USDA United States Department of Agriculture
Natural Resources Conservation Service

# Regional Modeling Unit

# Fact Sheet

- **Four NRCS Regional Modeling Units established in 2014**
- **Aligned with NRCS Regional Conservationist areas**

**Map depicting area on back**

| *Coordinators* | | *Supervision* |
|---|---|---|
| Northeast: | Glenn Stanisewski, Amherst, MA (SSR-12) | **Soil Survey Regional Director (SSRD)** at respective Soil Survey Regional Offices (SSRO) and **Lee Norfleet,** Modeling Unit Team Leader, Resource Assessment Division (RAD), Temple, TX, |
| Central: | Drew Kinney, Temple, TX (SSR-9) | |
| West: | Carrie-Ann Houdeshell, Davis, CA (SSR-2) | |
| Southeast: | Charlie Ogg, Auburn, AL (SSR-7) | |

## History and Development

- Modeling began in Temple, TX in the 1960s with Dr. Jimmy Williams (USDA-ARS) in association with Texas A&M Agri-Life, Blackland Research and Extension Center.
- Modeling program designed to answer the question "What are the effects of soil erosion on crop productivity?"
- Temple modeling group has supplied information to Farm Bills and RCAs since the early 1980s.
- APEX (**A**gricultural **P**olicy **E**nvironmental E**x**tender) is a cropland model and is built on the earlier model EPIC (**E**rosion and **P**roductivity **I**mpact **C**alculator).
    - Capable of simulating land management practices, cropping systems, grazing systems, and the effects of conservation decisions.
    - Works at a broad landscape scale; and at field, farm, and small watershed scales.
- APEX has evolved into a tool for hydrology, sediment yield, storm and flood routing, crop growth and yield, nutrient routing, water yield, and other functions. In addition, APEX capabilities are able to predict the impact of conservation practices on grazing lands.

## Major Applications

- CEAP (**C**onservation **E**ffects **A**ssessment **P**roject). Quantifies the environmental effects of conservation practices and programs, and develops the science base for managing the agricultural landscape for environmental quality. (http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/technical/nra/ceap/)
- State Resource Assessments. Documents the effects of conservation practices and systems at various geographic levels so that better decisions can be made up front and risk is managed more effectively. (http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/technical/nra/)

## Modeling Units — Current Activities

- APEX output relies on a number of soil properties via soil map unit input. For the model to make the best predictions and assessments, soils data are obtained from NASIS. Modeling Unit Coordinators are currently working on importing KSSL lab characterization pedons as model input.
- Regional expertise is developed as Modelers participate on MLRA Soil Survey Office Technical Teams within their assigned region.
- Presently the two priority areas for CEAP Cropland Assessment Studies using the APEX model are the California Bay Delta and the Northeast Arkansas/Southeast Missouri St. Francis River basin.

## Modeling Units — Future Activities and Goals

- Emphasize the importance of Soils information to achieve best conservation practices agency-wide.
- Attain full staff of three (3) full-time employees per location. Future staff may come from all technical fields.
- Develop input databases and modeling techniques for multiple land uses.
- Work with Technical Centers and State Technical staff to:
    - Tailor conservation practices and systems to soil landscapes.
    - Develop cost effective practice suites that can be used at field level for program application.
    - Develop benefit estimates for performance reporting.

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