

Nutrient Tracking Tool

OFFICE OF
ENVIRONMENTAL
MARKETS USDA



*A Tool to Account for
Nutrients in the
Environment and the
Responses to
Conservation*

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Nutrient Tracking Tool (NTT)

Features...

- User Friendly
- Web-based
- Scientifically Credible
- Facilitates Environmental Trading

Calculates delta for...

- Nitrogen
- Phosphorus
- Sediment
- Carbon
- N₂O



United States Department of Agriculture
Natural Resources Conservation Service



Agricultural Research Service
the in-house research arm of the U.S. Department of Agriculture



NTT - *How Does it Work?*

- Google maps-like program lets you zoom into a specific field
- Required data for major portions of US are provided through GIS data layers and pre-existing databases
- Allows input of conservation practices
- Uses Agricultural Policy Environmental eXtender (APEX) to determine nutrient and sediment losses and runoff from agricultural fields
- Enables multiple scenarios to be compared

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 TiAER
Texas Institute for Applied Environmental Research

 **NTT**
Nutrient Trading Tool

APEX – *The core model in NTT*

- The APEX model calculates delta for Nitrogen, Phosphorus, Sediment, Carbon, N₂O, and Yield
- Runs 42 – year daily time step scenarios and reports average annual results
- Models the interactions of the nutrients
- Models the effects of conservation practices



NTT Databases

Weather

- Includes 42 years (1960-2001*) of daily rainfall and min/max temperature
- Source: USDA-NRCS High-Resolution Climate Extractor

Soils and Field Geometry

- Soil SURGO up to 10 layers and numerous (up to 9) major soils within a field
- Source: National Cooperative Soil Survey.
- Operated by the USDA-NRCS Soil Survey Site

Management

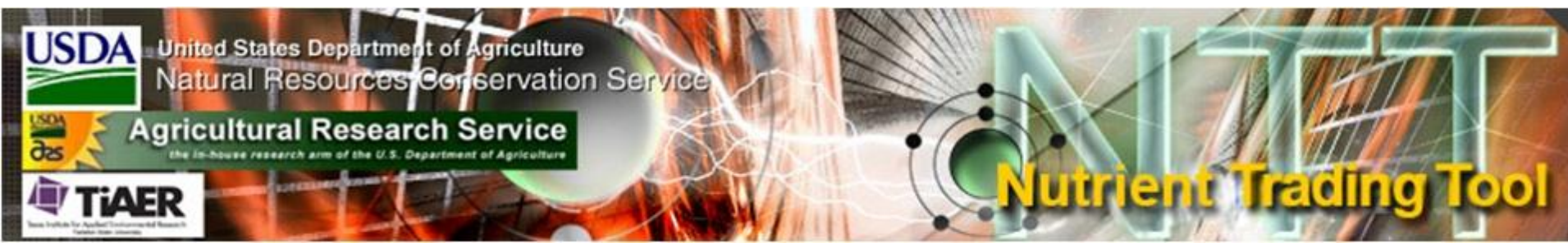
- Includes daily management operations for any crop rotations
- Sources:
 - pre-existing (e.g., RUSLE)
 - user input/edit/upload



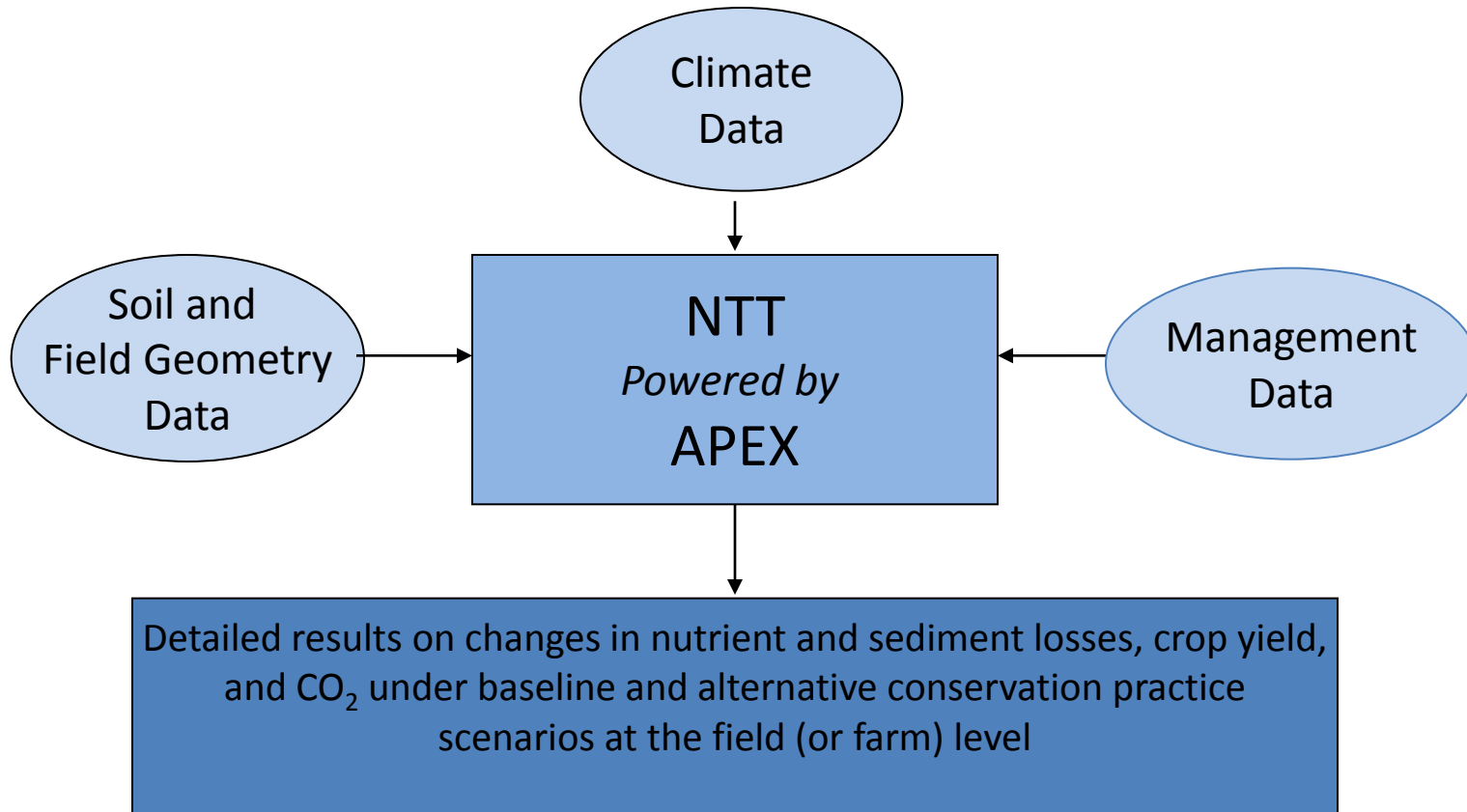
NTT and Conservation Practices

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- Nutrient management
- Tillage
- Irrigation
- Buffers
- Filter strips
- Terraces
- Tile Drainage
- Grass Waterways



NTT Flowchart

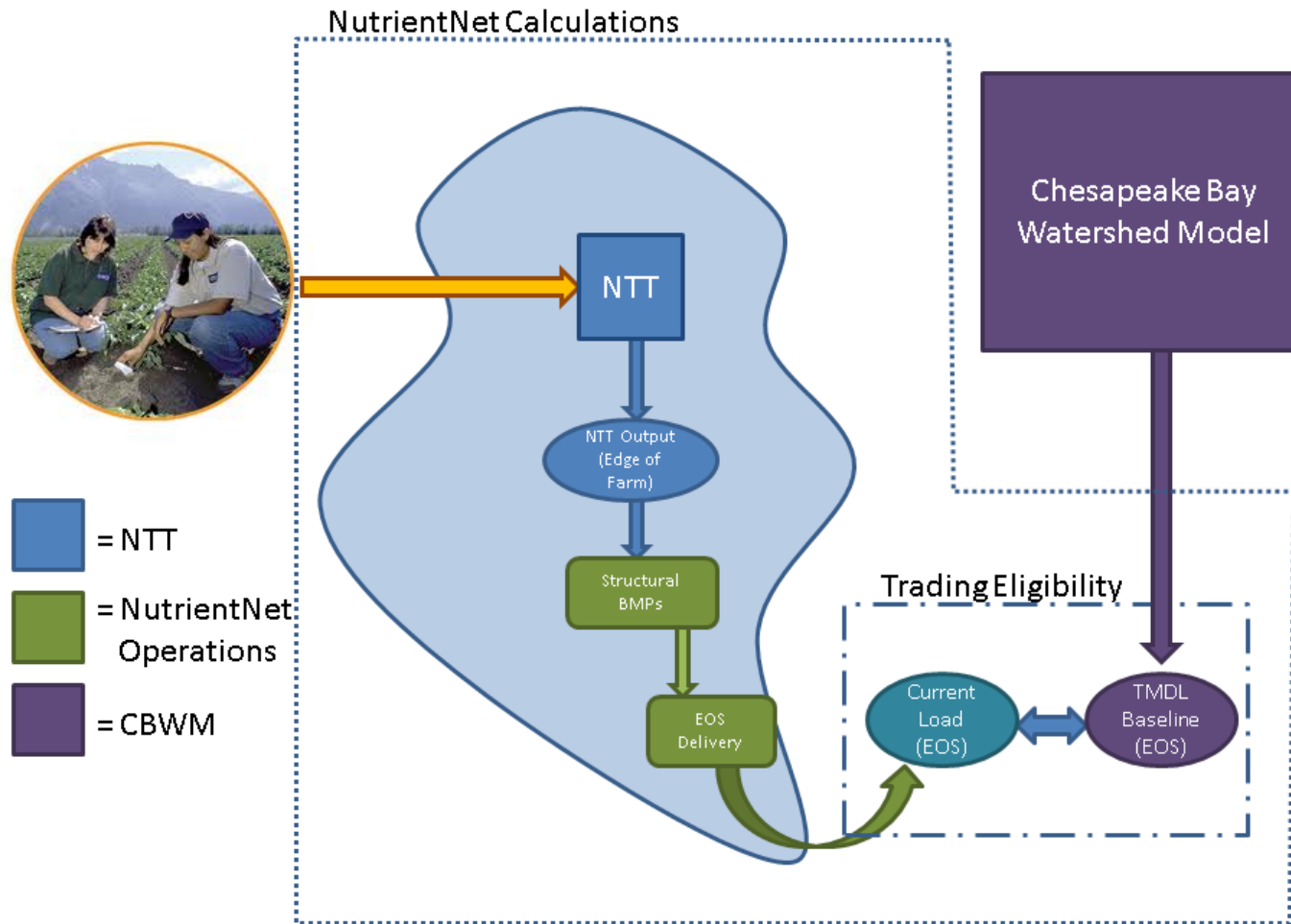


NTT - *Ecosystem Marketplace*

- Built to Reduce Transaction Costs
- Single National Model with site specific soil, climate and calibration coefficients
- Transparent and Rigorous
- Combines ease of use with rigorous science and oversight framework



NTT in the Chesapeake Bay



For more information...

http://www.usda.gov/oce/environmental_markets

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