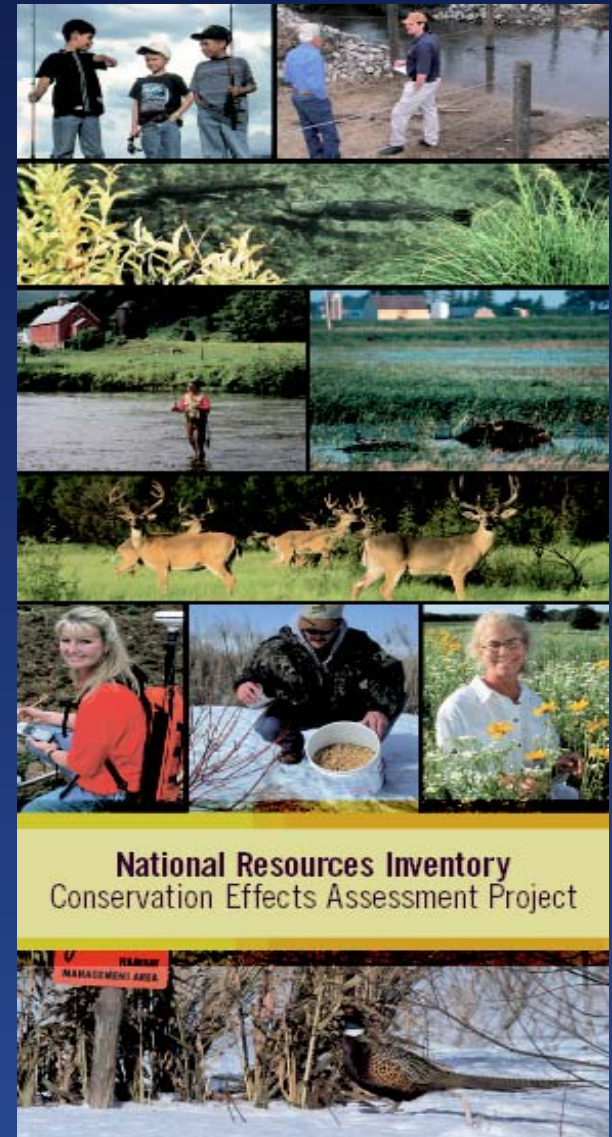


CEAP—Conservation Effects Assessment Project

The NRI-CEAP Cropland Survey

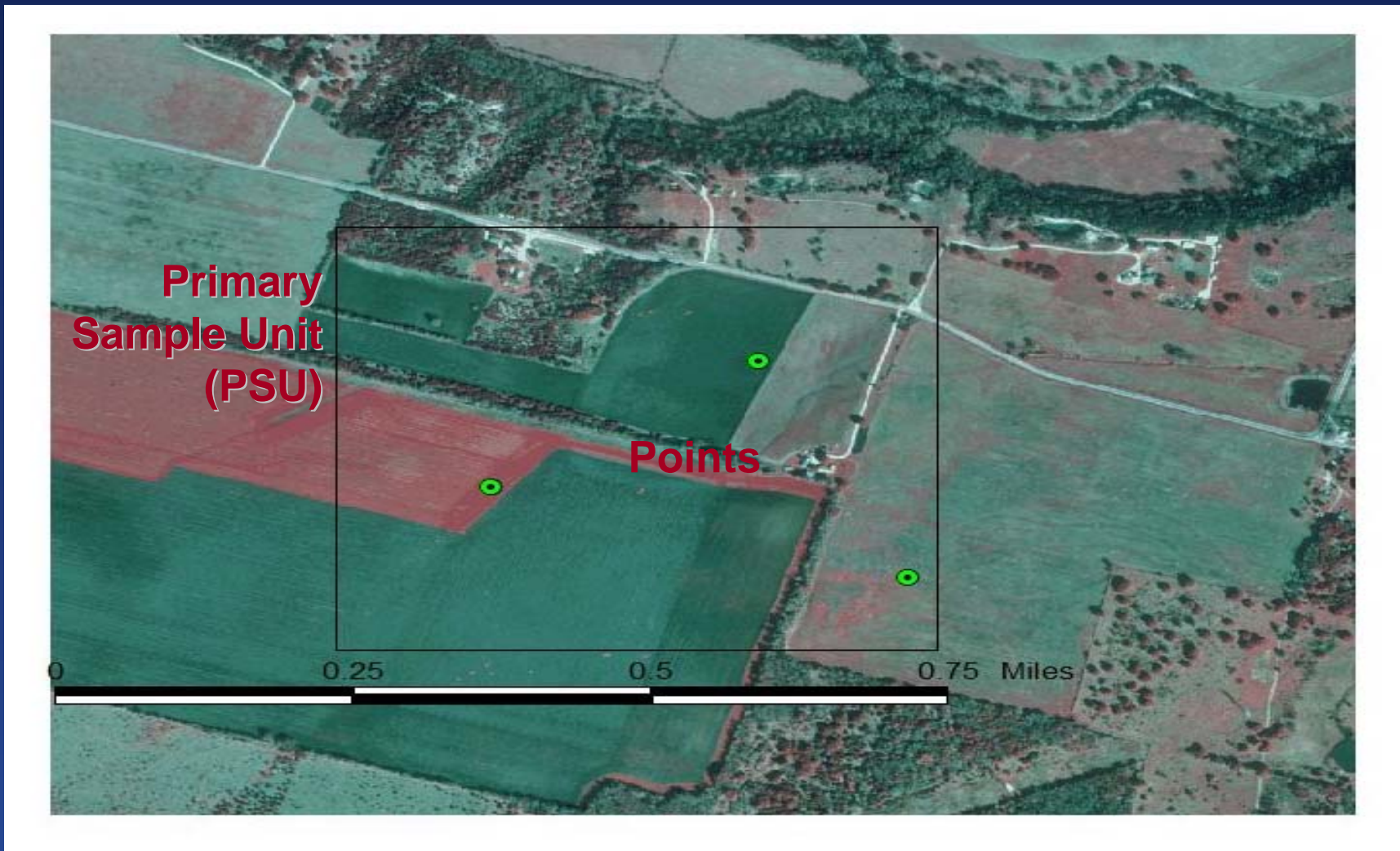
Robert L. Kellogg
USDA NRCS



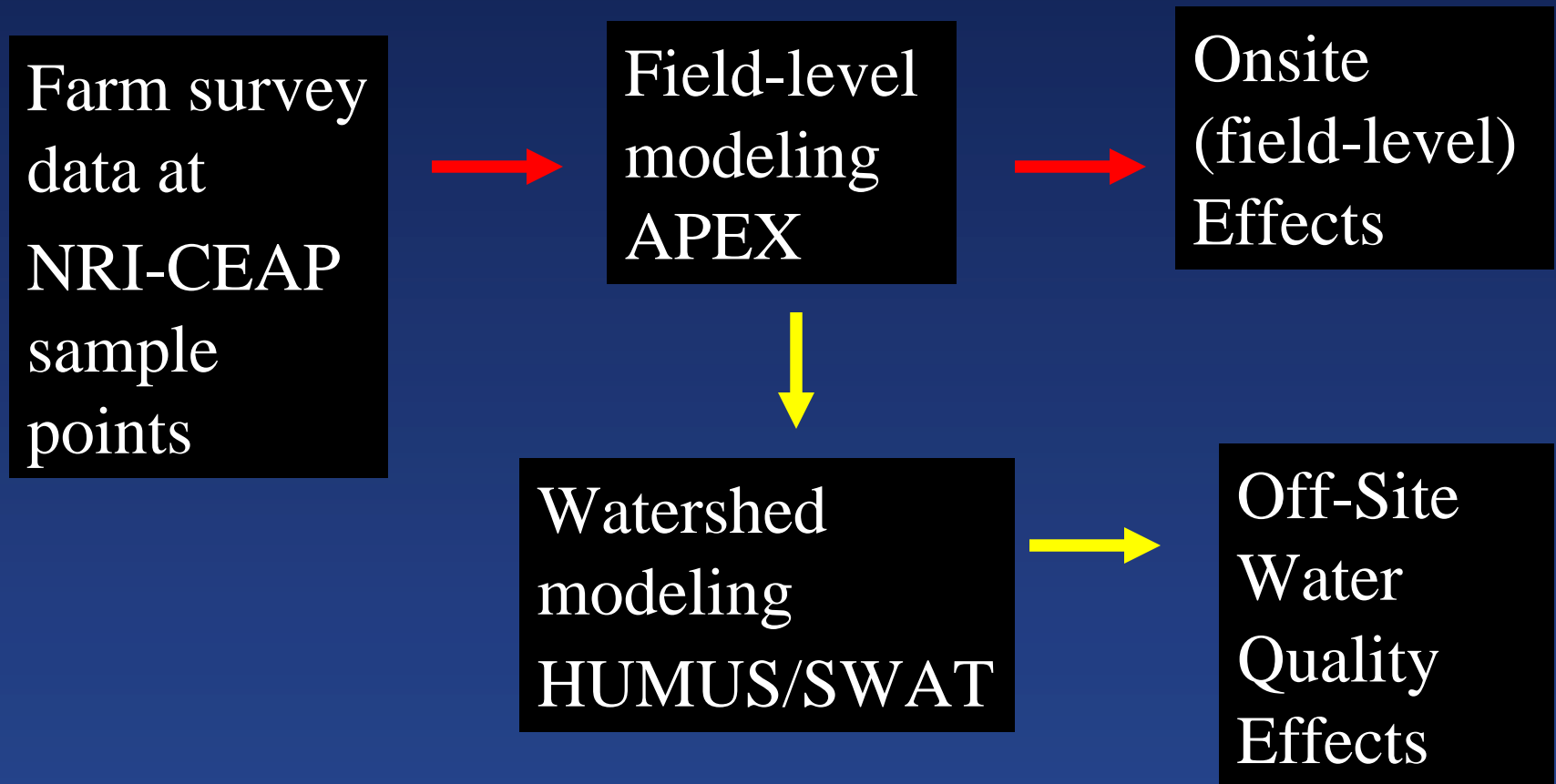
Purpose of NRI-CEAP Survey

Designed to provide information on farming activities and conservation practices for use with physical process modeling to estimate the effects of conservation practices currently in place on the landscape.

Statistical Design



Sampling and Modeling Approach



Modeling Strategy

1. **Estimate a CEAP Baseline using farmer survey information at NRI sample points**
2. **Construct an alternative scenario assuming “no practices”**



Difference between these two scenarios represents the benefits of the accumulation of conservation practices currently in place on the landscape.

Characteristics of Survey

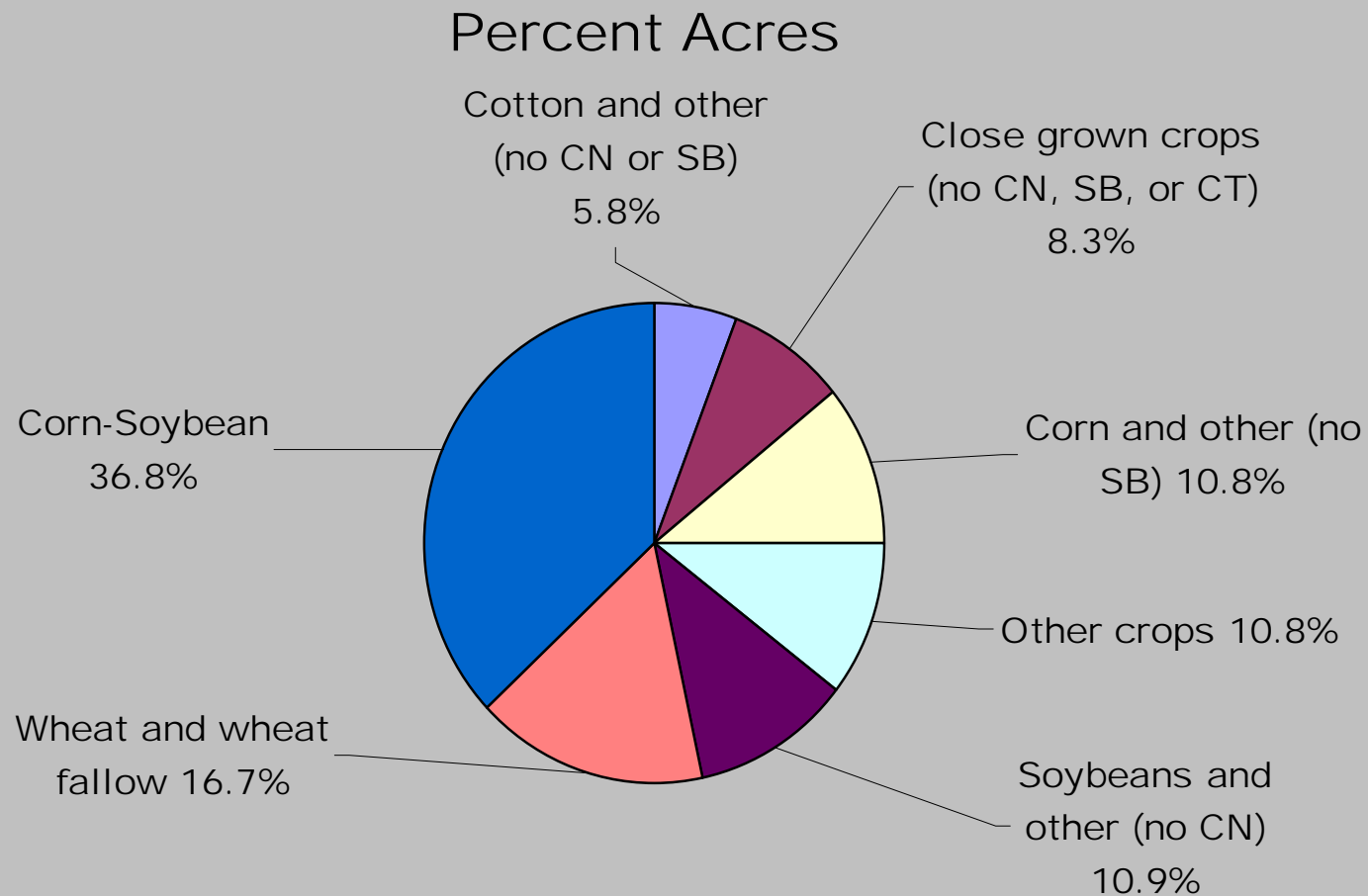
- 20,000 sample points
- Sample size designed for national and regional level reporting
- Represents acres of cultivated cropland in US
- Data collected over 4-year period—
2003-2006

Survey Content

The survey obtains for each sample point:

- Three years of crop and cropping practice information
 - Crops grown, intended use, seeding rates, yields, etc.
 - Commercial fertilizer applications
 - Manure applications
 - Pesticide applications
 - Field operations, including tillage
 - Irrigation practices
- Integrated Pest Management Practices
- Conservation practices
- Conservation Program participation

Cropping Systems



Crop Rotation Plans

	Million acres	Percent acres
Acres with crop rotation plan	223	73%
No crop rotation plan	83	27%

Crop Rotation Plans

	Million acres	% total acres	% corn- soybean acres
corn-soybean 2 year	77	25%	82%
corn-soybean 3 year	13	4%	14%
corn-soybean 4 year or more	4	1%	4%

Farming Practices

Percent acres

**Irrigation used for any crop grown
during the past 3 years** **19%**

**Herbicides, fungicides, or other
pesticides applied** **88%**

Commercial fertilizers applied **87%**

**Manure applied to the field during the
past 3 years** **9%**

Field Characteristics

Percent acres

Field has surface drainage structures	12%
Field has subsurface (tile) drainage	22%
Field adjacent to a water body or wetland	23%
Field has evidence of gully erosion	9%
Soil test performed within the past 5 years	53%

Current Status

- Database consists of survey data and APEX model results
- Databases will be completed by major river basin throughout 2008-09
- Upper Mississippi to be completed in June
- Other Mississippi River basins by end of 2008
- Remaining basins/regions in early 2009
- CEAP future plans include repeating survey in about 2011

Strengths of NRI-CEAP Database

- NRI area sample frame
 - Captures diversity of soils, climates, terrain, farming activities, cropping patterns
 - Results represent the landscape condition
- All-crop survey with 3 years of information
 - Allows cropping system framework for analysis and reporting
 - Allows estimation of pollutant loadings from cropland
- Conservation treated acres identified
 - Allows estimation of conservation practice effects
 - Allows estimation of conservation treatment needs

Weaknesses of NRI-CEAP Database (for uses other than designed)

- Designed for national and regional reporting—usually not reliable for smaller areas
- Not representative of landowner/operator population—all results are in terms of acres
- Survey content restricted to attributes needed to assess the effects of conservation practices