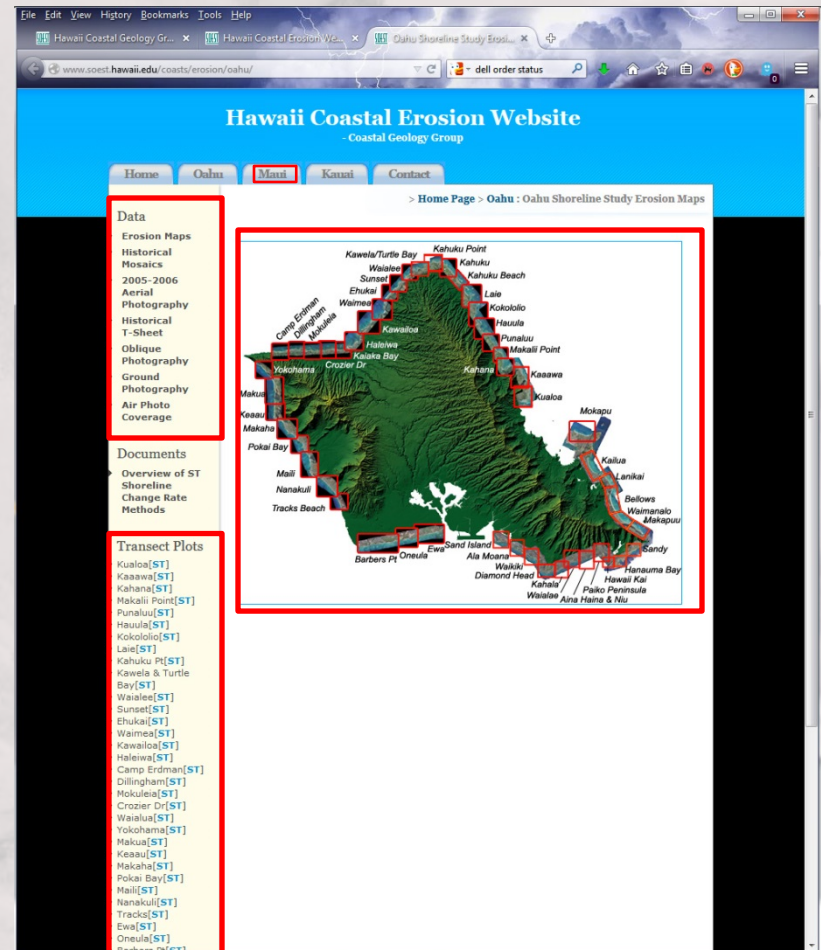
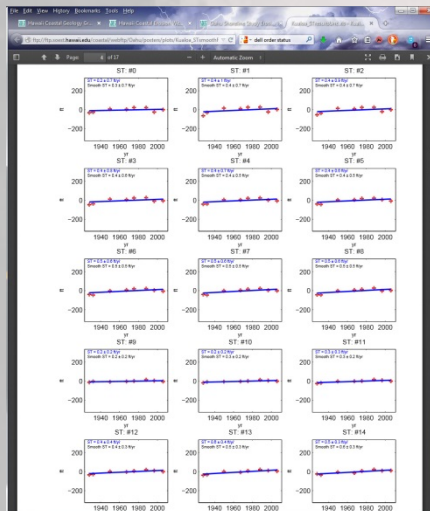


<http://www.soest.hawaii.edu/coasts/erosion>

Hawaii Coastal Erosion

Oahu

- **Links to relevant data**
- **Island data products**



Coastal Geology Website

<http://www.soest.hawaii.edu/coasts/erosion>

Hawaii Coastal Erosion

Maui

- Links to relevant data
- Island data products



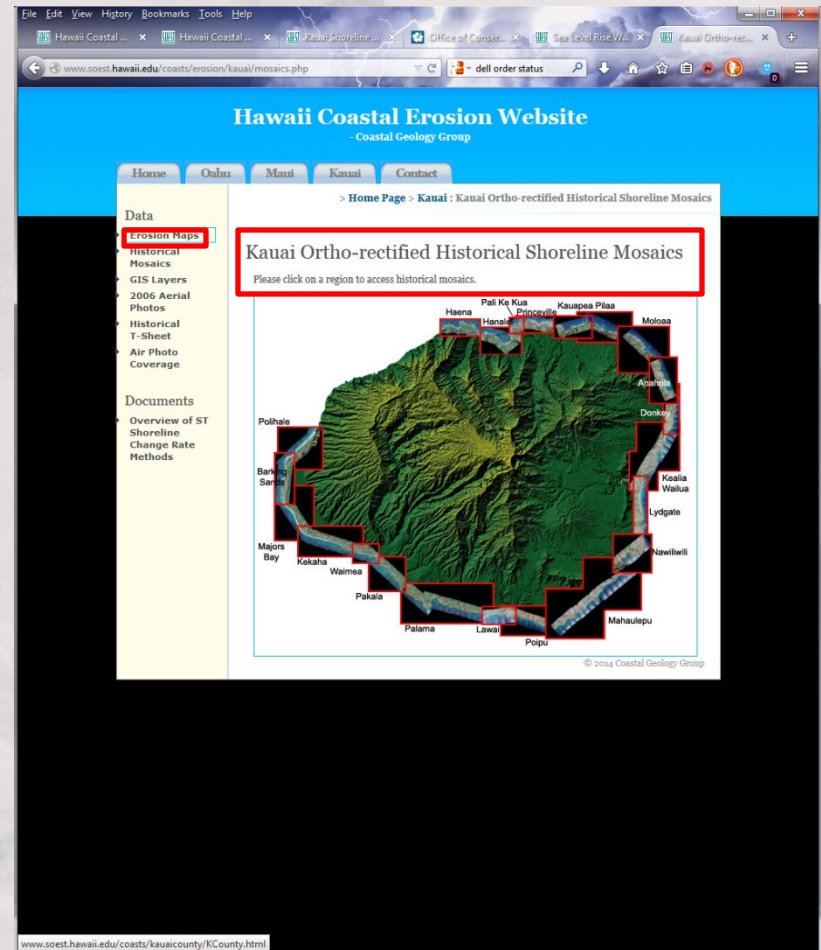
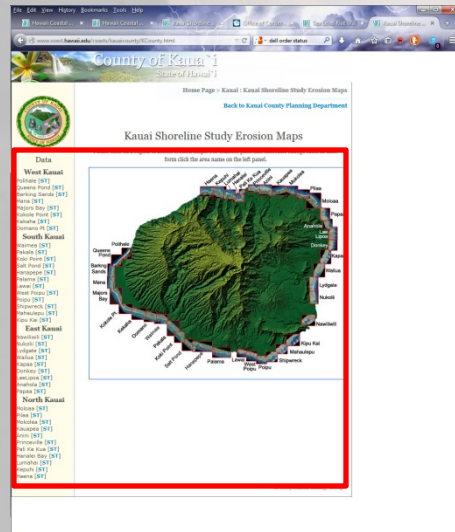
Coastal Geology Website

<http://www.soest.hawaii.edu/coasts/erosion>

Hawaii Coastal Erosion

Kauai

- Linked to county mock-up page
- Island data products



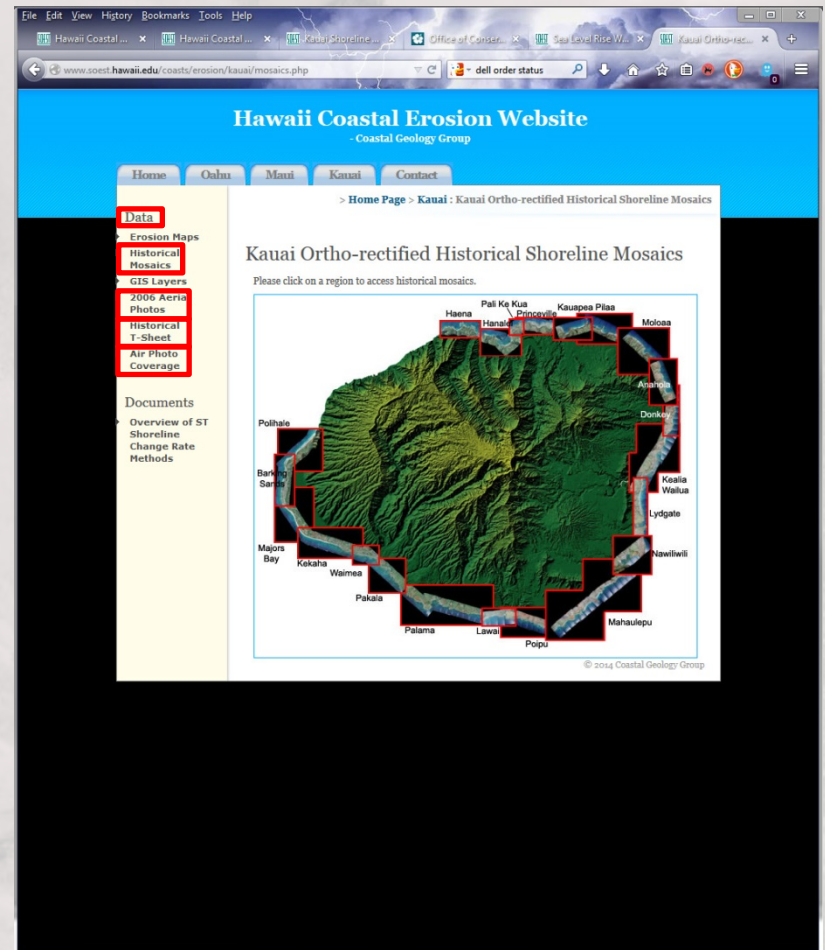
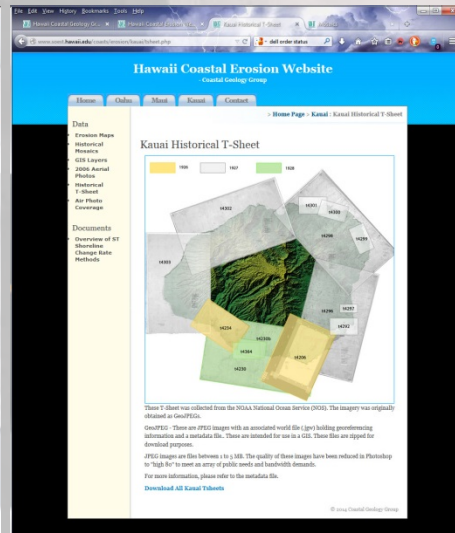
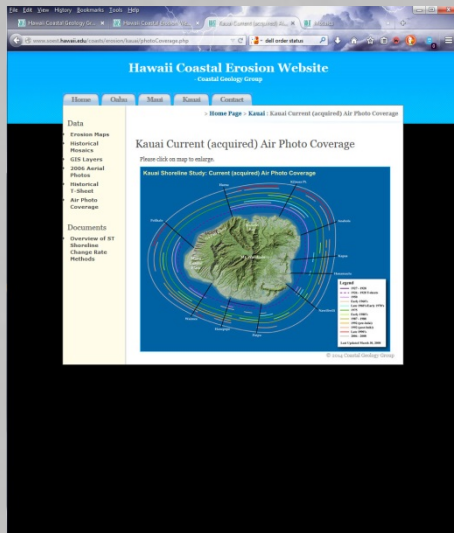
Coastal Geology Website

<http://www.soest.hawaii.edu/coasts/erosion>

Hawaii Coastal Erosion

Data

- Relevant study data



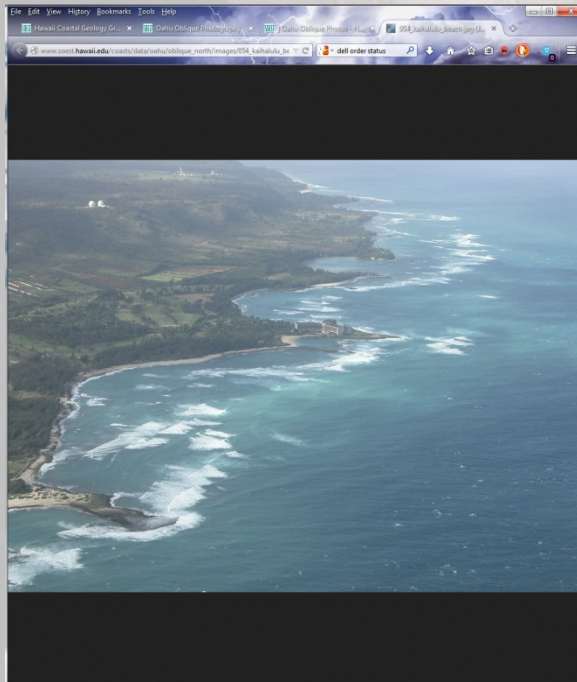
Coastal Geology Website

<http://www.soest.hawaii.edu/coasts/>

Main page

Website Navigation

○ Oblique Aerial Photos



Coastal Geology Website

<http://www.soest.hawaii.edu/coasts/>

Main page

Website Navigation

○ Coastal Imagery & Data



Coastal Geology Website

<http://www.soest.hawaii.edu/coasts/data>

Coastal Imagery and Data

Website Navigation

- Oahu



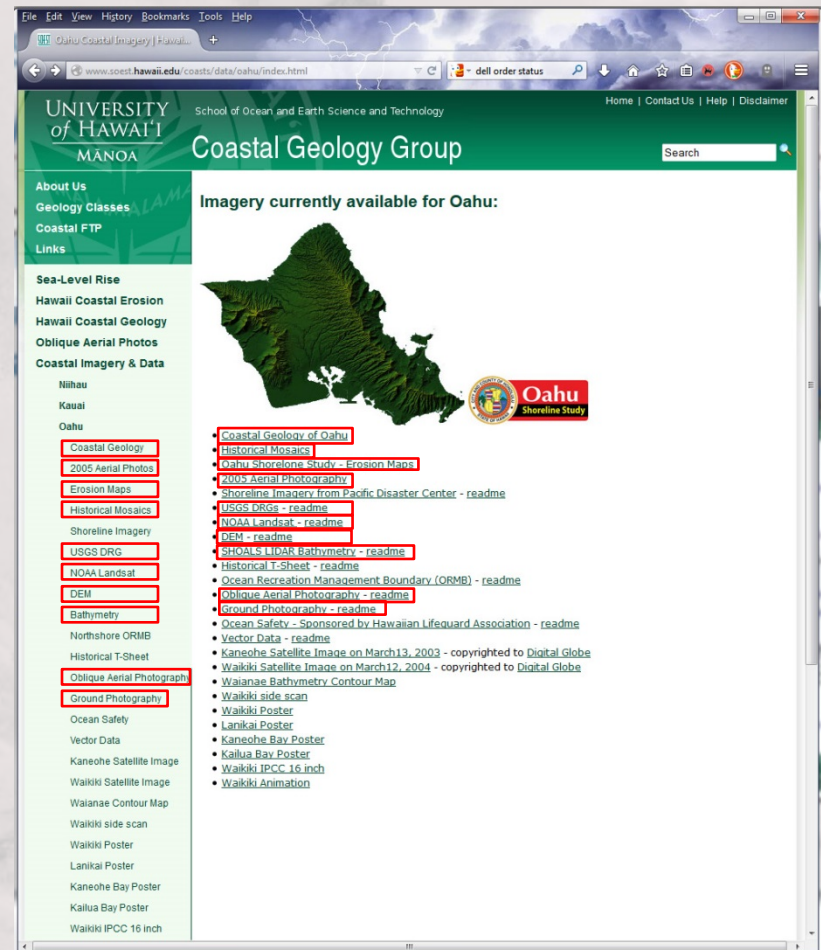
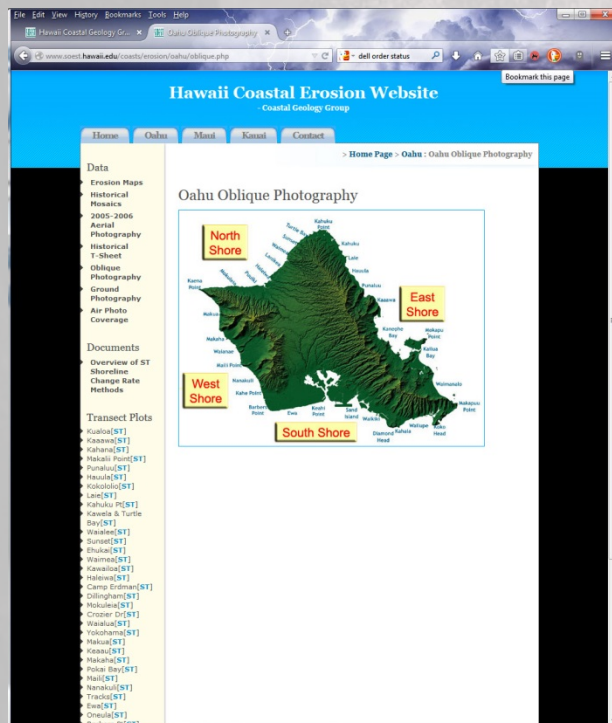
Coastal Geology Website

<http://www.soest.hawaii.edu/coasts/>

Coastal Imagery and Data

Data organized by island

- Oahu



Coastal Geology Website

<http://www.soest.hawaii.edu/coasts/>

Main page

Website Navigation

○ Publications



The screenshot shows the Coastal Geology Group website on a web browser. The browser's address bar displays www.soest.hawaii.edu/coasts/. The website header includes the University of Hawai'i logo and the text "School of Ocean and Earth Science and Technology". The main navigation bar features "Coastal Geology Group" and a search bar. The left sidebar contains a "Publications" link, which is highlighted with a red box. Below this, there are links for "Talks and Posters", "Student Research", "Reports - NEW", "Hawaii Beach Safety", "Ocean Conditions", "Kauai County", and "Hawaii Climate Change Discussion on PBS". The main content area is divided into several sections: "About Us" (Geology Classes, Coastal FTP, Links), "Sea-Level Rise - NEW", "Hawaii Coastal Erosion", "Hawaii Coastal Geology", "Oblique Aerial Photos", "Coastal Imagery & Data", "Publications" (highlighted), "Climate.gov News & Features" (with links to articles about Arctic sea ice, wildfires, carbon dioxide, and a Webby Awards win), "Climate News -- ScienceDaily" (with links to articles about carbon capture, butterflies, fossil fuels, and babbling brooks), and "Nature Climate Change - Issue - nature.com science feed" (with links to articles about business action, heat in Sweden, natural hazards, and China's response). On the right side, there are two book covers: "Climate Change: What the Science Tells Us" by Chip Fletcher and "Living on the Shores of Hawai'i: Natural Hazards, the Environment, and Our Communities". The footer contains the W3C XHTML 1.0 logo, the website's address, and contact information.

University of Hawai'i
Mānoa
School of Ocean and Earth Science and Technology
Coastal Geology Group

Home | Contact Us | Help | Disclaimer

Search

About Us
Geology Classes
Coastal FTP
Links

Sea-Level Rise - NEW
Hawaii Coastal Erosion
Hawaii Coastal Geology
Oblique Aerial Photos
Coastal Imagery & Data

Publications

Talks and Posters
Student Research
Reports - NEW

Hawaii Beach Safety
Ocean Conditions
Kauai County

Hawaii Climate Change
Discussion on PBS

Climate.gov News & Features
Climate.gov News & Features

- [The Role of Global Climate Change in the Extreme Low Summer Arctic Sea Ice Extent in 2012](#)
- [Fire forecasting: Texas watches for wildfires before they burn](#)
- [Tracking carbon dioxide across the globe](#)
- [Climate.gov staff, NOAA leadership attend Webby Awards](#)
- [MIT Sea Grant Hosts a Climate Change Symposium on Sustaining Coastal Cities](#)

Climate News -- ScienceDaily
Climate change and climate prediction. Read science articles on regional climates and global climate shifts. Updated daily.

- [Vines choke a forest's ability to capture carbon](#)
- [Rules to cut carbon emissions also reduce air pollution harmful to people, environment](#)
- [Light-colored butterflies and dragonflies thriving as European climate warms](#)
- [Buried fossil soils found to be awash in carbon](#)
- [Babbling brooks adding to climate change?](#)

Nature Climate Change - Issue - nature.com science feed
Nature Climate Change is dedicated to publishing the most significant research across the physical and social sciences on the impacts of global climate change and its implications for the economy, policy and the world at large. Alongside original top quality research Nature Climate Change also publishes a compelling mix of analysis, reviews and comment.

- [Business action](#)
- [Adaptation to extreme heat in Stockholm County, Sweden](#)
- [Reply to 'Adaptation to extreme heat in Stockholm County, Sweden'](#)
- [Costing natural hazards](#)
- [China's response to the air pollution shock](#)

New Book
"Climate Change: What the Science Tells Us"
a textbook by Chip

CLIMATE CHANGE
WHAT THE SCIENCE TELLS US

LIVING ON THE SHORES OF HAWAII
Natural Hazards, the Environment, and Our Communities

University of Hawai'i at Manoa | School of Ocean & Earth Science & Technology | Department of Geology and Geophysics
Last modified February 12th, 2014. © 2003-2014 Coastal Geology Group.
1680 East-West Rd. POST Room 721, Honolulu, Hawaii, USA • Phone: (808) 956-3605 • Fax: (808) 956-5512



Coastal Geology Website

<http://www.soest.hawaii.edu/coasts/>

Publications

Source of literature for
shoreline change in the
Hawaiian Islands



The screenshot shows the website of the Coastal Geology Group at the University of Hawai'i, Manoa. The page is titled "Publications: (* student of C. Fletcher)" and lists publications from 2011 to 2014. The left sidebar contains navigation links such as "About Us", "Geology Classes", "Coastal FTP", "Links", "Publications", "Talks and Posters", "Student Research", "Reports - NEW", "Hawaii Beach Safety", "Ocean Conditions", "Kauai County", "Hawaii Climate Change", and "Discussion on PBS". The main content area lists publications with their authors, titles, and links. The bottom of the page shows the URL: www.soest.hawaii.edu/coasts/publications/KaneEtAl2014_RankedManagementConcerns.pdf.

UNIVERSITY of HAWAII MANOA School of Ocean and Earth Science and Technology Coastal Geology Group

Publications: (* student of C. Fletcher)

2014

1. Kane H.H., Fletcher C.H., Frazer L.N., Barbee, M., (in review) Decision-makers face a "critical elevation" of flooding due to sea-level rise. *Regional Environmental Change*.
2. Kane H.H., Fletcher C.H., Frazer L.N., Anderson T., Barbee, M., (submitted) Modeling sea-level rise vulnerability of coastal wetlands using ranked management concerns. *Conservation Biology*.
3. Sherman*, C.E., Fletcher, C.H., Rubin, K.H., Simmons, K.R., and Adey, W.H., 2014. Sea-level and reef accretion history of Marine Oxygen Isotope Stage 7 and late Stage 5 based on age and facies of submerged late Pleistocene reefs, Oahu, Hawaii. *Quaternary Research* 81: 138-150

2013

4. Fletcher, C.H. *Climate Change: What the science tells us*, 265 p. J. Wiley & Sons, NY
5. Anderson*, T.R., and Frazer, L.N., 2013. Toward Parsimony in Shoreline Change Prediction (III): B-splines and noise handling. *Journal of Coastal Research*.
6. Romine*, B.M., Fletcher, C.H., Barbee, M.M., Anderson*, T.R., and Frazer, L.N., 2013. Are beach erosion rates and sea-level rise related in Hawaii? *Global and Planetary Change*, 108: 149-157
7. Cooper, H.M., Chen, O., Fletcher, C.H., and Barbee, M.M., 2013. Assessing vulnerability due to sea-level rise in Maui, Hawaii using LIDAR remote sensing and GIS. *Climate Change*, 116:547-563, 16 p.
8. Cooper, H.M., Fletcher, C.H., Chen, O., and Barbee, M.M., 2013. Sea-level rise vulnerability mapping for adaptation decisions using LIDAR DEMs. *Progress in Physical Geography*, 001-22, 22 p.

2012

9. Rotzoll, K., and Fletcher, C., 2012. Assessment of groundwater inundation by sea level rise. *Nature Climate Change*, 3, 477-481, DOI:10.1038/NCLIMATE1725
10. Fletcher, C.H., Romine*, B.M., Genz, A.S., Barbee, M.M., Dyer, M., Anderson*, T.R., Lim, S.C., Vitousek*, S., Roichichio*, C., and Richmond, R.M., 2012. National assessment of shoreline change: Historical shoreline change in the Hawaiian Islands: U.S. Geological Survey Open-File Report 2011-1051, 55 p.
11. Hanumani M. Kane*, Charles H. Fletcher, Bradley M. Romine*, Tiffany R. Anderson*, Neil L. Frazer, and Matthew M. Barbee (2012) Vulnerability Assessment of Hawai'i's Cultural Assets Attributable to Erosion Using Shoreline Trend Analysis Techniques. *Journal of Coastal Research* (In-Press).
12. Romine*, B.M., Fletcher, C.H., Genz, A.S., Barbee, M.M., Dyer, Matthew, Anderson*, T.R., Lim, S.C., Vitousek*, Sean, Roichichio*, Christopher, and Richmond, R.M., 2012. National Assessment of Shoreline Change: A GIS compilation of vector shorelines and associated shoreline change data for the sandy shorelines of Kauai, Oahu, and Maui, Hawaii: U.S. Geological Survey Open-File Report 2011-1009.
13. Romine*, B.M. and Fletcher, C.H., 2012. A summary of historical shoreline changes on beaches of Kauai, Oahu, and Maui, Hawaii. *Journal of Coastal Research*, West Palm Beach (Florida), ISSN 0749-0208.
14. Romine*, B.M. and Fletcher, C.H. 2012. Armoring on Eroding Coasts Leads to Beach Narrowing and Loss on Oahu, Hawaii. In *Profile of Shoreline Stabilization: Selected Case Studies*, J.A.G. Cooper, G. Andrew and O.H. Pikev (eds.), Coastal Research Library 3, DOI 10.1007/978-94-007-4122-2_10, Springer Science and Business Media, Dordrecht, Netherlands.

2011

15. Ostrander, C.E., Seim, H., Smith, E., Studer, B., Luscher-Aissauoi, A., and Fletcher, C., 2011 Contributions of the U.S. integrated ocean observing system to national and regional coastal hazards and resource information, tools, and services. *Marine Technology Journal*, v. 45, no. 1, p. 29-38.

www.soest.hawaii.edu/coasts/publications/KaneEtAl2014_RankedManagementConcerns.pdf



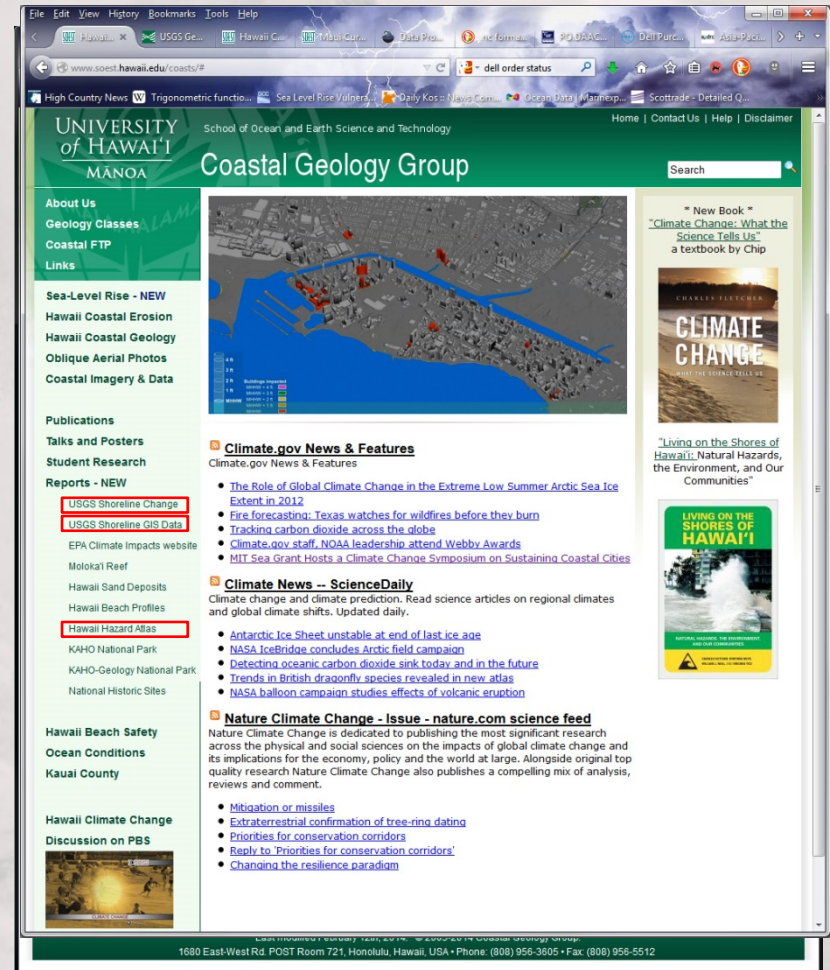
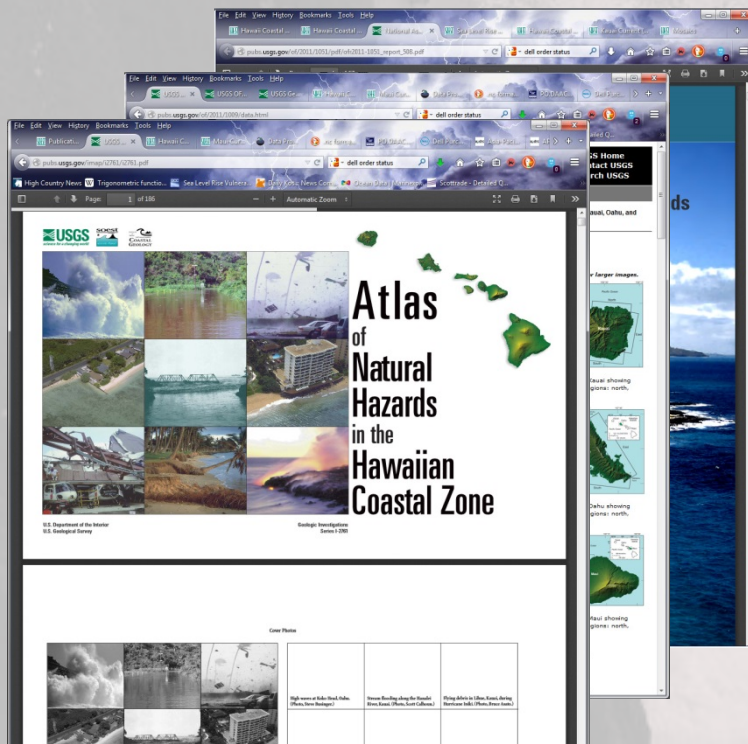
Coastal Geology Website

<http://www.soest.hawaii.edu/coasts/>

Main page

Website Navigation

○ Reports



Coastal Geology Website

<http://www.soest.hawaii.edu/coasts/>

Main page

Website Navigation

○ Links

The screenshot shows the main page of the Coastal Geology Group website. The header includes the University of Hawai'i logo and navigation links. The main content area is divided into several sections: 'About Us', 'Geology Classes', 'Coastal FTP', and 'Links'. The 'Links' section is highlighted with a red box and contains a list of links to various resources, including 'Sea-Level Rise - NEW', 'Hawaii Coastal Erosion', 'Hawaii Coastal Geology', 'Oblique Aerial Photos', 'Coastal Imagery & Data', 'Publications', 'Talks and Posters', 'Student Research', 'Reports - NEW', 'Hawaii Beach Safety', 'Ocean Conditions', 'Kauai County', 'Hawaii Climate Change Discussion on PBS', and 'Hawaii Climate Change Discussion on PBS'. The footer contains contact information and a copyright notice.

University of Hawai'i at Manoa | School of Ocean and Earth Science and Technology | Department of Geology and Geophysics

Last modified May 27th, 2014. © 2003-2014 Coastal Geology Group.
1680 East-West Rd. POST Room 721, Honolulu, Hawaii, USA • Phone: (808) 956-3605 • Fax: (808) 956-5512

This screenshot is similar to the one above, but with a red box highlighting the 'Links' section in the left sidebar. The 'Links' section contains a list of links to various resources, including 'Sea-Level Rise - NEW', 'Hawaii Coastal Erosion', 'Hawaii Coastal Geology', 'Oblique Aerial Photos', 'Coastal Imagery & Data', 'Publications', 'Talks and Posters', 'Student Research', 'Reports - NEW', 'Hawaii Beach Safety', 'Ocean Conditions', 'Kauai County', 'Hawaii Climate Change Discussion on PBS', and 'Hawaii Climate Change Discussion on PBS'. The footer contains contact information and a copyright notice.

University of Hawai'i at Manoa | School of Ocean and Earth Science and Technology | Department of Geology and Geophysics

Last modified February 12th, 2014. © 2003-2014 Coastal Geology Group.
1680 East-West Rd. POST Room 721, Honolulu, Hawaii, USA • Phone: (808) 956-3605 • Fax: (808) 956-5512

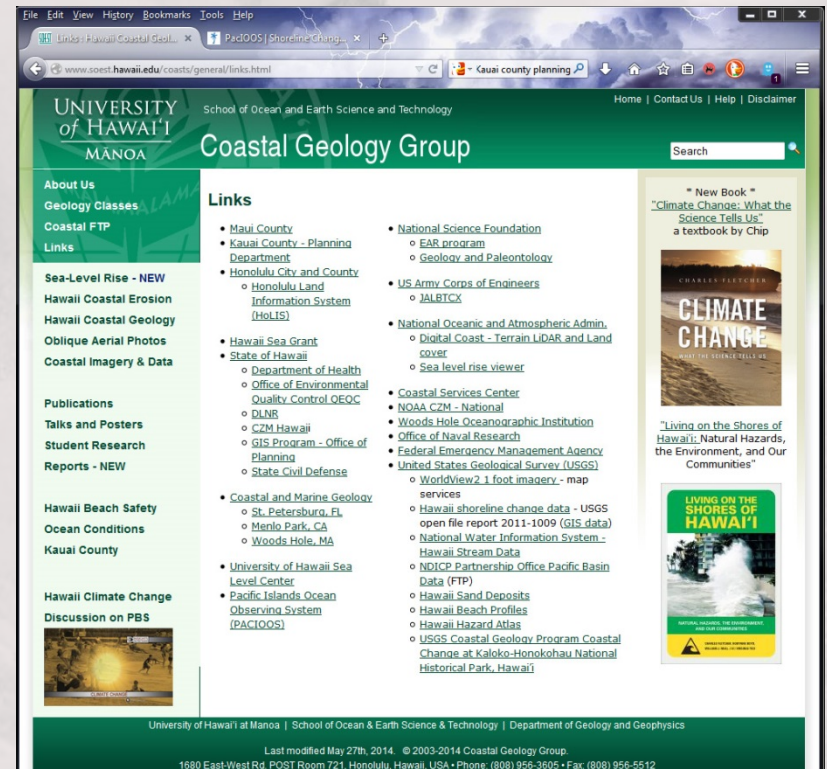


Coastal Geology Website

<http://www.soest.hawaii.edu/coasts/>

Links to

- Federal, State and County Agencies
- Available, relevant datasets
- Data services



Coastal Geology Website

<http://www.soest.hawaii.edu/coasts/>

Main page

Website Navigation

○ Coastal FTP

Index of ftp://soest.hawaii.edu/coastal/

[Up to higher level directory](#)

Name	Size	Last Modified
ARMY_RMA_Reports		1/18/2011 12:00:00 AM
AndyBaklander		5/18/2011 12:00:00 AM
BlueLineRidge		11/17/2009 12:00:00 AM
Bruce Micronesia		9/1/2009 12:00:00 AM
Climate Articles		4/20/2011 12:00:00 AM
Climate Talk		3/15/2011 12:00:00 AM
Climate Update		3/28/2011 12:00:00 AM
Climate brief		3/18/2010 12:00:00 AM
Coastal Geology Class G6420		11/23/2010 12:00:00 AM
Fletcher PPTX and PPT		4/22/2011 12:00:00 AM
ForPeople		10/9/2013 12:00:00 AM
GG01 PPT's		5/2/2011 12:00:00 AM
GSA Talk		10/28/2010 12:00:00 AM
YCAP		5/19/2011 12:00:00 AM
Imagery/Temp		11/13/2013 12:00:00 AM
Maui		5/9/2012 12:00:00 AM
MauiSLR_2ndDRAFT		1/27/2012 12:00:00 AM
Micronesia		8/4/2010 12:00:00 AM
Micronesia Figures		3/5/2010 12:00:00 AM
NOAA/SLR		10/11/2013 12:00:00 AM
NPS		11/4/2009 12:00:00 AM
SSPM powerpoints		12/15/2009 12:00:00 AM
Samoa		2/10/2011 12:00:00 AM
Shoreline Worksheets		4/21/2011 12:00:00 AM
Shoreline_Change_2005		5/18/2011 12:00:00 AM
USGS_OPR_14_shorelinechange		7/18/2011 12:00:00 AM
Waikiki Blue Line		6/17/2010 12:00:00 AM
database		10/24/2008 12:00:00 AM
fortilogos		4/19/2011 12:00:00 AM
incoming		11/20/2013 12:00:00 AM
movies		1/08/2011 12:00:00 AM
presentations		9/29/2005 12:00:00 AM
webftp		2/25/2013 12:00:00 AM

University of Hawai'i at Manoa School of Ocean and Earth Science and Technology

Coastal Geology Group

Home | Contact Us | Help | Disclaimer

Search

About Us
Geology Classes
Coastal FTP
Links

Sea-Level Rise - NEW
Hawaii Coastal Erosion
Hawaii Coastal Geology
Oblique Aerial Photos
Coastal Imagery & Data

Publications
Talks and Posters
Student Research
Reports - NEW

Hawaii Beach Safety
Ocean Conditions
Kauai County

Hawaii Climate Change
Discussion on PBS

Climate.gov News & Features
Climate.gov News & Features

- [The Role of Global Climate Change in the Extreme Low Summer Arctic Sea Ice Extent in 2012](#)
- [Fire forecasting: Texas watches for wildfires before they burn](#)
- [Tracking carbon dioxide across the globe](#)
- [Climate.gov staff, NOAA leadership attend Webby Awards](#)
- [MIT Sea Grant Hosts a Climate Change Symposium on Sustaining Coastal Cities](#)

Climate News -- ScienceDaily
Climate change and climate prediction. Read science articles on regional climates and global climate shifts. Updated daily.

- [Vines choke a forest's ability to capture carbon](#)
- [Rules to cut carbon emissions also reduce air pollution harmful to people, environment](#)
- [Light-colored butterflies and dragonflies thriving as European climate warms](#)
- [Buried fossil soils found to be awash in carbon](#)
- [Babbling brooks adding to climate change?](#)

Nature Climate Change - Issue - nature.com science feed
Nature Climate Change is dedicated to publishing the most significant research across the physical and social sciences on the impacts of global climate change and its implications for the economy, policy and the world at large. Alongside original top quality research Nature Climate Change also publishes a compelling mix of analysis, reviews and comment.

- [Business action](#)
- [Adaptation to extreme heat in Stockholm County, Sweden](#)
- [Reply to 'Adaptation to extreme heat in Stockholm County, Sweden'](#)
- [Costing natural hazards](#)
- [China's response to the air pollution shock](#)

New Book
"Climate Change: What the Science Tells Us"
a textbook by Chip

Living on the Shores of Hawai'i
Natural Hazards, the Environment, and Our Communities

W3C XHTML 1.0

University of Hawai'i at Manoa | School of Ocean & Earth Science & Technology | Department of Geology and Geophysics

Last modified February 12th, 2014. © 2003-2014 Coastal Geology Group.
1680 East-West Rd. POST Room 721, Honolulu, Hawaii, USA • Phone: (808) 956-3605 • Fax: (808) 956-5512

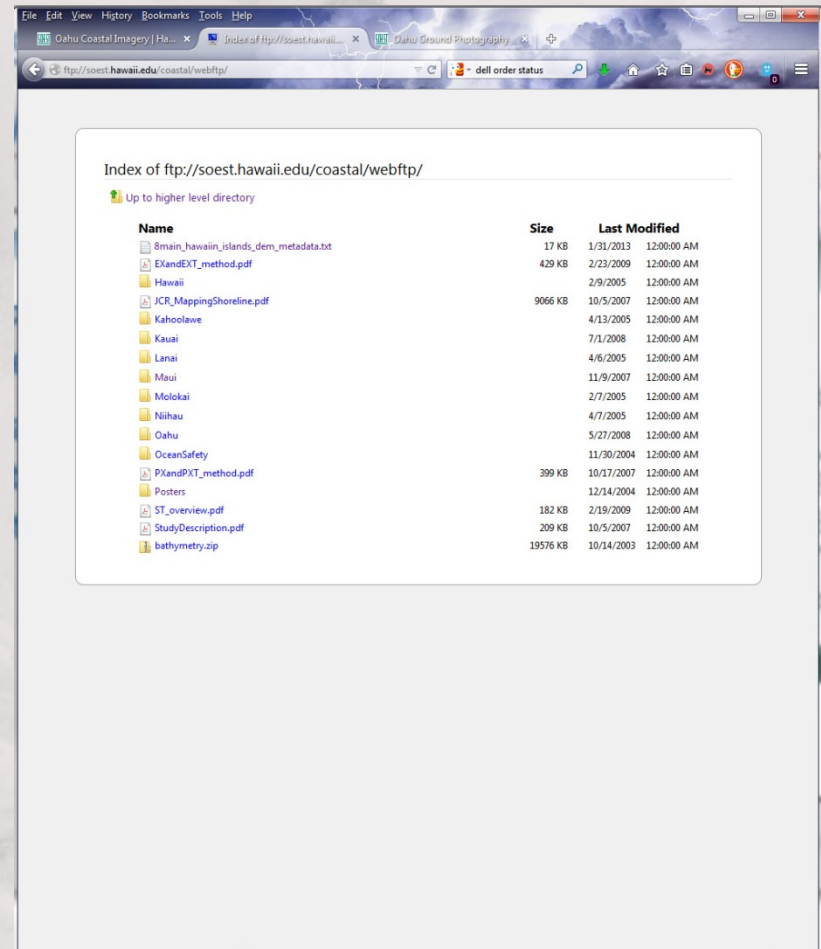


Coastal Geology Website

<ftp://soest.hawaii.edu/coastal/webftp/>

Contains all website data

- Can be downloaded through a browser
- No proprietary data is served without permission
- Permissions are managed





Thank you

