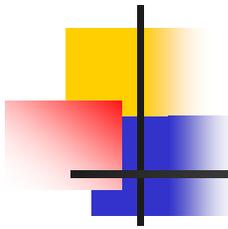


# National Environmental Status and Trends (NEST) Indicator Project

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**Richard W. Guldin**

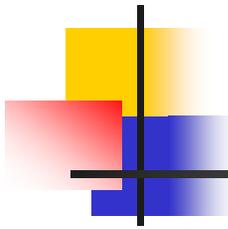
Executive Management Team Leader, NEST Project  
USDA Forest Service R&D



# Outline of Today's Presentation

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- Review some recent history about environmental indicator policy discussions
- Discuss the CEQ-OMB-OSTP policy memo issued June 17, 2008
- Highlight key products and milestones



# In the Beginning ...

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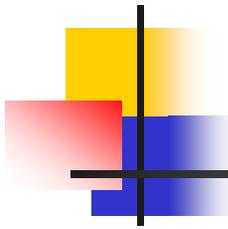
- The Earth Summit (June 1992)
  - United Nations Conference on Environment and Development (UNCED) Rio de Janeiro
  - Focused on the environment and sustainable development, especially links between the two
  - Key documents
    - Agenda 21
    - Rio Declaration on the Environment
    - Statement of Forest Principles
    - UN Framework Convention on Climate Change
    - UN Convention on Biological Diversity



# Responses to UNCED

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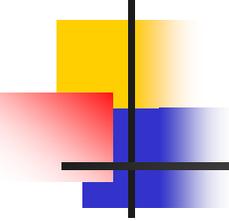
- The President's Council on Sustainable Development was formed by Executive Order 12852 (July 1993)
- A U.S. Interagency Working Group on Sustainable Development Indicators was organized under the auspices of CEQ.
  - Expanded on the PCSD work, developing an indicator framework and an experimental set of 40 indicators
- The Santiago Declaration (1995) focused on implementing the UNCED Statement of Forest Principles
  - Created criteria & indicators for the conservation and sustainable management of temperate and boreal forest ecosystems



# History

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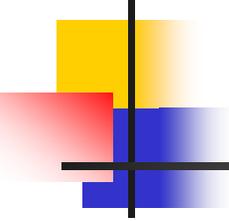
- Independent activities on indicators occurred throughout the 1990s in EPA and Depts of Commerce, Interior, and Agriculture
- Work in OSTP-CENR in mid-1990s led to *Recommendations for a National Environmental Monitoring Framework* (March 1997)
  - Seminal workshop of 160 stakeholders in Sept 1996
  - Vice President Gore challenged federal agencies
    - Work together with the scientific community and other interested parties to create an environmental “report card”
  - Jerry Melillo’s charge to the workshop
    - “How can we improve our current environmental monitoring and research programs (and the synthesis of data derived from them) to address policy questions related to the health of the nation's ecosystems?”



# More History

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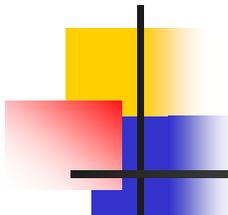
- Roundtables formed; first on Forests and then Range and Water
  - Driving factor for RSF was development and implementation of criteria and indicators of sustainable forest management
  - *First Approximation Report* (1998) followed by *National Report on Sustainable Forests* (2003)
- Several National Academy of Sciences studies
  - *Nature's Numbers: Expanding the National Economic Accounts to Include the Environment* (1999)
  - *Ecological Indicators for the Nation* (2000)
- 2004 GAO Report: *Environmental Indicators: Better Coordination Is Needed to Develop Environmental Indicator Sets that Inform Decisions*



# A Bit More History

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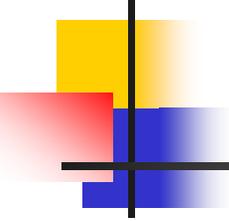
- The H. John Heinz III Center for Science, Economics, and the Environment began work on the *State of the Nation's Ecosystems* project
  - Initial report in 2002
  - The Heinz Center report successfully demonstrated a process for building consensus around indicators
  - Developed sets of indicators that enjoyed broad-based support for 6 different sectors of the environment
  - Demonstrated that some information was available and that significant data gaps existed
  - Highlighted the fact that some agency programs that provide key data had uncertain long-term funding prospects



# 2002-2003 Was A Busy Time

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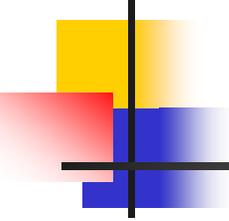
- Heinz Center issued first *State of the Nation's Ecosystems* report
- USGS issued Circular 1223, *Concepts for National Assessment of Water Availability and Use*
- EPA issued draft *Report on the Environment*
- FS issued *National Report on Sustainable Forests—2003*
- Network of Roundtables began to emerge
  - Roundtable on Sustainable Forests
  - Sustainable Rangelands Roundtable
  - Sustainable Water Resources Roundtable
- CEQ refocused on environmental indicators → Collaboration on Indicators for the Nation's Environment (CINE) to develop a System of Indicators for the Nation's Environment (SINE)
  - EPA, USDA (FS & NRCS), Interior (USGS), NOAA, OMB, OSTP



# Getting NAPA Engaged

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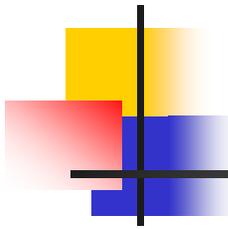
- To get more advice for the CEQ dialog, the Dept of the Interior requested the National Academy of Public Administration in 2006 to review the situation, with special focus on the institutional collaboration challenges
  - *A Green Compass: Institutional Options for Developing a National System of Environmental Indicators* (Dec 2007)



# NAPA Report Nuggets

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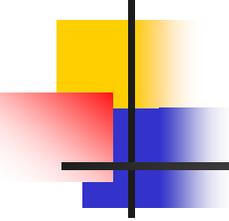
- “It is clear America needs a comprehensive nationwide system of environmental indicators.”



# NAPA Report Nuggets

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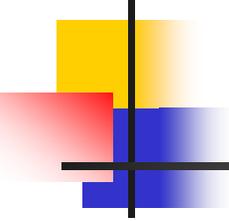
- “It is clear America needs a comprehensive nationwide system of environmental indicators.”
- “While a host of federal and state agencies collect a vast amount of environmental and natural resource data, our ability to produce actionable information is limited by the fact that the data currently collected are inconsistent, incomplete and, often, simply not adequate for decision-making.”



# NAPA Report Nuggets

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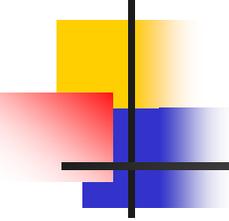
- “It is clear America needs a comprehensive nationwide system of environmental indicators.”
- “While a host of federal and state agencies collect a vast amount of environmental and natural resource data, our ability to produce actionable information is limited by the fact that the data currently collected are inconsistent, incomplete and, often, simply not adequate for decision-making.”
- “**Undertake an intensive pilot** to develop crosscutting indicators for an environmental issue that is nationally significant, high profile, multi agency in scope, and of immediate interest to state and local governments and the private sector. **The Panel suggests water quantity as a candidate issue.**”



# NAPA Report Nuggets

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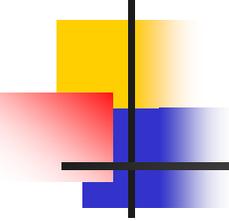
- “It is clear America needs a comprehensive nationwide system of environmental indicators.”
- “While a host of federal and state agencies collect a vast amount of environmental and natural resource data, our ability to produce actionable information is limited by the fact that the data currently collected are inconsistent, incomplete and, often, simply not adequate for decision-making.”
- “Undertake an intensive pilot to develop crosscutting indicators for an environmental issue that is nationally significant, high profile, multi agency in scope, and of immediate interest to state and local governments and the private sector. The Panel suggests water quantity as a candidate issue.”
- ***“Think big, start small and ramp up fast.”***



# And In the Past Three Months...

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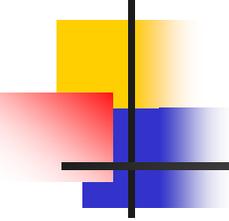
- EPA issued its new *Report on the Environment* (May)
- Heinz Center announced its second *State of the Nation's Ecosystems* report (June 17th)



# Have We Learned from History? Or are We Doomed to Repeat It?

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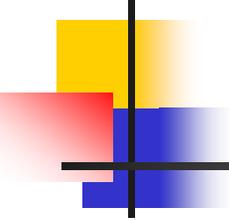
- The past 15 years of projects demonstrated that the task of defining indicators—though difficult—could be mastered
- We underestimated the importance of designing indicators to address key public policy questions so they will be used by decision-makers and the public
- Describing a suitable framework within which the indicators could be nested also proved difficult
- Most difficult was orchestrating institutional collaboration among federal agencies responsible for inventory and monitoring programs and building external support for a cross-cutting set of indicators



# CEQ, OMB, OSTP Policy Memo

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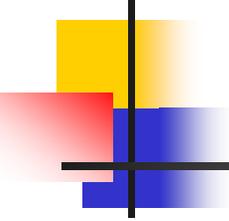
*The pilot project is designed to **test the vision** for the NEST Indicators. It will **demonstrate the collaborative interagency processes** that will be used to select and implement indicators and will **improve the consistency and interoperability of data**. In addition, **a national forum** will be convened to identify the topics and questions that should be addressed by the indicators of water **availability**. (17 Jun 2008 Policy Memo Cover Letter from Connaughton, Johnson and Marburger)*



# Characteristics of NEST Indicators

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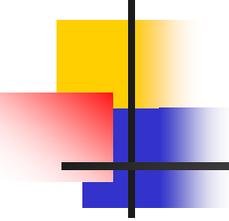
*NEST Indicators are envisioned to be a set of high quality, science-based statistical measures of selected conditions of our environment and natural resources. They address topics that are sufficiently important and cross-cutting to warrant the acquisition of data using measurement methods and statistical designs that are consistent across the entire country and repeated regularly over time.* (17 June 2008 Policy Memo Cover Letter from Connaughton, Johnson, and Marburger)



# Who is Involved?

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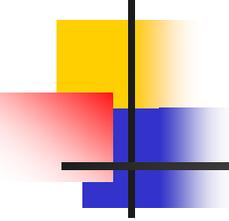
- Four departments/agencies
  - Dept of Agriculture (FS – Rich Guldin & NRCS – Wayne Maresch)
  - Dept of Commerce (NOAA – Paul Doremus)
  - Dept of the Interior (OIS – Holman & USGS – Hirsch)
  - EPA (ORD – Denice Shaw & Water – Mike Shapiro)
- National Forum to engage stakeholders
  - State agencies and other interested Federal agencies
  - NGOs
  - The science community



# Why Have a National Forum?

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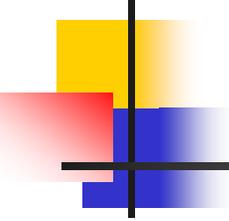
- Hear the views of key partners and stakeholders
  - What are the most important policy arenas where better information is needed to make better policy?
  - Focus on water quantity and quality
  - Welcome information on other resources
- Identify potential non-Federal contributions
  - To the policy dialogues at multiple geo-spatial scales
  - To the data and data management needed for better dialogue
  - To the estimation and reporting processes to create indicators that will better inform policy dialogue



# 4 Key Products of NEST Project

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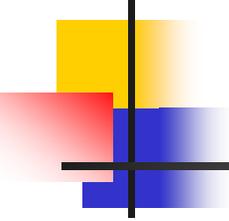
- Desirable attributes of high-level environmental and natural resource indicators
- Key policy-related questions that guide indicator creation/selection
  - Frame high-level policy and reflect enduring interests
  - **Not** selection of all the indicators for all sectors
- Initial set of indicators for water availability (5 to 7)
  - Results of an initial test of data interoperability and the ability to report on them
  - Recommended changes to existing programs at the participating agencies to improve reporting
- “After Action Review” of institutional collaboration and any recommended changes to improve institutional capacity



# Examples of Key Attributes

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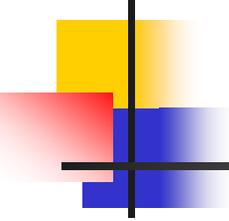
- NAPA Report suggested:
  - Results oriented; measure the effectiveness of preventative, protective, and remedial actions
  - Support priority setting and point the way to effective action
  - Highlight geographic differences; measure changes in national condition yet useful at regional, state, and sub-state/local level
- CEQ/OSTP/OMB Policy memo suggested:
  - Produced to high standards of scientific and statistical quality
  - Rely on data acquired using measurement methods and statistical designs that are consistent across the USA and repeated regularly over time



## 4 Key Products of NEST Project

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- Desirable attributes of high-level environmental and natural resource indicators
- Key policy-related questions that guide indicator creation/selection
  - Frame high-level policy and reflect enduring interests
    - Illustrative example --> areas impacted by below-normal rainfall and soil moisture, which is likely to reduce crop yields, increase fire danger, and reduce in-stream flows
  - **Not** selection of all the indicators for all sectors



## 4 Key Products of NEST Project

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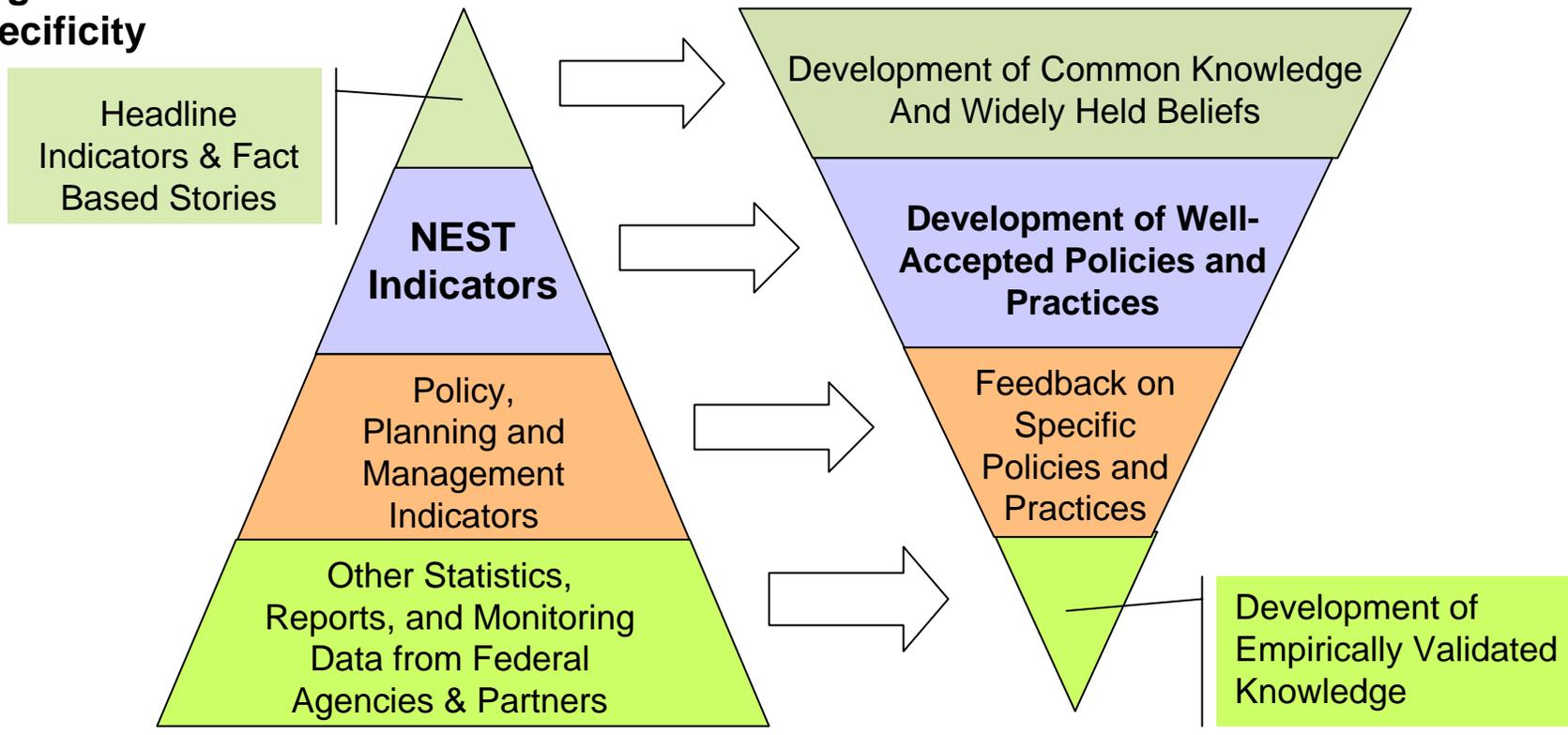
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  - Results of an initial test of data interoperability and the ability to report on them
  - Recommended changes to existing programs at the participating agencies to improve reporting
    - Improve consistency of data, databases, and models
    - Improve scientific peer review

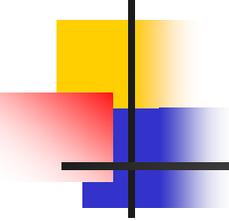
# Types of Information and Functions

Types of Information from  
A Comprehensive System

Functions Performed  
Using Information

Increasing Detail  
and Specificity

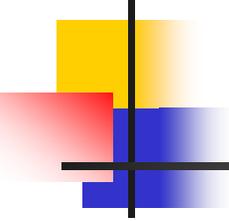




## 4 Key Products of NEST Project

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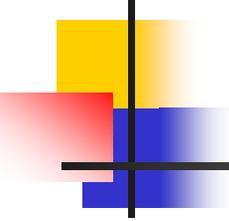
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# NEST Timeline & Milestones

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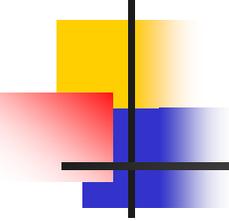
- Finish the pilot test by Oct/Nov 2009
  - Review current situation and ongoing projects/processes (Aug 08)
  - Initial description of indicator attributes and framework (Nov 08)
  - First National Forum (Jan 09) to identify key policy arenas, issues, and questions
  - Second National Forum (Jun 09) focus on water indicators
  - Final report on water availability indicator test (Sep 09)
  - Final recommendations (Oct 09)
  - "After Action Review" (Nov 09)
- "Keep the pedal to the metal throughout transition"



# NEST Leadership & Staffing

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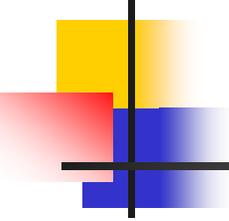
- A Executive Management Team
  - One or two career SESers/senior GS-15s per Dept/agency
  - Necessary support staff and technical experts for task teams
    - Team #1: Summarize current situation and projects within Depts/agencies
    - Team #2: Information management and interoperability
    - Other teams, to be determined
  - Forest Service leads the EMT for first two years
- Funding
  - Use existing program funds
  - Sufficient funding for an 18-month, high-speed, high-profile project to report out to new Administration leaders



# Near-Term Information Needs from Agency Staff

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- Provide a “snapshot” of the current indicator projects/processes
  - Within the participating agencies and their networks
  - Build off existing networks and institutional relationships
  
- Provide synopses of the most important indicator development projects/processes the past 5 years on
  - Environmental and natural resource indicators, in general
  - Water availability, in particular
    - Water quantity and water quality
      - Biological dimensions as well as physical and chemical dimensions?
      - Should coastal, littoral, estuarine indicators be considered?
    - Where water availability intersects with other environmental sectors
      - Climate change?
      - Bio-energy?



# Questions ...

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