

Nature needs all of us.

See inside to learn how you can help.



Getting dirty for clean rivers

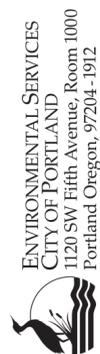
Students from Prescott Elementary School planted about 400 native plants at Senn's Dairy Park in the Parkrose neighborhood. These native plants will help reduce stormwater pollution to the Columbia Slough and provide habitat for birds, bees, butterflies, and other beneficial wildlife.

RiverViews

Photo by Naim Hasan Photography

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Nick Fish, Commissioner
Michael Jordan, Director

RiverViews is a newsletter from the City of Portland's Bureau of Environmental Services.

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RiverViews

Nature at work

The Bureau of Environmental Services works with Portland residents and businesses to protect water quality, public health, and the environment through wastewater collection and treatment, sewer construction and maintenance, stormwater management, and stream and watershed restoration.



Portland is known for our beautiful natural areas and peaceful green spaces. But did you know that nature gives us much more than scenic places to relax or play? Nature is also hard at work around the clock. It does many jobs in Portland, such as helping keep our rivers and streams clean and providing habitat for birds, beaver, salmon, and other critters.

Environmental Services looks to nature for inspiration to solve many of our urban problems. We combine natural solutions with sewer pipes, pump stations, and treatment plants to create a stronger, healthier, more resilient community. **Read inside to learn more!**




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Nick Fish, Commissioner
Michael Jordan, Director

Pipes, Pump Stations, Nature, and More— Working Together for Portland



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We work with nature to solve urban problems that threaten our rivers and streams.



The restored floodplain stores extra water from heavy winter rains.

Foster Floodplain What's Its Job? Reduce Flooding

A growing city transformed the landscape around Johnson Creek over the course of 150 years. People built homes, businesses, and streets in the creek's floodplain, interfering with the floodplain's job to collect and store the extra water from winter rains. As a result, the creek flooded frequently and damaged people's homes and businesses.



Lupine flowers at Foster Floodplain.

To reduce flooding in the area, Environmental Services looked to nature for inspiration. We restored 63 acres of floodplain and added 20,500 trees, 70,500 shrubs, and 1,000 pounds of native grasses.

Now the Foster Floodplain Natural Area holds the extra water during heavy rains, and flooding in the neighborhood happens less often. The restored floodplain also makes a good home for salmon, steelhead trout, red-legged frogs, Northwestern salamanders, and many more species.



Stormwater from more than 600 acres in the Wilkes neighborhood drains into the wetland, where pollutants are filtered out.

Mason Flats Wetland What's Its Job? Collect and Filter Stormwater

Mason Flats Wetland sits in northeast Portland near the Columbia Slough. This 25-acre natural area is home to native turtles, birds, and amphibians.

Mason Flats also helps improve water quality in the Columbia Slough by collecting and filtering stormwater. When stormwater washes over streets, parking lots, and buildings, it collects pollutants. Mason Flats collects stormwater that flows from 600 acres of nearby neighborhood areas. In the wetland, the stormwater slows down and is naturally filtered before flowing to the slough.



A cedar waxwing perches at Mason Flats.



Enter to win a free, guided nature tour of the salmon subway at Oaks Bottom with Environmental Services' biologists and fish experts. Visit www.portlandoregon.gov/bes/oaksbottomtour for details!



The refuge is the largest remaining natural area within the lower Willamette River floodplain.

Oaks Bottom Wildlife Refuge What's Its Job? Welcome Salmon Back

Salmon have been an important part of the ecosystem of the Pacific Northwest for thousands of years. Young salmon used to thrive in Oaks Bottom Wildlife Refuge, a 170-acre natural area north of the Sellwood Bridge in southeast Portland. For years, their route into the refuge was blocked by a small culvert.



The new culvert sits behind a piece of the old culvert.

To help salmon return to Oaks Bottom, Environmental Services partnered with Portland Parks & Recreation and U.S. Army Corps of Engineers on a major habitat restoration project to replace the small culvert with a much larger culvert, creating a salmon subway. Young salmon can now travel between the Willamette River and the wildlife refuge.



Trillions of microscopic bugs, like these stalked ciliates, live in the treatment plant's aeration basins.

The Treatment Plant's Bugs What's Their Job? Clean Our Wastewater

Some of the city's smallest unsung heroes live and work 24 hours a day at the Columbia Boulevard Wastewater Treatment Plant. Trillions of microscopic organisms, or bugs, feed on poop and other material in our wastewater.



Stalked ciliates help clean our wastewater.

To explain how the bugs work, let's take a few steps back. When you flush the toilet, or wash a load of dishes, your wastewater makes its way through miles of pipes to the treatment plant. At the plant, the bugs live in the aeration basins where they clean the wastewater. We work hard to make sure the basins provide enough food, water, and air for the bugs to do their job. After the water has been cleaned by the bugs and other steps in the treatment process, it's returned to nature via the Columbia River.

How you can help!

We can all do something to help keep our rivers healthy. Here are some simple actions you can take. To learn more and find volunteer opportunities, visit www.portlandoregon.gov/bes/partner.

- **Toilets are not trash cans.** Flush only human waste and toilet paper. Other things, if flushed down toilets or poured down drains, can clog sewers and cause basement backups and sewage overflows.
- **Ride your bike, take TriMet, or walk when possible.** Driving less reduces automotive fluid leaks on roadways. When it rains, these chemicals are washed into streams where they can harm wildlife and water quality.
- **Plant native trees, shrubs, and ground covers.** Natives are well suited for our climate, help filter pollutants, and reduce stormwater runoff, which can carry pollution into our rivers and streams.
- **Clean up after pets.** Dog and cat poop contains harmful bacteria. Germs from poop can wash into rivers and streams when it rains and make wildlife and people sick.



Your Sewer and Stormwater System at Work



Green Streets: What's Their Job?

Absorb and filter rain to help prevent water pollution, flooding, and more. Portland's 2,300 green street planters help prevent sewer overflows by keeping 200 million gallons of water out of sewer pipes.



Big Pipes: What's Their Job?

Contain heavy rain to prevent most Combined Sewer Overflows (CSOs) into the Willamette River and Columbia Slough. The Big Pipes have reduced CSOs to the Willamette River by 94 percent and to the Columbia Slough by 99 percent.



99 Pump Stations and More Than 2,500 Miles of Pipes: What's Their Job?

Move wastewater and stormwater to the treatment plants to protect your health and our rivers and streams.