



Geomorphology Update

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Summary of current field projects

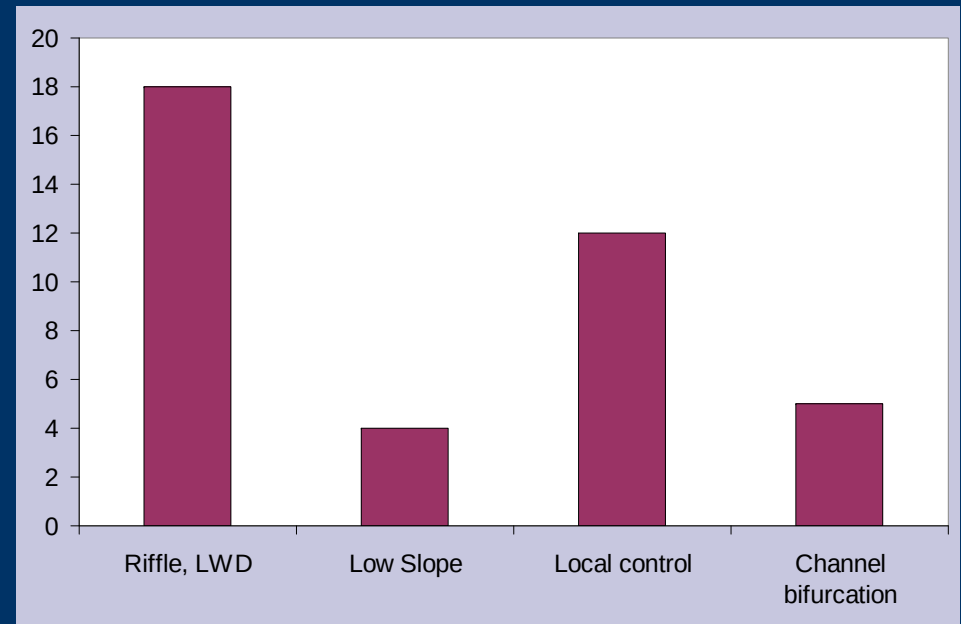
- Quantified number of mud deposits from Hopeman to Forestry Station
 - 39 deposits of varying size in this reach
(11 Hopeman to Dooms, 23 Dooms to Crimora, 5 Crimora to Forestry Station)
- Mud deposits have been categorized based on formation processes

Variables controlling mud storage

- Slope
- Riffles
- LWD
- Trees
- Scalloped banks
- Beaver activity
- Islands, bars
- Backwaters

Working Hypothesis of Mud Storage Controls

- ☛ Riffles and LWD (18)
- ☛ Low Slope (4)
- ☛ Local control (12)
- ☛ Channel Bifurcation (5)

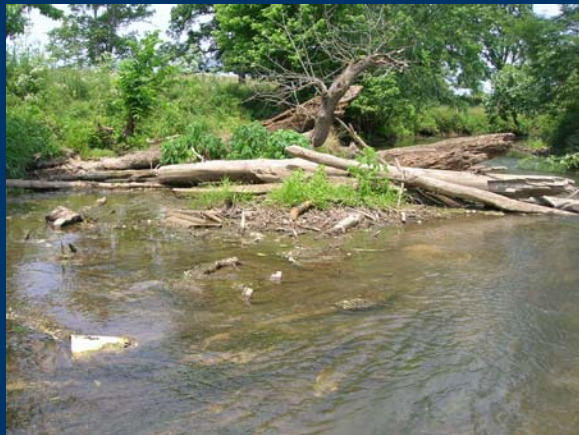




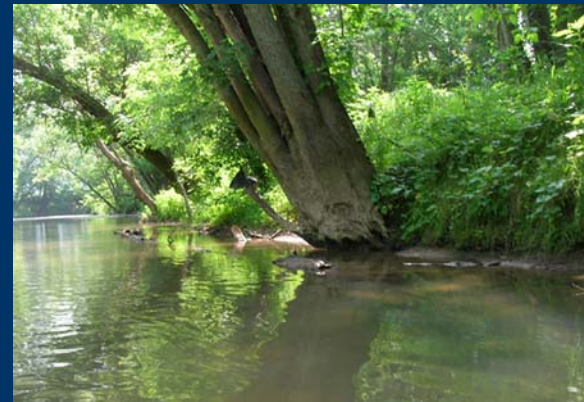
Riffle, LWD



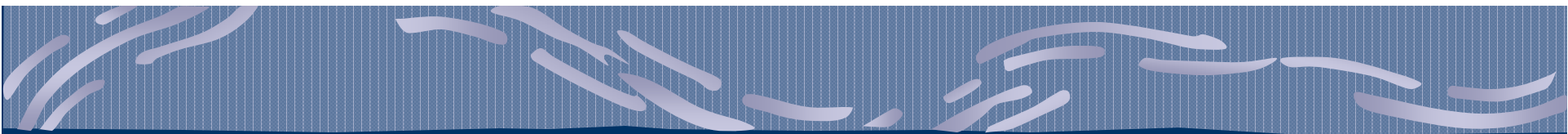
Low Slope, Pool



Channel Bifurcation



Local Control



Mud volume estimates

- Obtained volume estimates for mud deposits from plant to Forestry Station (23)
 - an average mud deposit is about 20 m long, 4 m wide and 80 cm deep

Field projects summary

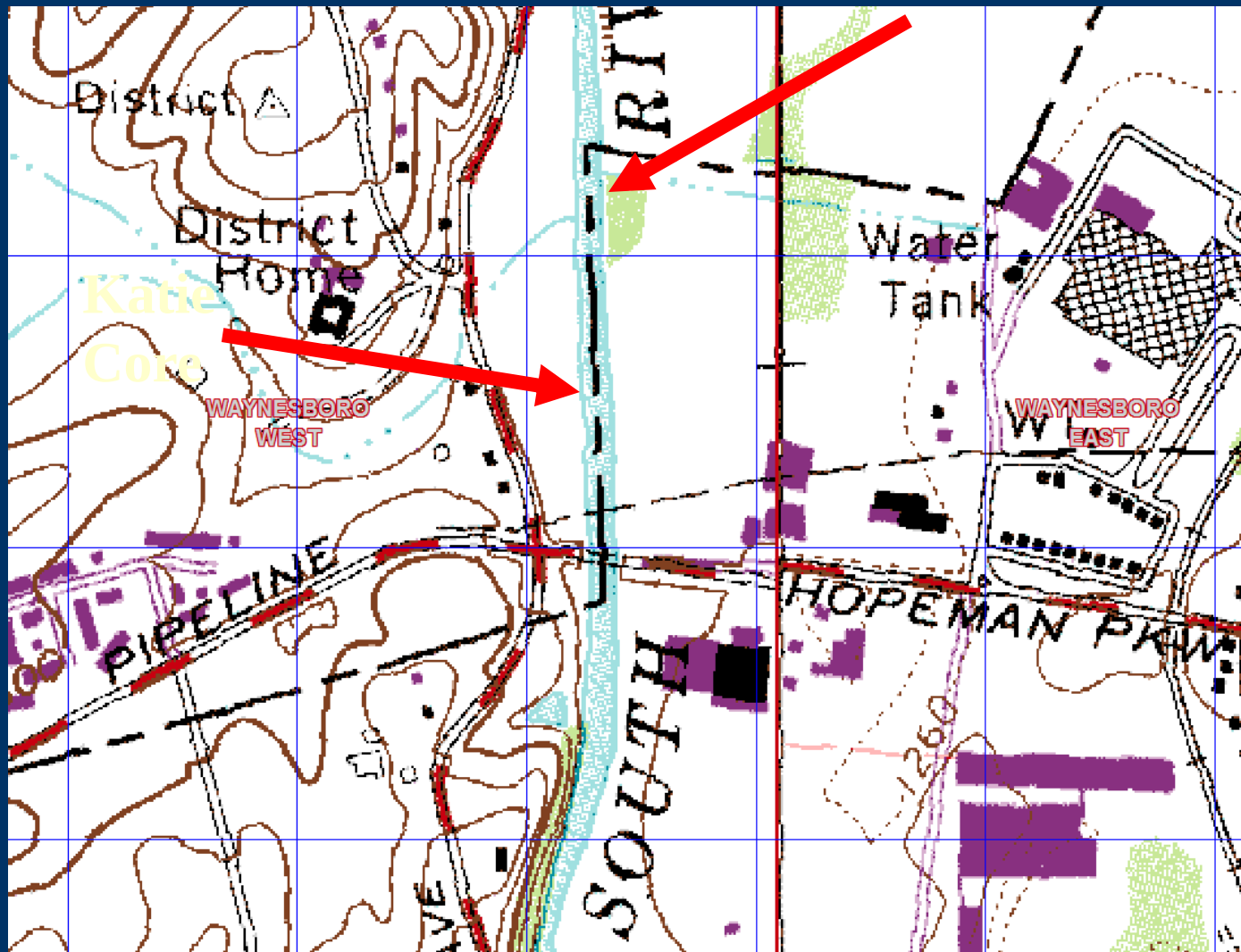
- ☛ Floated to Forestry Center for first time:
 - mapped geomorphic features
 - quantified mud deposits and volumes
- ☛ More bedrock, higher slope, less mud storage

Coring Mud Deposits

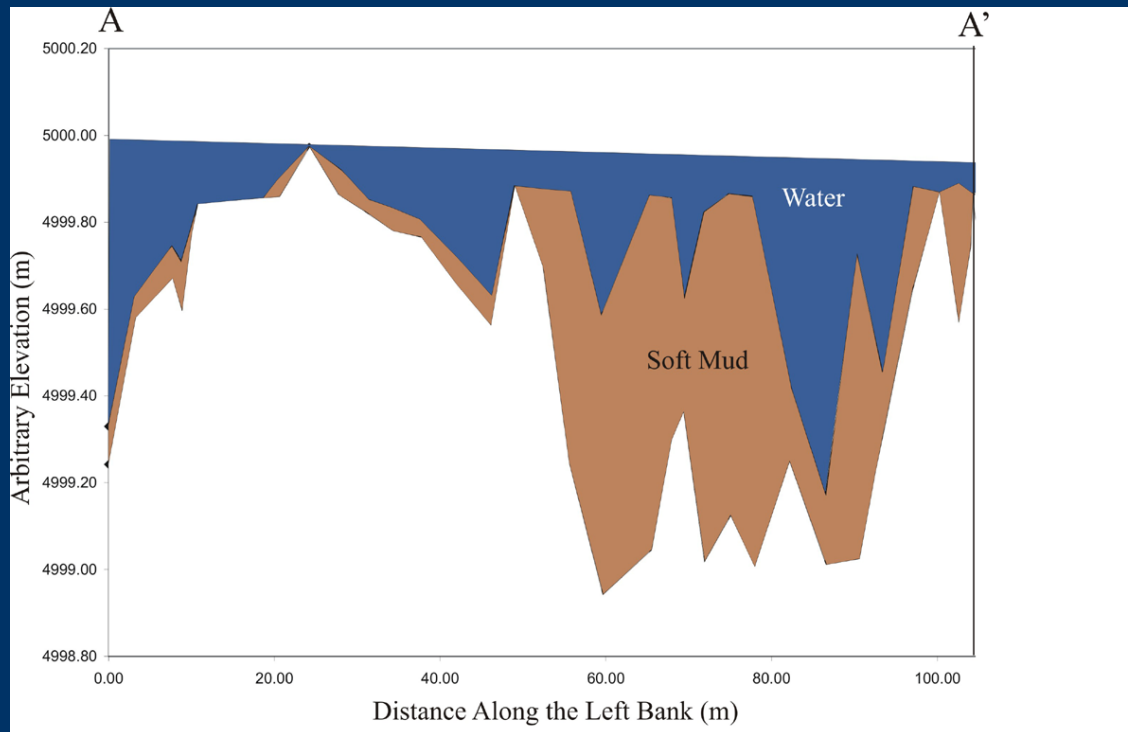


- Attempted to core selected mud deposits (Hopeman to Dooms) but largely unsuccessful due to the nature of deposits
 - tested various methods and options
 - 4 cores taken and sent for analysis (incomplete sections)

Location of Katie's Core



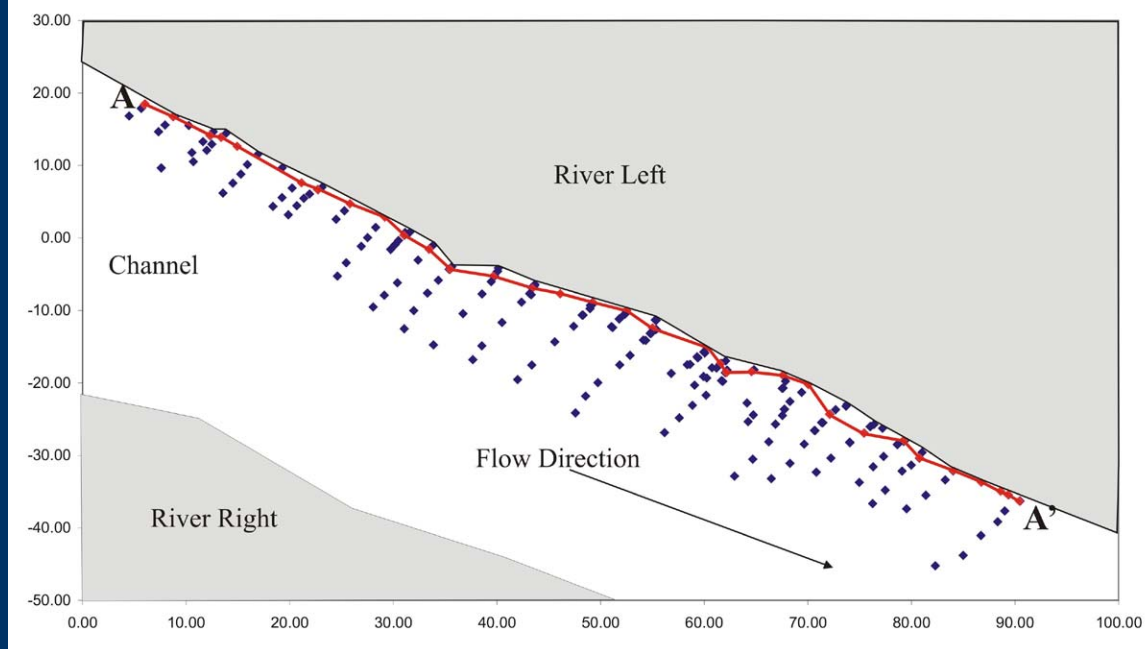
Core 1 results indicate high Hg levels!



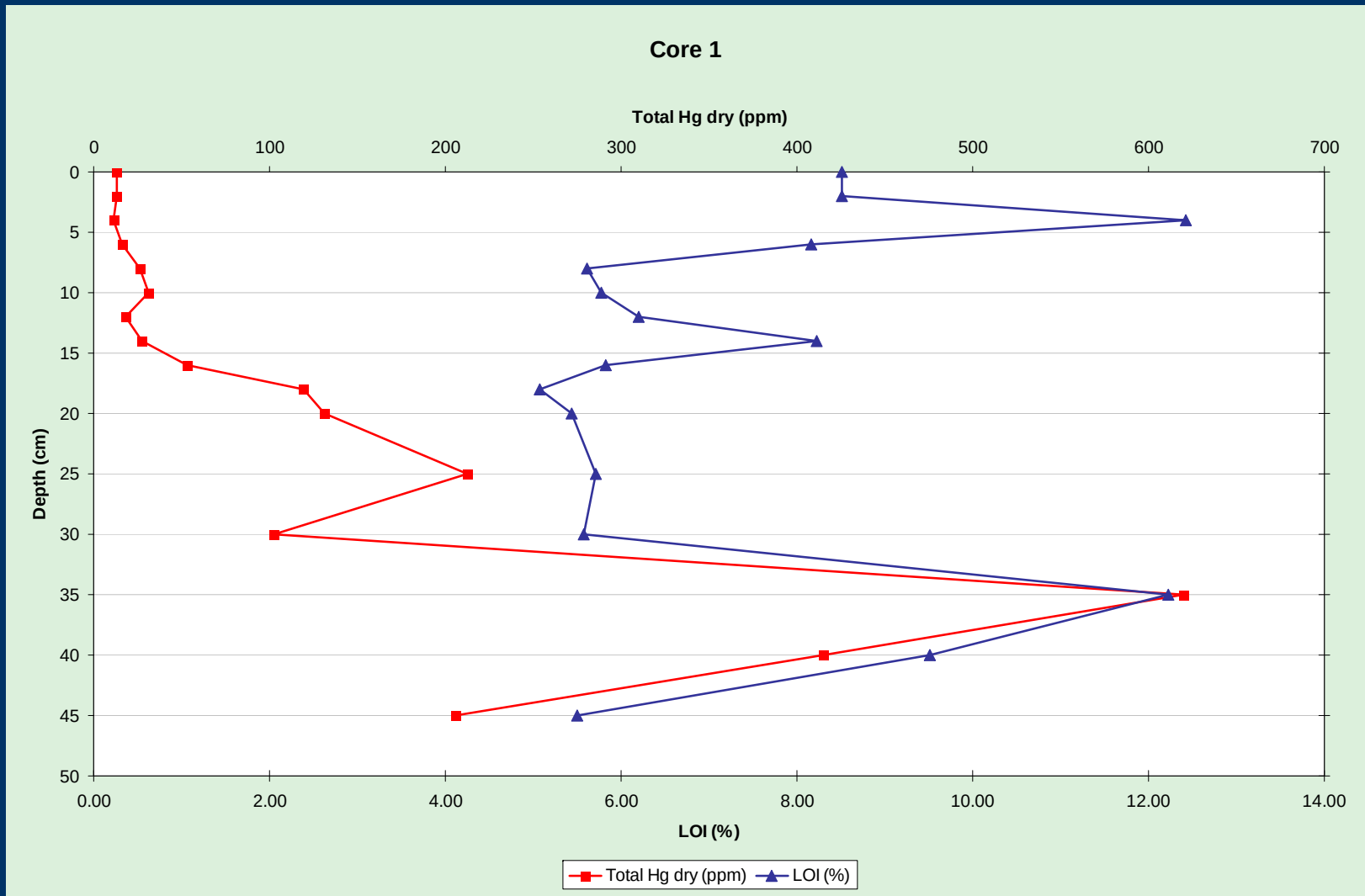


Cores 1 and 3

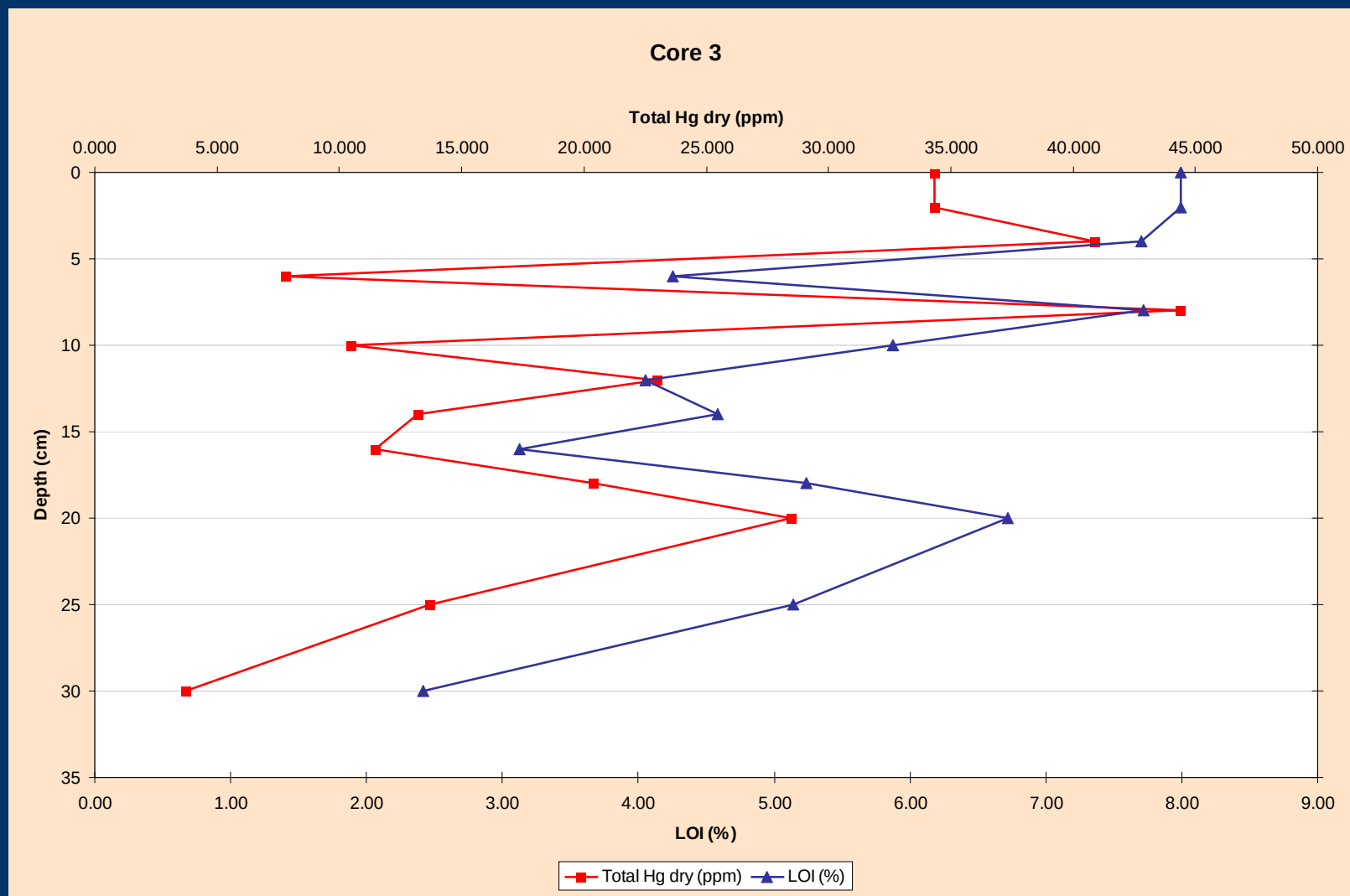
Mud Mapping Survey



Core 1



Core 3

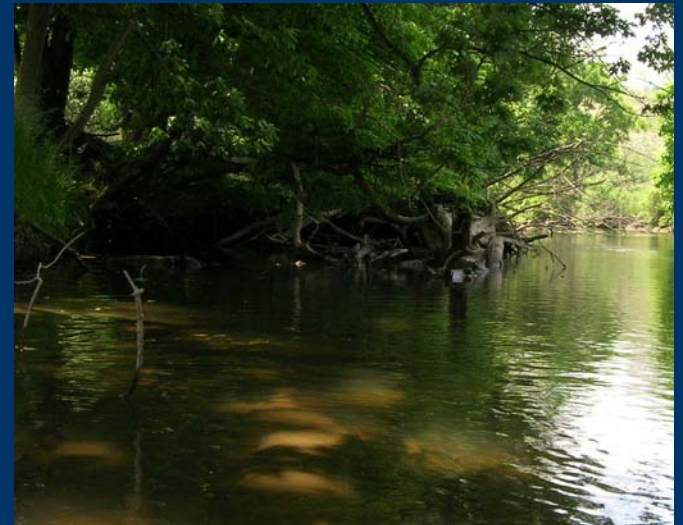


Core 4 and 5 (between Hopeman and Dooms)

- Core 4: grab sample at an eddy
 - Total Hg 0.62 ppm



- Core 5: LWD riffle deposit upstream of Dooms access
 - Total Hg 10.17 ppm



Eroding Bank Sampling

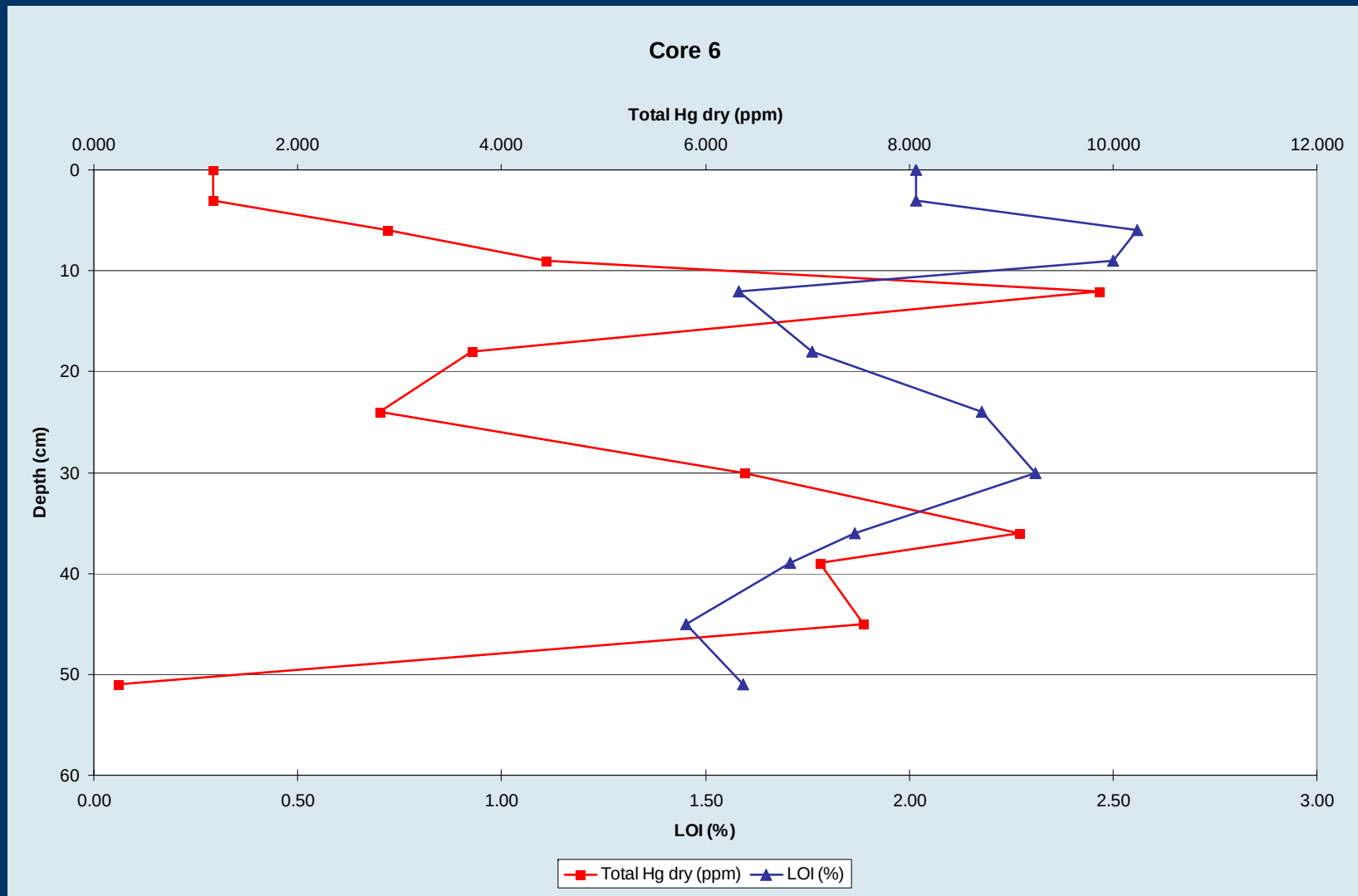
Attempted to sample banks for Hg and grain size
but stage too high

Sampled the floodplain
at Grand Caverns



Low Hg concentrations support assumption that this reach is sediment
and Hg pass-through

Core 6 (Grand Caverns)



Future Work

- Plan to have a successful coring expedition by October (maximum)
 1. Hg concentrations
 2. Grain size
 3. Radionuclide dates
- Sample eroding banks this week (Hg and grain size)
- Plan to core the channel bed to quantify mud as well as analyze for Hg
- Join the storm sampling effort
- Use aerial photos and LIDAR to obtain bank erosion rates

Thank you! Questions? Comments?

