

FREQUENT WALKER CARD

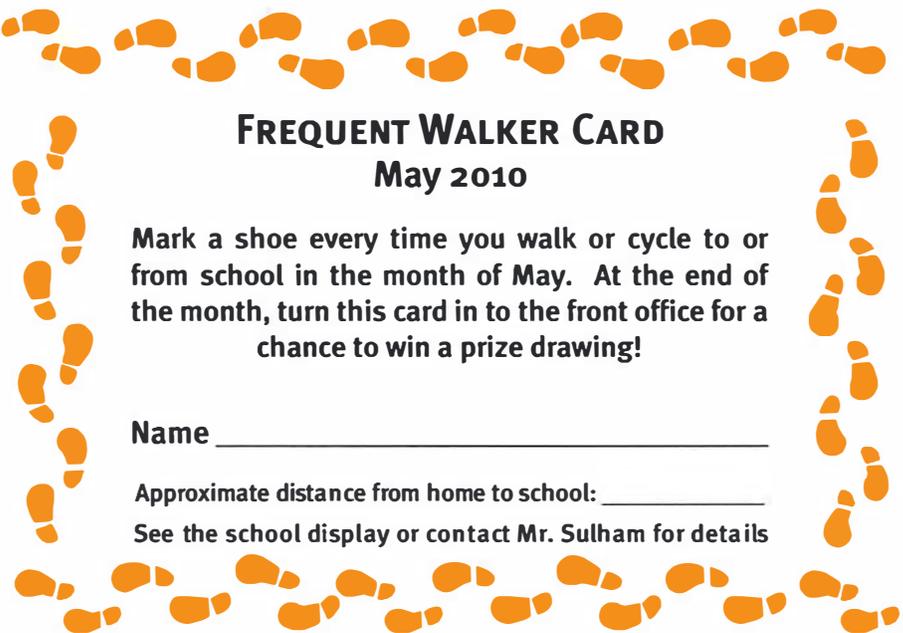
May 2010

Mark a shoe every time you walk or cycle to or from school in the month of May. At the end of the month, turn this card in to the front office for a chance to win a prize drawing!

Name _____

Approximate distance from home to school: _____

See the school display or contact Mr. Sulham for details



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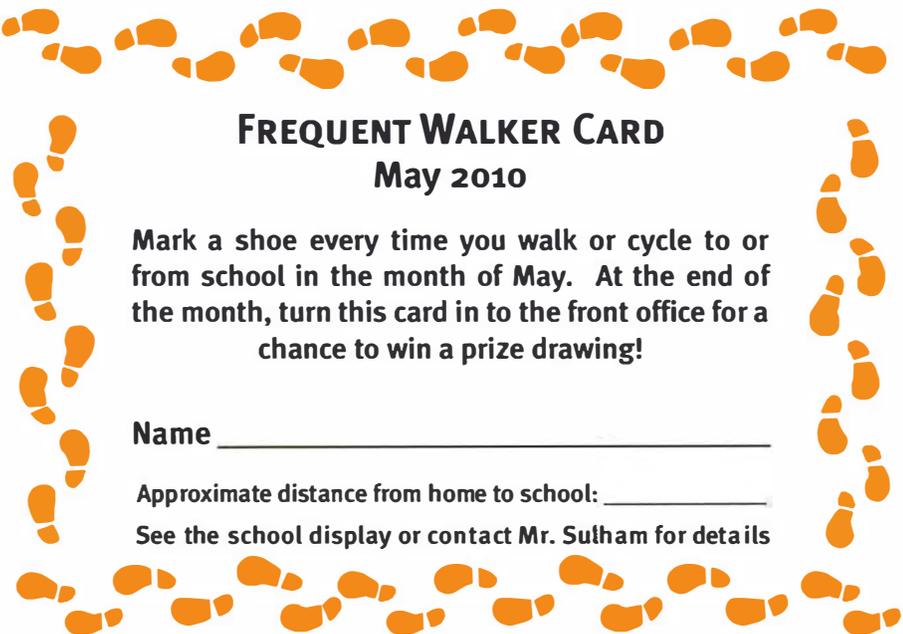
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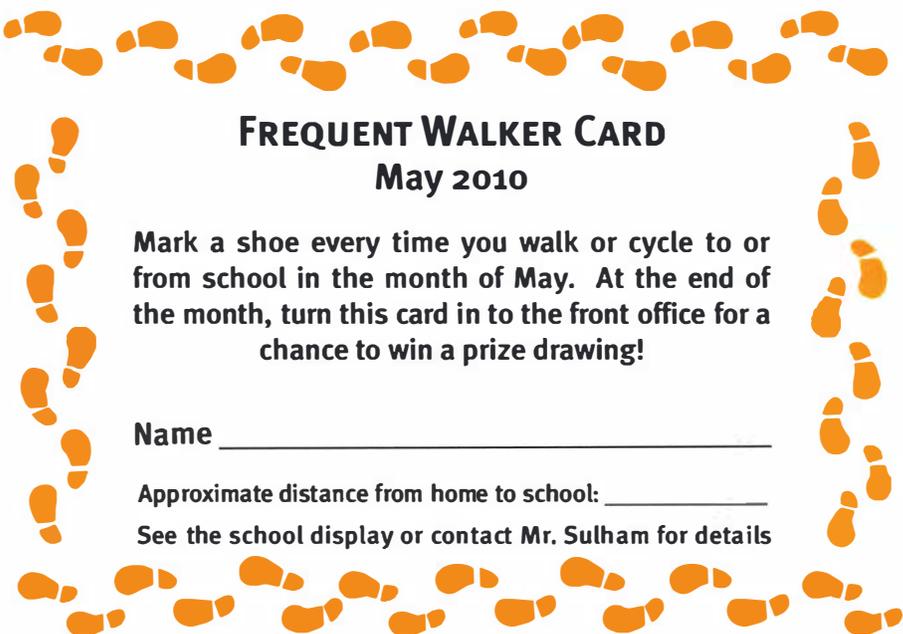
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A pair of pink and white canvas sneakers with white laces, resting on a dark surface with scattered brown leaves. The sneakers are positioned diagonally, with the left shoe in the foreground and the right shoe slightly behind it.

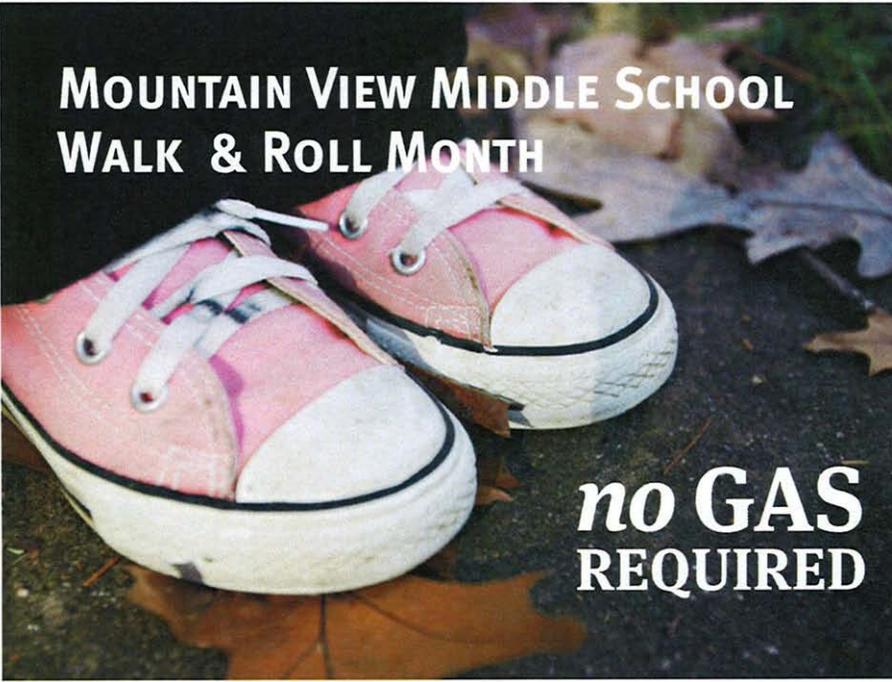
**MOUNTAIN VIEW MIDDLE SCHOOL
WALK & ROLL MONTH**

***no GAS
REQUIRED***

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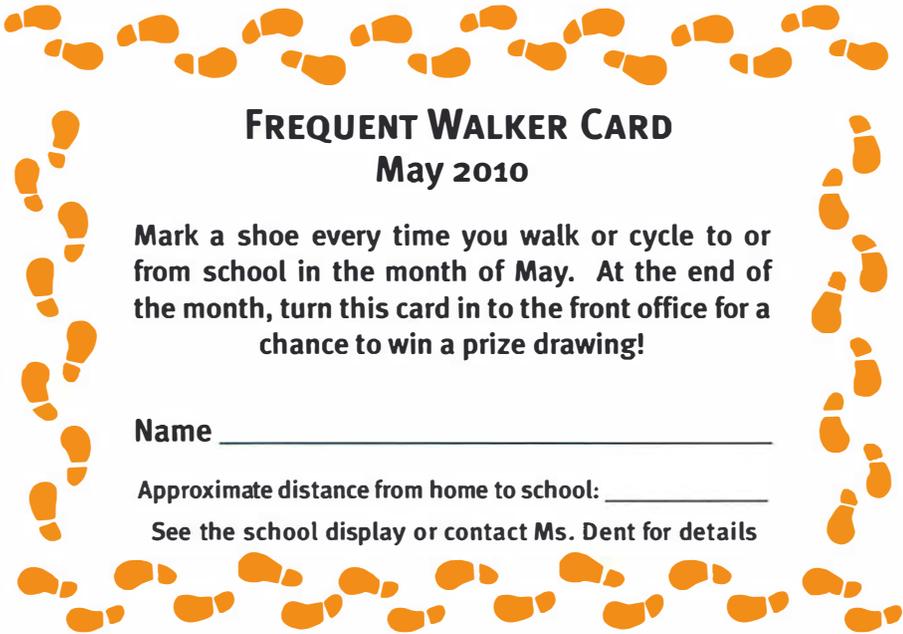
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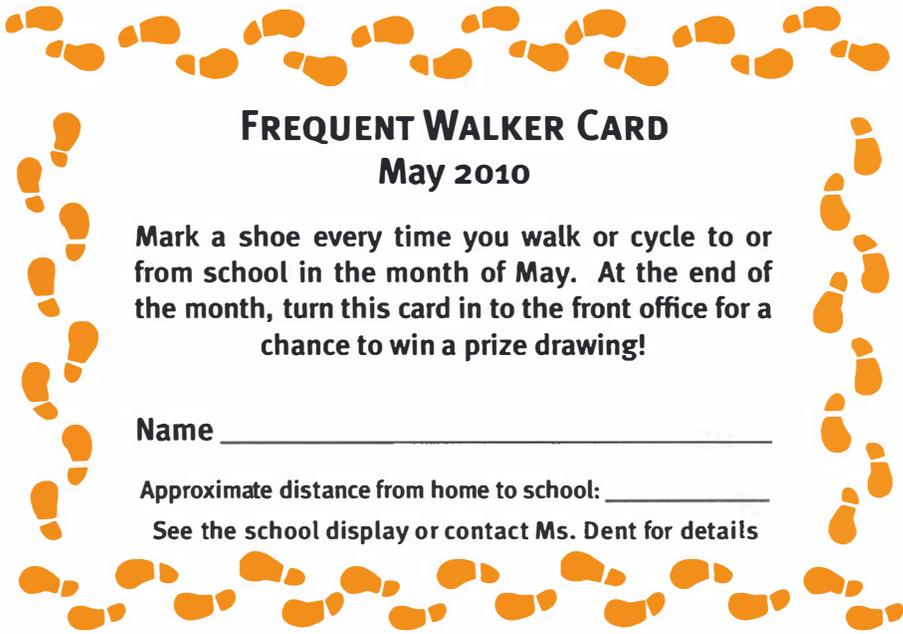
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Photo credit National Center for Safe Routes to School, www.saferoutesinfo.org



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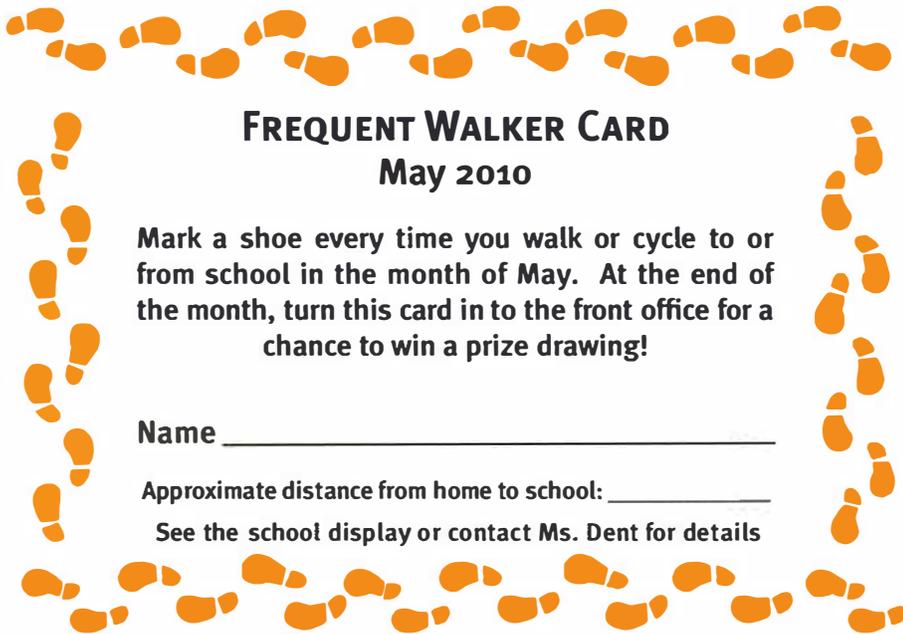
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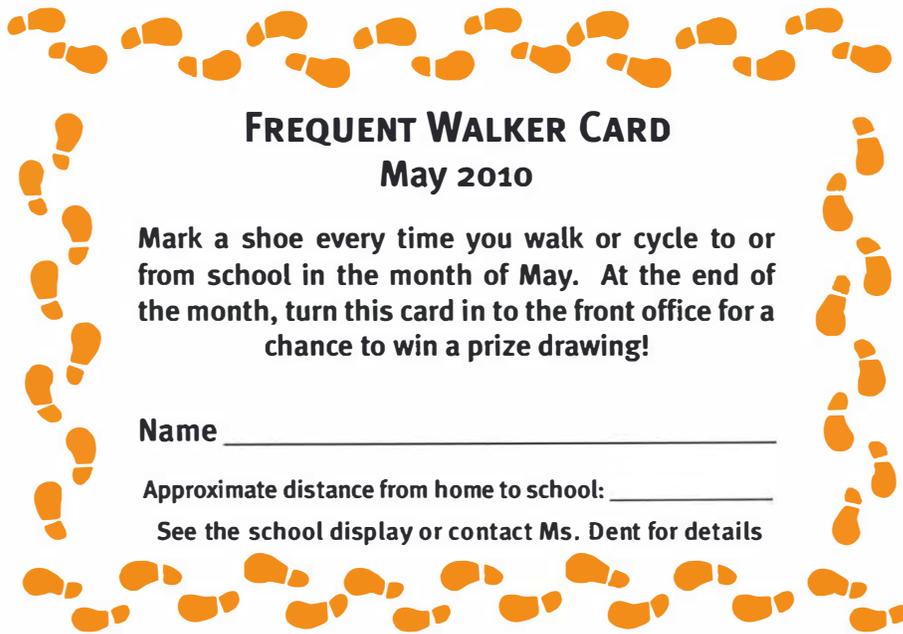
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Photo credit National Center for Safe Routes to School, www.saferoutesinfo.org

DATA COLLECTION FORM - SCHOOL DROP-OFF OBSERVATION

Today's Date _____ School _____

Your Name _____

Location _____

DIRECTIONS

Mark the "Time Started" and "Time ended" on each page. If you need multiple pages, mark the times that you begin and end each page.

Make a record of every car that drops off students at this location. Do not count traffic that is simply passing through.

In this case, "car" refers to any personal vehicle – sedan, minivan, SUV, pickup, taxi etc. Do not count school buses, school district vans, pedestrians or cyclists.

When observing behavior, check every box that applies. If a car drops off multiple passengers, give a checkmark for each passenger.

The first priority is to get an accurate count of the cars, and the second is to record the behaviors. If cars arrive faster than you can tally, simply check the box (☐) to count the car and move on. Draw a solid line through the row to indicate that you did not record data for that vehicle.

Make additional notes if you notice behavior that affects pedestrian safety and is not covered by this check list.

Example: **Car 1** drives up, drops 2 students at the designated location. The students exit from both sides of the car. The parent keeps the motor on while the children talk to friends, tie their shoes and eventually enter the school. ("Idling" is anything longer than time required to drop and go). **Car 2** approaches on the far side of the street, lets a single student out on the curb. The student crosses the street right there, and the parent drives off.

	Driver approach to school			Passenger exit from car			Passenger crossing behavior			Driver wait and departure				Notes
	Uses drop-off area	Pulls to curb	Wrong direction	Number dropped off	Exits onto curb	Exits into street	Does not cross	Crosses at corner/crosswalk	Crosses mid block	Drop and go	Idles	Parks and exits	U-turn	
Car 1 <input checked="" type="checkbox"/>	✓	✓		✓✓	✓	✓	✓✓				✓			
Car 2 <input checked="" type="checkbox"/>		✓		✓	✓				✓	✓				Driver using cell phone

Time Started: _____

Location: _____

	Driver approach to school			Passenger exit from car			Passenger crossing behavior			Driver wait and departure				Notes
	Uses drop-off area	Pulls to curb	Wrong direction	Number dropped off	Exits onto curb	Exits into street	Does not cross	Crosses at corner/crosswalk	Crosses mid block	Drop and go	Idles	Parks and exits	U-turn	
Car 1 <input type="checkbox"/>														
Car 2 <input type="checkbox"/>														
Car 3 <input type="checkbox"/>														
Car 4 <input type="checkbox"/>														
Car 5 <input type="checkbox"/>														
Car 6 <input type="checkbox"/>														
Car 7 <input type="checkbox"/>														
Car 8 <input type="checkbox"/>														
Car 9 <input type="checkbox"/>														
Car 10 <input type="checkbox"/>														
Car 11 <input type="checkbox"/>														
Car 12 <input type="checkbox"/>														
Car 13 <input type="checkbox"/>														
Car 14 <input type="checkbox"/>														

Time Ended: _____

Initials: _____

Fennel Creek Watershed
Environmental Learning Stations

- 1) Western Redcedar tree/seedlings: Victor Cissell/property owner & Mary Ann Barcom, City of BL volunteer. *Student activity*: harvesting one seedling per session to take back to classroom for observation
- 2) Trillium/Devil's Club: Laurie Carter *Student activity*: Trillium coloring page & seasonal cycles info sheet about Devil's Club plant
- 3) Nursery Log: Heather Harris *Student activity*: Use of magnifying glasses for observation & Life cycle of a plant handout
- 4) Sword fern, Bleeding Heart, Vine Maple & Skunk Cabbage: Lynn Malony /VF teacher *Student activity*: Use of magnifying glasses for observation & gathering and pressing of leaves from all but skunk cabbage
- 5) Licorice Fern and Freshwater Mussels: Tralone Clark/VF Teacher, Judy Eagle/property owner and granddaughter Kamryn (age 11) *Student activity*: fern rubbings using color crayons & mussel shell rubbings using pencils

Each student will be using Watershed Journal pages for notes, to draw or for plant or shell rubbings. 1st session students will arrive with clipboards and pencils and drop off clipboards in bins at end of field trip. 2nd session students will pick up clipboards at time of arrival and carry them back onto bus at end of field trip.

Supplies and Resources:

Fennel Creek Watershed property - Thanks to Victor and Judy
Fennel Creek banner - Marian
Watershed map - Marian - Thanks to BL GIS expert Al Catanzaro
First Aid Kits - Lisa *Refer all medical needs and decisions to Victor Falls elem. staff*
5 portable canopies in the event of rain - all
5 card or small tables for each learning station - FCPG
5 chairs - FCPG
Handiwipes for each station - FCPG
Gloves and small spades for Western Redcedar station - Victor and Mary Ann
Clipboards - Lisa
100 journal pages - Lisa
Magnifying glasses - Lisa
Mussel Shells - Judy & Victor & Kamryn
10 licorice fronds in wax paper for crayon rubbings - Judy
100 Trillium coloring pages - Marian original/copies provided by Gary
100 Devil's club seasonal cycles page - Marian original /copies provided by Gary
100 Life cycle of a plant - Lisa original/copies provided by Gary
Colored crayons - Marian
Ream of white paper - Marian
Pencils - Marian

Restroom facilities as required - Victor and Judy

May 14, 2010
Victor Falls Elementary
2nd Grade Field Trip to Fennel Creek Watershed

Itinerary

Bus arrives: 9:25 a.m. Students walk down driveway to field trip location

Welcome/overview of FC map: 9:30 a.m. Marian

Fennel Creek t-shirts to students: Gary

Leaders escort students in groups of 8 to 10 to learning stations

Session I: There are 5 Learning Stations each lasting 9 minutes with 1 minute transition time between stations

9:35 to 9:45 a.m.

9:45 to 9:55 a.m.

9:55 to 10:05 a.m.

10:05 to 10:15 a.m.

10:15 to 10:25 a.m.

Transition students back to buses for return to school. Students drop off clipboards into collection bins.

Bus arrives: 10:25 a.m. Students walk down driveway to field trip location and pick up clipboards from collection bins

Welcome/overview of FC map: 10:30 a.m. Marian

Fennel Creek t-shirts to students: Gary

Leaders escort students in groups of 8 to 10 to learning stations

Session II: There are 5 Learning Stations each lasting 10 minutes with 1 minute transition time between stations

10:35 to 10:45 a.m.

10:45 to 10:55 a.m.

10:55 to 11:05 a.m.

11:05 to 11:15 a.m.

11:15 to 11:25 a.m.

Transition students back to buses for return to school

11:30 Pizza lunch following field trip for volunteers and guests

Field Trip Welcome & Introductions
About Fennel Creek Watershed
Marian Betzer - FCPG Facilitator

5 minutes total

2 minutes – Introductions

Welcome students

- 1) Thank Victor & Judy
- 2) Introduce guests
- 3) Introduce FCPF volunteers
- 4) Introduce Gary Leaf – brief comments and hand out shirts with help from volunteers

2 minutes - Fennel Creek Map

___ Show student's location of field trip

___ Show student's location of Victor Falls Elementary

___ Show poster of Victor Falls and share that their school is named for Victor Falls

___ Point out FC headwaters and route of Fennel Creek thru Bonney Lake to Puyallup River

(point upstream and downstream)

___ Tell about Puyallup River flowing all the way to Tacoma

___ Show Poster of mouth of Puyallup at Tacoma

___ FC salmon come from Puget Sound at Tacoma up Puyallup to Fennel Creek – show photo of mouth of FC

1 minute - Student Groups to their learning station leaders.

Start with group #5 as they have the farthest to walk

5 Judy Eagle & Kamryn & Tralone Clark

#4 Lynn Malony

#3 Heather Harris & Owen & Shane

#2 Laurie Carter

#1 Victor Cissell & MaryAnn

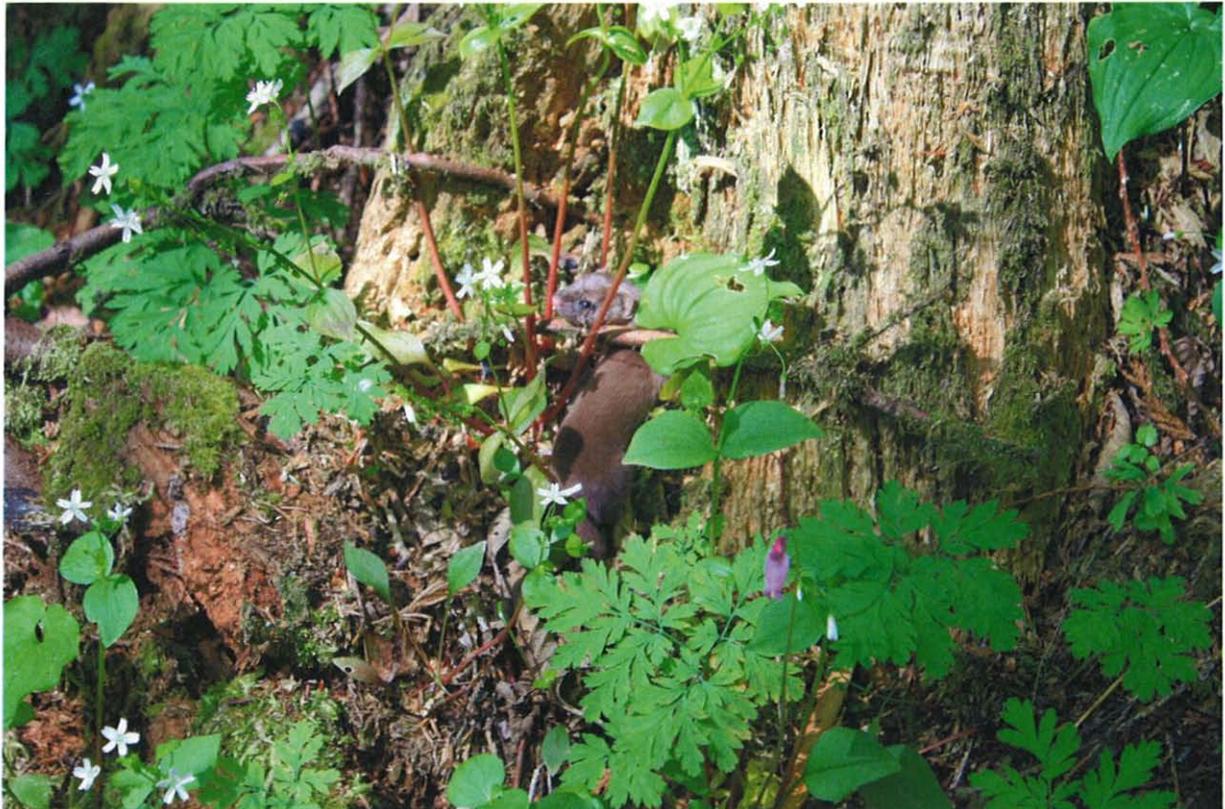
Who was the
furry friend
who visited our
Fennel Creek
Watershed
field trip?

Mink?

Weasel?

Marian and a
VFE volunteer
saw at least 3
or 4 "kits" play-
ing amongst
ferns on Judy
and Victor's
property

Right is close
up of one who
curiously
peeked over
top of twig at
me for quite
some time be-
fore disappear-
ing into hole
at base of tree



May 14, 2010
Victor Falls Elementary
2nd Grade Field Trip to Fennel Creek Watershed - 90+ students
Session I - 9:25 a.m. to 10:25 a.m.
Session II - 10:25 a.m. to 11:25 a.m.
Pizza lunch for volunteers and invited guests following field trip

Location of field trip: Courtesy of Victor and Judy's /Fennel Creek Estates (off 192nd SW of WalMart)

10410 188th Avenue Court East, Bonney Lake, WA Home phone: 253-862-1935 *Directions:* turn right off of 192nd into FC Estates and first left into private drive off of cul-de-sac. Follow drive keeping to left. This drive will become gravel until it dead-ends at Victor and Judy's. Parking is limited. House is located down driveway in lower area where FC field trip will take place.

Field Trip Set-up:

Thursday - pre-delivery of all tables and resources to Victor & Judy's garage
8:00 a.m. Friday field trip set-up: Jerry & Victor
8:30 a.m. Marian pickup of FCPG volunteers from WalMart parking lot adjacent to 192nd

Fennel Creek Preservation Group volunteers:

Marian Betzer - Field trip facilitator and photographer cell: 206.276.3607 home: 253.826.1079
Jerry Betzer - Videographer - host pizza lunch cell: 253.389.5474
Laurie Carter - BL Councilmember for Ward 3 - Learning station leader cell: 253.219.7258
Victor Cissell - Homeowner/host - Learning station leader Home: 253.862.1935
Judy Eagle - Homeowner/host - Learning station leader Home: 253.862.1935
Kamryn - age 11, granddaughter of Victor and Judy
Heather Harris - Learning station leader/daughter of Marian & Jerry cell: 425.361.5178
Owen - age 8 and Shane - age 5 - grandsons of Marian and Jerry

Victor Falls Elementary 2nd grade teachers and volunteers:

Principal Beth Dykman
Lead Teacher: Lisa Crinklaw - Field Trip facilitator Cell: 253.209.8282
2nd grade Teachers: Shannon Papcun, Chuck Williams, Lois Rogers
Volunteers:
Lynn Malony - Learning station leader
Vonnie Konap
Wendy Burnside
Mike Shannon
Daniel Hostettler
Tralone Clark - Learning station leader
Scott Hatfield
Thanks to Secretary Sheri Runyon for her planning assistance

City of Bonney Lake:

Gary Leaf - Community Dev. Director/Facilitator of Safe Routes to School Grant cell: 253.405.6237
Gary is providing bus transportation, field trip educational resources and Fennel Creek t-shirts for 2nd grade students through the Safe Routes to School Grant
Mary Ann Barcom - City of BL Asst. Arborist during summer season cell: 253.228.1718

Invited guests:

Dr. Gil Mendoza - Supt. of Sumner S.D.
Craig Spencer - Asst. Supt. of Sumner S.D.
Neil Johnson - Mayor of Bonney Lake
Brian Hartsell - Asst. to Mayor Johnson

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Fennel Creek Pre-Assessment

Name _____

Date _____

1. What is a watershed?

- A shed to play in.
- It's a new game for recess.
- An area of land that drains all water together.

2. What does it mean for a plant to have "wet feet?"

- The plant likes to be planted in a wet, shady spot.
- The plant likes to be planted in hot, dry spot.
- The plant will grow no matter where you plant it.

3. A Trillium is a special plant.

- If you pick it, you won't see it bloom again for years.
- It got it's name because it has 3 leaves, 3 petals, and 3 stigmas.
- Many Trillium seeds are moved by ants.
- All of the above.

4. What is a “nursery log?”

- A kind of candy made from logs.
- A tree that has fallen down and is giving nutrients to new plants.
- A special tree to put into a babies room.

5. Where do you find Sword Fern spores or seeds?

- Underneath the leaf.
- Deep under ground by the roots.
- In the middle of the plant where all the leaves come together.

6. Licorice Ferns are special plants because...

- The rootstock tastes like licorice.
- They have been used for medicine.
- Grows out of moss on trees.
- All of the above.

Devil's Club



Winter

...within the Fennel
Creek
Watershed



Photos courtesy of Judy Eagle and Marian Betzar along Fennel Creek above and below Victor Falls *excluding berries photo*



Spring



Left: Fennel Creek at Judy and Victor 's

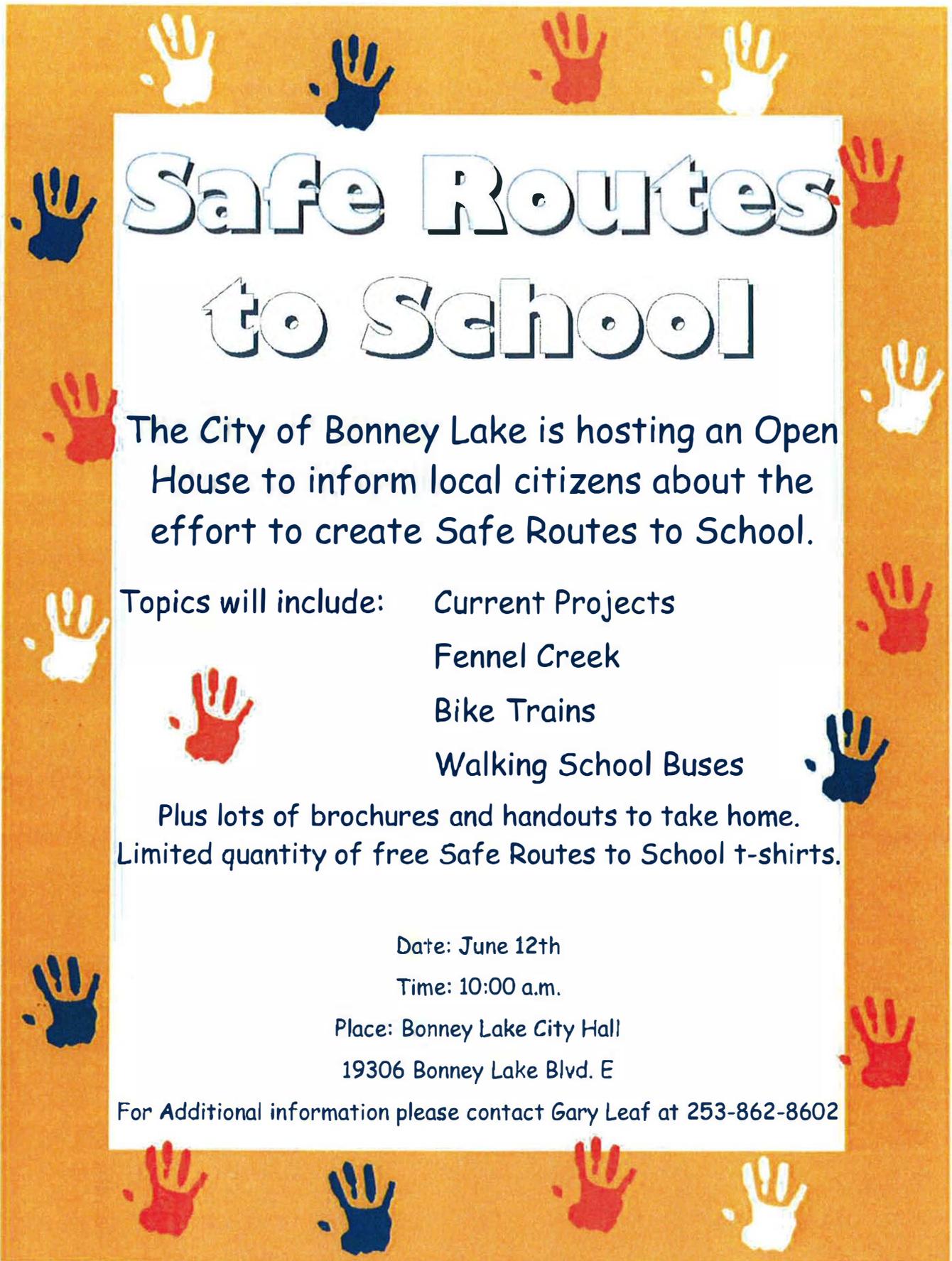
Right: Fennel Creek Downstream of Victor Falls



Summer

A native perennial that grows along streambanks and moist places within forests, Devil 's Club leaves can reach 14 inches across. Flowers are greenish white and scarlet berries are poisonous and do not appear until a plant has matured for several years. The thick spine-covered stems can grow singly or in thickets. Spines on all parts of the plant are irritating if touched.





Safe Routes to School

The City of Bonney Lake is hosting an Open House to inform local citizens about the effort to create Safe Routes to School.

Topics will include:

- Current Projects
- Fennel Creek
- Bike Trains
- Walking School Buses

Plus lots of brochures and handouts to take home.
Limited quantity of free Safe Routes to School t-shirts.

Date: June 12th

Time: 10:00 a.m.

Place: Bonney Lake City Hall

19306 Bonney Lake Blvd. E

For Additional information please contact Gary Leaf at 253-862-8602

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Pierce County

- None at this time.

Bonney Lake and Sumner School District work for Safe Routes

By [CHAZ HOLMES](#)

Bonney Lake-Sumner Courier-Herald Reporter

Jun 15 2010, 2:51 PM

Bonney Lake City Hall served as the information hub Saturday morning for anyone wanting to learn about the city's Safe Routes to School program.

About a dozen citizens showed up to hear about the city's partnership with the Sumner School District to realize the goal of creating a safe way for children to walk or bike to and from school.

Bonney Lake Public Works Director Gary Leaf said the benefits of the routes, which include a trail and new sidewalks, are environmental and physical. In a presentation he mentioned the health risks associated with inactivity and obesity. With children getting more exercise, he said, they are apt to be healthier.

"There's physical activity benefits," he said.

Large maps and satellite images on display provided a visual aid of where the routes are being installed.

The proposed trail location is along Fennel Creek, connecting to Victor Falls Elementary. A mile of sidewalk will connect Victor Falls Elementary to Bonney Lake High School and existing paths between Bonney Lake High School and Mountain View Middle School are planned.

Leaf said the city worked hard to publicize the program by sponsoring a contest among students to determine who could design the best poster about the school routes. Eight bicycles were given as prizes

September 2010

Dear Bonney Lake Families:

Most of our students are bused or driven to school nowadays. However, there is growing interest in making it safer and more fun for kids to get to school by **walking**, especially if they live within the walk boundary of their school.

While nothing will replace the expert knowledge of those who live and walk in their own neighborhood, we have created this Walk Route Map with specific information about walking to school. It shows recommended walk routes based on existing traffic controls such as crosswalks, stop signs, and sidewalks, and on other conditions such as visibility and speed limits.

If you already walk or are interested in walking to school, we recommend that you use this map to help find the best route. Become familiar with your route by walking it with your children and noting any areas of concern. Mark your route on the map with a highlighter or crayon and use it as a starting point to talk with children about pedestrian and traffic safety. Measure the distance between home and school if you want to keep track of how far you travel on foot!

Why Walk?

- Children who walk to school arrive more awake, alert and ready to learn.
- Walking to school creates healthy habits for a lifetime.
- Walking with an adult when young helps children practice safety skills they will need as independent teens.
- Imagine fewer cars at school during drop-off and pick-up times!

Did you know?

Children need 60 minutes of exercise *each day* to stay fit. The average child spends more than 7 hours a day watching screens. Only one third of our children get a full 60 minutes of exercise. Source: www.letsmove.gov

Parents and guardians are the best judges of when to allow their children to walk unsupervised. We recommend that adults walk with children whenever possible so that you can teach pedestrian skills, increase safety, and enjoy the time together.

If you are interested in getting involved with the "Safe Routes to School" efforts in the area, contact your individual school to learn more.

Important Safety Tips to Share With Your Child

• Children younger than 10 should be supervised when crossing roads.	• Remove earbuds or headphones before crossing a street.
• Stop at the street corners and driveways.	• If there is no sidewalk, walk on the left side facing traffic.
• Look left, right, and left again to see if it's safe to cross.	• Make eye contact with drivers to be sure they see you before crossing.
• Keep looking as you cross.	• Wear light clothing or reflectors when walking in the dark or rain.

8. Has your child asked you for permission to walk or bike to/from school in the last year? Yes No

9. At what grade would you allow your child to walk or bike to/from school without an adult?

(Select a grade between PK,K,1,2,3...) grade (or) I would not feel comfortable at any grade

Place a clear 'X' inside box. If you make a mistake, fill the entire box, and then mark the correct box

10. What of the following issues affected your decision to allow, or not allow, your child to walk or bike to/from school? (Select ALL that apply)

11. Would you probably let your child walk or bike to/from school if this problem were changed or improved? (Select one choice per line, mark box with X)

- Distance..... Yes No Not Sure
- Convenience of driving..... Yes No Not Sure
- Time..... Yes No Not Sure
- Child's before or after-school activities..... Yes No Not Sure
- Speed of traffic along route..... Yes No Not Sure
- Amount of traffic along route..... Yes No Not Sure
- Adults to walk or bike with..... Yes No Not Sure
- Sidewalks or pathways..... Yes No Not Sure
- Safety of intersections and crossings..... Yes No Not Sure
- Crossing guards..... Yes No Not Sure
- Violence or crime..... Yes No Not Sure
- Weather or climate..... Yes No Not Sure

+ Place a clear 'X' inside box. If you make a mistake, fill the entire box, and then mark the correct box

12. In your opinion, how much does your child's school encourage or discourage walking and biking to/from school?

- Strongly Encourages Encourages Neither Discourages Strongly Discourages

13. How much fun is walking or biking to/from school for your child?

- Very Fun Fun Neutral Boring Very Boring

14. How healthy is walking or biking to/from school for your child?

- Very Healthy Healthy Neutral Unhealthy Very Unhealthy

+ Place a clear 'X' inside box. If you make a mistake, fill the entire box, and then mark the correct box

15. What is the highest grade or year of school you completed?

- Grades 1 through 8 (Elementary) College 1 to 3 years (Some college or technical school)
- Grades 9 through 11 (Some high school) College 4 years or more (College graduate)
- Grade 12 or GED (High school graduate) Prefer not to answer

16. Please provide any additional comments below.

An Introduction and Overview of the Fennel Creek Watershed

BLHS Field Trip - May 24, 2010

Marian Betzer

Fennel Creek Preservation Group/Facilitator

Fennel Creek Trail Committee/City of BL

- First identified on watershed maps in the 2005 Pierce County Mid-Puyallup Basin plan, Marsha Huebner, Manager, Pierce County Environmental Permitting and Planning wrote; *"the health of the Puyallup River system reflects the health of each of its tributaries. Fennel Creek flows approximately eight miles and is the largest of eight sub-basins in the Mid-Puyallup Basin."*
- Fennel Creek is a perennial creek fed by numerous seeps, springs and tributaries located along its channel including Printz Basin, Lake Debra Jane and Lake Bonney.
- Fennel Creek headwaters are located in Bonney Lake's Easttown near 96th, 233rd and Hwy 410.
- The mouth of Fennel Creek at the Puyallup River is downstream from McCutchen Bridge near Alderton/McMillin
- According to the 1991 Foster Wheeler Environmental analysis of the Fennel Creek watershed, *"the Fennel Creek Corridor is a unique physiographic expression in the Puget Lowlands. During the last glaciations, approximately 15,000 years ago, the Puyallup Valley was occupied by a glacial lake known as Lake Puyallup; melt water from retreating glaciers to the north and east formed large channels in the glacial drift that drained into Lake Puyallup. The Fennel Creek corridor, which is the entire width from the east slopes of the corridor to the west slopes of the corridor, displays this feature. During the last deglaciation, a river occupied the entire width of the corridor"*
- 4,800 year ago the Fennel Creek corridor was influenced by the Osceola mudflow which originated from the slopes of Mt. Rainier and Fennel Creek today flows on top of that mudflow.
- As a reminder of its geological history, today Fennel Creek flows between steep slopes from 214th to Victor Falls and in a ravine from Victor Falls to McCutchen Road where it flattens out in the Puyallup River floodplain.
- Soils identified in the Fennel Creek watershed are a result of influences from the Osceola mudflow. In Study area II, soils have been identified predominately as Buckley Loam, a poor drainage soil.
- Fennel Creek flows over 100' high Victor Falls at the edge of the Osceola mudflow which has eroded upstream to its present location from its origins at the Puyallup River.
- Fennel Creek below the natural barrier of Victor Falls *"is unusual for a creek of its size in that it continues to support all five species of salmon including Chinook, Steelhead, Chum, Coho and Pink."* Russ Ladley, Manage, Puyallup Tribe of Indians.
- There is not a complete list of fish species in Fennel Creek upstream of Victor Falls as no intensive surveys have ever been conducted. Locals talk about catching 12 inch stream trout years ago when flows were higher.
- Fennel Creek is classified by Washington State as being a Type 2 stream below Victor Falls and a Type 3 stream above the falls. *"Type 2 streams represent fish bearing waters used by substantial numbers of anadromous or resident game fish for spawning, rearing or migration. Type 3 streams are also fishbearing streams but include significant resident game fish, but may not have anadromous fish."*
- The Fennel Creek watershed has a rich historical and cultural heritage. *"The Fennel Creek Watershed holds significance as a Native American trail and gathering place. The Naches Trail carried the first wagon train of white settlers to the area. The first white settler on the creek was Reuben Finnell in 1853."* Winona Jacobsen, BL Historical Society.

- Fennel Creek is classified by Washington State as being a Type 2 stream below Victor Falls and a Type 3 stream above the falls. “Type 2 streams represent fish bearing waters used by substantial numbers of fish”.
- Fennel Creek ecosystems are complex and diverse and consist of riparian areas, hydrology, wetlands, wet meadows, forested uplands, aquifer recharge areas, soils, plant and tree species, soils, and Pacific NW habitats. Healthy watersheds retain not only uninterrupted stream channels, but retain large portions of adjacent riparian areas, meadows and open space and upland forests as part of . Together this ecosystem provides healthy habitats for fish, bird and wildlife populations.
- Connectivity is an important function of watershed health which protects channel flows, water quantity and quality and that complex watershed functions remain intact.
- Fennel Creek Headwaters are located East of Bonney Lake in the growth area known as Eastown located near 96th, Hwy 410, and 233rd. The headwaters consists of large numerous seeps and springs and tributaries which form into the Fennel Creek channel in this area.



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- Unnamed tributaries join the Fennel Creek channel and flow along the Sumner-Buckley Hwy east of 214th.

- Fennel Creek from 214th to Kelly Lake Road is located in Study Area I of the 1999 Foster Wheeler Environmental Analysis of the Fennel Creek watershed. This half-mile section of the Fennel Creek watershed is classified as Palustrine Forested Wetland and Riverine Forested Wetland and is identified as a National Wetlands area by the Dept. of Fish and Wildlife. 25% of the Palustrine forests contain coniferous species with the Western Redcedar the dominate tree and a few

Sitka Spruce and Western Hemlock trees. Douglas Fir are classified as an upland species and are present on marginal upland sites. Tall, deep canopy coverage provides beneficial food and nutrients and is considered moderate. Salmonberry is the most common understory shrub along with native wetland plants that include devil's club, lady-fern, water parsley and skunk cabbage. Fennel Creek regularly flooded the Sumner-Buckley Hwy. during winter or storm events until Pierce County installed box culverts in 2008. Soils in Study area I are classified as Buckley silt loam composed primarily of organic material with the top foot of soil consisting entirely of muck. Native plant diversity in this area is rated high with more than 11 species of plants identified.



- Fennel Creek in Study Area II is approx, 1.6 miles long and flows from Kelly Lake Road to State Route 410. The Sumner-Buckley Hwy. bisects Fennel Creek which flows through .7 miles of pasture and a total of .9 miles of forested wetlands located at either end of the pastured area. Study Area II contains 8 different vegetation classes. This watershed valley located between steep slopes is comprised of approx. 200 acres much of which has been disturbed by human impact which has resulted in predominately Low ratings for Ecological functions such as vegetation and wetlands, hydrology, soils, fish and wildlife and water and sediment quality.

- Area II has been altered even further since the 1999 study by logging and clearing activities, fill and compaction, spraying and the installation of 77 acres of drain tiles in 2003-04 . Human impacts along Fennel Creek have reduced hydrological functions and impacted Riparian areas along the shorelines, with the result that species diversity is low and there is an absence of aquatic vegetation as well as areas where water velocities have scoured the creek channel due to lack of woody material. Soils in Area II are classified as Buckley Silt Loam and drainage and percolation is low. At the midpoint of Area II is an unnamed stream which enters Fennel Creek from the North and is a significant tributary. In 2004-06, Pierce County formed the Fennel Creek Advisory Committee comprised of a stakeholders group charged with development of a land use plan, called the Fennel Creek Master Plan for the 333 acres located in Study Area's I and II. In-depth analysis of the environmental, historical and soils was part of this process and the details of this plan are available on the Pierce County website under Planning and Land Services/Other. The No. 1 recommendation of this plan was for acquisition for the purpose of preservation with recommendations for restoration.



- The section of Fennel Creek in Study Area II that is located south of the Sumner-Buckley Hwy. is "sandwiched" between Hwy. 410, Angeline Road and Junction 192. Though the building of the Target site and Junction 192 removed much of the adjacent wetlands and open space, Fennel Creek in this area retains some of its native habitats on parcels which remained under private ownership. In 2009, the City of Bonney Lake, Cascade Land Conservancy and the Fennel Creek Preservation Group partnered together to purchase 10 acres of Fennel Creek in Study Area II through a Pierce County Conservation Futures Grant for use as a Fennel Creek Trailhead and Natural Resource area.

- Fennel Creek in the 1999 Foster Wheeler Study Area

III parallels Angeline Road from Hwy. 410 South to Victor Falls for 1.7 miles. This reach of the creek contains areas of healthy watershed ecosystems and areas which have been greatly impacted by human development. During the 1999 Environmental Analysis, the high-density Willowbrook development was being built which replaced historic pasture land and grazing areas that had damaged wetlands and riparian areas adjacent to Fennel Creek.



- Subsequent developments continue to remove Fennel Creek forests and wetlands along Fennel Creek in Study Area III. However, East of Fennel Creek and Willowbrook the City of Bonney Lake owns a 38 acre parcel that comprises a significant wetlands area. The first mile of the Fennel Creek Trail will be located adjacent to Fennel Creek at Willowbrook which resulted in a 2009 Critical Areas Study by Parametrix that provides a comprehensive environmental overview of Fennel Creek soils, ecosystems and habitats in the study area. Both of these environmental studies indicate wetlands with hydric soils classified as poor draining Buckley Loam. Vegetation in the study area consists of wetland and upland species and areas of

emergent and forested habitats. Both studies provide details, data, maps and photos of the study area for those interested in pursuing a greater understanding of the Fennel Creek watershed in this reach.



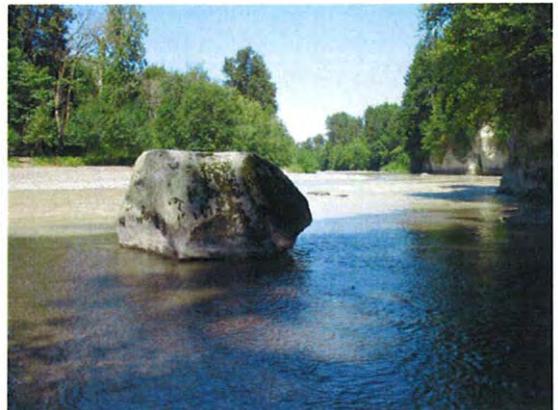
- The functional value of Study Area IV located between Victor Falls and McCutchen Road is considered High due to the presence of healthy ecosystems, forests and habitats. This is largely due to the fact that there has been little human disturbance along this reach of Fennel Creek located in a canyon between steep slopes. Fennel Creek wetlands in this area are Classified as Class II and soils are Xerochrepts, a soil type formed mainly of glacial till that is moderately to excessively drained though covered by a mat of undecomposed needles and wood over gravelly sandy



loam about 40 inches thick where permeability varies. Study area IV contains healthy salmon spawning grounds for fish populations returning to Fennel Creek up the Puyallup River from Puget Sound at Commencement Bay in Tacoma. This canyon is utilized by wildlife as a travel corridor between upstream and downstream habitats. Beaver dams and activity has also been observed in Study Area IV.



- The last half-mile of Fennel Creek downstream of McCutchen bridge and its confluence with the Puyallup River is located in the Puyallup River floodplain. In addition to some pastured areas, this reach of Fennel Creek has been flooded often during the last decade and watershed ecosystems and habitats have been impacted by these flood events.



- Biological and physical characteristics of the Fennel Creek watershed include water quality, concentrations of nutrients, acidity, dissolved oxygen, temperature, chloride, fecal coliforms, pH and turbidity. Ongoing tests indicate diminishment in the health of the Fennel Creek Watershed which has resulted in the Dept. of Ecology performing a TMDL plan for Fennel Creek during 2010. The Action Plan committee for this TMDL/NPDES is being formed at this time, May/June 2010. Interested students may wish to attend these meetings as a way of better understanding current efforts to improve the water quality in the Fennel Creek Watershed.

- The 1999 Foster Wheeler Environmental Analysis of the Fennel Creek Watershed is available in the Resource section of the Bonney Lake Library.
- The 2009 Parametrix Critical Areas Study of the Fennel Creek Watershed for the Fennel Creek Trail Plan is available from the City of Bonney Lake.
- The Fennel Creek Master Plan is available on the Pierce County Website under Planning and Land Services/Other.

The Fennel Creek Watershed, though at risk from continued human encroachment, retains much of its rich watershed heritage and gifts the Bonney Lake community with an 8-mile long "greenway" that connects us to our History, Pacific Northwest habitats, salmon-bird-and wildlife populations and Pacific Rim Geology.

Car Count Bonney Lake High School

