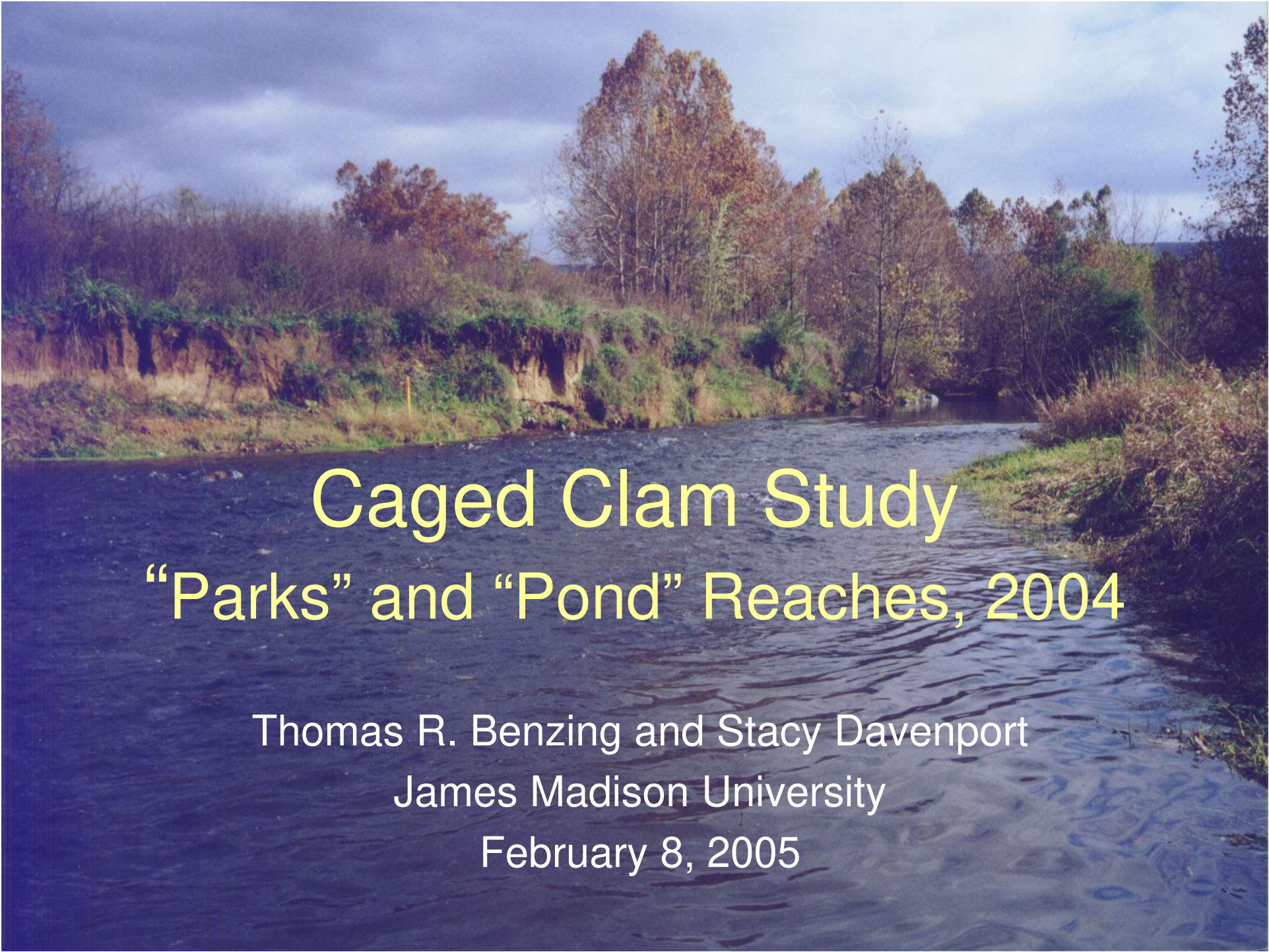




Caged Clam Study

“Parks” and “Pond” Reaches, 2004

Thomas R. Benzing and Stacy Davenport
James Madison University
February 8, 2005

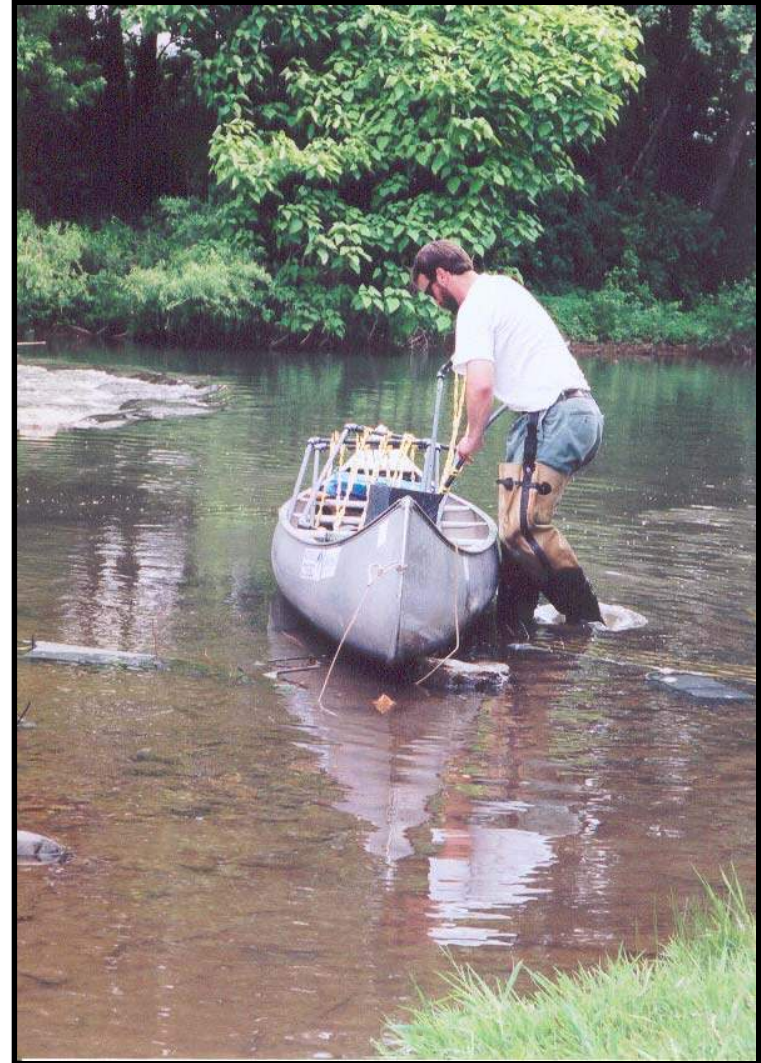
Clams taken from North River



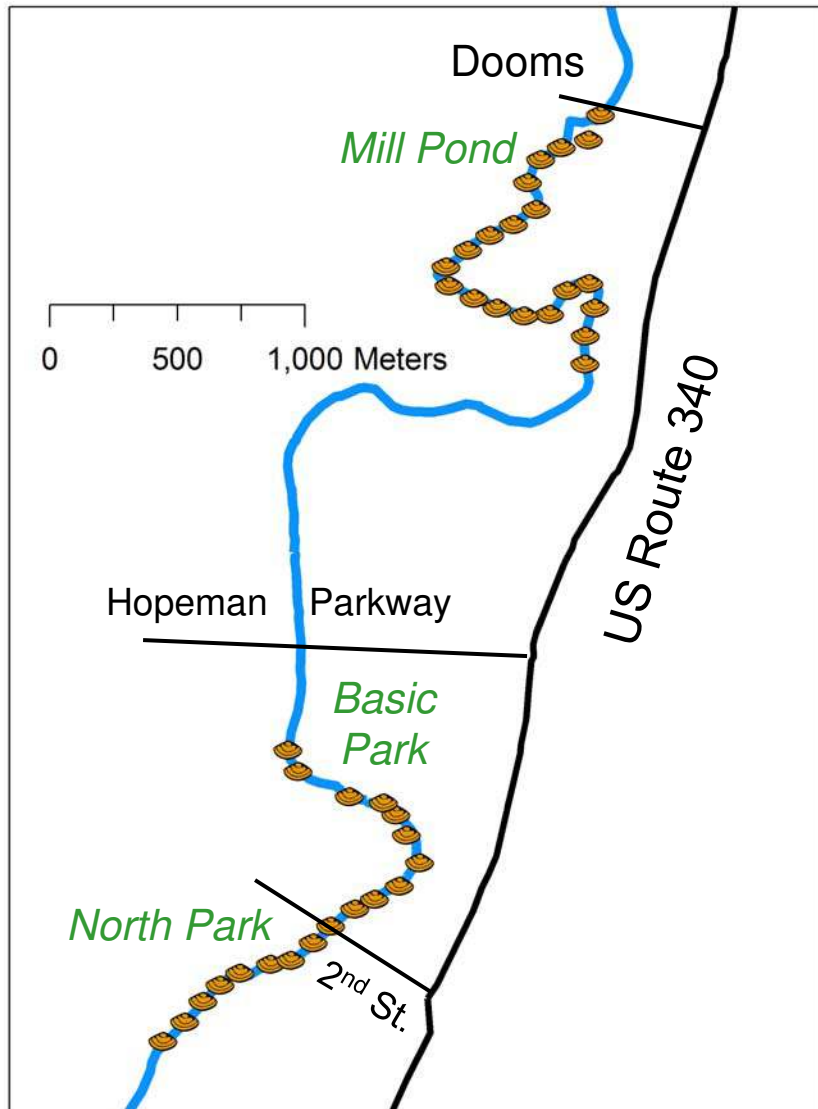
Collecting clams (above) and
sorting them by size (right)



Caging and Canoeing Clams



Clam Cage Placement

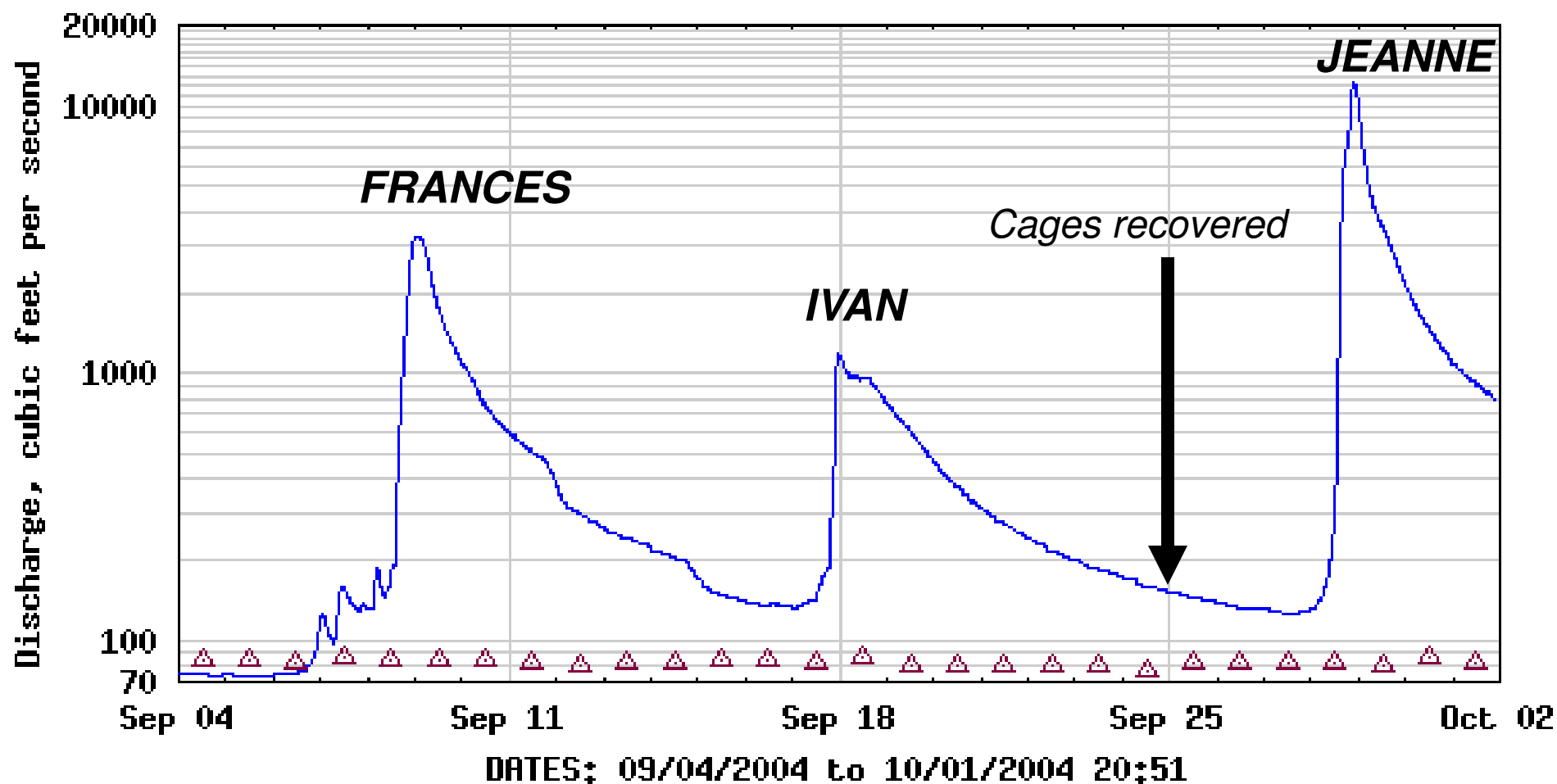


Dates of Study

- Caged Clams: North Park to Basic Park
 - Placed on July 10, 2004
 - Recovered on September 25 (after 77 days)
 - 13 of 20 cages recovered (65%)
- Caged Clams: Dooms Mill Pond
 - Placed on July 16, 2004
 - Recovered on September 25 (after 71 days)
 - 18 of 20 cages recovered (90%)



USGS 01627500 SOUTH RIVER AT HARRISTON, VA

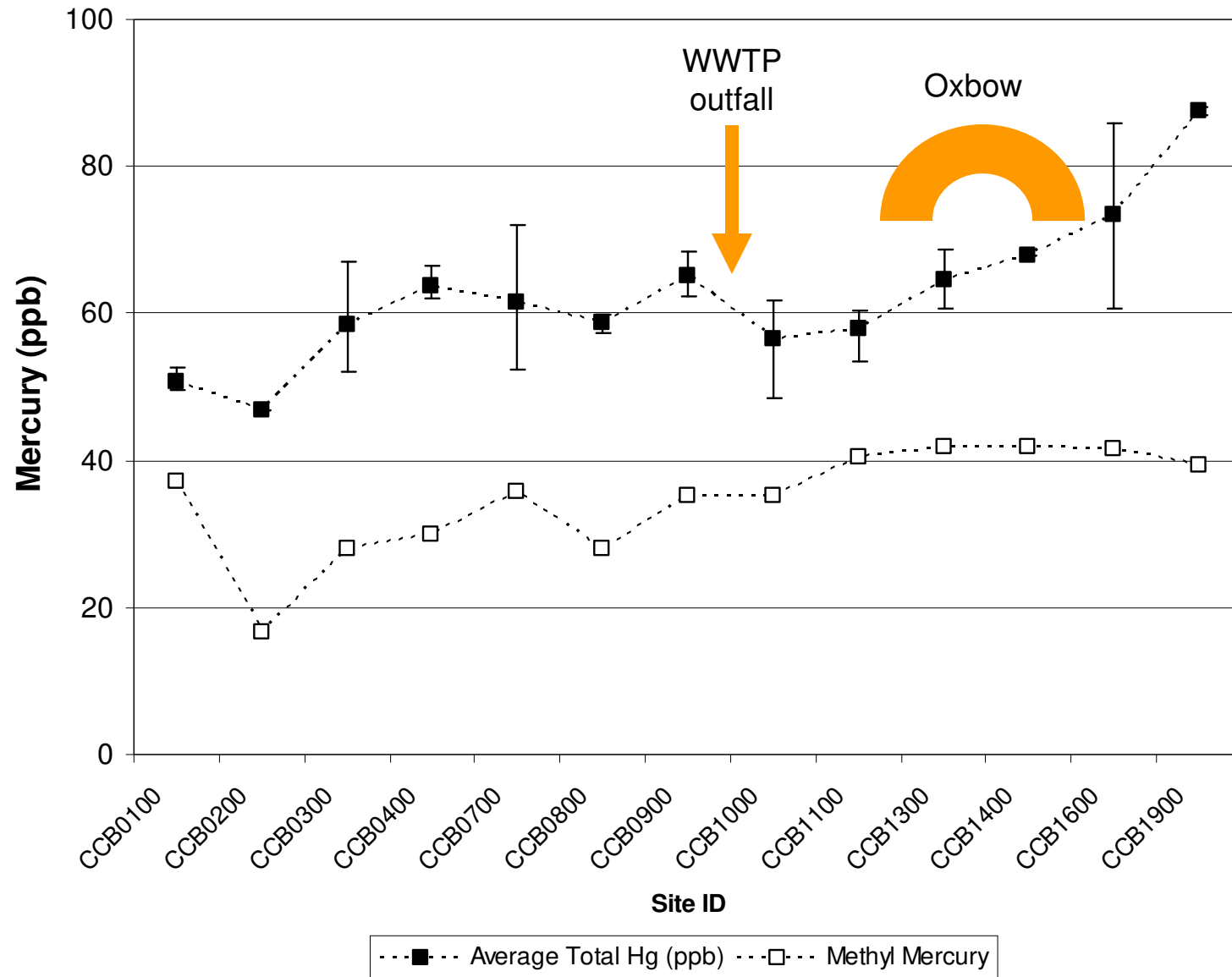


EXPLANATION

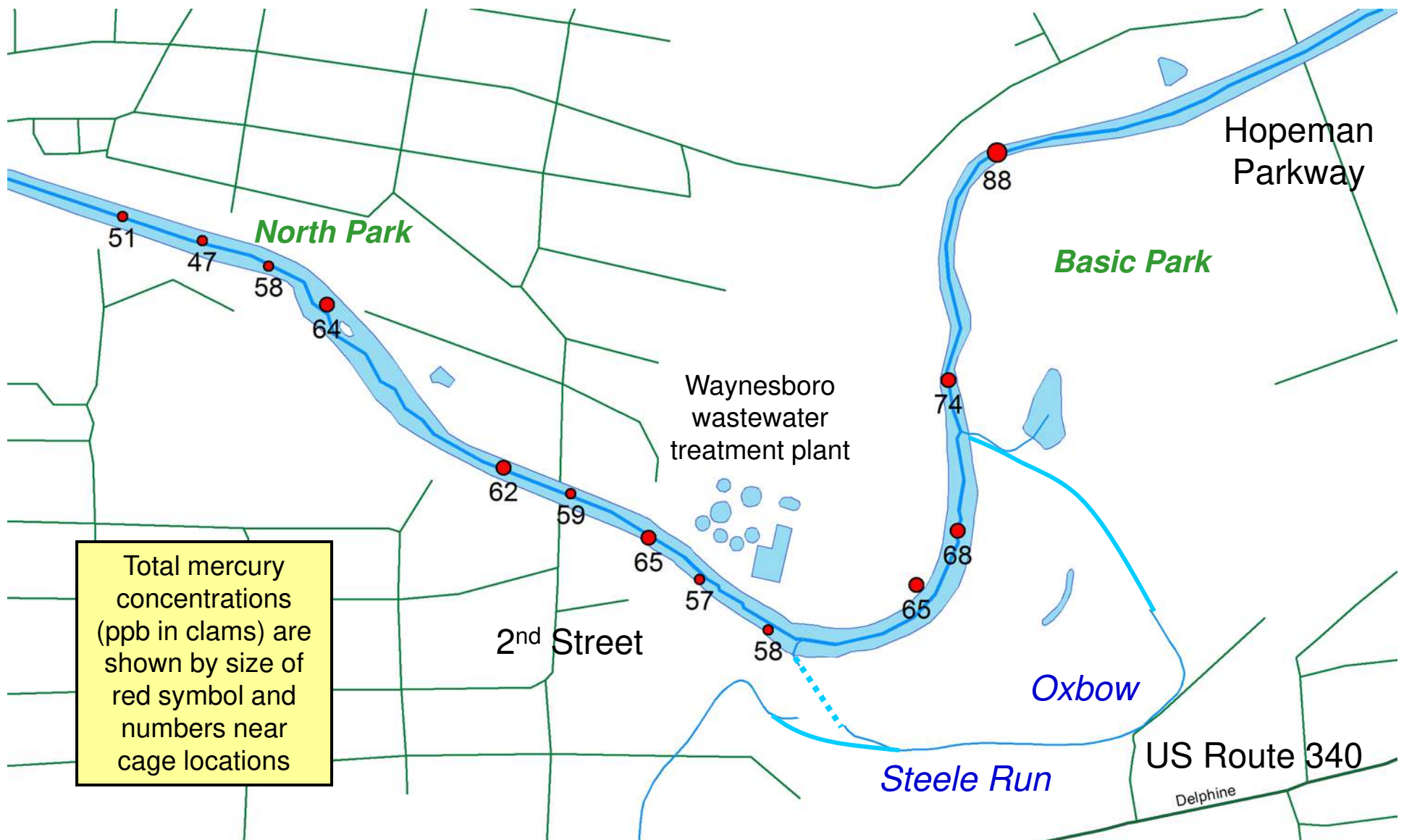
— DISCHARGE

△ MEDIAN DAILY STREAMFLOW BASED ON 61 YEARS OF RECORD

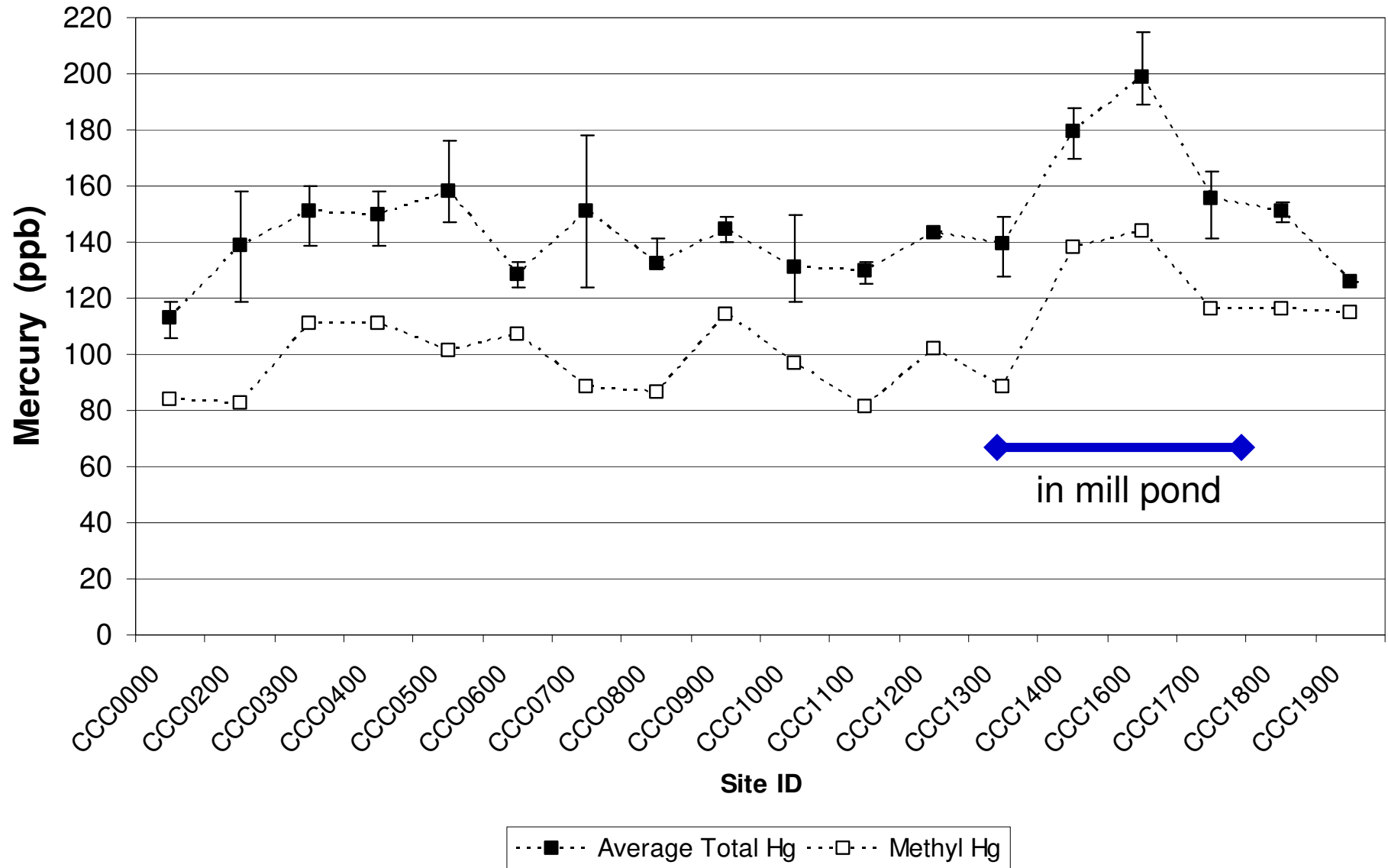
Parks Reach: Mercury by Site



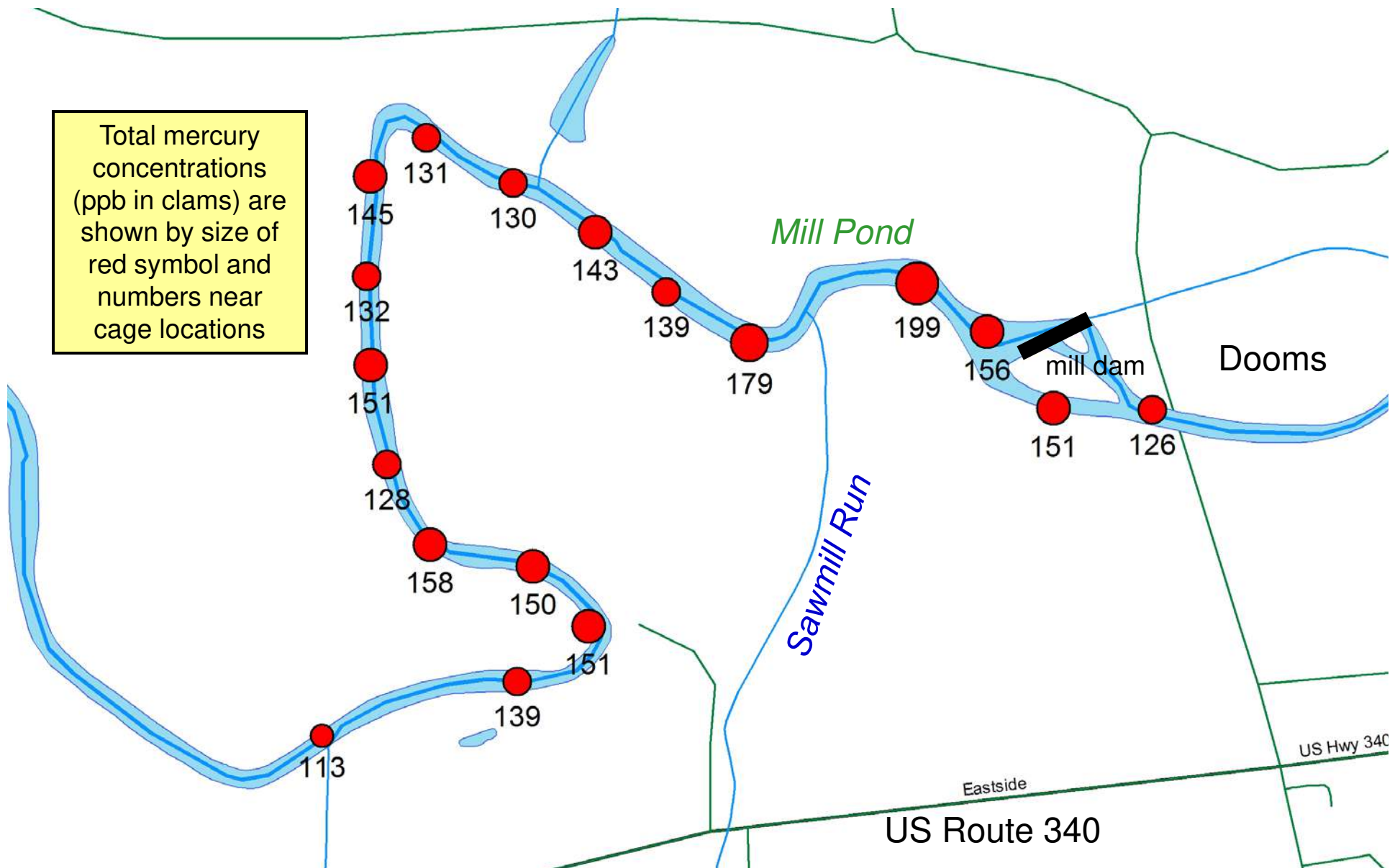
Parks Reach: Map of Mercury in Clams



Pond Reach: Mercury by Site



Pond Reach: Map of Mercury in Clams



Conclusions from Caged Clam Study, 2004

- Mercury concentrations increase downstream from Dupont's 001 outfall on South River in Waynesboro
- Mercury concentrations increase downstream from an oxbow (Steele Run confluence) near Basic Park
- Significantly higher mercury concentrations were found in the middle of the mill pond near Doods
- In the mill pond, increases in methylmercury account for the increase in total mercury concentrations
- Caging clams allowed us to monitor locations where wild clams are not easily found (e.g. Doods mill pond)
- Caged clams showed good survival rates (55.4 - 80.1%)
- Some clam cages were lost during high flow (10 of 60)

Thanks to...

Sina Pricelius

Stacy Davenport

Lee Cochran

Cheryl Heatwole

Tim Shenk

Absalom Shank

Fred Copithorn



Mark Lotts

Pete Bolton

Ashley Young

Harrison Green

Jacob Hileman

Bill Van Wart

Ted Turner