

## Oakland Watershed Restoration and Protection Study

**1,800 new trees in Oakland means 9 million fewer gallons of contaminated water will enter the Bay each year.**

### The Initiative

The study site is Oakland's Ettie Street watershed, a 1.8 square mile watershed on the eastern edge of the San Francisco Bay. The watershed contains predominately commercial, industrial, and residential land uses. Urban Releaf is planting 1,800 trees. The Center for Urban Forest Research is studying their ability to reduce runoff and improve runoff quality.

### Study Objectives

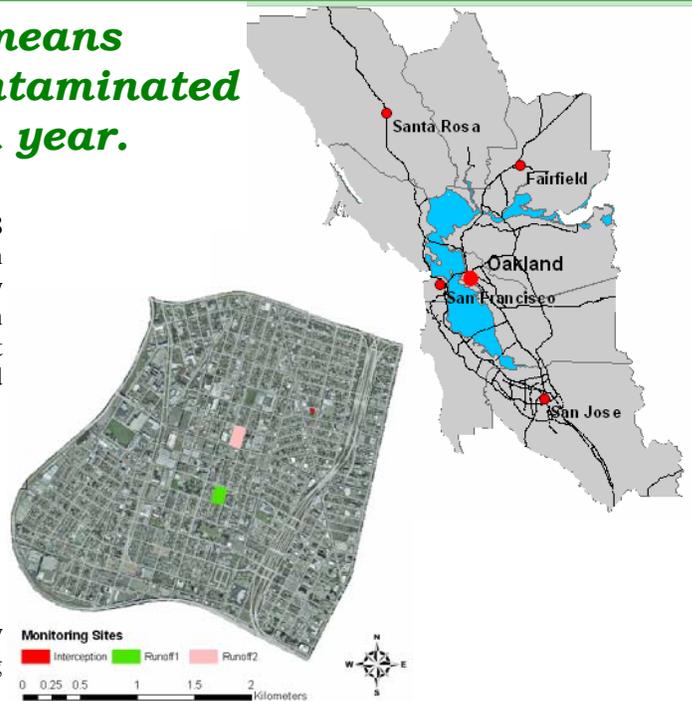
- Evaluate the effect increased tree cover will have on:
  - Reducing flooding and erosion
  - Lowering contaminants entering storm drains
  - Improving water quality in the watershed
- Determine the kinds of contaminants entering the Bay and demonstrate the benefits of urban trees in reducing contaminated storm water runoff.
- Raise awareness of degraded quality of the watershed.
- Support local residents in planting and caring for trees and restoring watershed health.

### Why We Should Do This

- Because land surfaces in the Ettie Street watershed are largely impervious, most rainfall runs into storm drains, and is then pumped directly into the Bay.
- Watershed runoff and water quality are at dangerous levels during certain types of storm events.
- No formal assessment or monitoring has been conducted in this watershed.
- This and other East Bay watersheds are the last opportunity to regulate flows into the Bay from the upstream Delta system.
- Highways, streets, and parking lots in the watershed are major sources of heavy metals, sediment, oil, and grease.
- Rooftops in the watershed are sources of coliform bacteria from birds, copper and zinc from gutters, and nitrogen and phosphorous from atmospheric deposition.
- Rainfall interception by the urban forest could reduce the volume of runoff, but few studies have been conducted to measure the effectiveness of trees in urban settings.
- The watershed's sparse tree canopy contributes to storm water runoff problems.

**Tree planting and stewardship in Oakland can provide benefits beyond improved watershed performance.**

USDA Forest Service, Pacific Southwest Research Station  
Center for Urban Forest Research  
[www.fs.fed.us/psw/programs/cufr](http://www.fs.fed.us/psw/programs/cufr)



### Oakland Watershed Restoration and Protection Project

#### What the USDA Forest Service is Doing

- The Center for Urban Forest Research is helping to train volunteers, who are collecting data on the urban forest and monitoring watershed health.
- We are measuring the effects of increasing tree cover on both the quantity and quality of runoff.
- We are modeling how annual and peak runoff will change as trees mature over a 40 year period.

#### What Urban Releaf, Our Community Partner, is Doing

- With funding from the California Bay-Delta Authority, Urban Releaf is directing the planting of 1,800 trees (600 per year) within the Ettie Street watershed.
- Youth from Urban Releaf, East Bay Conservation Corps, and the Oakland Unified School District are active in tree planting and stewardship activities.
- Property owners, non-profit organizations, business owners, local officials, and volunteer groups are also planting trees and distributing information to the public.
- A volunteer-based tree monitoring program is being developed to track tree survival, health, growth, and performance over the long term.



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