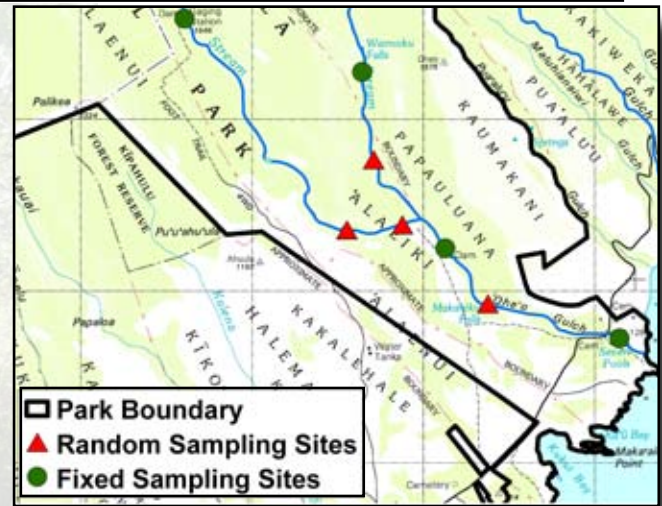




## Water Quality Monitoring in the PACN

### Network Parks Where Resource Is Monitored

- ◆ Haleakalā National Park (HALE)
- ◆ War in the Pacific National Historical Park (WAPA)
- ◆ American Memorial Park (AMME)
- ◆ Kaloko-Honokōhau National Historical Park (KAHO)
- ◆ Kalaupapa National Historical Park (KALA)
- ◆ National Park of American Samoa (NPSA)
- ◆ Pu‘uhonua o Hōnaunau National Historical Park (PUHO)
- ◆ Pu‘ukoholā Heiau National Historic Site (PUHE)
- ◆ Ala Kahakai National Historic Trail (ALKA)



Example of fixed and random water quality sampling sites in the K pahulu area of HALE.

### Importance: Clean Water Is Necessary For Life

PACN park waters supply island communities with water for drinking and domestic uses, crop irrigation, and recreation. Precipitation that collects in park watersheds feeds anchialine pools and streams, and eventually runs into the ocean. Clean water is a requirement for healthy organisms and the ecosystems they create and inhabit. Some threats to water quality include: urban runoff, chemical, nutrient contamination, temperature change, and sedimentation. Contaminants make water unsafe for human and animal consumption and create unsuitable habitat for aquatic organisms. High temperatures and turbidity limit the water's ability to support life.

### Long-Term Monitoring

The Water Quality Monitoring Protocol was field tested in KAHO, PUHO, PUHE, KALA, AMME and WAPA. Bi-monthly sampling trips in HALE have been on-going since April 2007 and have proven successful. Two person crews, led by the PACN Aquatic Ecologist or Aquatic Biotechnician, hike up the stream or nearby trails to locate selected sampling sites where physical measurements (temperature, pH, turbidity, salinity/conductivity, dissolved oxygen, and chlorophyll) and water samples for nutrient analysis are collected. Habitat information, photographs and GPS waypoints are recorded along with time and date to help in data interpretation. Monitoring of fixed and random locations will provide the NPS with the ability to characterize the water quality of the entire watershed, and compare changes in water quality in the parks over time.

### Monitoring Objectives

- ◆ Identify trends in physical and chemical water quality parameters
- ◆ Determine compliance with federal, state, and local water quality regulations

### Management Applications

- ◆ Identify park waters in compliance with relevant water quality regulations
- ◆ Document long term trends in water quality parameters
- ◆ Document effects of management actions on water quality
- ◆ Provide warnings for management on deteriorating water conditions

Water throughout the PACN is monitored in its many forms (streams, nearshore marine environments, estuaries, and brackish water pools).

