A few concepts from USDA

Dr. Ann M Bartuska

Landscape Approaches to Sustainable Resource Management – a NAS workshop

June 2, 2015
21st Century Conservation

- All lands, landscape scale
- Strong partnerships, locally driven
- Targeted, systems based
- Strong science
- Results
- Innovation
• Not every watershed is created equal – target critical ones
• Monitoring at 3-scales to capture impact of changing practices
Governance matters:

Over 800 Watershed Councils in the U.S. integrate public-private lands and are the emerging governance system for maintaining and sustaining watersheds.
Let’s talk about scale – matching data with program delivery

....and program with the policy decision!
Watershed Condition Framework Process

**STEP A**
Classify Watershed Condition

**STEP B**
Prioritize Watersheds for Restoration

**STEP C**
Develop Watershed Restoration Action Plans

**STEP D**
Implement Integrated Projects

**STEP E**
Track Restoration Accomplishments

**STEP F**
Monitor and Verify
Finally, we want to ensure we are science-based
Long Term Agro-Ecosystem Research Network

Shared Research Strategy (www.ars.usda.gov/ltar)
Mangrove swamp

Upstream freshwater forest

aapuaha

Marine and reef habitats

...Ridge to Reef...

balancing and sustaining ecological, social, and cultural needs
THE END

This is an intentionally blank slide; The following slides are place holders In case questions on ecosystem Services or Hubs is asked.
Crop and range production (area, yield by type, land use, location)

- **Driver data**
  - [NOAA- climate, weather; NRCS- land use, soils; ARS- invasives, APHIS- pests, pathogens]

- **Imagery**
  - NASA, ARS

- **Legacy data**
  - LTAR, ARS, NASS, ERS, NRCS

- **Short-term data**
  - FSA, ARS, NASS, NIFA, GRA

- Observations, experiments, land use, management strategies

**GOAL:** Regional to national-level synthesis and integration

- Forecast vulnerability of agrosystems to global change drivers
- Develop potential adaptation strategies

**Site-level synthesis**

- Conceptual models
- Statistical models
- Simulation models (AgMIP, others)

**US GLAM** – links imagery with ground observations across contiguous US and globally

**INFORMATION TRANSFER**

- Climate hubs
  - Land managers, public, decision makers

**Feedbacks to data and knowledge gaps**
Markets in Transition: The “Natural Infrastructure”  
(Forest Trends 2005)
Data is not the issue
.....translating it to usable information is!

USDA Regional Climate Hubs
The Regional Climate Hubs hope to:

Improve the information flow to stakeholders by translating science into tools and products useful to land managers.
The Hubs hope to:
Improve the information flow to stakeholders
And provide feedback to research agencies

Foundational Research

Stakeholder Feedback

Applied Research

Package & Develop

Outreach / Extension

Stakeholders
Farmers
Ranchers
Forest land owners
Conceptual Framework of a USDA Regional Hub

Science and Technology providers:

**Federal Partners**
- NOAA RISA
- USGS CSC
- DOE
- NASA etc
- USDA Intramural Research (ARS/FS/ERS/NRCS)
- USDA Extramural funded Research (NIFA)
- Agricultural Experiment Stations
- Many others

**Non-Federal Partners**

**Science and Technology Coordination, Synthesis, and Tools**

**Technology Transfer providers (Tech-Transfer Stakeholders):**

- Cooperative Extension
- USDA Service Centers
- Forest Service Threat Centers
- State Foresters
- State Climatologists
- Others

**Land Management Stakeholders**

- Farmers / Ranchers / Forest Managers / Tribes / States / Feds / LCCs / Others

Links with other Hubs & National Coordinator

Foundational Research

Applied Research

Package & Develop

Stakeholder Feedback

Outreach / Extension

https://www.flickr.com/photos/usdagov/15547491480