



2021 PET-WASTE STUDY

BACKGROUND

Fauntleroy Park is a 28-acre natural area that shelters the headwaters of Fauntleroy Creek. Several spring- and runoff-fed tributaries merge at the western boundary of this city park into one channel that carries flow year-round into Fauntleroy Cove in central Puget Sound. The park's location in a residential neighborhood and its network of trails make it a popular place to walk dogs. Although not an off-leash park, casual observation indicates that some dog walkers let their "well behaved" pets roam off leash.

Based on several years of water-quality monitoring near the mouth of the creek, the Washington State Department of Ecology determined in 2004 that levels of fecal coliform bacteria in the creek were above what the state considers healthy in freshwater. Although these bacteria are not usually pathogenic themselves, they occur in association with bacteria and viruses that *are* health hazards, thus serving as indicators of the potential for pathogens in the water. Fecal bacteria encourage algae growth in Puget Sound's nearshore habitat, which diminishes the amount of dissolved oxygen available to juvenile salmon. In addition, parasites in dog waste can cause juvenile salmon to sicken and die. In urban settings, pet waste is typically a significant source of these bacteria. In the Fauntleroy watershed, rainfall washes pet waste into the creek, which conveys the bacteria to Puget Sound.

Prior to the start of this student study, no one had documented just how much pet waste was available to contaminate creek tributaries. In 2007, Ecology, Seattle Public Utilities, and the watershed council began gathering and analyzing data about the "total maximum daily load" of fecal coliform bacteria in the creek and assessing potential sources. Data from the first student survey, in 2004, factored into that assessment. Findings from three follow-up surveys have confirmed the need to enlist the cooperation of dog walkers in reducing bacterial contamination of the creek.

PRIOR SURVEYS

In 2004, students at KapKa Cooperative Primary School completed a baseline study of pet waste in Fauntleroy Park, headwaters of Fauntleroy Creek in central Puget Sound. They counted fecal deposits along a popular dog-walking trail six times over a 12-month period and installed "put-and-take" bag dispensers at park entrances.

During the 2007-08 school year, Kapka again surveyed the same trail segment five times. Then in 2016, elementary students at Taproot School did three surveys. In 2021, a family in the watershed with 4th- and 1st-grade daughters did six surveys, from late March to late August.

Droppings were most plentiful in 2004, which was before concerted efforts to educate dog walkers about the toxicity of runoff from dog waste and before poop bags were readily available. In all surveys, droppings were highest near the SW Barton Street entrance and second highest south of the big bridge over the creek.

OBJECTIVES

Study objectives take into account both scientific questions and learning opportunities:

- Document the prevalence of dog feces along a segment of trail.
- Talk with dog walkers encountered along the trail about what researchers were doing and why.
- Apply findings to messaging aimed at reducing fecal coliform bacteria in the creek and Puget Sound.
- Recognize student contributions to meaningful community science.

METHODOLOGY

Dog walkers access the 600-foot segment of trail used in this study from four entrances, with the closest being at SW Barton Street. Students surveyed the well-maintained trail segment in about 20 minutes each way. They looked for droppings on the trail and on either side, using vegetation to set natural boundaries for dogs on leash. This choice gave us confidence that the waste was from dogs (as opposed to wildlife). Students marked dropping locations on a field map, then transferred those locations to a large version of the map, which over time revealed areas of greatest concern.



When encountering dog walkers, students responded to questions about what they were doing and why. Midway through the 2021 survey, the girls stuck a paper flag on a wooden skewer into each deposit to call park users' attention to the problem.

FINDINGS

Survey dates and counts: March 28: 13; April 25: 17; May 22: 12; June 26: 3; July 24: 12; August 25: 8

As reported by prior survey teams, most droppings were near the SW Barton Street entrance to the park, where dog owners have been observed using the park as a "potty stop" for their pets. Most of the dog walkers with whom the girls talked while doing their surveys had their dogs on leash; those who did not tended to describe their dogs as well behaved and not in need of being leashed.

This summary puts 2021 findings into perspective:

YEAR	TIMES SURVEYED	HIGH	LOW	DEPOSIT CONCENTRATIONS
2004	6	30	4	Near the Barton Street entrance and the alley entrance behind houses on Barton, the large clearing, and near the big bridge
2008	5	13	7	Near the Barton Street entrance and the large clearing; more where trail is flat than where it is hilly
2016	3	17	5	Near the Barton Street entrance and along a wide curve in the trail south of the big bridge
2021	6	17	3	Near the Barton Street entrance; secondarily immediately south of the big bridge

Deposit concentrations near the park entrance have been consistent over time. The number of deposits is way down from 2004 but similar since.

RECOMMENDATIONS

The students' recommendations to the watershed council encompassed not only this study but also several big-picture aspects of our outreach. This table summarizes actions to date related to each:

RECOMMENDATION	STATUS
Update the watershed website more frequently.	A major overhaul is to be completed by Feb. 1, 2022; new software should make updating it easier.
Offer numerous ways (website, social media) for the public to engage with the watershed council and promote on park signs; consider having a digital marketing volunteer (i.e., student intern for school credit).	Once the website is upgraded, we will add our web address to park kiosks. We will discuss social media/digital marketing during a 2021 council meeting.
Use the <i>West Seattle Blog</i> and digital tools to recruit volunteers; create an email list and use it keep them engaged.	The <i>Blog</i> is our go-to medium for reaching the public in West Seattle, inc. about volunteer opportunities. We will start an email list serve with current salmon watchers and add other volunteers and prospects as we learn of their interest.
Use creative ways to educate and engage, including a QR code and eco-friendly signage to explain why pet waste is bad.	We will discuss during a 2021 council meeting.
Update the watershed brochure and refresh park kiosks.	Brochure is just updated. We are collecting maps/photos and seeking a volunteer to refresh the kiosks.
Involve more schools in Salmon in the Schools.	SIS-Seattle is nearly topped out (max. of 75 schools) so is not actively recruiting new schools. The State Superintendent has just contracted with one or more agencies to expand the program, especially in small districts and native schools.
Consider seeking grant funding for testing to identify trends, risks, and ways to improve water quality.	We continually take advantage of testing being done by agencies and in cooperation with other watersheds. We will discuss in early 2022 whether or not we need to do more and, if so, who will take the lead.
Share findings of this study and keep it going.	We will post on our website, submit an article to the <i>WS Blog</i> summarizing findings, and feature in our 2021 annual report. We will pencil in an update for 2026.