

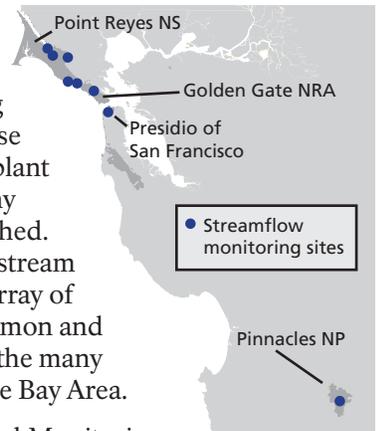
Streamflow Monitoring

San Francisco Bay Area Network

Resource Brief

Why Is Streamflow Important?

The amount of water flowing in a stream is among the most useful factors available for understanding watershed and stream health. This is in part because streamflow is a reflection of the weather, climate, plant life, soil characteristics and land use (e.g. how many buildings, roads and farms there are) in the watershed. Streamflow then directly influences water quality, stream channel shape, and habitat conditions for a wide array of plants and animals. Federally endangered coho salmon and threatened California red-legged frogs are among the many at-risk species that rely on healthy waterways in the Bay Area.



The San Francisco Bay Area Network Inventory and Monitoring Program and its partners monitor streamflow in selected streams in the Golden Gate National Recreation Area, Pinnacles National Park, Point Reyes National Seashore, and the Presidio of San Francisco.

Above: Brisk winter flows such as this one in Redwood Creek enable endangered coho salmon and threatened steelhead trout to swim upstream to spawn. Too little water could render the journey impossible. On the other hand, if flows are too high, their eggs may get washed away. Photo by Jessica Weinberg McClosky.

Below: A typical streamflow monitoring setup, including gages to manually measure water depth and peak flow depth (center left), a transducer to automatically measure and record water level (center right), a rain guage (back left), and a solar powered, weather-protected datalogger (back right). NPS Photo.



Why Do We Monitor Streamflow?

- To monitor the variability and long-term trends in streamflow
- To monitor the frequency, size and duration of high flow events and of extreme low water events in streams containing threatened or endangered species

How Do We Use the Monitoring Data?

- To guide decisions and policies about issues ranging from habitat restoration and water quality to urbanization and water rights
- To better predict extreme high or low streamflow events and plan strategies to lessen the negative affects these events can have on vulnerable wildlife

What Have We Learned?

Streamflow data has been collected regularly at sites in Golden Gate and Point Reyes since 1997-98, at the Presidio since 2001 and at Pinnacles since 2008. Given the high variability of streamflow data, it is too soon to report on long-term trends. Still, the data has already helped to address specific concerns at several parks. In Golden Gate, for example, streamflow data from Redwood Creek has been used to help plan effective creek and wetland restoration activities. It has also been valuable for assessing and adjusting water withdrawal schedules to improve dry season habitat conditions for juvenile coho salmon and steelhead trout.

To learn more, visit www.sfnps.org/rivers_streams
Summary by Jessica Weinberg McClosky, January 2014.

For More Information

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SF Bay Area National Parks Science and Learning
http://www.sfnps.org/rivers_streams

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