all four. Stream Stewards gain valuable experiences and simultaneously contributed to the community's awareness about stream health issues. To become a Stream Steward, contact Iris Benson, City of Corvallis Stormwater Specialist, Iris.Benson@corvallisoregon.gov.

Stop 3: Beca Rain Garden

Viewing Location: Corner of Beca and 17th

The rain garden in bloom.

Rain gardens reduce the amount of stormwater runoff entering the municipal stormwater system. Instead, the stormwater is redirected through the garden, where it slows down and is filtered by vegetation and soil before it reaches groundwater or nearby storm drains and streams. Rain gardens are a cost-effective way to treat stormwater runoff, which contains heavy metals, oils, and bacteria that decrease water quality and harm wildlife. A properly designed rain garden should take into account both the rate of infiltration of the given soil, and the amount of runoff that it is intended to absorb. For instance, rain gardens built on high clay soils like those found in Corvallis need more surface area than rain gardens designed for sandy soils present in other regions.

The Beca Rain Gardens were built in Fall 2011 by the City of Corvallis and project general contractor Durbin Excavating. The $60,000 pilot project was funded by utility bill fees. The City will study the effectiveness of this pilot project as it prepares for the likely development of future rain gardens. The Beca Rain Gardens contain mostly native plants, which are accustomed to the climate and soils of our region and are most likely to thrive in the varying moisture conditions experienced in a rain garden.

Stop 4: Corvallis High School Bioswale

Viewing Location: This site is located on school grounds and should only be accessed on weekends or outside regular school hours. Park on Buchanan by the creek crossing and pedestrian bridge at CHS.

In 2005, CHS was renovated and several new features were added, including two bioswales; one to the north and one to the west of the baseball field. The swale is a vegetated ditch that cleans and slows stormwater runoff from the school's impervious surfaces. According to the designer, Joe Percival of Murase Associates, this swale serves two purposes: 1) it retains water and "meters it into the creek to mimic pre-development conditions"; and 2) it improves the quality of runoff making it into the stream. When the water slows down, much of its particulate load drops out. Particulates such as phosphorous and other elements act as nutrients in the swale but pollutants in the stream. The swale is filled with native plants including sedges, rushes, willows and red twig dogwoods. This

This aerial image from Google Maps shows the parking lot, bioswale and creek on the CHS campus.

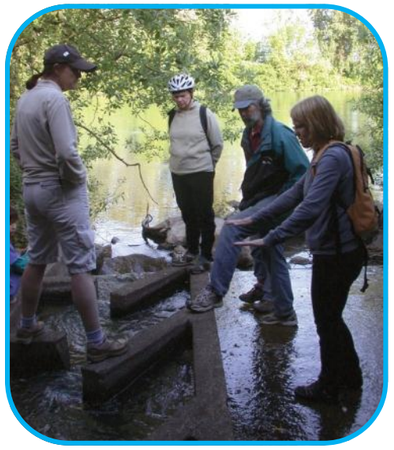
vegetation adds beauty and wildlife habitat to school grounds. Furthermore, by taking this water from the pavement through the cooler ground of the swale, it may actually lower runoff temperatures on warm days.

Stop 5: Willamette River Confluence

Viewing Location: Park on the south side of the intersection of 2nd and Waterworks St. The box culvert is located underneath 2nd St, on the south side of Waterworks St.

About 25 native fish species live in the Willamette River and most of them are present in Dixon Creek as well. These include the well-known salmon and trout, but also redside shiner, speckled dace, sculpin, lamprey, threespine stickleback, northern pikeminnow, peamouth, chiselmouth, sandroller, and large scale sucker. While most of these fishes don't grow to more than a few inches in size, they play huge role in the stream ecology of the creek. Young Willamette Valley spring Chinook salmon, steelhead and native cutthroat trout routinely use small Willamette River tributaries in the Corvallis area for spawning, rearing, and refuge.

In the past, a concrete box culvert under Highway 20 made it difficult for fish to enter the creek. During Summer 2007, the City of Corvallis constructed an improved fishway at the confluence, downstream from the herringbone fish passage weir inside the culvert. The weir causes the water to back up and slow down, making it deeper and more accessible to fish. The design tends to clog easily and a team of volunteers helps to keep the weir clear of debris.



Karen Hans and bike tourists visit the confluence during the 2008 Dixon Creek Tour.

Learn More About the Dixon Creek Watershed

Become a Stream Steward
www.corvallisoregon.gov/index.aspx?page=1041

Become a Wildlife Steward
extension.oregonstate.edu/benton/wildlife-stewards

Benton Soil and Water Conservation District:
www.bentonswcd.org

City of Corvallis Stormwater Master Plan/Dixon Creek:
www.corvallisoregon.gov/modules/showdocument.aspx?documentid=4462

Read more about Beca Rain Gardens
djcoregon.com/news/2012/02/08/corvallis-builds-first-rain-garden/

THANK YOU

A special thanks to everyone who helped out on the tour!

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Cover Art by Iris Benson

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Dixon Creek

Urban Creek Tour 2013

Share the Stream

Discover Dixon Creek

Visit five fascinating locations to see examples of low impact design that help keep the creek beautiful and healthy for us and our fish and wildlife neighbors as the landscape becomes increasingly urbanized.

This tour was sponsored by:

Only Rain Down the Drain
City of Corvallis Stormwater Program

CORVALLIS sustainability COALITION

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Benton Soil and Water CONSERVATION DISTRICT

Viewing Locations correspond to numbers on the map below. *See Stop Descriptions for detailed driving directions.*

Sites 2 & 4 are located on school grounds and should only be accessed on weekends or outside of regular school hours.

Introduction to the Dixon Creek Watershed

If you live in Corvallis, you probably cross Dixon Creek on your way to work or the grocery store. The Dixon Creek Watershed encompasses 2,712 acres. Dixon Creek begins as a collection of over 40 seeps in the hills above the Timberhill residential area. On the Creek's 3.5 mile journey, it passes by three parks, three schools, under more than 25 pedestrian and vehicle bridges, and behind numerous businesses, churches and homes.

But the Dixon Creek we see today looks very different than it did 100 years ago, and even more dissimilar from how it looked back in the 1850s. The earliest surveys indicate that the area now known as the Dixon Creek Watershed used to be one long wetland area from the northwest foothills of Corvallis to the Willamette River, lacking a defined stream channel. To develop the land for agriculture and housing, the land was drained into a single channel, so the water would flow rapidly into the Willamette. After World War II, the creek was further altered and constrained to accommodate the growing community's automobile-oriented development.

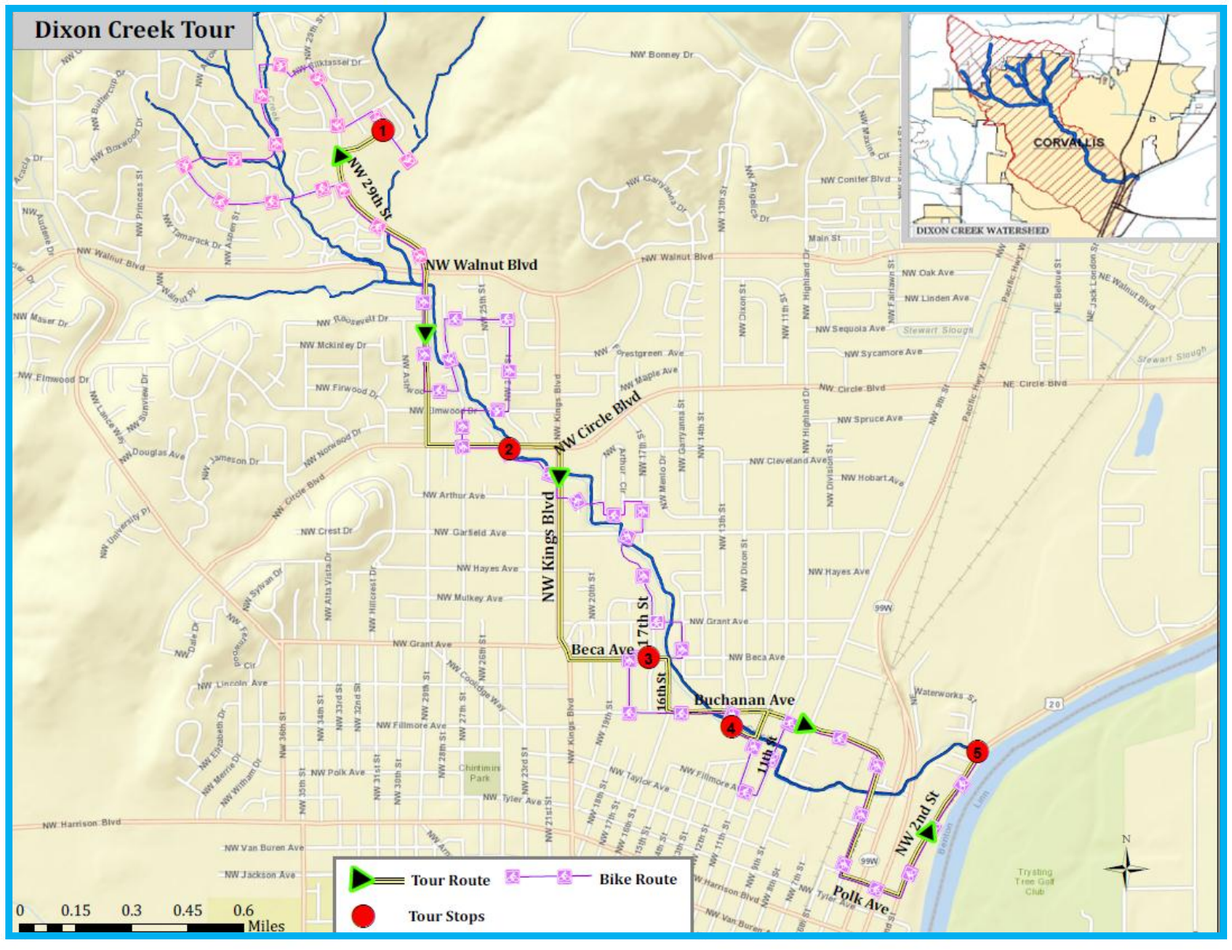
Until recently Dixon Creek was viewed predominantly as a stormwater conveyance system and its other ecosystem services were largely ignored. Today there is greater recognition that this creek plays an important role in the life support system for our native plant and animal communities, as well as in the delicate environmental balance that supports our own lives.

On this tour we will visit five special sites where recent efforts have been taken by members of our community to implement best use practices for sustainable water management. Stormwater management techniques such as rain gardens, bioswales and detention basins help to minimize urban development impacts. These and other low impact design techniques are being readily adapted by current land managers

Sources:

A. City of Corvallis Stormwater Master Plan

B. Wikia.com Sustainable Water Management Wiki



Stop 1: Chepenefa Springs Park

Viewing Location: Far southeast end of Shooting Star Dr.

This stop is close to the 40 plus seeps on Dimple Hill and IV Hill that make up the headwaters of Dixon Creek. Headwaters influence the conditions downstream and often support diverse plant and animal communities. As you walk along the trail, you can observe the riparian corridor, the area around the stream, which serves as a habitat for many native tree species, including Oregon ash, big leaf maple, red alder, white alder, willow, and Oregon white oak. Signs of a healthy stream include intact streambanks that resist erosion, as well as robust vegetation and woody debris that provide shade and cool water. The corridor also enhances water quality by acting as a biological filter, trapping sediments and pollutants in runoff.

As this area experiences development pressures, it becomes necessary to augment the creek's functions with built features, such as the nearby detention basins. These detention basins slow down the flow of stormwater into the creek and help prevent flashfloods downstream. They are designed to be dry most of the time, filling and draining excess water gradually and without the need for complicated maintenance. They provide habitat for migratory waterfowl and other wildlife, and minimize the impacts of impervious surfaces associated with new development.

An inlet to the drainage basin by Chepenefa Springs Park.

Stop 2: Jefferson Elementary School Trail

Viewing Location: A portion of this site is located on school grounds and should only be accessed on weekends or outside regular school hours. The trailhead is located at the far west entrance of the Kings Circle Assembly of God parking lot.

Jefferson Elementary has an active 4-H Wildlife Stewards program. Trained students, parents, and educators help to preserve wildlife habitat on school grounds and on the portion of Dixon Creek between Circle and Kings Boulevard. Their volunteer work also benefits the community, as many neighborhood residents enjoy walking on this trail. Students use the area as an outdoor classroom and research site to study plants and animals. The students remove invasive plants, pick up litter, and add wood chips to the trail. Removing invasive plants and replacing them with native species benefits the stream in several ways. Invasive plants spread quickly and take over animal habitat. Their roots tend to be shallow and increase erosion. On the other hand, native plants effectively hold streambanks together, reduce erosion, lower water temperatures, and provide ideal wildlife habitat and nutrients. This Wildlife Stewards project has served as a community model for urban stream enhancement since 2002.

The City of Corvallis Stream Stewards is another volunteer program and a way for Corvallis citizens to get involved in the care of local streams. Each volunteer makes a year-long commitment to a stretch of a stream located within the City of Corvallis. There are four different categories of Stream Steward activities: 1) Stream Stewardship Mentoring, 2) Water Quality Monitoring, 3) Stream Insect Monitoring, and 4) Stream and Wetland Restoration Work. A participant may choose to be involved in just one of these areas or

Wildlife Stewards installed informational signs along the trail.