SLIDE 1

- What period is simulated?

    o 5/1/1994 to 5/1/1995 - this information is located under the Simulation Setup menu

- What rates are being saved?

    o Rates for all the animals in the study are being tracked, including Diatoms, Greens, Clam, Grazers, etc. This information is found by clicking on the Rate Specifications button in the Simulation Setup menu.

- What is the mean temperature for the site?

    o 16 C – this can be found by double-clicking on Temperature in the state variables list

- What is the mean light?

    o 333 Ly/d

- What is the pH?

    o 6.8

- What is the ammonia loading?

    Information regarding loadings can be found by double-clicking on the state variable of interest in the panel on the right hand side of the main window

    o Ignore All Loadings is selected. By selecting to ignore all loadings, it is specified that no Ammonia is entering the system from point sources, non-point sources, or direct precipitation. Any increase observed in the ammonia concentration over the simulation will be due to its creation in the reach being studied, since all external loadings are ignored.

- What is the nitrate loading? Source?

    o 0, with a Loading from Direct Precipitation set to 0.05 g/m2-d

- Does water volume vary?

    o No, the water volume remains constant at 2004 cubic meters.

- What is mean wind speed?

    o 4 m/s (found under Wind Loading)

- What is the source of the esfenvalerate loadings?

o   Point Sources, specifically the "adjacent cornfield"

SLIDE 6

- First try to produce a graph of the water column concentration of Esfenvalerate predicted within this simulation. *Hint: T1 stands for "Toxicant 1" which in this case is Esfenvalerate so the result to graph is "T1 H2O (ug/L)"*

    o   *To make this graph, press the "new" button in the Graph Library tab. Select Custom Graph (make sure the Create Graph using State Variables in Scenario: Perturbed) and then add T1 H2Oto 'Results on the Y1 Axis'.*
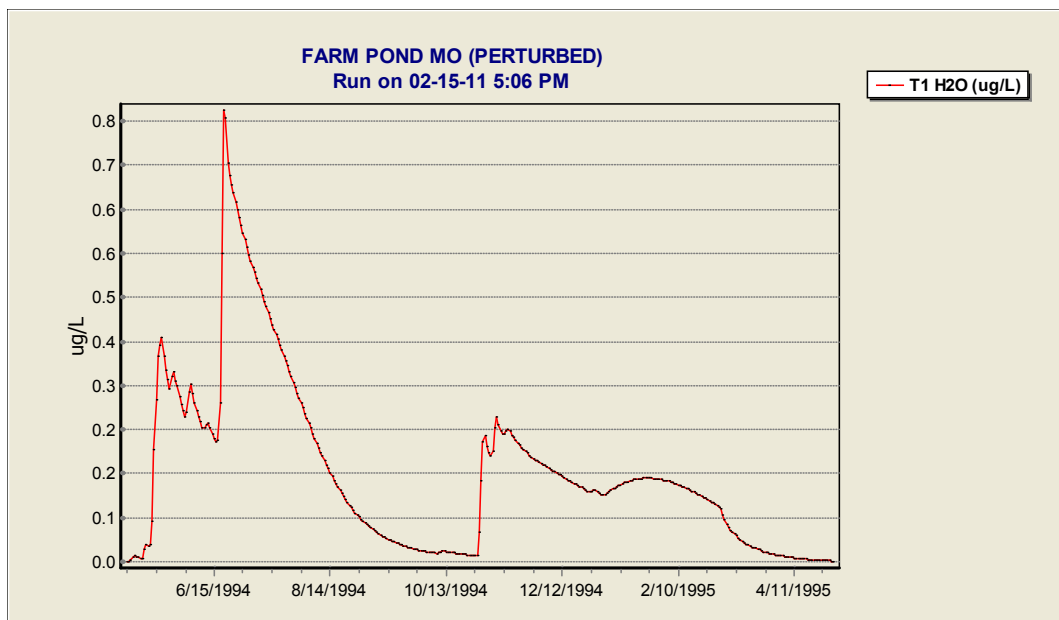
- Can you produce an output table with parts per billion output for Esfenvalerate throughout the food-chain?

    o ug/Kg= ppb
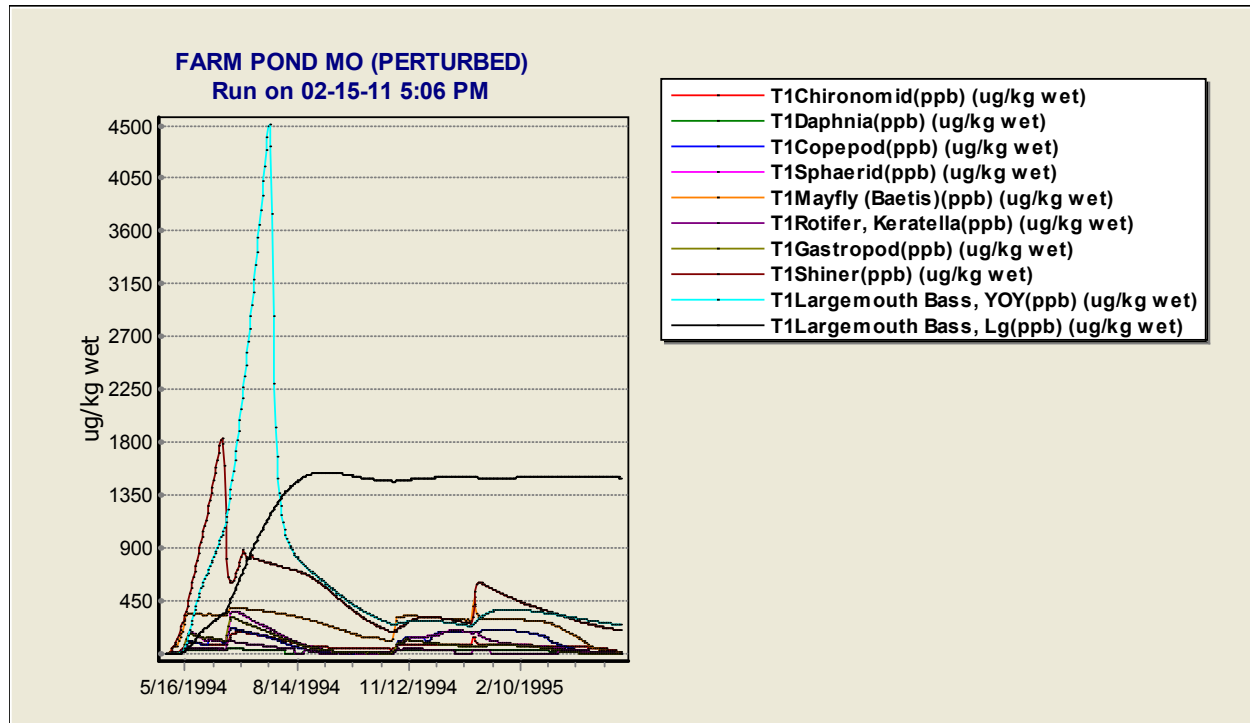
- Is there evidence of biomagnification through the food-chain?

    o It appears that biomagnification is occurring since the larger animals (i.e., Largemouth Bass) have higher concentrations of Esfenvalerate during the simulation period.

- Can you produce a graph that displays parts per billion output for Esfenvalerate in all animals (*Chironomid* through Largemouth Bass Lg)?

    o See graph above.

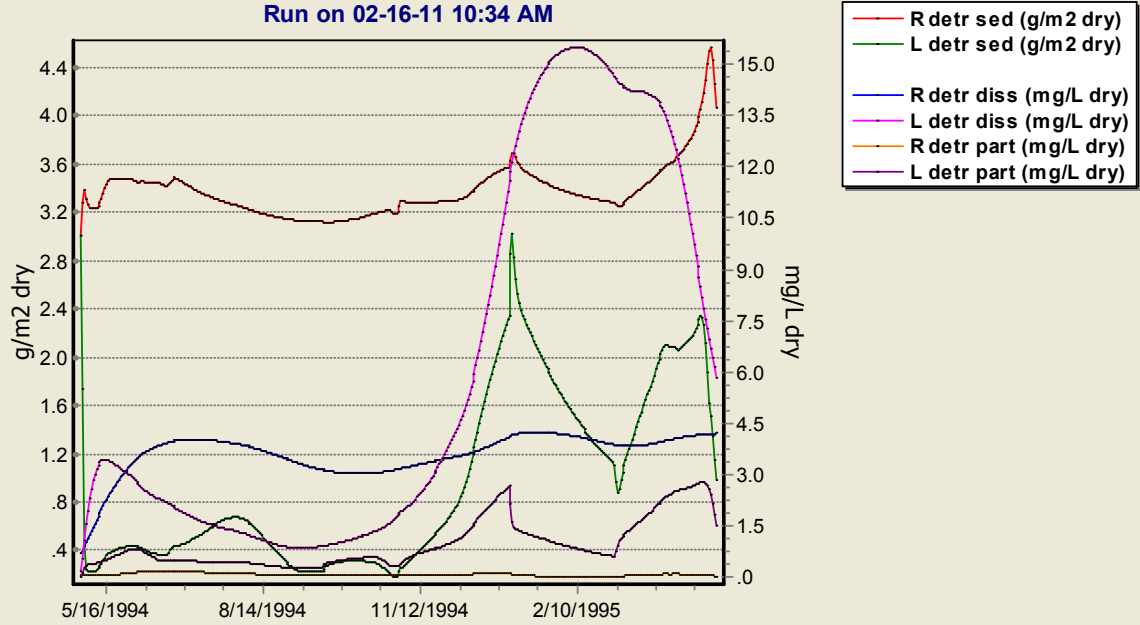- To help answer "why are the parts per billion output for Gastropod falling to zero" graph the Gastropod state variable.

FARM POND MO (PERTURBED)
Run on 02-16-11 10:34 AM

T1Gastropod(ppb) (ug/kg wet)
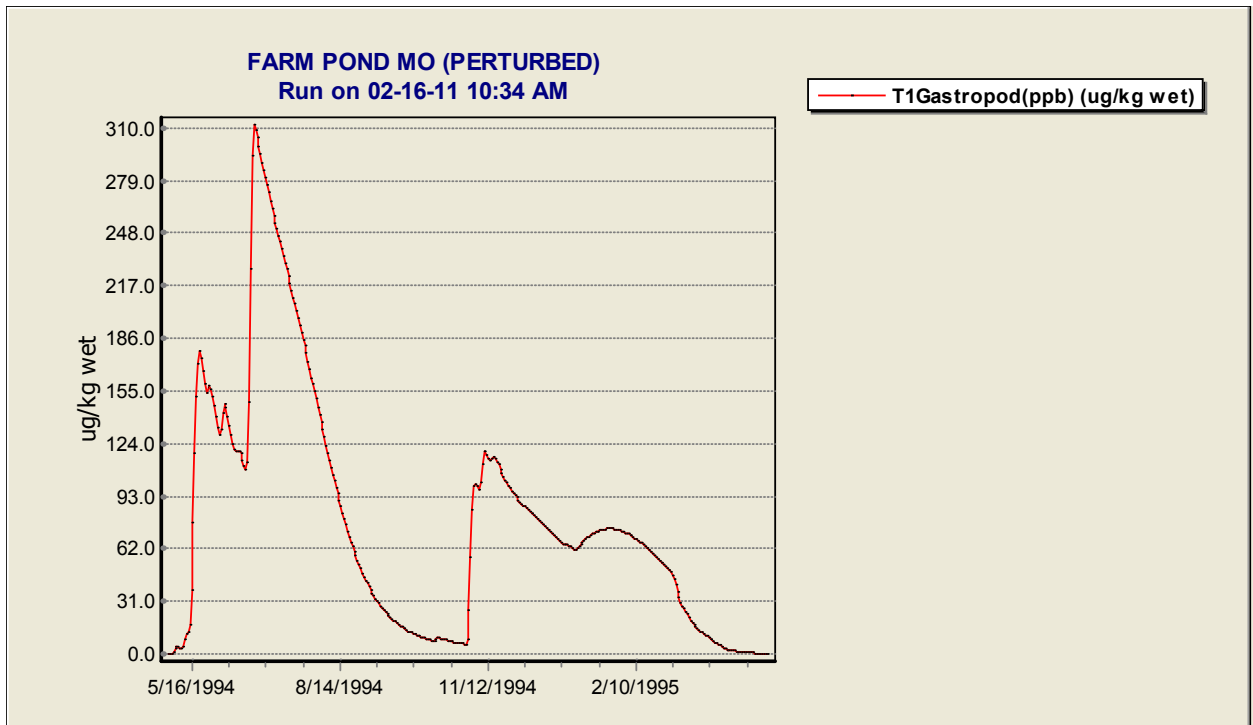
- o The Gastropod toxicant concentration reflects the water column concentration

- If time permits, explore graphs containing other output categories (i.e. detrital state variables, bioaccumulation factors).

FARM POND MO (PERTURBED)
Run on 02-16-11 10:34 AM

Legend:
- R detr sed (g/m2 dry)
- L detr sed (g/m2 dry)
- R detr diss (mg/L dry)
- L detr diss (mg/L dry)
- R detr part (mg/L dry)
- L detr part (mg/L dry)

FARM POND MO (PERTURBED)
Run on 02-16-11 10:34 AM

Legend:
- BAF Lipid T1Peri High-Nut Diatom (log10BAF lipid)
- BAF Lipid T1Phyt High-Nut Diatom (log10BAF lipid)
- BAF Lipid T1Peri, Green (log10BAF lipid)
- BAF Lipid T1Phyto, Green (log10BAF lipid)
- BAF Lipid T1Phyt, Blue-Greens (log10BAF lipid)
- BAF Lipid T1Cryptomonas (log10BAF lipid)
- BAF Lipid T1Myriophyllum (log10BAF lipid)
- BAF Lipid T1Chironomid (log10BAF lipid)
- BAF Lipid T1Daphnia (log10BAF lipid)
- BAF Lipid T1Copepod (log10BAF lipid)
- BAF Lipid T1Sphaerid (log10BAF lipid)
- BAF Lipid T1Mayfly (Baetis) (log10BAF lipid)
- BAF Lipid T1Rotifer, Keratella (log10BAF lipid)
- BAF Lipid T1Gastropod (log10BAF lipid)
- BAF Lipid T1Shiner (log10BAF lipid)
- BAF Lipid T1Largemouth Bass, YOY (log10BAF lipid)
- BAF Lipid T1Largemouth Bass, Lg (log10BAF lipid)