ESIP Earth Sciences Data Analytics

Story

Big Earth Sciences Data – From Descriptive to Prescriptive Analytics

Story

Data Analytics in Data Science

ESIP Earth Sciences Data Analytics (ESDA) Telecon

Guest Speaker

Slides

Spotfire Dashboard

Research Notes

Background

Request from Eric Kihn
Request from Steve Kempler
Response from Brand Niemann
Response to Emily Law
Request from Emily Law
Draft Next ESDA Telecom Agenda
Earth Science Data Analytics/Earth Science Data Analytics Telecons/2014-02-20 Telecon Notes
Response from Brand Niemann
First Earth Science Data Analytics (ESDA) Telecon
Analytics and Data Scientist ‘Cluster’
AGU Session IN008
Earth Science Informatics Position Open at the NASA GES DISC
Temperature / Precipitation Data Access

FACT SHEET: The President’s Climate Data Initiative: Empowering America’s Communities to Prepare for the Effects of Climate Change

Administration Commitments

Launch of climate.data.gov
Launch of NASA and NOAA Innovation Challenge on Coastal Vulnerability and Preparedness
Release of New Infrastructure and Geographic Map Data Relevant to Climate-Preparedness
NOAA Request for Information on Increasing Access to Environmental Data
Support for Climate Data & Tools in the President’s Budget

Expanding Stakeholder Outreach & Engagement

Private Sector Commitments

Esri: Providing Communities with Map-Based Planning Tools and Collaboration Platforms

Intel Corporation: Fostering Regional Partnerships and Hosting Hackathons to Boost the Development of Climate Resilience Tools


CartoDB: Announcing New Grants Program to Support Creation of Data-Driven Tools

Climate Central: Releasing New Web Tools to Assess Local-Scale Sea Level Rise

Microsoft Research: Providing Climate Scientists with New Tools and Computing Resources

Circle of Blue and Qlik: Developing New Tools and Visualizations to Better Understand Climate Impacts

100 Resilient Cities, an effort Launched by the Rockefeller Foundation: Supplying Data on Local Demand and Market Opportunities for Resilience Tools

Code for Philly: Using City Buses to Help Monitor Local Climate Change-Related Pollution

The World Bank: Launching New Initiative for Global Use of Open Data for Climate and Disaster Resilience

Antioch University New England: Creating New Academic Center for Climate Preparedness and Resilience

MIT Climate CoLab: Crowdsourcing Solutions to Global Climate Change Preparedness

EcoHack: Launching New Hackathon Climate Data Track

Alliance for Water Efficiency

BLOG POST: Climate Data Initiative Launches with Strong Public and Private Sector Commitments

STATEMENTS OF SUPPORT for the Climate Data Initiative

WEBCAST: White House Climate Data Initiative Launch (will go live at 5:15pm ET)

Event Videos
Learn More
Infographic
Climate.data.gov

Coastal Flooding
Updates
Data

Climate Data Online (CDO)
Internet Weather Source
Population Estimates
Severe Weather Data Inventory
USGS Map service: Coastal Vulnerability to Sea-Level Rise
NOAA’s National Geophysical Data Center Geoportal
NFHL: FEMA’s National Flood Hazard Layer
Sea Level Rise Planning Tool - New Jersey and New York State (Nassau, Suffolk, and Westchester Counties)
NOAA's Inundation Analysis Tool
NOAA/WDS Global Historical Tsunami Database at NGDC, 2100 BC to present
USGS Map service: National Shoreline Change - Historic Shorelines by State
USGS Map service: National Shoreline Change - Long-Term Shoreline Change Rates
Historical Hurricane Tracks Tool
Social Vulnerability Index (SoVI) for Alabama based on 2000 Census Block Groups
Current National Weather Service Watches, Warnings, or Advisories for the United States
Worldwide historical hurricane tracks from 1848 through the previous hurricane season
Sea Level Rise Planning Tool - New York City
Storm Data
Economics: National Ocean Watch (ENOW)
National Data Buoy Center
NOAA's Coastal Change Analysis Program (C-CAP) Regional Land Cover Data
Marine Cadastre National Viewer
EvacRoutes
Bathymetry Data Viewer
CO-OPS Water level Observations Data
CO-OPS Currents Observations Data
NOAA Water Level Predictions Stations for the Coastal United States and Other Non-U.S. Sites
RSS Feeds for Severe Weather Advisories
Great Lakes Coastal Forecasting System (GLCFS)
Great Lakes Surface Environmental Analysis
ODIN: Observational Data Interactive Navigation, an interactive map of all CO-OPS active stations
Sea Levels Online: Sea Level Variations of the United States Derived from National Water Level Observation Network Stations
The National Map
NOAA's nowCOAST Web Mapping Portal to Near-Real-Time Coastal Information
National Elevation Dataset (NED)
Digital Elevation Model (DEM) Discovery Portal
Sea Level Rise and Coastal Flooding Impacts Viewer
Social Vulnerability Index (SoVI) for North Carolina based on 2000 Census Block Groups
NOAA's Spatial Trends in Coastal Socioeconomics
Social Vulnerability Index (SoVI) for Rhode Island based on 2000 Census Block Groups
Environmental Sensitivity Index (ESI) Threatened and Endangered Species REST Services
USGS Map service: National Shoreline Change - Short-Term Shoreline Change Rates
Social Vulnerability Index (SoVI) for New Hampshire based on 2000 Census Block Groups
Social Vulnerability Index (SoVI) for Minnesota based on 2000 Census Block Groups
Gridded Model Output Statistics (GMOS) Forecast Guidance
Social Vulnerability Index (SoVI) for Hawaii based on 2000 Census Block Groups
Social Vulnerability Index (SoVI) for Maine based on 2000 Census Block Groups
Social Vulnerability Index (SoVI) for Connecticut based on 2000 Census Block Groups
The National Water Level Observation Network
RSS Feeds for Central Pacific Hurricanes and Tropical Cyclones
Social Vulnerability Index (SoVI) for Illinois based on 2000 Census Block Groups
Digital Coast
Social Vulnerability Index (SoVI) for New Jersey based on 2000 Census Block Groups
NOAA Shoreline Data Explorer
International Best Track Archive for Climate Stewardship (IBTrACS)
Social Vulnerability Index (SoVI) for New York based on 2000 Census Block Groups
Social Vulnerability Index (SoVI) for Louisiana based on 2000 Census Block Groups
NOS Point Forecast Guidance to Weather and Ocean Conditions
Gulf of Mexico Data Atlas
EPA Geospatial Data Download: Facility and Site Information
Social Vulnerability Index (SoVI) for Louisiana based on 2000 Census Block Groups
Social Vulnerability Index (SoVI) for Alaska based on 2000 Census Block Groups
Gridded Model Output Statistics (GMOS) Forecast Guidance
Social Vulnerability Index (SoVI) for Virginia based on 2000 Census Block Groups
The National Water Level Observation Network
Social Vulnerability Index (SoVI) for Florida based on 2000 Census Block Groups
NOAA Shoreline Website
International Best Track Archive for Climate Stewardship (IBTrACS)
Gulf of Mexico Data Atlas
United States Interagency Elevation Inventory
Social Vulnerability Index (SoVI) for Michigan based on 2000 Census Block Groups
Historical North Atlantic and Eastern North Pacific Tropical Cyclone Tracks, 1851-2009
The NOMADS Ensemble Probability Tool
Social Vulnerability Index (SoVI) for Georgia based on 2000 Census Block Groups
Social Vulnerability Index (SoVI) for Delaware based on 2000 Census Block Groups
Social Vulnerability Index (SoVI) for Texas based on 2000 Census Block Groups
Social Vulnerability Index (SoVI) for Indiana based on 2000 Census Block Groups
Social Vulnerability Index (SoVI) for Oregon based on 2000 Census Block Groups
Social Vulnerability Index (SoVI) for Hawaii based on 2000 Census Block Groups
Social Vulnerability Index (SoVI) for South Carolina based on 2000 Census Block Groups
Social Vulnerability Index (SoVI) for Mississippi based on 2000 Census Block Groups
NOAA's National Ocean Service (NOS) Data Explorer Geoportal
RSS Feeds for Specific Tropical Cyclones of the North Atlantic, Caribbean Sea, and Gulf of Mexico (English)

Tools

- Coastal Change Analysis Program (C-CAP) Land Cover Atlas
- CanVis
- Climate Resilience Evaluation and Awareness Tool (CREAT)
- Coastal Change Hazards Portal
- Coastal County Snapshots
- Coastal Resilience
- Digital Coast
- Ecosystem-Based Management Tools Network Database
- Extreme Water Levels
- Federal Emergency Management Agency (FEMA) GeoPlatform
- FEMA Region II Coastal Analysis and Mapping
- Hawaii Tsunami Hazard Information Service
- Hurricane SANDY Response Imagery
- Inundation Analysis Tool
- MarineCadastre.gov
- National Stormwater Calculator (SWC)
- Planning for Changing Sea Levels
- Sea Level Rise Tool For Sandy Recovery
- Sea Level Rise Viewer
- Sea Level Trends
- State of the Coast
- Surging Seas
- United States Interagency Elevation Inventory

Maps

- Sandy SLR Planning Tool – New York City
- Sandy SLR Planning Tool – New Jersey and New York State
- SLR and Coastal Flooding Impacts Viewer
- Historical Hurricane Tracks Tool
- International Best Track Archive for Climate Stewardship (IBTrACS)
- NOAA’s nowCOAST Web Mapping Portal to Near-Real-Time Coastal Information
- NOAA’s Coastal Change Analysis Program (C-CAP) Regional Land Cover Data
- FEMA’s National Flood Hazard Layer (Official)
- FEMA’s Hazus Average Annualized Loss Viewer
- FEMA MOTF-Hurricane Sandy Impact Analysis
- Coastal Change Hazards Portal
**Challenges**

**Resources**

- Current Flood Risk: The FEMA National Flood Hazard Layer
- Sea Level Rise and Coastal Flooding Impacts
- Future Flood Risk Information for New York and New Jersey (Post-Sandy)
- ArcGIS Online Maps
- Coastal Erosion and Vulnerability
- Coastal Flood Frequency
- Socio-Economic Data
- Economics: National Ocean Watch (ENOW)
- Historical Hurricane Tracks
- U.S. Geoplatform

**FY 2015 Federal Research & Development Budget Briefing**

**The FY 2015 Science and Technology R&D Budget: Science, Technology, and Innovation for Opportunity and Growth**

**NEXT**

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**Story**

**Big Earth Sciences Data – From Descriptive to Prescriptive Analytics**

I am helping Dr. Joan Aron provide an end-user perspective for the April 17th ESIP Earth Sciences Data Analytics Meeting and the Federal Big Data Working Group Meetup on May 6th:

- 6:30 p.m. Welcome and Introduction Slides
- 6:35 p.m. Continue Data Science Tutorial: Practical Data Science for Data Scientists: Specific Data Science Tools and Applications 2 and Federating Big Data for Big Innovation, Data Science for Datapalooza and ESIP Earth Sciences Data Analytics. See Climate Change and the President Obama's Action Plan Infographic: Where is the data for this?
- 7:00 p.m. Brief Member Introductions
- 7:10 p.m. Dr. Joan Aron, EPA & NASA Climate/Environmental Data Analytics (with sample analytics by Brand Niemann)
- 7:45 p.m. Federating Big Data for Big Innovation and A Redesigned, Open Source Data.gov: Dr. Jeanne Holm Data.gov Evangelist
- 8:15 p.m. Open Discussion
- 8:30 p.m. Networking
- 9:00 p.m. Depart

A recent blog post on Big Data – From Descriptive to Prescriptive concludes the following about plotting analytical complexity against some sort of business value:
Regardless of graphic representation, they all follow the progression from **What Happened (descriptive analytics), Why Did It Happen (correlation analytics), What Will Happen Next (predictive analytics),** and **What Should I Do About It (prescriptive analytics).**

So I am going to try to find some sources of Earth Sciences data to illustrates these 4 analytic items using my recent discussions with Dr. Joan Aaron.

First, NASA is conducting the third annual International Space Apps Challenge, a "codeathon"-style event on April 12-13 at almost 100 locations around the world. This is an opportunity for citizens, scientists, entrepreneurs, educators, and students to help solve challenges about Earth, space exploration and social needs. Over 20 of the challenges are about Earth science and cover air quality, imagery, coastal inundation, watersheds, trees, and land cover. Please check out the challenges and register to participate at a physical location or virtually at https://2014.spaceappschallenge.org/. Joan and I will be listening to this looking for good examples.

Second, Joan gave me some suggestions for analytics:

1) **Climate and Air Quality**

Combine re-analysis of climate data (NASA) and air quality (AirNow air quality alerts; NASA MODIS; NASA VIIRS). Look at risks of heat waves and air quality events.

Example of AQ data: [http://earthobservatory.nasa.gov/OT...w.php?id=83356](http://earthobservatory.nasa.gov/OT...w.php?id=83356)


2) **Climate and Water Quality**

Combine re-analysis of climate data (NASA) and watershed data (pollution point sources; nonpoint issues - impervious surface; deforestation). Look at risks of pollution and extreme weather (flooding; drought). This could be keyed to different beneficial uses of water sources. One is protecting the source for drinking water (identifying sources of water in watersheds; monitoring and managing the watersheds). Another is protecting the waters for recreational use, aquaculture and fishing (land-based sources of pollution in coastal zone management).

3) **Examples of current practice in source water protection:**

[http://water.epa.gov/infrastructure/drinkingwater/sourcewater/protection/index.cfm](http://water.epa.gov/infrastructure/drinkingwater/sourcewater/protection/index.cfm)

How-To Manual: Update and Enhance Your Local Source Water Protection Assessments (EPA September 2006)


Third, she asked me some excellent questions:
I am curious about your comment about looking into the data behind the White House climate change infographic. What would be the aim? My Answer: Data science audit. Do you think that the infographic is a misleading summary of the data? My Answer: Could be

At the White House climate data presentations, there were lots of interesting talks about the use of liberated data but not a discussion of the president’s proposed climate change resilience fund. The best that I could find is the following from March 4 from the Council on Environmental Quality. Do you have other info on how this money is proposing to be programmed (with the understanding that all is subject to change by Congress)? Answer: I looked at the 2015 President’s Budget for R&D (see below) and NSF Funding Opportunities in Data Science.

I am interested in environment, ecosystems and health. I also have a broader interest in science and policy. I can write for different kinds of audiences. Perhaps we can find some opportunities to collaborate. One area I am trying to develop is coastal zone and health to connect with global interest in oceans.

- https://www.globalpartnershipforoceans.org/
- http://www.globaloceansactionsummit.com/

National Academies Press, Understanding the Connections Between Coastal Waters and Ocean Ecosystem Services and Human Health Workshop Summary (2014) My Answer: We have similar interests and backgrounds so we should collaborate.

ESIP Disaster Response Cluster Discussions* The Global Platform for Disaster Reduction is a good reference point. The reports refer to natural hazards but do not provide specific lists. However, the description of the PREVIEW Global Risk Data Platform on global risk from natural hazards provides a list. http://www.preventionweb.net/globalplatform/2013/

A recent series of tweets caught my eye because Professor Jim Hendler is having his graduate students try to produce a data graphic each day of the newly announced Climate.data.gov

jahendler @jahendler 51m
join us in promoting great open govt datasets with hashtag #cooldata! #opendata #opengov

NOAA’s Severe Weather Data inventory database #cooldata for today - http://catalog.data.gov/dataset/seve...data-inventory

See http://catalog.data.gov/dataset/seve...data-inventory

I also attended a recent EarthCube Summit, which has new NSF funding and a June all hands meetings in Washington DC, for data sources.

So let the data search, data preparation, etc. begin using the Data Mining Standard to try to produce four examples of the progression of analytics complexity and value.

MORE TO FOLLOW
Story

Data Analytics in Data Science

First how did we get to this point (what is the history?):

Steve Kempler called our attention to:

- Data: Temperature / Precipitation Data Access
- An open position: Earth Science Informatics Position Open at the NASA GES DISC
- An AGU Session IN008

So Data needs to be analyzed by a person with training and experience and presented publicly for feedback. This is why I am both a data scientist and a data journalist.

Then he proposed and initiated:

- Analytics and Data Scientist 'Cluster'
- First Earth Science Data Analytics (ESDA) Telecon
- Earth Science Data Analytics/Earth Science Data Analytics Telecons/2014-02-20 Telecon Notes
- Draft Next ESDA Telecom Agenda

So Analytics and Data Science need to be done by an open community. This is why I co-organized the Federal Big Data Working Group Meetup.

As a result he got responses from and made requests of:

- Response from Brand Niemann
- Response to Emily Law
- Request from Emily Law
- Request from Steve Kempler
- Response from Brand Niemann
- Request from Steve Kempler
- Request from Eric Kihn

The bottom line is that I was asked to:

- Explain the relationship between implementing data analytics (a tool) and the Data Scientist (a person and even better a team)
  - It was said that a Data Scientist does much more. Is data analytics part of the Data Scientists repertoire? My Response: Yes
- See applied examples and having the relevant parties dissect their goals and methods to achieve them
  - "Data Analytics in support Environmental Science." a show and tell around real use cases. My Note: See my EPA Waterways Data Science for Business (and Science): Specific Example
Steve Kempler's journey to Data Science/Data Analytics is very interesting and typical in my experience and I like to document that so others can identify with it. This is the beginning of your Data Science profile (see my graduate class described below in which I ask all my students to do the same)!

I teach a graduate course in Data Science called "Practical Data Science for Data Scientists" that uses two leading text book, both written by academic persons (but also with real-world business experience). The second book, "Data Science for Business", is used in over 20 universities in 9 countries and is centered on the Data Mining Process (which is an international standard) and which I used in my recent specific example of EPA Waterways data since Eric Kihn wants a summer session on "Data Analytics in support Environmental Science". To me this is the best way to explain Data Science and the role of Data Analytics in it.

In addition, my NIST presentation this week used the matrix below to provide more drill down detail to answer your question.

<table>
<thead>
<tr>
<th>Drew Conway - Data Science</th>
<th>Harlan Harris - Data Products</th>
<th>Josh Tauberer &amp; Brand Niemann - Data Stories</th>
<th>Recent Conferences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Substantive Expertise</td>
<td>Domain Knowledge</td>
<td>Find and Prepare Data Sets</td>
<td>Data Transparency 2013</td>
</tr>
<tr>
<td>Hacking Skills</td>
<td>Software Engineering</td>
<td>Store and Query Data Sets</td>
<td>* Cloud: SOA, Semantics, and Data Science Conference</td>
</tr>
<tr>
<td>Math and Statistics Knowledge</td>
<td>Statistics, Predictive Analytics, and Visualization</td>
<td>Discover Data Stories in the Data Sets</td>
<td>Predictive Analytics World 2013 Government Conference</td>
</tr>
</tbody>
</table>

* Tried to cover all three.

Source: [http://semanticommunity.info/Data_Science/Data_Science_Symposium_2013#Story_2](http://semanticommunity.info/Data_Science/Data_Science_Symposium_2013#Story_2)

You can also read what I learned from and recommended to the NIST Data Symposium this week. See:

[http://semanticommunity.info/Data_Science/Data_Science_Symposium_2013#Story](http://semanticommunity.info/Data_Science/Data_Science_Symposium_2013#Story)

and my interview by a major publication.

As a Data Scientist/Data Journalist, I produce data products and data stories that answer three basic questions:

- How was the data collected?
- Where is the data stored?
- What are the results? (analytics is used here)

Also please see my work for the recent NIST Data Science Symposium 2013 (actually 2014) and the NIST Big Data Working Group for which my poster and use case, respectively were: "What a Data Scientist Does and How They Do It"
and "The Semantic Medline – YarcData Graph Appliance Application for the Federal Big Data Senior Steering Group", respectively.

"Gartner defines advanced analytics as, 'the analysis of all kinds of data using sophisticated methods (for example statistics, descriptive and predictive data mining, simulation and optimization) to produce insights that traditional approaches to business intelligence (BI) - such as query and reporting - are unlikely to discover. See their recent Magic Quadrant."

An advanced analytics platform provides a full suite of tools for a knowledgeable user to perform a variety of analyses on different types of data.

See an Eight-Question Decision Framework for Buying, Building, and Outsourcing Data Science Solution."

END OF QUOTE

To me "a knowledgeable user" would/ should be a data scientist.

There are some free and open source tools that I have used and reviewed for OMB and others.

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**ESIP Earth Sciences Data Analytics (ESDA) Telecon**

**Thursday, March 20, 2014 3:00 PM-4:00 PM. (UTC-05:00) Eastern Time (US & Canada)**

**Guest Speakers:**

- Dr. Brand Niemann, Director and Senior Data Scientist, Semantic Community: Sorting out Data Science and Data Analytics
- Dr. John Schnase, NASA/GSFC: Hands on Experience: Big Data Challenges
- Prof. Bamshad Mobasher, Professor of Data Analytics, DePaul University: Data Analytics Masters Degree Overview

**Objectives:**

It seems that this Cluster can serve multiple purposes to address the various levels of members understanding and interests regarding Data Analytics. This includes:

- ‘Academic’ discussions that allow all of us to be better educated and on the same page in understanding the various aspects of Data Analytics
- Bringing in guest speakers to describe external efforts and further teach us about the broader use of Data Analytics
- Activities that ESIP members can actually address and tackle

**Agenda - 3/20/14 (details below)**

1. Topics that help us to better understand data analytics/data science
2. Guest Speakers
3. EDSA Activities

**Agenda Details:**
1. Topics to better understand, so far: - Dr. Brand Niemann, Director and Senior Data Scientist, Semantic Community: Sorting out Data Science and Data Analytics

2. Two Guest Speakers – What are people doing with Data Analytics
   1. Dr. John Schnase, NASA/GSFC: Hands on Experience: Big Data Challenges
   2. Prof. Bamshad Mobasher, Professor of Data Analytics, DePaul University: Data Analytics Masters Degree Overview

3. ESDA Activities

Discussion: These are solid activities that have been suggested so far:

- Compile use cases (include producer/supplier and data user analytics utilization)
- Compile analytics tools (internal and external to ESIP)
- Do gap analysis

Do they sound correct? Any other suggestions/ refinements?

Next: Volunteers needed to breakout work and move forward…discuss.

Future Activities:

- Examine project long case studies to determine successfulness of using data analytics in the project (i.e., lessons learned)
- Oh yeah: Create a Cluster Mission Statement and Objectives
- Report out to the Federation All

Guest Speaker

Dr. Brand Niemann, Director and Senior Data Scientist, Semantic Community: Sorting out Data Science and Data Analytics

Brand Niemann, former Senior Enterprise Architect & Data Scientist with the US EPA, works as a data scientist, produces data science products, and publishes data stories for Semantic Community, AOL Government, & Data Science & Data Visualization DC.

I am a practicing Data Scientist/Data Journalist with 30+ years of government experience and 3+ years of private sector experience.

I identify with the other two speakers in that I have had Hands on Experience with Big Data Challenges (e.g. NASA Big Data) and Teaching Graduate Data Science Courses (e.g. George Mason University).

Objectives:

The Federal Big Data Working Group Meetup that I co-lead with Kate Goodier has the following objectives (mission statement):

- Federal: Supports the Federal Big Data Initiative, but not endorsed by the Federal Government or its Agencies;
• **Big Data**: Supports the Federal Digital Government Strategy which is "treating all content as data", so big data = all your content;

• **Working Group**: Data Science Teams composed of Federal Government and Non-Federal Government experts producing big data products (How was the data collected, Where is it stored, and What are the results?); and

• **Meetup**: The world's largest network of local groups to revitalize local community and help people around the world self-organize like MOOCs (Massive Open On-line Classes) being considered by the White House.

**Agenda Details:**

Sorting out Data Science and Data Analytics

"Gartner defines advanced analytics as, "the analysis of all kinds of data using sophisticated methods (for example statistics, descriptive and predictive data mining, simulation and optimization) to produce insights that traditional approaches to business intelligence (BI) - such as query and reporting - are unlikely to discover. See their recent Magic Quadrant."

An advanced analytics platform provides a full suite of tools for a knowledgeable user to perform a variety of analyses on different types of data.

See an Eight-Question Decision Framework for Buying, Building, and Outsourcing Data Science Solution."

END OF QUOTE

To me "a knowledgeable user" would/ should be a data scientist.

There are some [free and open source tools](http://semanticommunity.info/Data_Science/ESIP_Earth_Sciences_Data_Analytics) that I have used and reviewed for OMB and others.

**Discussion:**

• Compile use cases (include producer/supplier and data user analytics utilization)

• Compile analytics tools (internal and external to ESIP)

• Do gap analysis

Do they sound correct? Any other suggestions/ refinements?

Next: Volunteers needed to breakout work and move forward…discuss.

The [Federal Big Data Working Group Meetup](http://semanticommunity.info/Data_Science/ESIP_Earth_Sciences_Data_Analytics) asks members to focus their data science team work and presentations on answering three principle questions:

• Where did you get the data?,

• Where did you store the data?, and

• What were your results?)

**Future Activities:**

• Examine project long case studies to determine successfulness of using data analytics in the project (i.e., lessons learned)

• Oh yeah: Create a Cluster Mission Statement and Objectives
• Report out to the Federation All

The Federal Big Data Working Group Meetup Data Science Team presentations are documented so senior government officials, senior business leaders and members and students can learn and apply them. See topics under Data Science.

An example of starting to use the Data Mining Standard for the URLs below:

• Earth Science Informatics Position Open at the NASA GES DISC
• Temperature / Precipitation Data Access

I followed and documented this trail:

http://disc.sci.gsfc.nasa.gov/giovanni/overview/index.html
http://disc.sci.gsfc.nasa.gov/giovanni-at-is-giovanni
http://disc.sci.gsfc.nasa.gov/giovanni-uses-giovanni
http://disc.sci.gsfc.nasa.gov/giovanni-nni-parameters
http://disc.sci.gsfc.nasa.gov/giovanni-o-use-giovanni
http://disc.sci.gsfc.nasa.gov/giovanniledge-giovanni
http://disc.sci.gsfc.nasa.gov/giovinnoknowledgements
http://disc.sci.gsfc.nasa.gov/services
http://disc.sci.gsfc.nasa.gov/data-holdings
http://disc.sci.gsfc.nasa.gov/gesNew_data_usgs_gdp

NLDAS and GLDAS data sets accessible through the USGS GDP

NASA-USGS collaboration allows new visualization options for hydrologic data

Excel spreadsheet and data plot of monthly NLDAS 0-100cm soil moisture content for Texas, 1979-2013.
The NASA Goddard Earth Sciences Data and Information Services Center (GES DISC) is pleased to announce that, in a collaborative effort with the United States Geological Survey (USGS), the North America Land Data Assimilation System Phase 2.0 (NLDAS-2) and Global Land Data Assimilation System Version 2 (GLDAS-2) data sets have been integrated into the USGS Geo Data Portal (GDP). In addition to the existing data access methods listed in the NASA GES DISC Hydrology Data Holdings Page, users can access the NLDAS-2 and GLDAS-2 data and get “Areal Statistics” for specified geo-regions, shapefiles, or polygons, through the USGS GDP.

Here is an example procedure for getting area-averaged NLDAS-2 monthly Noah 0-100 cm soil moisture content for Texas:

Go to: http://cida.usgs.gov/gdp/.

* Click “Landscape” tab (or “Climate” tab, or “All” tab).
* Select “NLDAS monthly Noah files.”
* Click “Areal Statistics” tab, which brings up the green button at the bottom of the page.
* Click green button, “Process Data with the Geo Data Portal.”
* Select “sample: CONUS_states,” then “STATE,” and then “Texas,” and click “Next.”
* Select “Area Grid Statistics (weighted).”
* Click “OK” in the pop-up window.
* Select “soilm0-10cm - 100 ** 0-100 cm top 1 meter soil moisture content [kg/m^2].”
* Click “Submit For Processing.”
* Input your email address to receive the result.

The figure accompanying the article shows the result link (delivered via email), as opened and displayed in Excel.

**Caution:** Please note that, for hourly NLDAS and 3-hourly GLDAS data, although requests that span many tens of thousands of time steps are possible, test-runs made over shorter time periods (tens of time steps) are highly recommended, to gauge the expected total time per request. Single requests should be kept small enough, such that they do not run longer than a day or two. The longer a request runs, the more chance there is of a system outage causing failure.
Questions or comments? Email the NASA GES DISC Help Desk: gsfc-help-disc@lists.nasa.gov

Click here to view documentation

Although this program has been used by the USGS, no warranty, expressed or implied, is made by the USGS or the United States Government as to the accuracy and functioning of the program and related program material nor shall the fact of distribution constitute any such warranty, and no responsibility is assumed by the USGS in connection therewith.

I did the above steps and got:

Process Information Follows:

Process Title:   Area Grid Statistics (weighted)
Process Version: 1.0.0
Process Full Name: gov.usgs.cida.gdp.wps.algorithm.FeatureWeightedGridStatisticsAlgorithm
Process Created: 2014-03-17T16:47:46.412-05:00
Process Status: Process successful

Inputs:

Input: FEATURE_ATTRIBUTE_NAME
Data: STATE

Input: DATASET_URI
Data: dods://hydro1.sci.gsfc.nasa.gov/dods..._MOS0125_M.002

Input: DATASET_ID
Data: soilm0_10cm
Input: TIME_START
Data: 1979-01-01T00:00:00.000Z
Input: TIME_END
Data: 2014-02-01T00:00:00.000Z
Input: REQUIRE_FULL_COVERAGE
Data: true
Input: STATISTICS
Data: MEAN
Input: GROUP_BY
Data: STATISTIC
Input: SUMMARIZE_TIMESTEP
Data: false
Input: SUMMARIZE_FEATURE_ATTRIBUTE
Data: false
Input: DELIMITER
Data: COMMA
Input: FEATURE_COLLECTION
Data:

< Complex Value Reference (not shown) >

Outputs:

Output Name: OUTPUT
Data:

Encoding:
Mime Type: text/csv
Data Services: http://disc.sci.gsfc.nasa.gov/services

The following is a list of data related services that the GES DISC provides our users to help them get the most out of our data resources. None of these services requires the user to download or install any software. A list of tools provided by the GES DISC, which do require the user to download and install software, can be seen on our Data Tools.

Active Fire Data
Download MODIS active fire data for the last 24, 48 hours and 7 days in shapefile, KML, WMS or text file formats.

https://earthdata.nasa.gov/data/near...tive-fire-data

https://firms.modaps.eosdis.nasa.gov.../Global_7d.zip (SHP)

I visualized these data (bar chart with Gaussian fit and map chart) and filter these data by satellite type and brightness.

I also followed this trail:

- http://gdata1.sci.gsfc.nasa.gov/daac...RS_Level3Daily
  - Results can be downloaded either in HDF or ASCII format.
- ftp://acdisc.sci.gsfc.nasa.gov/ftp/d...ua_AIRS_Level3
FTP DID NOT WORK

MORE TO FOLLOW ON THIS AND OTHER DATA SOURCES

The Data Mining Standard is shown in this figure from the book Data Science for Business.

Figure 2-2. The CRISP data mining process.

As a data scientist I followed this complete process for the EPA Waterways data sets. I am just starting this process for the excellent NASA Goddard Earth Sciences Data and Information Services Center (GES DISC) data sets.

Opportunities:

White House Big Data and FY 2015 Science and Technology R&D Budget Excerpts

“Data to Knowledge to Action” Event Highlights Innovative Collaborations to Benefit Americans

Dozens of public and private organizations are meeting at a White House-sponsored event today to describe their contributions to an inspiring array of collaborations that embrace a common theme: sharing resources and drawing upon sophisticated tools to plumb the depths of huge data sets in order to derive greater value for American consumers and grow the Nation’s economy.

The new commitments build on an initial platform of projects launched last year as part of the Obama Administration’s $200 million “Big Data Initiative.” Among the new announcements:

Bringing NASA data down to Earth

Amazon Web Services (AWS) and NASA are making space-based data about the Earth widely available to the public through the NASA Earth eXchange (NEX), a collaborative sharing network for researchers in Earth Science. AWS is working with NEX to host a significant amount of NASA’s Earth-observing data as an AWS Public Data Set. Among other benefits, this will bolster projects like Citizen Science Alliance’s Zooniverse.org, which allows researchers to leverage the power of the crowd to quickly analyze massive data sets and work on problems that

http://semanticommunity.info/Data_Science/ESIP_Earth_Sciences_Data_Analytics

Updated: Sat, 19 Sep 2015 06:50:30 GMT
Powered by mindtouch™
cannot be efficiently solved by computers. Already, for example, the Zooniverse’s Galaxy Zoo projects have used contributions from volunteer “citizen scientists” to classify more that 1 million galaxies in the Sloan Digital Sky Survey. 

See: Semantic Data Science Team Attends White House Big Data Event

The FY 2015 Science and Technology R&D Budget: Science, Technology, and Innovation for Opportunity and Growth
$2.5 billion for the U.S. Global Change Research Program (USGCRP), which coordinates and integrates Federal research and applications to assist the Nation and the world in understanding, assessing, predicting, and responding to the human-induced and natural processes of global change and their related impacts and effects.

See: NSF Funding Opportunities in Data Science

GMU Statistics Seminar Announcement: Feb 22, 2013, 11am-12pm
Why we need huge datasets of space-based Earth observations, examples of what we do with them for studying airborne dust, smoke, and pollution, and how an involved statistician might help out

Ralph Kahn Slides
NASA/Goddard Space Flight Center
Johnson Center G19 - Gold Room
4400 University Drive, Fairfax, VA 22030
Time: 11:00 A.M. - 12:00 P.M.
Date: Friday, Feb 22, 2013

Abstract
From a human perspective, Earth is a huge planet, and environmental conditions are enormously diverse. Yet we care very much about even small-scale and short-lived phenomena, as they affect climate and determine habitability. As such, satellite-borne instruments that can make frequent, global observations are central to our study of current conditions, and are indispensable for efforts to predict future change. As a window into the nature of massive Earth science data sets, I will use space-based measurements of aerosols: desert dust, volcanic ash, wildfire smoke, and pollution particle l context for these measurements, general data set attributes, key questions these data are intended to address, and the need for coupling such observations with climate and air quality numerical models, will be covered. The final aspect of the seminar, how statisticians might help out, will be explored during discussion at the end of the presentation.

Practical Uses of Math and Science: The On-Line Journal of Math and Science Examples for Pre-College Education, Ralph Kahn, Editor
See: http://pumas.nasa.gov/

Slides

Slides
Research Notes

In process when I work with the Temperature / Precipitation Data Access below.

http://www.epa.gov/airquality/airdata/ad_maps.html

http://airnow.gov/index.cfm?action=a...ives#datafeeds

Dear Colleagues, I write to announce the launch of the first Group on Earth Observations GEO Appathon 2014 - an exciting new worldwide data science competition to be launched on 7 May 2014. See www.geoappathon.org

The GEO Appathon is a global applications (App) development competition that aims to develop new, exciting and - most importantly - useful Apps using Earth observation data from the open and expansive Earth Observation data sets in the GEOSS Common Infrastructure (GCI). See www.geoportal.org

The Appathon kicks off on 7 May 2014 and runs until 31 August 2014. Participation is open to any non-commercial entity, individual or team from any background in any country. Apps can be created for any of the main operating systems, and can be designed for any type of portable device. All Apps will be judged and the top three winners will receive a cash prize and a year-long GEO network endorsement and publicity for the App.

Visit our GEO Appathon website (www.geoappathon.org) for more rules, details of how to register and information about how you can help us unleash the power of Earth observation data.

I invite you to share this email broadly across your organizations and networks, and with anyone who has a passion for building apps, or an interest in creative solutions that can make a difference.

We encourage students, scientists and developers to join us and create the next game-changing solution using Earth observation data.

If you have any questions, please do not hesitate to email Dan Williams at: dan@geoappathon.org.

Best regards, Barbara Ryan

Director, GEO Secretariat

Tel: +41 22 730 85 80
Background

Source: ESIP-All Emails

Request from Eric Kihn

I'm very much interested in seeing applied examples and having the relevant parties dissect their goals and methods to achieve them. I think a great summer topic could be "Data Analytics in support Environmental Science." a show and tell around real use cases.

Request from Steve Kempler

I have done much research and still can not come to a strong description regarding the relationship of implementing data analytics and the Data Scientist. It was said that a Data Scientist does much more, and the two terms should not be coupled... Is data analytics part of the Data Scientists repertoire? Most definitions connect the two terms.

Can you lead this discussion?

Response from Brand Niemann

Yes I will use my abstract for the NIST Data Science Symposium yesterday and today entitled "What does a data scientist do and how do they do it."

Response to Emily Law

Good point about having a Data Scientist talk about Data Analytics. The Cluster's own Brand Niemann has given presentations about being a Data Scientist and is already on this e-mail chain. So... Brand would you like to talk for about 5 minutes on your views of the role of a Data Scientist in performing data analytics (i.e, how are these two things related), followed by leading a 5 minute discussion.

Request from Emily Law

It will be important to identify what needs to be better understood and tie the speakers to help us understand and give us real life examples. Take your first topic: data scientists vs data analytics. Bring in a data scientist who performs data analysis to talk about what he/she does and his/her experience and the needs will be great.

Draft Next ESDA Telecom Agenda

It seems that this Cluster can serve multiple purposes to address the various levels of members understanding and interests regarding Data Analytics. This includes:
• ‘Academic’ discussions that allow all of us to be better educated and on the same page in understanding the various aspects of Data Analytics
• Bringing in guest speakers to describe external efforts and further teach us about the broader use of Data Analytics
• Activities that ESIP members can actually address and tackle

Agenda - 3/20/14 (details below)

1. Topics to better understand
2. Guest Speaker
3. ESDA Activities

Agenda Details:

1. Topics to better understand, so far (let’s say, one per telecom)

A few topics that have come up from our past discussions include:
• Data Scientist vs Data Analytics
• Defining the end-to-end data analytics needs: Define data producer/supplier analytics needs vs. data user analytics needs
• Understanding the Data Scientists user needs

2. Guest Speaker – What are people doing with Data Analytics, out there (let’s say two guests per telecom):
• Dave Jones
• John Schnase
• IEEE – Beth Plale?
• Brand Niemann?
• Belmont Forum - Lee Allison
• CODATA
• NSF
• EarthCube
• Data- Scientist or two - Understanding the Data Scientists user needs

3. ESDA Activities
• Compile use cases
• Compile analytics tools (internal and external to ESIP)
• Do gap analysis
• Examine project long case studies to determine successfulness of using data analytics in the project (i.e., lessons learned)
• Oh yeah: Create a Cluster Mission Statement and Objectives
• Report out to the Federation All
Earth Science Data Analytics/Earth Science Data Analytics Telecons/2014-02-20

Telecon Notes

Presentations:
Steve's telecom Presentation
NIST Big Data Presentation

Notes:

More than 40 people attended this telecom. Interest is high. As in any start-up group addressing an area with extensive components that can be addressed in various ways, we too will coalesce in one or maybe more directions.

The purpose of this telecom was to initiate discussion on Earth Science Data Analytics and the Data Scientist to start the coalescing process that would result in ESIP contributions to, ultimately, facilitate the advancement of Earth science.

The following show the process commencing and several potential actionable ideas that have so far come forth. Please feel free to add additional comments to the meeting notes or send me an e-mail.

External Activities:
- We should look at inventory activities pursued outside ESIP (Emily L)
- John Schnase (GSFC) has relevant activities related to ‘Climate Analytics-as-a-Service’ (Chris L)
- We should also look into inviting individuals from other groups (e.g., CODATA, NSF, IEEE) (Bob C, who will help look for/provide points of contact)

Information Sharing:
- There is a growing amount of literature addressing data analytics. E.g., “Doing Data Science” by Cathy O’Neil (Bob C)
- Very nice presentation: ‘Demystifying Data Science’ by Natasha Balac ([http://bigdatawg.nist.gov/_uploadfile...9072641833.pdf](http://bigdatawg.nist.gov/_uploadfile...9072641833.pdf)). I am curious how/if you ESIP Data Scientists resonate with this presentation
- NIST provides an excellent list of ‘Big Data Analytics’ reading material: [http://bigdatawg.nist.gov/_uploadfile...5728417524.pdf](http://bigdatawg.nist.gov/_uploadfile...5728417524.pdf)

Ideas (potential direction) and Other Notes:
- Idea: What does analytics mean in Earth science. Currently, tools are crude. We can we help users find what they are looking for (Chris L)
- Idea: We can define the analytics toolset (focusing on Earth science) (Sara G)?
- Idea: We can assemble end-to-end team(s) that together address various aspects of data analytics (and, more broadly, Data Science. This would also surface gaps in our expertise. (Bob C)
- Note: Data Science is much bigger than analytics (Sara, others). Thus, let’s not treat them the same. (We can address both topics, but not as one topic)

RDA Highlights (thanks to Rahul)
- Idea: We can provide ESIP Earth science expertise to support RDA activities (e.g.,use cases) (Sara G, Nancy H)
- Idea: We can identify cross domain commonalities (Emily L)
NIST highlights (thanks to Wo) – See presentation

- Idea: We can better understand and provide potential ESIP expertise to NIST activities

Post Telecom Comments:

- Idea: Data Supplier vs. Data User perspectives. We can surface/organize the analytics needs and use cases from both perspectives (as noted below, related Bob's idea above)

Comment 1 (from Rudy H):
Another dimension of delineating Data Scientist and Data Analytics is along the Data Creator/Provider < --- > Data End User axis. -- The perspectives and the needs of Data Science and Data Analytics are very different where you are along that axis. -- Typically a real gap exists between the two perspectives,

Comment 2 (from Joan A):
My main comment is that the telecom tended to focus more on the suppliers of tools. This should be complemented by attention to the demand side. I am thinking of environmental monitoring and protection decision-makers who need interaction with the suppliers of the technologies. ESIP has a niche in contributing to this understanding. Bob Chen's comments about examining the whole process and comments about use cases fit in here. I have a particular interest in the perspective as a user in how data analytics and sharing can support better decisions linking environmental protection and public health.

- Idea: We can consider focusing on the collection of case studies where organizations have implemented big data solutions to problems, carried out analytics, quality assurance, and have allowed policy makers to make informed decisions based on the end products of data science. From this body of work, which can highlight both successes and failures, I think that the group can begin to form recommendations on how organizations should proceed in data science based on their particular goals. It can also serve as a bed of research for data scientists and IT staff to consider alternatives to their own approaches. (Rob C)

Next Telecon:

- Targeting: March 20, 3:00 EST
- Looking for help setting the agenda (contact Steve) drawing from 'ideas' provided above – Eric K?, Brand N? (help address Data Scientist related activities), Emily L? Others?
- Invite 2 guest speakers to discuss their Analytics activities

Thank you all again for your participation in yesterday's ESDA telecon. Special thanks to Rahul, Wo, and Erin for their presentations and support.

Please take a look at the notes, linked from our ESDA page: http://wiki.esipfed.org/index.php/Ea...Data_Analytics

If you see any corrections or additions to the notes, please let me know.

If you wish to add new notes, your interests, ideas, and additional information, please feel free to edit the Discussion Page:

http://wiki.esipfed.org/index.php/Ta...-02-20_Telecon

References, presentations, and additional information are linked to these notes.
Looking forward to hearing from you and further discussion.

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**Response from Brand Niemann**

Some expertise that can help you:

Dr. Brand Niemann  
Director and Senior Data Scientist  
Semantic Community  
http://semanticommunity.info  

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**First Earth Science Data Analytics (ESDA) Telecon**

Agenda (details below)

1. Analytics and Data Scientist...in the Federation (what we can contribute to the field)  
2. Collaboration with the RDA Big Data Analytics Interest Group (Infrastructure Working Group)  
3. Data Scientist as a data user

Agenda Details:

Note, there is a plethora of very significant activities on this subject at this time: e.g., NIST, the National Big Data R&D Initiative, RDA, Countless huge workshops, dozens for experts in the field. This agenda is built around determining what the Federation can do to contribute to the field, as opposed to initiating another major activity. Thus,

1. Analytics and Data Scientist...in the Federation (what we can contribute to the field)

Discussion to flush out what expertise we have in the Federation on Analytics Techniques and Data Science. This can result in a collection of text summarizing our experience/expertise. Regarding Data Scientist, what would you like to see a Data Scientist do to help you in your work. Peter just provide me with another interesting link:  
[http://www.mastersindatascience.org](http://www.mastersindatascience.org)  
(Thanks Peter)

2. Collaboration with the RDA Big Data Analytics Interest Group (Infrastructure Working Group) - Rahul will provide us a briefing

RDA and NIST Big Data initiative have jointly focused their interests on the RDA Big Data Analytics Interest Group, and in particular, the Infrastructure Working Group. Basic Charter: ‘to establish best practices implementation guidelines for how to deploy and manage big data applications using NIST Big Data Reference Architecture (NBD-RA) and other big data architectures along with best technologies available today to meet the ever challenging big data application demands’

As a group, is this something we should collaborate with? Can we contribute. For more information see:
3. Data Scientist as a data user

Data Scientists are, obviously, data users. Data scientists: What are your Earth science data needs in regards to accessing and using Earth science data? Looking for people with experience

Analytics and Data Scientist 'Cluster'

At the recent Winter ESIP Meeting, we held a session entitled: Analytics and Data Scientists. Please see: http://commons.esipfed.org/node/1879, for abstract and session notes.

Instead of taking on 'Big Data', which has its own amoeba-like characteristics ("moves about by extending fingerlike projections"), this group addressed the more grounded response to what information management paradigm shifts are needed to address the continuing increase and heterogeneity of Earth science data: Analytics and Data Science. We had a very good initial discussion that provided us the opportunity to start putting our arms around these relatively new information management paradigms.

To move forward, I would like to invite ESIP members who have experience in analytics techniques, data scientists, information managers who wish to explore new information management paradigms, information technologists, folks interested in learning more to better understand the new dynamics, and...everyone else, to a telecom to discuss the following topics:

1. Analytics and Data Scientist...in the Federation (what we can contribute to the field)
2. Collaboration with the RDA Big Data Analytics Interest Group (Infrastructure Working Group)
3. Data Scientist as a data user

AGU Session IN008

Please consider submitting an abstract for the following Earth and Space Science Informatics session at the Fall 2013 AGU Meeting (December 9-13). Please note – the deadline for abstracts is 6 August 2013 at 23:59EDT/3:59+1 GMT. Our apologies for multiple postings.

Session IN08: Data Curation, Credibility, Preservation Implementation, and Data Rescue to Enable Multi-Disciplinary Science

This session invites contributions that focus on all aspects of data curation, with a focus on long-term credibility of datasets and experiences, lessons learned, and ongoing projects in preparing earth science data for long-term preservation, especially poorly curated, ‘dark’ data. We envision a broad range of topics from data management plans; examples of early career practitioners; data rescue initiatives; data preservation initiatives; ensuring credibility through
openness, completeness, permanence, and ease of access in processing/preparing datasets including documentation of uncertainty and data quality.

Since this is a session with a broad coverage, here are a few more details about the topics of interest:

1. Curation: The need for data curators is now more critical than ever. In response, Earth science librarians, information specialists, data scientists, data engineers, and curators are developing pragmatic efforts and formal practices to address ever increasingly complex and voluminous data flows. This session showcases such and seeks to highlight the 'in-between' work of curation and informatics. Topics include Earth science data management plans; data curation need assessments with an eye toward trends in data science, and sustainability of both data and curation services. This session highlights Council of Library Information and Resources' scholars and others to spur synergy between data curation support and researchers.

2. Credibility: Long-term datasets are of high interest in climate change studies. Scientific studies, especially those affecting public policy, are required to have a high standard of credibility, including: 1. Transparency (openness) – free and open sharing of data and associated information; 2. Completeness – availability of all information needed to understand and reproduce results; 3. Permanence – preservation of bits, readability and understandability; and 4. Ease of access and use – facilitating discovery with appropriate metadata, interoperability, and standards. This session covers how these topics are addressed in the processing/preparing datasets such as Earth Science Data Records, including derivation and documentation of uncertainty and data quality.

3. Preservation Implementation: A key to every data archive is to ensure the long term preservation of its data holdings. Into the information age, data archives are well prepared, or beginning preparations for how they will implement preservation of their data, and the identified decisions that are to be addressed. Data producers, also face the same implementation questions so to best provide data and supporting documentation for preservation. This session seeks those representing data archives and data producers who are preparing their data for long term preservation implementation, to describe concepts/approach, lessons learned, issues (and resolutions) faced, and status. And for those just starting, issues, concerns and questions.

4. Data Rescue and Multi-Disciplinary Science: As computational infrastructures have grown in capacity and connectivity, new opportunities are emerging for cross-disciplinary earth and space research at much larger scales, at higher resolutions, over longer time intervals and with greater complexity. The fourth paradigm of data intensive science is becoming reality, but limited by data accessibility. We invite contributions about data rescue initiatives that aim to bring poorly curated, ‘dark’ data sets that are often fragmented across multiple sources into the ‘light’ by converting them into cohesive, standardized collections and data sets that are stored on enduring physical infrastructures with sustainable funding.

Earth Science Informatics Position Open at the NASA GES DISC

I would like to bring your attention to the Earth Scientist position with expertise in Informatics, now open through USAJobs:
https://www.usajobs.gov/GetJob/ViewDetails/333843900 My Note: Position Filled
Description (from the posting):
The Science & Exploration Directorate, Earth Sciences Division, Global Change Data Center (Code 610.2), is seeking a senior scientist to lead research projects to utilize remote sensing data in Atmospheric Science applications and develop Earth Science Informatics tools at the Goddard Earth Science Data and Information Services Center (GES DISC).

As an Aerospace Technologist (AST) specializing in Earth Science data analysis and informatics, you will lead a team of scientists and software developers in: the design, planning, development, testing and evolution of on-line Earth Science data analysis and visualization tools; the investigation of science data provenance used to evaluate measurements suitability for a given science parameter and/or interpretation; and the cultivation of science partnerships and successful pursuit of winning proposals (solicited and unsolicited) for applied research.

The scope of responsibilities also includes: sensitivity analysis for global and regional assessments of aerosol, clouds and other atmospheric parameters; development of procedures (such as Giovanni see http://disc.sci.gsfc.nasa.gov/giovan...iew/index.html) that bring together and visualize datasets in various ways (e.g., merging, co-registering); outreach to the science research community to promote awareness of products and services; working with applications communities to facilitate usage of NASA remote-sensing data for societal benefits; and filling leadership roles in science data informatics working groups. In addition, the incumbent will develop strategies to address various aspects of multi-mission data analysis (e.g., inter-comparisons, data quality, data fusion) in conjunction with interested members of the science community, and reusable across other science disciplines.

A successful record of winning proposals in the Earth Science arena is required. Significant publications in prominent Earth Science peer-reviewed journals are expected.

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Temperature / Precipitation Data Access

In addition to all the other great information you have been receiving, I would like to add the Giovanni service as a quick, easy way to get surface air temperature and precipitation daily and monthly data by just specifying the location, time frame and parameter the user wishes to acquire. A graphic of the data will appear and then if of interest, the actual data can be downloaded (Users do not need to download data until they are sure the selected data is what they are looking for.). The process is quickly repeatable.

Observed Remote Sensing Data:

- For AIRS daily surface air temperature, go to:

  http://gdata1.sci.gsfc.nasa.gov/daac...RS_Level3Daily

  and check:

  'Surface air temperature_ascending' for daytime temperature 'Surface air temperature_descending' for nighttime temperature

  These temperatures are instantaneous, recorded the same time every day

- For AIRS monthly surface air temperature, go to:
and check:
'Surface air temperature_ascending' for daytime temperature 'Surface air temperature_descending' for nighttime temperature

These temperatures are instantaneous, recorded the same time every day

- For TRMM daily precipitation, go to:
  http://gdata1.sci.gsfc.nasa.gov/daac...RMM_3B42_Daily

  and check: 'precipitation'

- For TRMM monthly precipitation, go to:
  http://gdata1.sci.gsfc.nasa.gov/daac...d=TRMM_Monthly

  and check: 'accumulated precipitation'

Also, from model data (hourly, that can be averaged to daily or monthly):

- North American Land Data Assimilation:
  http://gdata1.sci.gsfc.nasa.gov/daac...id=NLDAS0125_H

  and under NLDAS-2 Primary Forcing, check:
  'Precipitation hourly total' for precipitation 'Temperature (2-m above ground)' for surface air temperature

Users will see a lot of other interesting parameters, as well.

FACT SHEET: The President’s Climate Data Initiative: Empowering America’s Communities to Prepare for the Effects of Climate Change

Source: http://www.whitehouse.gov/the-press-...america-s-comm (PDF)

THE WHITE HOUSE
Office of the Press Secretary

FOR IMMEDIATE RELEASE

March 19, 2014

FACT SHEET: The President’s Climate Data Initiative: Empowering America’s Communities to Prepare for the Effects of Climate Change
“Climate change is a fact. And when our children’s children look us in the eye and ask if we did all we could to leave them a safer, more stable world, with new sources of energy, I want us to be able to say yes, we did.”– President Barack Obama, State of the Union Address, January 28, 2014

Last June, President Obama launched a Climate Action Plan to cut carbon pollution, prepare communities for the impacts of climate change, and lead international efforts to address this global challenge. The plan recognizes that even as we act to curb the carbon pollution that is driving climate change, we must also prepare our citizens and communities for the climate impacts that are already underway across the country.

Delivering on a commitment in the President’s Climate Action Plan, the Obama Administration is today launching the Climate Data Initiative—a broad effort to leverage the Federal Government’s extensive, freely-available climate-relevant data resources to stimulate innovation and private-sector entrepreneurship in support of national climate-change preparedness.

President Obama is committed to ensuring that communities across America have access to the information and tools they need to protect themselves from harm today and potential damage in the future. This means connecting regional and city planners, resource managers, farmers, hospitals, and businesses with data-driven tools to help them better understand, manage, and prepare for the real-world impacts associated with climate change. Maps of future sea-level rise, for instance, can help builders decide where to break ground out of harm’s way, while other online tools can help water utility operators identify potential threats to the local water supply.

Insights gathered from data can help communities and businesses better understand and manage the risks associated with climate change. However, taking data about climate that is collected by satellites and scientific equipment and turning it into easy-to-use information and tools takes analysis, innovation, and cutting-edge technology expertise.

Through the Climate Data Initiative, the Obama Administration is today issuing a call to America’s top private-sector innovators to leverage open government data resources and other datasets to build tools that will make America’s communities more resilient to climate change and to forge cross-sector partnerships to make those tools as useful as possible. In response to this call to action, today’s launch includes a number of commitments by Federal agencies and private-sector partners:

**Administration Commitments**

The Climate Data Initiative builds on two significant Administration commitments: (1) to strengthen America’s resilience to climate change, and (2) to make government-held data more accessible to the public, entrepreneurs, researchers, and others as fuel for innovation and economic growth. New steps by the Administration include:

**Launch of climate.data.gov**

With leadership from the National Oceanic and Atmospheric Administration (NOAA) and National Aeronautics and Space Administration (NASA), the Administration is launching climate.data.gov—a new climate-focused section of Data.gov, the Federal Government’s open data platform, hosted by the General Services Administration, that will make Federal data about our climate more open, accessible, and useful to citizens, researchers, entrepreneurs, and innovators. Climate.data.gov will initially focus on coastal flooding and sea level rise in its beta phase, and already includes more than 100 curated, high-quality datasets, web services, and tools that can be leveraged by innovators to
help communities prepare for the future. Over time, these data and resources will expand to provide information on other climate-relevant threats, such as to human health, energy infrastructure, and our food supply.

Launch of NASA and NOAA Innovation Challenge on Coastal Vulnerability and Preparedness

Today, NOAA and NASA are launching an innovation challenge to encourage entrepreneurs, technologists, and developers to create and deploy data-driven visualizations and simulations that help people understand their exposure to coastal-inundation hazards and other vulnerabilities. This "Coastal Flooding Challenge" will culminate in a two-day event on April 12-13, 2014, as part of broader activities around the International Space Apps Challenge—a global mass collaboration inviting teams of problem-solvers to leverage publicly available data to design innovative solutions for global challenges.

Release of New Infrastructure and Geographic Map Data Relevant to Climate-Preparedness

To help communities and citizens plan for the risks of coastal flooding and other climate-change-related impacts, the U.S. Geological Survey, U.S. Department of Homeland Security, U.S. Department of Defense, and National Geospatial-Intelligence Agency are releasing today a collection of datasets containing mapping information about hundreds of thousands of the Nation’s infrastructure units and geographical features, including bridges, roads, railroad tunnels, canals, and river gauges. Providing wider access to these data to mission partners and the general public can advance preparedness for climate change impacts and other disasters. These data, which have been reviewed by DHS, DoD, USGS, and NGA and deemed non-sensitive, are being made available via user-friendly mapping services on Geoplatform.gov and Climate.data.gov.

NOAA Request for Information on Increasing Access to Environmental Data

To increase access to and use of its vast library of environmental data, NOAA has issued a request for information (RFI) seeking comment from industry, non-profits, research laboratories, universities, and private-sector partners to help make NOAA’s vast data holdings available in a rapid, scalable manner to the public. Of the 20 terabytes of data NOAA gathers each day only a small percentage is easily accessible to the public. Through the RFI, American companies will be able to provide potential solutions for NOAA to turn this untapped information into usable products or services. Respondents have until March 24, 2014, to submit a written statement of interest, including a proposed way forward.

Support for Climate Data & Tools in the President’s Budget

Recognizing the critical importance of data and information to meet the challenge of climate change, the President’s proposed FY15 Budget includes support for State, local, and tribal preparedness efforts, analysis of vulnerabilities of critical infrastructure, and development and dissemination of better information and planning tools, including the Climate Resilience Toolkit and Climate Data Initiative. The Budget also includes a new $1 billion Climate Resilience Fund, within a fully paid for $56 billion Opportunity, Growth, and Security Initiative, that expands on existing climate-change preparedness programs to ensure we are doing everything we can to support the safety and security of our communities and resources. The Fund will help us better understand and prepare for climate change by investing in research and unlocking data and information, including new sea-level rise analyses.
Expanding Stakeholder Outreach & Engagement

The White House, NASA, NOAA, and other Federal agencies will convene innovators, community leaders, scientists, communicators, and citizens to identify needs for data and data-driven tools, spur innovative collaborations and partnerships, and get feedback on how to best make data, information tools, and other resources on climate change available and useful to people, businesses, and communities. This process began today with two collaborative stakeholder workshops during which climate and technology experts will brainstorm innovative new climate resilience tools and ways to provide increased data-access to wide audiences. These workshops will precede the public launch.

Private Sector Commitments

Esri: Providing Communities with Map-Based Planning Tools and Collaboration Platforms

Esri is unveiling a new two-part initiative to help communities more effectively build climate-resilience. First, Esri will develop and publish a series of free and open "maps and apps" developed in partnership with 12 cities that help address the most urgent climate-relevant needs shared among thousands of users of Esri’s ArcGIS platform—such as preparing for droughts, heat waves, or flooding. Second, Esri is announcing today a climate-focused geo-collaboration portal—an online destination to discover, contribute, and share resources critical to confronting the impacts of climate change. Additionally, Esri recently announced, during one of the largest gatherings of GIS developers and in response to the President’s call to action, a Climate Resilience App Challenge to inspire more than 2,500 developers to focus their creative attention on creating mapping and analytical tools that help communities see, understand, and prepare for climate risks. Prizes will be awarded and the resulting apps will be openly shared in July.

Intel Corporation: Fostering Regional Partnerships and Hosting Hackathons to Boost the Development of Climate Resilience Tools

Intel Corporation, as part of its Code for Good program, is announcing its sponsorship of three regional partnerships including “hackathon” events focused on climate resilience in the Chesapeake Bay, New Orleans, and San Jose. In each location, Intel will join with local partners to convene teams of engineering and computer science students, and other interested local citizens, and challenge them to develop new software applications and tools to make good use of available data sets related to climate-change resilience. Each hackathon will have a focus area tailored to priorities of its host community, with an emphasis on driving a sense of local ownership of the tools that emerge from the event. These tools will be broadly communicated and made available for use in other localities.


Google is today announcing it will donate significant cloud computing and storage resources to support the creation of global, high-resolution maps, tools, and data products that will be made freely available to the public to help manage the risks of extreme heat, drought, sea-level rise and flooding. Google is committing to provide one petabyte (1,000 terabytes) of cloud storage to house satellite observations, digital elevation data, and climate and weather model datasets drawn from government open data and contributed by scientists as well as 50 million hours of high performance cloud computing on the Google Earth Engine geospatial analysis platform. To leverage these resources, Google is announcing today new partnerships with the Desert Research Institute, the University of Idaho, and the
University of Nebraska to (1) provide drought mapping and monitoring for the entire continental United States in near real-time and (2) model water consumption from vegetation across the entire planet. To better manage climate-related flooding, Google is also challenging the innovation community to leverage these vast cloud computing resources by collaborating in the development of an open and freely available global terrain model at unprecedented resolution - one petabyte of storage could support better than 1 meter resolution which will help the public and planners worldwide better anticipate and map the risks of coastal floods and other disasters. Google is also committing to support analysis and visualization of these scientific data to make information about impacts such as sea-level rise, storm surges, extreme heat, and drought easily accessible to the public.

**CartoDB: Announcing New Grants Program to Support Creation of Data-Driven Tools**

CartoDB will launch a grants program to support foundations and nonprofits in creating data-driven tools or efforts with respect to helping communities, companies, or citizens with resilience and preparedness for climate change impacts such as flooding, drought, and heat waves. The company will solicit grant applications and offer between $50 and $3500 for successful applications to be used on CartoDB infrastructure to help make climate resilience apps or projects possible. The money is to be spent in a year, but funded projects are free to reapply in the future.

**Climate Central: Releasing New Web Tools to Assess Local-Scale Sea Level Rise**

Climate Central will release a free web tool providing local projections, maps, and assessments of exposure to sea level rise and coastal flooding tabulated for every coastal zip code, municipality, county, and state in the U.S., along with planning, legislative and other geographic districts. Exposure assessments will cover more than 100 demographic, economic, infrastructure and environmental variables using data drawn mainly from federal sources, including NOAA, USGS, FEMA, DOT, DOE, DOI, EPA, FCC and the Census. Climate Central has already developed its [Surging Seas Risk Finder tool](http://semanticommunity.info/Data_Science/ESIP_Earth_Sciences_Data_Analytics) for Florida, New Jersey, and New York, which is geared toward city, state, and Federal planners, and commits to completing the balance of coastal states this year. Climate Central will conduct at least 100 more informational webinars and briefings with officials, planners and other stakeholders across the country in 2014.

**Microsoft Research: Providing Climate Scientists with New Tools and Computing Resources**

Microsoft Research is announcing a new program to provide climate change scientists and decision-makers free access to cloud computing resources to conduct research and analysis of climate data. Microsoft Research will grant 12 months of free cloud computing resources to 40 awardees selected from project proposals submitted by June 15, 2014. Each award provides up to 180,000 hours of free cloud computing time and 20 Terabytes of cloud storage. Microsoft is also announcing a new, free climate data resource, Adaptable FetchClimate, for retrieving past and present observations and for future climate-prediction information. FetchClimate will continue to be available as a free intelligent environmental information-retrieval service and will now be adaptable as a cloud-based system that can be re-implemented and adapted to the specific needs of new projects.

**Circle of Blue and Qlik: Developing New Tools and Visualizations to Better Understand Climate Impacts**

Circle of Blue, a nonprofit news and science organization, has partnered with Qlik, a data-analytics company, to develop a series of tools to improve understanding of water, food, and energy in a changing climate. Today the two organizations will launch an interactive visual dashboard that analyzes and integrates data into displays of current and past levels of
water reservoirs in California, and which can be scaled to compare hyper-local data and research with national and global trends. Current data, particularly water-related, is often compartmentalized and not available in comparative, visual formats. This new interactive display application, will help the public, water managers, and researchers, and others to build more resilient communities and ecosystems by helping the nation better understand, monitor, compare and manage its water supplies in this era of climate change.

100 Resilient Cities, an effort Launched by the Rockefeller Foundation: Supplying Data on Local Demand and Market Opportunities for Resilience Tools

100 Resilient Cities (100RC) is working to build urban resilience in 100 member cities around the world and develop the practice of resilience. As cities work to build resilience, they will demand new resilience-building tools from the marketplace. 100RC will provide to the Climate Data Initiative’s stakeholder engagement community with information from their 100 member cities on which types of resilience tools are most needed and could be most useful to inform efforts and direct investment in areas of greatest need, and pool demand for these tools as a signal to innovators of the market opportunity.

Code for Philly: Using City Buses to Help Monitor Local Climate Change-Related Pollution

Code for Philly, Code for America’s Philadelphia Brigade, is announcing the development of a new mobile sensor network they aim to run on city buses to gather temperature and pollution data across the city, allowing researchers to track the effects of climate change on and its pollutants in areas across an entire city. This data will be combined with OpenTreeMaps, a platform for crowdsourced tree inventory and urban forestry analysis, to determine the value of trees in combating climate change. The data will also be openly available so developers can incorporate and convey information on local pollution and heat levels in real time to citizens.

The World Bank: Launching New Initiative for Global Use of Open Data for Climate and Disaster Resilience

The World Bank is launching today a new Field Guide that serves as a model for how communities around the globe can best leverage open data for resilience to disasters and climate change impacts. As part of the World Bank’s Open Data for Resilience Initiative (OpenDRI), the Field Guide builds on work active across more than 20 countries to map millions of buildings and urban infrastructure; open more than 1,000 geospatial datasets to the public; and spur the development of innovative applications based on those data. The OpenDRI Field Guide will be presented at stakeholder workshops and events across the globe. Additionally, to establish a versatile framework for free access to risk data, the World Bank will share the Field Guide and other resources with at least 24 partner countries by 2016.

Antioch University New England: Creating New Academic Center for Climate Preparedness and Resilience

Antioch University New England (AUNE) is announcing the creation of a new Center for Climate Preparedness and Community Resilience, to be launched later this year. The Center will expand on a decade of AUNE’s climate adaptation research and modeling efforts, community engagement/technical assistance, and professional science sustainable development and climate change education. The launch of the new Center will include a convening in May, 2014, in partnership with the U.S. Environmental Protection Agency, of municipal, county and regional leaders on the frontlines of climate change adaptation, from the upper Chesapeake Bay watershed to Maine, to leverage the data-driven expertise of a wide range of organizations and individuals.
MIT Climate CoLab: Crowdsourcing Solutions to Global Climate Change Preparedness

The Massachusetts Institute for Technology (MIT) Center for Collective Intelligence runs the Climate CoLab, an online platform to crowdsource solutions for what to do about global climate change. Over 10,000 people from around the world have registered as members and have submitted more than 400 proposals in contests ranging from how to generate electricity with fewer harmful emissions, to how to increase public understanding about climate change. The MIT Climate CoLab recently launched two global crowdsourcing contests, in line with the White House Climate Data Initiative, to generate solutions to climate change preparedness and resilience: (1) What can be done to adapt to the impacts of climate change? and (2) How can crowdsourcing provide more efficient disaster risk management? To help the public understand the potential impacts of climate change, MIT Climate CoLab’s platform also includes computer simulation models to predict phenomena such as temperature change and sea level rise.

EcoHack: Launching New Hackathon Climate Data Track

EcoHack, an annual hackathon focused on tackling real scientific and environmental challenges through code, visualization, and hardware hacking, will launch and promote a new dedicated track to support climate data and application hacks. The event will take place this year on May 9 – 10th in New York City, San Francisco, and São Paulo, Brazil. At each of the three locations, organizers will work to identify one or more high-impact climate-relevant products or outcomes resulting from the hackathons—with the goal of creating a finished visualization, app, or website to help expand the reach and impact of these tools.

Alliance for Water Efficiency

Over the next three years, Alliance for Water Efficiency will provide assistance to communities across the country to help them achieve water use reductions or expand water conservation programs, through webinars, workshops, and new tools. This includes AWE’s Water Conservation Tracking Tool, which enables utilities to evaluate the water savings, costs, and benefits of a variety of conservation programs, and track savings over time. AWE is also announcing it will build over the next three years an Outdoor Water Savings Research Program to produce actionable data on the potential and actual water savings from outdoor conservation measures. AWE will work with at least ten communities to customize and distribute its online Household Water Calculator, which empowers citizens to make better decisions about their water use through data, allowing consumers to calculate their own water use and compare it to a neighboring and water-efficient home, and then receive a personalized efficiency plan to help them use water more wisely.

BLOG POST: Climate Data Initiative Launches with Strong Public and Private Sector Commitments

Source: http://www.whitehouse.gov/blog/2014/...or-commitments

Across the country, state and local leaders are on the front lines of climate change—and it is impossible for them to ignore the consequences. In 2012 alone, extreme weather events caused more than $110 billion in damages and claimed more than 300 lives.
While no single weather event can be attributed to climate change, we know that our changing climate is making many kinds of extreme events more frequent and more severe. Rising seas threaten our coastlines. Dry regions are at higher risk of destructive wildfires. Heat waves impact health and agriculture. Heavier downpours can lead to damaging floods.

Even as we work to curb greenhouse-gas emissions and expand renewable energy generation, we need to take steps to make our communities more resilient to the climate-change impacts we can’t avoid—some of which are already well underway.

That’s why today, delivering on a commitment in the President’s Climate Action Plan, we are launching the Climate Data Initiative, an ambitious new effort bringing together extensive open government data and design competitions with commitments from the private and philanthropic sectors to develop data-driven planning and resilience tools for local communities. This effort will help give communities across America the information and tools they need to plan for current and future climate impacts.

The Climate Data Initiative builds on the success of the Obama Administration’s ongoing efforts to unleash the power of open government data. Since data.gov, the central site to find U.S. government data resources, launched in 2009, the Federal government has released troves of valuable data that were previously hard to access in areas such as health, energy, education, public safety, and global development. Today these data are being used by entrepreneurs, researchers, tech innovators, and others to create countless new applications, tools, services, and businesses.

Data from NOAA, NASA, the U.S. Geological Survey, the Department of Defense, and other Federal agencies will be featured on climate.data.gov, a new section within data.gov that opens for business today. The first batch of climate data being made available will focus on coastal flooding and sea level rise. NOAA and NASA will also be announcing an innovation challenge calling on researchers and developers to create data-driven simulations to help plan for the future and to educate the public about the vulnerability of their own communities to sea level rise and flood events.

These and other Federal efforts will be amplified by a number of ambitious private commitments. For example, Esri, the company that produces the ArcGIS software used by thousands of city and regional planning experts, will be partnering with 12 cities across the country to create free and open “maps and apps” to help state and local governments plan for climate change impacts. Google will donate one petabyte—that’s 1,000 terabytes—of cloud storage for climate data, as well as 50 million hours of high-performance computing with the Google Earth Engine platform. The company is challenging the global innovation community to build a high-resolution global terrain model to help communities build resilience to anticipated climate impacts in decades to come. And the World Bank will release a new field guide for the Open Data for Resilience Initiative, which is working in more than 20 countries to map millions of buildings and urban infrastructure.

Every citizen will be affected by climate change—and all of us must work together to make our communities stronger and more resilient to its impacts. By taking the enormous data sets regularly collected by NASA, NOAA, and other agencies and applying the ingenuity, creativity, and expertise of technologists and entrepreneurs, the Climate Data Initiative will help create easy-to-use tools for regional planners, farmers, hospitals, and businesses across the country—and empower America’s communities to prepare themselves for the future.

John Podesta is a Counselor to the President. John P. Holdren is Assistant to the President for Science and Technology and Director of the White House Office of Science and Technology Policy.
STATEMENTS OF SUPPORT for the Climate Data Initiative

Source: http://www.whitehouse.gov/sites/defa...ch_19_2014.pdf (PDF)

“Local health departments are on the frontlines of preparing for and addressing the health effects of climate change -- from reduced air quality to extreme weather to climate-sensitive infectious disease like West Nile virus and Lyme disease. The Climate Data Initiative will provide valuable data to guide and support local health departments in their efforts to ensure the health and safety of people in their communities. The National Association of County and City Health Officials is pleased to be involved with the development and launch of this important endeavor.”
- Robert M. Pestronk, Executive Director, National Association of City and County Health Officials

“Through competitions such as NYC BigApps, NYCEDC encourages private sector innovation to make New York City a better place in which to live, work, learn and play. As Hurricane Sandy demonstrated, new tools for resiliency are needed to ensure we are prepared for future storms. By providing high-quality, relevant data, the President’s Climate Data Initiative gives innovators the raw materials to help solve urban sustainability challenges for New York City, its citizens and its businesses.”
- David Gilford, Vice President of the New York City Economic Development Corporation and Director of the Center for Economic Transformation.

“The President’s climate data initiative will enable new industries to use climate data to enhance long-range decisions and planning. UCAR has long been supportive of data policies that are free and open and help people create new products to bring value to the lives of Americans. The community climate models that we have developed allow a wide range of companies, foundations, and academics to create their own value-added products for a diverse marketplace that sees value in the data. In the digital age, training approaches like those provided by UCAR's COMET program through open access enable meteorologists, emergency managers, and the public to better understand and use weather and climate data. UCAR supports the president’s climate data initiative because it helps to provide the right data at the right time to make the right decision.”
- Scott Rayder, President, University Corporation for Atmospheric Research Urban Sustainability Directors Network

“It is critical that local decision makers have access to data, tools and information that can help us to make smart planning decisions. As a network of practitioners from cities across the country, the Urban Sustainability Directors Network embraces the opportunity to collaborate with public and private sector partners through the President’s Climate Data Initiative to share resources and identify opportunities to strengthen climate preparedness and resilience efforts.”
- Katherine Gajewski, Director of Sustainability, City of Philadelphia, and Co-Chair of the Urban Sustainability Directors Network

“As we work with a team of experts to make Hoboken more resilient, it is critical that we have the tools and data necessary to anticipate the impacts of climate change. Thanks to open data from the Administration’s Climate Data Initiative, we are able to conduct a data driven analysis and demonstrate that a comprehensive strategy to address Hoboken’s flooding challenges is a cost-effective solution to protecting our area that will also save the federal government money in the long term. HUD’s Rebuild by Design competition is sparking innovation, and the availability of open data facilitates creative solutions for rebuilding a more resilient region.”
“In response to the President’s call to action via his Climate Data Initiative, National Grid, a gas and electric utility serving over 7 million customers in the United States, would like to voice its support for the Climate Data Initiative. We too see the value in data-driven discussions around climate change. Recent storms such as Irene, Sandy, and Nemo have taught us that extreme weather is playing a greater role in the lives of our customers and our gas and electrical infrastructure. Climate change underscores the need for investment in a more resilient energy network. We applaud the President for his leadership and for unleashing the power of openly available climate data to inform our communities and customers. Delivering this information will help drive the policy, regulatory, financing, and technological innovation necessary to build a resilient energy backbone.

The Climate Data Initiative will help educate and inform our customers about the energy choices they make while expanding public-private partnerships. In fact, we are deploying additional weather sensors in our communities of Massachusetts, Rhode Island, and New York that are underserved by existing weather data. Our vision of a more resilient 21st century energy network can be found at our [Connect21](http://www.connect21.com) website.”

- Tom King, Executive Director and President National Grid US and Cheri Warren, Vice President, Asset Management, National Grid US

WEBCAST: White House Climate Data Initiative Launch (will go live at 5:15pm ET)

Event Videos

John Podesta, Counselor to the President, The White House

Jack Dangermond, Founder and CEO, Esri

Dr. Kathryn D. Sullivan, Under Secretary of Commerce for Oceans and Atmosphere, U.S. Department of Commerce

Stephen Harper, Global Director, Environment and Energy Policy, Intel Corporation

Joel Dunn, Executive Director, Chesapeake Conservancy

Denice Ross, Director of Enterprise Information, City of New Orleans

Dr. Ellen Stofan, Chief Scientist, NASA

Rachel Kyte, Vice President and Special Envoy for Climate Change, The World Bank

Rebecca Moore, Founder, Google Earth Engine

Learn More

- [View the Full PDF of the President's Climate Action Plan](http://semanticommunity.info/Data_Science/ESIP_Earth_Sciences_Data_Analytics)
• Watch President Obama's Climate Change Speech
• Watch President Obama's Video Speech Teaser
• Weekly Address: Confronting the Growing Threat of Climate Change

Infographic

http://www.whitehouse.gov/share/climate-action-plan (JPG)

My Note: Where is the data for this? At data.gov/climate?
CLIMATE CHANGE AND PRESIDENT OBAMA’S ACTION PLAN

Due to climate change, the weather is getting more extreme

2012 was the second most extreme year on record for the nation

- Record heat across the U.S.
- Warmest year on record for the U.S.
- Record high temperatures tied or broken
- One-third of the U.S. population experienced 100+ temperatures

Droughts, wildfires, and floods are all more frequent and intense

- Precipitation was 2.57 inches below the 20th century average
- 15th driest year on record
- Wildfires burned more than 5.3 million U.S. acres

Extreme weather comes at a cost

Climate and weather disasters in 2012 cost the American economy more than $100 billion

- $30 billion: U.S. drought/heatwave
- $65 billion: Superstorm Sandy
- $1 billion: Western wildfires
- $2.3 billion: Hurricane Isaac
- $11 billion: Combined severe weather

There are also public health threats associated with extreme weather

Children, the elderly, and the poor are most vulnerable to a range of climate-related health effects, including those related to heat stress, air pollution, extreme weather events, and diseases carried by food, water, and insects.

We can choose to believe that superstorm Sandy, and the most severe drought in decades, and the worst wildfires some states have ever seen were all just a freak coincidence. OR, we can choose to believe in the overwhelming judgment of science — and act before it’s too late.” - President Obama

We’re still contributing to the problem

Carbon pollution is the biggest driver of climate change

U.S. greenhouse gas pollution includes:

- Carbon dioxide (CO2)
- Nitrous oxide (N2O)
- Methane (CH4)
- Fluorinated gases

84% 22% 2% 11%

Total U.S. greenhouse gases by economic sector in 2011

Progress

- Increased renewable energy
- Decreased carbon pollution
Climate.data.gov

Source: http://www.data.gov/climate/

Here you can find data related to climate change that can help inform and prepare America's communities, businesses, and citizens. Initially, in this pilot phase, you can find data and resources related to coastal flooding, sea level rise, and their impacts. Over time, you will be able to find additional data and tools relevant to other important climate-related impacts, including risks to human health, the food supply, and energy infrastructure.

Coastal Flooding

Source: http://www.data.gov/coastalflooding/

Here you will find resources that help shed light on the risks of near-term coastal flooding and future sea level rise scenarios. You can find tools from inside and outside government on coastal vulnerability and related climate change risks and impacts.

Updates

Source: http://www.data.gov/climate/ My Note: Same as above

Here you can find data related to climate change that can help inform and prepare America's communities, businesses, and citizens. Initially, in this pilot phase, you can find data and resources related to coastal flooding, sea level rise, and their impacts. Over time, you will be able to find additional data and tools relevant to other important climate-related impacts, including risks to human health, the food supply, and energy infrastructure.

Data

Source: http://catalog.data.gov/dataset?grou...groups_limit=0

Federal datasets are subject to the U.S. Federal Government Data Policy. Non-federal participants (e.g., universities, organizations, and tribal, state, and local governments) maintain their own data policies. Data policies influence the usefulness of the data.

83 data sets found

Climate Data Online (CDO)

National Oceanic and Atmospheric Administration, Department of Commerce — Climate Data online or CDO provides access to climate data products through a simple, searchable online web mapping service. Users can find a variety of NCDC...

- HTML

Federal
Internet Weather Source

National Oceanic and Atmospheric Administration, Department of Commerce —
The National Weather Service (NWS) National Telecommunications Gateway provides weather, hydrologic, and climate forecasts and warnings for the United States, its...

- xml, csv/txt, xls, shapefile, kml/kmz, pdf

Federal

Population Estimates

US Census Bureau, Department of Commerce —
The program publishes estimates of the population by age, sex, race, and Hispanic origin for the nation, states, and counties. It also provides estimates of the...

- TXT

Federal

Severe Weather Data Inventory

National Oceanic and Atmospheric Administration, Department of Commerce —
The Severe Weather Data Inventory (SWDI) is an integrated database of severe weather records for the United States. The records in SWDI come from a variety of...

- csv, xml, shapefile, kml/kmz

Federal

USGS Map service: Coastal Vulnerability to Sea-Level Rise

U.S. Geological Survey, Department of the Interior —
The coastal vulnerability index (CVI) provides a preliminary overview, at a National scale, of the relative susceptibility of the Nation’s coast to sea-level rise....

- WMS
- HTML
- HTML
- WMS
- HTML

Federal

NOAA's National Geophysical Data Center Geoportal

National Oceanic and Atmospheric Administration, Department of Commerce —
The National Geophysical Data Center (NGDC) Geoportal Server provides a suite of new data discovery and access services to one of the nation’s primary sources of...

- xml, html, kml, wms, georss, json, csv

http://semanticommunity.info/Data_Science/ESIP_Earth_Sciences_Data_Analytics

Updated: Sat, 19 Sep 2015 06:50:30 GMT

Powered by mindtouch™
**NFHL: FEMA’s National Flood Hazard Layer**

Federal Geographic Data Committee —
Contains data from the National Flood Hazard Layer, a GIS database of flood risks and regulatory flood determination data.

- [ArcGIS Map Service](#)
- [ArcGIS Map Preview](#)

**Sea Level Rise Planning Tool - New Jersey and New York State (Nassau, Suffolk, and Westchester Counties)**

Federal Geographic Data Committee —
NOAA, in partnership with FEMA, USACE, USGCRP, and CEQ has created a set of map services and related tools to help communities, residents, and other stakeholders...

- [arcgis online map](#)

**NOAA’s Inundation Analysis Tool**

National Oceanic and Atmospheric Administration, Department of Commerce —
Coastal storms and other meteorological phenomenon can have a significant impact on how high water levels rise and how often. The inundation analysis program is...

- [HTML](#)

**NOAA/WDS Global Historical Tsunami Database at NGDC, 2100 BC to present**

National Oceanic and Atmospheric Administration, Department of Commerce —
The Global Historical Tsunami Database provides information on over 2,400 tsunamis from 2100 BC to the present in the Atlantic, Indian, and Pacific Oceans; and...

- [HTML](#)
- [KMZ](#)
- [HTML](#)
- [HTML](#)
- [HTML](#)

**USGS Map service: National Shoreline Change - Historic Shorelines by State**

U.S. Geological Survey, Department of the Interior —
There are critical needs for a nationwide compilation of reliable shoreline data. To meet these needs, the USGS has produced a comprehensive database of digital...

- WMS
- HTML
- HTML
- HTML
- WMS
- HTML
- 11 more in dataset

Federal

**USGS Map service: National Shoreline Change - Long-Term Shoreline Change Rates**

U.S. Geological Survey, Department of the Interior —

Beach erosion is a chronic problem along most open-ocean shores of the United States. As coastal populations continue to grow, and community infrastructures are...

- WMS
- HTML
- HTML
- HTML
- WMS
- HTML
- 11 more in dataset

Federal

**Historical Hurricane Tracks Tool**

Federal Geographic Data Committee —

This interactive mapping application easily searches and displays global tropical cyclone data. Users are able to query storms by the storm name, ZIP Code, city,...

- arcgis online map

Federal

**Social Vulnerability Index (SoVI) for Alabama based on 2000 Census Block Groups**

National Oceanic and Atmospheric Administration, Department of Commerce —

This data depicts the social vulnerability of Alabama census block groups to environmental hazards. Data were culled primarily from the 2000 Decennial Census.

- HTML

Federal

http://semanticommunity.info/Data_Science/ESIP_Earth_Sciences_Data_Analytics

Updated: Sat, 19 Sep 2015 06:50:30 GMT

Powered by mindtouch™
Current National Weather Service Watches, Warnings, or Advisories for the United States

National Oceanic and Atmospheric Administration, Department of Commerce —
The National Weather Service (NWS) Storm Prediction Center uses RSS feeds to disseminate all watches, warnings and advisories for the United States that are...

• XML

Federal

Worldwide historical hurricane tracks from 1848 through the previous hurricane season

National Oceanic and Atmospheric Administration, Department of Commerce —
This Historical Hurricane Tracks web site provides visualizations of storm tracks derived from the 6-hourly (0000, 0600, 1200, 1800 UTC) center locations and...

• HTML
• HTML

Federal

Sea Level Rise Planning Tool - New York City

Federal Geographic Data Committee —
NOAA, in partnership with FEMA, USACE, USGCRP, and CEQ has created a set of map services and related tools to help communities, residents, and other stakeholders...

• arcgis online map

Federal

Storm Data

National Oceanic and Atmospheric Administration, Department of Commerce —
Storm Data is a monthly publication of NCDC. Issues from Jan 1959 to the current date are available in the Image Publication System System (IPS). Monthly issues...

• HTML

Federal

Economics: National Ocean Watch (ENOW)

Federal Geographic Data Committee —
This application presents spatial information about the Economics: National Ocean Watch (ENOW) data in the Web Mercator projection. ENOW contains annual...

• arcgis online map

Federal
National Data Buoy Center

National Oceanic and Atmospheric Administration, Department of Commerce —
National Data Buoy Center (NDBC) is a part of the National Weather Service (NWS). NDBC designs, develops, operates, and maintains a network of data collecting...

- csv/txt, kml/kmz

Federal

NOAA's Coastal Change Analysis Program (C-CAP) Regional Land Cover Data

National Oceanic and Atmospheric Administration, Department of Commerce —
The Coastal Change Analysis Program (C-CAP) is developing a nationally standardized database on land cover and habitat change in the coastal regions of the United...

- HTML

Federal

Marine Cadastre National Viewer

National Oceanic and Atmospheric Administration, Department of Commerce —

The NOAA Coastal Services Center (CSC) and the DOI Bureau of Ocean Energy Management, Regulation and Enforcement (BOEM), in cooperation with federal and state...

- HTML

Federal

EvacRoutes

Federal Geographic Data Committee —
HSIP GOLD 2011 - Hurricane Evacuation Routes

- ArcGIS Map Service
- ArcGIS Map Preview

Federal

Bathymetry Data Viewer

Federal Geographic Data Committee —
The Bathymetry Data Viewer is an interactive map providing discovery, descriptions, and download capability for bathymetric survey data and digital elevation...

- arcgis online map

Federal
**CO-OPS Water level Observations Data**
National Oceanic and Atmospheric Administration, Department of Commerce —
The National Ocean Service (NOS) maintains a long-term database containing a listing of active stations that are installed all over the United States and U.S.

- HTML
- HTML

Federal

**CO-OPS Currents Observations Data**
National Oceanic and Atmospheric Administration, Department of Commerce —
The National Ocean Service (NOS) maintains a long-term database containing a listing of active stations that are installed all over the United States and U.S.

- HTML

Federal

**NOAA Water Level Predictions Stations for the Coastal United States and Other Non-U.S. Sites**
National Oceanic and Atmospheric Administration, Department of Commerce —
The National Ocean Service (NOS) maintains a long-term database containing water level measurements and derived tidal data for coastal waters of the United States...

- HTML

Federal

**RSS Feeds for Severe Weather Advisories**
National Oceanic and Atmospheric Administration, Department of Commerce —
The National Weather Service (NWS) uses RSS feeds to disseminate severe weather advisories. These RSS feeds are regularly updated and include the following...

- XML

Federal

**Great Lakes Coastal Forecasting System (GLCFS)**
National Oceanic and Atmospheric Administration, Department of Commerce —
his query tool provides quick access to GLCFS input data and model output for a given location and time period, 2006-present (in partnership with GLOS).

- .png, .kml, .kmz, .flc, .netcdf

Federal
Great Lakes Surface Environmental Analysis

The Great Lakes Surface Environmental Analysis (GLSEA2) is a digital map of the Great Lakes surface water temperature and ice cover which is produced daily at the...

- txt, kml, flc, qt, png, ascii

Federal

ODIN: Observational Data Interactive Navigation, an interactive map of all CO-OPS active stations

The CO-OPS Station Map has many features designed to provide a quick and easy way to find a CO-OPS station, and to view real-time observations as well as plot the...

- HTML
- HTML

Federal

Sea Levels Online: Sea Level Variations of the United States Derived from National Water Level Observation Network Stations

Water level records are a combination of the fluctuations of the ocean and the vertical land motion at the location of the station. Monthly mean sea level (MSL)...

- HTML
- HTML

Federal

The National Map

The National Map includes lower 48 states coverage of hydrography, orthoimagery, elevation, geographic place names, landcover, structures, boundaries, and...

- HTML

Federal

NOAA's nowCOAST Web Mapping Portal to Near-Real-Time Coastal Information

NOAA nowCOAST is a Geographic Information System (GIS)-based Web mapping portal which provides users with an integrated, one-stop access to online, real-time...

- HTML
- HTML
University

**National Elevation Dataset (NED)**

Kansas Data Access and Support Center —
The U.S. Geological Survey has developed a National Elevation Database (NED). The NED is a seamless mosaic of best-available elevation data. The 7.5-minute...

- HTML
- HTML

Federal

**Digital Elevation Model (DEM) Discovery Portal**

National Oceanic and Atmospheric Administration, Department of Commerce —
Digital Elevation Model (DEM) Discovery Portal from NOAA's National Geophysical Data Center provide web service map-based and text search, discovery, descriptive,...

- HTML

Federal

**Sea Level Rise and Coastal Flooding Impacts Viewer**

Federal Geographic Data Committee —
Being able to visualize potential impacts from sea level rise is a powerful teaching and planning tool, and the Sea Level Rise Viewer brings this capability to...

- arcgis online map

Federal

**Social Vulnerability Index (SoVI) for North Carolina based on 2000 Census Block Groups**

National Oceanic and Atmospheric Administration, Department of Commerce —
This data depicts the social vulnerability of North Carolina census block groups to environmental hazards. Data were culled primarily from the 2000 Decennial Census.

- HTML

Federal

**NOAA's Spatial Trends in Coastal Socioeconomics**

National Oceanic and Atmospheric Administration, Department of Commerce —
The coastal management community is challenged to better understand and incorporate spatial patterns of human activities into the management of coastal and ocean...

- TXT
Social Vulnerability Index (SoVI) for Rhode Island based on 2000 Census Block Groups

National Oceanic and Atmospheric Administration, Department of Commerce —
This data depicts the social vulnerability of Rhode Island census block groups to environmental hazards. Data were culled primarily from the 2000 Decennial Census.

• HTML

Federal

Environmental Sensitivity Index (ESI) Threatened and Endangered Species REST Services

National Oceanic and Atmospheric Administration, Department of Commerce —
Environmental Sensitivity Index (ESI) data characterize the marine and coastal environments and wildlife based on sensitivity to spilled oil. Coastal species that...

• Esri REST
• Esri REST
• Esri REST
• Esri REST
• Esri REST
• Esri REST
• Esri REST
• 28 more in dataset

Federal

USGS Map service: National Shoreline Change - Short-Term Shoreline Change Rates

U.S. Geological Survey, Department of the Interior —
Beach erosion is a chronic problem along most open-ocean shores of the United States. As coastal populations continue to grow, and community infrastructures are...

• WMS
• HTML
• HTML
• HTML
• WMS
• HTML
• 11 more in dataset

Federal

Social Vulnerability Index (SoVI) for New Hampshire based on 2000 Census Block Groups

National Oceanic and Atmospheric Administration, Department of Commerce —
This data depicts the social vulnerability of New Hampshire census block groups to environmental hazards. Data were culled primarily from the 2000 Decennial Census.

- [HTML]

Federal

Social Vulnerability Index (SoVI) for Minnesota based on 2000 Census Block Groups

National Oceanic and Atmospheric Administration, Department of Commerce —
This data depicts the social vulnerability of Minnesota census block groups to environmental hazards. Data were culled primarily from the 2000 Decennial Census.

- [HTML]

Federal

Gridded Model Output Statistics (GMOS) Forecast Guidance

National Oceanic and Atmospheric Administration, Department of Commerce —
The National Digital Forecast Database (NDFD) provides access to weather forecasts in digital form from a central location. Anyone with a computer and access to the...

- [htm]

Federal

Social Vulnerability Index (SoVI) for Hawaii based on 2000 Census Block Groups

National Oceanic and Atmospheric Administration, Department of Commerce —
This data depicts the social vulnerability of Hawaii census block groups to environmental hazards. Data were culled primarily from the 2000 Decennial Census.

- [HTML]

Federal

Social Vulnerability Index (SoVI) for Maine based on 2000 Census Block Groups

National Oceanic and Atmospheric Administration, Department of Commerce —
This data depicts the social vulnerability of Maine census block groups to environmental hazards. Data were culled primarily from the 2000 Decennial Census.

- [HTML]

Federal

Social Vulnerability Index (SoVI) for Connecticut based on 2000 Census Block Groups

National Oceanic and Atmospheric Administration, Department of Commerce —
This data depicts the social vulnerability of Connecticut census block groups to environmental hazards. Data were culled primarily from the 2000 Decennial Census.
The National Water Level Observation Network

National Oceanic and Atmospheric Administration, Department of Commerce —
The fundamental observational component of the National Water Level Program (NWLP) is the National Water Level Observation Network (NWLon). The NWLon is a network...

- csv/txt, pdf, kml/kmz, tsv, xml

RSS Feeds for Central Pacific Hurricanes and Tropical Cyclones

National Oceanic and Atmospheric Administration, Department of Commerce —
The National Weather Service (NWS) National Hurricane Center uses RSS feeds to disseminate Central Pacific tropical cyclone and marine forecasts. These RSS feeds...

- rss

Social Vulnerability Index (SoVI) for Illinois based on 2000 Census Block Groups

National Oceanic and Atmospheric Administration, Department of Commerce —
This data depicts the social vulnerability of Illinois census block groups to environmental hazards. Data were culled primarily from the 2000 Decennial Census.

- HTML

Digital Coast

Federal Geographic Data Committee —
While the need for good data forms the foundation of the website, the basic premise behind the effort is the understanding that data alone are not enough. Most...

- arcgis online map

Social Vulnerability Index (SoVI) for New Jersey based on 2000 Census Block Groups

National Oceanic and Atmospheric Administration, Department of Commerce —
This data depicts the social vulnerability of New Jersey census block groups to environmental hazards. Data were culled primarily from the 2000 Decennial Census.

- HTML
**NOAA Shoreline Data Explorer**

National Oceanic and Atmospheric Administration, Department of Commerce —
This website enables interactive selection of a section of shoreline and provides downloading capabilities. ESRI's software was used to clean and edgematch datasets...

- HTML
- HTML

Federal

**International Best Track Archive for Climate Stewardship (IBTrACS)**

National Oceanic and Atmospheric Administration, Department of Commerce —
IBTrACS provides tropical cyclone best track data in a centralized location to aid our understanding of the distribution, frequency, and intensity of tropical...

- netcdf, csv, shapefiles

Federal

**Social Vulnerability Index (SoVI) for New York based on 2000 Census Block Groups**

National Oceanic and Atmospheric Administration, Department of Commerce —
This data depicts the social vulnerability of New York census block groups to environmental hazards. Data were culled primarily from the 2000 Decennial Census.

- HTML

Federal

**Social Vulnerability Index (SoVI) for Louisiana based on 2000 Census Block Groups**

National Oceanic and Atmospheric Administration, Department of Commerce —
This data depicts the social vulnerability of Louisiana census block groups to environmental hazards. Data were culled primarily from the 2000 Decennial Census.

- HTML

Federal

**NOS Point Forecast Guidance to Weather and Ocean Conditions**

National Oceanic and Atmospheric Administration, Department of Commerce —
To provide National Ocean Service (NOS) forecast model developers and the coastal community easy and centralized access to online, real-time physical...

- HTML
- HTML
- HTML
Gulf of Mexico Data Atlas

National Oceanic and Atmospheric Administration, Department of Commerce —
The Gulf of Mexico Data Atlas provides answers to questions related to the physical environment, marine resources, and economic activity in the Gulf of Mexico. As...

- HTML
- HTML
- HTML

Federal

EPA Geospatial Data Download: Facility and Site Information

U.S. Environmental Protection Agency —
Contains information about facilities or sites subject to environmental regulation, including key facility information along with associated environmental...

- XML
- HTML

Federal

Social Vulnerability Index (SoVI) for Louisiana based on 2000 Census Block Groups

National Oceanic and Atmospheric Administration, Department of Commerce —
This data depicts the social vulnerability of Louisiana census block groups to environmental hazards. Data were culled primarily from the 2000 Decennial Census.

- HTML

Federal

Social Vulnerability Index (SoVI) for Alaska based on 2000 Census Block Groups

National Oceanic and Atmospheric Administration, Department of Commerce —
This data depicts the social vulnerability of Alaska census block groups to environmental hazards. Data were culled primarily from the 2000 Decennial Census.

- HTML

Federal

Gridded Model Output Statistics (GMOS) Forecast Guidance

National Oceanic and Atmospheric Administration, Department of Commerce —
The National Digital Forecast Database (NDFD) provides access to weather forecasts in digital form from a central location. Anyone with a computer and access to the...

- .htm
Social Vulnerability Index (SoVI) for Virginia based on 2000 Census Block Groups

National Oceanic and Atmospheric Administration, Department of Commerce —
This data depicts the social vulnerability of Virginia census block groups to environmental hazards. Data were culled primarily from the 2000 Decennial Census.

- HTML

The National Water Level Observation Network

National Oceanic and Atmospheric Administration, Department of Commerce —
The fundamental observational component of the National Water Level Program (NWLP) is the National Water Level Observation Network (NWLon). The NWLon is a network...

- csv/txt, pdf, kml/kmz, tsv, xml

Social Vulnerability Index (SoVI) for Florida based on 2000 Census Block Groups

National Oceanic and Atmospheric Administration, Department of Commerce —
This data depicts the social vulnerability of Florida census block groups to environmental hazards. Data were culled primarily from the 2000 Decennial Census.

- HTML

NOAA Shoreline Website

National Oceanic and Atmospheric Administration, Department of Commerce —
The original intent of this site was to alleviate confusion about shorelines generated by National Oceanic and Atmospheric Administration (NOAA) agencies. However,...

- HTML

International Best Track Archive for Climate Stewardship (IBTrACS)

National Oceanic and Atmospheric Administration, Department of Commerce —
IBTrACS provides tropical cyclone best track data in a centralized location to aid our understanding of the distribution, frequency, and intensity of tropical...

- netcdf, csv, shapefiles
Gulf of Mexico Data Atlas

National Oceanic and Atmospheric Administration, Department of Commerce —
The Gulf of Mexico Data Atlas provides answers to questions related to the physical environment, marine resources, and economic activity in the Gulf of Mexico. As...

- HTML
- HTML
- HTML

Federal

United States Interagency Elevation Inventory

Federal Geographic Data Committee —
The U.S. Interagency Elevation Inventory displays high-accuracy topographic and bathymetric data for the United States and its territories. The project is a...

- arcgis online map

Federal

Social Vulnerability Index (SoVI) for Michigan based on 2000 Census Block Groups

National Oceanic and Atmospheric Administration, Department of Commerce —
This data depicts the social vulnerability of Michigan census block groups to environmental hazards. Data were culled primarily from the 2000 Decennial Census.

- HTML

Federal

Historical North Atlantic and Eastern North Pacific Tropical Cyclone Tracks, 1851-2009

National Oceanic and Atmospheric Administration, Department of Commerce —
This Historical North Atlantic and Eastern North Pacific Tropical Cyclone Tracks file contains the 6-hourly (0000, 0600, 1200, 1800 UTC) center locations and...

- shapefile

Federal

The NOMADS Ensemble Probability Tool

National Oceanic and Atmospheric Administration, Department of Commerce —
The NOMADS Ensemble Probability Tool is a tool that is designed to allow users to interrogate the high volume NCEP Global Ensemble (GENS) weather forecast model...

- text, php, graphic, grib

Federal
Social Vulnerability Index (SoVI) for Georgia based on 2000 Census Block Groups
National Oceanic and Atmospheric Administration, Department of Commerce —
This data depicts the social vulnerability of Georgia census block groups to environmental hazards. Data were culled primarily from the 2000 Decennial Census.

• HTML

Federal

Social Vulnerability Index (SoVI) for Delaware based on 2000 Census Block Groups
National Oceanic and Atmospheric Administration, Department of Commerce —
This data depicts the social vulnerability of Delaware census block groups to environmental hazards. Data were culled primarily from the 2000 Decennial Census.

• HTML

Federal

Social Vulnerability Index (SoVI) for Texas based on 2000 Census Block Groups
National Oceanic and Atmospheric Administration, Department of Commerce —
This data depicts the social vulnerability of Texas census block groups to environmental hazards. Data were culled primarily from the 2000 Decennial Census.

• HTML

Federal

Social Vulnerability Index (SoVI) for Indiana based on 2000 Census Block Groups
National Oceanic and Atmospheric Administration, Department of Commerce —
This data depicts the social vulnerability of Indiana census block groups to environmental hazards. Data were culled primarily from the 2000 Decennial Census.

• HTML

Federal

Social Vulnerability Index (SoVI) for Oregon based on 2000 Census Block Groups
National Oceanic and Atmospheric Administration, Department of Commerce —
This data depicts the social vulnerability of Oregon census block groups to environmental hazards. Data were culled primarily from the 2000 Decennial Census.

• HTML

Federal

Social Vulnerability Index (SoVI) for Hawaii based on 2000 Census Block Groups
National Oceanic and Atmospheric Administration, Department of Commerce —
This data depicts the social vulnerability of Hawaii census block groups to environmental hazards. Data were culled primarily from the 2000 Decennial Census.

- **HTML**

**Federal**

**Social Vulnerability Index (SoVI) for South Carolina based on 2000 Census Block Groups**

National Oceanic and Atmospheric Administration, Department of Commerce —
This data depicts the social vulnerability of South Carolina census block groups to environmental hazards. Data were culled primarily from the 2000 Decennial Census.

- **HTML**

**Federal**

**Social Vulnerability Index (SoVI) for Mississippi based on 2000 Census Block Groups**

National Oceanic and Atmospheric Administration, Department of Commerce —
This data depicts the social vulnerability of Mississippi census block groups to environmental hazards. Data were culled primarily from the 2000 Decennial Census.

- **HTML**

**Federal**

**NOAA's National Ocean Service (NOS) Data Explorer Geoportal**

National Oceanic and Atmospheric Administration, Department of Commerce —
The National Ocean Service (NOS) Data Explorer Geoportal application provides centralized access to distributed NOS geospatial data, tools, applications and...

- **xml, html, kml/kmz, lyr, wms, georss, json**

**Federal**

**RSS Feeds for Specific Tropical Cyclones of the North Atlantic, Caribbean Sea, and Gulf of Mexico (English)**

National Oceanic and Atmospheric Administration, Department of Commerce —
The National Weather Service (NWS) National Hurricane Center uses regularly updated RSS feeds to disseminate North Atlantic, Caribbean Sea, and Gulf of Mexico...

- **rss**

**Federal**

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**Tools**

Here are a few government and non-government software tools to help coastal communities and others analyze and assess vulnerabilities of sea level rise, storm surges, and sinking lands.

**Coastal Change Analysis Program (C-CAP) Land Cover Atlas**
Provides access to regional land cover and land cover change information.

**CanVis**
A visualization program used to “see” potential impacts from coastal development or sea level rise.

**Climate Resilience Evaluation and Awareness Tool (CREAT)**
Provides information on climate impacts to assist water utilities to assess future risks and vulnerabilities.

**Coastal Change Hazards Portal**
The U.S. Geological Survey is uncovering the science behind coastal change hazards and providing data, tools, and scientific knowledge to help coastal planners as they work to reduce risk along our coastlines.

**Coastal County Snapshots**
Turns complex data into easy-to-understand stories, complete with charts and graphs.

**Coastal Resilience**
Delivers geospatial information on coastal ecosystems, socioeconomics, community vulnerability, and coastal hazards (including sea level rise and storm surge) via an internet mapping application that is a data viewer, data discovery tool, and a future scenario mapper.

**Digital Coast**
Provides relevant data and tools necessary to assess coastal management issues such as coastal inundation, offshore renewable energy planning, coastal wetlands conservation, and sea level rise adaptation.

**Ecosystem-Based Management Tools Network Database**
Search or browse to find tools for coastal and marine management and conservation projects, case studies of projects that have used tools, potential collaborators, and other resources.

**Extreme Water Levels**
Provides annual and monthly exceedance probability levels for select Center for Operational and Oceanographic Products and Services water level stations with at least 30 years of data.

**Federal Emergency Management Agency (FEMA) GeoPlatform**
Providing geospatial data and analytics in support of emergency management.
**FEMA Region II Coastal Analysis and Mapping**

View FEMA Flood Hazard Data for New Jersey and New York.

**Hawaii Tsunami Hazard Information Service**

Online access to Hawaii tsunami evacuation zone maps, as well as information about potential risks, how to prepare, and what to do in the event of a tsunami.

**Hurricane SANDY Response Imagery**

This rapid response imagery product was generated for use by emergency managers for visual analysis of damage in the Sandy impact area.

**Inundation Analysis Tool**

Helps in determining the frequency (or occurrence of high waters for different elevations above a specified threshold) and duration (or the amount of time that the specified location is inundated by water) of observed high waters (tides).

**MarineCadastre.gov**

Provides spatial context needed to address issues such as alternative energy and other types of marine planning efforts.

**National Stormwater Calculator (SWC)**

Estimates the annual amount of rainwater and frequency of runoff from a specific site anywhere in the United States (including Puerto Rico).

**Planning for Changing Sea Levels**

Helps the public understand, in a general way, some potential future vulnerabilities to changing sea levels, waves, tides, and surges in the New York and New Jersey areas.

**Sea Level Rise Tool For Sandy Recovery**

Addresses flood risk based on current conditions and has immediate, short-term benefits to communities, but does not adequately account for increasing flood risk resulting from sea level rise.

**Sea Level Rise Viewer**

A slider bar shows how various levels of sea level rise will impact coastal communities.

**Sea Level Trends**

Illustrates regional trends in sea level, with arrows representing the direction and magnitude of change. Click on an arrow to access additional information about that station.
State of the Coast

Offers quick facts and more detailed statistics through interactive indicator visualizations that provide highlights of what we know about coastal communities, coastal ecosystems, and the coastal economy, and about how climate change might impact the coast.

Surging Seas

Provides local regions and policy makers with the tailored local information they need to understand and respond to the risks of sea level rise and coastal flooding.

United States Interagency Elevation Inventory

Displays availability of high-accuracy topographic and bathymetric data for the United States and its territories.

Maps


Here are mapping tools and data layers to help you analyze and assess vulnerabilities in your or other coastal communities to the combination of sea level rise, storm surges, and sinking lands. These resources aim to help coastal communities identify and reduce vulnerabilities to inundation and improve their resilience. This map gallery is in a pilot stage. Please [let us know](#) how we can make it more useful.

Sandy SLR Planning Tool – New York City

Sandy SLR Planning Tool – New Jersey and New York State

SLR and Coastal Flooding Impacts Viewer
Historical Hurricane Tracks Tool

International Best Track Archive for Climate Stewardship (IBTrACS)

NOAA’s nowCOAST Web Mapping Portal to Near-Real-Time Coastal Information

NOAA’s Coastal Change Analysis Program (C-CAP) Regional Land Cover Data

FEMA’s National Flood Hazard Layer (Official)

FEMA’s Hazus Average Annualized Loss Viewer

FEMA MOTF-Hurricane Sandy Impact Analysis

Coastal Change Hazards Portal

Challenges

Source: http://www.data.gov/climate/climate-challenges
Data and innovation challenges issued by public, private, nonprofit, and other organizations can help catalyze new, data-driven solutions that help communities understand and build resilience to climate change. Is your organization hosting an innovation challenge for entrepreneurs and developers to help increase awareness of and preparedness for climate change impacts?

Resources

Source: http://www.data.gov/climate/climate-resources

Coastal communities are becoming increasingly vulnerable to the risk of damage from coastal inundation. In the northeast, Hurricane Sandy was a stark reminder of the potential damage a single storm can cause. These additional resources listed below will allow you to create tools and provide information to help communities prepare for coastal inundation. Through the use of data, visualizations, and simulations, you can help people understand their exposure to coastal inundation hazards and their increased vulnerability due to population increase and sea level rise.

Current Flood Risk: The FEMA National Flood Hazard Layer

- ArcGISOnline Tool
- REST Service (directory only)
- Download

Sea Level Rise and Coastal Flooding Impacts

- Digital Coast Tool
- REST Services

Future Flood Risk Information for New York and New Jersey (Post-Sandy)

- Online Tool

ArcGIS Online Maps

- New Jersey and New York State
- New York City
- REST Services (New York and New Jersey 2050 and 2100 and New York City 2050)
- Download (registration required)

Coastal Erosion and Vulnerability

- Shoreline change, Sea-Level Vulnerability, extreme storms coastal erosion hazards
- Composite Inundation Hazards for the Hurricane Sandy Impact Area
  - Spatial extents of multiple flood hazard data sets combined. Flood hazard data sets include shallow coastal flooding, FEMA flood data (V zones, A zones, and 500-year zones treated as individual layers), storm surge for category 3 hurricane, and sea level rise of 3 feet above mean high tide.
Coastal Flood Frequency

This dataset depicts the extent of flood-prone coastal areas based on predicted water levels exceeding specific tidal heights as issued by local National Weather Service offices.

- Tool Homepage
- REST Service
- Download

Socio-Economic Data

Social Vulnerability Index (SoVI) Census Block Groups (2000) – University of South Carolina Hazards and Vulnerability Research Institute

Index measuring the social vulnerability of Census block groups to environmental hazards

- REST Service
- Download (Tool)

Economics: National Ocean Watch (ENOW)

Contributing Partners: Bureau of Economic Analysis, NOAA Coastal Services Center, Bureau of Labor Statistics

ENOW is time-series data on the Ocean and Great Lakes Economy, which includes six economic sectors that depend on the oceans and Great Lakes. ENOW is available for counties, states, and the nation in a wide variety of formats.

- Tool Homepage
- Tool Wizard
- REST Service
- Download

Historical Hurricane Tracks

Contributing Partners: NOAA Coastal Services Center

Enables viewers to find tropical cyclone data in the Atlantic and Eastern Pacific Basins

- Tool Homepage
- REST Service
- Download

U.S. Geoplatform

Contributing Partners: U.S. Geological Survey

Geospatial resources are available from the geoplatform.
FY 2015 Federal Research & Development Budget Briefing

Source: (PDF)

DATE: Tuesday, March 4, 2014
TIME: 2:00 p.m. to 3:00 p.m. EDT
LOCATION: American Association for the Advancement of Science (AAAS) Auditorium
1200 New York Avenue, NW, Washington DC (Nearest Metro station: Metro Center)

Officials from the White House Office of Science and Technology Policy (OSTP) and other Federal departments and agencies with core science missions will discuss President Obama’s FY 2015 Budget for Research and Development (R&D).

SPEAKERS:
• John P. Holdren, Assistant to the President for Science and Technology and Director, OSTP
• Patricia Falcone, Assoc. Director, National Security & International Affairs, OSTP
• Cora Marrett, Acting Director, National Science Foundation
• Kathy Hudson, Deputy Director for Science, Outreach, and Policy, National Institutes of Health
• Catherine Woteki, Under Secretary for Research, Education, and Economics, US Department of Agriculture

Open Press – but space is limited. Please RSVP at: http://wh.gov/1EHJD

Live Web streaming of this event will be provided as a public service by AAAS and can be accessed at the following url:
http://www.aaas.org/ostp/fy2015

The FY 2015 Science and Technology R&D Budget: Science, Technology, and Innovation for Opportunity and Growth

Source: (PDF)

The President’s fiscal year 2015 Budget proposes $135.4 billion for Federal research and development (R&D) activities, an increase of $1.7 billion or 1.2 percent over FY 2014 enacted levels. The 2015 R&D budget extends the Administration’s ongoing commitment to make wise, targeted investments in science and technology (S&T) in support of job creation, economic growth, and opportunity for all Americans. It builds on R&D’s proven record of turning ideas into realities, and of generating new technologies, products, and businesses that in many cases were barely imagined a few years earlier.

“The 2015 budget reflects this Administration’s clear-eyed recognition that our Nation’s standing as a global leader today is built largely on a foundation of science and technology,” said Dr. John P. Holdren, President Obama’s science and technology advisor and Director of the White House Office of Science and Technology Policy. “By continuing the Administration’s record of steady support for research and development across the full spectrum of scientific and technological domains—including such diverse priorities as biomedicine, advanced manufacturing, climate science,
cybersecurity, natural resource management, space exploration, and national security—the Budget ensures that the United States will be an incubator of innovation and economic growth for many years to come.”

The Budget calls for $65.9 billion for non-defense R&D, up 0.7 percent or $477 million from the 2014 enacted level, and $69.5 billion for defense R&D, up $1.2 billion or 1.7 percent from the 2014 enacted level. (All comparisons are to FY 2014 enacted and are in current, not-adjusted-for-inflation dollars.[1]) Basic and applied research investments (the “R” in “R&D”) total $64.7 billion, up $251 million or 0.4 percent from 2014. Investments in development (the “D” in “R&D”) total $68.0 billion, an increase of 2.3 percent over 2014.

[1] For reference, the latest economic projections show inflation of 1.7 percent between 2014 and 2015 for the economy as a whole, using the GDP deflator.

Importantly, these critical investments in our Nation’s future fit within an overall 2015 Budget that falls within the caps of the deficit-reducing Budget Control Act of 2011 and the Bipartisan Budget Act of 2013. Already, the national deficit has fallen by more than half under President Obama—the most rapid deficit reduction as a share of the economy since the end of World War II. Promising to continue that trend, but also recognizing the additional boost that could be generated by enhanced investments in foundational elements of the Nation’s economy, the President’s Budget proposes a separate, fully-paid-for $56 billion Opportunity, Growth, and Security Initiative that includes $5.3 billion for R&D endeavors.

Some highlights of the 2015 Budget include:

$30.2 billion for the National Institutes of Health (NIH), which supports high-quality, innovative, biomedical research at institutions across the United States to improve the health of the American people.

$12.3 billion for R&D at the Department of Energy (DOE), to support such priorities as clean energy and advanced manufacturing, energy security, carbon pollution reduction and climate change mitigation, and modernization of America’s nuclear weapons stockpile and infrastructure—including $5.1 billion for DOE’s Office of Science.

$11.6 billion for R&D at the National Aeronautics and Space Administration, to develop systems for human exploration of deep space; continue studies of our planet, the Sun, our solar system and the universe; continue development of the James Webb Space Telescope for launch in 2018; and continue to develop, in collaboration with the private sector, new U.S. capabilities for transporting human crews to the International Space Station.

$7.3 billion for the National Science Foundation (NSF), the Nation’s primary source of support for academic research in most non-biomedical disciplines, integrating fundamental research and education across a broad spectrum of science and engineering domains.

$2.4 billion for R&D at the U.S. Department of Agriculture (USDA) to support research in such agriculturally important domains as climate resilience and advanced genetics.

$1.2 billion for R&D at the Department of Veterans Affairs (VA), which focuses on biomedical topics of special relevance to wounded warriors and supports a robust program of clinical and translational research.
$925 million for R&D at the Department of the Interior, including work relating to environmental and natural resource monitoring, energy permitting, ecosystem restoration and management, and Earth observations.

$876 million for R&D at the Department of Homeland Security (DHS), to support work in cybersecurity, explosives detection, nuclear detection, and chemical/biological detection, and for the development of state-of-the-art solutions for first responders.

$688 million for R&D at the National Oceanic and Atmospheric Administration (NOAA) in the Department of Commerce, to support critical satellite programs, Earth observations, ocean and coastal research, and NOAA’s other core science and stewardship responsibilities.

$680 million for the National Institute of Standards and Technology’s (NIST) intramural laboratories in the Department of Commerce, to support research that promotes U.S. innovation and industrial competitiveness by advancing measurement science, standards, and technology.

The 2015 Budget also provides ongoing support for key interagency initiatives that coordinate investments in three cross-cutting areas of importance:

$2.5 billion for the U.S. Global Change Research Program (USGCRP), which coordinates and integrates Federal research and applications to assist the Nation and the world in understanding, assessing, predicting, and responding to the human-induced and natural processes of global change and their related impacts and effects.

$3.8 billion for the Networking and Information Technology Research and Development (NITRD) Program, which provides strategic planning for and coordination of agency research efforts in cybersecurity, high-end computing systems, advanced networking, software development, high-confidence systems, health IT, wireless spectrum sharing, cloud computing, and other information technologies.

$1.5 billion for the National Nanotechnology Initiative (NNI), which supports R&D focused on materials, devices, and systems that exploit the unique physical, chemical, and biological properties that emerge in materials at the nanoscale (approximately 1 to 100 nanometers), including Signature Initiatives in such national priority areas as sustainable nanomanufacturing, solar energy, sustainable design of nanoengineered materials, nanoinformatics and modeling, nanoscale technology for sensors, and nanoelectronics.

The 2015 Budget also supports science, technology, engineering, and mathematics (STEM) education to ensure that our educational system is preparing students to become highly skilled workers and innovators prepared for challenging 21st-century careers:

$2.9 billion for Federal investments in STEM education, an increase of 3.7 percent over 2014 funding levels.

Additional details about the 2015 R&D Budget can be found on fact sheets and other resources at http://www.whitehouse.gov/ostp/rdbudgets.

OSTP was created by Congress in 1976 to serve as a source of scientific and technological analysis and judgment for the President with respect to major policies, plans, and programs of the Federal government. For more information on OSTP, visit http://www.whitehouse.gov/ostp