Comments Regarding the National Resources Inventory (NRI)

- **Purpose of the NRI**
- **Structure and Features of NRI**
- **Reactions; Comments**

The National Resources Inventory (NRI)

- Developed by USDA in the 1970's to assess status, condition, and trend of soil, water, and related resources

  [1972, 1977 legislative mandates]
- Many features make it suitable to evaluate and assist in development of U.S. agri-environmental policy

Information from NRI has been used to assist development of agri-environmental policy since 1980's:

- ❑ Provisions of 1985 Farm Bill based on NRI
- ❑ All subsequent Farm Bills
  - Identify areas where conservation initiatives and resources should be focused
  - Evaluate effectiveness of past legislation and conservation programs

National Resources Inventory [NRI]

- **Captures data on land cover and use, soils, soil erosion, wetlands, habitat diversity, selected conservation practices, & related resource attributes -- at 800,000 scientifically selected sample sites**
- **Purpose: To provide support for**
  - *Agricultural* **and** *Environmental* **Policy Development and Program Implementation**

Evolution of the NRI

Conservation Needs Inventory	• 1934, 1945 • 1958, 1967
National Resources Inventory	• 1977, 1982 • 1987, 1992
Foundation NRI	• 1997
Special Studies	• 1975 • 1991, 1995, 1996, 1997, 1998, 1999
Continuous/Annual NRI	• PI: 2000, 2001, 2002, 2003 • Range: 2003, 2004, 2005, 2006, 2007 • CEAP: 2003, 2004, 2005, 2006
Annual NRI [PI and on-site]	• 2005 - 2010

Why Consider these 30 Different Surveys

- Much has been learned over these several decades [and 30 surveys]
  - ❑ Statistical/survey methodologies
  - ❑ Data collection methodology
  - ❑ Needs of data users; analytical methods
- These studies must fit together and give consistent data/results; if not:
  - ❑ Waste taxpayers money
  - ❑ Waste efforts of conservationists/scientists
  - ❑ Future efforts will be discredited
    - By scientists, special interest groups, policy analysts, policy makers

NRI is “Soil-Based”

- Interpretations made from a “soils perspective”, for example: land condition, or wetland determinations
- Use of soil attributes very important in analysis and assessment [NRI and NRCS soils data bases are “linked”]

Modeling with NRI Data

- Estimate changes in C-stock for current land use & mgmt.
- Use physical process models to simulate effects of Conservation Practices/Systems
  - Example: NRI/CEAP Cropland Assessment
  - Supports numerous of "What if?" scenarios
- Issues dealing with Rural Land conversions
- Loss of Crop Productivity due to Soil Erosion
- Forestry Programs: Converting erodible cropland to trees
- Wetlands Programs
  - Potential restoration programs and locations
  - Economic effect of relaxing restrictions [to Agriculture]
- Development of Rules/Reg's for Farm Bill Programs
  - Development of HEL and CRP concepts in 1980's
  - Development of 25% rule for CRP eligible land, by county

NRI Modeling

NRI survey structure → simulation framework

- Sample sites = "representative fields"
- Linked data used to impute values
- Predict outcomes
- NRI weights – estimates of distribution, extent of predicted conditions

Comments

- "Longitudinal Survey" approach is necessary
  - "Panel Survey" where sampling units are revisited periodically
  - Much more powerful
  - Provides information on *Dynamics* of change
- NRI utilizes Area Sampling approach
  - Cannot use farms, fields, & ownership units because they can change dramatically over time [also difficult to define]
- NRI collects data in manner that allows "What if?"
- NRI moved from 5-year cycle after 1997 to the annual inventory approach

Monitoring

- **Much more powerful to use Longitudinal Survey" techniques**
  - **i.e., do "Panel Survey" where same sample units are revisited periodically**
- **Power of paired observations**
  - **Acreage of wetlands, 1997**
    - **111.2 mil Acres [+/- 1.2 mil. Acres]**
  - **Change in wetland acres, 1992 – 1997**
    - **- 163,000 [+/- 63,000 acres]**
- **Also have more information on dynamics, etc. of the changes [e.g., what are the characteristics of the lost wetlands vs. newly created wetlands]**

Discussion

- Use of site-specific data vs. aggregated – for models
- NRI is soil-based
- Use of Models is necessary
- NRI is land/resource based – not enterprise based
- Issues not discussed
  - Economics
  - Alignment between field and models
  - Emerging issue – ethanol production

Annual NRI

- NRI 5-Year Cycles
  - 1977/1982/1987/1992/1997
- In 2000 - NRCS converted NRI from 5-year inventory cycle to a continuous/annual inventory process
- Annual NRI design – each year
  - Photo-Interpretation: 73,000 sample segments
  - Field/On-site Methods: 5,000 – 8,000 samples.

Scientific Responsibility

- Rigorous scientific sample survey
- Strict quality assurance protocols
- Scientifically sound reporting
  - USDA/OMB Quality of Information Guidelines
  - NRI data release standards

NRI Policy

OMB/USDA Guidelines

- Addresses statistical information
- Affects all NRCS
- Agency stands behind data and information
- Process to retract, fix flawed information