SCOTT LADD MEMORIAL INTERNSHIP

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Part I: Objective

- To revisit July 2002 survey of Rountree Branch which was completed by the UWP biology department.

Rountree Branch

- Is a 3rd order stream located in Grant County, WI.
- It originates northwest of Platteville and runs through the municipality and drains into the Little Platte River.

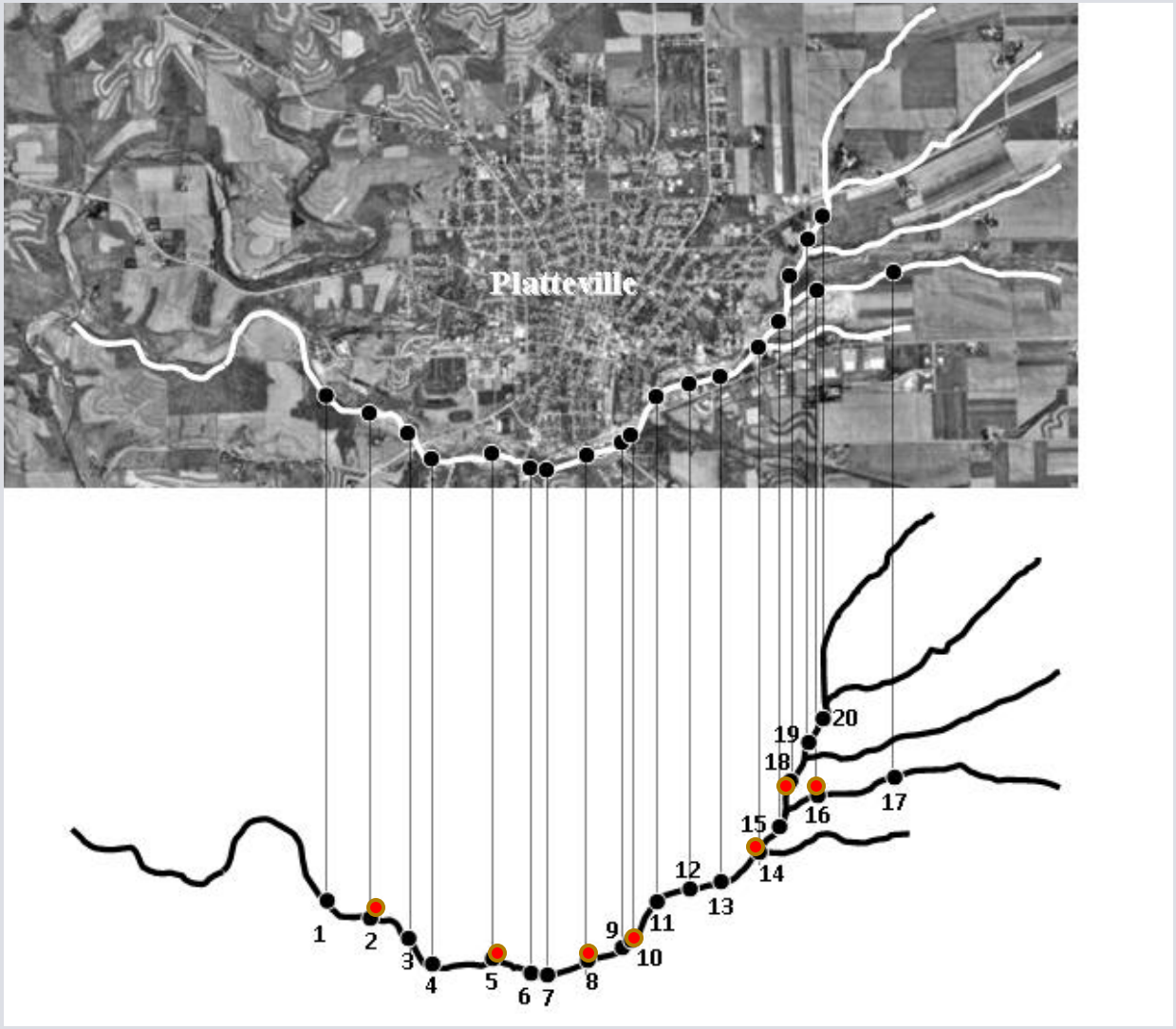
2002 Research

- During the summer of 2002, twenty sites were sampled along an approximately 3.5 mile section of the Rountree Branch.
- All sites were 50 meters in length.

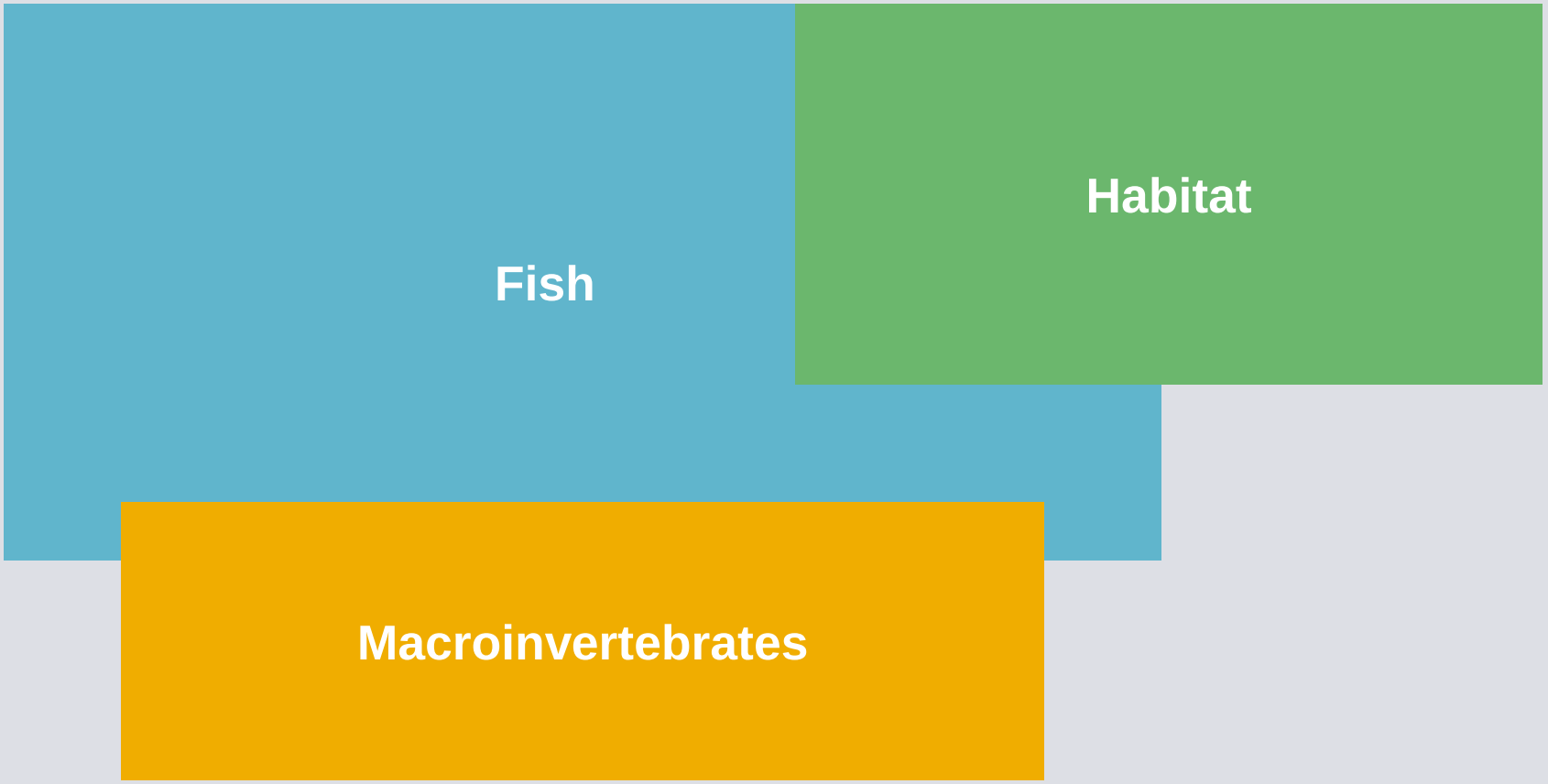
Rountree Branch 2007

- 7 sites 50 meters in length
- Fish Collection at all sites
- 3 Invertebrate samples per site
- Habitat inventory in 10 meter intervals

Map of Site Locations



Procedure



Surveying Protocol Rountree Branch

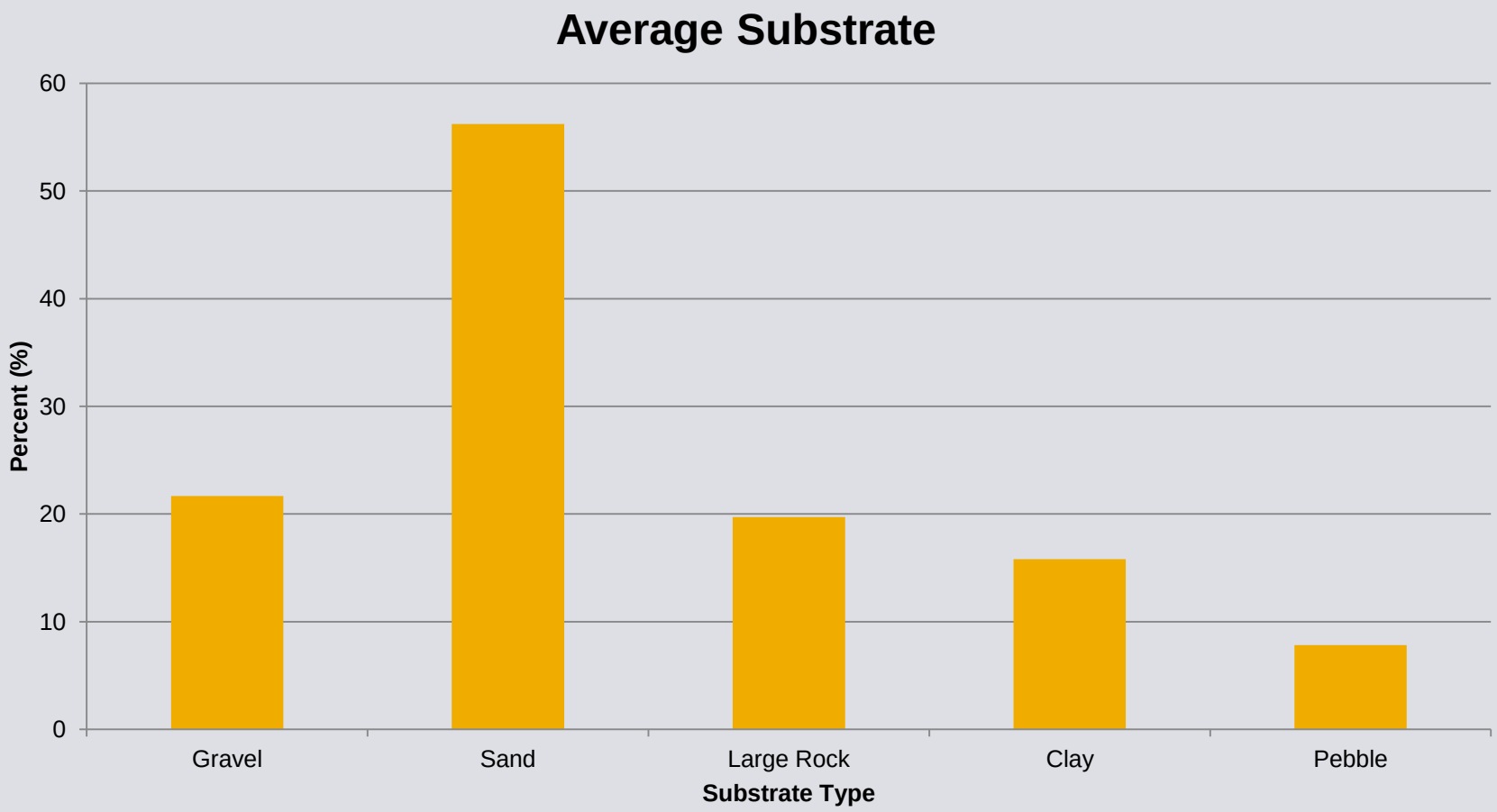
- The survey included physical habitat, macro-invertebrates, and fish following guidelines and methods of the 2002 study.

Survey Results

Rountree Habitat

- There was a high variability between sites.
- This was consistent with 2002 results.

Substrate


Average Substrate
60
50
40
30
20
10
0
Percent (%)
Gravel
Sand
Large Rock
Clay
Pebble
Substrate Type

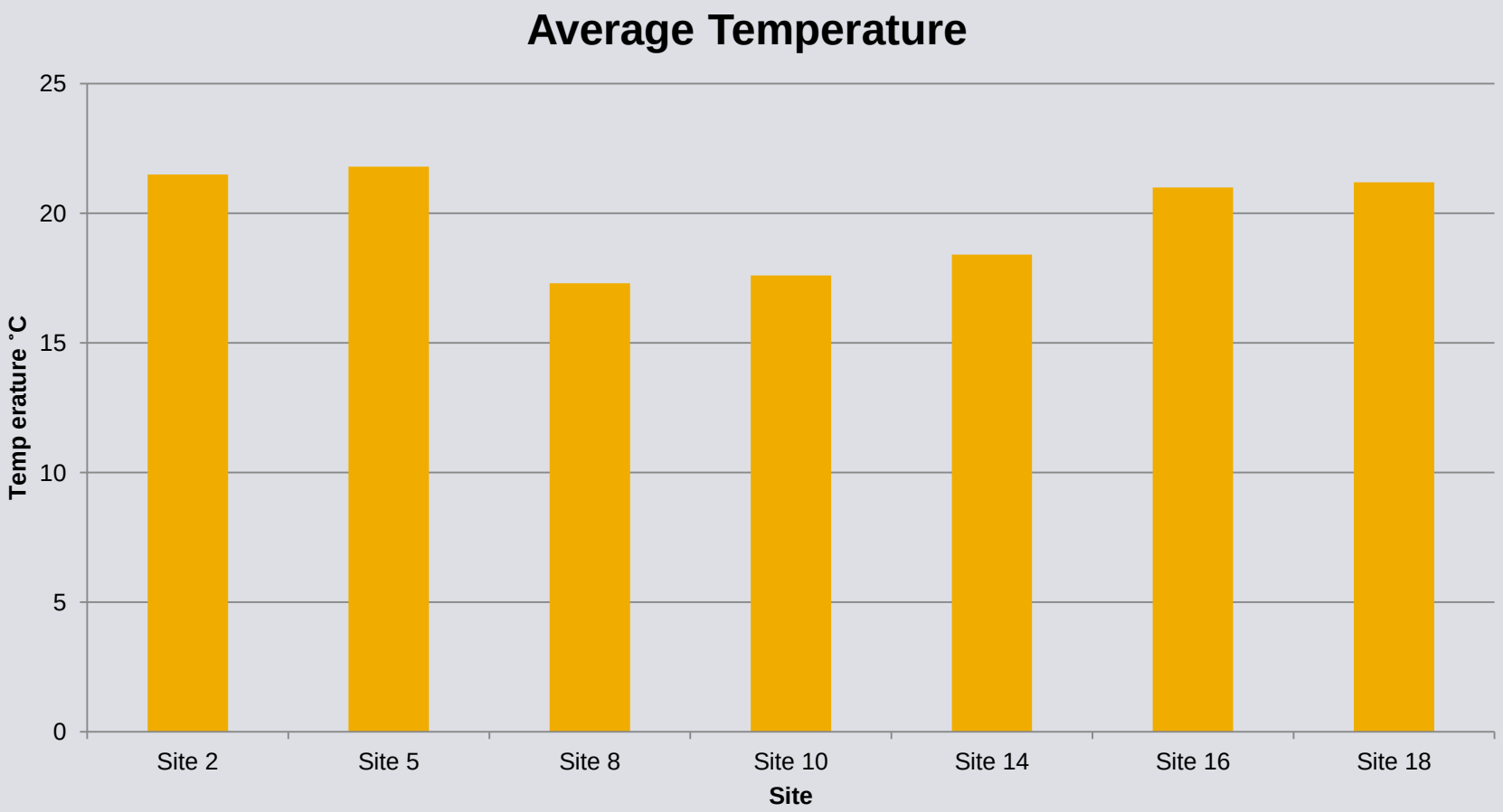
Average Depths

- 2007 Average River Depth = 24.10cm
- 2007 Average Substrate Depth = 24.91cm
- 2002 Average River Depth= 21.3cm
- 2002 Average River Width= 5.16m

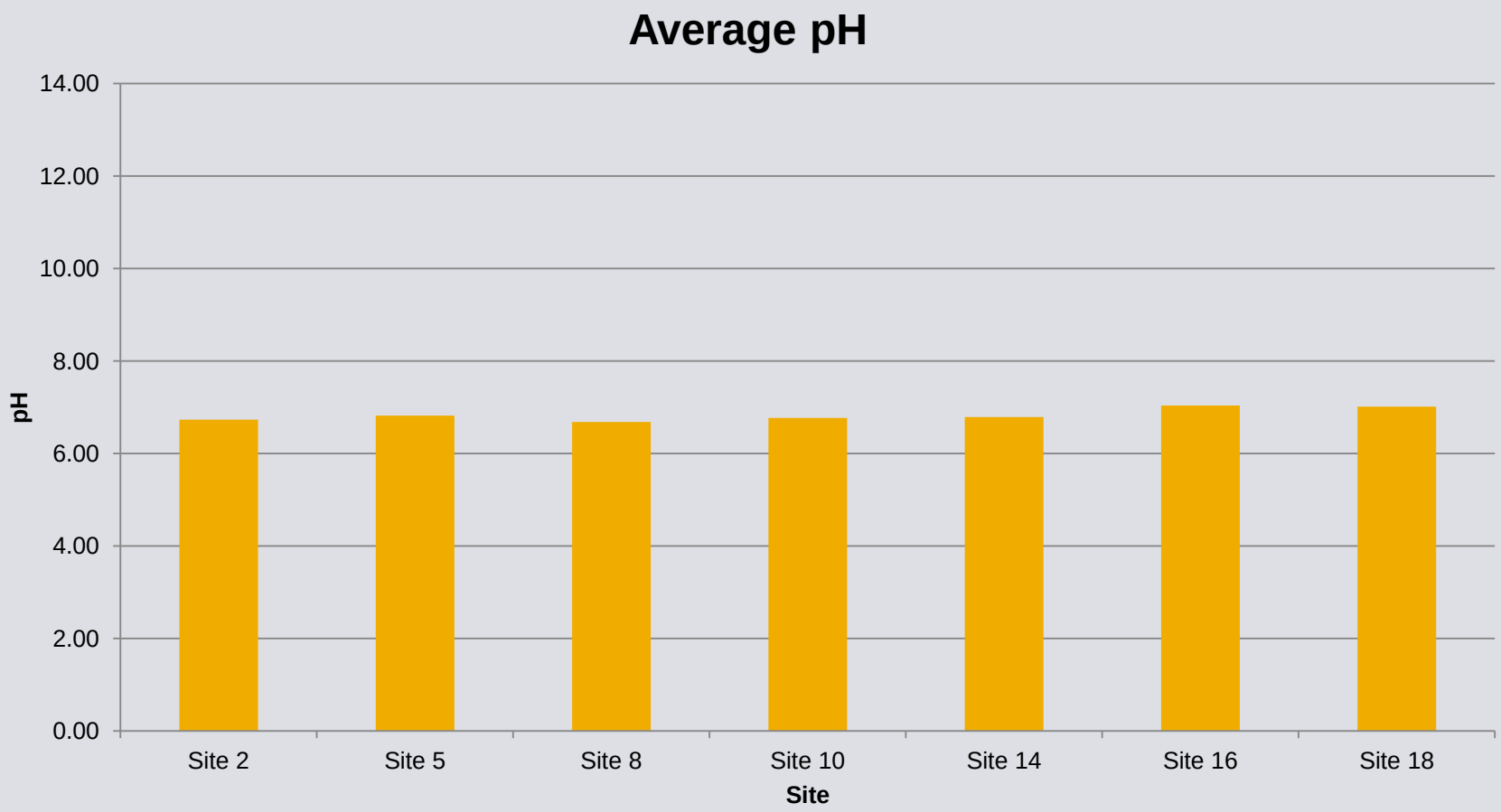
Erosion and Cover

- Average percent cover= 44.29%
- Average erosion on the left bank= 0.39 m
- Average erosion on the right bank=1.36 m

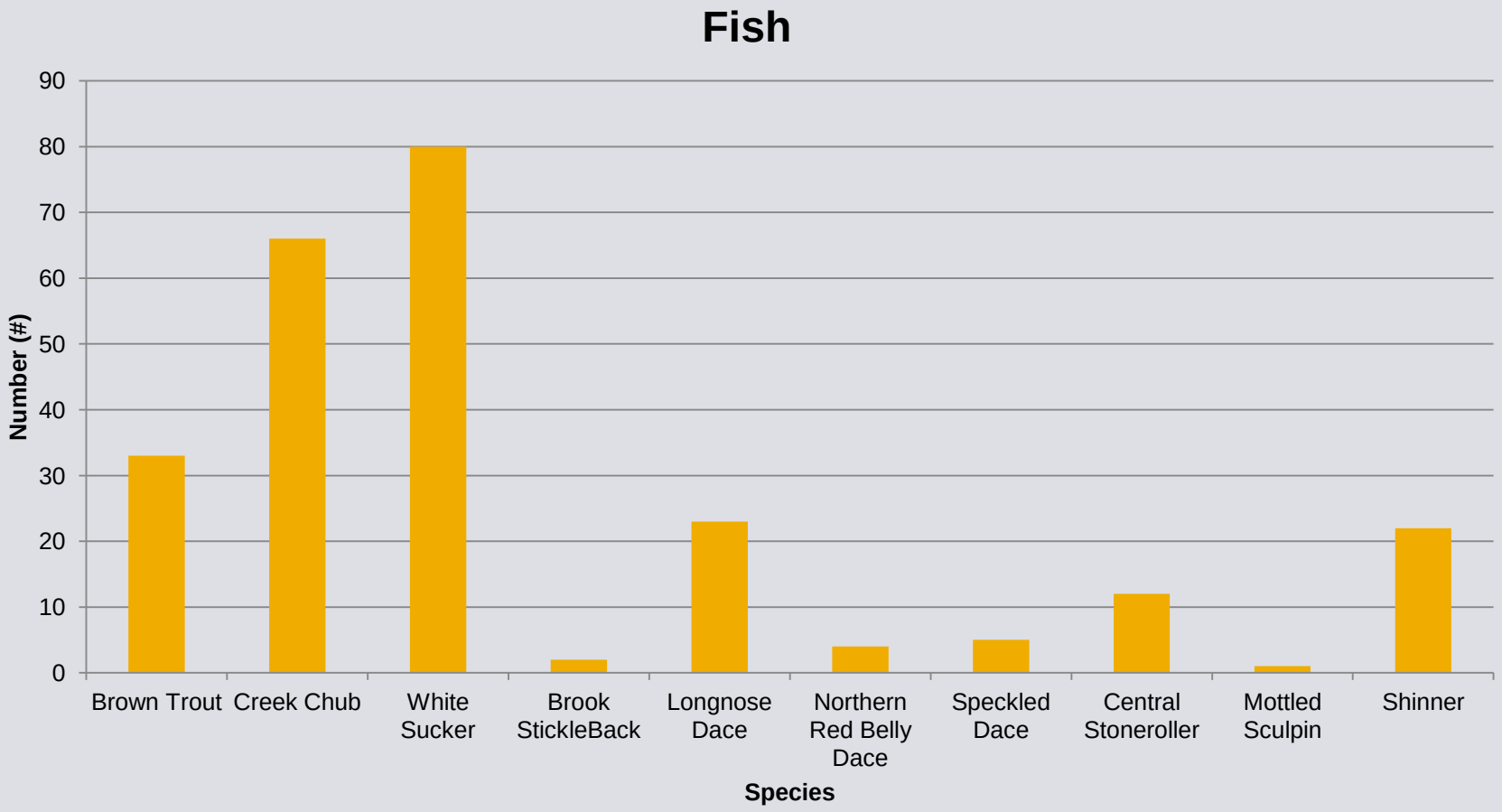
Average: Temperature



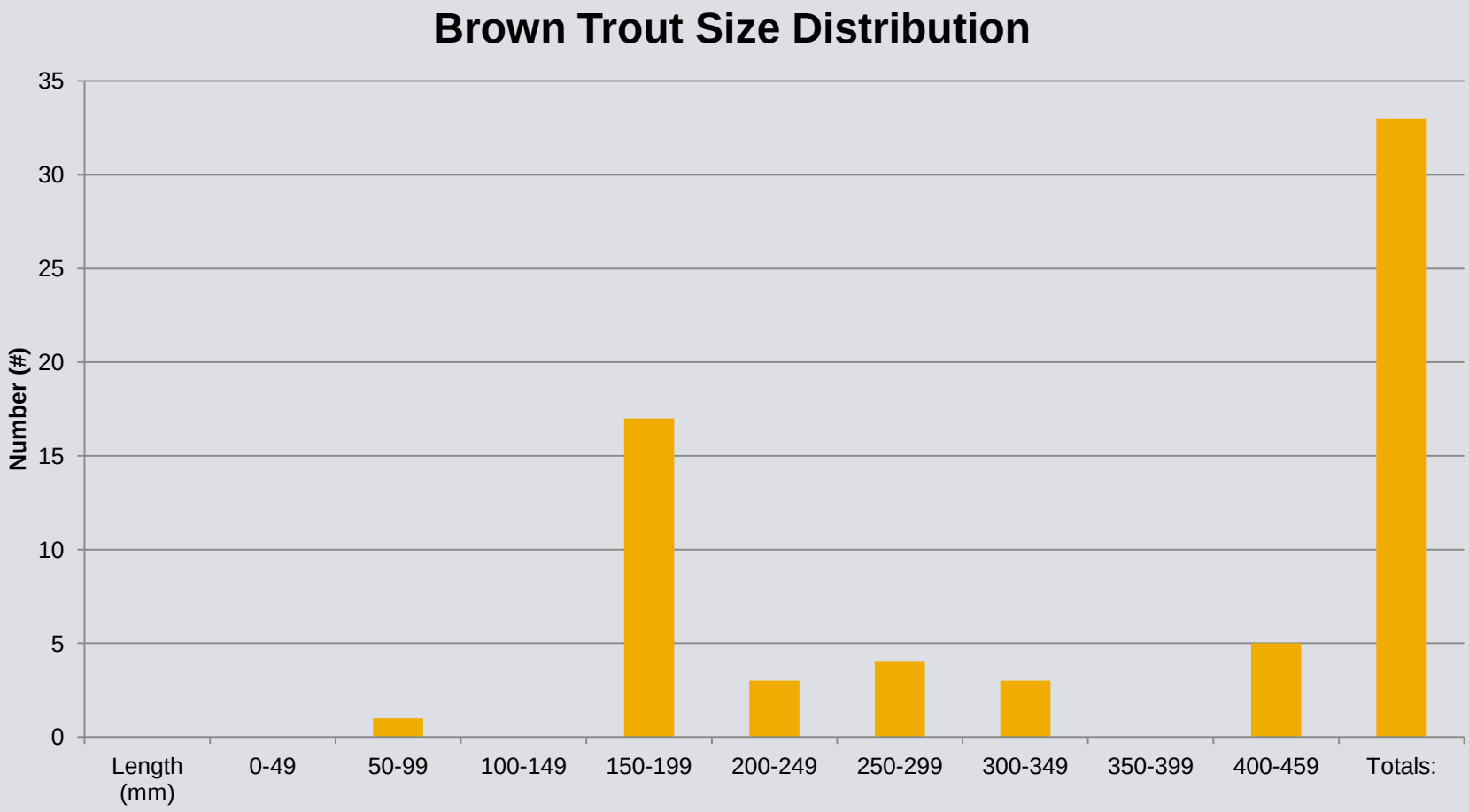
Average: pH


Average pH
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
pH
Site 2
Site 5
Site 8
Site 10
Site 14
Site 16
Site 18
Site

Rountree Branch Fish



Rountree Branch Results
Brown Trout Size Distribution



Rountree Summary

- Habitat
  - Little change from 2002
- Fish
  - Less species diversity

Part II: Objectives

- Examine both immediate and long term effects of restoration on habitat, macroinvertebrates, and fish communities in the Blue River of Southwest Wisconsin
- 2004, 2005, 2006, and 2007

Blue River

- The Blue River is located approximately 20 miles north of Platteville, WI and flows into the Wisconsin River.

Hypotheses

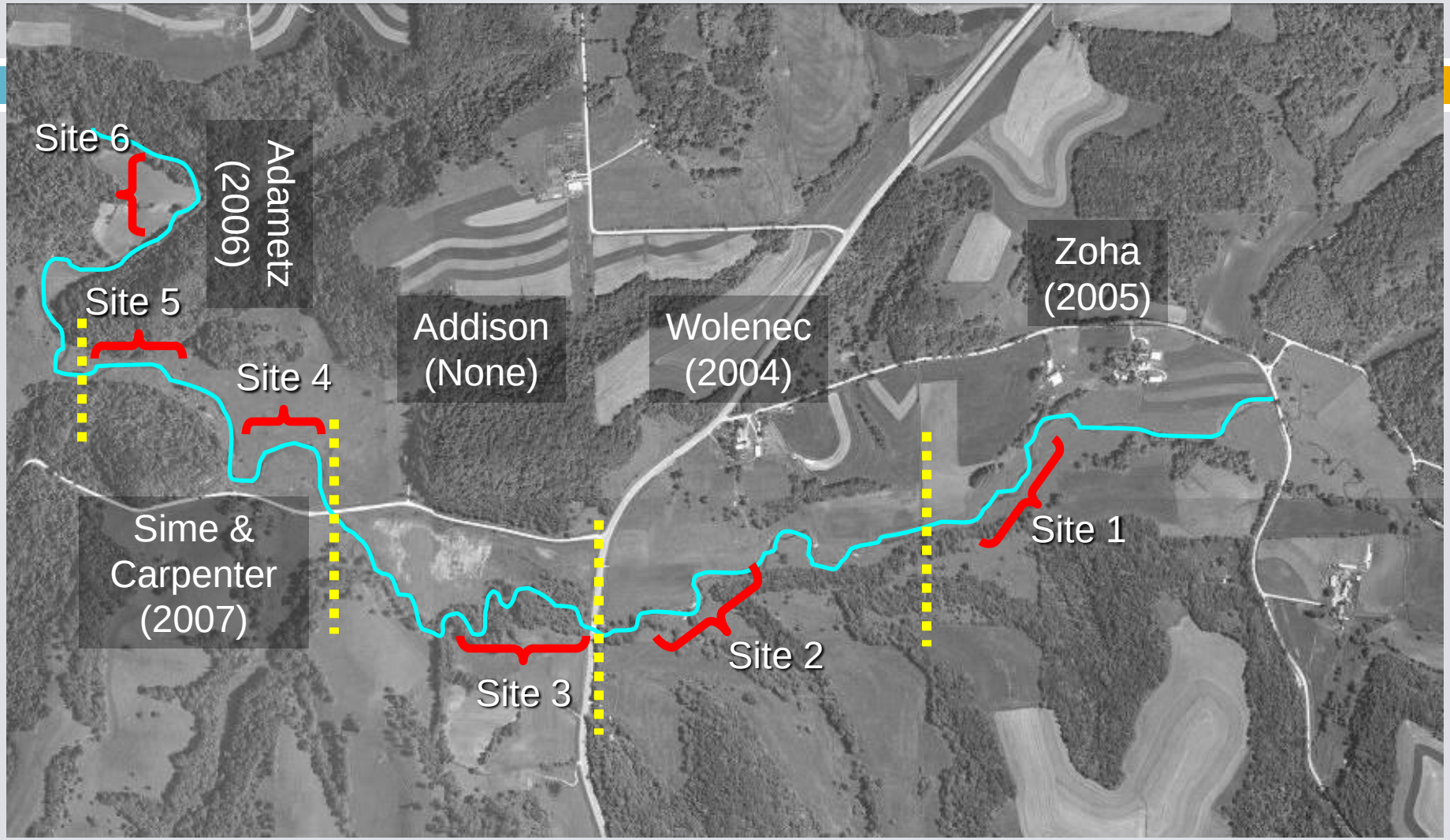
- Restored reaches would have greater abundance and diversity of fish and macroinvertebrates than un-restored reaches.

- Habitat in restored reaches would be significantly different compared to un-restored reaches.

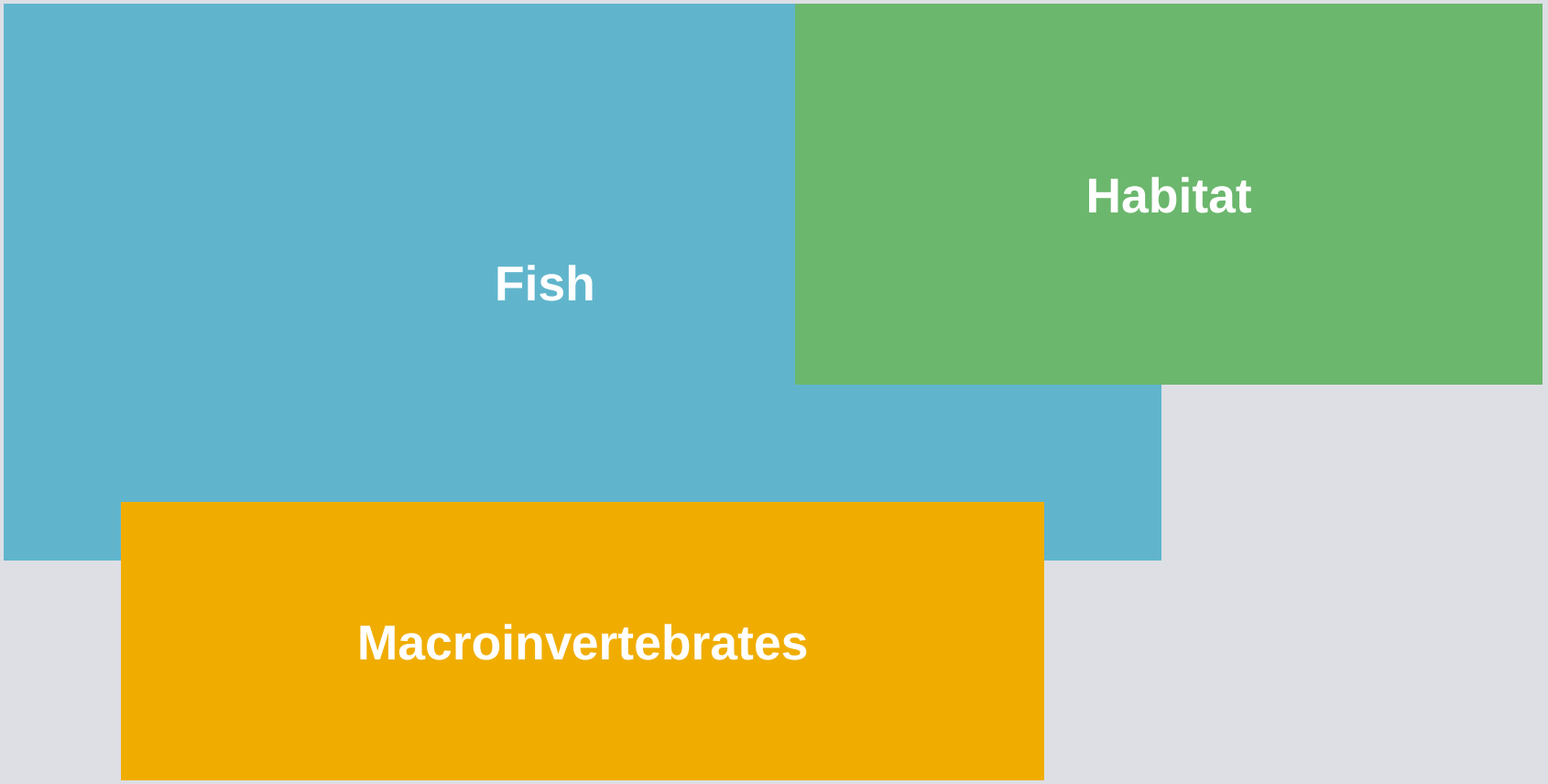
Study Area

- In 2007 we looked at 3 sites
- Two of the sites had previous data
- The third site had no previous data

The Blue River (2004-07)



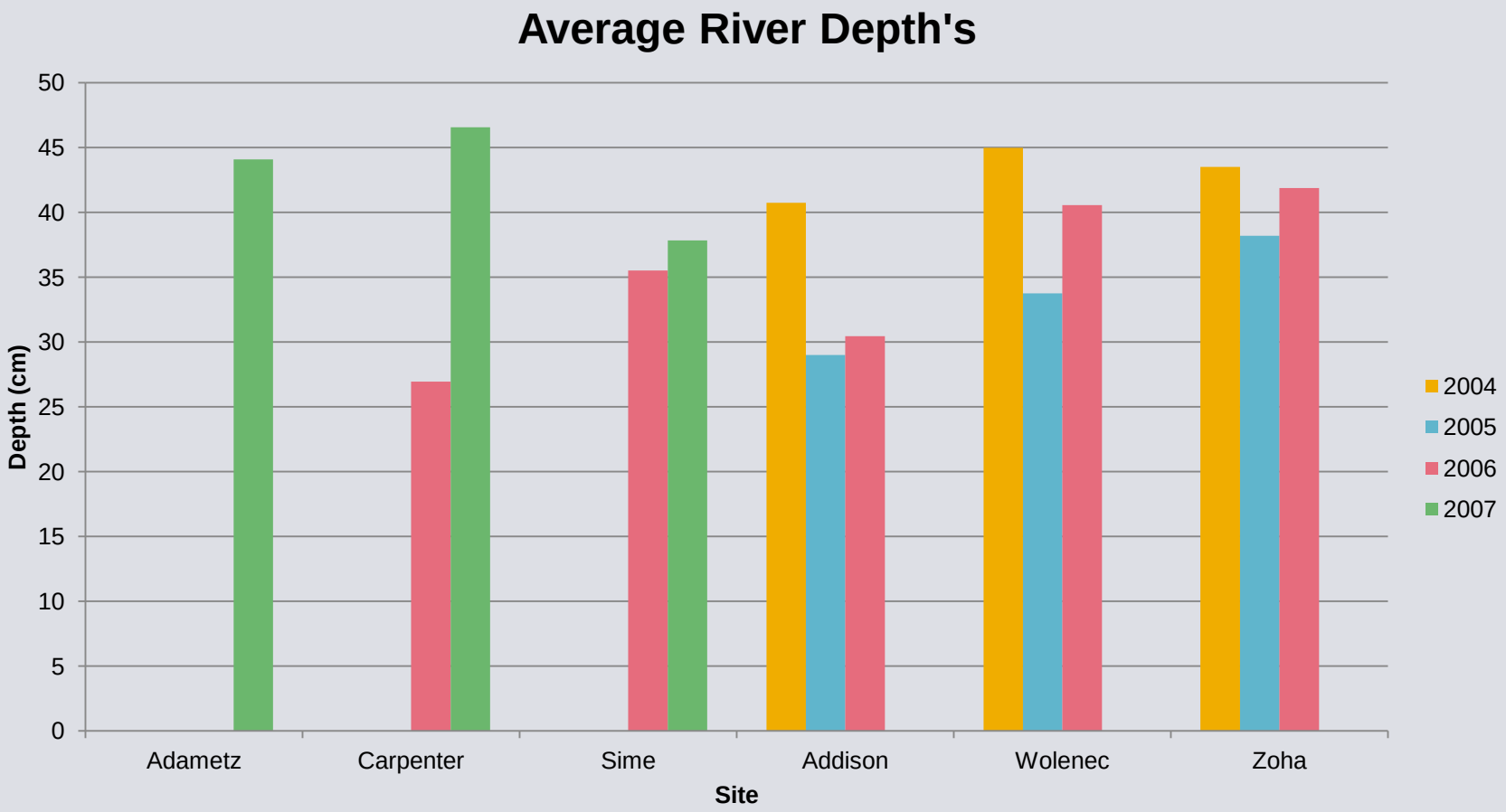
Procedure



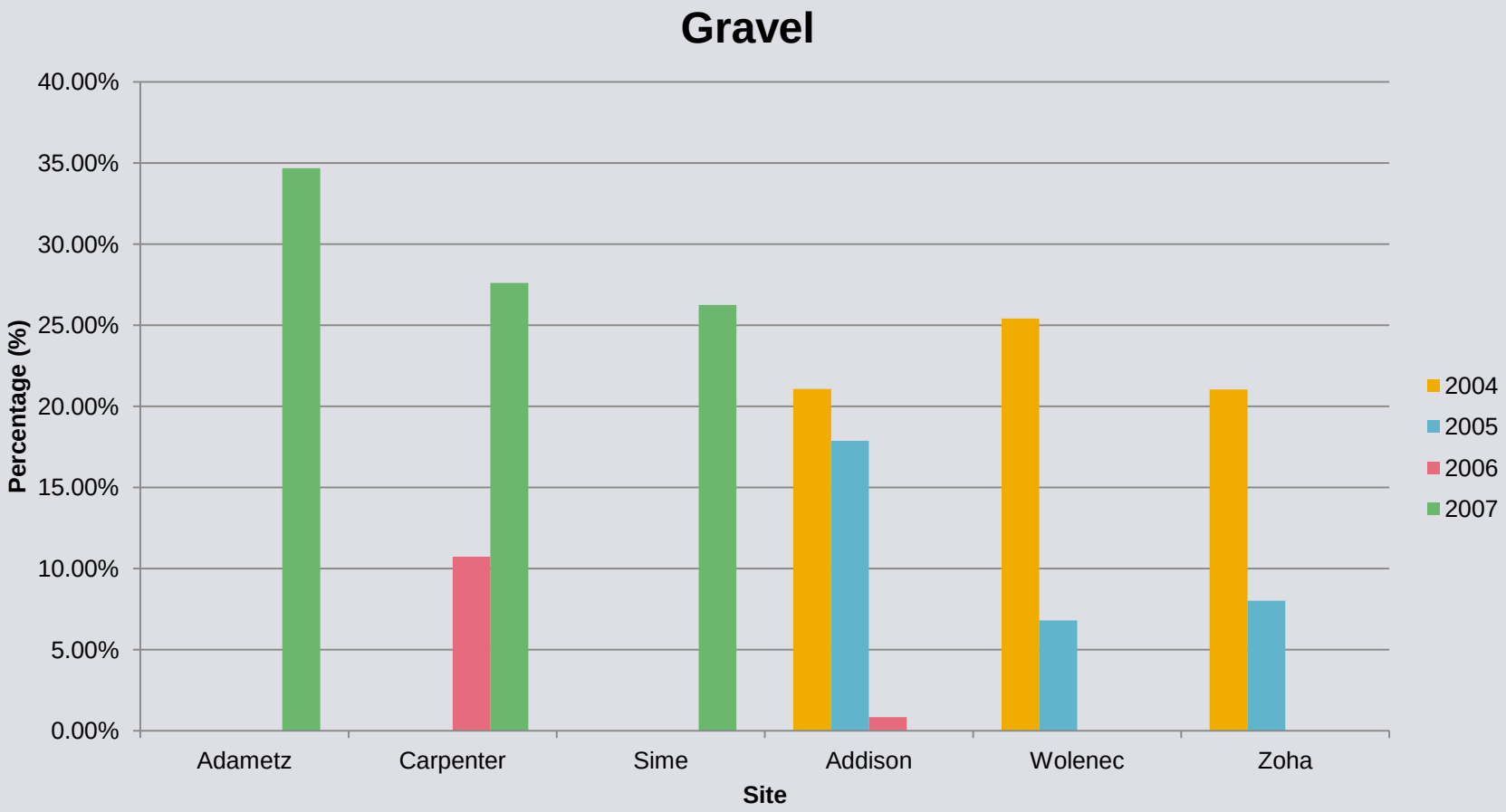
Blue River Results 2006 vs. 2007 Habitat

- There was no change in the river width.
- Restored areas are increasing in depth.
- Little substrate variability.
- Restored sites continue to promote mid size trout populations.

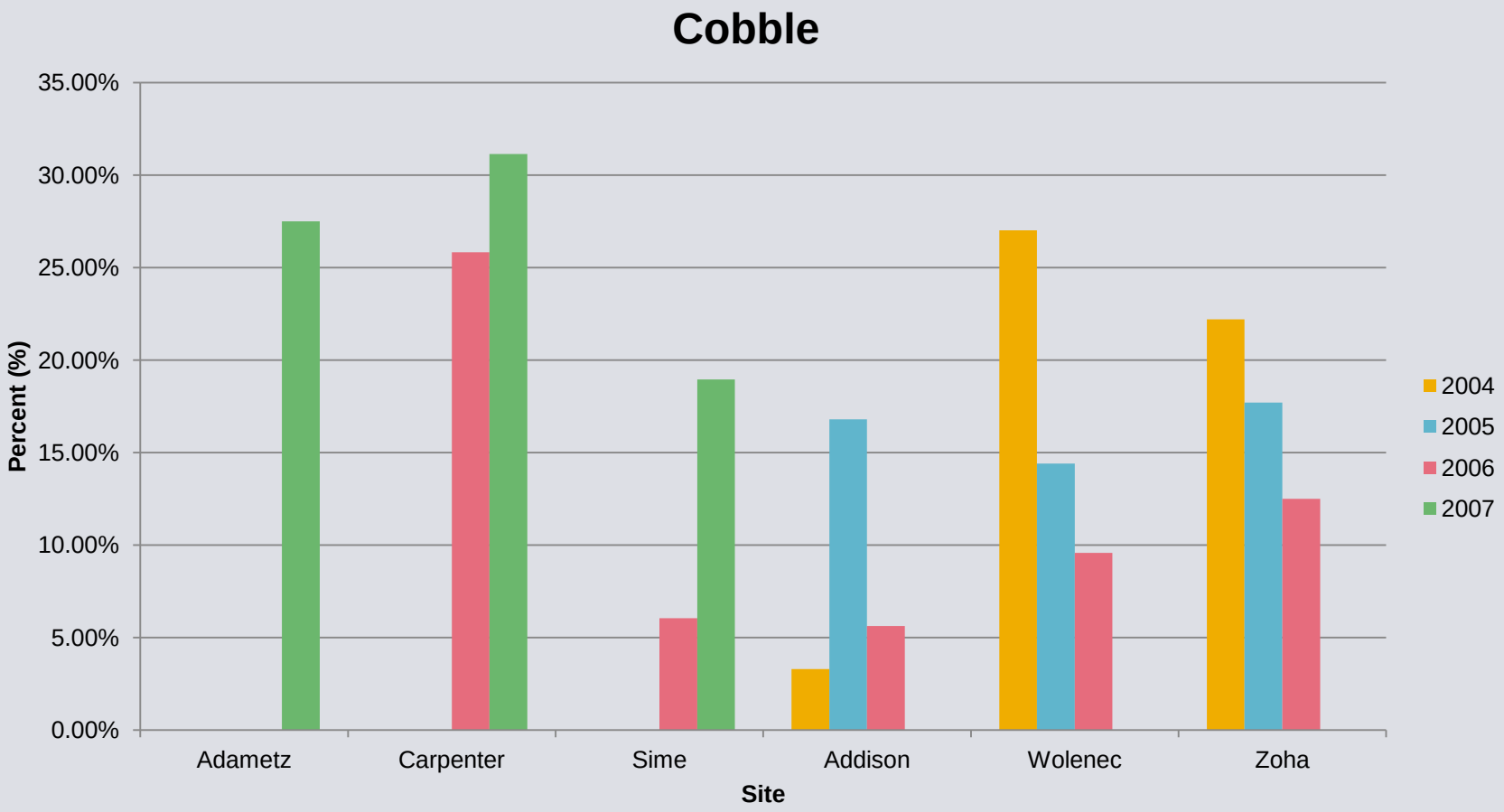
Blue River 2007 Average Depth



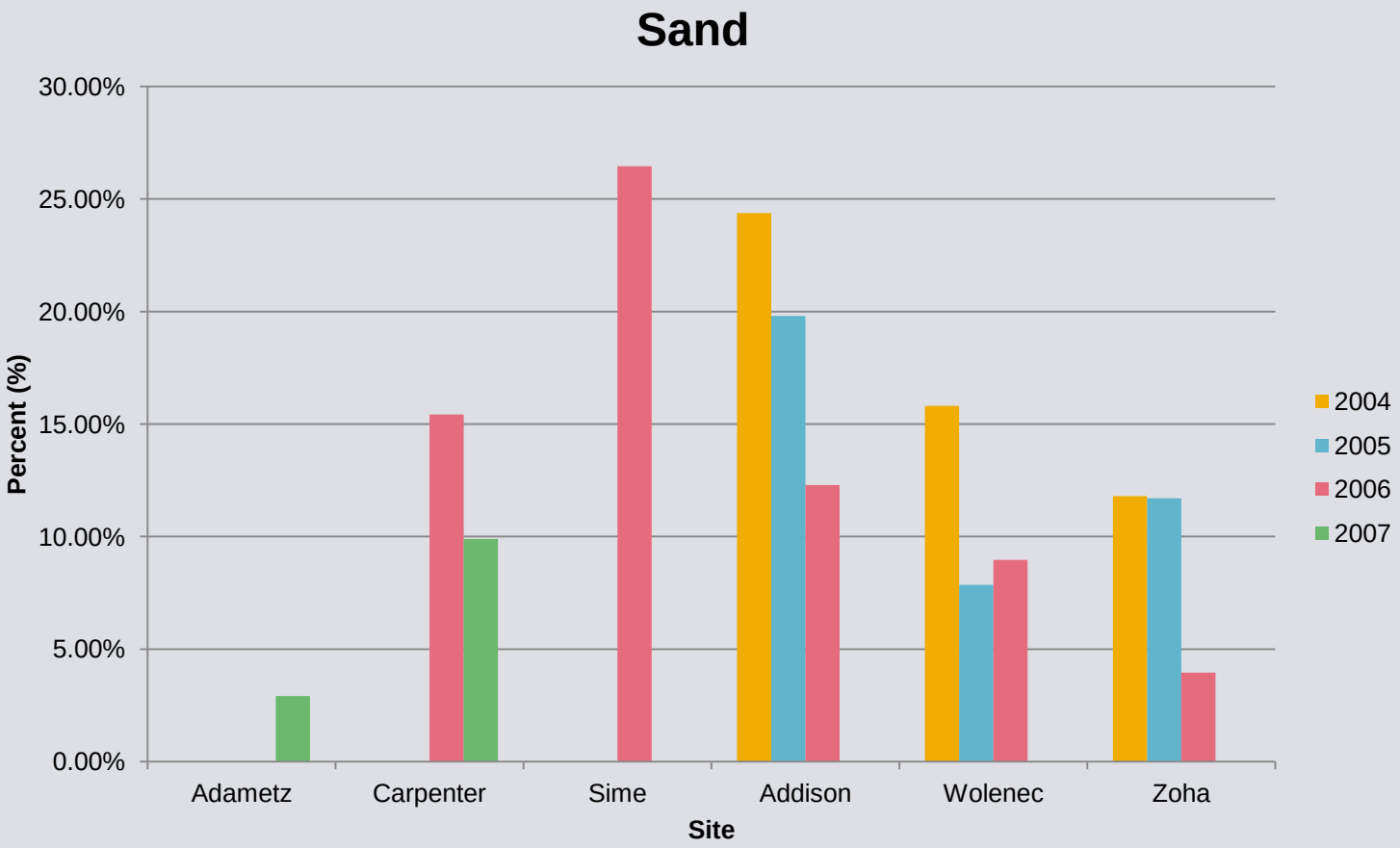
Blue River Results Comparison Substrate: Gravel



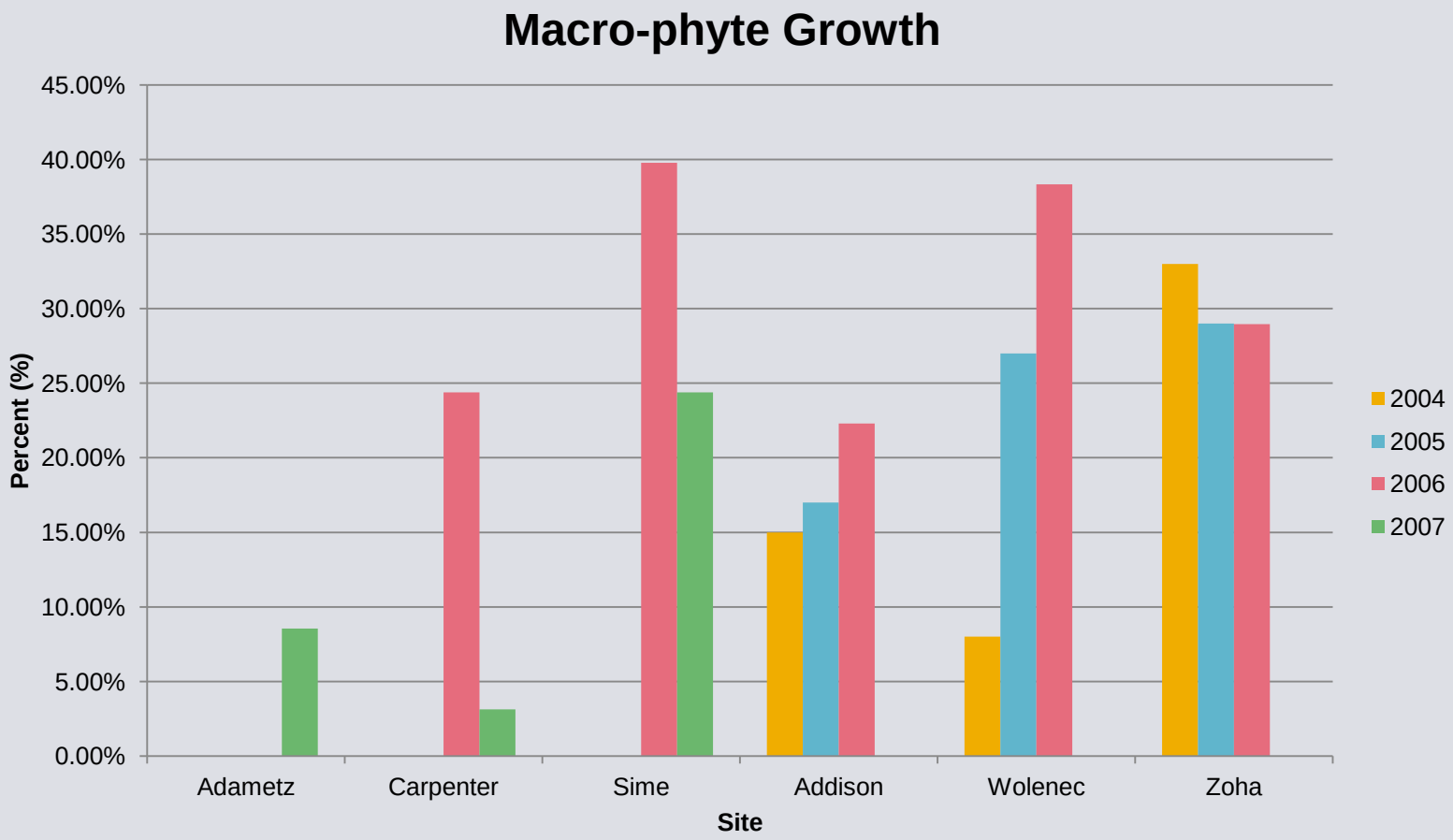
Blue River Results Comparison Substrate: Cobble



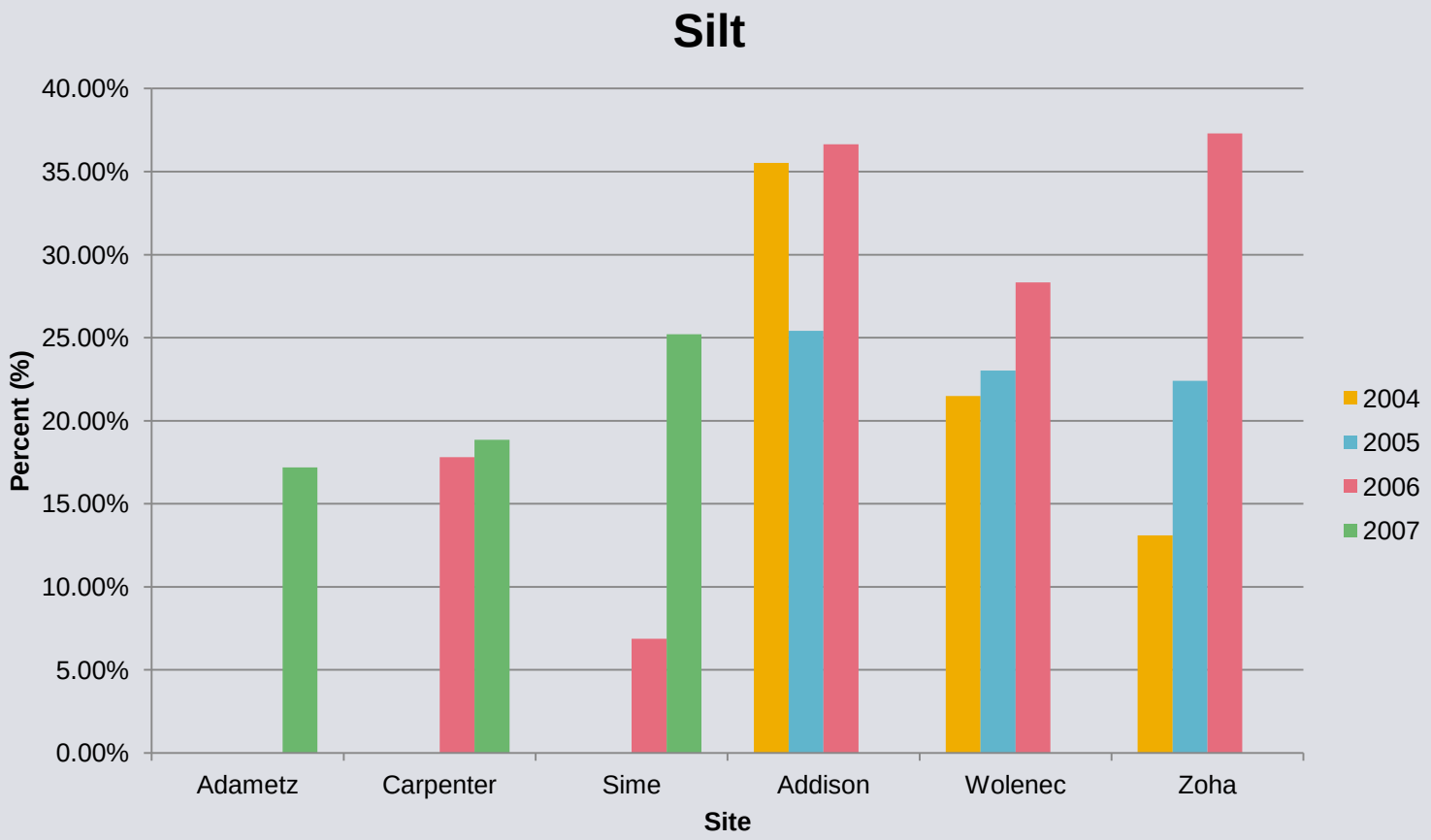
Blue River Results Comparison Substrate: Sand



Blue River Results Comparison Macrophyte Growth

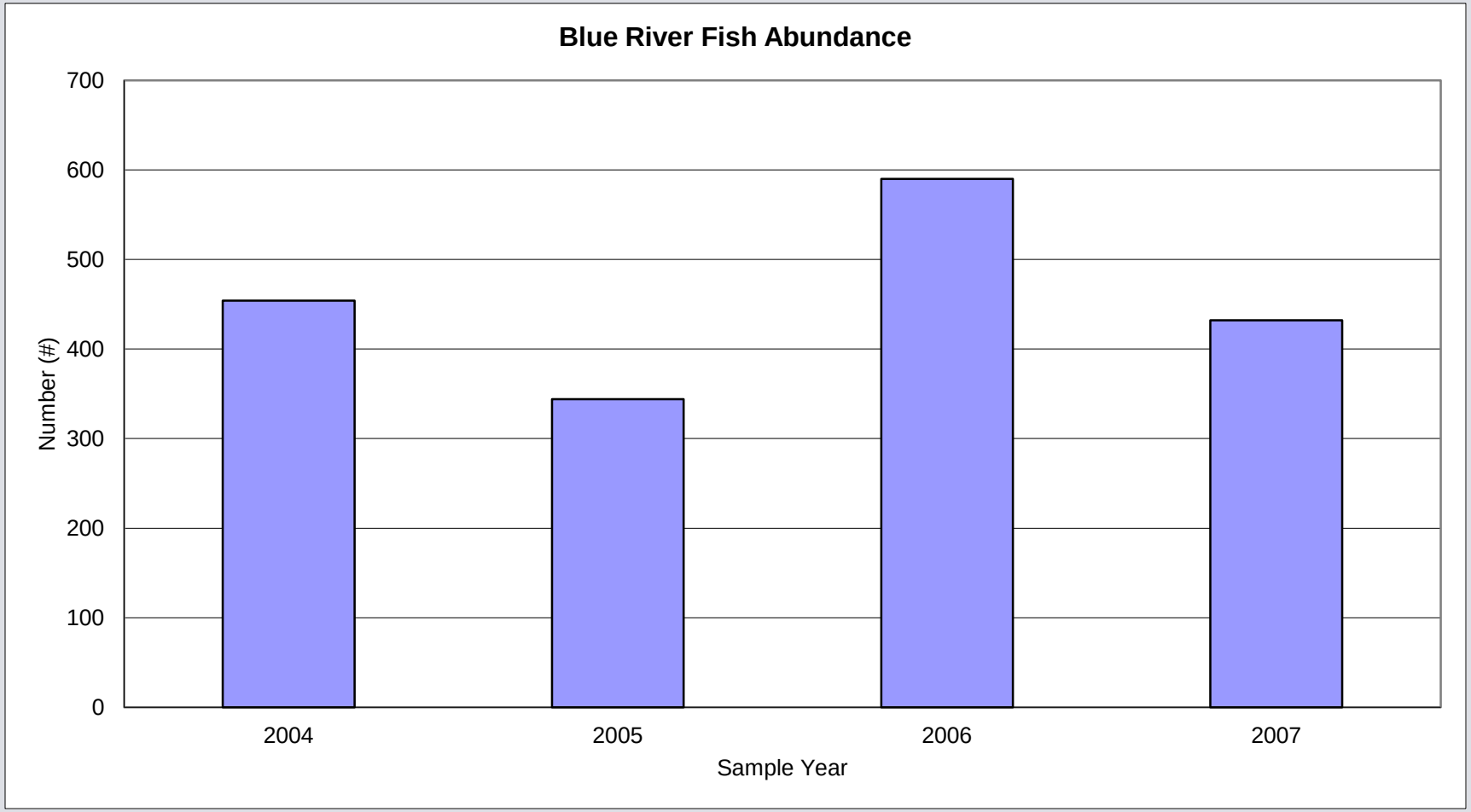


Blue River Results Comparison Substrate: Silt

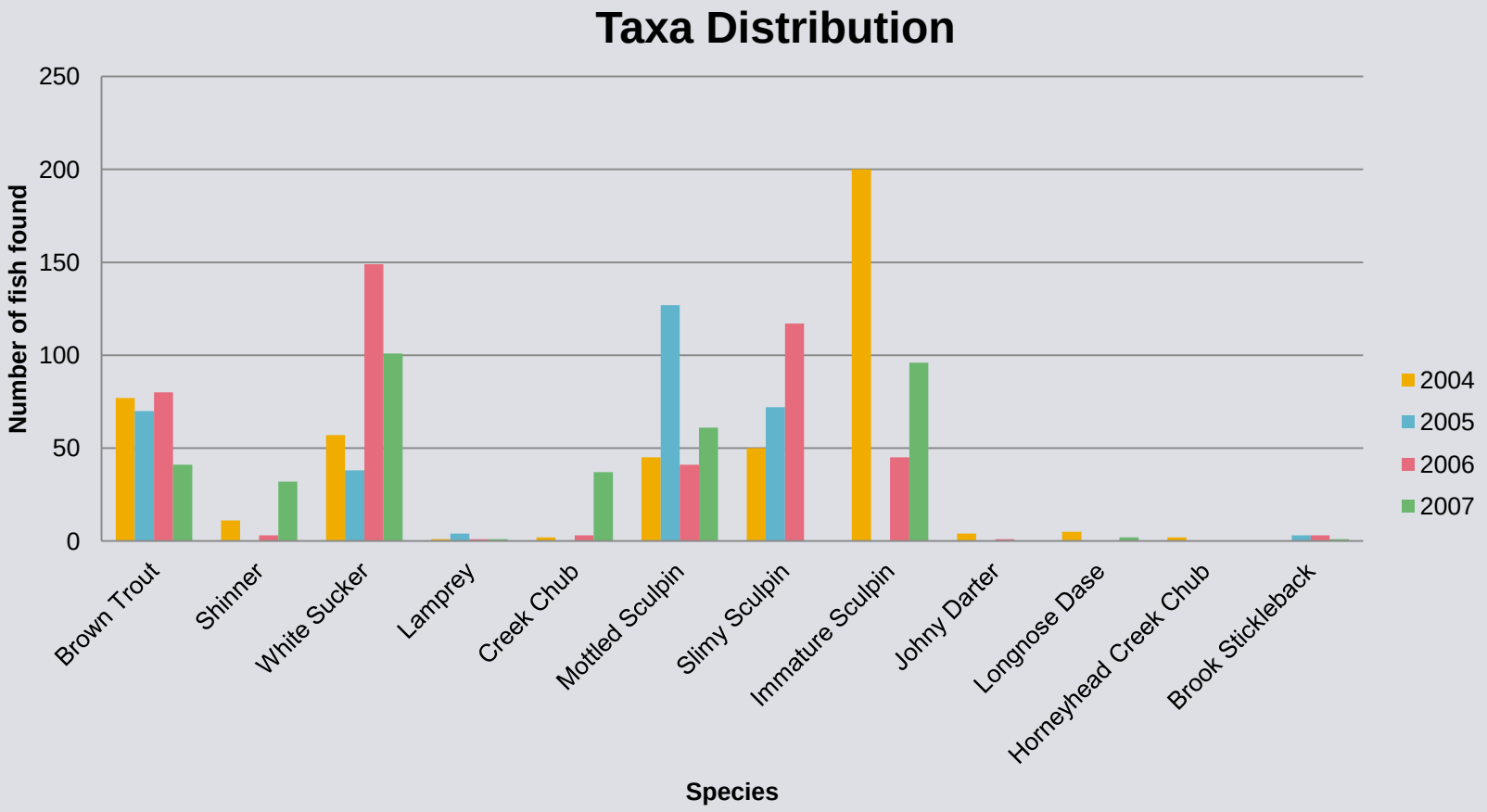


Blue River Macroinvertebrates

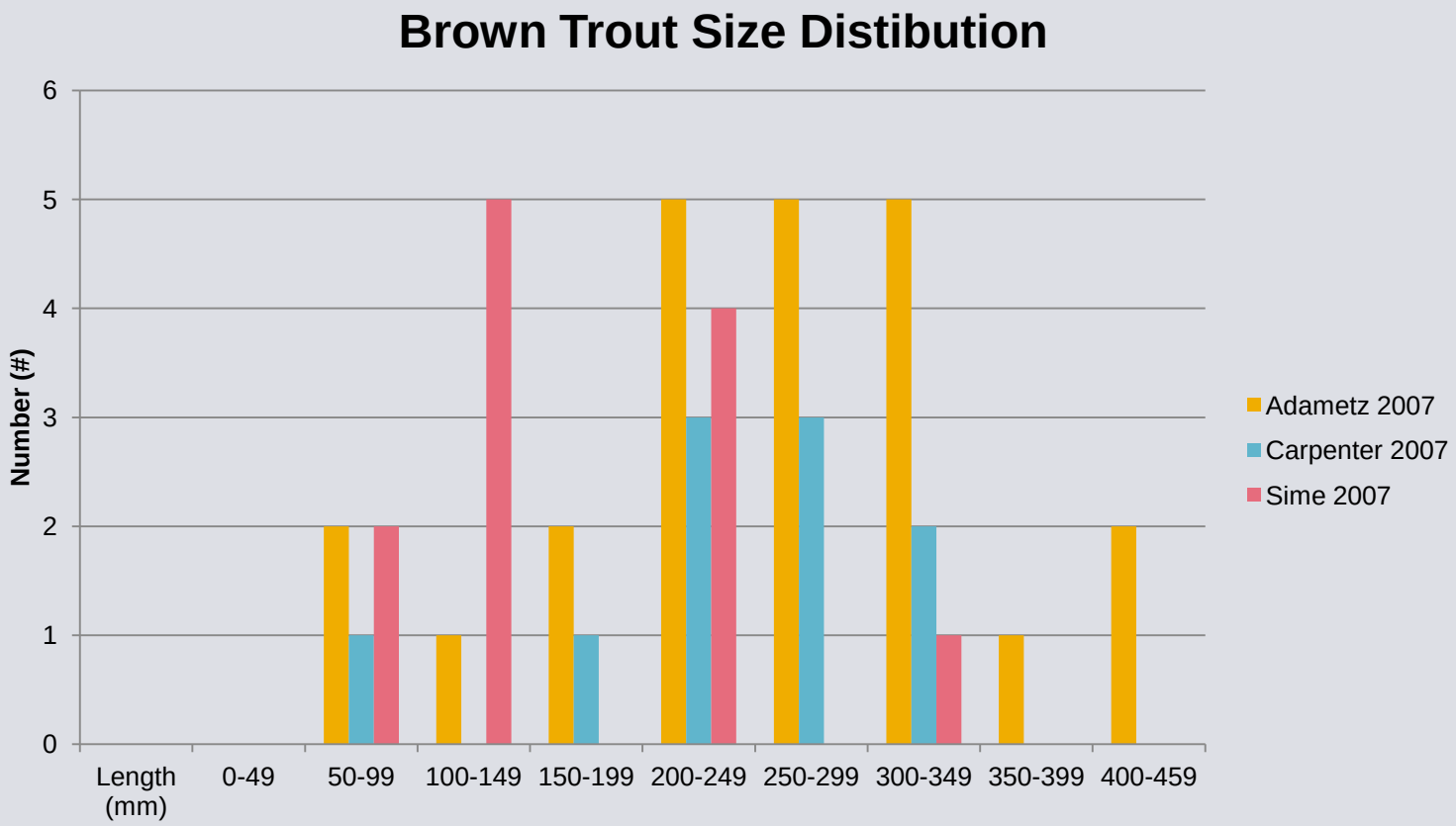
Blue River Fish
Fish Abundance



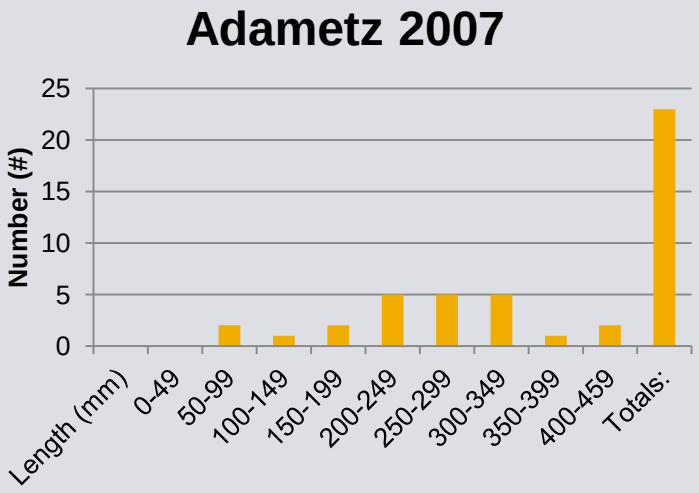
Blue River Results Comparison Fish

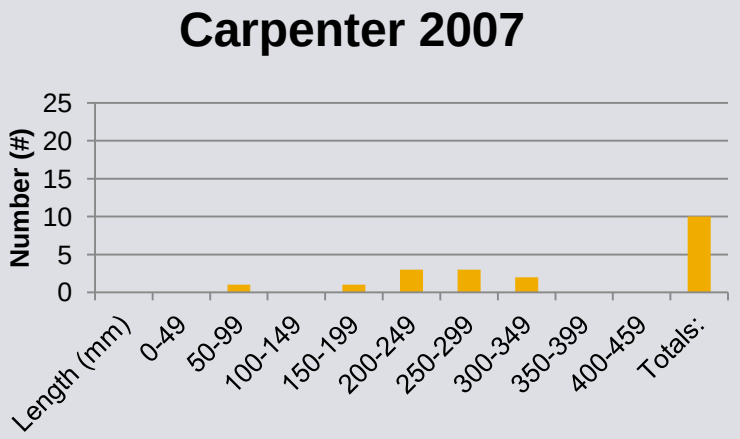


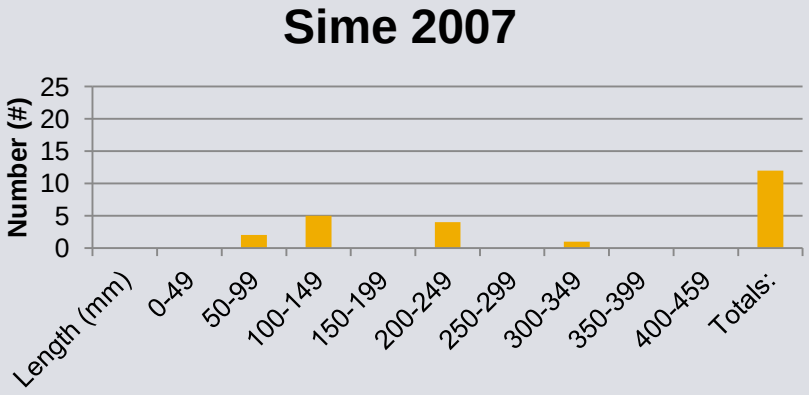
Blue River Brown Trout Distribution



Blue River Results 2006 vs. 2007 Brown Trout by site







Discussion- Blue River

- Habitat, macroinvertebrates, and fish have all been impacted by restoration.
- Macroinvertebrate numbers increased as a result of sampling method.

Overall

Key factors that we continue to see that determine the success of stream restoration activities:

1) Size of the system

- The upper Blue River watershed is a large system, larger systems generally adapt slower.

2) Land-use activities within the watershed

- Land use activity in the Blue River watershed is greatly affected by agriculture.

3) Time

- Rather significant changes can occur in a system from year to year

Thank You

- Harry and Laura Nohr Chapter of Trout Unlimited
- University of Wisconsin-Platteville
- Dr. Kristopher Wright
- Dylan Arnold (Rountree Branch Data Collection)
- Jenna Peterson (Blue River Data Collection)