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The Runnins Report 2010

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The Runnin's Report

Seekonk High School
Biology II
April 2010



RUNNINS RIVER

- The 10th grade Bio 2 classes went to the Runnins River to see how healthy it was.
- Students investigated microorganisms and phosphate levels.

Site A Location: Woodward Ave



Site B Location: Burr's Pond



Description of Site A

- Varied canopy (sunnier than B)
- Great variety of plant life
- Water was murky
- Silty river bottom with little flow
- Manicured banks



Description of Site B

- Shallow, clear water
- Overcast weather 9/22.
- Many trees surrounding the river.
- There was dry soil, but wet gravel on the banks of the river.
- Some aquatic life
- 100 yds upstream the shape of the stream bank and the channel was vertical/undercut.
- Waterfall upstream



Grab sampling

- Collected water in bottles
- Filtered into dark bottles
- Froze samples until use

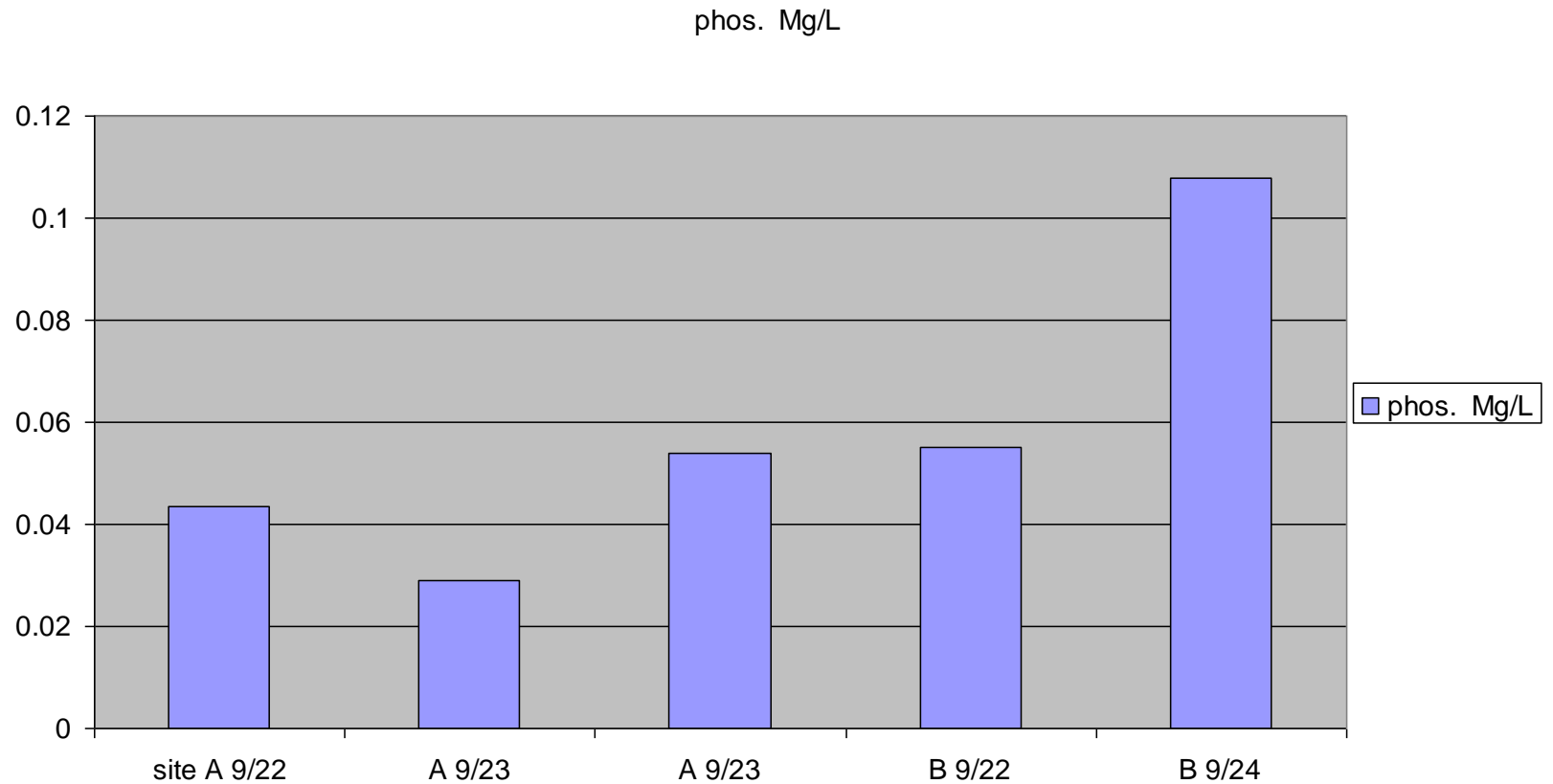




Water Testing for Phosphates

- In class, students added phospho-ver reagent to water samples
- Samples were measured using Hach 2010 & Hach 890 specs
- Readings were recorded and then graphed.

Phosphate Lab Results



Phosphate Load Sites A & B

Site & Date	Total phosphate load
A, period A	0.02
A, period B	0.27
Average	0.16

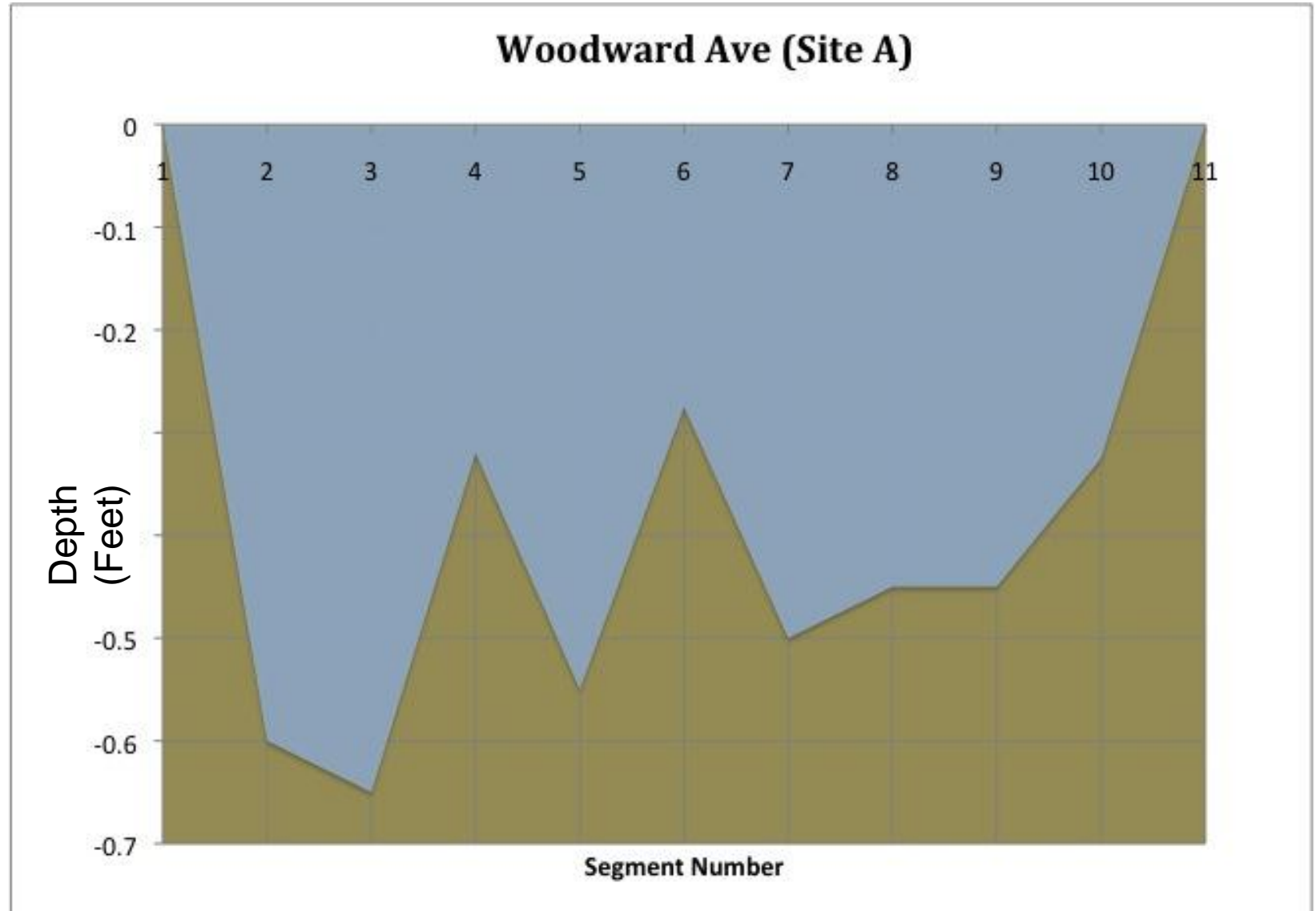
Site & Date	Total Phosphate Load
B, period A	9.15
B, period C	4.18
B, period B	6.01
Average	9.50

Depth & Flow Collection

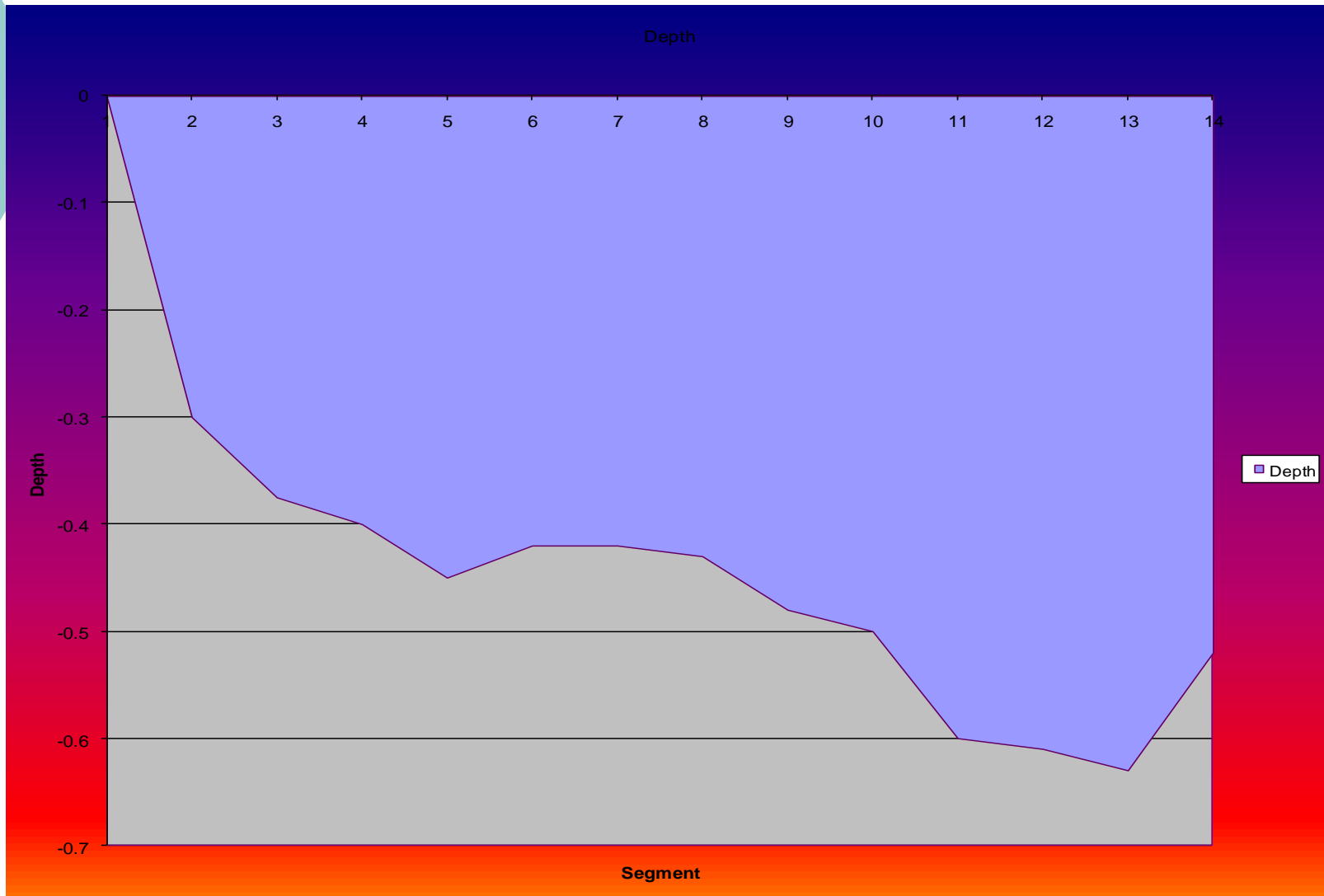
- Measured depth and flow in 1 ft. segments across the width of river
- Recorded measurements for in class graphing & calculations



Graph of the Riverbed Site A



Graph of the Riverbed Site B



Macro Collecting

- Found fast and slow current spots in the river
- Collected microorganisms with net
- Rinsed & searched for living organisms
- Put all the organisms into a bottle of ethanol



Counting & ID Description

- First, we took the macros and separated them from the debris
- Then, we separated the macros into groups to identify them.
- Next, we used identification cards to identify & count each group.
- Lastly, we took pictures of the macroinvertebrates.

Macroinvertebrates Site A



Odonata: PTV 5; 6.06%



Megaloptera: PTV 2; 18.2%



Amphipoda: PTV 7; 45.4%

Macroinvertebrates Site A



Diptera chironomidae:
PTV 7: 12.1%



Amphipoda:PTV 7

MGBI Woodward Ave Site A

MGBI is used to estimate the overall health of the river by looking at the macro invertebrates that live in it.

- The MGBI that we came up with for the Woodward Ave site is: **5.08**

- The standards for this are:

<3.75 which is No Pollution

3.76-6.50 which is Moderate Pollution

>6.50 which is Severe Pollution.

Based on this scale, Woodward Ave (Site A) is moderately polluted.

Macroinvertebrates Site B



Trichoptera; PTV 3;
16.9%



Amphipoda; PTV 7;
49.4%



Coleoptera; PTV 4;
30.1%



Gastropoda; PTV 7;
0.6%

Macroinvertebrates Site B



Hirudinea; PTV 10; 0.6%



Diptera; PTV 4; 1.8%



Chironomidae; PTV 7; 0.6%



Coleoptera: PTV 4: 18.2%

MGBI Burr's Pond Site B

- The Major Group Biotic Index for the Burr's pond site was= **5.40**
- The MGBI standards are:
 - <3.75 no pollution
 - 3.76-6.50 moderate pollution**
 - >6.50 severe pollution
- Based on this scale, the river at Site B is moderately polluted.

Thank You:



-Mrs. Cunard

-Mrs. McGovern

-Mr. Bonneau

-Mrs. Borden

-Bridgewater State College -Seekonk Land Trust