# Scientific and Technical Needs and Priorities of Federal Agencies

## National Park Service Perspective

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# CESU Objectives

- Provide high-quality scientific research, technical assistance, and education.
- Deliver products that are timely, relevant, and needed to develop and implement sound adaptive management approaches.
- Ensure the independence and objectivity of research.
- Take advantage of University resources while benefiting faculty and students.
- Encourage professional development of Federal scientists.

# Overarching Themes

(Natural Resources)

- Climate Change
- Invasive Species
- Developing Standardized Monitoring Protocols
- Ecological Profiles and Conceptual Modeling
- Effects of Fire on Ecosystems
- Increasing Demand for Energy
- Increasing Demand for Water
- Restoration of Communities and Ecosystems

# Needs and Priorities

(Natural Resources continued)

- Air Resources - multidisciplinary, regional, park
  - Threshold/Benchmarks for resource impacts
  - Acoustics and Soundscapes
  - Night Skies
- Water Resources
  - Asses altered water quantities
  - Evaluation of fisheries management practices
  - Status and trends of contaminants in water & sediment
  - Watershed, stream, and wetland restoration

# Needs and Priorities

(Natural Resources continued)

- Biological Resources
  - Fragmentation of ecosystems
  - Feral animals
  - Ecosystem health
  - Fading forests
  - Disease and pathogens
  - Overpopulation of native species

# Needs and Priorities
## (Natural Resources continued)

- Inventory and Monitoring Program
  - Data analysis of specific data sets
  - Modeling & synthesis of ecological data
  - Remote sensing and image analysis
  - Restoration of park resources
  - Science communication
- Marine and Coastal Areas
  - Ocean park stewardship strategy
  - Fisheries science
  - “No Take” reserve design & performance
  - Near shore coastal assessment
  - Marine inventories and monitoring
  - Benthic habitat mapping
  - Relationships between land use change and the response of coastal systems to nutrient enrichment
  - Response of coastal systems to sea level rise - salt marshes/ beaches/dunes

# Needs and Priorities
(Continued)

- Cultural Resources
  - Baseline Documentation for Parks
    - Historic resource studies
    - Archeological overview and assessment
    - Administrative histories
    - Cultural landscape research
    - Ethnographic studies
    - Traditional use studies
  - Environmental History – Landscape Scale Histories
  - National Register Documentation

# Needs and Priorities
(Continued)

- Social Sciences
  - Visitor Use Surveys
  - Visitor Impact studies
    - Resource Damage and Non-Compliance of Park Rules
  - Wilderness and Resource value studies
  - Visitor Capacity Studies
  - Modeling Visitor Flow and Use in Parks
  - Subsistence Use in Parks (primarily in Alaska)
  - Social and Demographic Change

# Technical Assistance Needs

- Helping parks identify research needs
- Reviewing sampling designs
- Reviewing monitoring protocols
- Assistance in database development
- Statistical consultation
- GIS skills and expertise
- Educational media presentations
- Curriculum development
- Website development
- Kiosk display, interpretive programs, multi-media
- Assistance in preparing compliance documents (EA, EIS, Sec 106)

# How Can Federal Agencies Better Utilize Their University Partners?

## What Can Universities Do to Help Meet the Needs of Federal Partners?

# Federal Agencies

- Need to do a better job identify needs and priorities.
  - Rocky Mountain CESU
  - Research Reporting and Permit System
  - CESU and Research Learning Centers Coordinators
- Provide prospective researchers/collaborators with information on funding opportunities within agencies.
  - Sources, Timelines, Format
- Provide prospective researchers /collaborators with contact information within agencies.
- Provide assistance with the permitting process to make it as painless as possible.

# Universities

- Provide agencies with list of expertise and research interests.
  - Researchers – Biological, Physical, Social, Cultural
- Market Yourselves
  - Types of technical assistance that is available and where it is available.
  - Educational opportunities or facilities that can be utilized.
- Work with agencies to find and secure outside funding.
- Be patient with the bureaucratic processes.
- NEON

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