

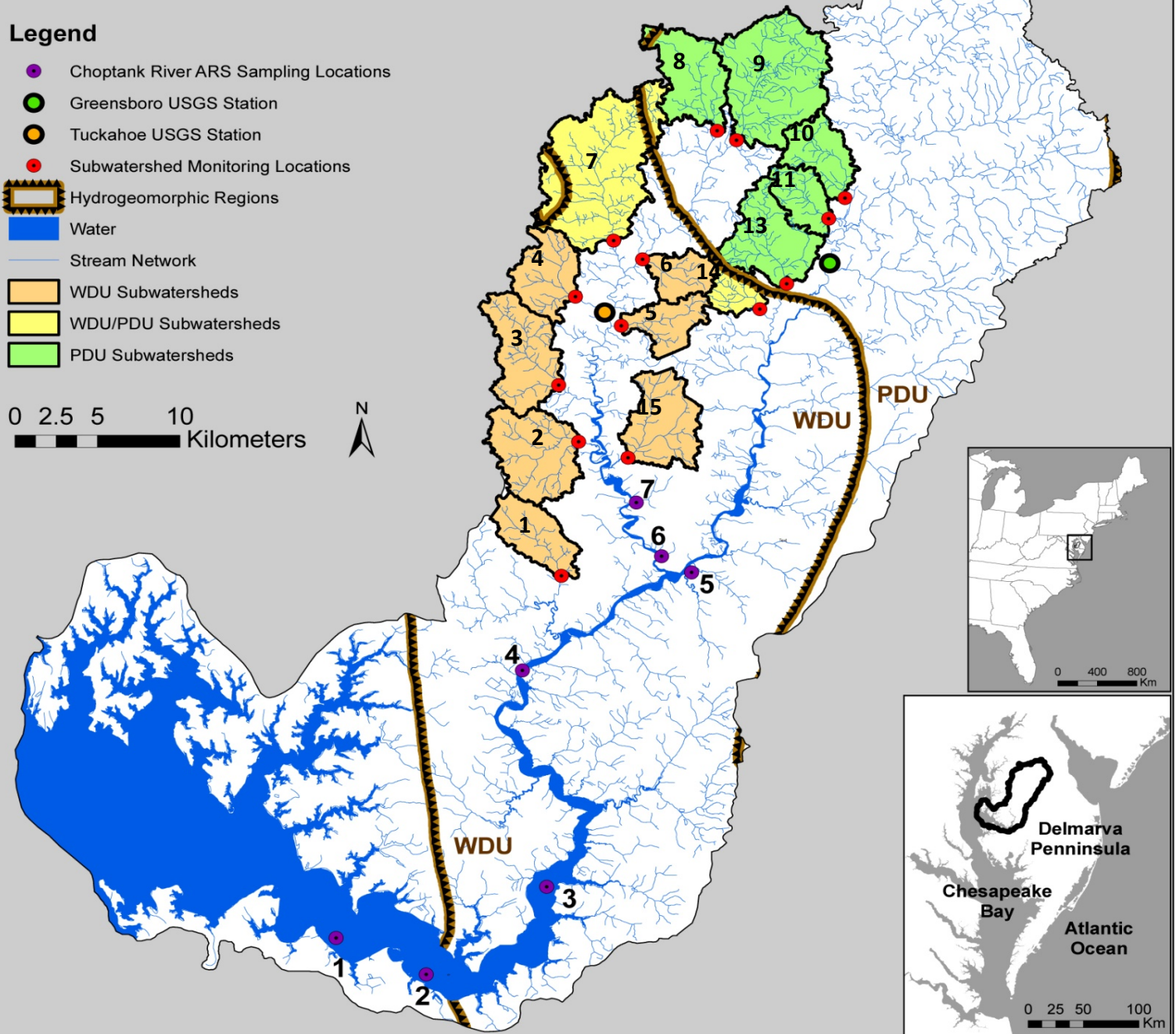
# Choptank River Watershed

# Choptank River Watershed

## Legend

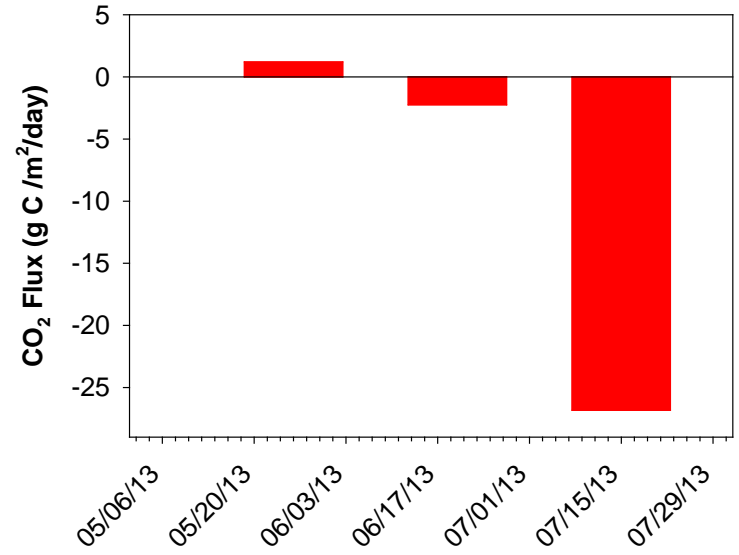
- Choptank River ARS Sampling Locations
- Greensboro USGS Station
- Tuckahoe USGS Station
- Subwatershed Monitoring Locations
- ▭ Hydrogeomorphic Regions
- Water
- Stream Network
- WDU Subwatersheds
- WDU/PDU Subwatersheds
- PDU Subwatersheds

0 2.5 5 10  
Kilometers

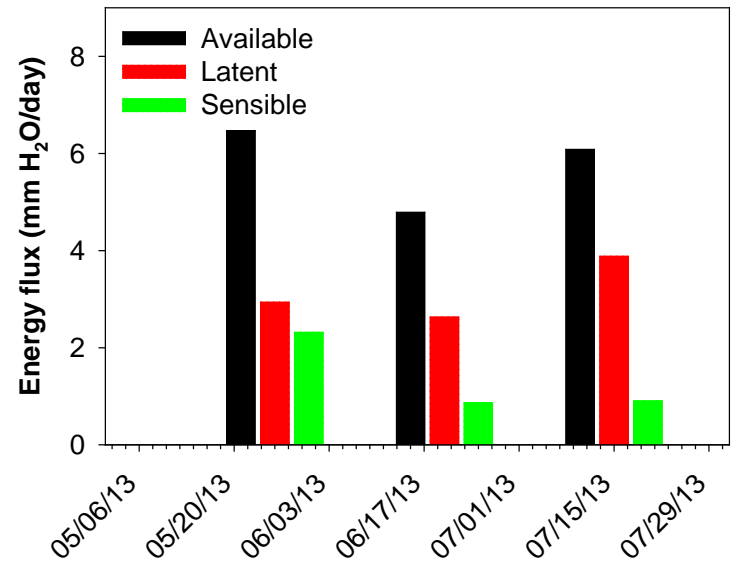


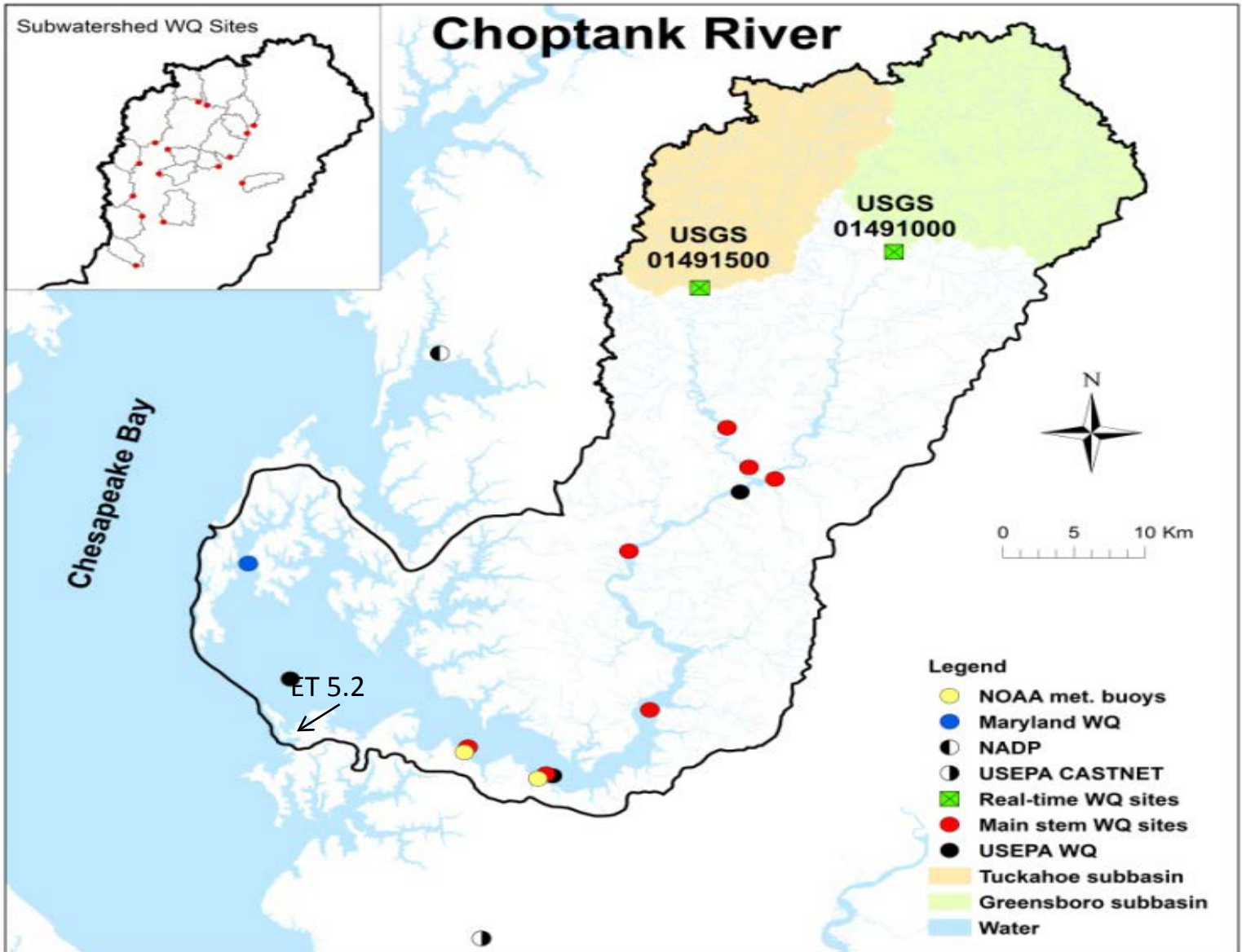


### CO<sub>2</sub> Flux



### Energy Balance





# Basin Comparison

## Sub-basin land use

---

	Total area	Cropland
Sub-basin	km <sup>2</sup>	km <sup>2</sup>
Greensboro	293	129.9
Tuckahoe	226	129.3
Ratio G/T	1.3	1.0

---

## Poorly Drained Uplands (PDU)

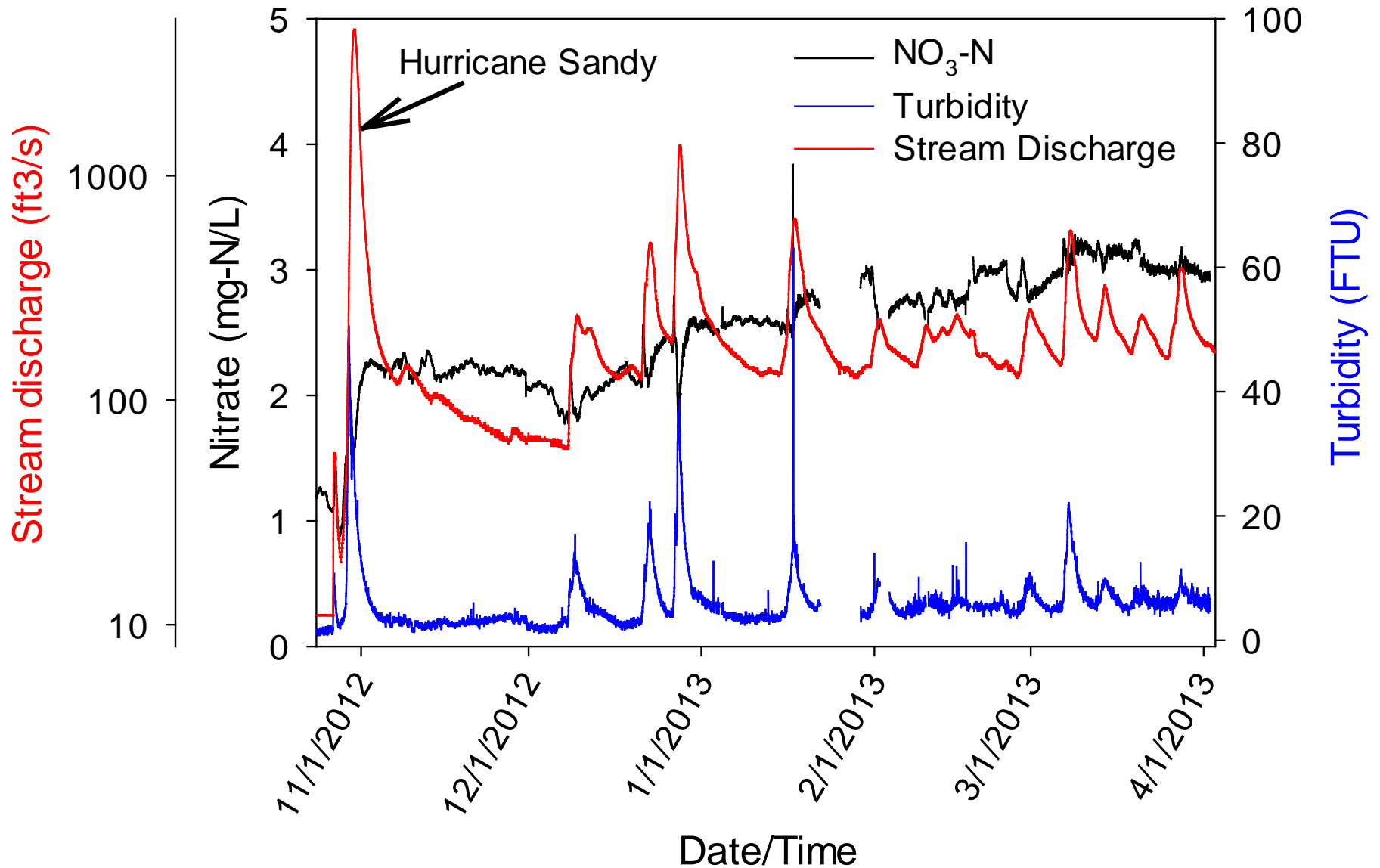
Greensboro	100%
Tuckahoe	50%

---

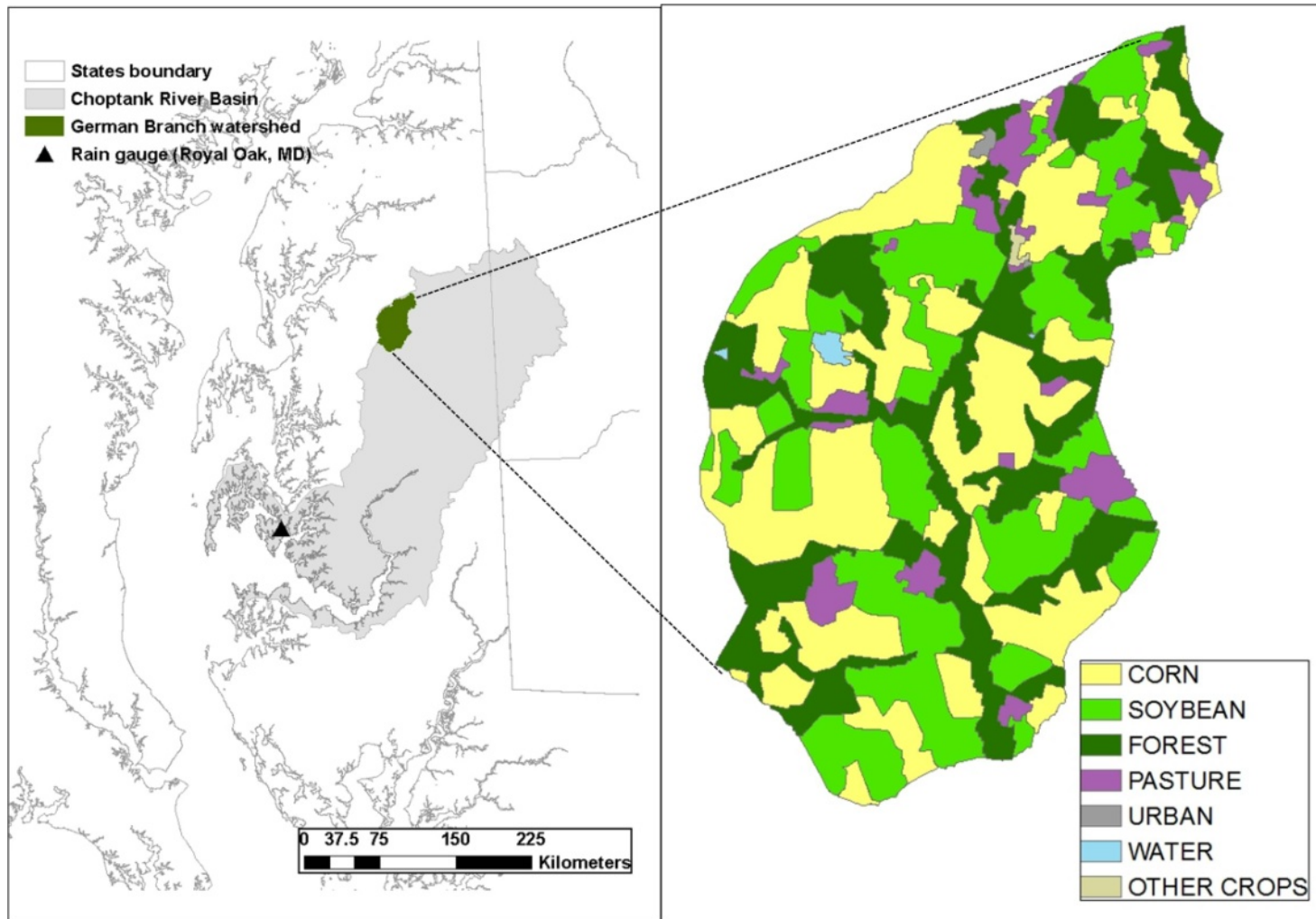
# Real time Monitoring



# Current Real Time data at the Greensboro Gage Station



# SWAT modeling of winter cover crops

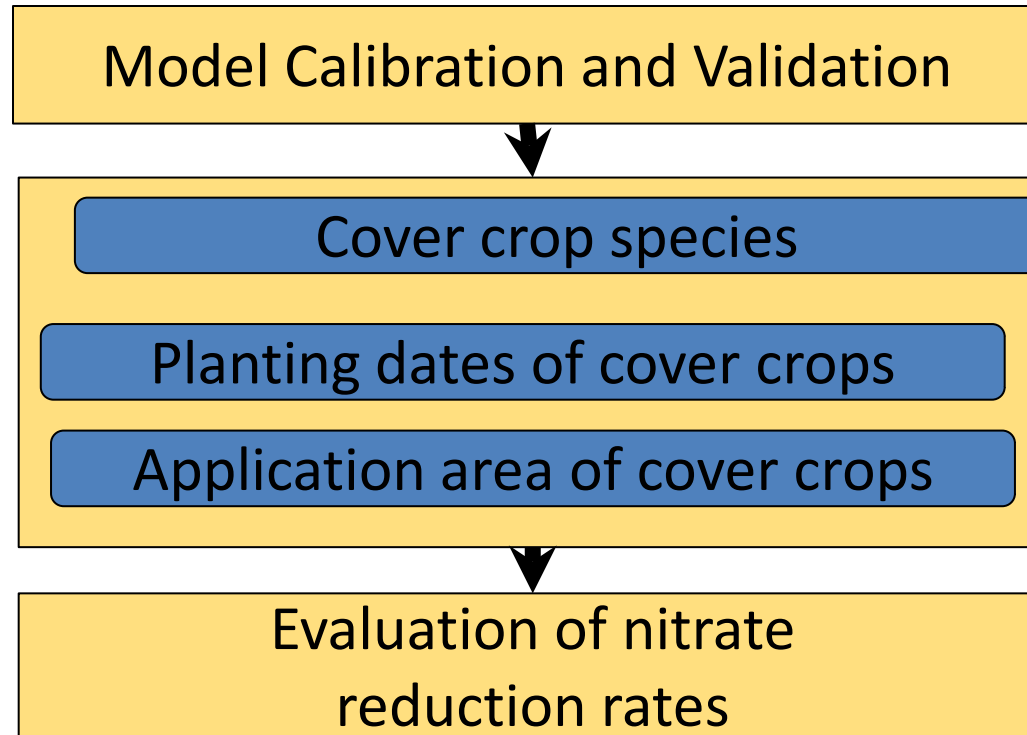




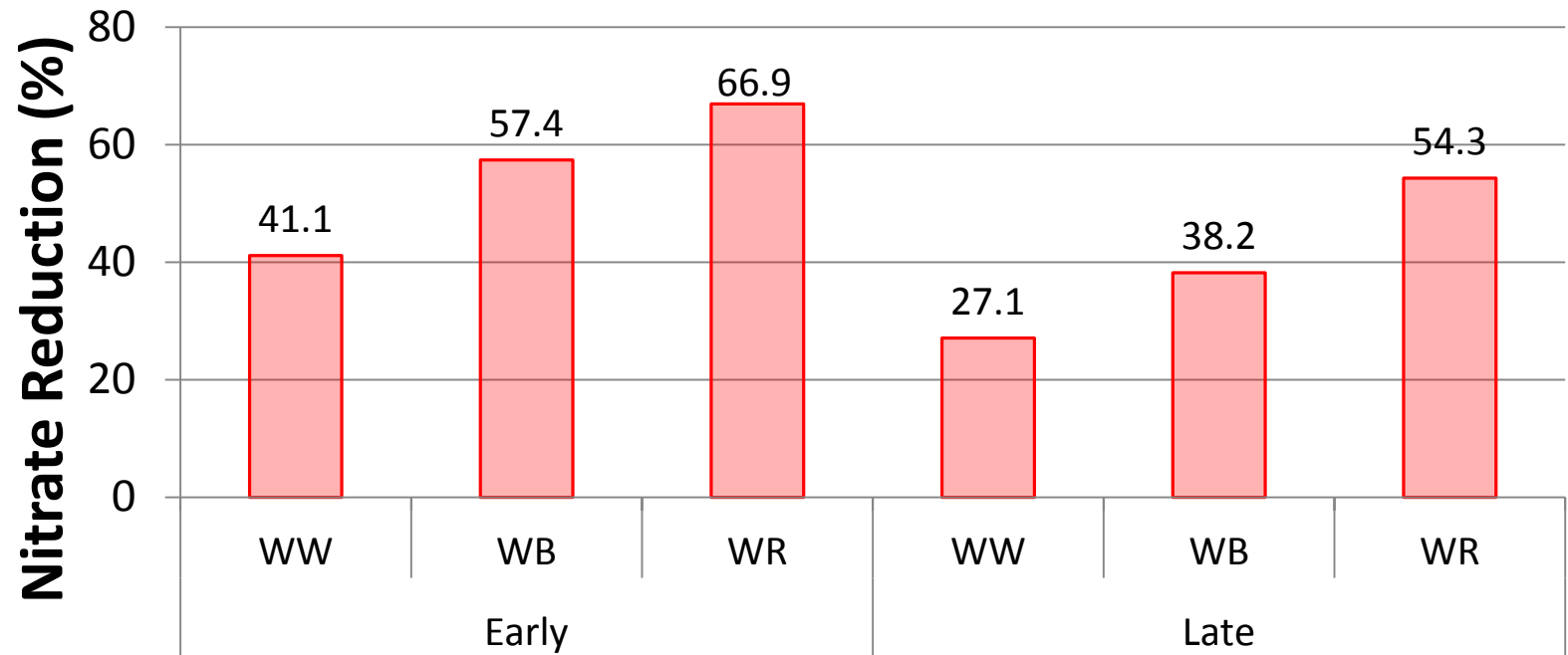
# Management schedule

	Baseline Scenario	Cover Crop Scenario
Corn	Planting: Apr. 30 Harvesting: Oct. 15	Planting: Apr. 30 Harvesting: Oct. 1 & 30
Soybean	Planting: May. 20 Harvesting: Oct. 15	Planting: May. 20 Harvesting: Oct. 30
Cover Crops	-	Planting: Oct. 2 & Nov. 1 Killing: Apr. 1
Fertilizer	Apr. 12 & 27 – Poultry manure Jun. 15 – Side dress 30% UAN	

# Study design



## 9-year average nitrate reduction rates by cover crop species and planting dates.



# Nitrate reduction rates when cover crops (planted Early and Late) were applied to 20, 40, 60 and 80% of croplands.

