



National Institute of Food and Agriculture  
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# Ecosystem Site Description Funding Opportunities for Research, Education, and Extension Support

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# NIFA Federal Funding

Small Agency (360 employees),  
Big Budget (~1.5 billion)

**Formula programs**  
**Competitive grants**  
**Targeted programs**  
**Agreements with other Federal agencies**





## Funding ESDs

- No funding line directed exclusively to the development, improvement, or support through research, education, and/or extension.
- Request of Project Directors to support ESDs (effectiveness?):



## Contribution to Rangeland Ecological Site Descriptions (ESDs) and State and Transition (S&T) Models:

In order to help focus their research, applicants who are likely to generate new knowledge that is relevant to the dynamics or management of grassland and/or shrubland are strongly encouraged to consult appropriate ESDs and the associated S&T conceptual models. These models are increasingly used by Natural Resource Conservation Service (NRCS), the Department of Interior's Bureau of Land Management (BLM) and the U. S. Forest Service (USFS) to guide the application of management practices. The appropriate ESDs can be identified using soil surveys together with on-site soil verification at your proposed study sites, or by contacting the NRCS State Rangeland Management Specialist. Further information is available at the following website: <http://usda-ars.nmsu.edu/esd/esdIntro.html>.

As appropriate, successful applicants are strongly encouraged to recommend changes to ESDs based on the results of their research to the NRCS team responsible for reviewing potential changes. Where S&T models do not exist, opportunities may exist to contribute to their development.



## Funding ESDs

- Hatch?
  - Small money university projects.
- Multistate Research or Coordination Committees?
  - Already in existence?
  - Create one with University lead.
  - Steer a committee towards ESD development.



## Program Areas and Investment: FY 2010

Agriculture and Food Research Initiative	\$262 million
Rangeland Research	\$1 million
Small Business Innovation Research	\$22 million





## Program Areas and Investment: FY 2010

Sustainable Agriculture Research and Education	\$14.5 million
Integrated Research, Education, and Extension (Section 406)	\$41 million (only potential for water quality \$12 million in 2011 without CR)



# Agriculture and Food Research Initiative

- Basic and applied research
- Extension
- Education
- Integrated research, education, and extension
- Biological, Physical, and Social Sciences
- Single Discipline and Transdisciplinary
- Single Investigator and Teams





# Agriculture and Food Research Initiative

## FY 2010 Challenge Areas

- Childhood Obesity Prevention: \$25 M
- ✓ Climate Change: \$55 M
- Global Food Security: \$15 M
- Food Safety: \$20 M
- ✓ Sustainable Bioenergy: \$40 M



# Climate Change RFA

- “Adaptation – Maximize resiliency and reduce the impact of climate change on the productivity of agriculture and forest systems and reduce carbon, nitrogen, and water footprints under changing climates by providing producers and decision makers with new management methods and technologies...”



# Sustainable Bioenergy RFA

- “Fund grants targeting the development of regional systems for the sustainable production of bioenergy and biobased products that: contribute significantly to reducing dependence on foreign oil; have net positive social, environmental, and rural economic impacts; and are compatible with existing agricultural systems.”
- FY2011 Priorities:
  - Impacts of policy on feedstock production systems
  - Impacts of feedstock production systems on pollinators and wildlife.



# Agriculture and Food Research Initiative

## Foundational Programs: \$65 M

- Plant Health and Production and Plant Products
- Animal Health and Production and Animal Products
- Food Safety, Nutrition, and Health
- ✓ Renewable Energy, Natural Resources, and Environment (\$9 M) FY2010 Priorities:
  - ✓ Drought Triggers and Recycled Water
- Agriculture Systems and Technology
- Agriculture Economics and Rural Communities



# Agriculture and Food Research Initiative

## NIFA Fellowships Program: \$6 M

1. Offering individual fellowships for pre- and post-doctoral scholars – *NIFA Fellows*
2. Supporting the next generation of agricultural scientists



## ESD Support from AFRI

- Partnerships, integration, and “seeing yourself in the RFAs” are key....







# Rangeland Research Program

- Open to accredited universities with a 50% match requirement.
- Funding levels at \$500K.
- FY2010 Priorities:
  - Rangeland restoration;
  - Rangeland drought preparedness and management;
  - *Adoption Outreach.*





# Small Business Innovation Research

*Research for the development of a profit-making technology, product, or service*

*12 topic areas including:*

- Forests & Related Resources;
- Soil and Water Resources.
- New monitoring protocols?--Talk to Dr. Charlie Cleland before beginning the process.



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# Sustainable Agriculture Research and Education

SARE works to increase knowledge about practices that are profitable, environmentally sound, and good for communities (~150K per research project).

- Projects address crop and livestock production and marketing, stewardship of soil, water and other natural resources, economics and quality of life.





# Section 406 Integrated Research, Education and Extension

## National Integrated Water Quality Program (NIWQP)

- \$12 M - Three Project Types:
  - Multi-Regional
  - Regional Network
  - Watershed Scale
- Projects involve integration of research, education, and extension
- Multi-disciplinary focus: biophysical, social, economic, and behavioral sciences
- Rural, agricultural, and urbanizing watersheds





# Using This Gathering As An Input Session: What Are The Issues?

- Continue the amplification of site concepts (complexity in time and space, appropriate scale, and scalability) and the design of field experiments to provide a framework for the collaboration of research, education, and extension personnel, field technical staff, and stakeholders (Brenner et al. 2007).
- Application of restoration interventions based on updated understanding of the ecological site capacities of rangeland and other landscapes (Havstad et al. 2007).





# Using This Gathering As An Input Session: What Are The Issues?

- Key to the dynamics of any system is whether or not that system has, or is likely to have, thresholds. Can a threshold be identified before it has been crossed? (Carpenter 2003; Walker and Meyers 2004).
- Is a threshold an emergent property of some underlying set of attributes of a system? Is there a relationship, for example, between the network topology of a system and the likelihood of a threshold? (Walker and Meyers 2004).





# Using This Gathering As An Input Session: What Are The Issues?

- What research, education, and extension might link threshold concepts related to organismal behavior, demography, and diversity with ecosystem functions to obtain a broader perspective on land management and restoration? (Bestelmeyer 2006).
  - Are we expanding our knowledge concerning the kinds of threshold processes (e.g., productivity loss, soil degradation, and invasion) in different sites?
  - What are the appropriate scientific approaches to the development of ESDs? How do we maintain focus on management-relevant distinctions and policy issues in conducting research?



# Using This Gathering As An Input Session: What Are The Issues?

- Science-based ESDs are needed now, e.g., demands for fine-grained site information for assessing the potential for carbon sequestration and biobased production on rangelands.



# Thanks! Questions?

**NIFA Website: [www.nifa.usda.gov](http://www.nifa.usda.gov)**

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