The Northeast AVGWLF

A Watershed Scale Model for New England and New York State

Becky Weidman
NEIWPCC

Barry Evans
Penn State University

NEIWPCC
New England Interstate Water Pollution Control Commission

AVGWLF?

- The Generalized Watershed Loading Function using ArcView as a Geographic Information Systems (GIS) Interface
- Mid Level, Watershed-Scale, Calibrated Model
- Examples of information required by AVGWLF to estimate nutrient and sediment transport within a watershed:
  - Hydrology
  - Landcover
  - Soils
  - Topography
  - Weather
  - Pollutant Discharges

The Northeast AVGWLF

- Objective:
  - Consistent approach for the region to model watershed-scale NPS pollutant loading in a watershed
- Model Selection:
  - Watershed-scale
  - Mid-level in complexity
  - Data rich
  - User-friendly
  - Dynamic

NEIWPCC

AVGWLF, PA Version 6.1.0. Project File: becky_ppt.apr

File Edit View Theme AvGWLF Analysis Analysis Surface Graphics Window Help

Scale 1:

-271,963.25
2,397,862.42

View1

AVGWLF Functions

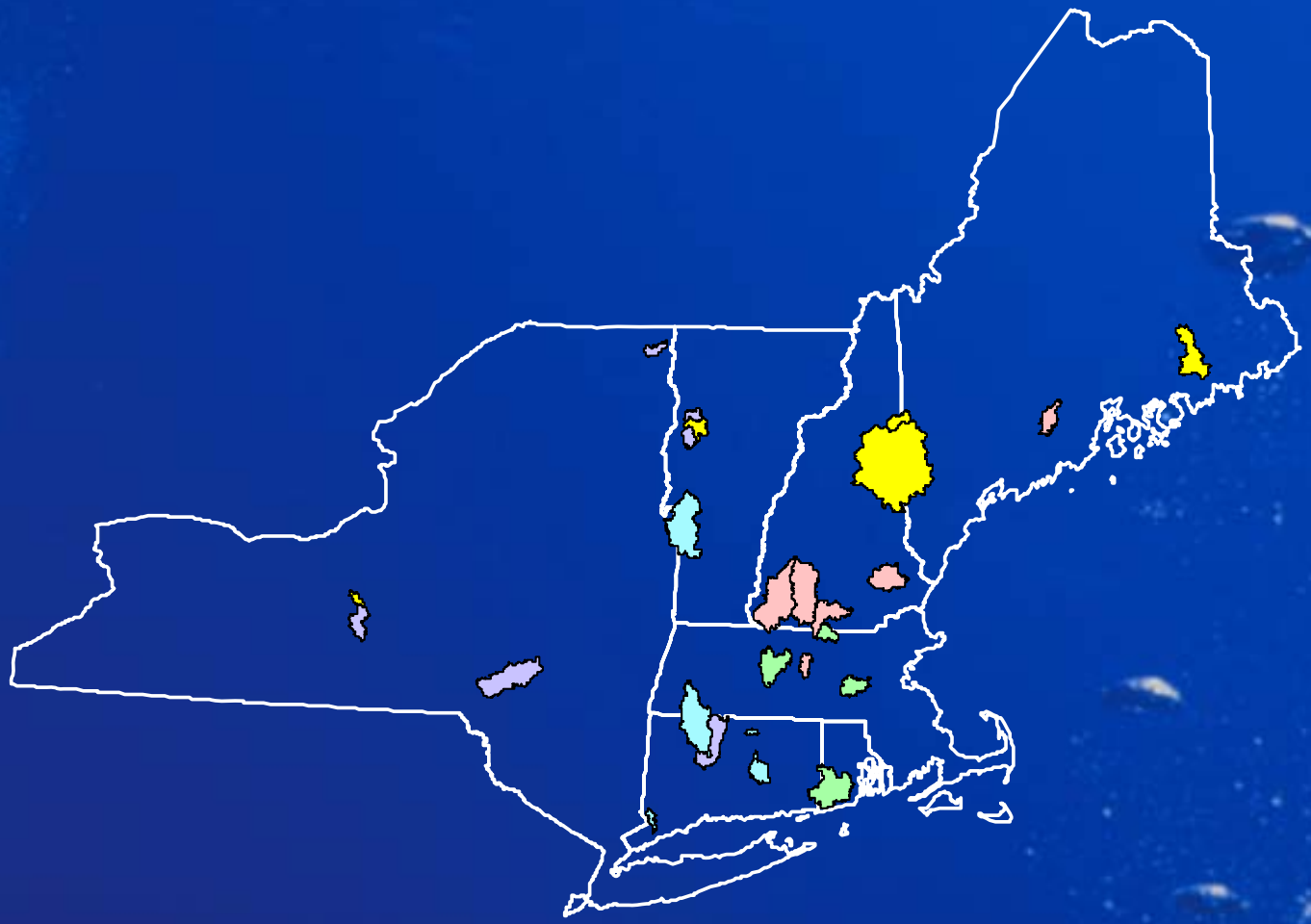
GIS Data Required

- Zipcode.shp
- Weatherstation.shp
- Flowsta.shp
- States.shp
- Subwatersheds.shp
- Streams.shp
- Animal_density.shp
- 24k_quad.shp
- Boundary.shp
- Landuse
  - 1
  - 2
  - 3
  - 4
  - 5
  - 7
  - 8
  - 9
  - 10
  - 11
  - 12
  - 15
  - 17
  - No Data
- Soils.shp
  - Clay
  - Clay Loam

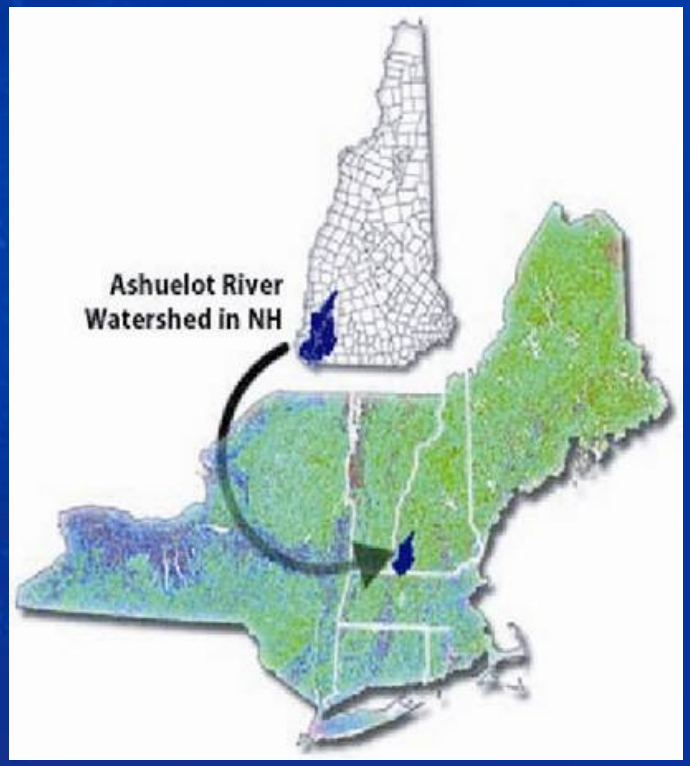
Model Development

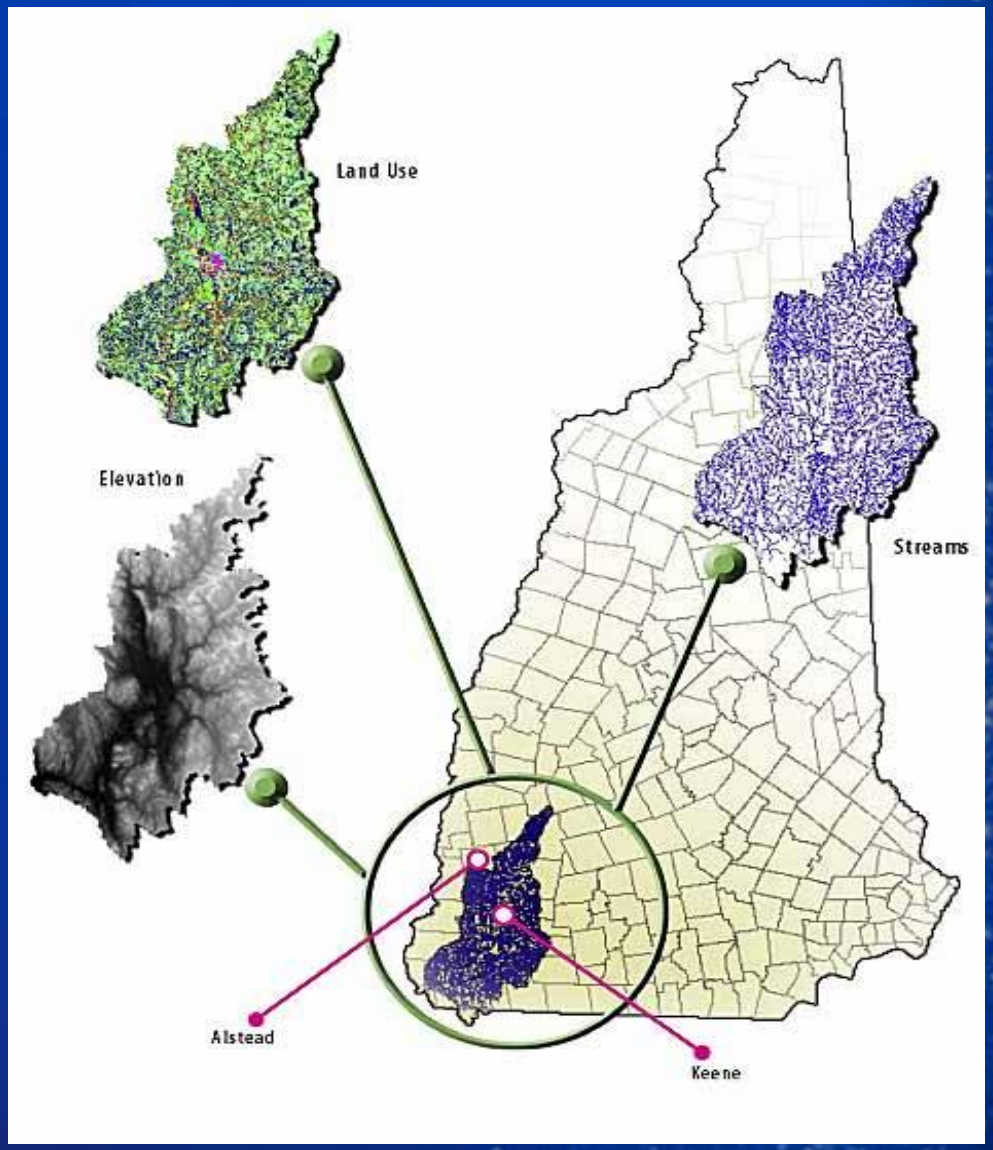
- Regional data layers were collected
- Technical Advisory Committee (made up of members from all of the Northeast states) in the region selected calibration and verification watersheds
- Calibration and verification watersheds have the following characteristics:
  - Historic water quality and flow data
  - Minimal point source inputs

- 27 watersheds were chosen for calibration and validation



Ashuelot River Watershed, New Hampshire





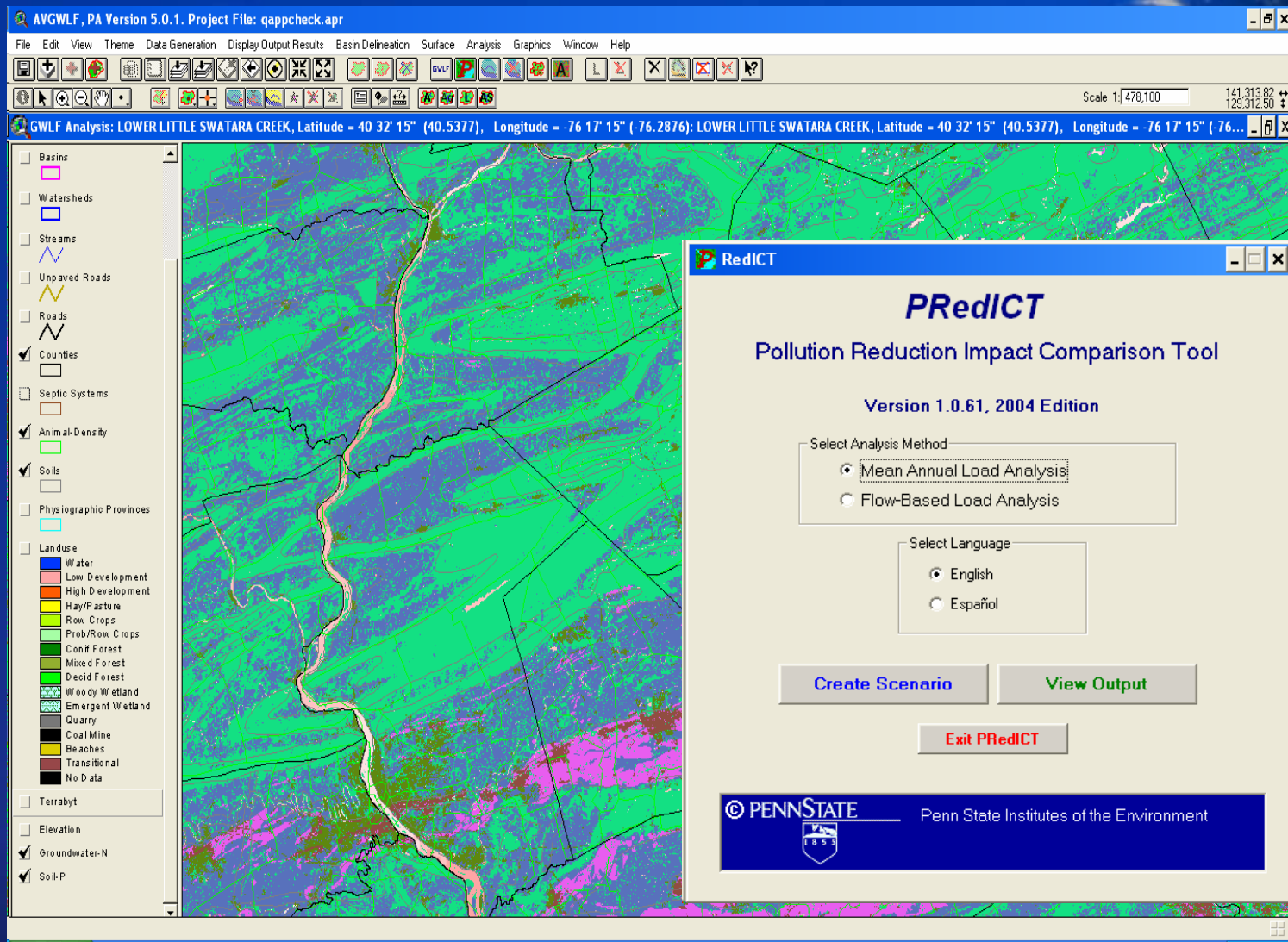
PRedICT

AVGWLF

Management Tool

Users enter management scenarios

Provides cost estimates and pollution reduction efficiencies



Progress To Date

- Quality Assurance Project Plan approved
- Calibration is in process
- Regional datasets are almost complete
- Model should be complete in the fall of 2006
- For additional information, visit: **www.neiwpcc.org/AVGWLF**

NEIWPCC

SPECIAL THANKS TO:

Tom Mulcahy, NEIWPCC

Barry Evans, Penn State

US EPA Headquarters

Additional Information:

Becky Weidman, rweidman@neiwpcc.org