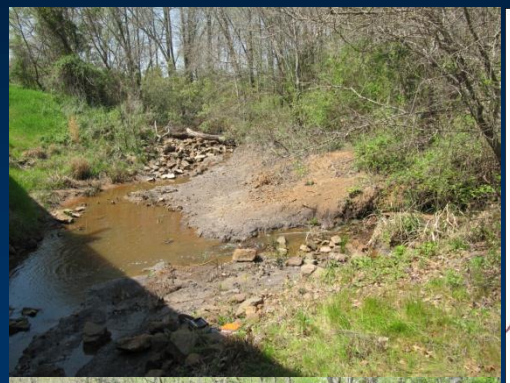
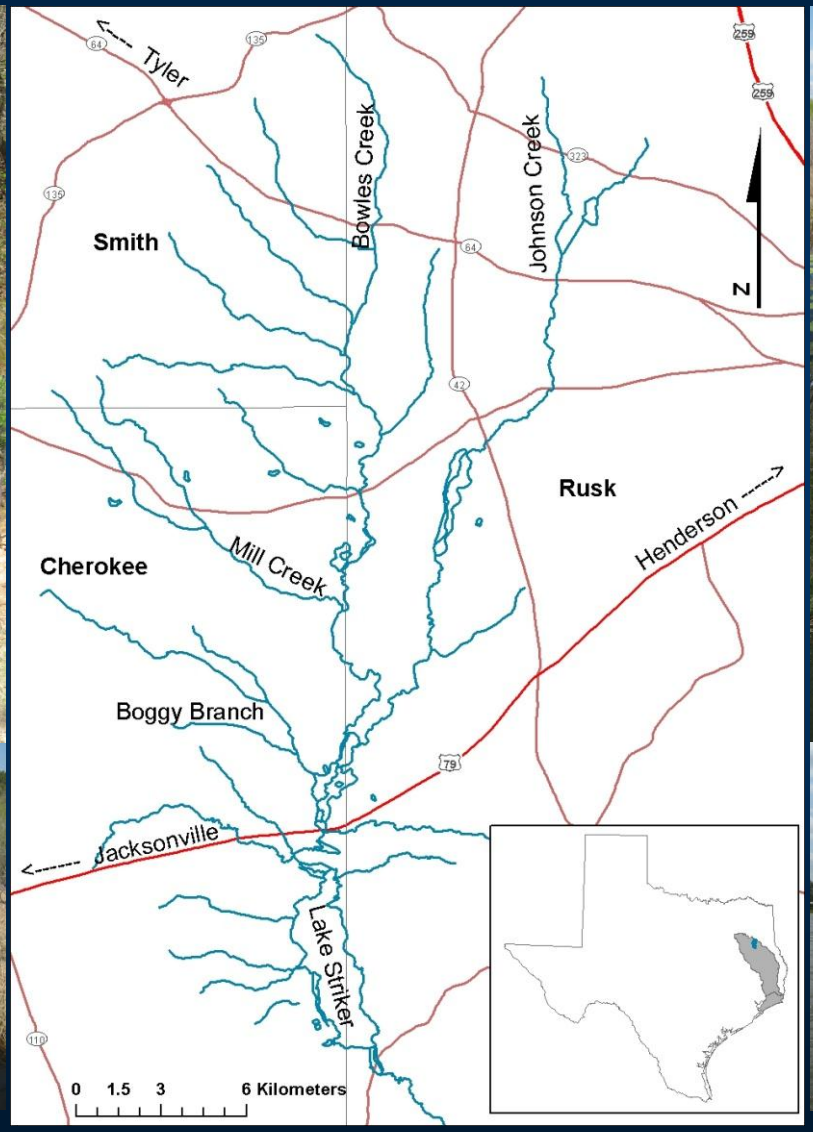
Acidification of the Lake Striker Watershed

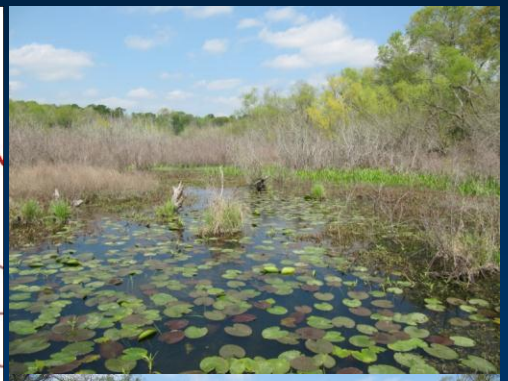
April 27, 2012

Adam Whisenant, Texas Parks and Wildlife Department

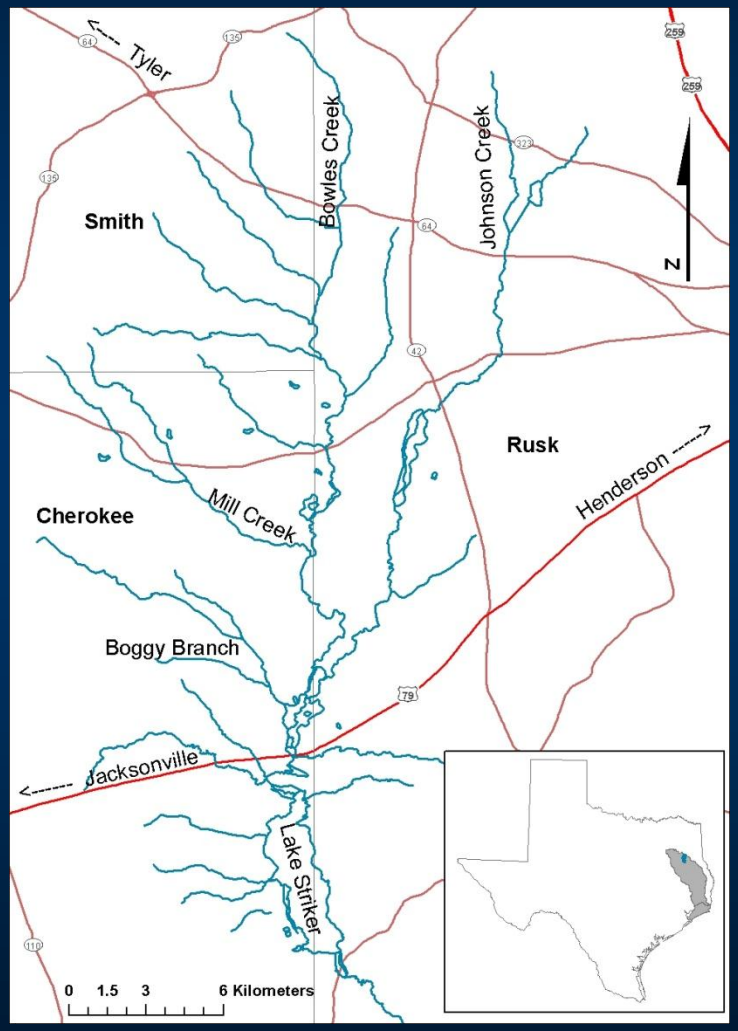
Lake Striker Watershed





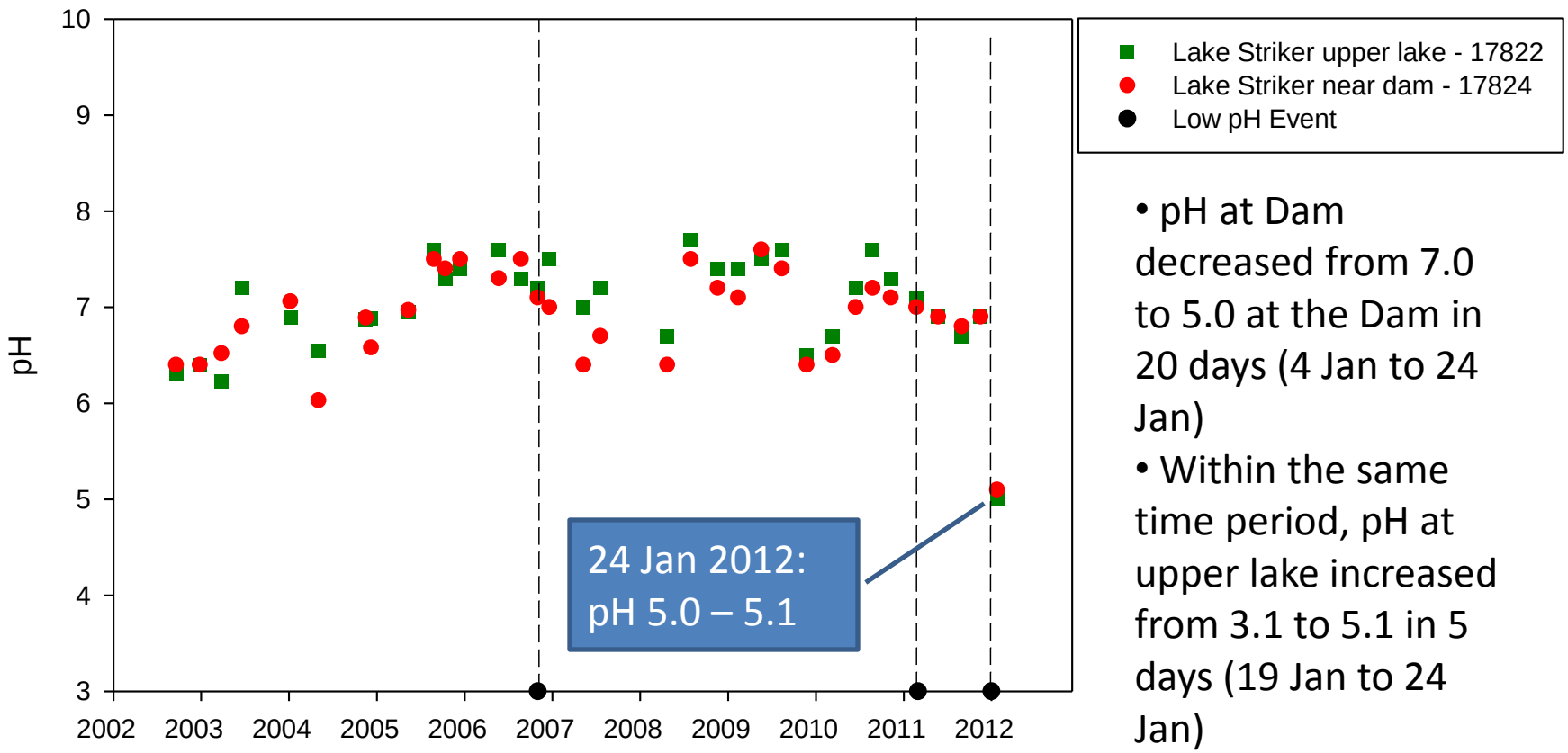


Lake Striker Watershed pH Values, 4 Jan 2012 (upstream to downstream)



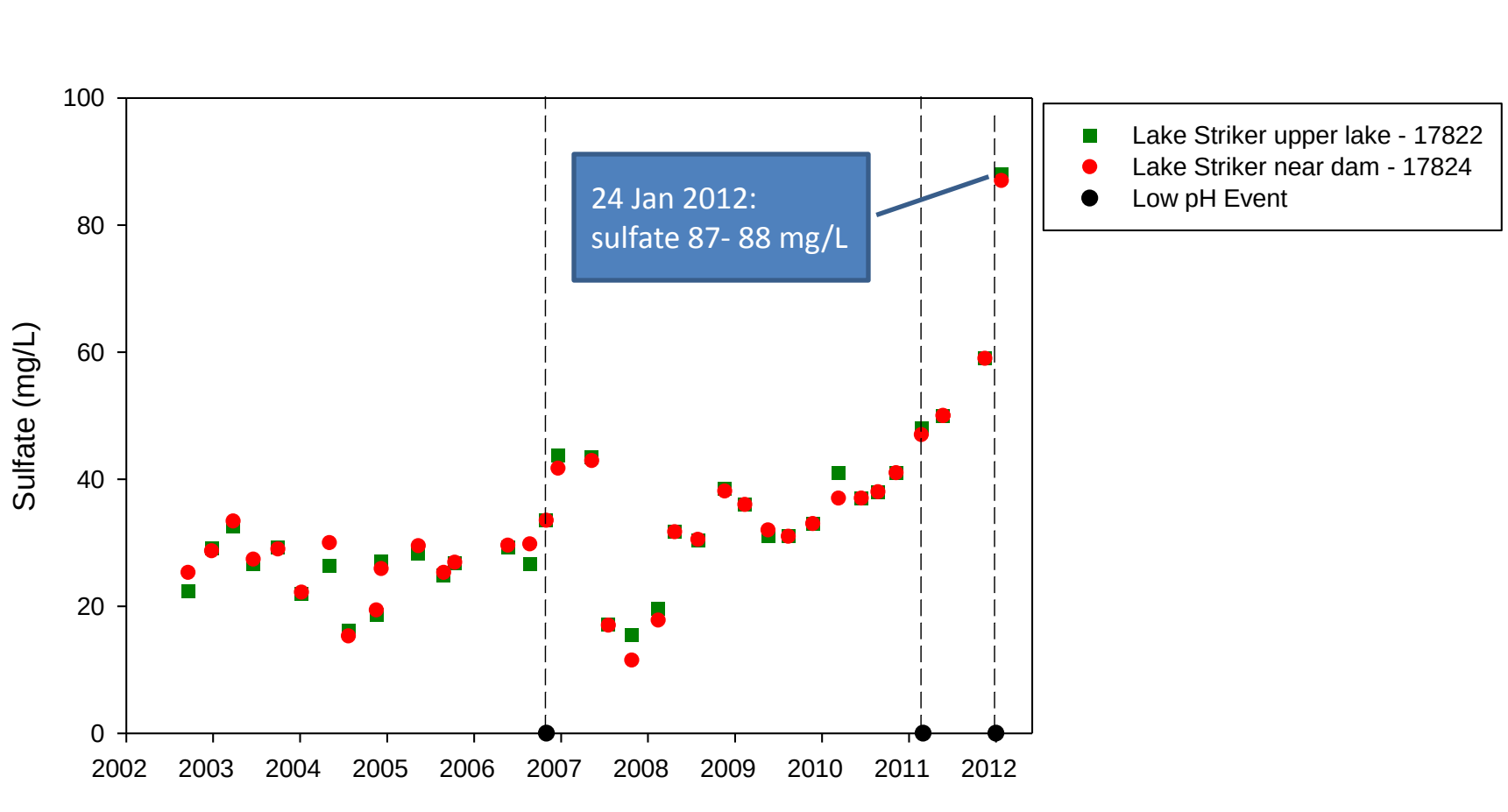
Location	pH
Bowles Creek at FM 838	7.2
Bowles Creek at Hwy 64	4.2
Johnson Creek at HWY 64	4.1
Johnson Creek at Hwy 42	4.5
Bowles Creek at Hwy 13	4.3
Trib. To Mill Creek at Hwy 856	4.0
Bowles Creek at CR 4608	3.6
Johnson Creek at CR 476	3.2
Lake Striker at County Park Boat Ramp	3.5
Lake Striker upper reservoir	3.5 – 5.1
Lake Striker mid-reservoir	4.9
Lake Striker near Dam	7.0

pH: TCEQ Surface Water Quality Monitoring Data, 2002 - 2012



- pH at Dam decreased from 7.0 to 5.0 at the Dam in 20 days (4 Jan to 24 Jan)
- Within the same time period, pH at upper lake increased from 3.1 to 5.1 in 5 days (19 Jan to 24 Jan)

Sulfate Concentrations in Lake Striker are on the Rise



The Cause of the Acidic Water?

- Likely not pollution
- Soil chemistry
- Oxidation of organic matter
- Low buffering capacity in watershed
- Drought

Lake Striker, Jan 2012

Effects to the Fish Community and Ecosystem

- Short-term impacts
  - Fish kills
- Long-term impacts?
  - Impacts to species richness and abundance
  - Impacts to the fishery in Lake Striker

Bowles Creek, Nov 2006

Acidic Water Events are Becoming More Common in East Texas

- Recent records of low pH fish kills in the Cypress Creek, Sabine River, Neches River, and Trinity River basins
- Reports of low pH fish kills in private lakes in fall/winter: 2005 - 2007 and winter 2012

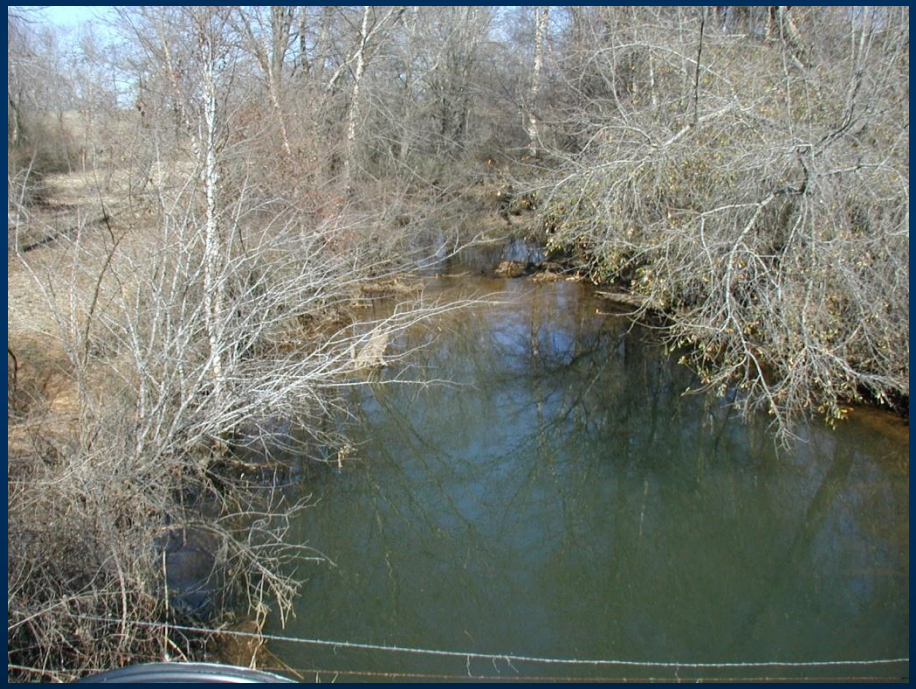
Tucker Lake, north Toledo Bend Reservoir, Jan 2012

Effects of Acidic Water in East Texas

pH: 6.5

Clear Creek - Summer 2005

pH: 3.5



Clear Creek - Winter 2006

Next Steps

- More watershed information is needed:
  - Continue to monitor acidic water events
  - Soil chemistry data
  - Biological surveys

Contact Information

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