

**Wilsonville Primary School  
Environmental Education Grant  
Project Summary**

Our project on Boeckman Creek was very successful . We achieved the goals that we set out to do in the proposal. We went to the stream on a monthly basis to do monitoring and to take data about the stream and the plants and animals around the stream. We raised public awareness by attending meetings, hosting work parties, making flyers and starting a "Friends of Boeckman Creek" group. We finished a video which documents the work we did better than anything I could say in writing.

**Monthly Monitoring**

Students went to the stream on a monthly basis to monitor wildlife and water quality.

**Work parties**

We held work parties on weekends. Activities included barking a trail for better access to the site, brush removal, planting of native plants, cutting of ivy and blackberry bushes.

**Flyers**

We put out a flyer to 1000 residences. The flyer was designed and produced by students. We picked up an extra grant partner. Stan Wiley donated the layout of the flyer. The City of Wilsonville also paid for the printing costs. A follow-up flyer is in process.

**Meetings**

The students had several opportunities to share about the project with adults. We had a Friends of Boeckman Creek meeting that several people attended. The students presented for the school board and a group called Friends of Goal 5.

**Press/ Media**

We had an article in the local paper as well as in the Oregonian. I have included those in the work packet.

### **Getting other students involved**

We had one class come join us at the stream for a monitoring trip. Another class from a neighboring school heard about our project and started a project of their own upstream from our site. I worked closely with Mr. Gannon from the other school. Next year we will continue to collaborate on projects. Some students from other classes joined us on the weekend work parties.

### **Videotape**

We created a videotape to use as an educational tool. We used the video at the various meetings. Students worked with Lorna Freeze one of the business partners in the grant. The students took zap camera pictures and shot part of the video.

### **Grant partners**

Bosky Dell Nursery provided consultation on planting native species. They provided plants at wholesale cost and some for free.

Gary Galovitch made several trips to our site to help with monitoring. He was helpful in providing direction for the project.

Michael Carlson of Audubon came out and assisted with planning and planting of the native species.

Lorna Freeze worked with the students on the development of the videotape which documents the work we have done the past year.

The City of Wilsonville provided wood chips for the trail and paid for the printing of the flyer. Steve Starner brought some city water personnel to talk to the students about Wilsonville's water system.



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# FOG5 FRIENDS OF GOAL FIVE

*"Protecting Wilsonville's Natural Areas"*

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Friends of Boeckman Creek  
C/O Wilsonville Primary School  
30275 SW Boones Ferry Rd  
Wilsonville OR 97070

April 15, 1995

Dear Mr. Carlson, Alan, <sup>Tyson</sup> Jason, Katrina, and Marissa,

Thank you so much for coming and talking to the Friends of Goal 5. We thoroughly enjoyed your presentation and found it very informative. Your video was very well done. We look forward to seeing your new video. Your presentation showed that you have all put energy into this project and have learned a lot.

Since we did not have much time to talk after your presentation, I am enclosing some information about our group and a copy of our meeting minutes. We are very supportive of your work and hope to have an opportunity to work together in the future. Everyone present at our meeting would like to receive your newsletter. I have enclosed a list of names and addresses. If distribution is a problem, please let me know so that we can arrange a solution. Perhaps you could get them to me and I could pass them out at our meeting.

Thank you again. Please let us know if there is any way that we can help you in your projects.

Sincerely,

Debra Iguchi, President  
Friends of Goal 5

April 18th, 1994

## Boeckman Creek News

Thanks to all of you who are making this a very successful project. I developed a list of events ahead of time, so you can plan to join in whenever you get the chance. We will be developing a flyer about the stream for local residents in May, so if you might like to help get the flyer together please let me know. On the flyer, we will give information about the stream and invite them to come to a meeting to form a "Friends of Boeckman Creek" group. The kids will show slides and talk at the meeting, which will be June 7th at 7:00 in the school library.

### Upcoming dates:

Weekend work party- Saturday April 23rd 10:00-12:00  
May 19th-Monitoring  
May 24th Flyer to local residents  
June 7th- Monitoring  
June 9th- 7:00 Friends of Boeckman Creek Meeting  
Weekend work party- Sunday June 12th 1:00-3:00

During the work party in April (this weekend), we will be putting bark on the path to the wetland area. Sorry for the late notice! I realize that baseball and other things may conflict. The work parties are totally optional. No pressure to attend! The work party in June will focus on removal of invasive plant species. Please bring shovels, wheelbarrows, and rakes in April and blackberry removers like clippers, machetes (adults only), or loppers in June. Everyone is welcome. Meet at the maintenance shed at the park. Come for the whole time or just for a half-hour.

Thanks,

The plants and animals of Boeckman Creek

P.S. The STEP biologist says that the presence of sculpins, caddisflies, and three different species of mayflies is an encouraging sign. He expects there to be a native cutthroat population in the stream!! We are looking for native plant guides that would be specific to this area. Let Bob Carlson know if you know of any resources.

9-26-94

To: Charlotte Morris, Debbie Thompson, Meg Kanne

From: Patrick Gannon

Re: Off Campus Nature Study.

Two weeks ago, Joyce Campbell contacted me about using her property for my class to do an ongoing nature study. Her son, Robert, is a third grader in my class. She and her husband own 2 and 1/2 acres of wooded land on Boeckman Rd. The Boeckman Creek, after which our school was named, runs through their property. She proposed my class do an environmental study where they make short field trips on the property to examine animal and plant life.

Last January, both of us attended a WL/W school board meeting in which 3/4 teacher Bob Carlson from Wilsonville Primary discussed the nature study on the Boeckman Creek his class has done the past two weeks. They study a portion of Boeckman Creek in the Memorial Park area.

On Saturday, September 24, I walked part of the property with Mrs. Campbell. The wooded area offers a diverse ecosystem. The Boeckman Creek on her property is only 3-4' wide and 6" deep at this location.

After school today, I talked at length with Bob about some of the activities he does with his students. He measures the width of the stream, its flow, takes ph samples, water temperature, does drawings and journal writing, studies animal and plant life, etc. He received a grant proposal from METRO for \$3000 to buy the equipment for his class studies.

I would like to do a similar study with my students. Bob stated he would be willing to come and view the Campbell property with me. He also stated he would be willing to have me come along with he and his class for an outing. Perhaps we could arrange coverage for my class should I accompany his class for an outing.

Meg, I understand you have considerable experience in environmental education. I would appreciate meeting with you to discuss lessons developmentally appropriate for this age level. Bob and I are going to

scout the Campbell property after school on Wednesday, October 6. You are invited to come along and offer your recommendations.

Debbie and Charlotte, perhaps we can meet to discuss such items as: travel arrangements, liability, grant writing, etc.

In addition to the many scientific advantages to such an activity, I see this as an opportunity to develop more of an educational bridge between the Boeckman Creek and Wilsonville Primary elementary schools.

I look forward to meeting with you on this.

cc: Bob Carlson  
Joyce Campbell

Dear Parents,

We have been asked to make a 5 minute presentation to the school board on Thursday May 12<sup>th</sup> about our project on Boeckman Creek from 7:15 to 8:00. Your child would like to participate if they are not busy that evening. If you would like them to participate, you must be willing to transport them to the Ad. Bldg. and take them home. Please sign below and we will have a drawing to see who gets to go. Please return by Thurs. A.M. Those who aren't chosen will be able to present at our June 9<sup>th</sup> meeting.

X \_\_\_\_\_



March 6th 1995

Dear Friend of Boeckman Creek,

Mr. Carlson's third and fourth graders have continued their work on Boeckman Creek. Late last fall we planted some native wetland and upland plant species. We focused on species that would provide food for wildlife. We have continued monitoring the water quality and streamflow.

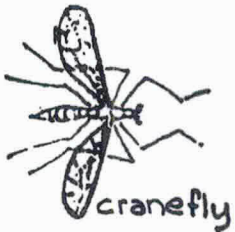
We are in the process of developing another flyer to send to local residents. We will be inviting them to join Friends of Boeckman Creek. We will have a meeting later this spring to establish the mission and goals of the group. We will try to keep you informed more often in the future.

There will be a work party this weekend on Saturday March 11th, from 3:30 pm to 6:00 pm. You are invited to join us if you can. We will be working on the trail, planting and brush cutting.

There is an exciting development in the Metro Greenspaces upcoming ballot measure 26-26 which will be a mail-in ballot. If the ballot is approved, 44 acres adjacent to the park and the creek will become nature preserve and there would be funding available to make an Environmental Learning Center which would be used by all of the schools in Wilsonville. Please remember to send in your ballots!! It would fund great projects like this all over the Metro area.

Sincerely,  
Bob Carlson's class  
Wilsonville Primary





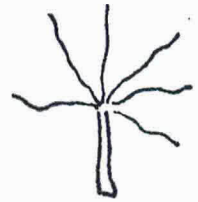
crane fly



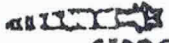
water boatman



water strider



hydra



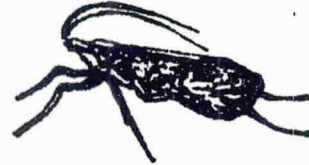
crane fly larvae



frog



tadpole



caddisfly



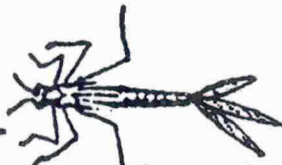
caddisfly larvae



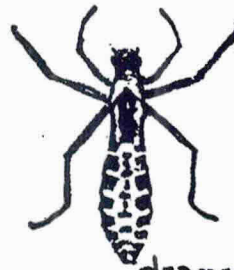
water flea



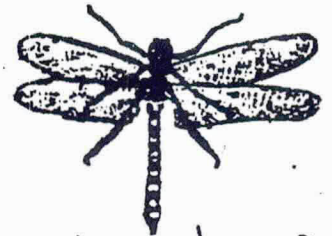
damselfly



damselfly nymph



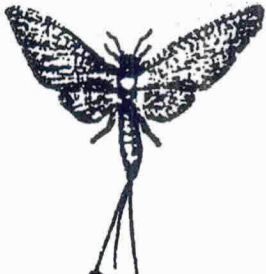
dragonfly nymph



dragonfly

# The Pond

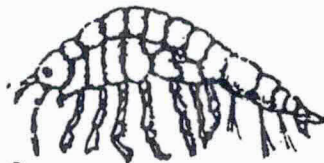
Here are some of the members of the pond community. Draw a circle around the ones you found in our pond. Look carefully-many look alike!



mayfly



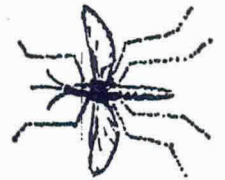
mayfly nymph



fresh water shrimp  
scud



mosquito larvae



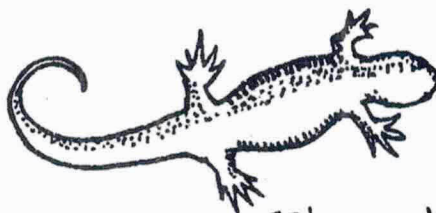
mosquito



copepod



whirligig beetle



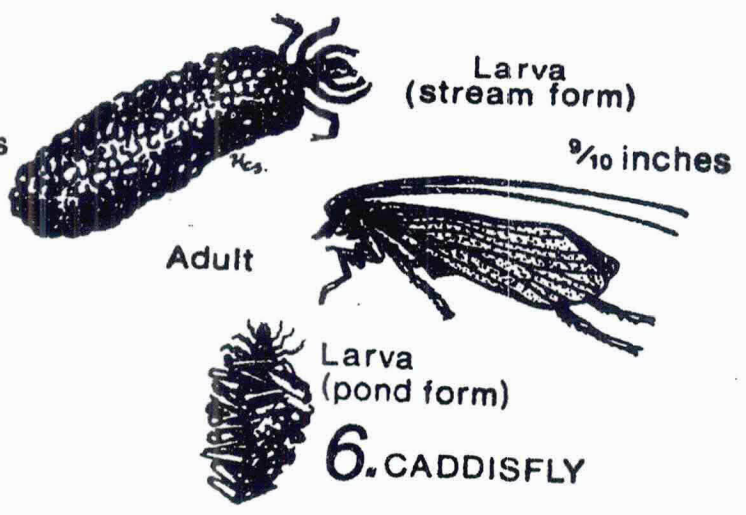
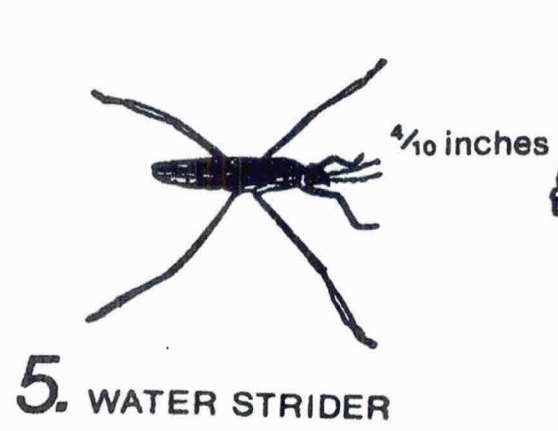
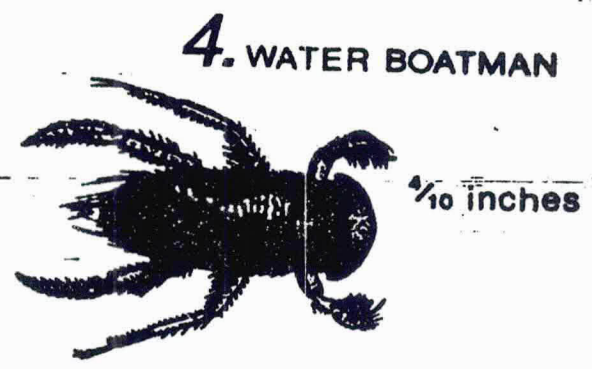
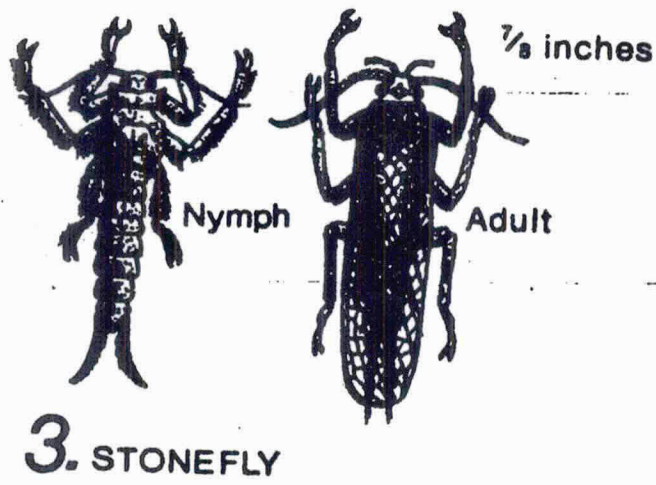
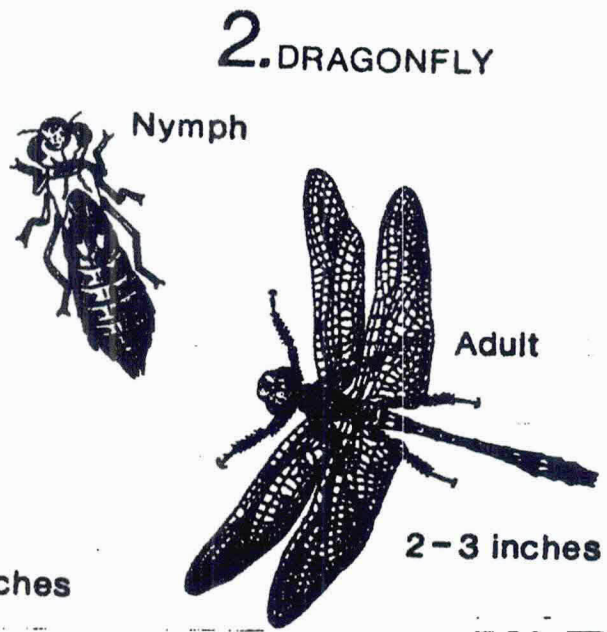
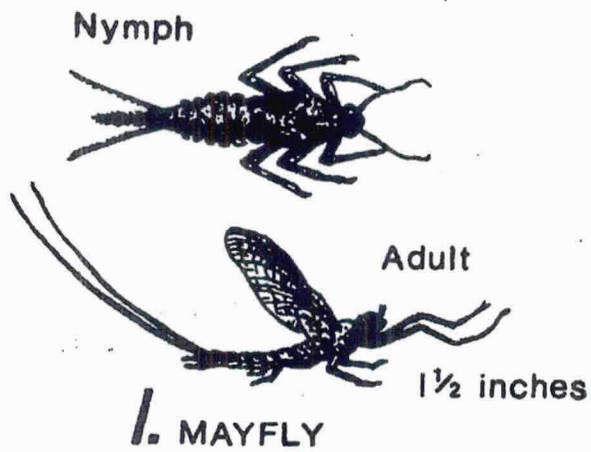
salamander



backswimmer

# AQUATIC INSECTS

APPROXIMATE LENGTHS GIVEN IN INCHES



Date: \_\_\_\_\_ Observers: \_\_\_\_\_

## Streamflow Data Sheet

Site #1

Measure	1					2					3					Average	
Width (low water)	_____ ft					_____ ft					_____ ft					w = _____	
Depth	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5		
	Average _____ ft					Average _____ ft					Average _____ ft						d = _____
	_____ ft					_____ ft					_____ ft						
Velocity (Distance / Time)	_____ ft + _____ sec = _____ ft/sec					_____ ft + _____ sec = _____ ft/sec					_____ ft + _____ sec = _____ ft/sec					v = _____	
Bottom factor:	rubble, gravel, or plant a = 0.8 smooth mud, silt, or bedrock a = 0.9 <span style="float: right;">a = _____</span>																
Streamflow (r) = w X d X v X a																	
Streamflow site #1 = _____ X _____ X _____ X _____ = _____ ft <sup>3</sup> /sec																	

Site #2

Measure	1					2					3					Average	
Width (low water)	_____ ft					_____ ft					_____ ft					w = _____	
Depth	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5		
	Average _____ ft					Average _____ ft					Average _____ ft						d = _____
	_____ ft					_____ ft					_____ ft						
Velocity (Distance / Time)	_____ ft + _____ sec = _____ ft/sec					_____ ft + _____ sec = _____ ft/sec					_____ ft + _____ sec = _____ ft/sec					v = _____	
Bottom factor:	rubble, gravel, or plant a = 0.8 smooth mud, silt, or bedrock a = 0.9 <span style="float: right;">a = _____</span>																
Streamflow (r) = w X d X v X a																	
Streamflow site #2 = _____ X _____ X _____ X _____ = _____ ft <sup>3</sup> /sec																	

# Streamflow

## Flow site selection

Select two representative sites as far apart as possible in the total study area. Sharp turns or very rough bottoms will slow the water and should not be considered representative.

Measure a 50-foot section at each site. Mark the upper and lower ends of the section for easy reference.

## Width

At each flow site, measure the width to the nearest tenth of a foot in three places (see below). Select places that do not have large slack areas at the edge. Record these measurements on the data sheet and compute the average.

## Depth

At each of the three places where you measured the width of the stream, measure the depth to the nearest tenth of a foot at five equally spaced places across the stream (see below). Record your measurements on the data sheet and compute the average.

## Velocity

Velocity is a measure of how fast something moves. Water velocity can be measured by timing how fast a floating object travels 50 feet in a stream deep enough to float the object. Wind can be a factor, so use an object that floats low in the water—an orange, fishing bobber, stick or

leaf). Dye specifically designed for streamflow determinations may also be used. Calculate the velocity using the formula below.

The average of three to five trials should give a good velocity figure.

$$V = \frac{50 \text{ ft}}{x \text{ sec}}$$

Where:  $x$  is the number of seconds it takes object to float 50 ft

$V$  = Velocity

**Example:** If your object floats 50 feet in 25 seconds, velocity is:

$$V = \frac{50 \text{ ft}}{25 \text{ sec}}$$

$$V = 2 \text{ ft/sec}$$

## Bottom factor

Look at the bottom of the stream. If it is rubble, gravel or plants, the bottom factor ( $a$ ) = 0.8. If the bottom is smooth mud, silt or bedrock, the bottom factor ( $a$ ) = 0.9.

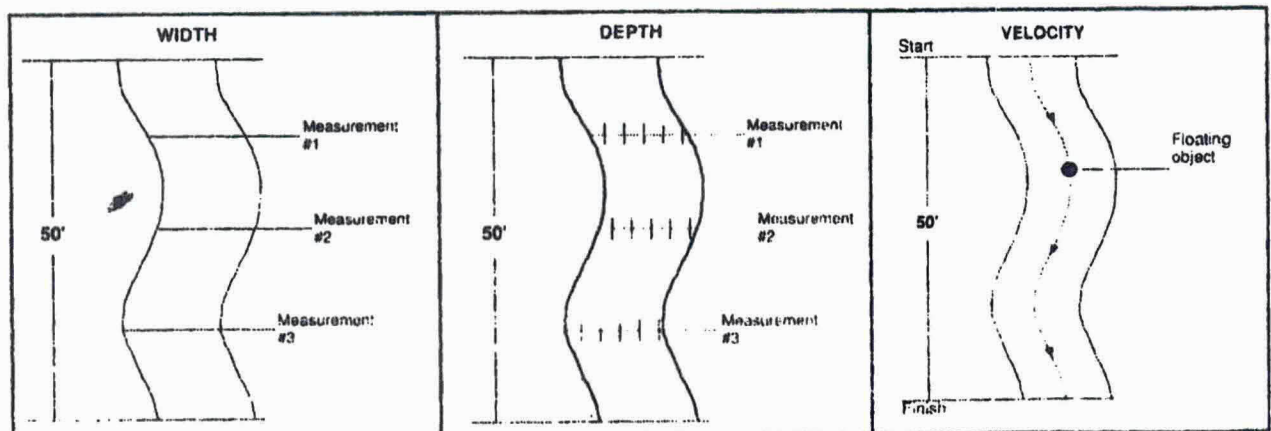
## Streamflow

Compute streamflow (discharge) in cubic feet per second (cfs) using the formula below for each of the two sites.

$$\text{Streamflow in cubic feet per second (cfs)} = \text{width} \times \text{depth} \times \text{velocity} \times \text{bottom factor}$$

**Example:**

$$15 \text{ ft} \times 0.5 \text{ ft} \times 2 \text{ ft/sec} \times 0.9 = 13.5 \text{ cfs}$$



# Invertebrates

month \_\_\_\_\_

Group member \_\_\_\_\_

Drawing

Description

Drawing	Description

# Test Kit Data Sheet

Month \_\_\_\_\_

Air temp \_\_\_\_\_

Group members \_\_\_\_\_

Test 1

water temp \_\_\_\_\_

P.h. \_\_\_\_\_

D.O. \_\_\_\_\_

TEST 2

water temp \_\_\_\_\_

P.H. \_\_\_\_\_

D.O. \_\_\_\_\_

TEST 3

water temp \_\_\_\_\_

P.H. \_\_\_\_\_

D.O. \_\_\_\_\_

#1

#2

#3

AVG

D.O	PH	°F

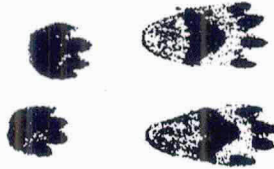


**Striped Skunk**

**Coyote**



**Long-Tailed Weasel**



**Beaver**



**Opossum**



**Red Fox**

**Raccoon**



**Bobcat**



# Wildlife Inventory Data Sheet

Stream: \_\_\_\_\_

Observers: \_\_\_\_\_

Location: \_\_\_\_\_

Date: \_\_\_\_\_

Weather: \_\_\_\_\_

Time: \_\_\_\_\_

Category	Number of individuals observed	Species (optional)	Additional Information
Songbirds			
Upland game birds			
Shorebirds			
Waterfowl			
Raptors			
Reptiles/ amphibians			
Mammals			



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Dear Landowner,  
I am in Bob Carlson's class at Wilsonville Primary School. Our class is taking care of Boeckman Creek. We are asking if we could walk on your property to find out if we could make a better environment for fish and animals to live in. We are doing this too find out more about the animals and the creek. We'll call you and tell you the exact date and time. We promise not to damage any thing. Thanks for your time.

Sincerely,  
Lauren

Lauren Wippel  
4<sup>th</sup> grade, 10 years old  
Bob Carlson's class