



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

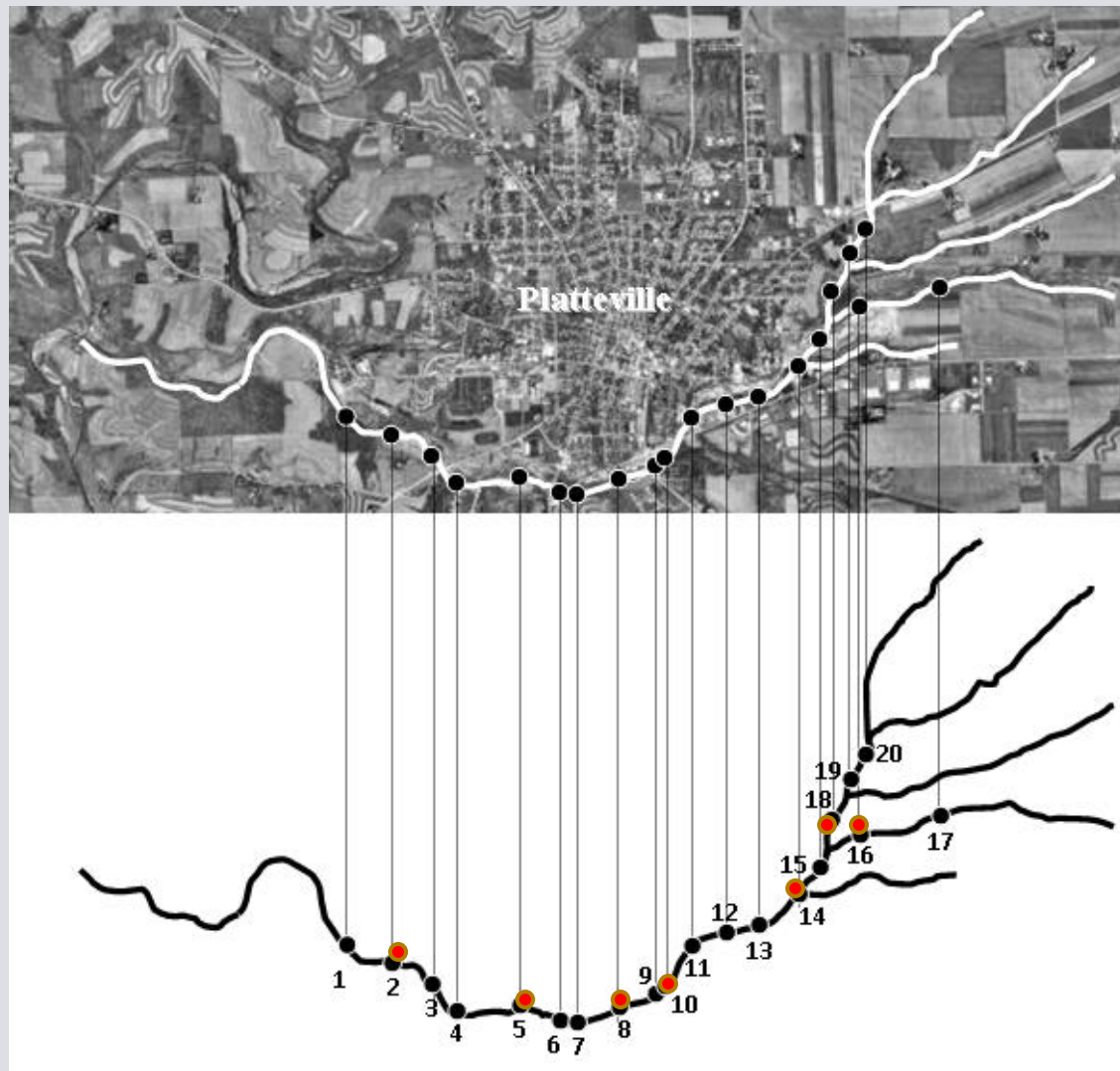


- During the summer of 2002, twenty sites were sampled along an approximately 3.5 mile section of the Rountree Branch.
- All sites were 50 meters in length.

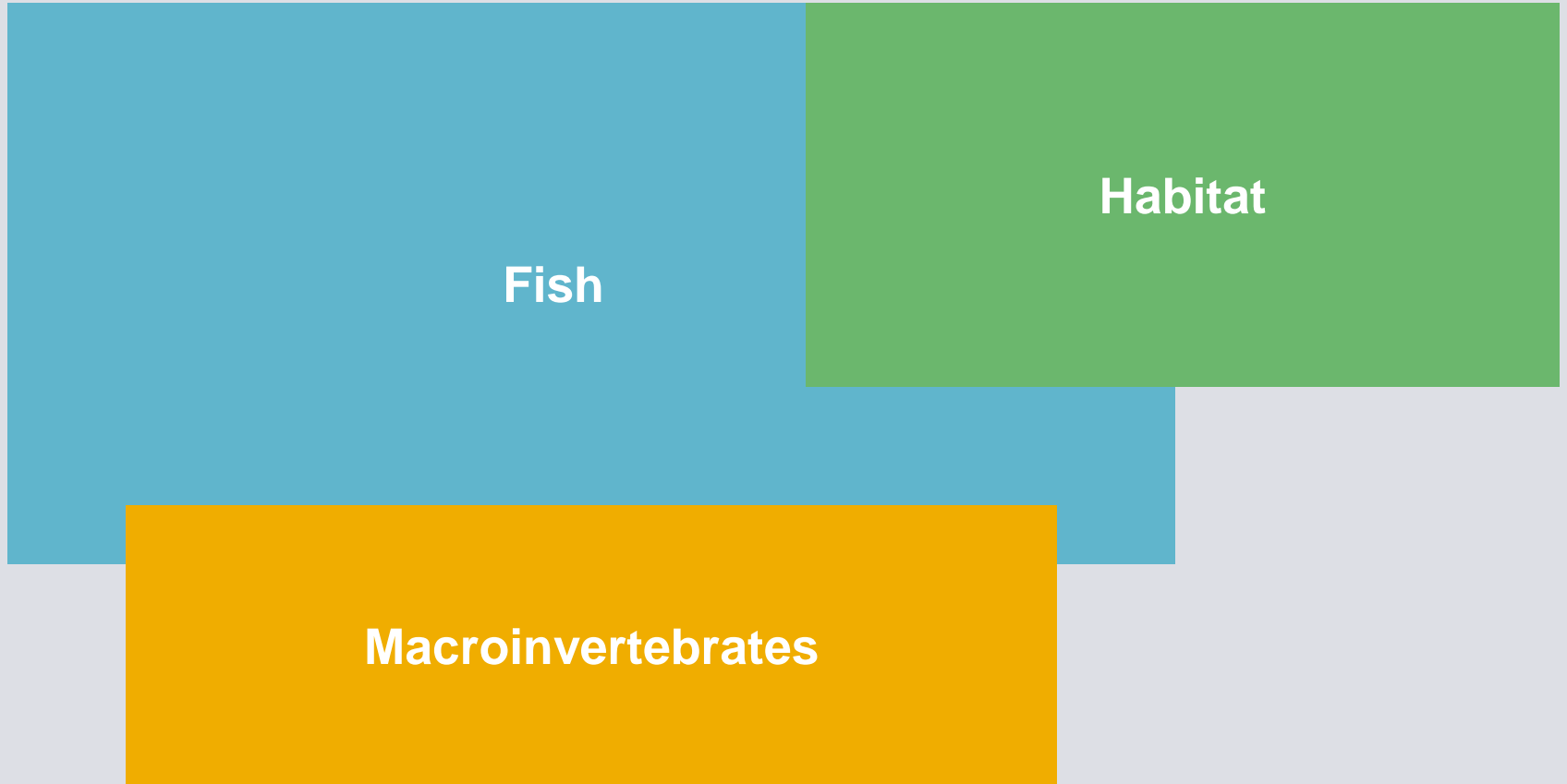
Rountree Branch 2007

- 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.

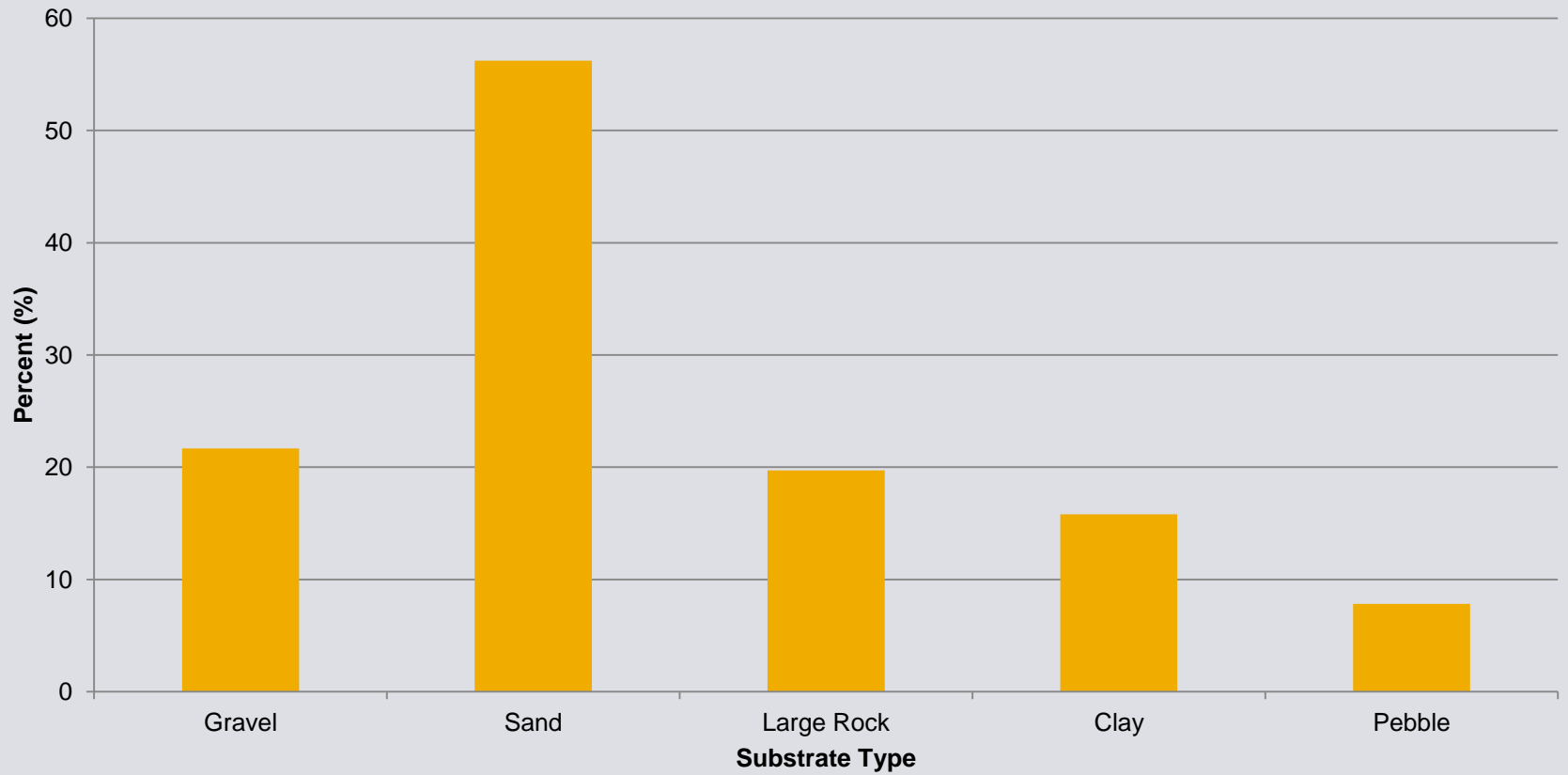
Survey Results

Rountree Habitat

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

Substrate

Average Substrate



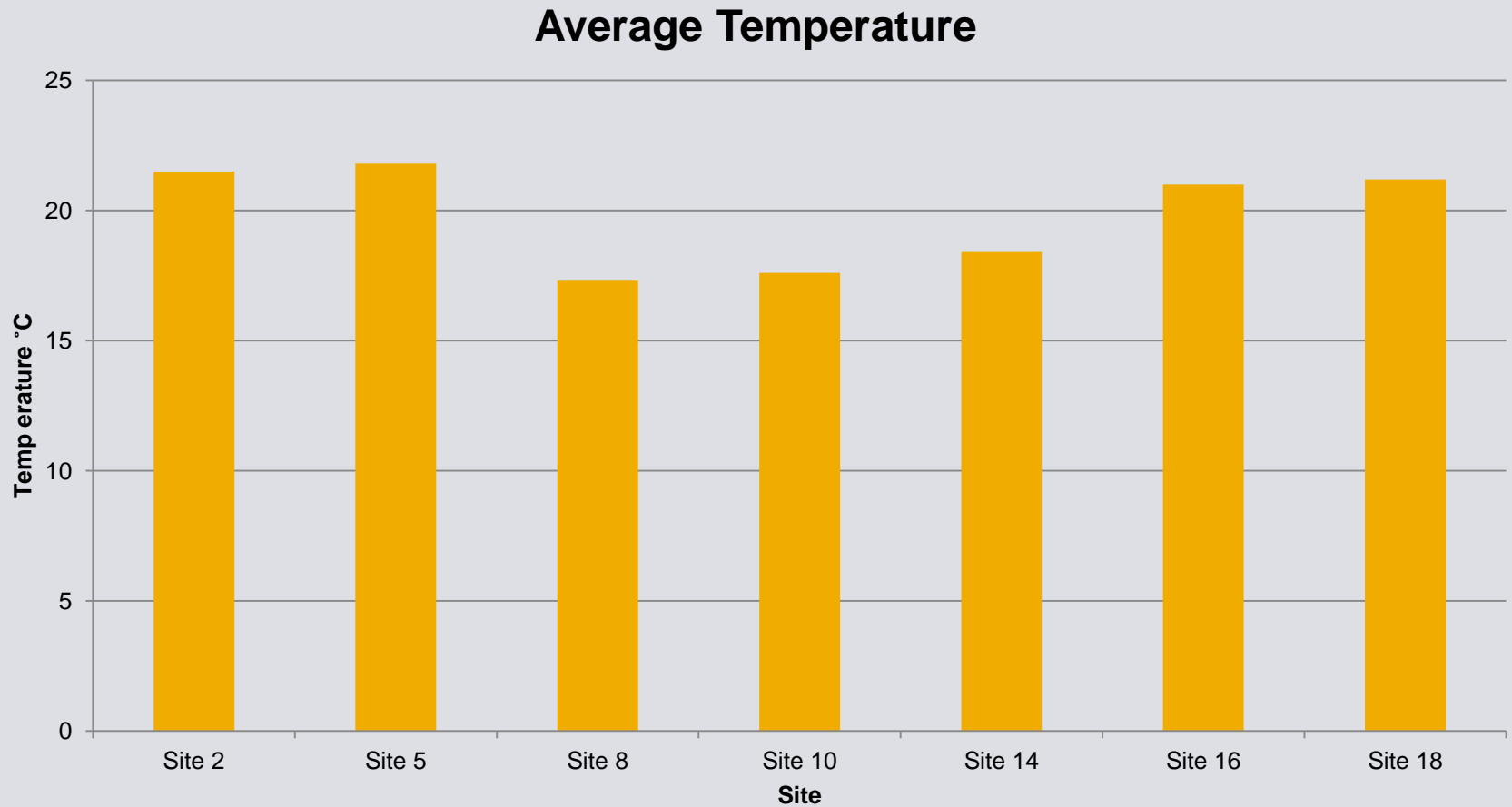
Average Depths

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

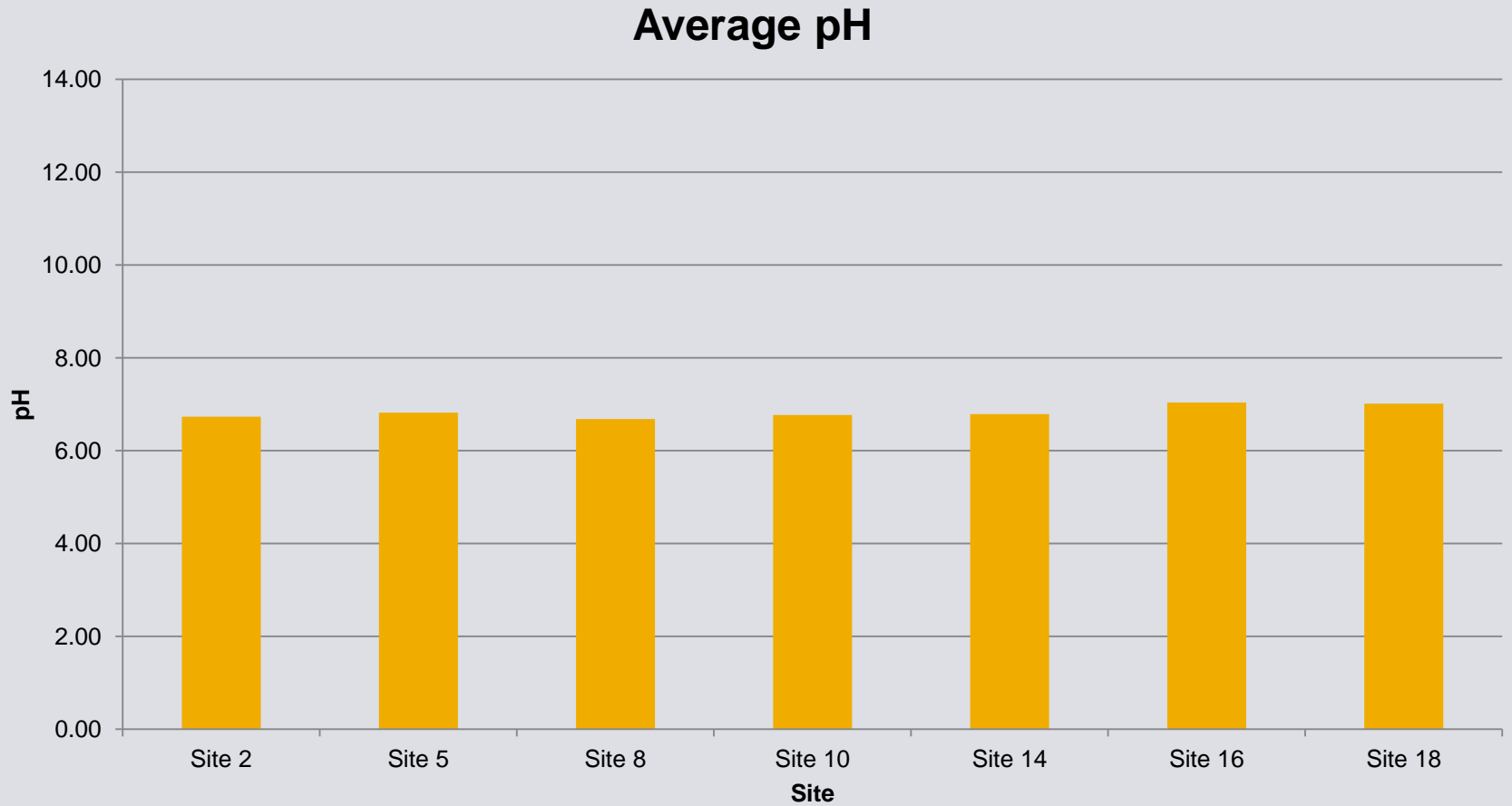
Erosion and Cover

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

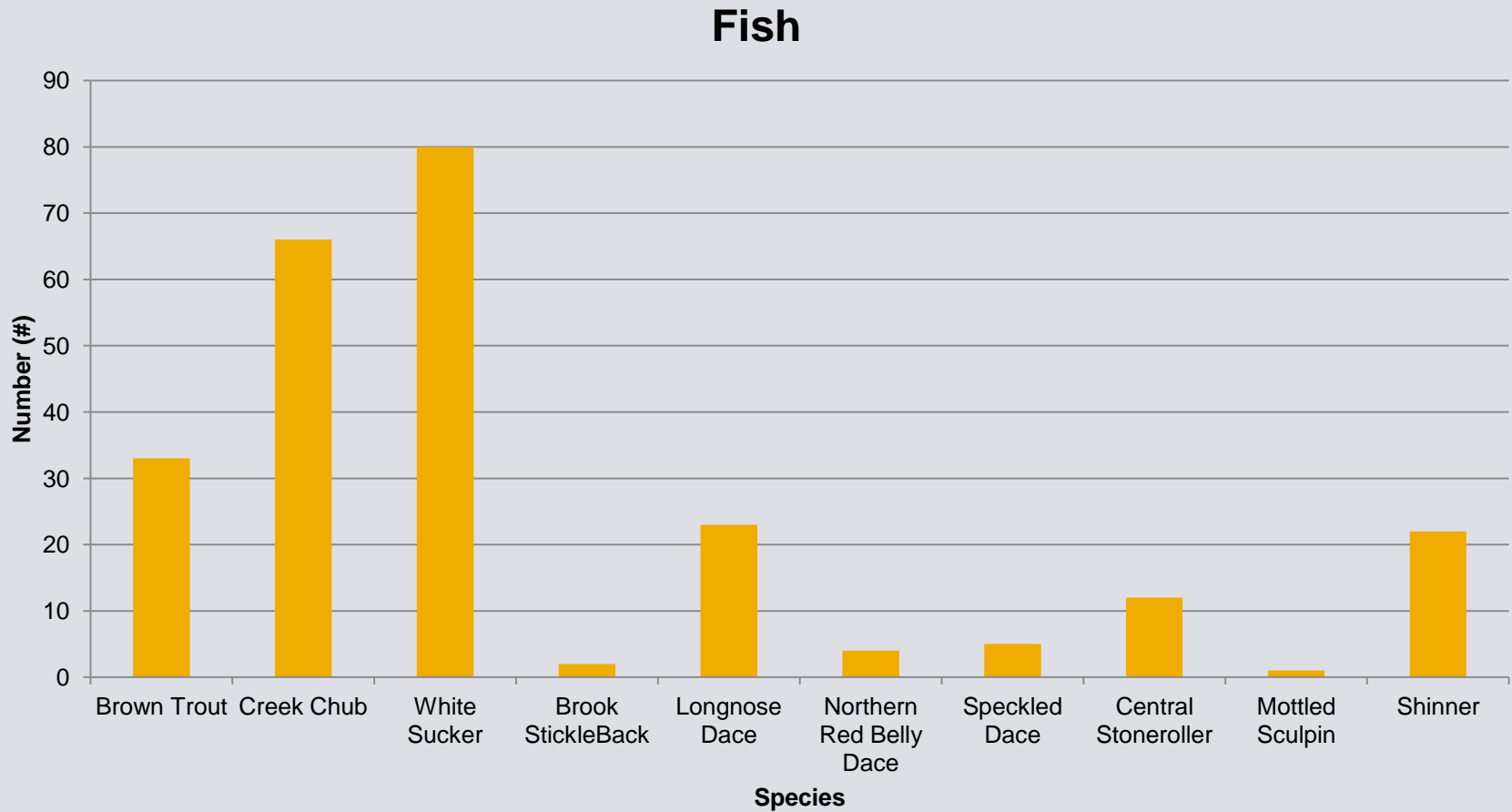
Average: Temperature



Average: pH



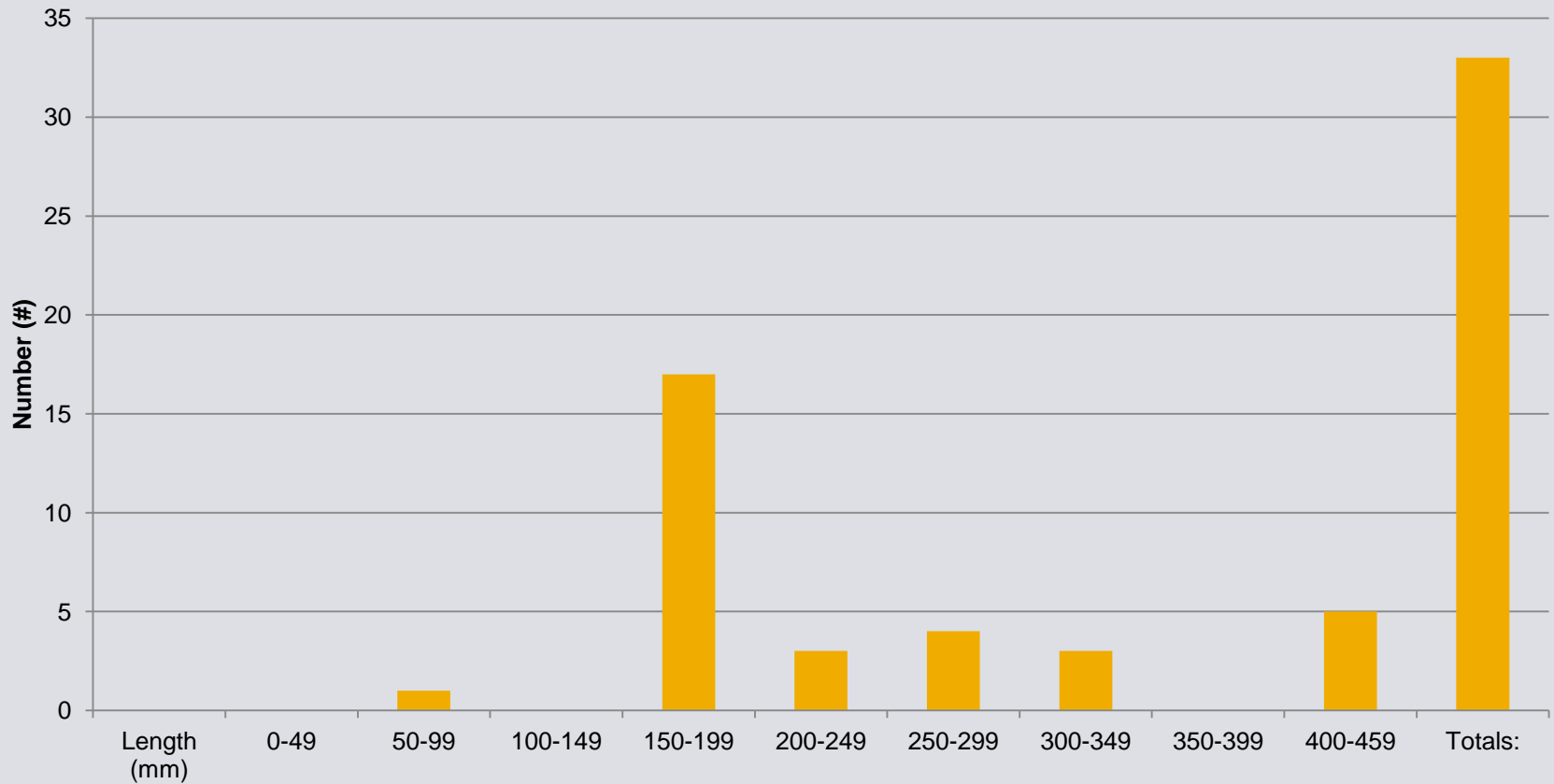
Rountree Branch Fish



Rountree Branch Results

Brown Trout Size Distribution

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.

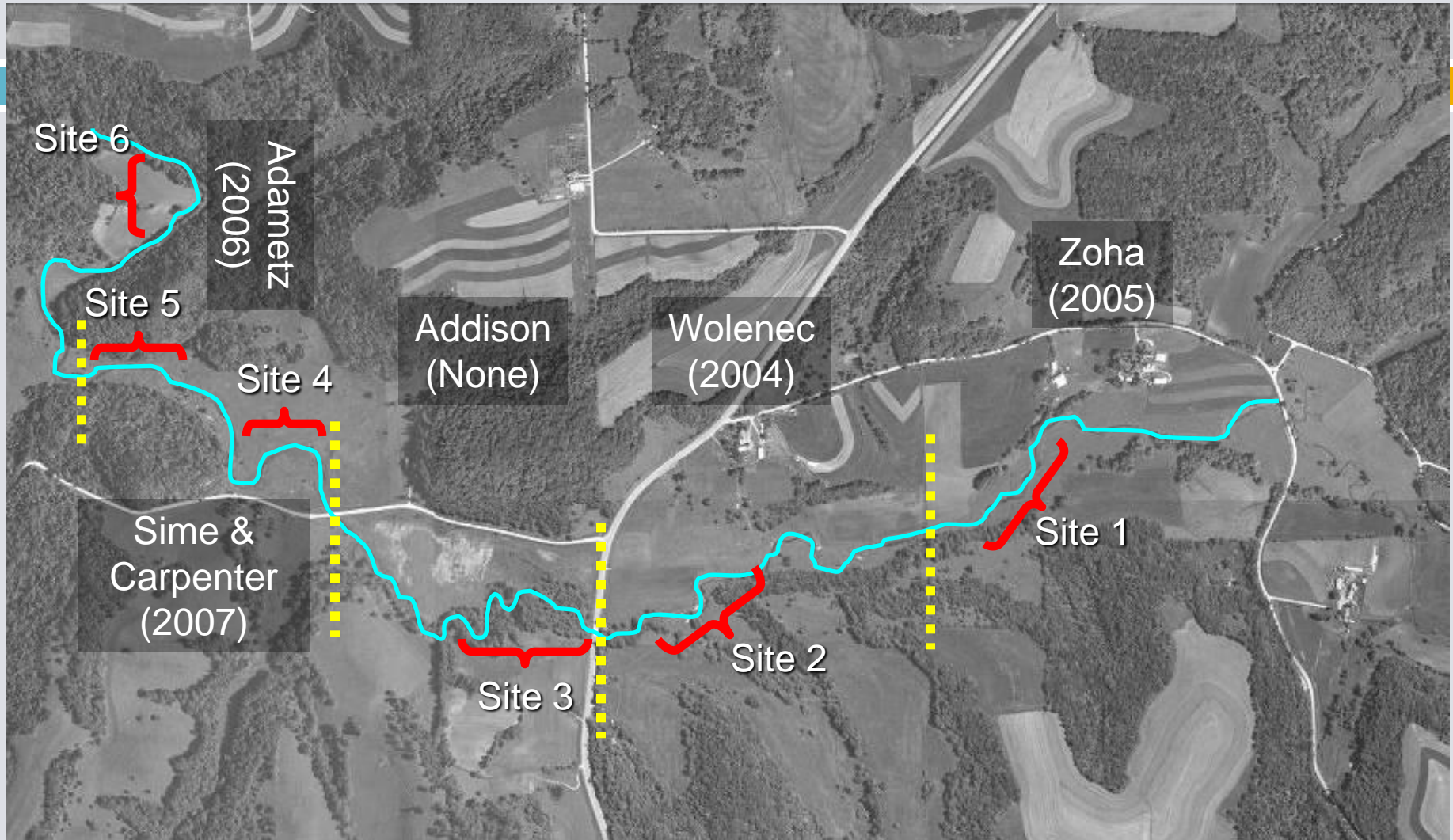
Hypotheses

- 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.

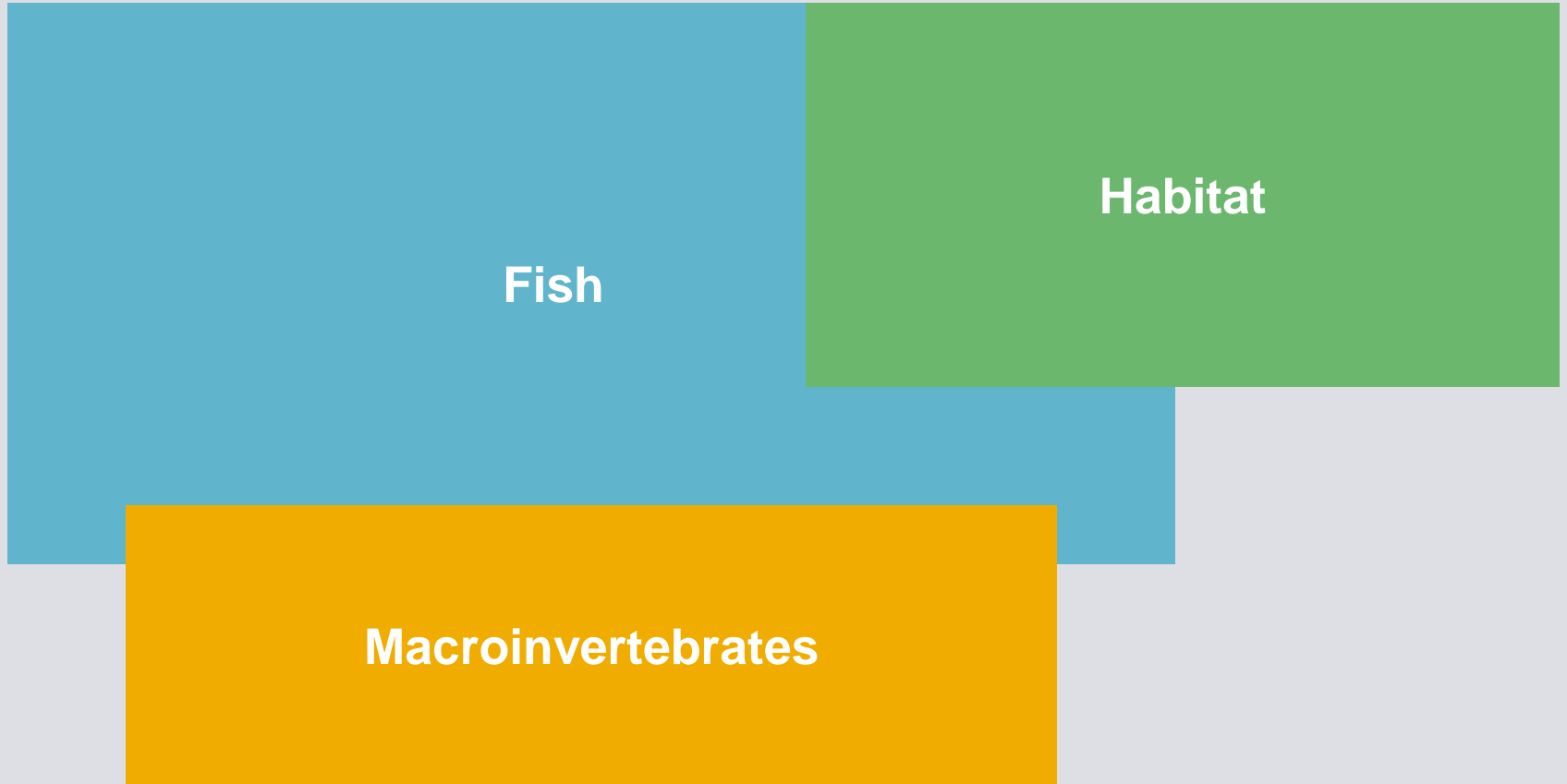
Study Area

- 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

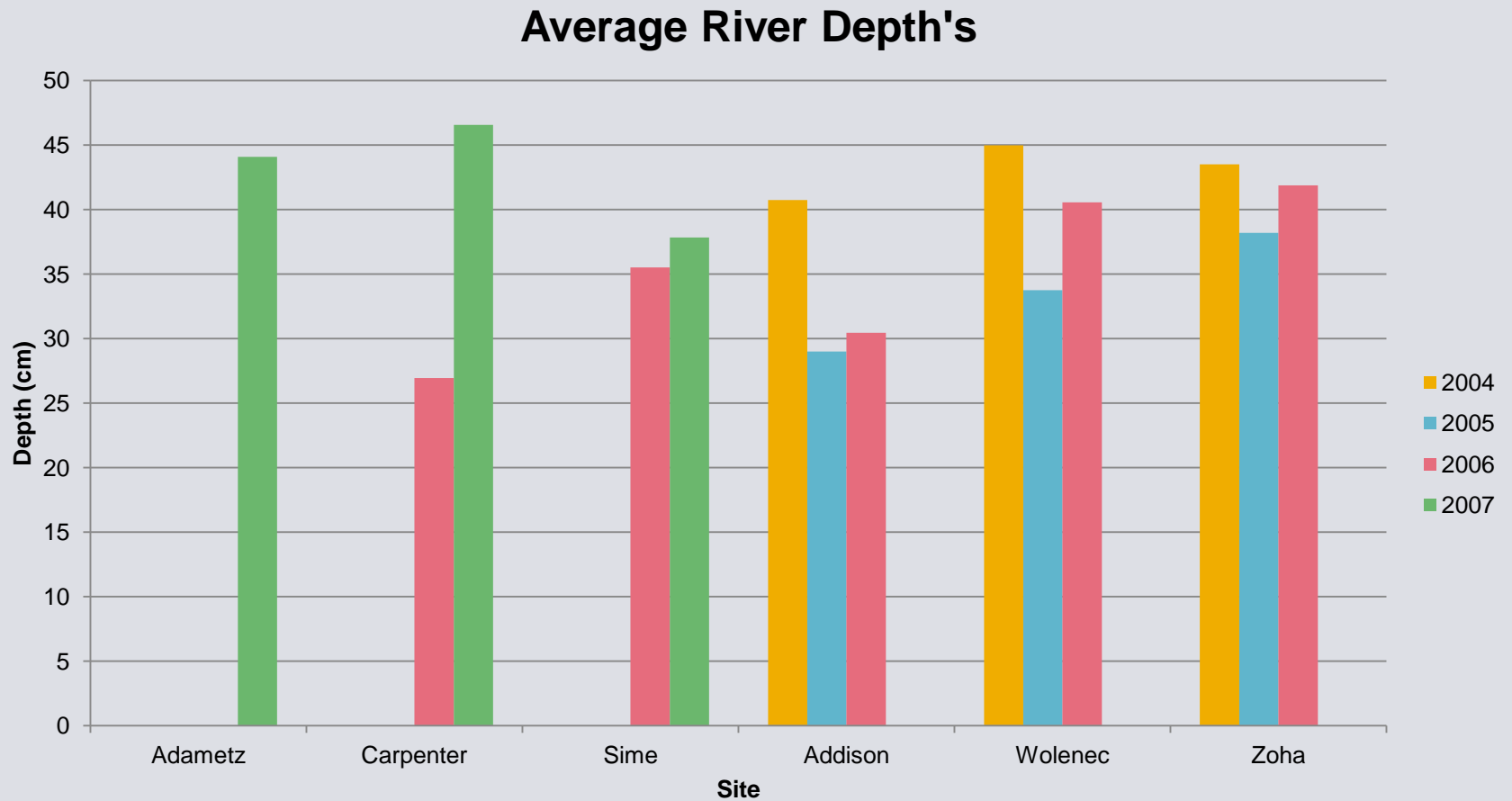


Blue River Results 2006 vs. 2007

Habitat

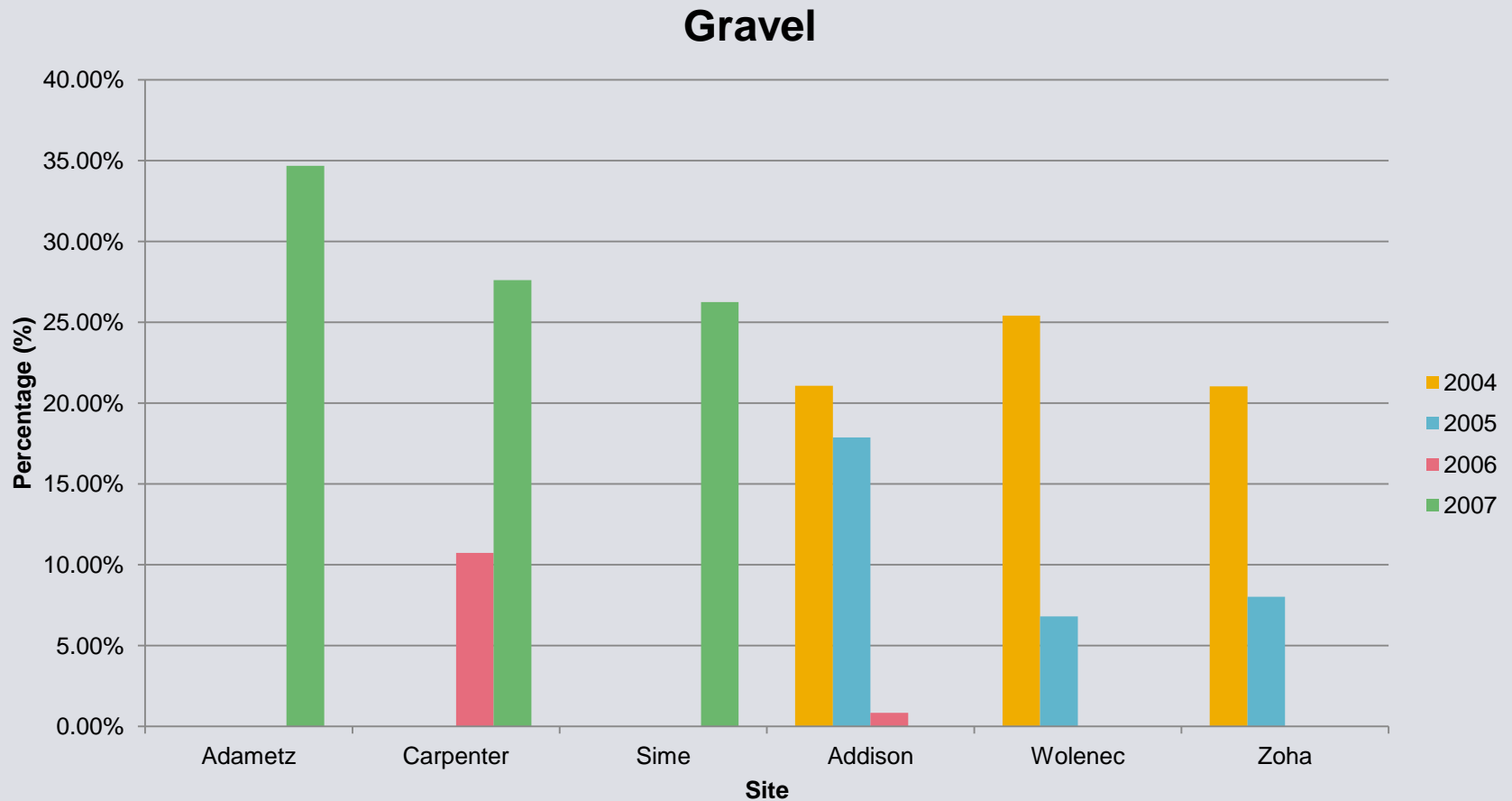
- There was no change in the river width.
- Restored areas are increasing in depth.
- Little substrate variability.
- Restored sites continue to promote mid size trout populations.

Blue River 2007 Average Depth



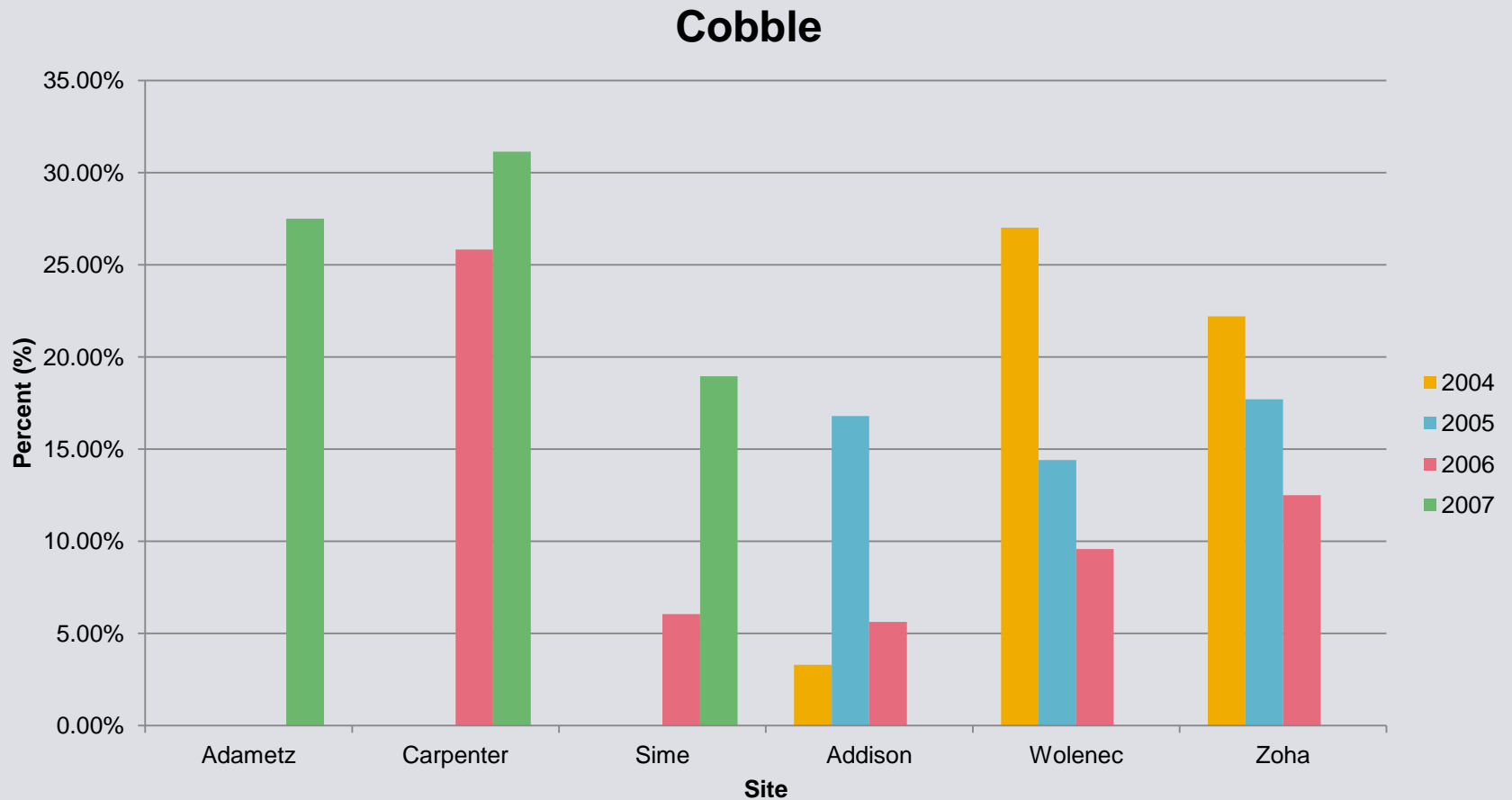
Blue River Results Comparison

Substrate: Gravel



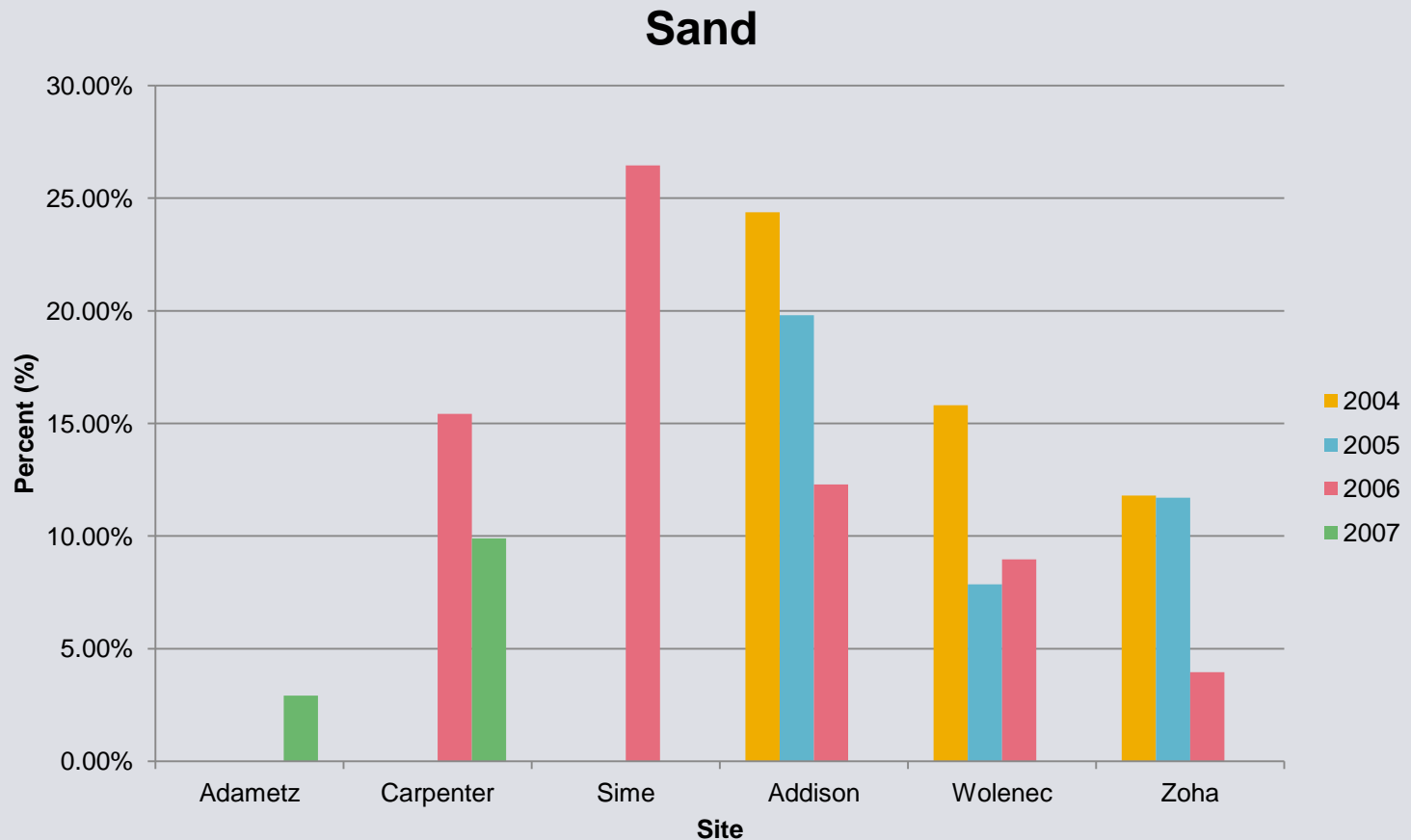
Blue River Results Comparison

Substrate: Cobble



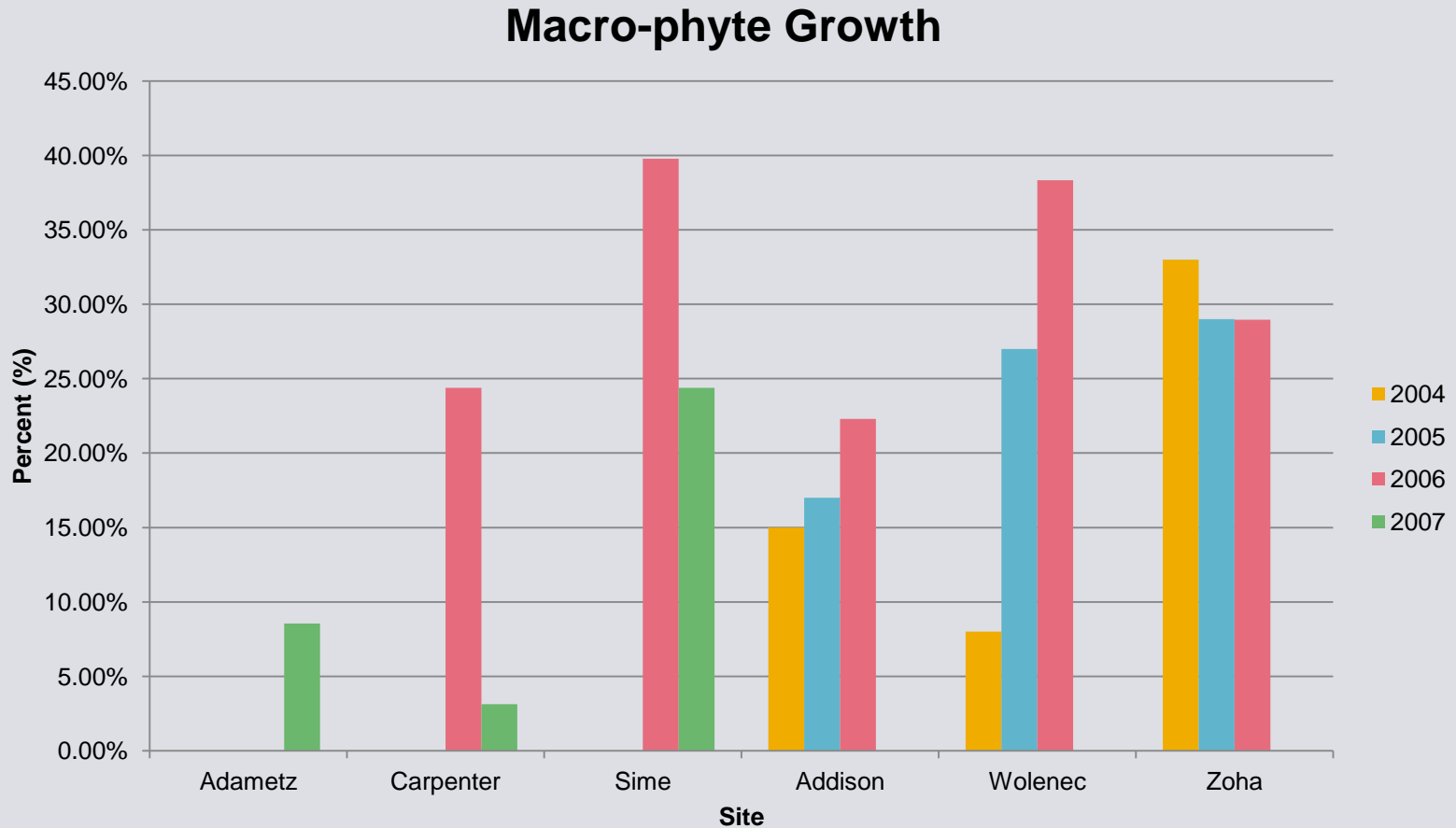
Blue River Results Comparison

Substrate: Sand



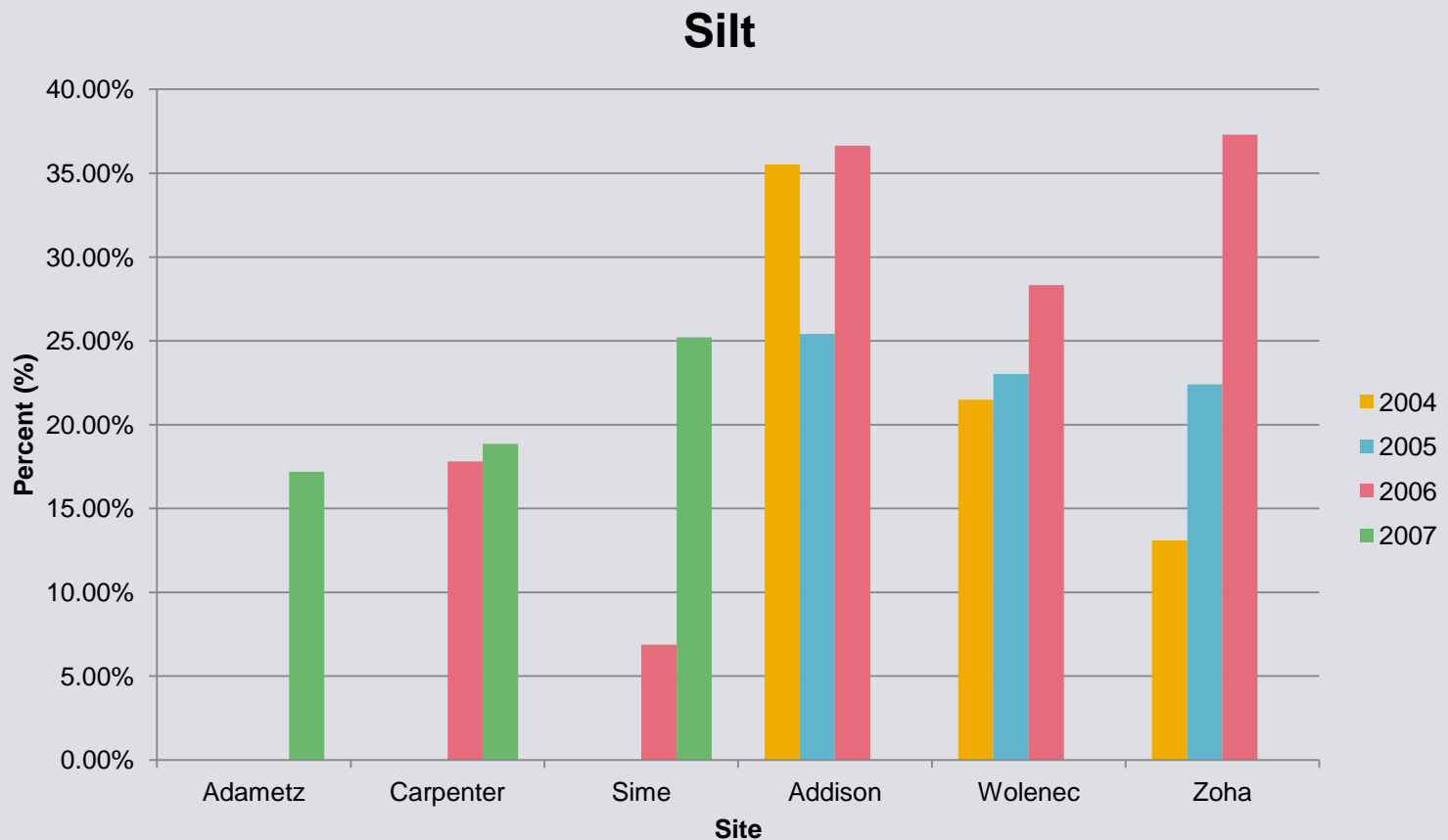
Blue River Results Comparison

Macrophyte Growth



Blue River Results Comparison

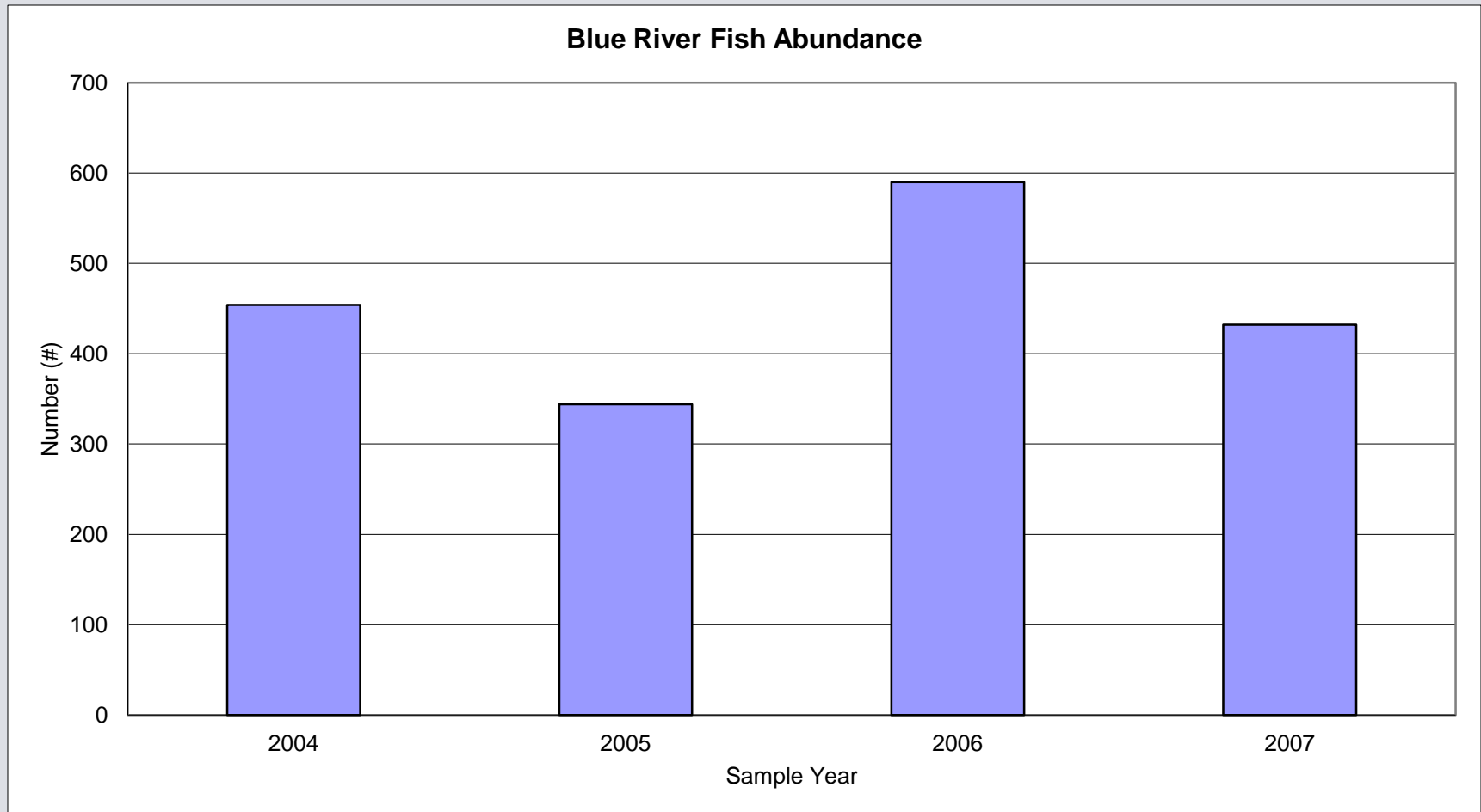
Substrate: Silt



Blue River Macroinvertebrates



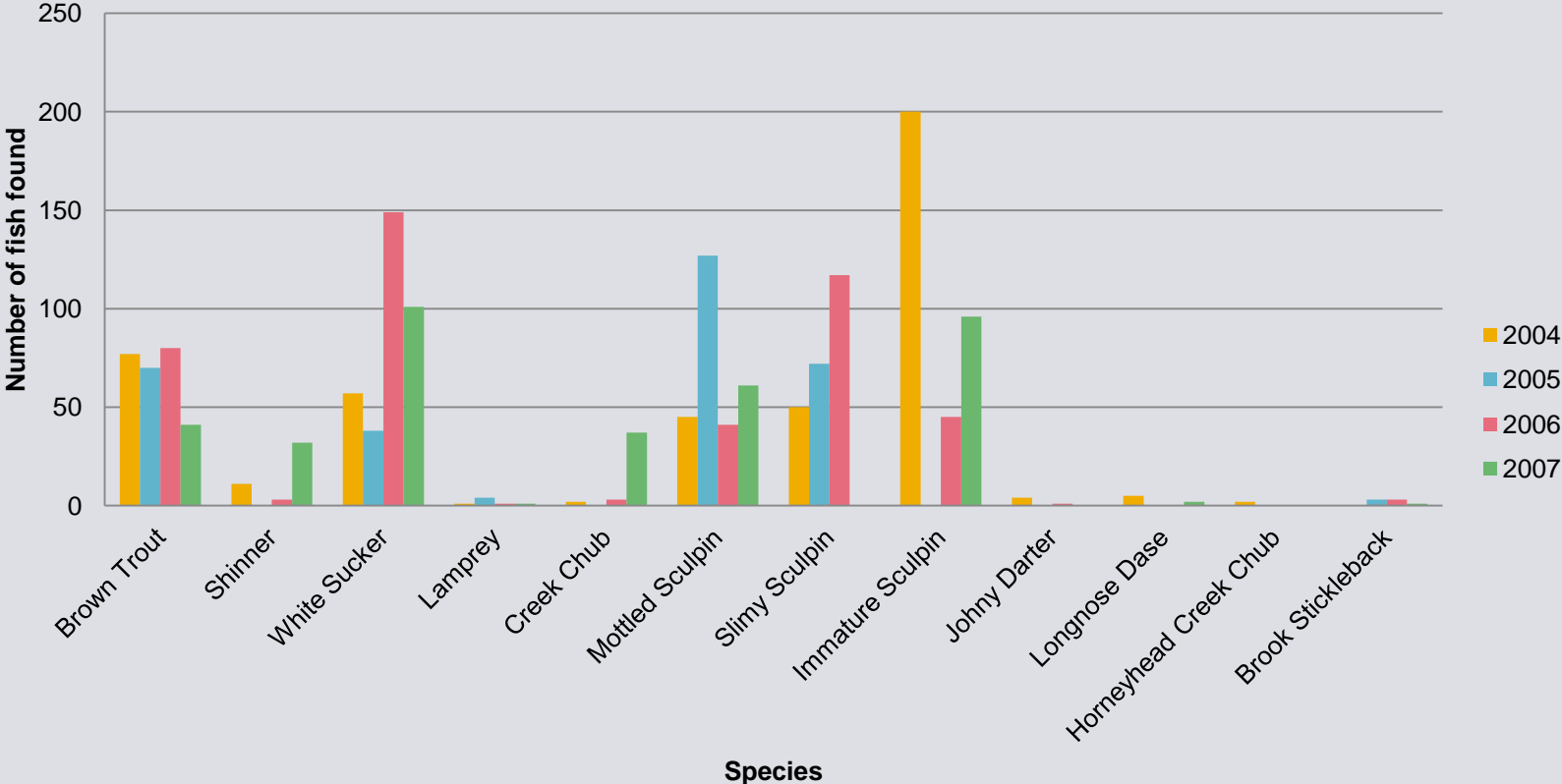
Blue River Fish Fish Abundance



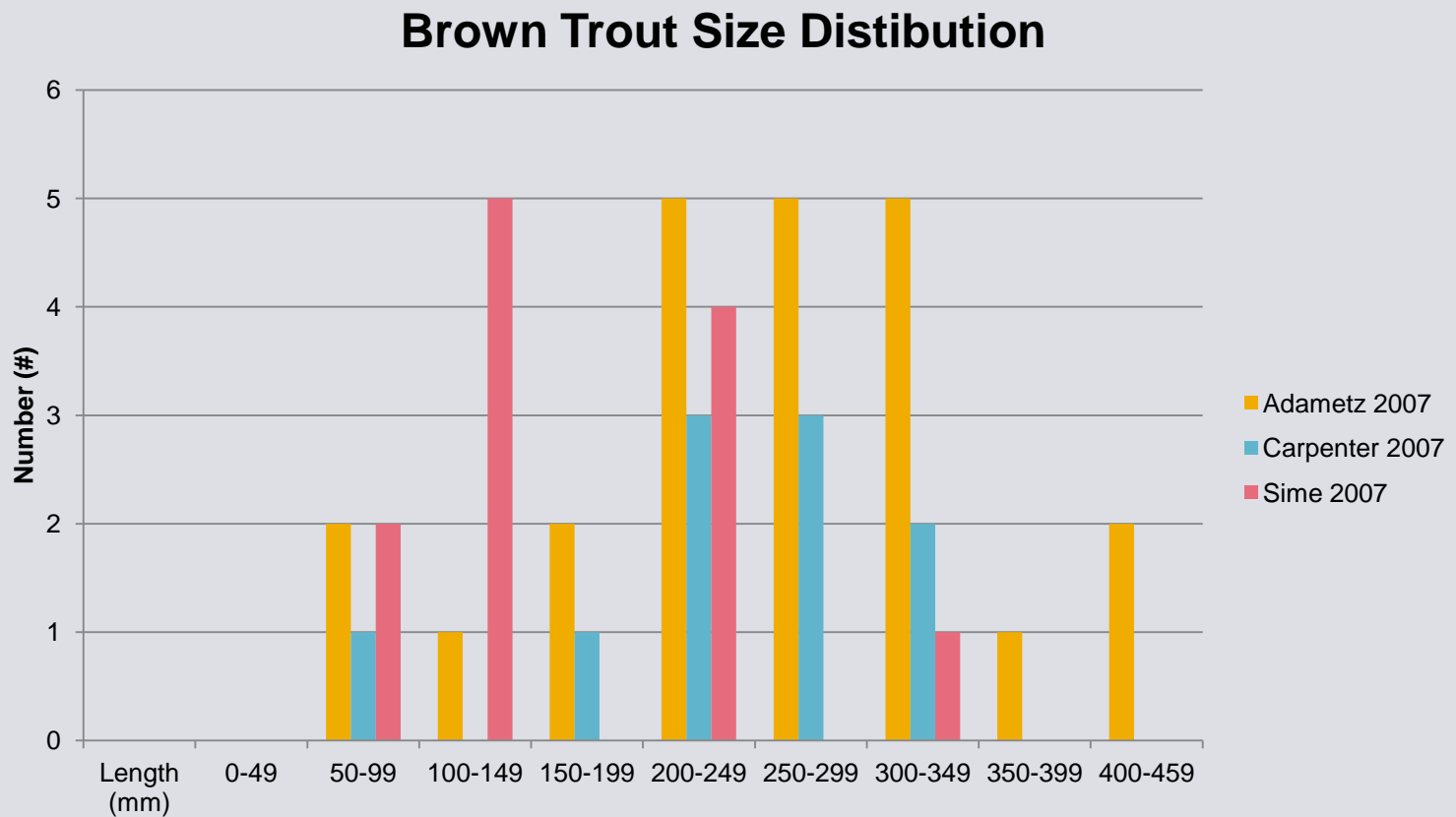
Blue River Results Comparison

Fish

Taxa Distribution



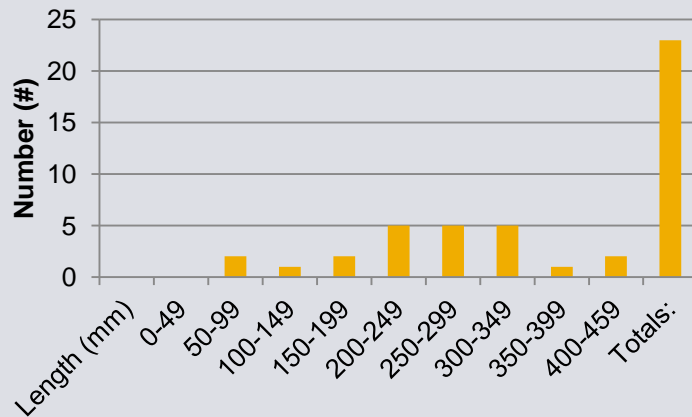
Blue River Brown Trout Distribution



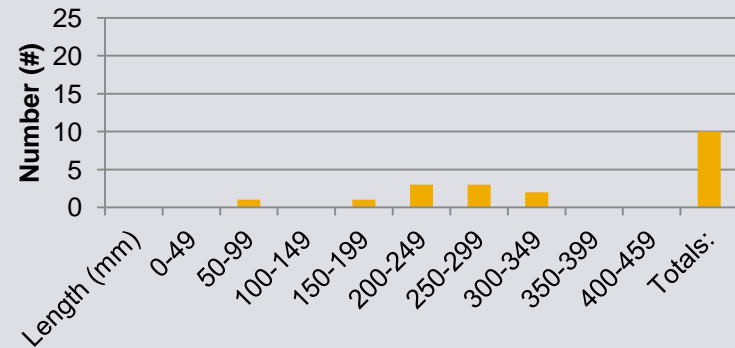
Blue River Results 2006 vs. 2007

Brown Trout by site

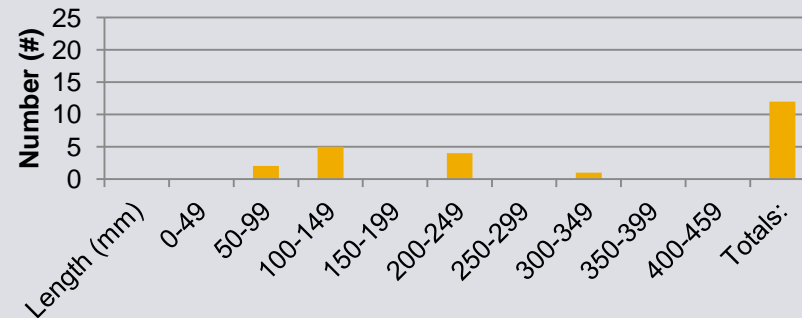
Adametz 2007



Carpenter 2007



Sime 2007



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)