



# 2016 PET-WASTE STUDY

## SUMMARY

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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. In that study, students counted fecal deposits along a popular dog-walking trail six times over a 12-month period and installed "put-and-take" bag dispensers at major park entrances.

For the 2007-08 term, Kapka again partnered with the Fauntleroy Watershed Council to do a followup, surveying the same trail segment five times over the course of the school year. The students found an average of 11 deposits per survey in two areas of concentration: near the SW Barton Street entrance at the north end of the trail segment and in a large clearing several yards down the trail. A scattering of deposits were found near the southern end of the trail segment.

In 2016, elementary students at Taproot School surveyed the trail segment three times to update the study. The number of deposits was highest during the rainy season (15 in the spring and 17 in the fall) and lowest during dry weather (5 in the summer). Deposits were again concentrated near the SW Barton Street entrance and also along a wide curve south of the big bridge (where salmon are released).

## BACKGROUND

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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 the 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 makes it a popular place to walk dogs. Although not an off-leash park, casual observation indicates that many dog walkers let their pets roam off leash.

Based on several years of water-quality monitoring near the mouth of the creek, the State Department of Ecology determined in 2004 that levels of fecal coliform bacteria in the creek are above what the state allows 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 this student study, no one had documented just how much pet waste was available to contaminate creek tributaries, all of which are located in Fauntleroy Park. 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 students' 2004 study factored into that assessment. Findings from 2008 and 2016 followup studies confirmed the need for more, persistent, and strategically better outreach to dog owners as part of a water-quality improvement plan aimed at bacteria reduction.

## OBJECTIVES

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

- Document the prevalence of dog feces along a segment of trail.
- Engage dog walkers encountered along the trail about what researchers were doing and why.
- Apply findings to how state and city agencies and the community work to reduce fecal coliform bacteria in the creek and Puget Sound.
- Recognize student contributions to what is known about pet waste as a source of fecal coliform contamination.

## METHODOLOGY

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The 600-foot segment of trail is frequented by dog walkers accessing the park from four entrances. The well-maintained trail is easily and safely passable year-round by young children in about 20 minutes each way. Half the segment of trail is flat and half is hilly. Students walked the trail looking for fecal deposits on the trail and to either side, using vegetation to set natural boundaries. This choice gave us confidence that the waste was from dogs (as opposed to coyotes known to reside in the park).

Students conducted their surveys on April 6, July 28, and October 11. To reduce the likelihood of double counting, one of the watershed's two forest stewards removed fecal deposits as they were counted. When they encountered dog walkers on the trail, the students were not shy about saying what they were doing and why.

Students marked deposit locations on a field map as they did each survey. Back at school, they transferred deposit locations to a large version of the map, using different colored dots for each survey date. The large map and deposit counts informed the students' final report. In November, students presented their report to representatives of the watershed council, using the large map as their reference.

In addition to talking with dog owners along the trail, students installed new signs on bag-dispenser posts after their first survey and replaced the milk-jug dispensers as needed so that owners entering the park at any location would have ready access to bags. They also brought used plastic bags from home to replenish dispensers during their frequent walks in the park.

## STUDENT FINDINGS

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Findings from this follow-up study compare to 2004 and 2008 as follows:

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.

Revegetation work over the years eliminated the large clearing noted in 2004 and 2008. Vegetation now creates more of a barrier to dogs running freely in this area.



Taproot students replenish poop bags in dispensers throughout Fauntleroy Park and transfer data to a large map to help them see areas where pet waste is concentrated.

## OBSERVATIONS

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- Dog owners still have much room for improved stewardship. Compliance with leash and scoop laws is far from universal in the park.
- Concentrations near the Barton Street entrance during the rainy season suggest that many owners let their dogs out to run while they stay dry in the car. Consequently, they don't know where their dogs defecate.
- Concentrations along the wide curve suggest that dogs are running ahead off leash and, because of the curve, owners can't see where their dogs defecate.

## RECOMMENDATIONS

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- Ask Seattle Parks to install leash and scoop signage on or next to the park-entrance sign on Barton Street, clearly visible to dog owners from their car.
- Make and install bigger signs on dispenser posts and put a sign on multiple sides of each post so dog owners see why scooping is important.
- Write "free bags" on each dispenser.
- Make replenishing bags a regular task when Taproot students study in the park.
- Create a sign for the bulletin board on the Barton Street kiosk and include a diagram showing why fecal runoff is a concern.
- Consider posting "good dog/protect restoration" signs within the park.
- Repeat the study after recommendations are implemented to gauge whether or not they were effective.