

# Incorporating New Flow Data to Extend the Watershed Model Calibration Period to 2011

Guido Yactayo, Ping Wang,  
Lewis Linker, Gopal Bath

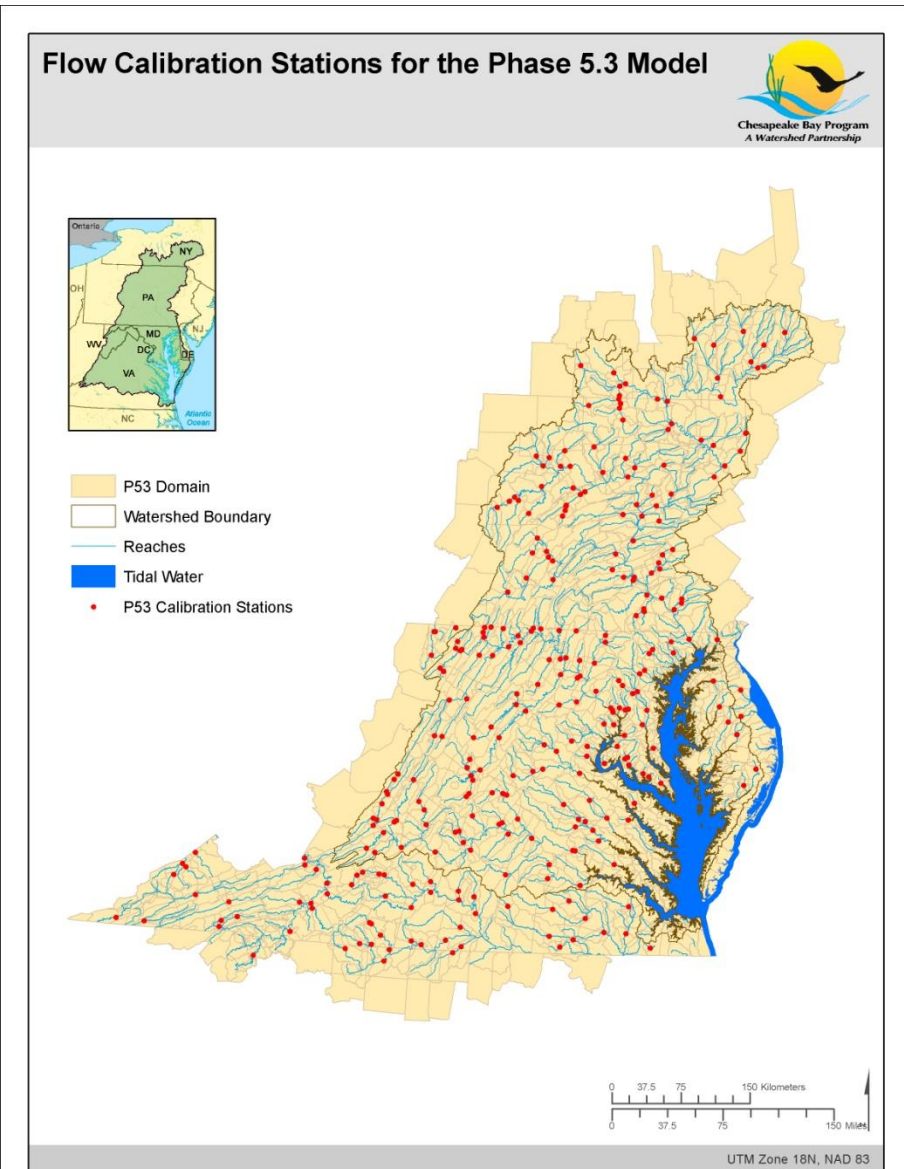
# Objectives

As a part of the next phase of the WSM development initial tasks include:

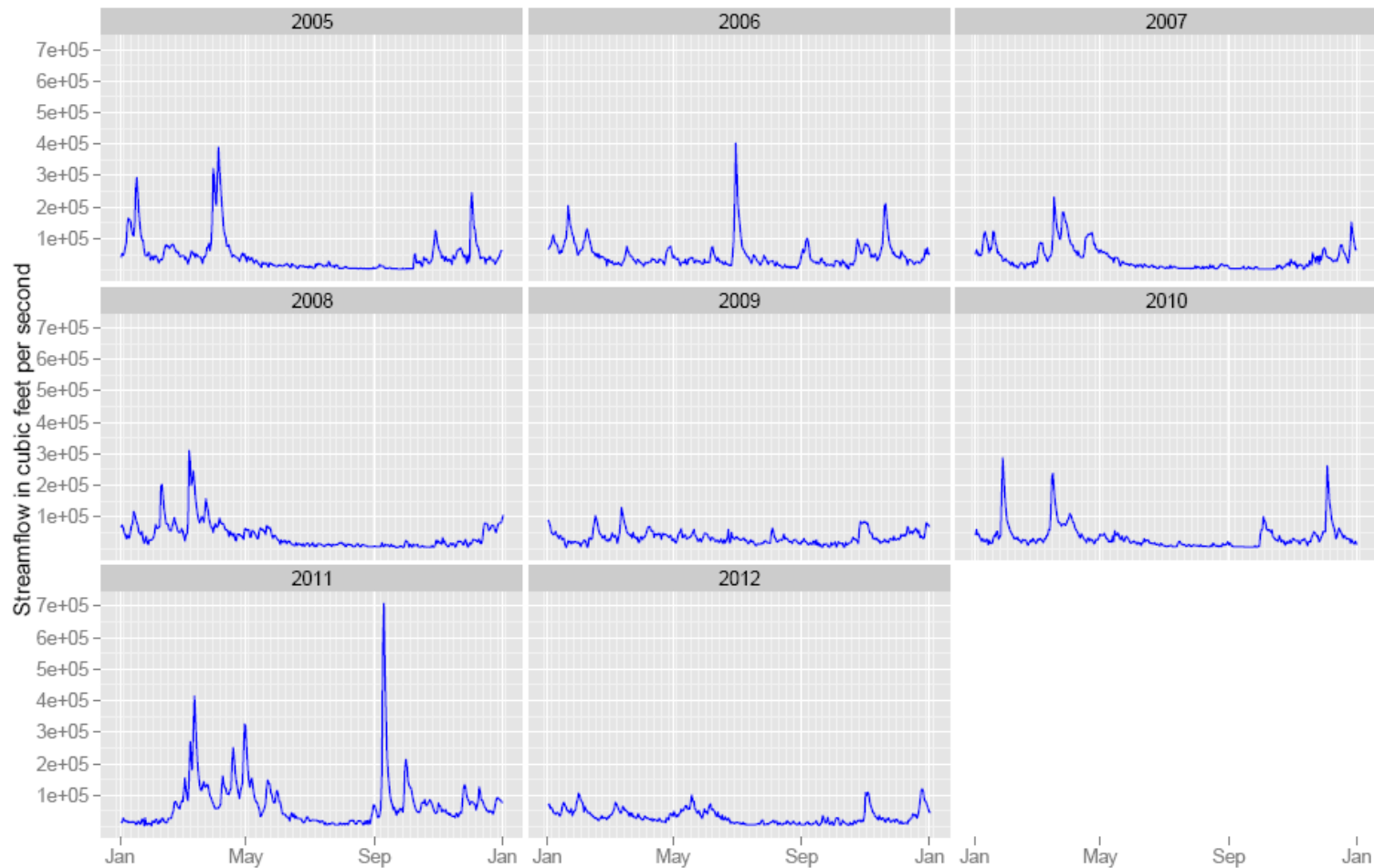
- Updating observed flow and WQ data sets
- Looking for new stations that would meet WSM criteria
- Extending the hydrology and nutrient calibration period to the most recent year of data available

# Incorporating New Flow and WQ Data

- Gathered new data for all USGS stations already included in the P532 calibration (~300 stations)
- Appended new data to the p532 existing calibration files.
- Created summaries and time series plots for each station automatically.



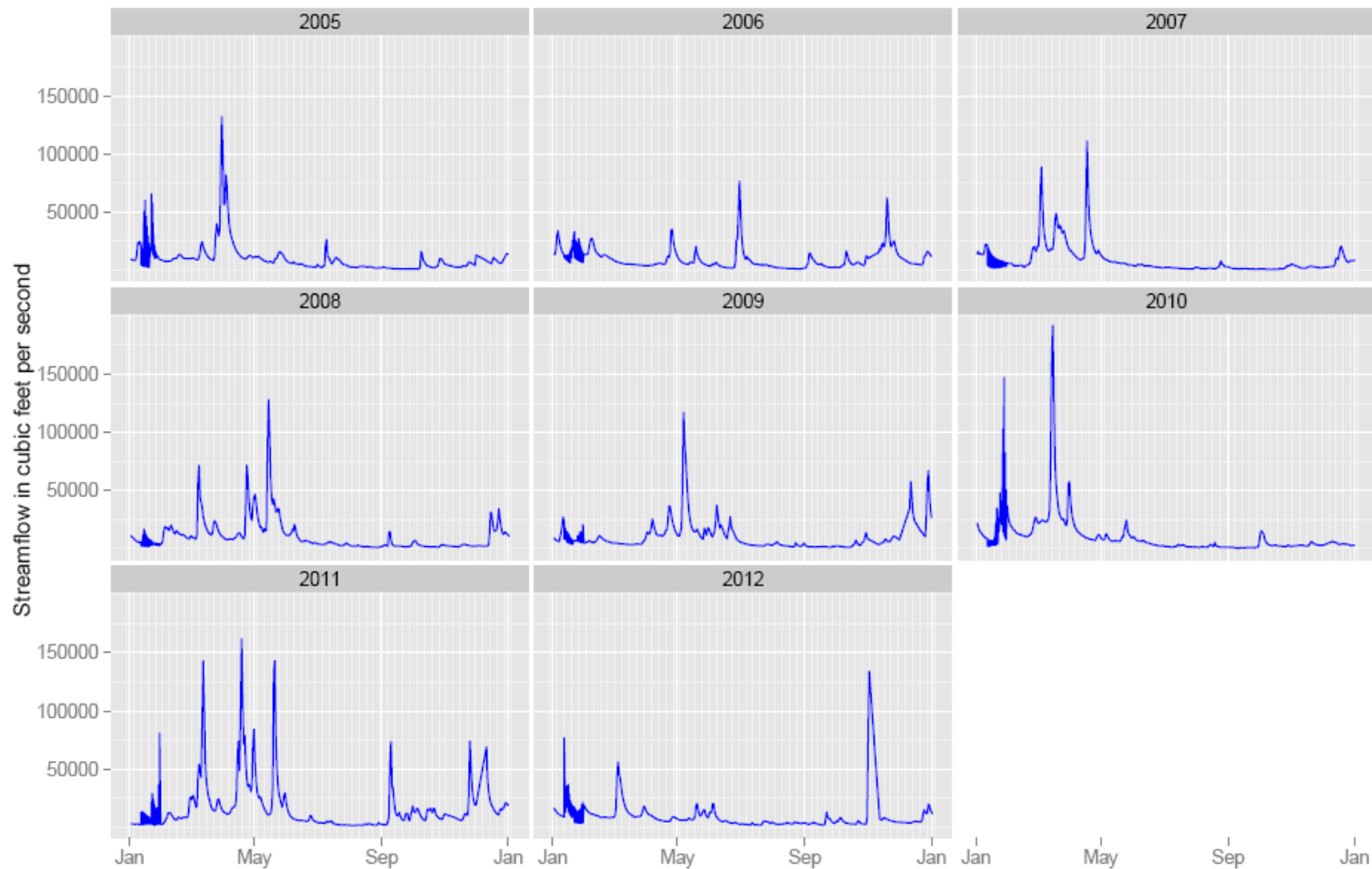
# SUSQUEHANNA RIVER AT CONOWINGO, MD SL9\_2720\_0001 – USGS 1578310



# POTOMAC RIVER NEAR WASH, DC

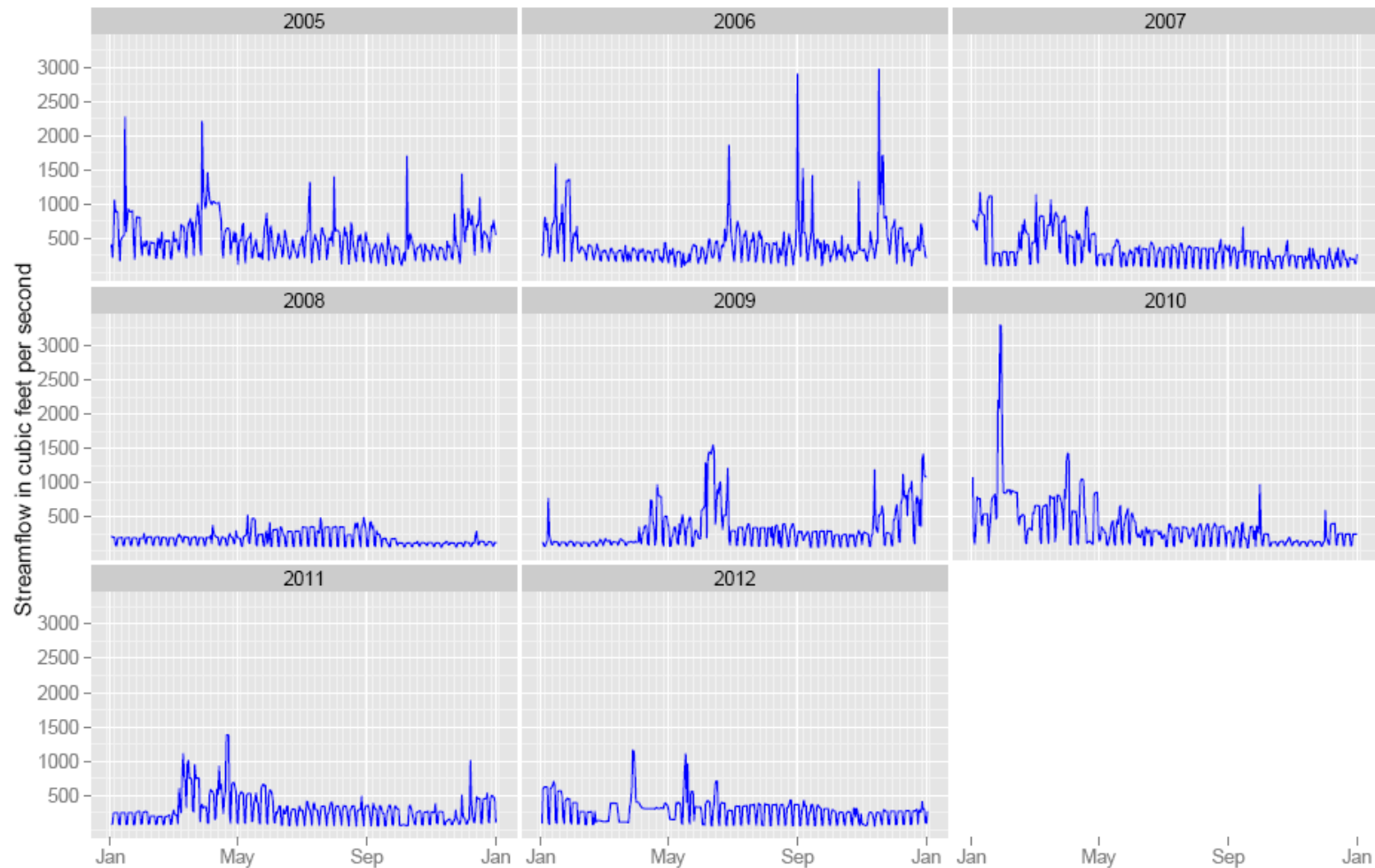
## LITTLE FALLS PUMP STA

### USGS 1646500 - PM7\_4820\_0001



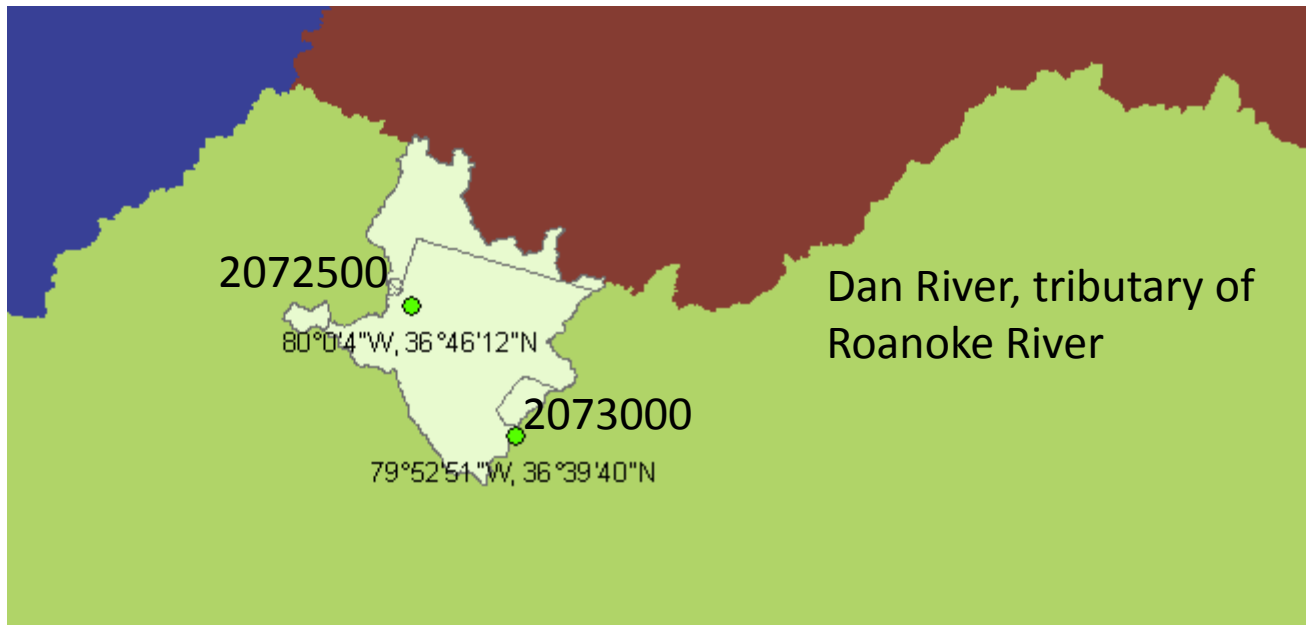
# SMITH RIVER AT BASSETT, VA

## OD3\_8630\_8720



# SMITH RIVER AT BASSETT, VA

## OD3\_8630\_8720

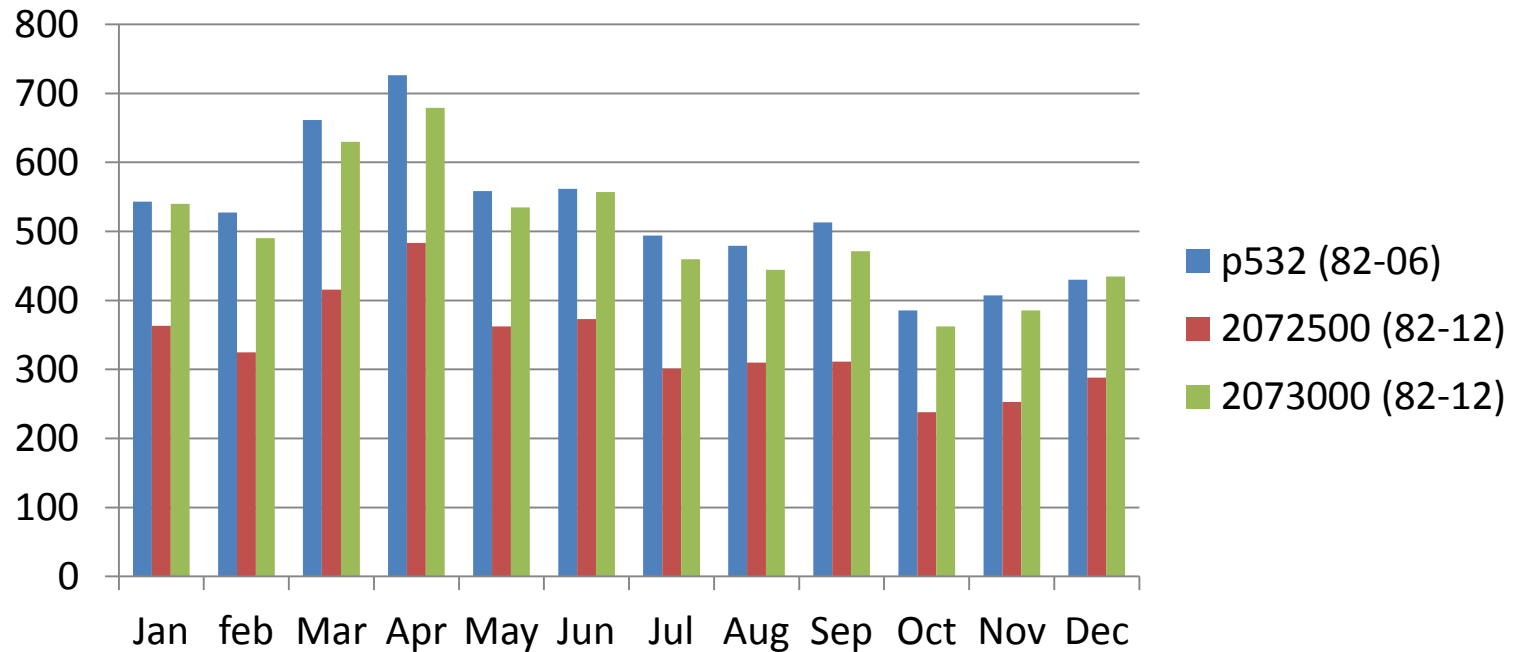


**USGS 02072500 SMITH RIVER AT BASSETT, VA**

**USGS 02073000 SMITH RIVER AT MARTINSVILLE, VA**

# SMITH RIVER AT BASSETT, VA

## OD3\_8630\_8720



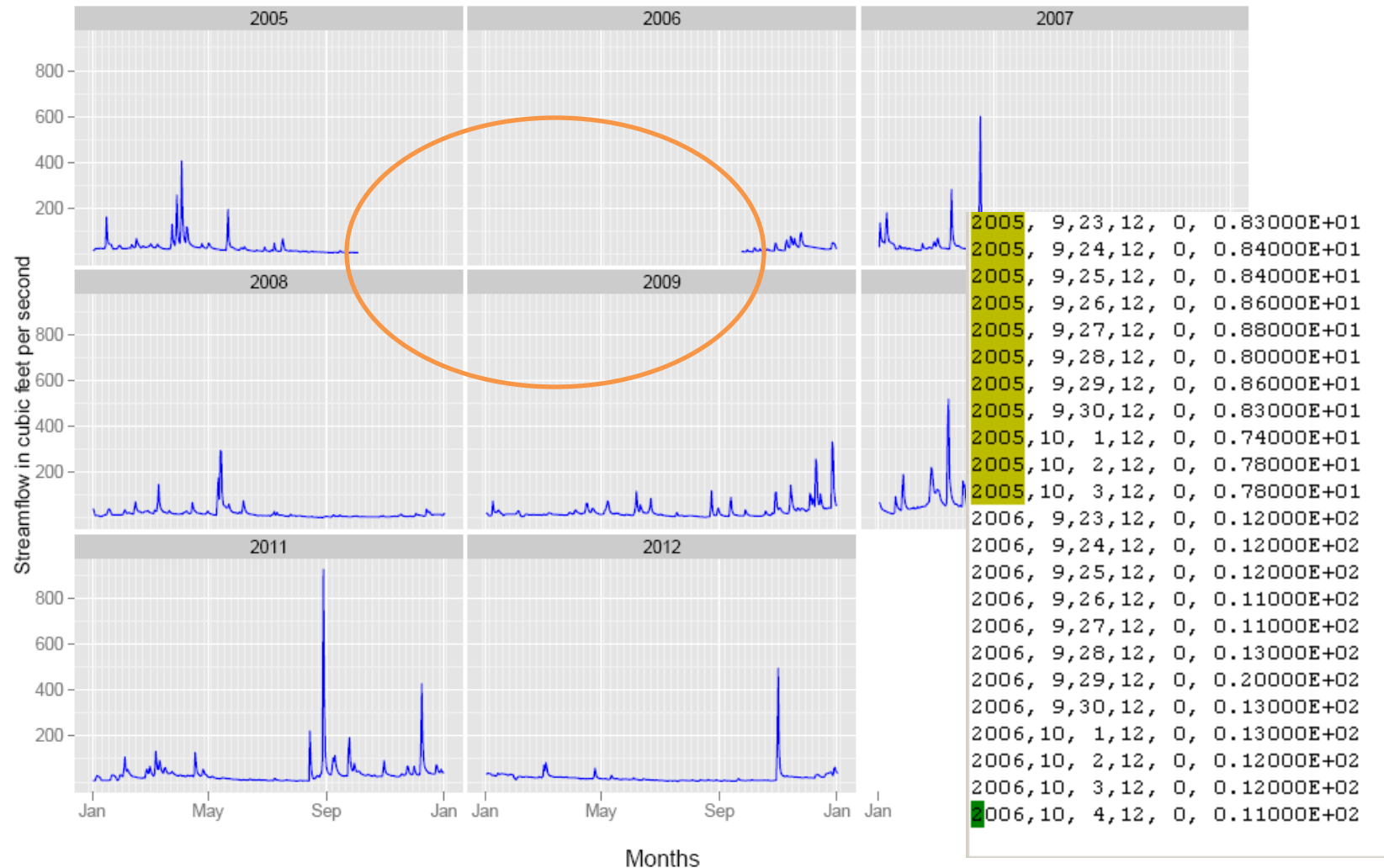
**USGS 02072500 SMITH RIVER AT BASSETT, VA**

**USGS 02073000 SMITH RIVER AT MARTINSVILLE, VA**



# UNICORN BRANCH NEAR MILLINGTON, MD

## EU0\_3830\_0001 – USGS 1493000

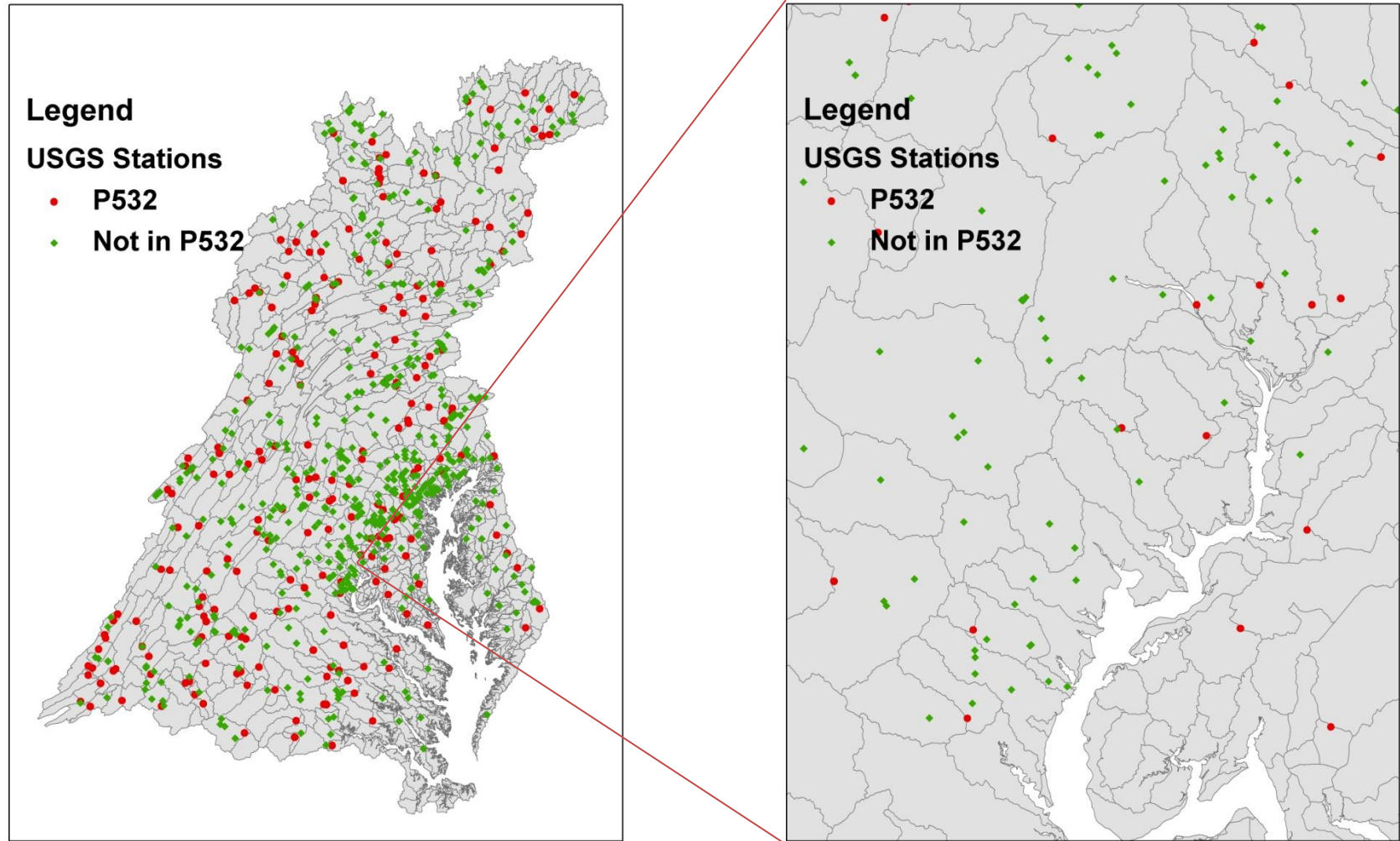


- Are there any new monitoring stations in the Chesapeake Bay watershed?

Criteria:

- Stations with 100 or more long term average cfs
  - At least 3 years of data
  - Located within the watershed boundary
- Do we need more segments if we find new stations?

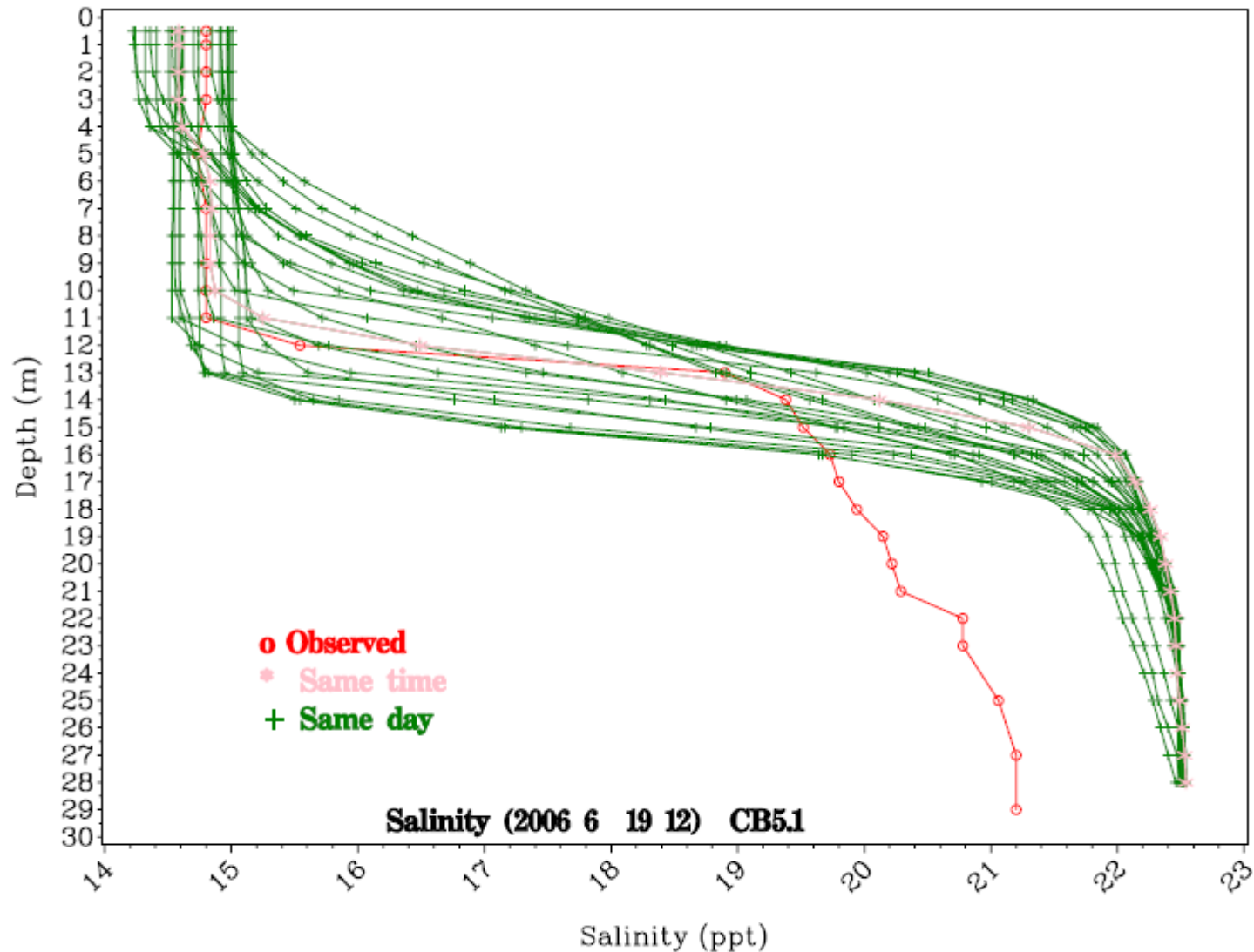
# Are there any new monitoring stations in the Chesapeake Bay watershed?



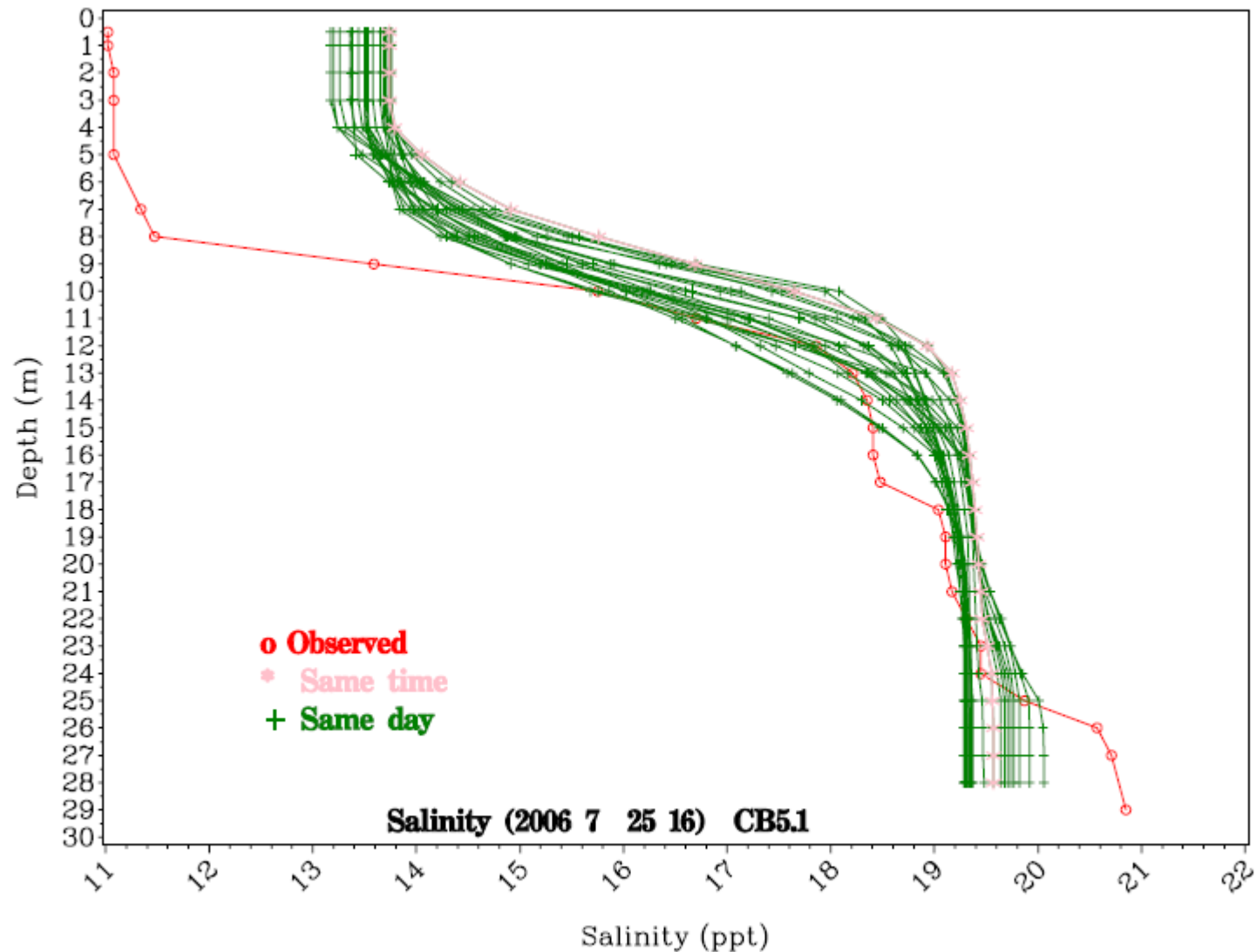
# CH3D Simulation

- More recent and frequent shallow water monitoring data is available since 2003
- There are about 20 salinity observations per year in each monitoring station.
- The WSM was recently calibrated (1984 to 2011) using the NLDAS climate data set and P532 hydrology (84-2005)
- CH3D was run using WSM output (calibrated recently) from 2006 to 2011

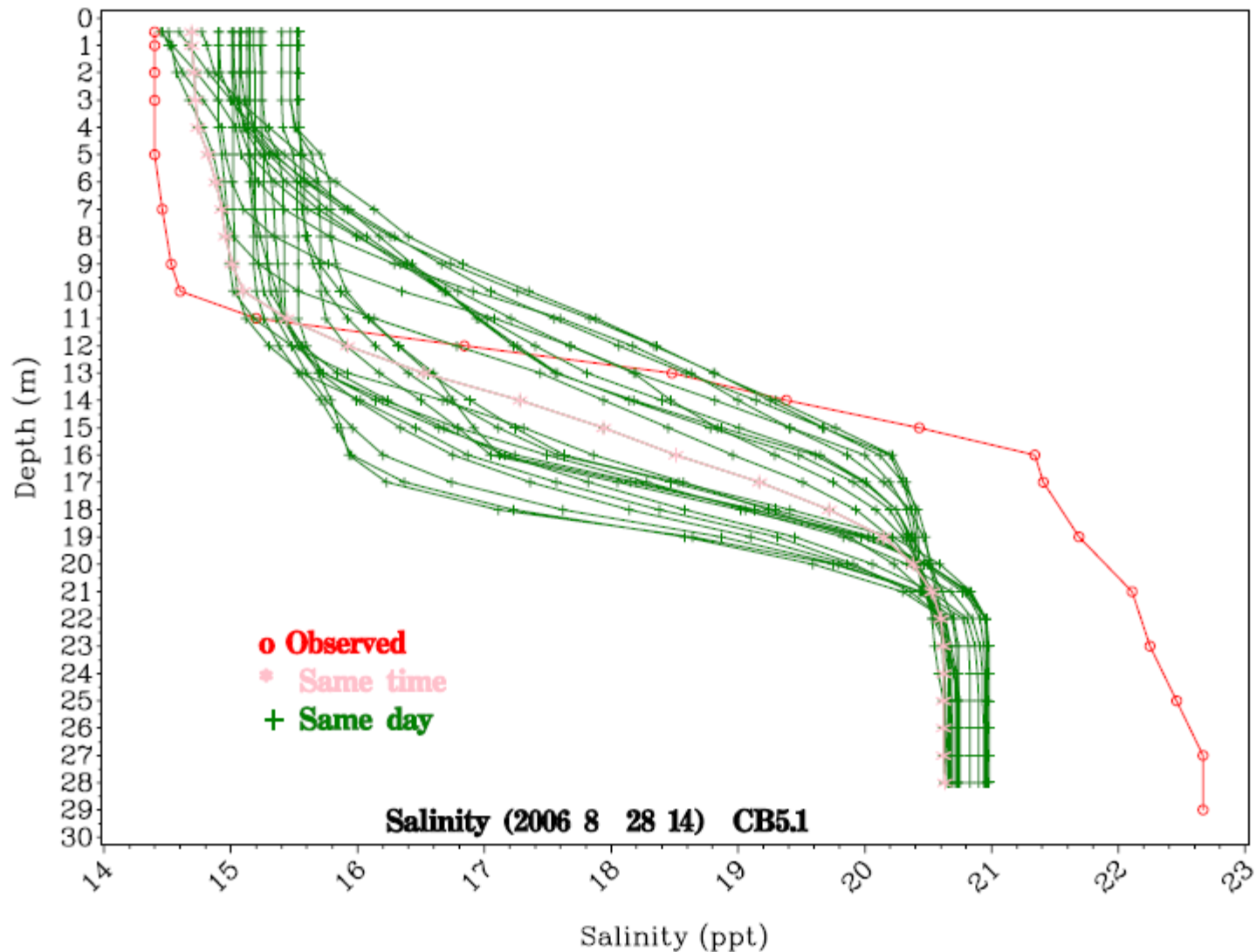
# Salinity Profiles on CB5.1 (Mid Bay)



# Salinity Profiles on CB5.1 (Mid Bay)



# Salinity Profiles on CB5.1 (Mid Bay)



# CH3D Evaluation Statistics on CB5.1 (Mid Bay)

