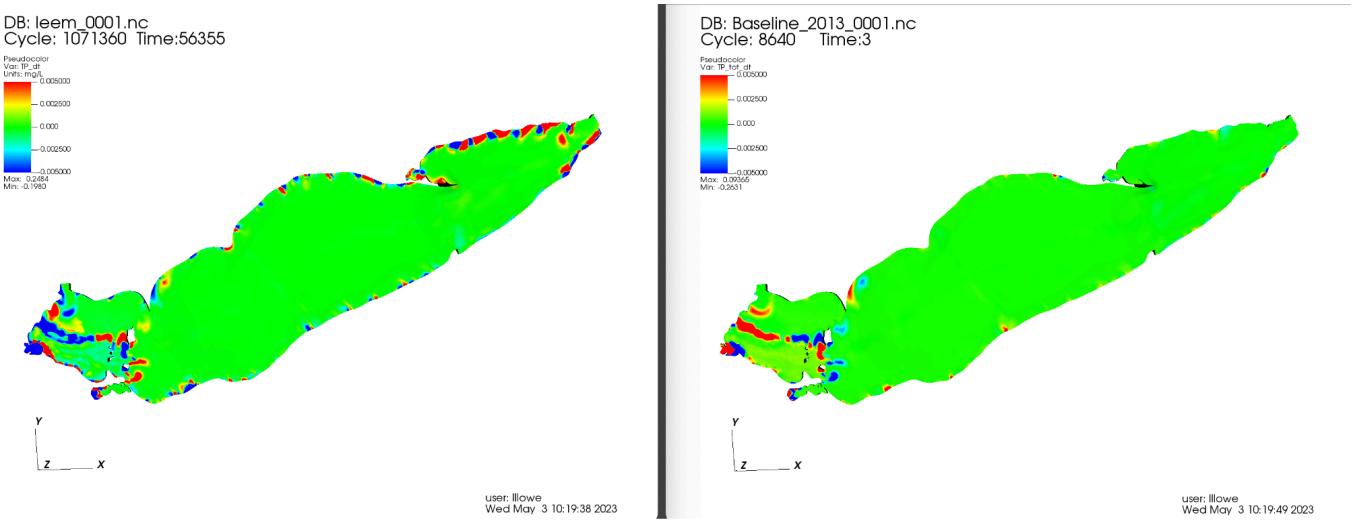
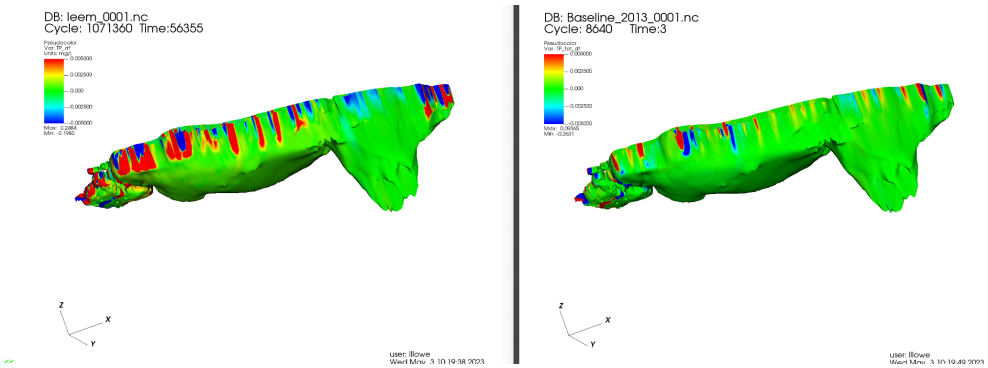
It looks like our model is dumping more TP from the rivers. These are:

TP run on NCSU | File from Wilson

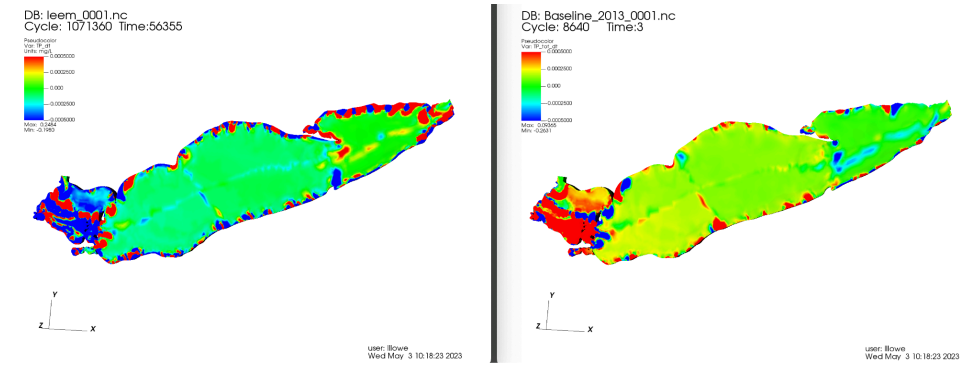
These are plotting TP(March 4th) - TP(March 3rd)

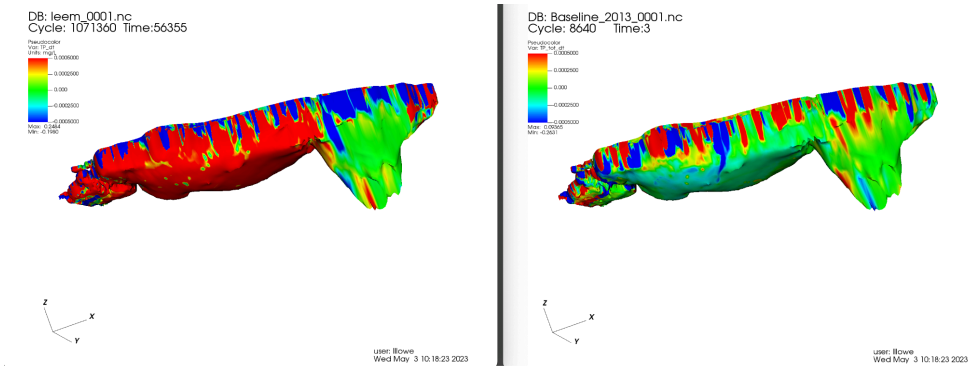
Colormap from -0.005 to 0.005





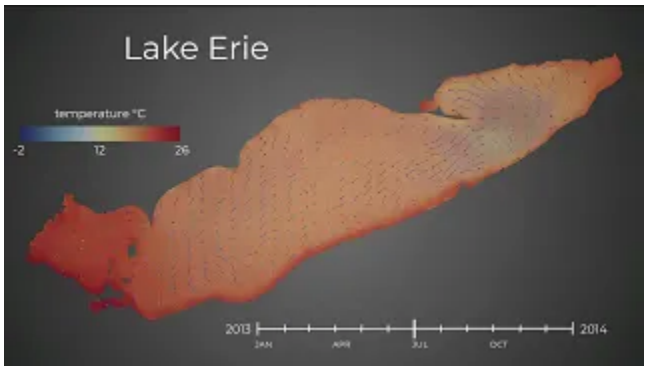
Colormap from -0.0005 to 0.0005





Science: The wave model?
VisIt: Streamlines

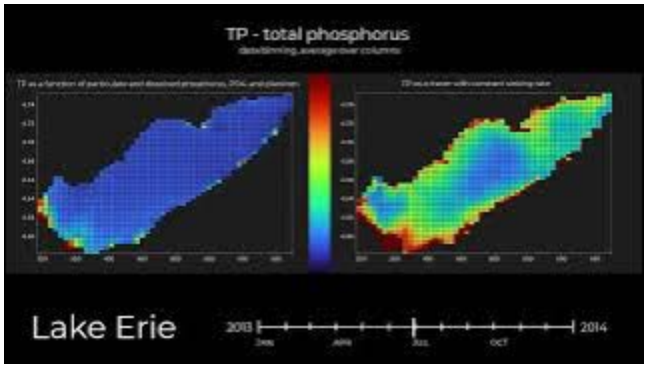
I'm looking at hydro that Wilson gave me vs what I generated and they are pretty much exactly the same. (Video of hydrodynamics, hourly output.)



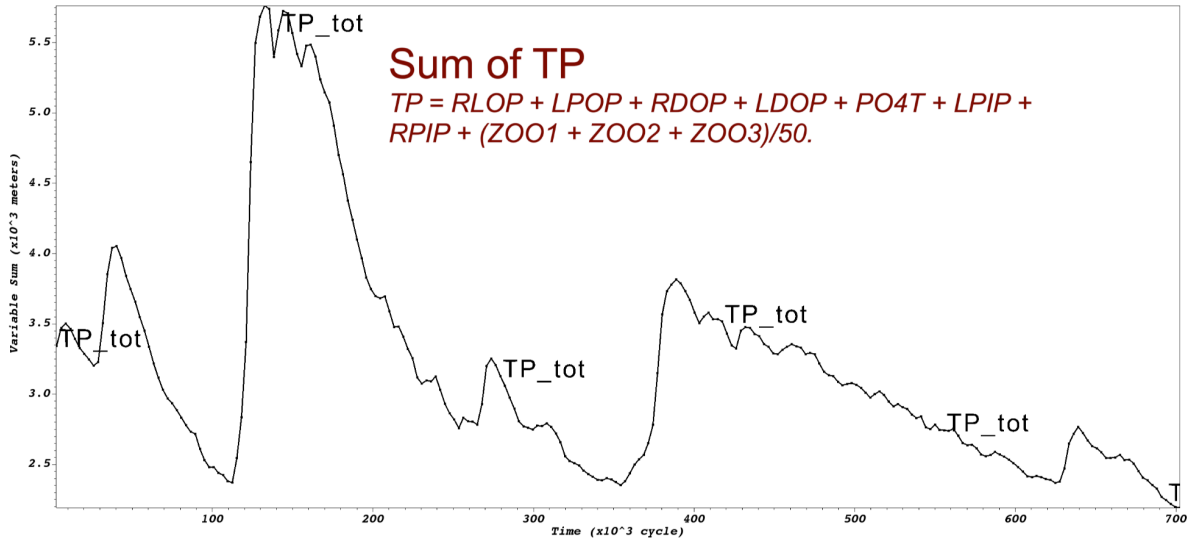
I was thinking they would be different because Limnotech ran a wave model, but I guess they ran the wave model after the general hydro. In that case, it will be hard to separate the hydro effects from BIO effects, since the BIO file doesn't have the hydro information.

Science: River loads
VisIt: Data binning with operators

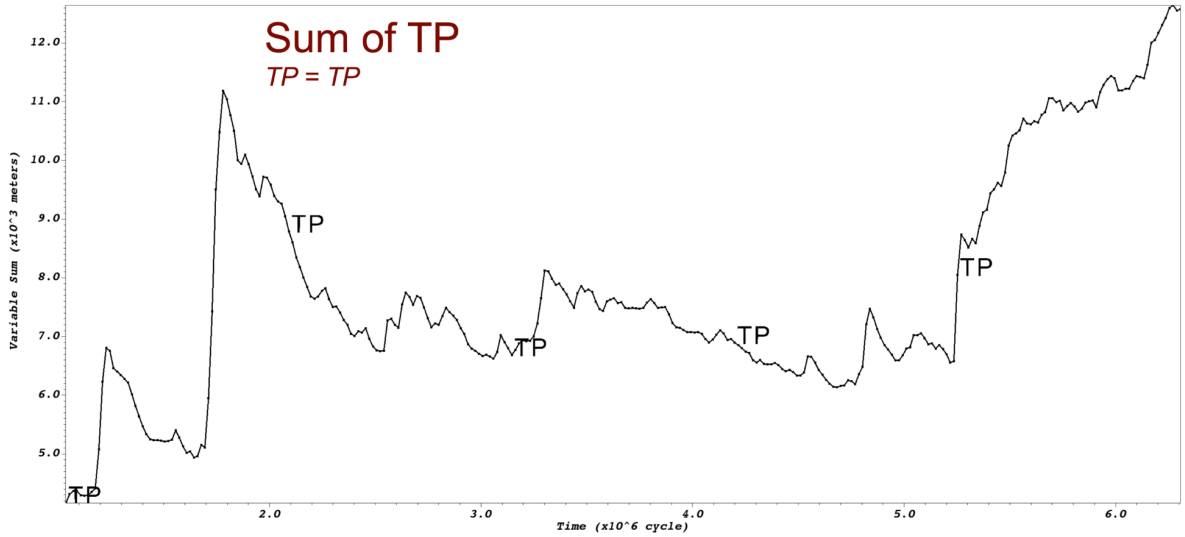
I thought to check the hydro, because visually (in a pseudocolor movie of TP), it looks like my rivers are dumping too much TP, so I wanted to make sure it wasn't being 'washed away' from the edges with waves. I found that VisIt can do summations over specified chunks of the grid. Here are: binning by average, and binning by summation. Output is daily. (Model time is the same, but movie time is different because I choose a different ffmpeg parameter.)



It looks like my rivers *are* dumping too much, and everything stays put so total TP in the lake just keeps growing. If Limnotech's file has river loads, they are much less, and also it looks like their TP has a way of leaving the system. Below are plots of total TP in the whole model for each timestep. Note that the Y axes are not the same. (VisIt is horrible at annotating 2D plots, I couldn't even figure out how to change the min/max so I could get them on the same plot.)



March 02 November 01



March 02 November 01

Data Files

Hydrodynamics data:
Movies show these are the same.

- Wilson's hydrodynamics file, transferred through OSN, Thu, Apr 27.
- My hydrodynamics file was generated on the NCSU cluster (Hazel).

River data:

- Starting with the initial data Wilson sent me on Saturday, January 14, the file with hydrodynamics river loads: 2013_leem_fine_river_data.nc, use commands from an R script borrowed from Mark to add TP data from xlsx Wilson emailed me on April 11.

BIO data:

- Wilson's BIO data is from Baseline_2013_0001.nc
- Output file starts March 02, one day after the initial timestep. Ends 244 timesteps later.
- To plot TP, VisIt calculates the following:

TP = RPOP + LPOP + RDOP + LDOP + PO4T + LPIP + RPIP + (Zoo1 + Zoo2 + Zoo3)/50.0

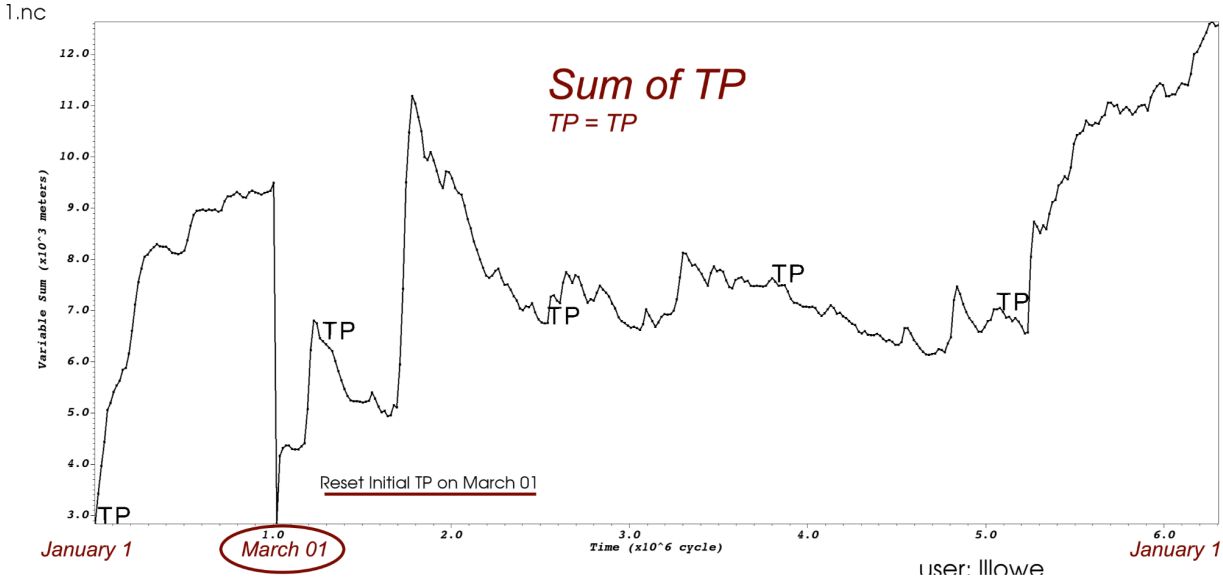
- My TP data is generated on Hazel.
- Wilson sent me a data file to initialize TP on April 17.

Comparing data:

Wilson's BIO run started on March 1st, and the output file starts on March 2nd. FVCOM 'likes' to start on January 1st. If I try to do a hotstart from March 1st, it doesn't work. I think it is because it might expect forcing files to start at that date, but I'm not sure.

I can 'trick' FVCOM into resetting the TP values by using the *crash restart* option as follows:

- Run FVCOM from January to March 1st, save a restart file for March 1st, save the output.
- Run FVCOM a single time step and make a restart dump on January 1st, 2013.
- Use `ncks` to copy the TP variable from Jan 1st restart to the March 1st restart:
  `ncks -A -v TP leem_restart_init.nc leem_restart_march1.nc`
- Do a crash restart.



My datafile is for the whole year, output is daily. To do the animations for the same time interval, I just do loops over frames from 60 to 304.

Movies info

The timeslider: Having time numbers flash through the screen is annoying. The time slider is a Camtasia animation. The fixed slider ruler is created with Paint so that ticks are spaced at the appropriate pixel distance. (0,31,59,90,120, etc…). The moving tick mark is an "I", animated to go from the first date to the last date at an even pace. (i.e., it is good, but obviously an approximation).

Just because: I learned how to do animations. Video of animating the view with a script.