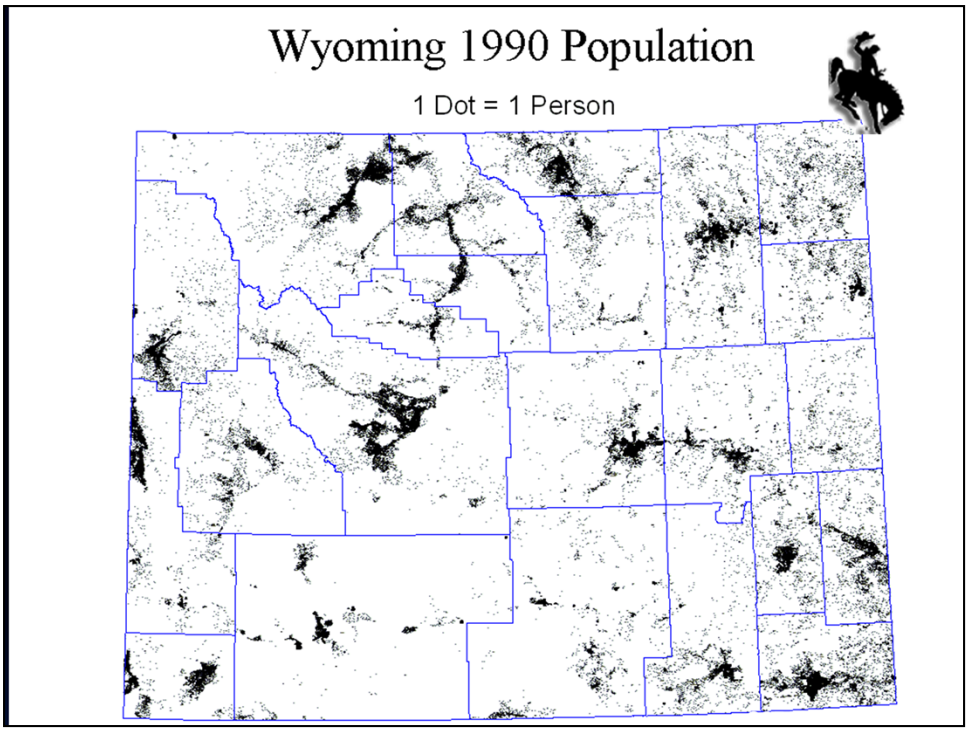
Goddard
SPACE FLIGHT CENTER
Yesterday's Vision, Tomorrow's Reality
Information Science & Technology
Colloquium Series
Goddard Space Flight Center
Eleanor Roosevelt High School
Goddard
Catherine T. Reed Elem School
Duval High School
Robert Goddard Middle School
Magnolia Elementary School
Jim Geringer
Wyoming Governor 1995-2003
Director, Policy & Public Sector Strategy
esri

Science and Technology
In A Confused and Competitive World
A User's Perspective
Greenbelt, MD
April 13, 2011
GSFC Gov Geringer



My Place…..

Wyoming

I asked our Dept of Admin and Info to come up with a map that would show our 105 cities/towns differentiated by population. They came up with this approach – plot the population based upon census tract information. Great teaching tool for the kids who visited my office!

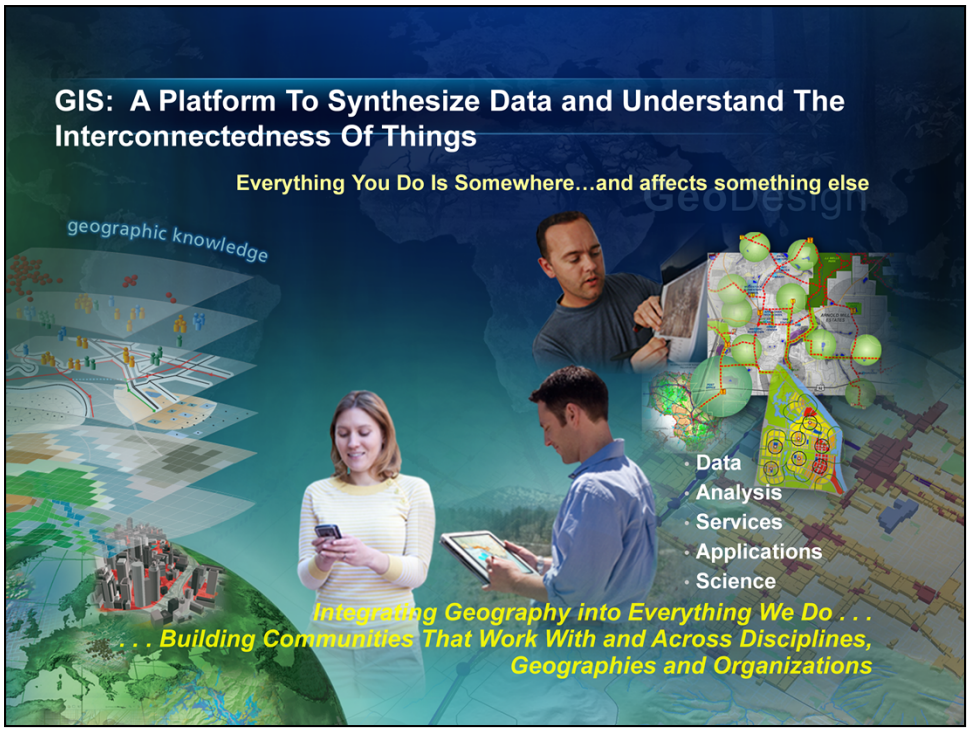
Society for Keeping Everybody
East of the Mississippi (SKEEM)
A Sense
of Place
The Power of
a Picture
GSFC Gov Geringer

"Earth Science and Applications from Space: National Imperatives for the Next Decade and Beyond" - NRC (2007) Decadal Survey

"The committee found that fundamental improvements are needed in existing observation and information systems because they only loosely connect three key elements:

- - the raw observations that produce information;
- - the analyses, forecasts, and models that provide timely and coherent syntheses of otherwise disparate information; and
- - the decision processes that use those analyses and forecasts to produce actions with direct societal benefits."

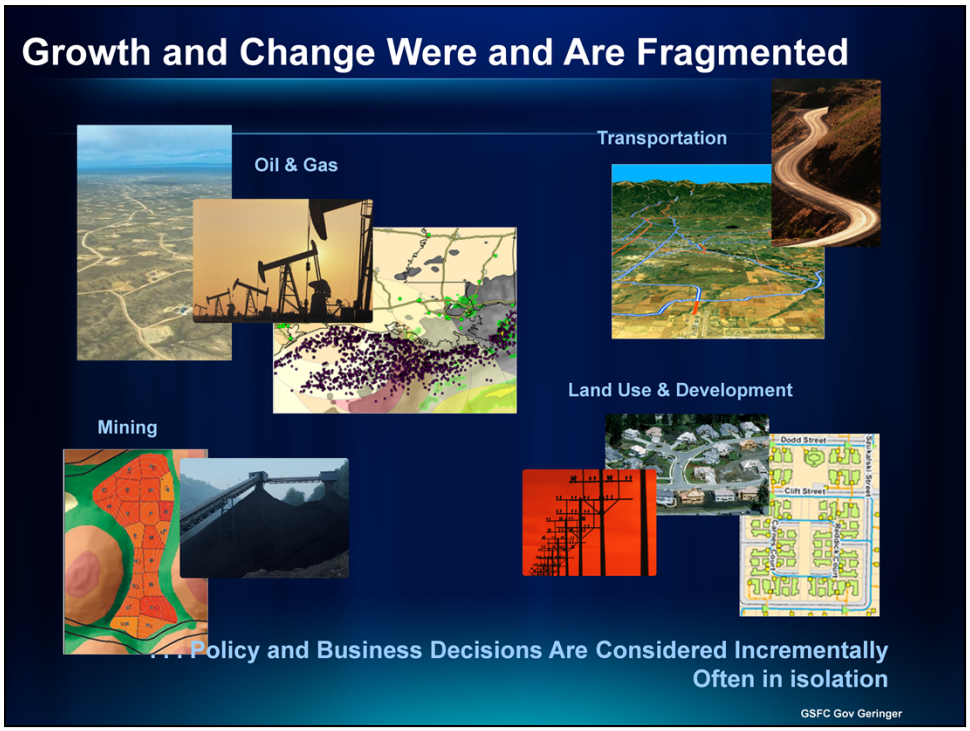
GSFC Gov Geringer



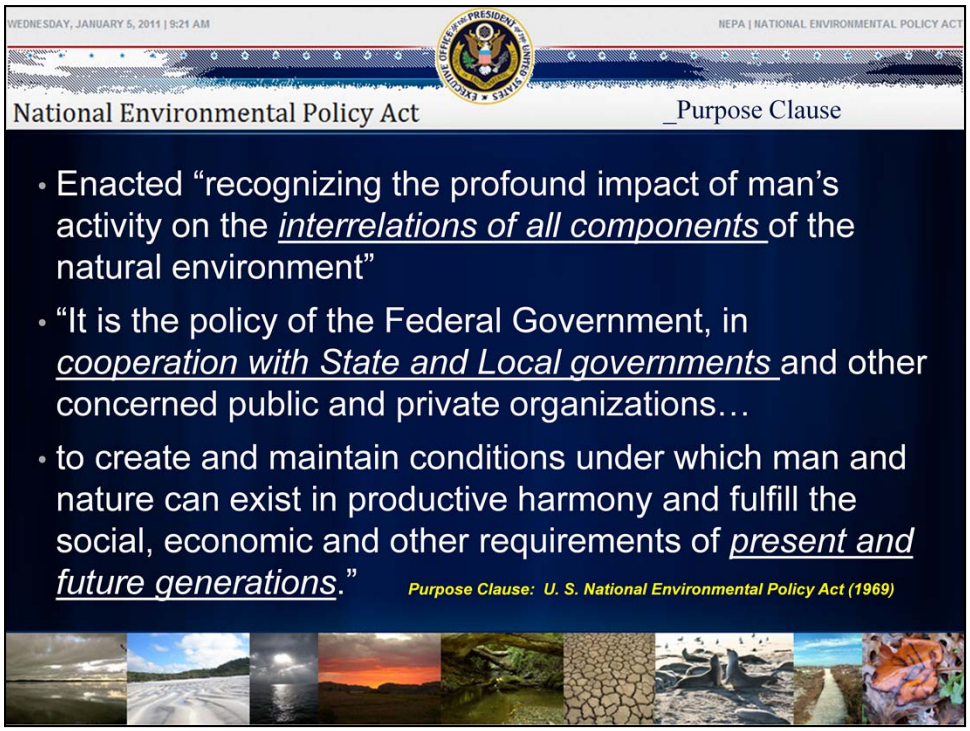
GIS is already organizing our geographic information, our knowledge, and clearly, now we must extend, we must share our systems to support everybody else, integrating geography, what we know, into everything we do. We know that that is clearly a solution. Your work demonstrates the fact that building communities and working across disciplines and across geographies and organization is one of the answers for our future.

GIS: More Than A Map –
Connecting People, Places and Policy:
• This Governor's Experience
• GIS and Productivity
- Create and apply knowledge
• GIS : A Platform for Innovation
- for Decision Makers
- for everyday activities
- To meet ever increasing public expectations
- Using a Map as an Integrated Information System
• Trends in IT and GIS
- Increasing presence on the Web
- Shift from desktops, laptops
- Web services, mobile applications
Solutions

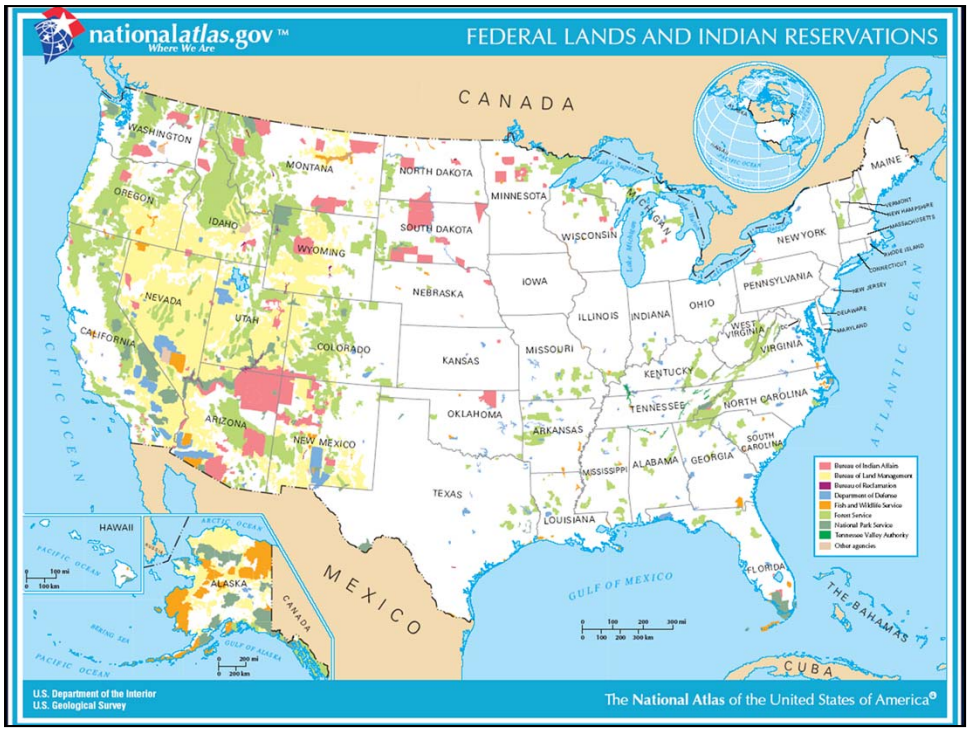
Western North America



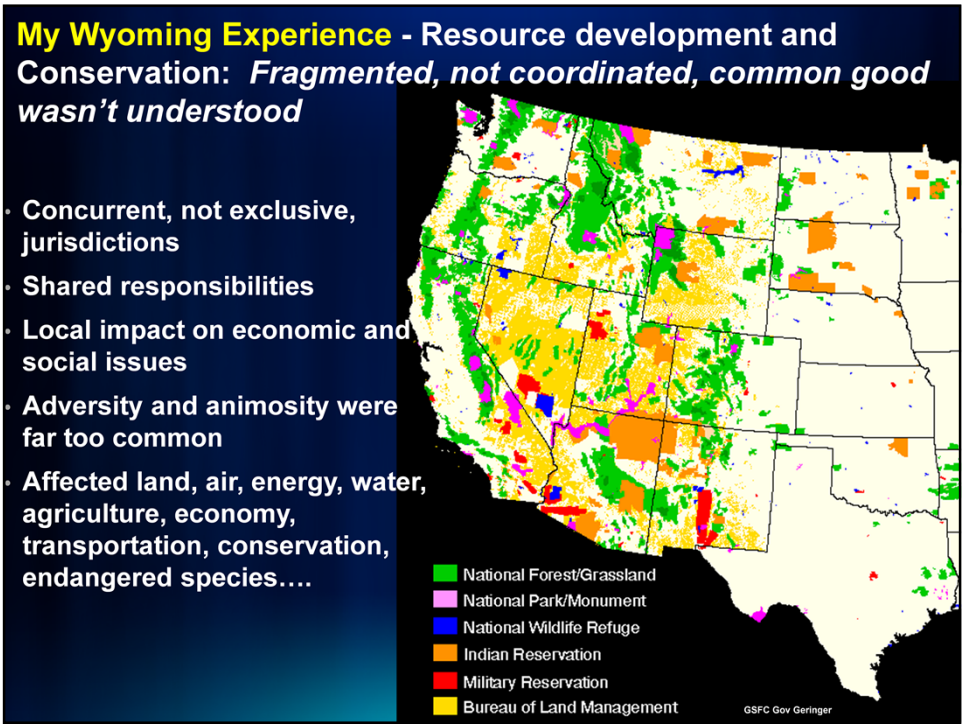
My experience with GIS grew out of the competition and even conflict among those who would or would not work together on natural resource issues



The focus of U.S. environmental policy has been to bring together social, economic and conservation issues in a collaborative way. Today, GIS has had a profound effect on fostering collaboration and an understanding of how issues are interrelated. The states don't just want to be UPDATED by federal managers on occasion – they want to be PARTNERS



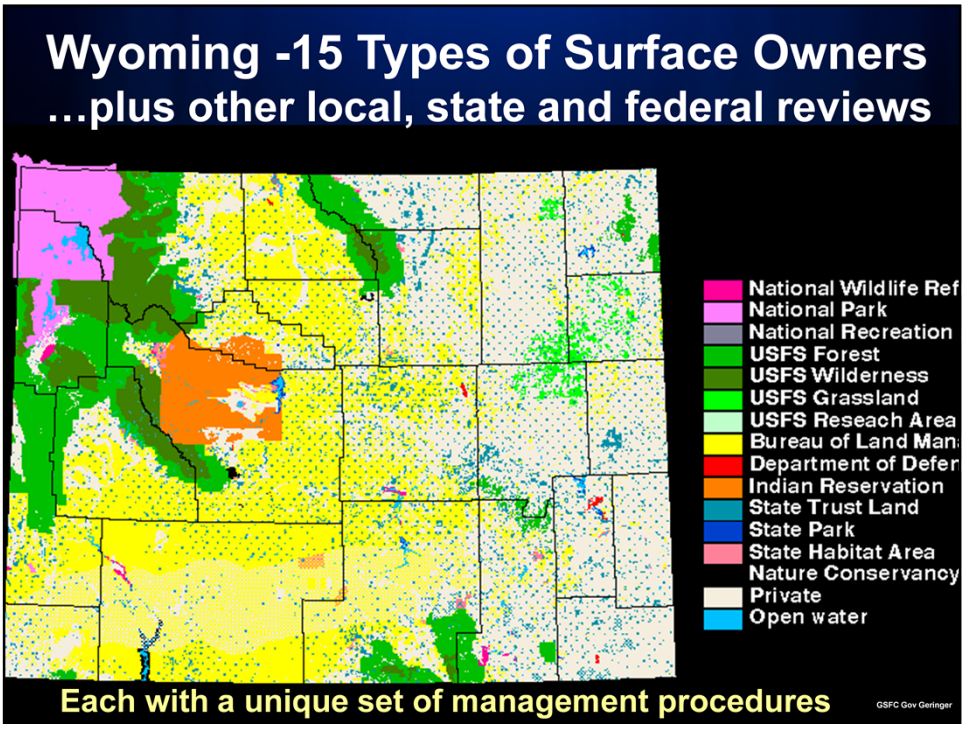
U. S. Federal Land surface ownership dominates the West, is hardly a factor in the East.



In this older GIS map of the western U.S., the surface land ownership pattern presents the challenge of fragmented resource management. The U. S. Federal agencies did not share information with each other or with their counterparts in the states. Pre-emption of state prerogatives by the federal agencies was far too common on resource management

issues.

Federal government dominated energy choices. States had primacy for air quality, water rights, state and private energy development. Interspersed ownership caused interference.



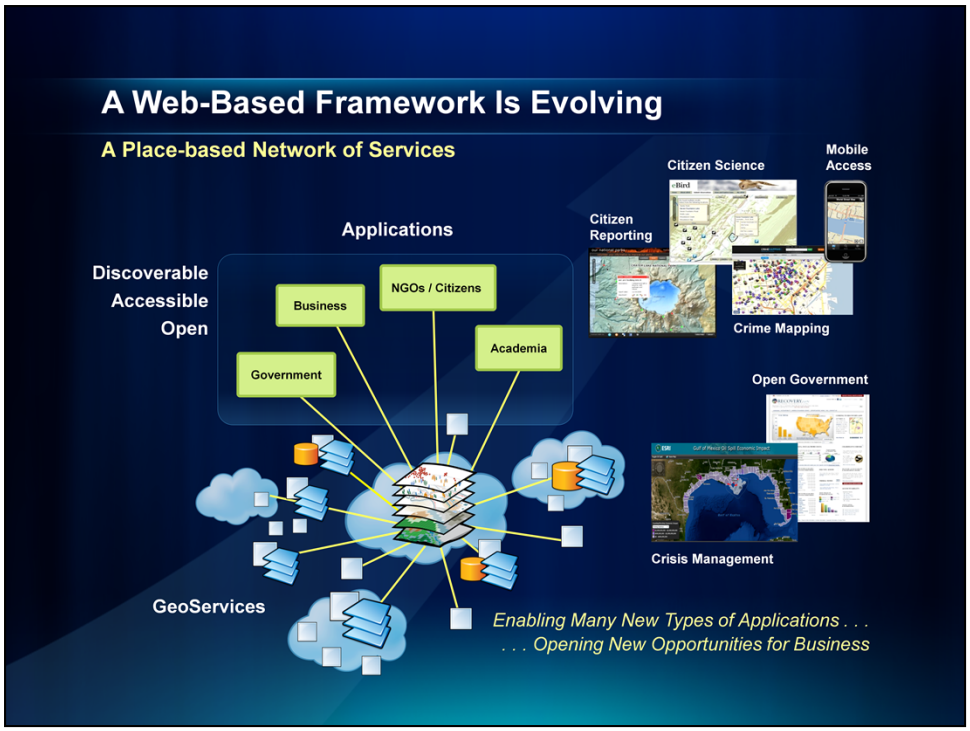
Federal surface ownership – approx 45%, state and other government ownership – approx 4%. Private lands only about 50%.
Federal subsurface ownership: Coal – 90%; natural gas – 75%
Mixed surface, subsurface estates, intermingled public, private lands
Agencies complained that they could not share information or data due to federal regulations,

incompatible data formats and lack of standards. When I asked why they didn’t at least exchange data, the reply was that Wyoming agencies lacked a common base Map. How hard could it possibly be to get one???

While much of GIS application has been in natural resources, the use of GIS is expanding rapidly in many other key issue areas

1980's IT
POWER.
Why Apple II is t
best selling person
IMSAI Introduces the Megabyte Micro.

Making Technology More Widely Accessible, Usable
Enterprise
Pervasive
Desktop
Server
Federated
Cloud / Web GIS
Device
Individuals
Ad Hoc Projects
Analysis/Modeling
Mapping
Workgroups
Shared Database
Fixed Applications
Transactions
Organizations
Shared Services
Integration
Collaboration
Desktop
Mobile
Web
New
Technology and GIS Resources . . .
. . . Available on Demand


A Web-Based Framework Is Evolving
A Place-based Network of Services
Applications
Discoverable
Accessible
Open
Business
NGOs / Citizens
Government
Academia
GeoServices
Citizen Science
Mobile Access
Citizen Reporting
eBird
Crime Mapping
Open Government
Crisis Management
Enabling Many New Types of Applications . . .
. . . Opening New Opportunities for Business

Rapid Growth in Mobile GIS
More Devices, More Capabilities …And Many More Users
Direct Feature Updating
Server
• SMARTPHONES
• iOS
• Windows
• Android
Supporting Mobile Workers and Citizen Engagement . . .
. . . Providing Real-Time Situational Awareness

Social Media and Real-Time Feeds Are Part of the Framework
Creating New Sources of Geospatial Information
Sensor Networks
Volunteered Geographic Information (VGI)
Twitter
Social Media
RSS
SMS
Twitter
Facebook…
Enriching GIS Systems with Diverse Observations, Perceptions and Dynamic Data
. . . Creating New Opportunities and Challenges

These Trends Will Change How We Work
More Integrative…
More Transparent…
More Collaborative…
Shared Infrastructure…
More Real-time…
Easier, More Productive . . .
. . . Providing a Framework for Efficient Organizations

Gartner

- By 2014, 90% of organizations will support corporate applications on personal devices.
- By 2013, 80% of businesses will support a workforce using tablets.

Smaller Budgets: The New Norm – A Different Government Ahead

- GIS as a Platform for government
- A Platform for Innovation
  - Supporting Entrepreneurship
- The newest government sector:
  Citizen engagement, citizen as a sensor.
  - Opinion – as it happens
  - Observation – Where it happens
  - Self-delivery of services
- Reduce costs / increase revenue
  - Cost effective
  - Making the business case
  - Being accountable for results

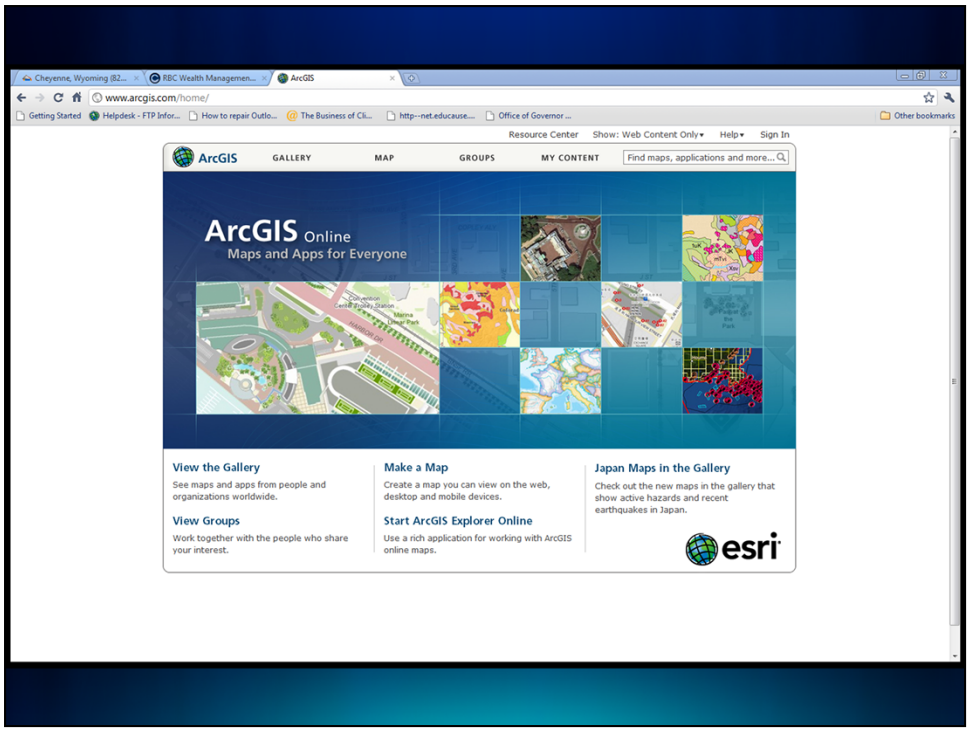
The severity and length of the economic turmoil drove a focus on core enterprise competencies, and thus a focus on IT investments that further improved productivity on these core competencies in the first half of the five-year planning horizon. During the second half of the five-year planning horizon the focus will shift to IT spending that supports business transformation goals rather than the focus on core competencies as the recession risks and uncertainty subsides.

Gartner and Education Week

- Technology leaders in K-12 education have backed away from routinely banning personally owned devices in favor of strategies that ***leverage personally owned devices*** to extend the reach — and the value — of technology in education.
- Market Implications: Leveraging ***student-owned consumer devices*** will speed the move to digital content. Schools will utilize ***desktop virtualization, social networking and cloud offerings*** to reach client devices — effectively moving toward becoming ***device-agnostic***.

Are You Smarter Than A 5th Grader?

GSFC Gov Geringer


www.arcgis.com/home/
Resource Center
Show: Web Content Only
Help
Sign In
ArcGIS
GALLERY
MAP
GROUPS
MY CONTENT
Find maps, applications and more...
ArcGIS Online
Maps and Apps for Everyone
View the Gallery
See maps and apps from people and organizations worldwide.
View Groups
Work together with the people who share your interest.
Make a Map
Create a map you can view on the web, desktop and mobile devices.
Start ArcGIS Explorer Online
Use a rich application for working with ArcGIS online maps.
Japan Maps in the Gallery
Check out the new maps in the gallery that show active hazards and recent earthquakes in Japan.
esri

Simplicity within Complexity

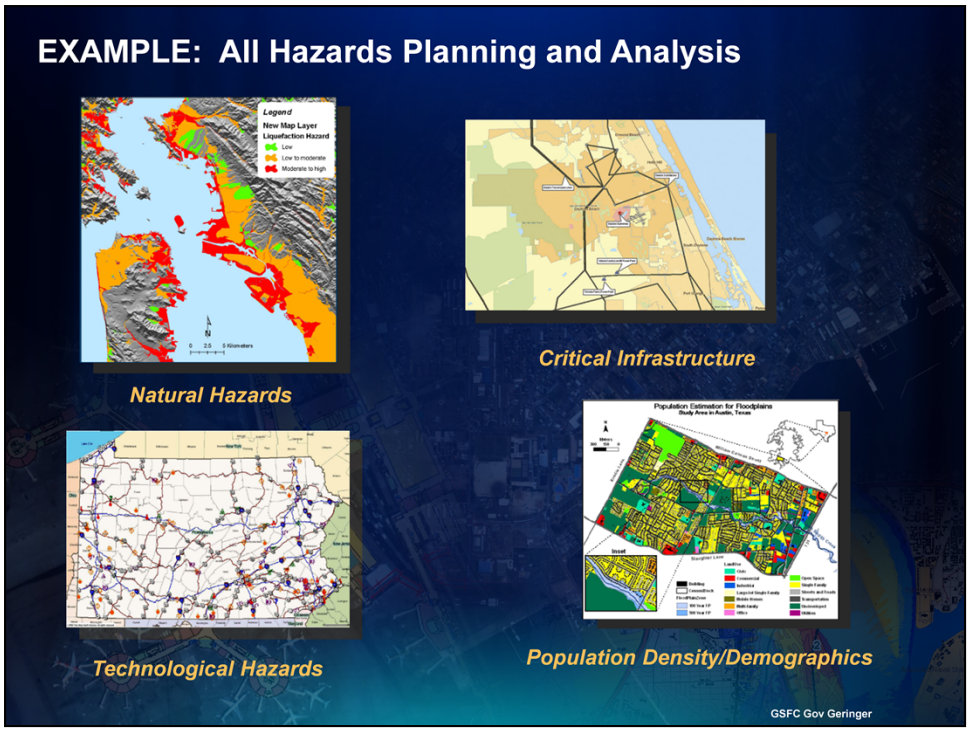
- Senior executives don't need to distinguish between the visualization application and the underlying digital data or how it works
- They just want it to work
- Solution centered

If IT isn't tied to an issue, it will be considered as a discretionary item in the budget

If You Had Ten Minutes At The Top, What Would You Talk About?

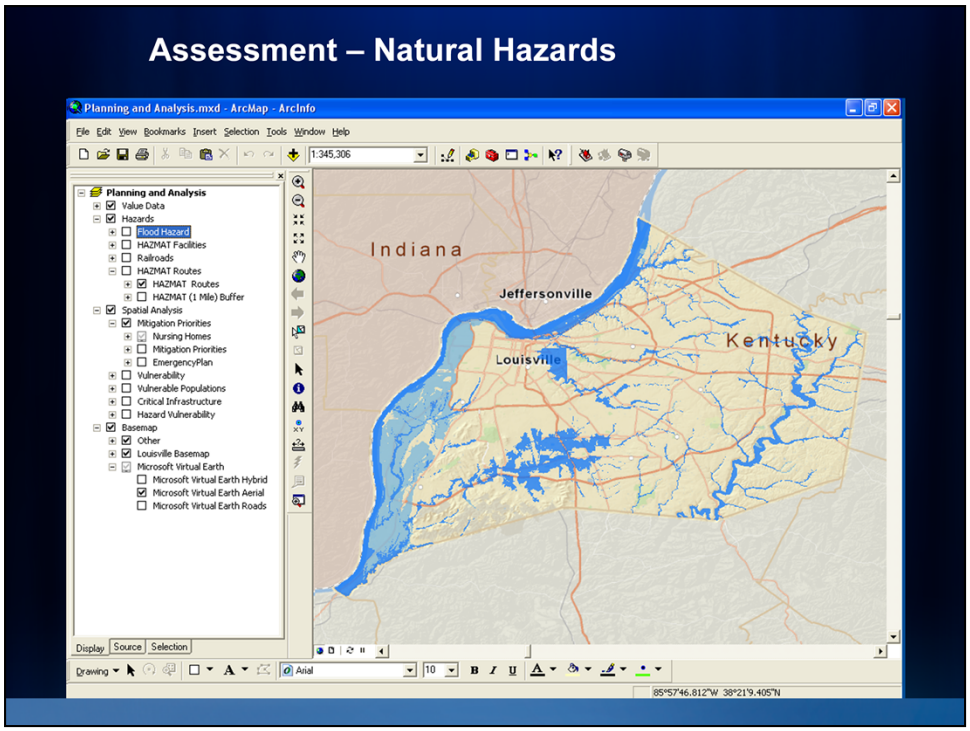
- ***Governor, Mayor, Congressional Staff***
- ***Agency officials – Administrator, CIO***
  - ***Issue***
  - ***Problem***
  - ***Solution*** *(Options)*
  - ***Example***
  - ***GIS***

GSFC Gov Geringer



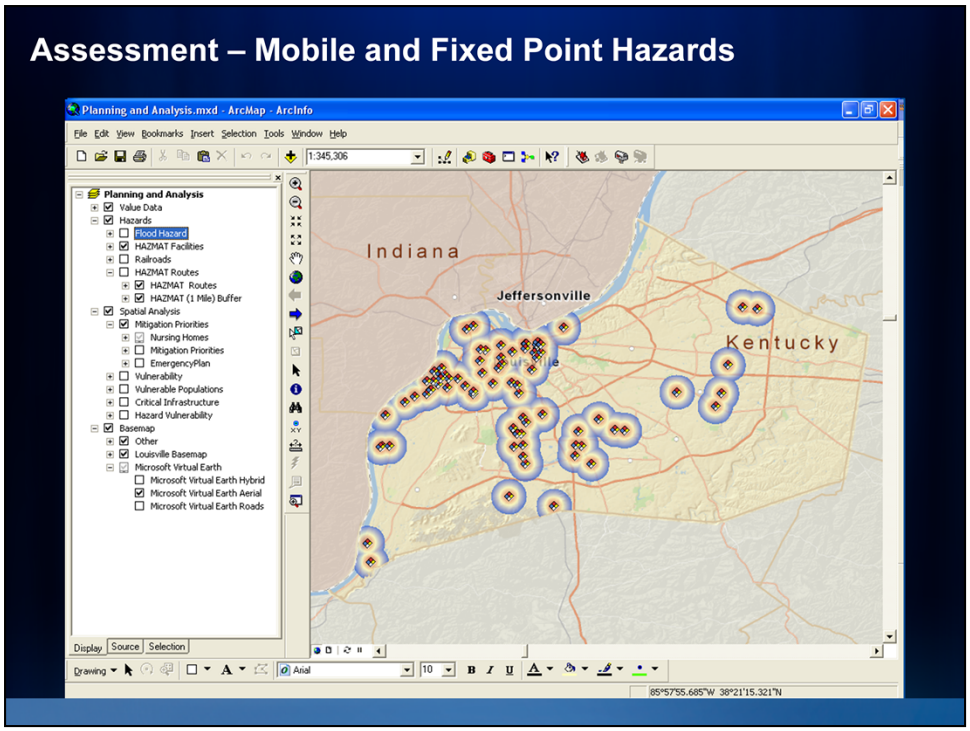
Risk and Hazard Assessment –
Identify natural hazards locations .
Identify technological hazards
Identify critical infrastructure
Identify populations at Risk

These steps begin to give us the data we need to focus on the highest priorities for mitigation and response



Take Louisville, Kentucky as an example.

Natural Hazards = Flooding - this represents a potential 100 year flood event.

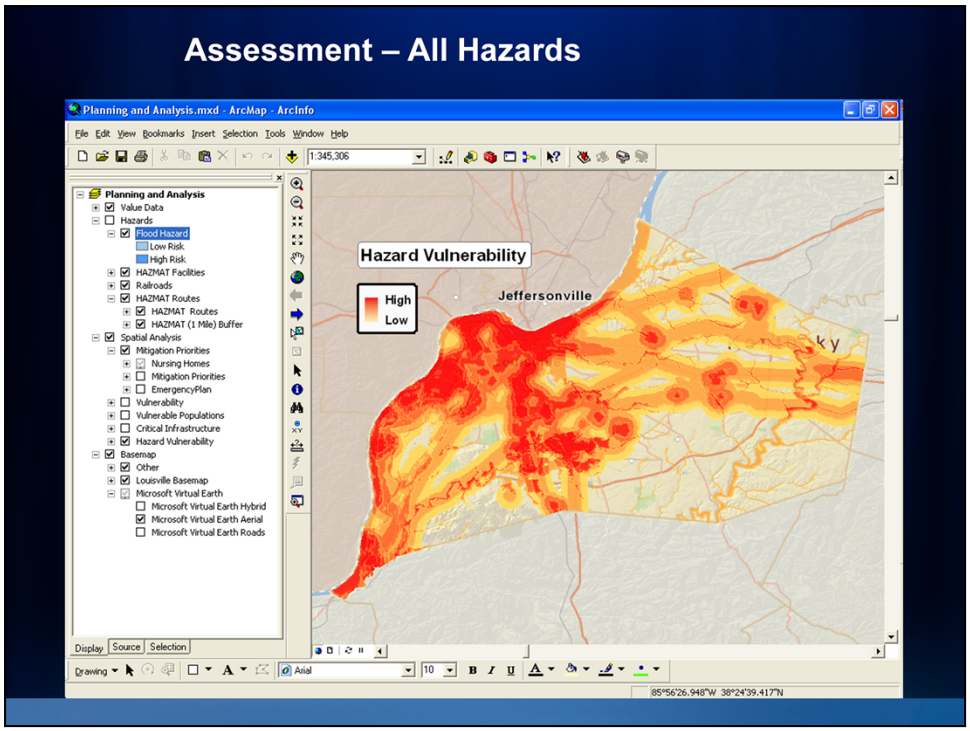


Technological Hazards –

Transportation Corridors for Hazardous Materials

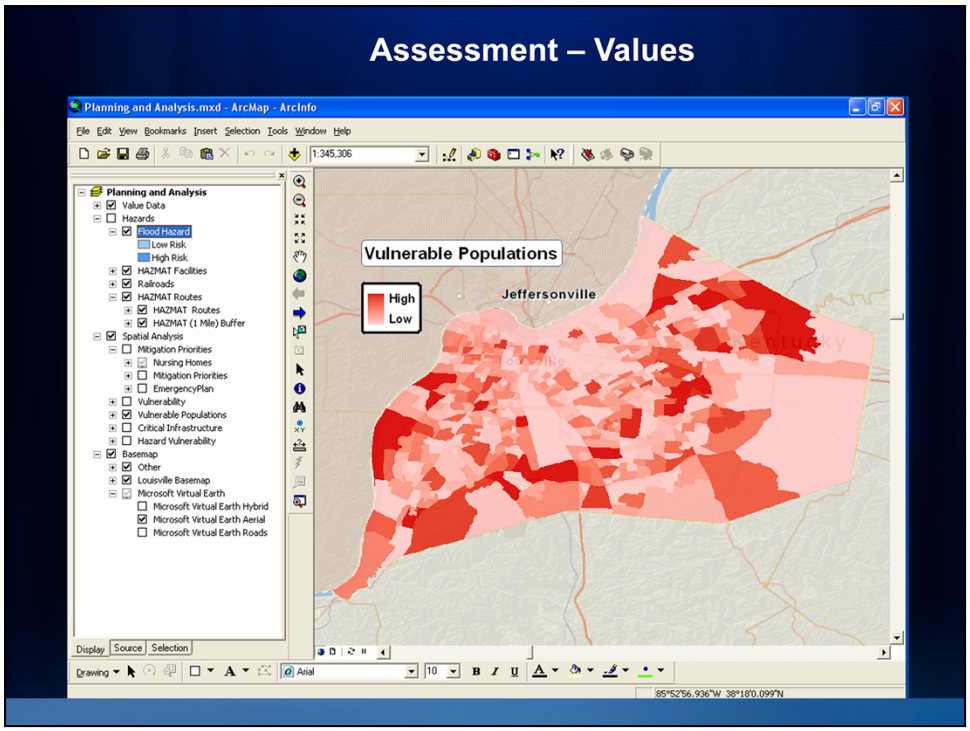
Rail Lines where hazardous materials are present

Fixed hazardous material locations – factories, utilities, etc.



When we turn on all of the technological and natural hazards layers, the map becomes cluttered and is difficult to assess

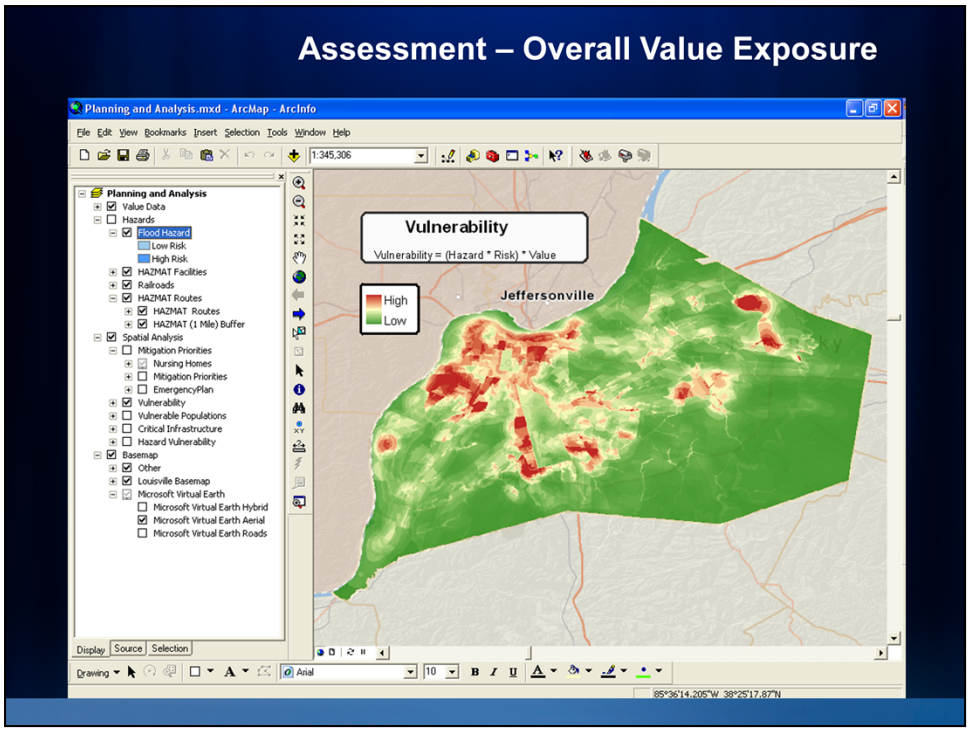
In GIS we simply create a weighted grid that identifies concentrations of hazards – A high level view that begins to allow us to focus on potentially critical areas.



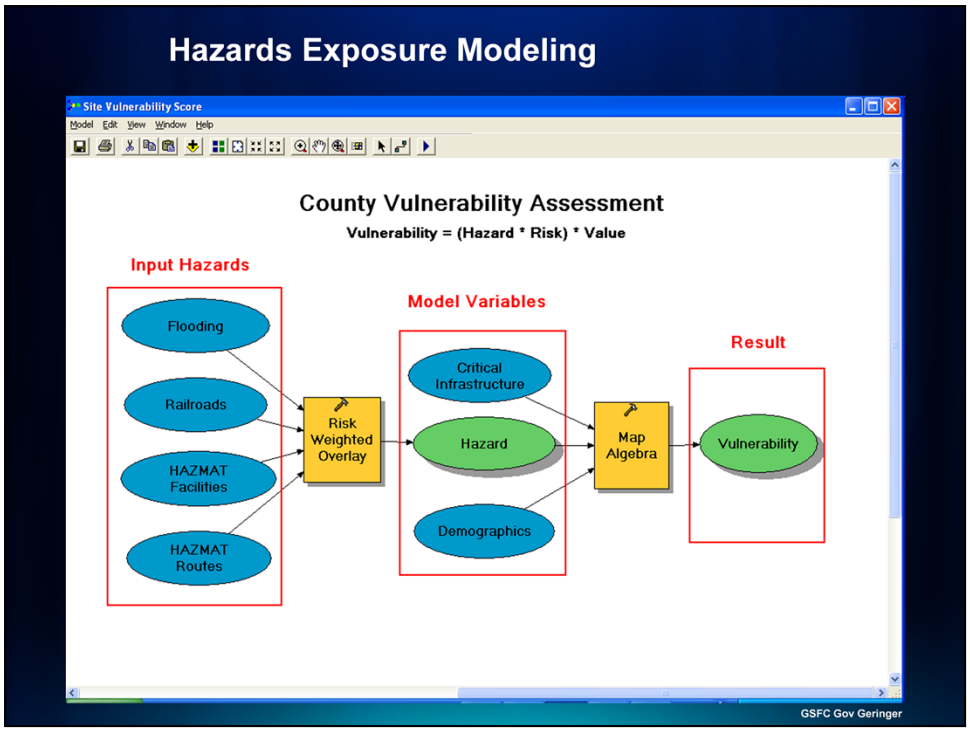
The first view represents concentrations of critical infrastructure – as determined by the local jurisdiction – again looking at a density of critical infrastructure

The second view represents concentrations of populated areas

Once again – a high level view of infrastructure and populated areas – Values matter



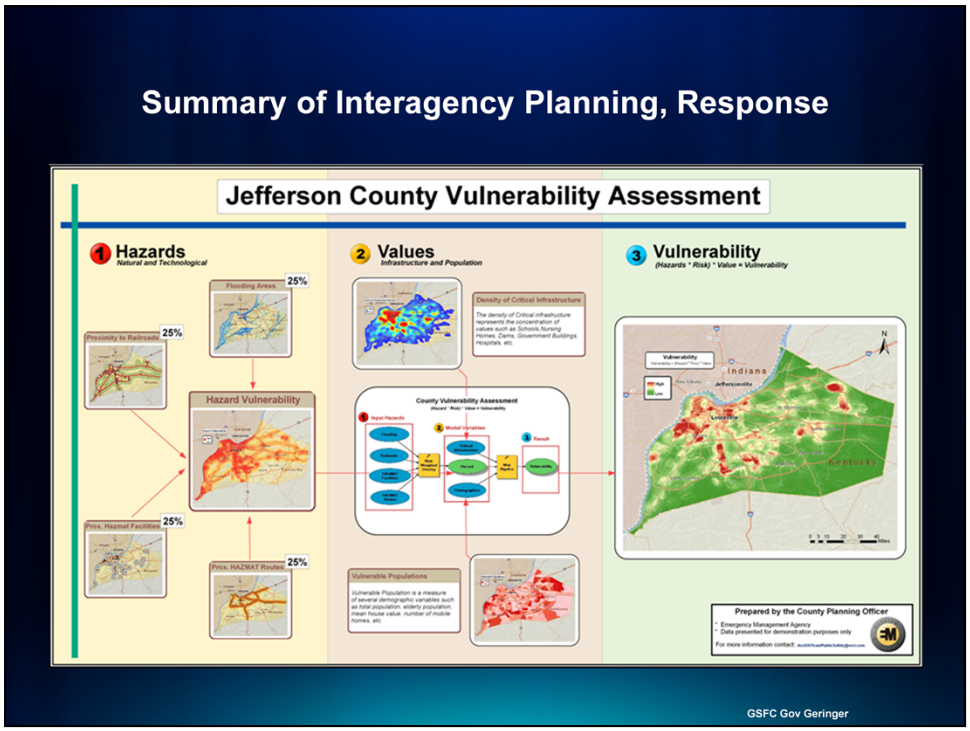
Now we can begin to see what assets are at risk – in this case looking at a senior care facility. In the table we can see why it is at risk and specifically what needs to be done for mitigation, and response



Model Builder that supports the vulnerability assessment

Set up a process to identify all hazards and the data that may be needed from any and all affected agencies, public and private

Model the variables using a risk-weighted overlay. The percentage of risk and relative values can be varied to meet local priorities. Several stakeholders can participate in setting their individual levels of acceptable risk, then Model Builder computes a composite score. That allows a follow up evaluation and adjustment if the priorities don't match what the participants believe to be a better approach.



This slide represents how the model worked

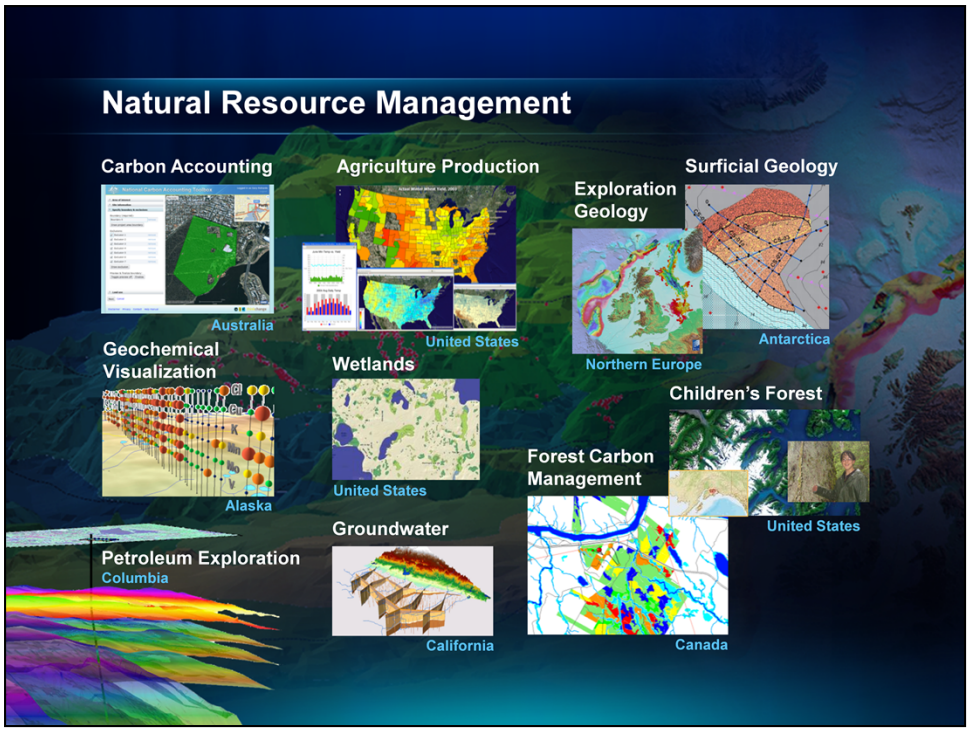
Review of the type of interagency data needed, the importance of using the right data from the original source and the significance of setting priorities through the visualization and modeling capability of GIS

Natural and Technological hazards turned into a weighted Grid

Critical Infrastructure and Population Density – Turned into a weighted Grid

Hazards and Values combined to identify values that are within high concentrated hazard areas – potentially at risk – priority for mitigation and response planning

Planning Demonstration



Others of you are making attempts to manage different facets of natural resources—exploring it, like this beautiful map on the left showing…exploring geography/geology to understand where there might be minerals and exploring geochemical under-the-ground visualization. And agriculture and forestry, and kids getting engaged _____.

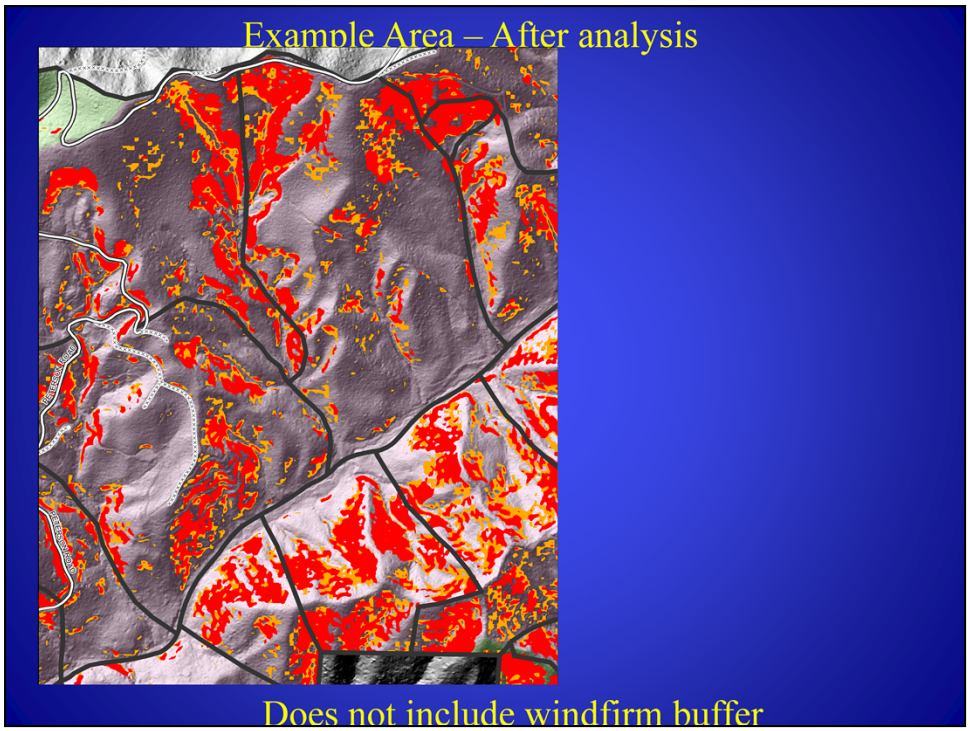
Landslide and Public Safety Spatial Analysis

In order for the public safety rules to be applied to a slope, both of the following conditions must exist…

There must be a High Landslide Hazard Location (HLHL) present upslope from a structure or public road.

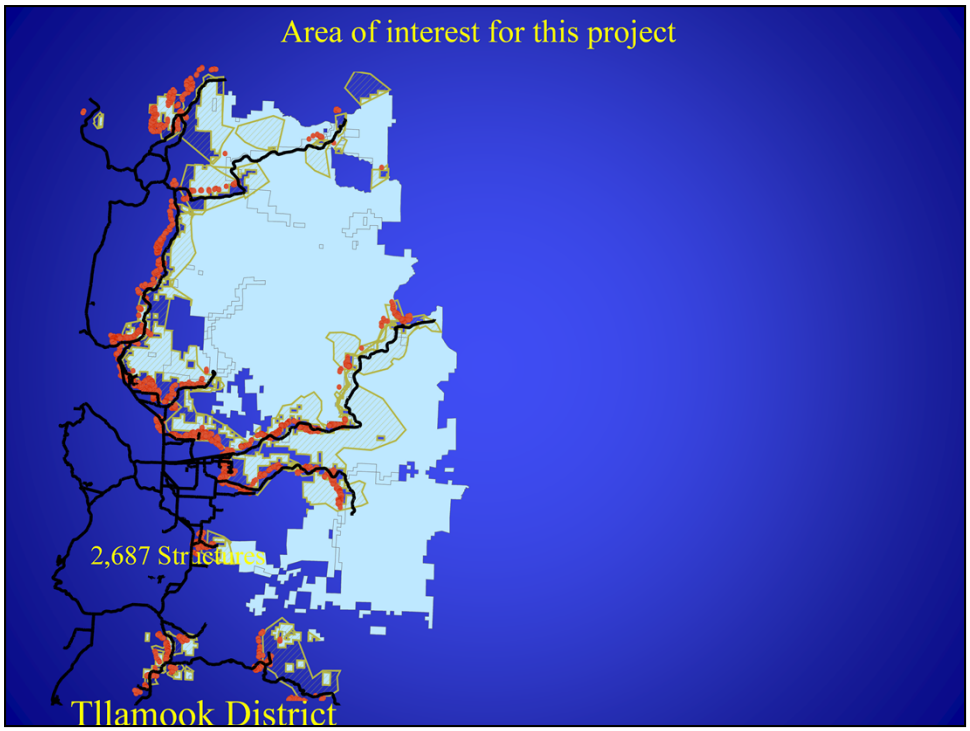
and

The structure or public road below the HLHL must have the potential of being impacted if a landslide initiates from that HLHL



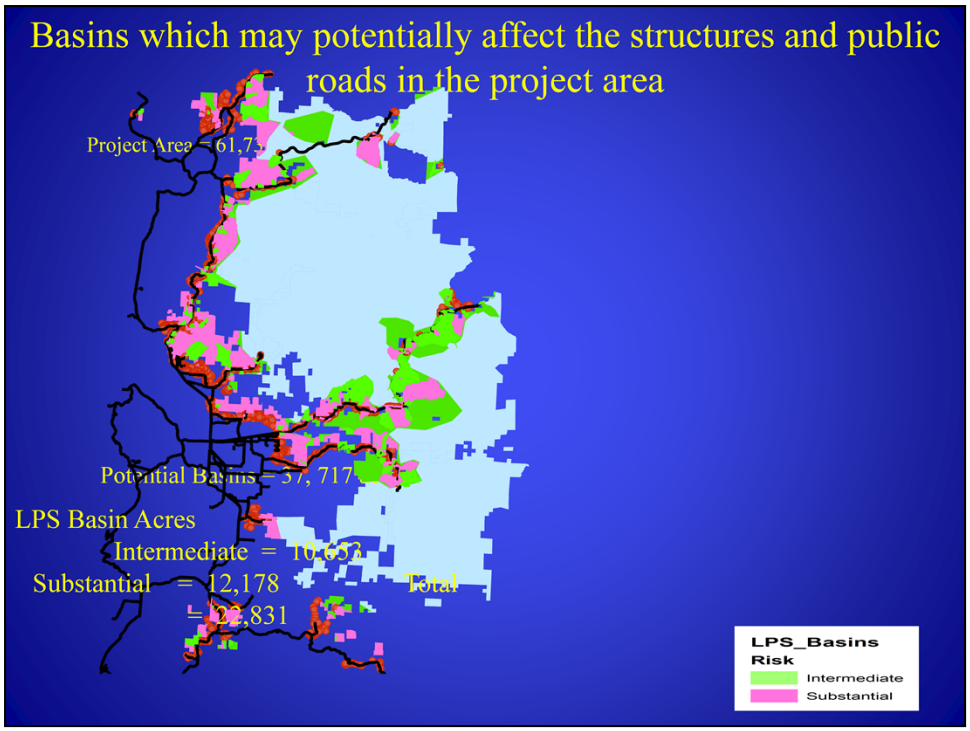
At this point of the project we applied the FPA landslide and public safety rules to the lidar DEM which included identifying headwalls and draws with slopes greater than 70% and all slopes greater than 80%

This is an example of the results from this analysis.



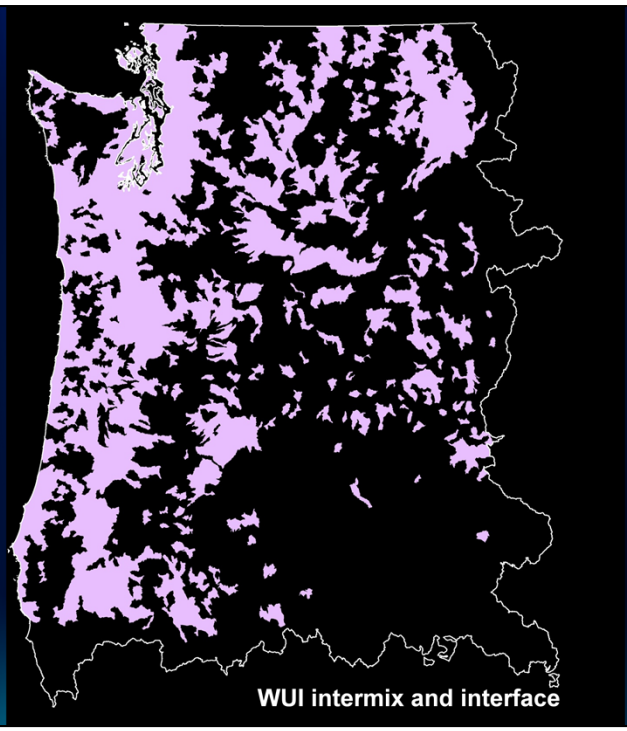
Talk about Area of Interest that Jason (Area GeoTech) designated for Eddie and Myself to look for structures

Using, photos, Lidar, Tax lots we identified the structures


Basins which may potentially affect the structures and public roads in the project area
Project Area = 61,7
Potential Basins = 37, 717
LPS Basin Acres
Intermediate = 10,653
Substantial = 12,178
Total
= 22,831
LPS_Basins
Risk
Intermediate
Substantial

Assessing wildfire danger - DSS
James Dickinson[a], Paul Hessburg[a], Keith Reynolds[a], Brion Salter[a], Robert Keane[b]
[a]USDA-FS, Pacific Northwest Research Station
[b]USDA-FS, Rocky Mountain Research Station

Locating the high priority watersheds, based on wildfire danger, presence of WUI and proximity to federal lands.



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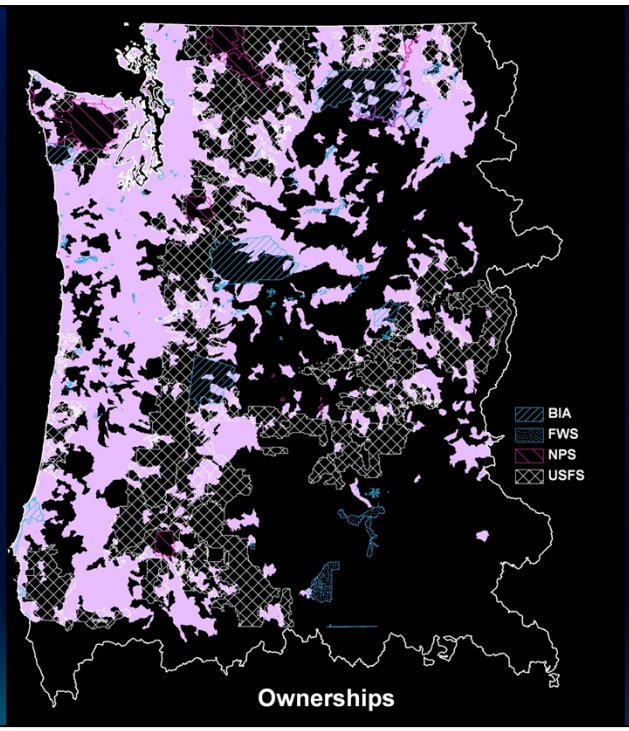

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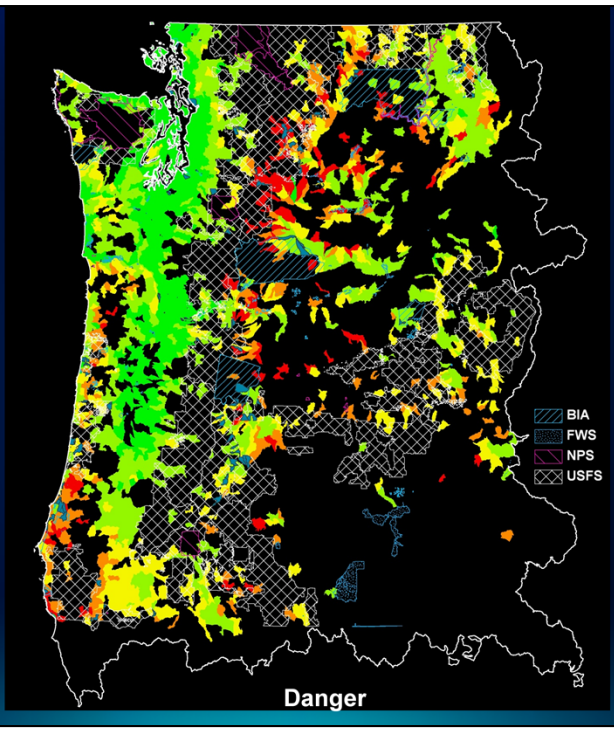
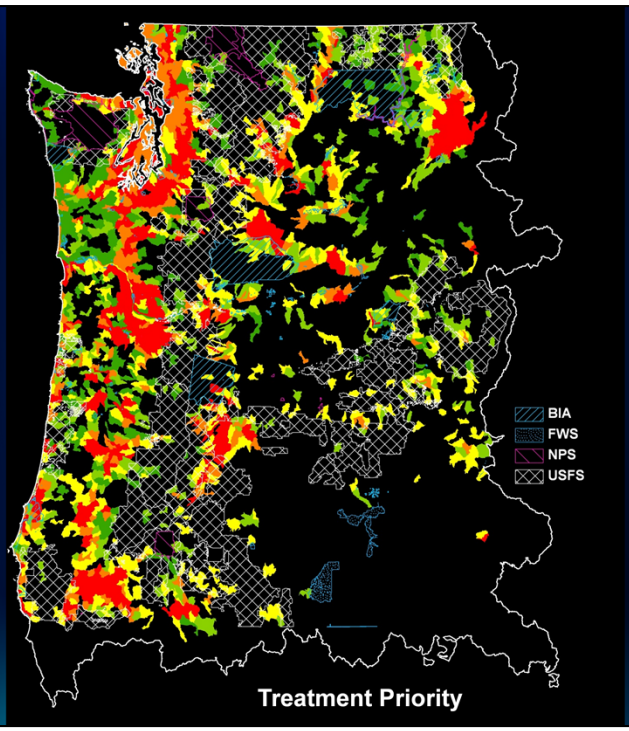
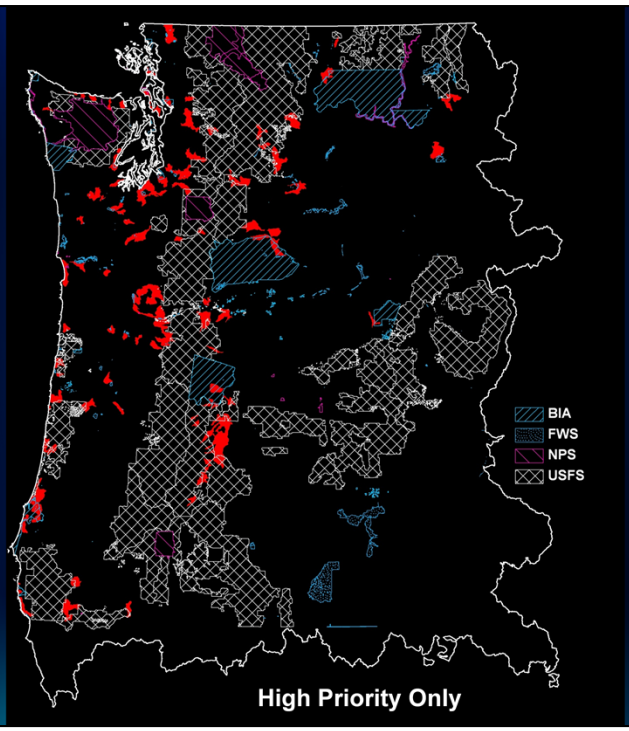
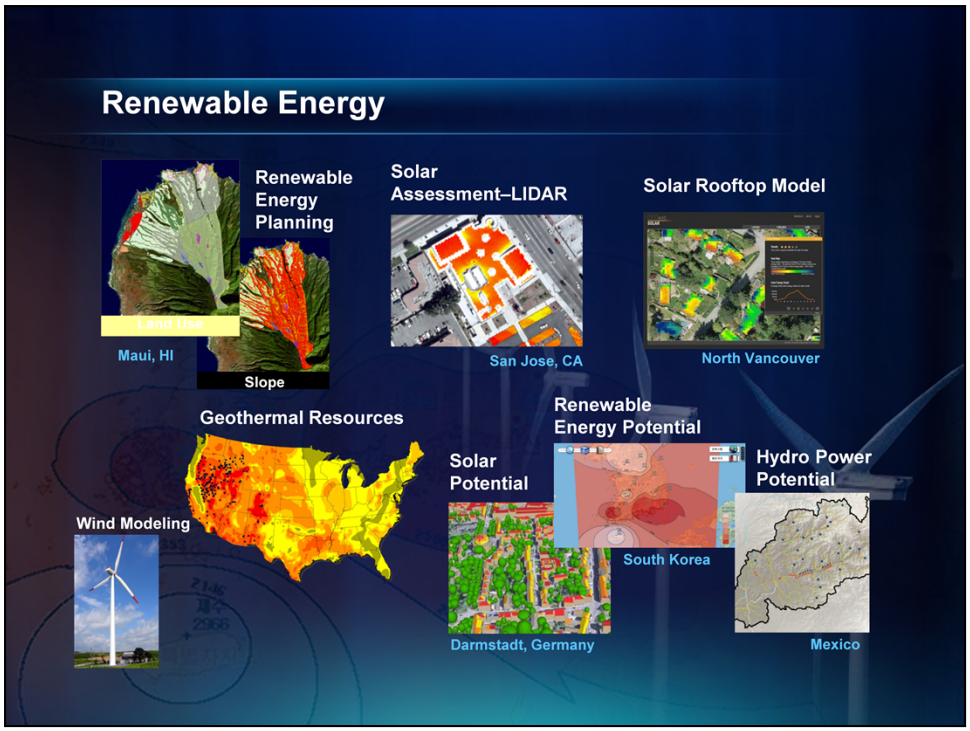


Locating the high priority watersheds, based on wildfire danger, presence of WUI and proximity to federal lands.

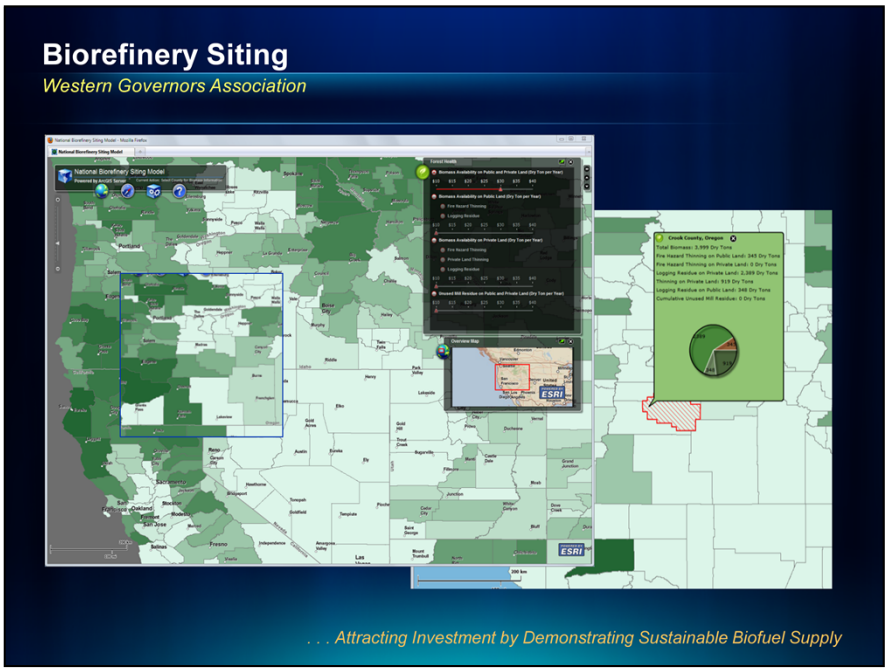


Locating the high priority watersheds, based on wildfire danger, presence of WUI and proximity to federal lands.

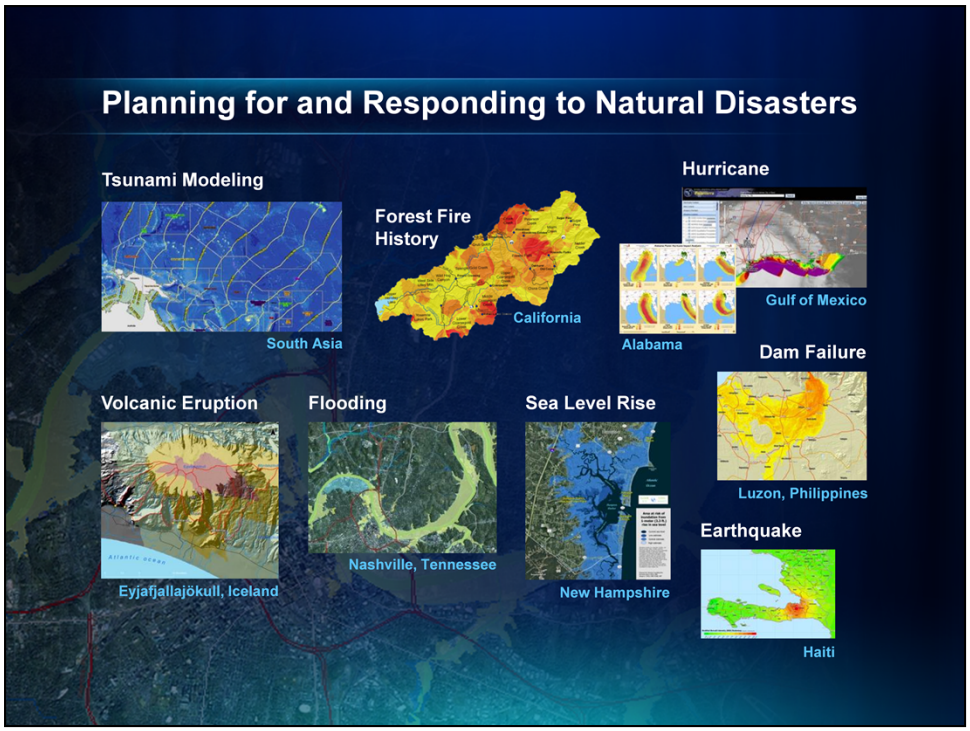




Some of you are exploring for renewable energy sources in cities with solar and wind and geothermal and hydro.

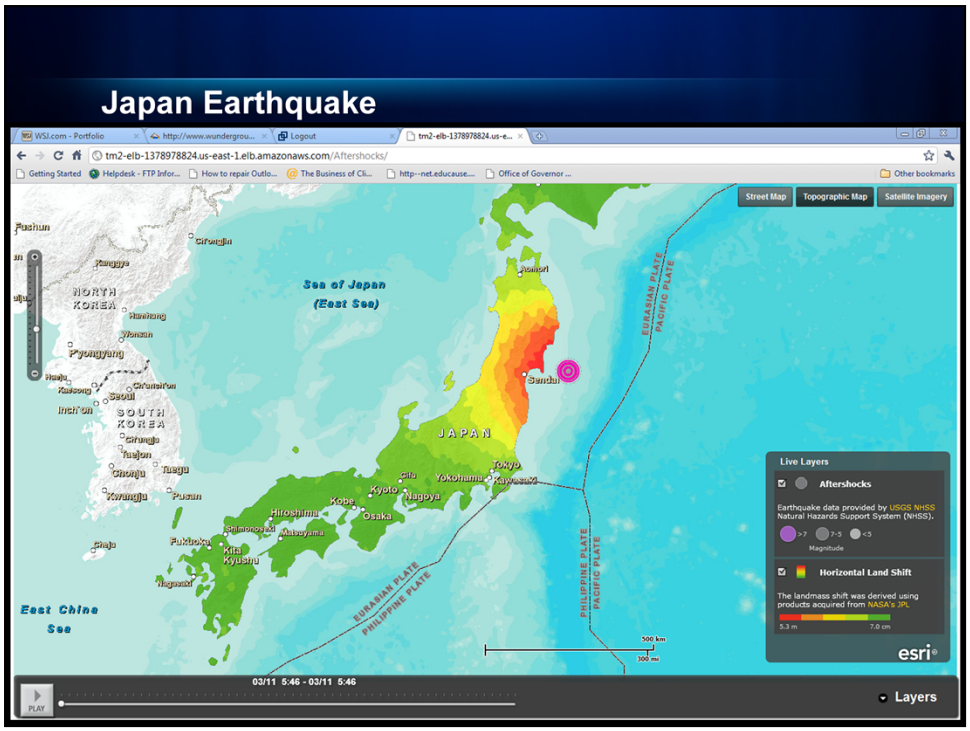

Biorefinery Siting
Western Governors Association
National Biorefinery Siting Model
. . . Attracting Investment by Demonstrating Sustainable Biofuel Supply

Transmission Planning
Western Governors' Association
Policy Resolution 10-15
Transmission and the Electric Power System
Western Governors' Association
Western Renewable Energy Zones - Phase 1 Report



Some of you are planning for and responding to natural disasters—fires, forest fires, hurricanes, flooding, the volcanic eruption in this—I won't try to pronounce the name—that Icelandic place, and also modeling tsunamis across the Pacific. The earthquake—responding to these disasters with people being in the field.

Today, we're challenged by one of the greatest of all disasters in the Gulf, and there are actually thousands of GIS people right now as we speak. Not here—there, collecting information with little handheld devices, providing situation awareness, using GIS to plan where to put booms and where to put skimmers to respond to this disaster. People from national government agencies, people from state agencies, local agencies, from the oil companies themselves, collaborating, using GIS as a way to make a difference here.


Japan Earthquake
tm2-elb-1378978824.us-east-1.elb.amazonaws.com/Aftershocks/
Street Map
Topographic Map
Satellite Imagery
Sea of Japan
(East Sea)
NORTH KOREA
SOUTH KOREA
JAPAN
East China Sea
Sendai
Tokyo
Yokohama
Kawasaki
Chiba
Nagoya
Kyoto
Osaka
Kobe
Hiroshima
Fukuoka
Kita Kyushu
EURASIAN PLATE
PACIFIC PLATE
PHILIPPINE PLATE
Live Layers
Aftershocks
Earthquake data provided by USGS NHSS Natural Hazards Support System (NHSS).
>7
7-5
<5
Magnitude
Horizontal Land Shift
The landmass shift was derived using products acquired from NASA's JPL
5.3 m
7.0 cm
esri
03/11 5:46 - 03/11 5:46
PLAY
Layers

Issue – Water Supply Becoming Inadequate

- **Problem** – Increased population will outpace the available water supply
- **Solution** – Develop new sources, enable conservation, determine priorities for allocation
- **GIS** – Provides a platform for adaptive modeling of alternatives

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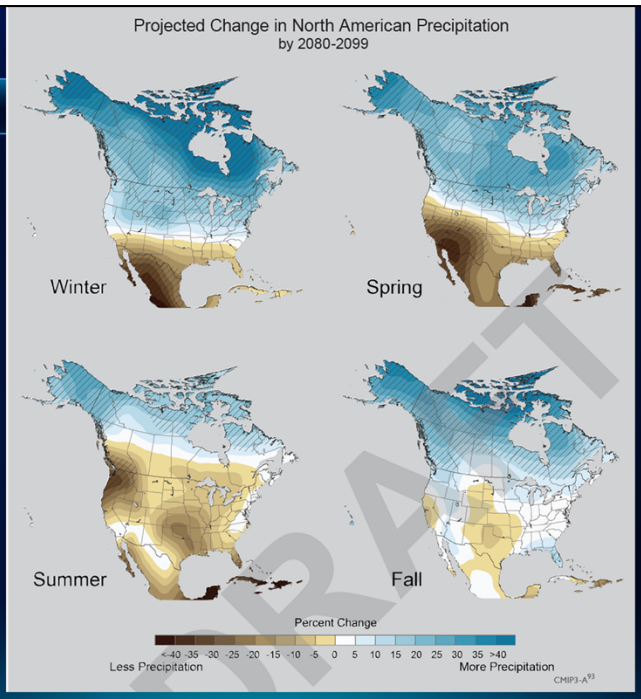
Water - Precipitation Trends



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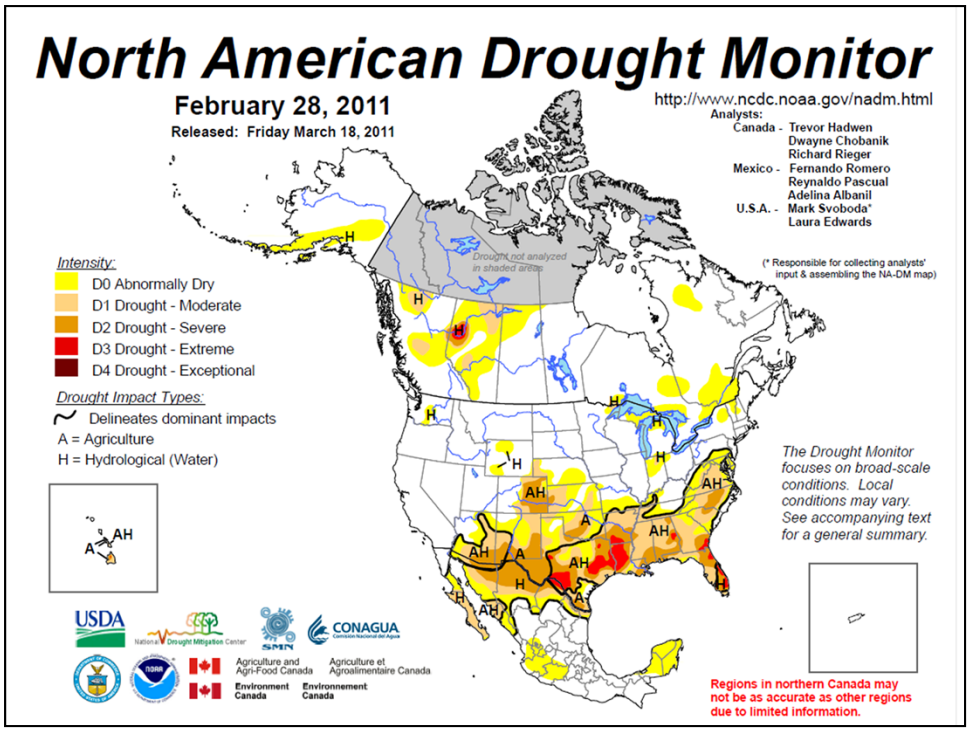
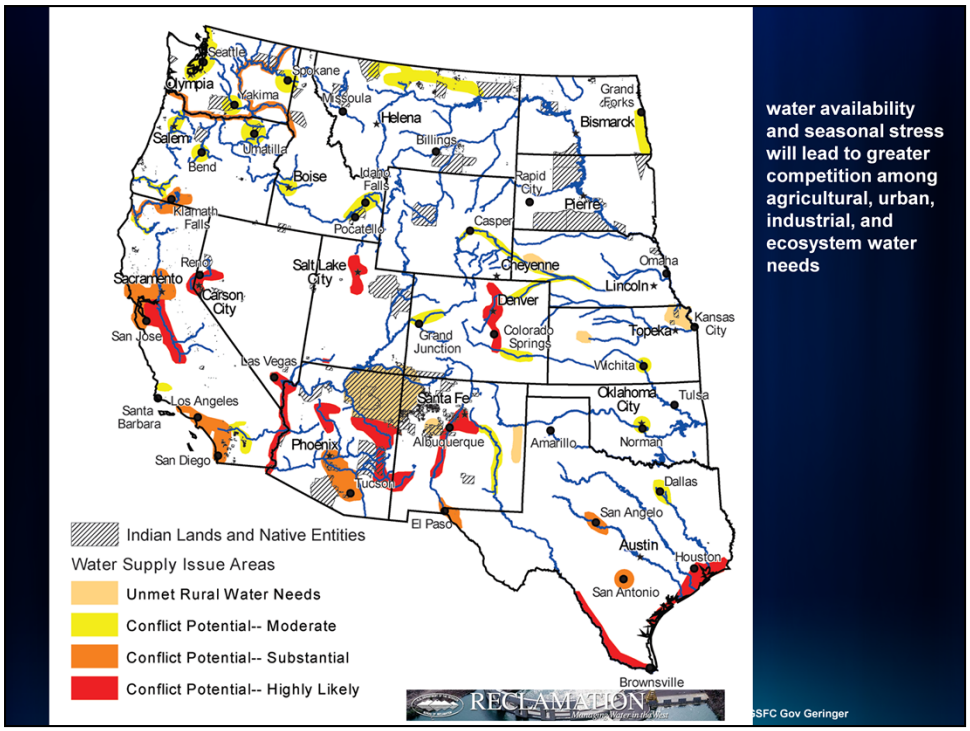
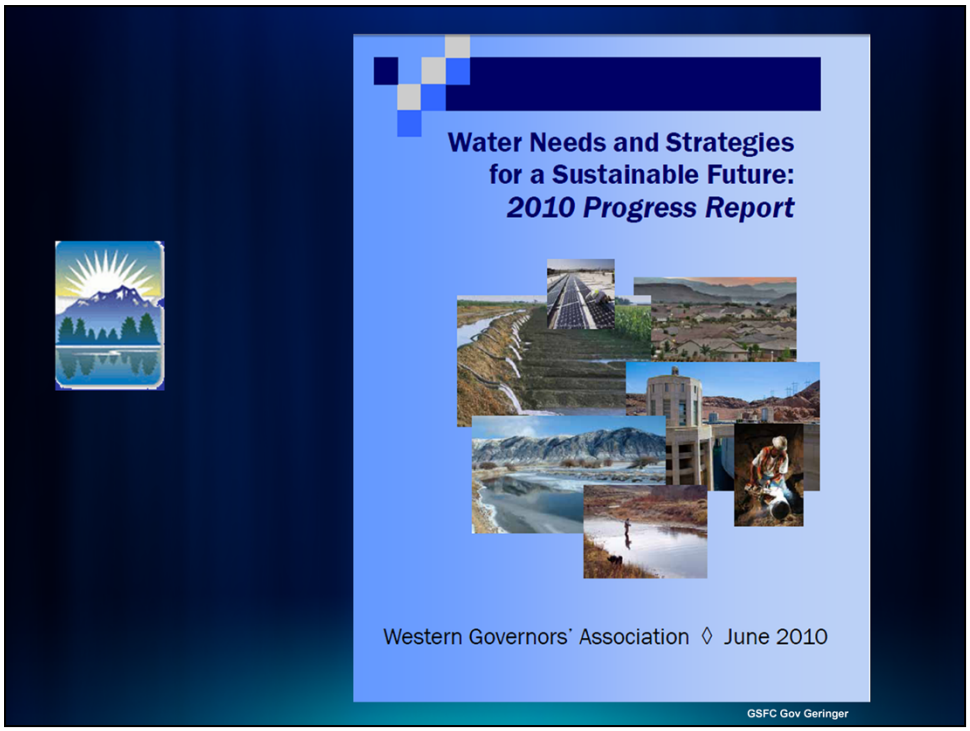
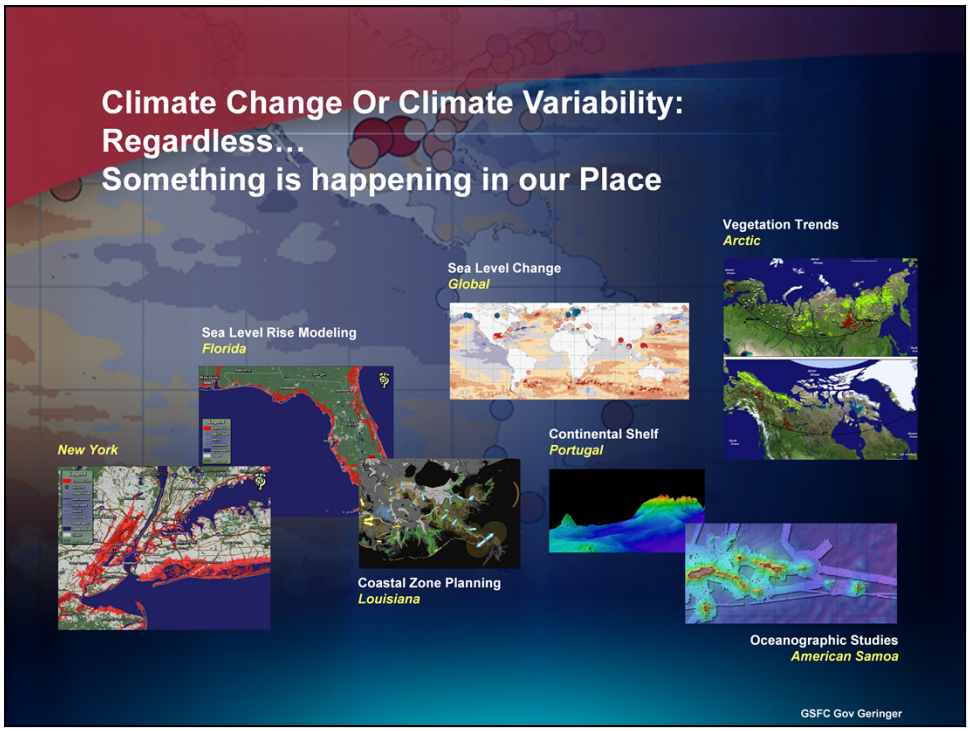


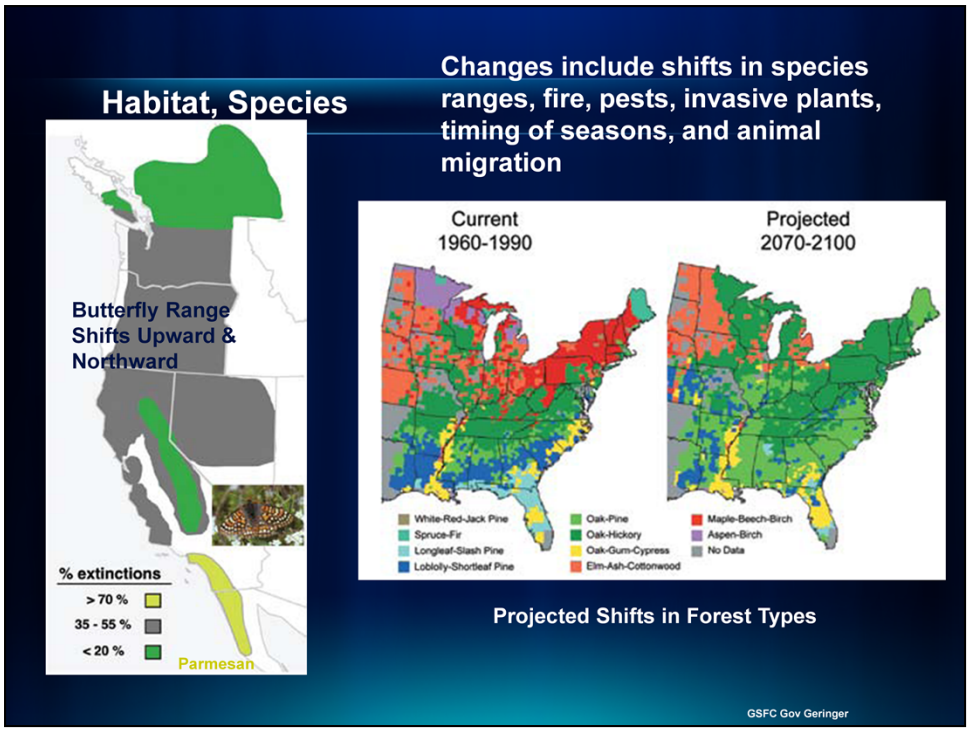
Weather knows no political boundary


Seattle
Olympia
Spokane
Yakima
Missoula
Helena
Billings
Grand Forks
Bismarck
Salem
Bend
Umatilla
Boise
Idaho Falls
Rapid City
Pierre
Klamath Falls
Pocatello
Casper
Reno
Salt Lake City
Cheyenne
Omaha
Sacramento
Carson City
Lincoln
Denver
Kansas City
San Jose
Grand Junction
Colorado Springs
Topeka
Las Vegas
Wichita
Santa Fe
Oklahoma City
Tulsa
Los Angeles
Santa Barbara
Albuquerque
Amarillo
Norman
Phoenix
San Diego
Tucson
Dallas
San Angelo
El Paso
Austin
Houston
San Antonio
Brownsville
Indian Lands and Native Entities
Water Supply Issue Areas
Unmet Rural Water Needs
Conflict Potential-- Moderate
Conflict Potential-- Substantial
Conflict Potential-- Highly Likely
RECLAMATION
Managing Water in the West
water availability and seasonal stress will lead to greater competition among agricultural, urban, industrial, and ecosystem water needs
SSFC Gov Geringer


Water Needs and Strategies
for a Sustainable Future:
2010 Progress Report
Western Governors' Association ◊ June 2010
GSFC Gov Geringer



Some of you are studying the impacts of global climate change synoptically for the whole planet and then the impacts that it means on various geographies like New York City or Florida or Louisiana and, in this beautiful set of maps, by Woodsfull Research Center, the impact of global climate change on vegetation in the Arctic.



Ecosystem processes, such as those that control growth and decomposition, have been affected by climate change.

• Large-scale shifts have occurred in the ranges of species and the timing of the seasons and animal migration, and are very likely to continue.

• Fires, insect pests, disease pathogens, and invasive weed species have increased, and these trends are likely to continue.

• Deserts and drylands are likely to become hotter and drier, feeding a selfreinforcing cycle of invasive plants, fire, and erosion.

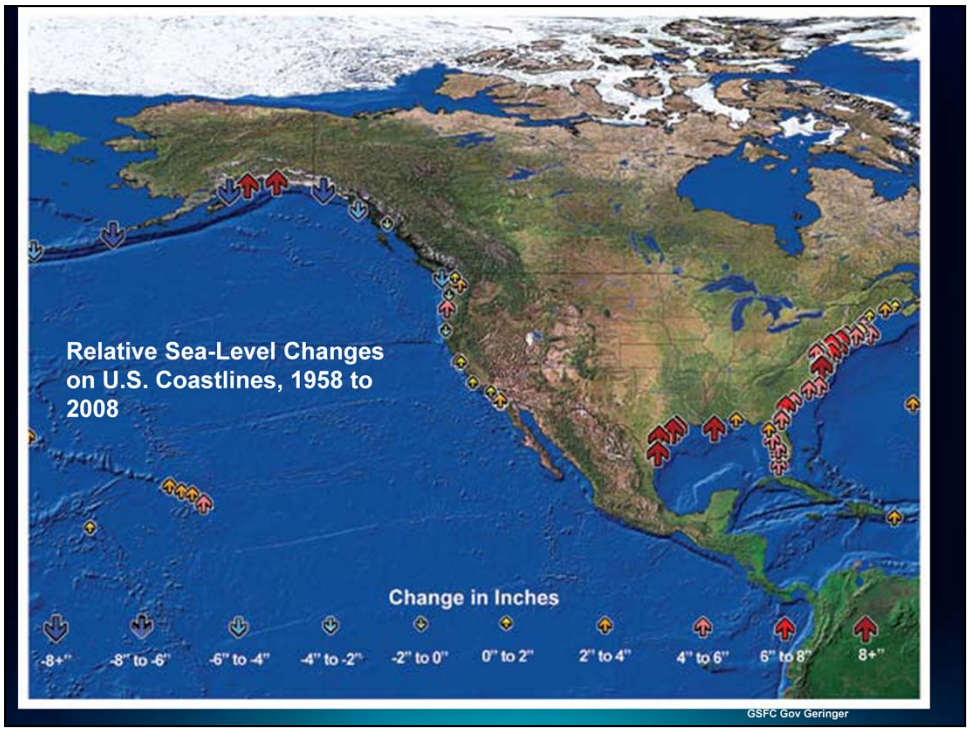
• Coastal and near-coastal ecosystems are already under multiple stresses. Climate change and ocean acidification will exacerbate these stresses.

• Arctic sea ice ecosystems are already being adversely affected by the loss of summer sea ice and further changes are expected.

• The habitats of some mountain species and coldwater fish, such as salmon and trout, are very likely to contract in response to warming.

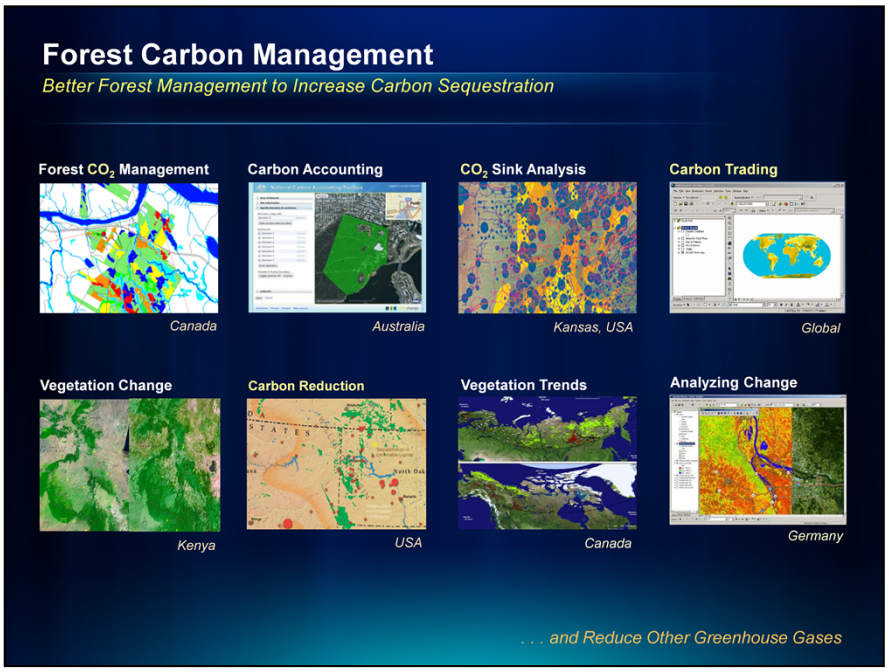
• Some of the benefits ecosystems provide to society will be threatened by climate change, while others will be enhanced.

Studying our Oceans
A GIS-Based Approach to Whole Earth Systems Science
Ocean Chlorophyll
Central America
Sea Surface Temperature
Naval Oceanographic Office
Sea Level Rise
New England, USA
Polar Ice Change
Arctic
Ocean Monitoring
California
Shoreline Change
Isle Derniers
New Orleans
Sea Level Change
Global
Coastal Zone Planning
Louisiana
. . . and Enabling the Prediction of Future Conditions



Observed changes in relative sea level from 1958 to 2008 for locations on the U.S. coast. Some areas along the Atlantic

and Gulf coasts saw increases greater than 8 inches over the past 50 years.


Forest Carbon Management
Better Forest Management to Increase Carbon Sequestration
Forest CO_2 Management
Canada
Carbon Accounting
Australia
CO_2 Sink Analysis
Kansas, USA
Carbon Trading
Global
Vegetation Change
Kenya
Carbon Reduction
USA
Vegetation Trends
Canada
Analyzing Change
Germany
. . . and Reduce Other Greenhouse Gases

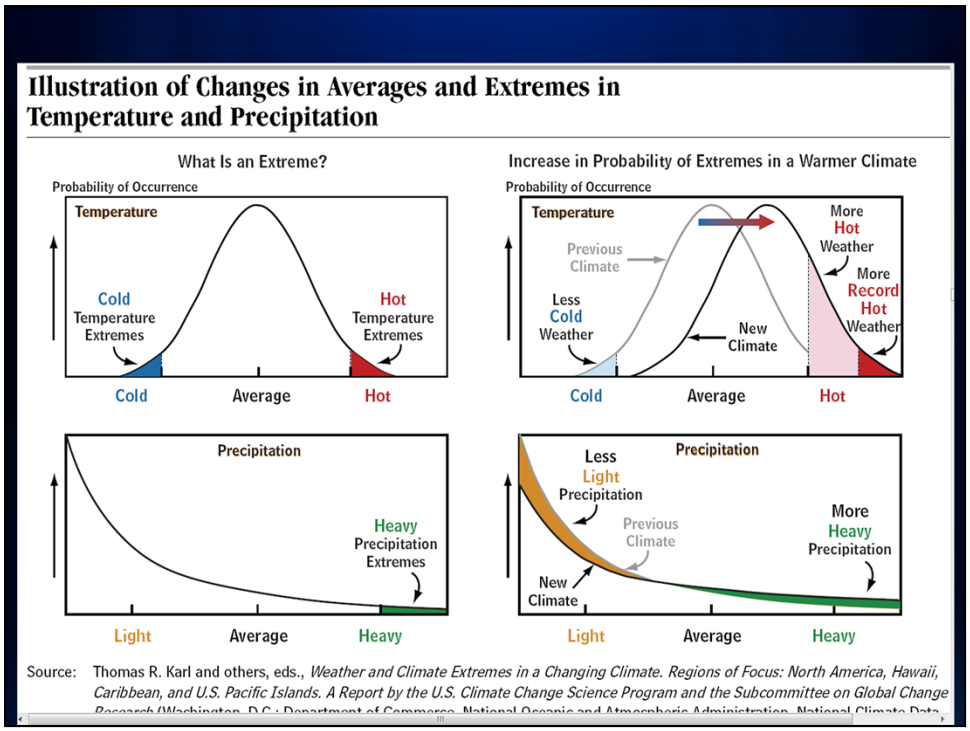
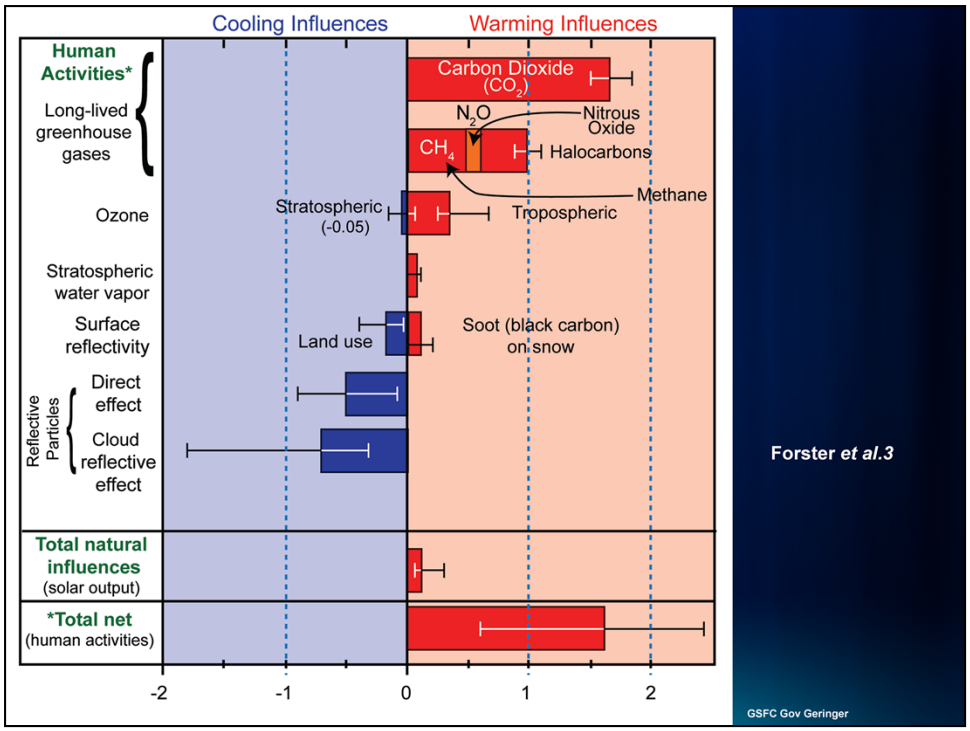


Illustration of Changes in Averages and Extremes in Temperature and Precipitation
What Is an Extreme?
Probability of Occurrence
Temperature
Cold Temperature Extremes
Hot Temperature Extremes
Cold
Average
Hot
Precipitation
Heavy Precipitation Extremes
Light
Average
Heavy
Increase in Probability of Extremes in a Warmer Climate
Probability of Occurrence
Temperature
Previous Climate
Less Cold Weather
New Climate
More Hot Weather
More Record Hot Weather
Cold
Average
Hot
Precipitation
Less Light Precipitation
Previous Climate
New Climate
More Heavy Precipitation
Light
Average
Heavy
Source: Thomas R. Karl and others, eds., Weather and Climate Extremes in a Changing Climate. Regions of Focus: North America, Hawaii, Caribbean, and U.S. Pacific Islands. A Report by the U.S. Climate Change Science Program and the Subcommittee on Global Change



The figure above shows the amount of warming influence (red bars) or cooling influence (blue bars) that different factors have had on Earth's climate over the industrial age (from about 1750 to the present). Results are in watts per square meter. The longer the bar, the greater the influence on climate. The top part of the box includes all the major human-induced factors, while the second part of the box includes the Sun, the only major natural factor with a long-term effect on climate. The cooling effect of individual volcanoes is also natural, but is relatively short-lived (2 to 3 years), thus their influence is not included in this figure. The bottom part of the box shows that the total net effect (warming influences minus cooling influences) of human activities is a strong warming influence. The thin lines on each bar provide an estimate of the range of uncertainty.

WEST COAST GOVERNORS' AGREEMENT on OCEAN HEALTH
CALIFORNIA OREGON WASHINGTON
Home
News
Actions
Action Teams
Documents
Meetings
Lead Agencies
Contact Us
Welcome
"Just as our western states have started to work together to fight global warming and protect our air, we now join forces to make sure we are doing everything in our power to maintain clean water and beaches along our coast."
- Governor Schwarzenegger
"Our oceans provide critical economic, environmental and social benefits to the Pacific Coast states. Today's historic agreement will mean clean water, healthy oceans and a better future for our children."
- Governor Kulongoski
"Our oceans are home to a great diversity of marine life and clean beaches and oceans are vital to West Coast fishing communities, recreation and tourism. We know that isolated local efforts cannot adequately address the breadth of degradation to our oceans. By cooperating, our three states will combine our resources and influence to make a real difference in the fight to clean and protect the oceans."
NOAA Regional Ocean Partnership Grant Funding Opportunity
You may now view the final funding proposals submitted by the WCGA:
Area 1: Achieving Sustainable Coastal Communities by Advancing Regional Ocean Priorities and Coastal and Marine Spatial Planning on the West Coast
Area 2: Administration of the West Coast Regional Ocean Partnership
The time to provide general comments or ideas for the WCGA's proposal to the Regional Ocean Partnerships Funding Program (ROPFP) has passed. You can view all public comments received here.
You can view the presentation PDF and also the full video from the Nov. 30 web meeting "Concepts Informing the West Coast Response to the Federal Funding Opportunity."
The WCGA hosted workshops in three states:
San Francisco, California: Friday, November 12, 2010; 11 AM - 5 PM
Newport, Oregon: Monday, November 15, 2010; 10 AM - 4 PM
Olympia, Washington: Tuesday, November 16, 2010; 10 AM - 4 PM
Workshop Summaries are available for California | Oregon | Washington
For full updates on the ROPFP, please see the News page.
West Coast Governors' Agreement on Ocean Health
On September 18, 2006 the Governors of California, Oregon and Washington
Eight Final Work Plans

Governors' South Atlantic Alliance
North Carolina • South Carolina • Georgia • Florida
Our Work
Agreement
Documents
Funding
Links
Contact Us
home | sitemap
Priority Issues and Technical Teams
Healthy Ecosystems
Working Waterfronts
Clean Coastal and Ocean Waters
Disaster-Resilient Communities
Technical Teams
Our Mission Statement
Implement science-based policies and solutions that enhance and protect the value of coastal and ocean resources of the southeastern United States to support the region's culture and economy now and for future generations.
South Atlantic Alliance Action Plan Finalized
North Carolina Governor
Bev Perdue
This Alliance will enable us to work together to protect our ocean environment and the health and economic well-being of the people dependent on those resources.
South Carolina Governor
Mark Sanford
The Alliance represents an important step toward enabling these states to pool their resources and better address the vital issues of economic development and environmental stewardship in the coming years.
Georgia Governor
Sonny Perdue
The South Atlantic Alliance provides a unique opportunity to collaborate with neighboring states on mutual priority issues that are vital to sustaining our rich coastal heritage and growing economy.
Florida Governor
Charlie Crist
This new initiative will allow our scientists, decision-makers, stakeholders, visitors and citizens to answer the call to work collaboratively to protect the South Atlantic region's resources.
Copyright © 2010 – All Rights Reserved
Site development, maintenance & hosting – South Carolina Sea Grant Consortium
Governors' South Atlantic Alliance
Carolyn Boltin-Kelly
Deputy Commissioner
SCDHEC Ocean and Coastal Resource Management
1362 McMillan Ave., Ste. 400
Charleston, SC 29405
P: 843-953-0225
F: 843-953-0201
boltincr@dhec.sc.gov
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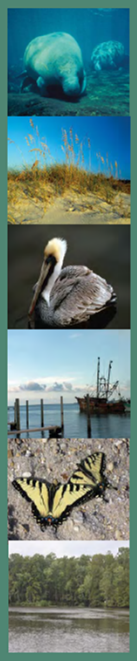

GULF OF MEXICO ALLIANCE

GOVERNORS' ACTION PLAN II

For Healthy and Resilient Coasts

2009 - 2014

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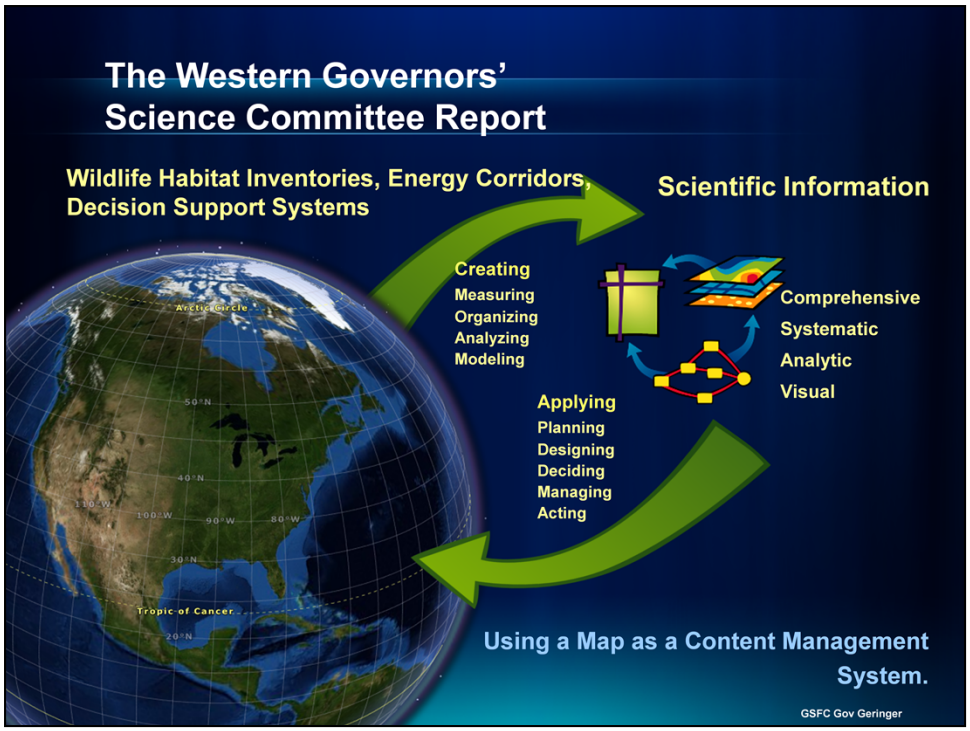
The Western Governors'
Science Committee Report
Wildlife Habitat Inventories, Energy Corridors,
Decision Support Systems
Scientific Information
Creating
Measuring
Organizing
Analyzing
Modeling
Comprehensive
Systematic
Analytic
Visual
Applying
Planning
Designing
Deciding
Managing
Acting
Using a Map as a Content Management
System.
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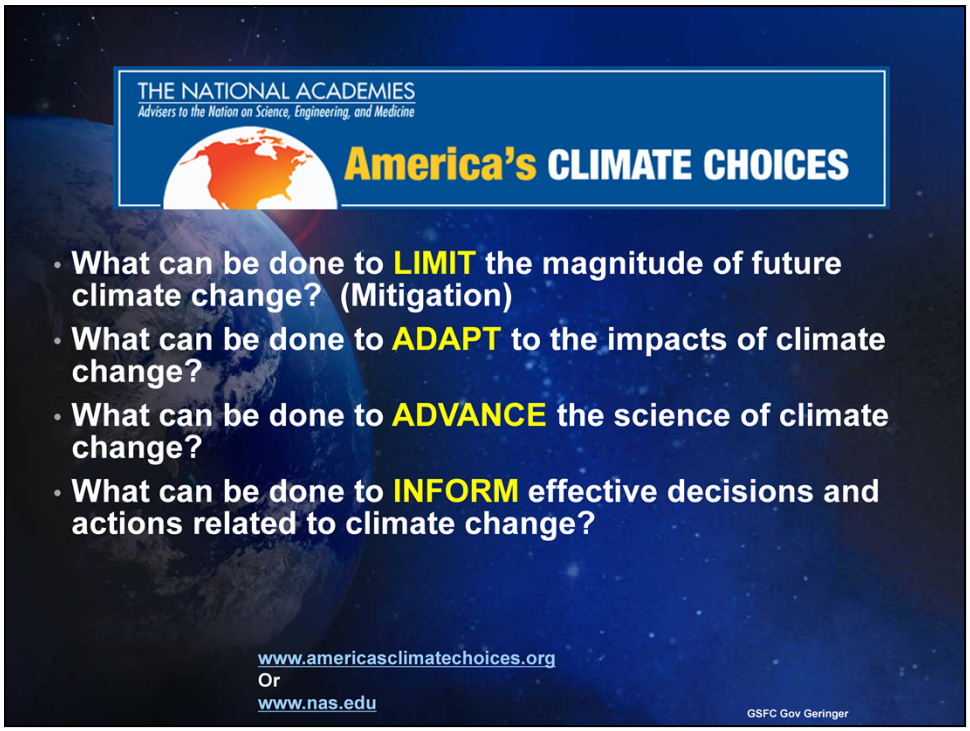
THE NATIONAL ACADEMIES
Advisers to the Nation on Science, Engineering, and Medicine
America's CLIMATE CHOICES
• What can be done to LIMIT the magnitude of future climate change? (Mitigation)
• What can be done to ADAPT to the impacts of climate change?
• What can be done to ADVANCE the science of climate change?
• What can be done to INFORM effective decisions and actions related to climate change?
www.americasclimatechoices.org
Or
www.nas.edu
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THE NATIONAL ACADEMIES
Advisers to the Nation on Science, Engineering, and Medicine
America's CLIMATE CHOICES
Informing an Effective Response to Climate Change
America's CLIMATE CHOICES

Informing an Effective Response to Climate Change

http://www.americasclimatechoices.org/panelinforming.shtml

- *Demand for information to support climate-related decisions has grown rapidly as people, organizations, and governments have moved ahead with plans and actions to reduce greenhouse gas emissions and to adapt to the impacts of climate change.*
- *Today, however, the nation lacks comprehensive, robust, and credible information systems to inform climate choices and evaluate their effectiveness.*

GSFC Gov Geringer

Informing an Effective Response to Climate Change

- *To provide a policy framework that promotes effective responses at all levels of American society, the federal government should build on its existing efforts and establish clear federal leadership, responsibility, and coordination for climate related decisions, information systems, and services.*

GSFC Gov Geringer

Informing an Effective Response to Climate Change

- *The report recommends that decision makers implement an iterative risk management strategy to manage climate decisions. Federal agencies should review and revise risk insurance programs; private firms should consider climate change risk disclosure.*
- *This report emphasizes that information should be tailored to user needs, provided at space and timescales to support decision-making, communicated clearly, and accompanied by decision support tools that allow exploration of alternative pathways.*

GSFC Gov Geringer

Informing an Effective Response to Climate Change

- *In order to meet National needs for state-of-the-art information on climate change, its impacts, and response options, a coordinated system of climate services is needed.*

GSFC Gov Geringer

Informing an Effective Response to Climate Change

- *The federal government should establish a national task force that includes formal and informal educators, government agencies, policymakers, business leaders, and scientists, among others, to set national goals and objectives, and to develop a coordinated strategy to improve climate change and education*

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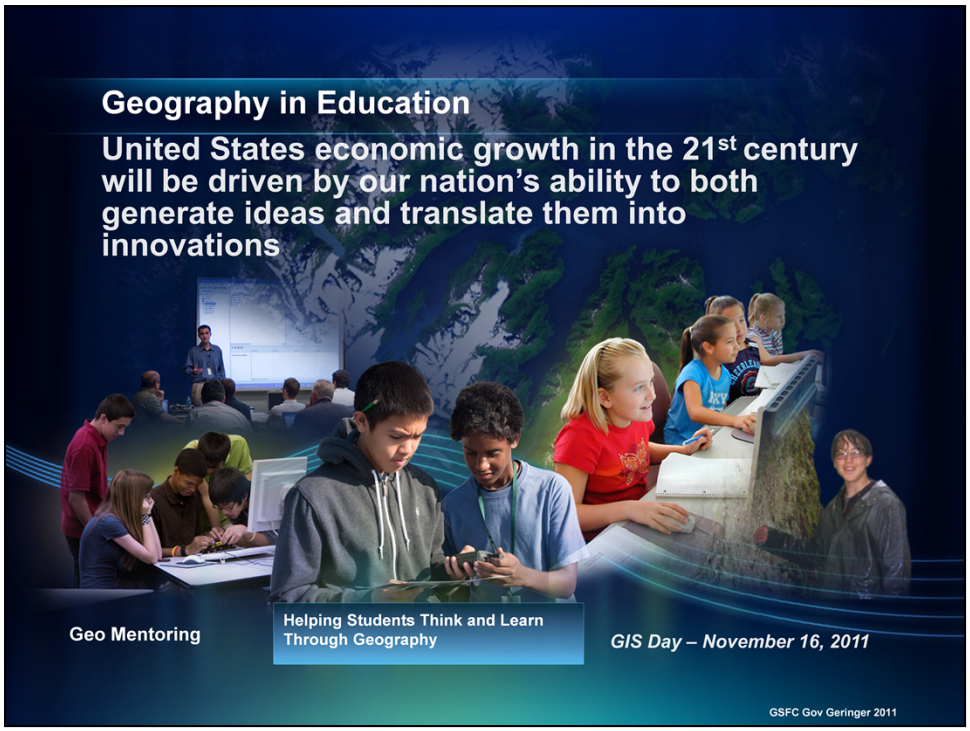


We are helping students learn geography and think about geography in new ways. And last year, thanks again to the National Geographic Society, we launched a new program called GeoMentoring. We're going to hear more about that this afternoon from Gil Grossner, the chairman of the society, but it's really a great privilege to be connected there.

The primary responsibility for achieving excellence falls upon the school and those who support the place of learning.

We have a joint responsibility to encourage and even insist upon continuous improvement.

We must advocate for and set high standards to maintain our position of global leadership in education and economic innovation.

Each place of learning should have ambitious, specific and clearly stated goals for student learning.

We want to assure enrichment of individual lives and our democratic society as a whole.

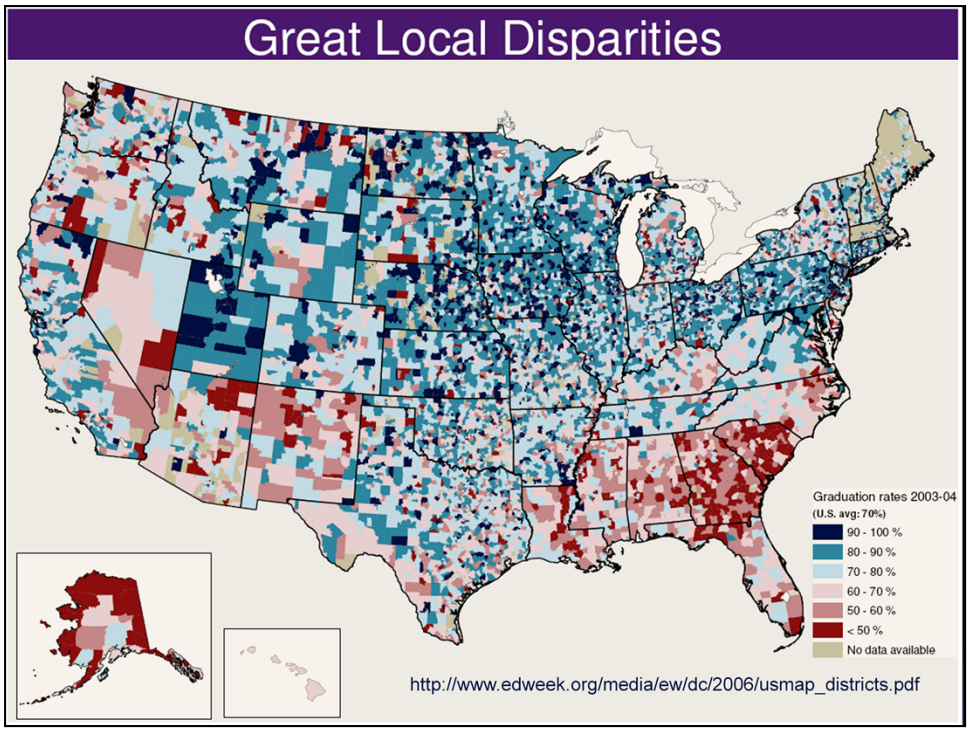
We should regularly gather evidence that students are achieving learning goals while in school as well as the ability to succeed upon leaving school.

The evidence gathered should be used for school and instructional improvement

Evidence and results should be summarized regularly and made public.

Parents, students and their communities should have easy access to conclusions drawn from the evidence gathered about student learning and success. They should be confident that there is a strategy for continuous improvement in the school.

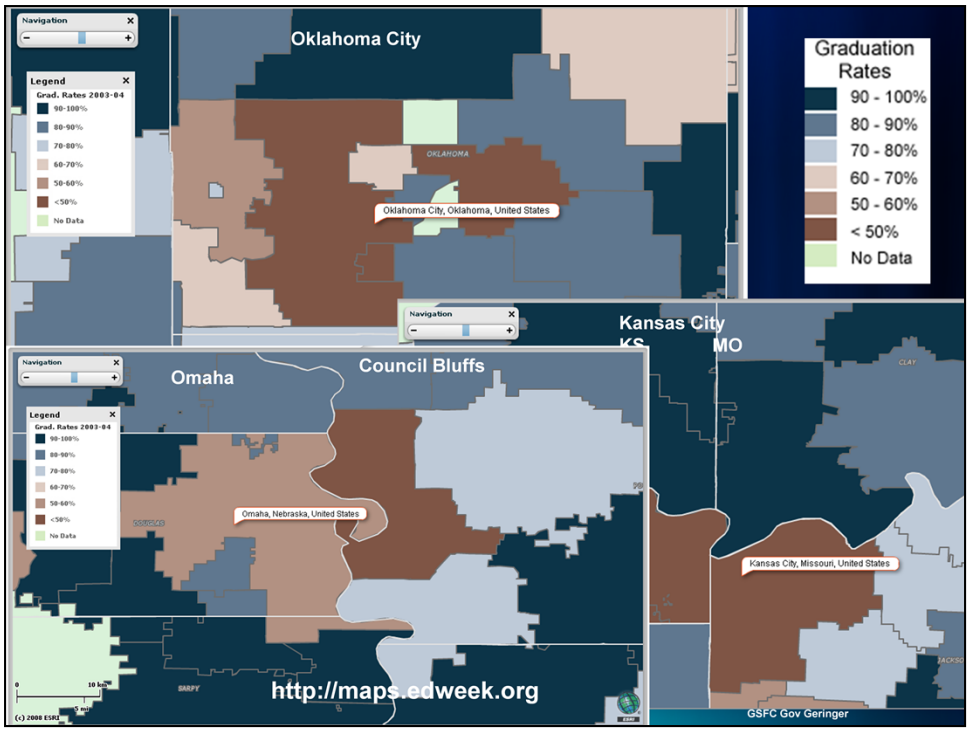
The faculty and staff are key partners in developing the shared goals to strengthen the quality of student attainment.



This map of high school graduation rate down to the school district level depicts how GIS provides a striking view of variability.

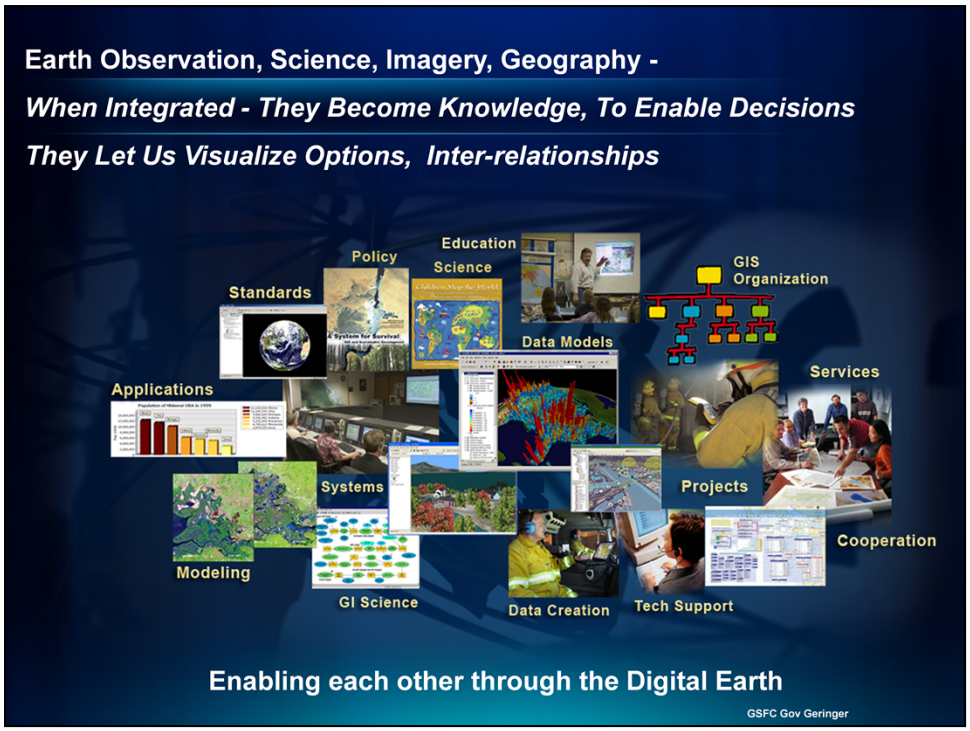
Over 15,000 individual school districts in the U.S. The only state with a single statewide district is Hawaii.

Zoom in to the Northwest. Not many districts with 90% plus graduation rate



The GIS presentation gives a visual comparison that leads to policy questions – why do adjacent school districts have widely disparate graduation rates? GIS leads to further information, evaluation, change.

http://63.241.153.180/edweek/main.html



This week is all about GIS, of course, and geography and sharing that knowledge: sometimes technology; sometimes methods and how we organize each other, ourselves, our data, what we do.

Advancing Better Decisions

- The power of ***data*** to support ***decision-makers***
- The power of Information Systems to ***integrate data*** from various sources (GIS)
  - Understanding ***interrelationships***
  - Help leaders understand options, today's ***priorities*** and ***resource*** allocation
- It's not about GIS, it's not about technology – ***it's about solutions***

GSFC Gov Geringer

Today we are measuring Virtually everything that Moves and Changes

..... Geography and GIS are being used to Integrate all this data ... Creating a whole new world of Geospatial Knowledge .... and make it available to everyone

It's no Enough to just collect data or look at ..... Or use it to tell alarming stories about what's happening

..... We need to Incorporate This Geospatial Knowledge into Designing a better future

<Advance to next slide>

Thanks!
Wyoming
esri

jgeringer@esri.com
geographic knowledge