

# Estimating water availability during low-flow conditions for Hawaiian streams

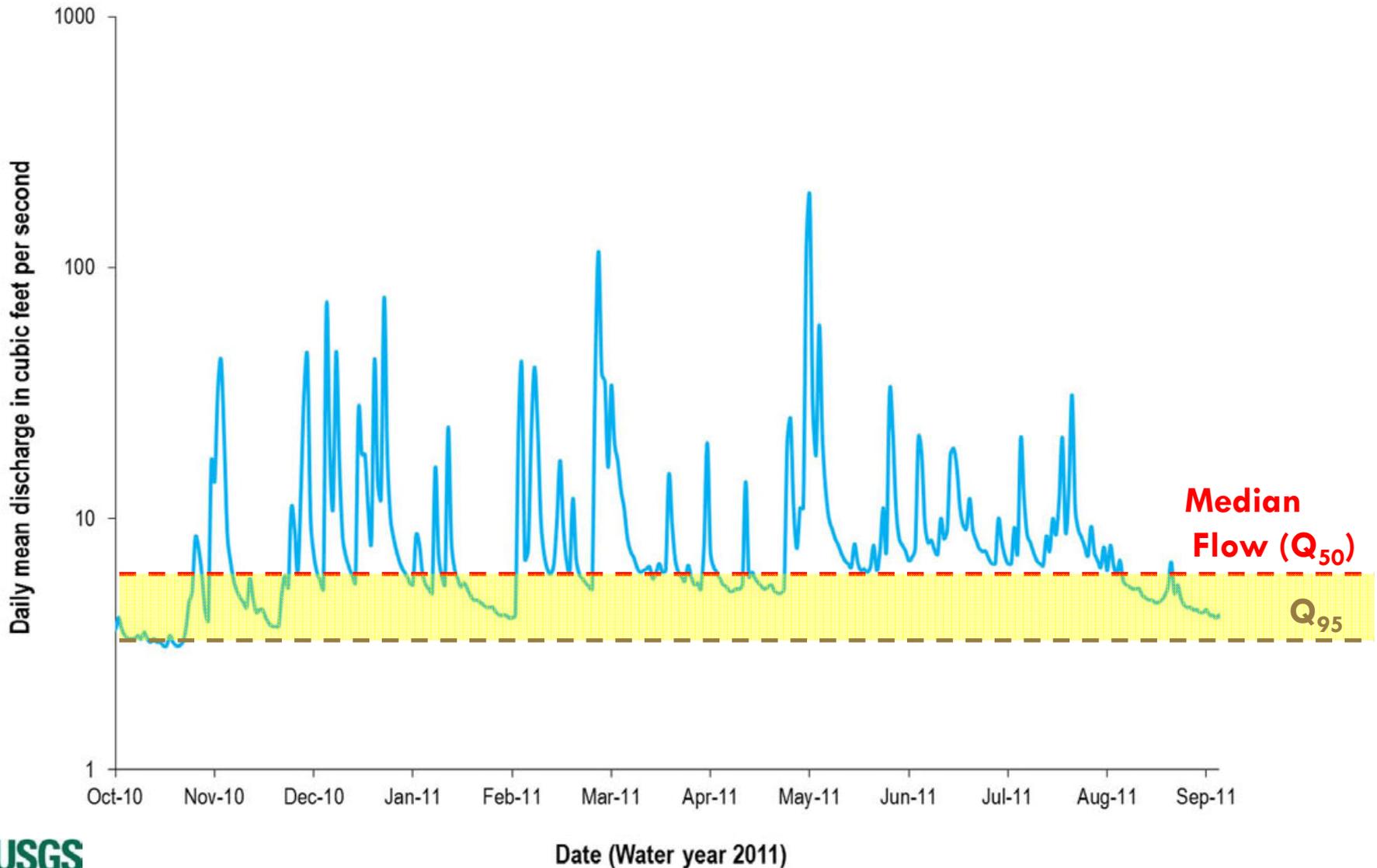
Proposal, February 2013

# ***United States Geological Survey Pacific Islands Water Science Center***

Our mission is to provide reliable, impartial, timely information that is needed to understand the quantity and quality of water resources.

***Website: <http://hi.water.usgs.gov/>***

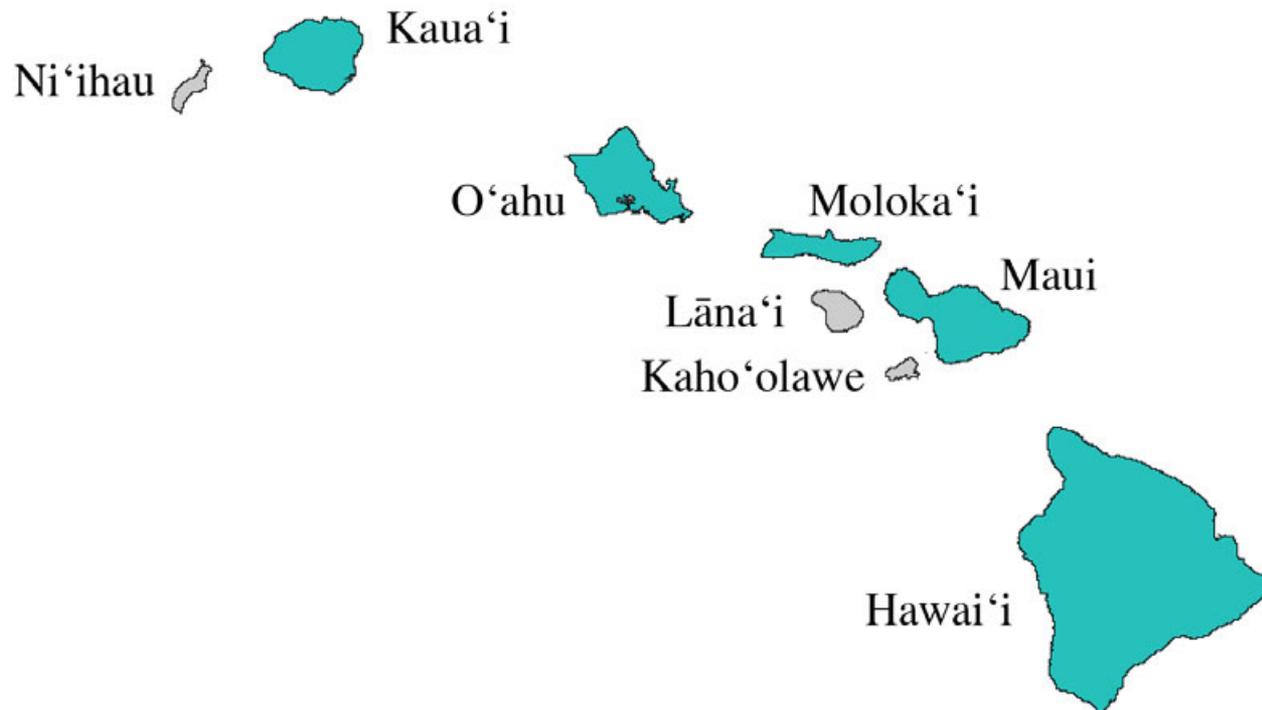
# Hydrograph for continuous-record streamflow-gaging station on Halaulani Stream, Kaua'i, HI



# Study objectives

Phase 1: Provide estimates of natural low flows for streams with existing data at gaged sites, and

Phase 2: Develop a tool to estimate natural streamflow under low-flow conditions at ungaged sites.



# Sites used to compute low-flow statistics

## CONTINUOUS-RECORD

Provides continuous-record of discharge at a particular location



Wailua River, Kaua'i

## LOW-FLOW PARTIAL-RECORD

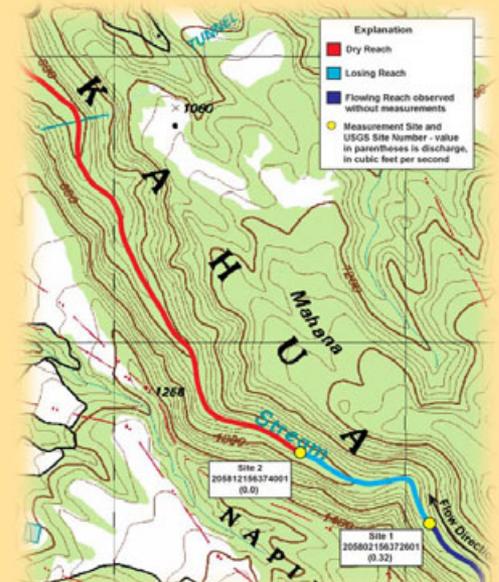
Discharge measurement made repeatedly at a particular location during low-flow periods



Anahola Stream, Kaua'i

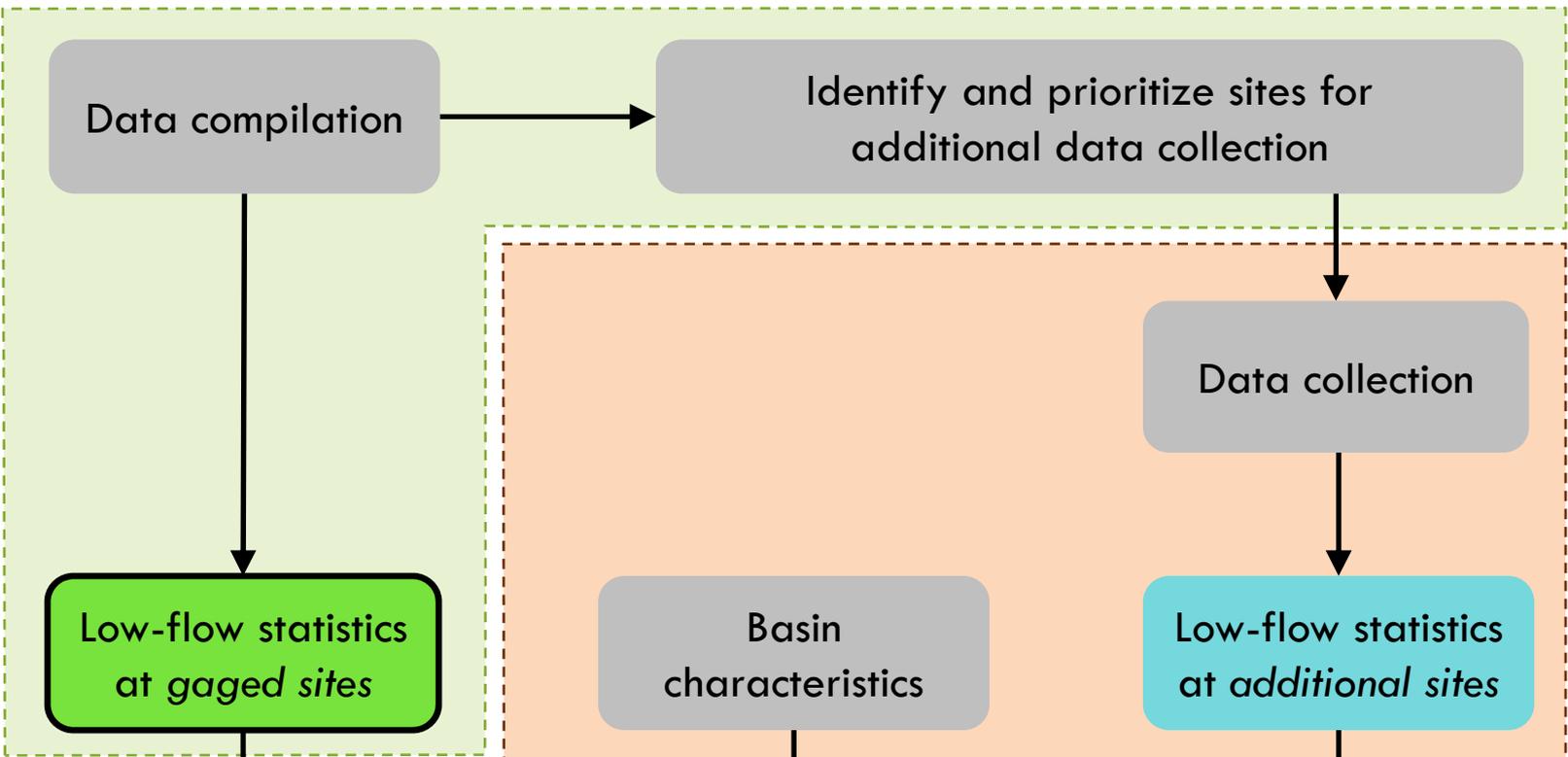
## SEEPAGE RUN

Discharge measurements made at several locations along a stream

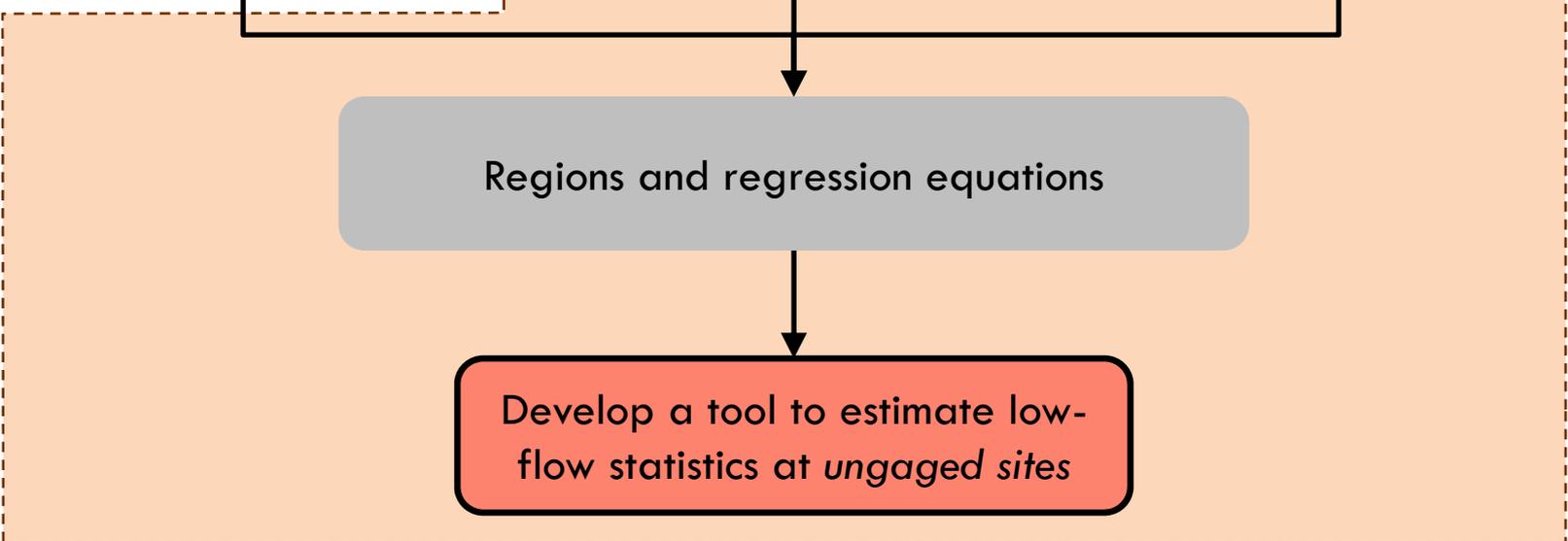


Honokahua Stream, Maui

# PHASE 1



# PHASE 2

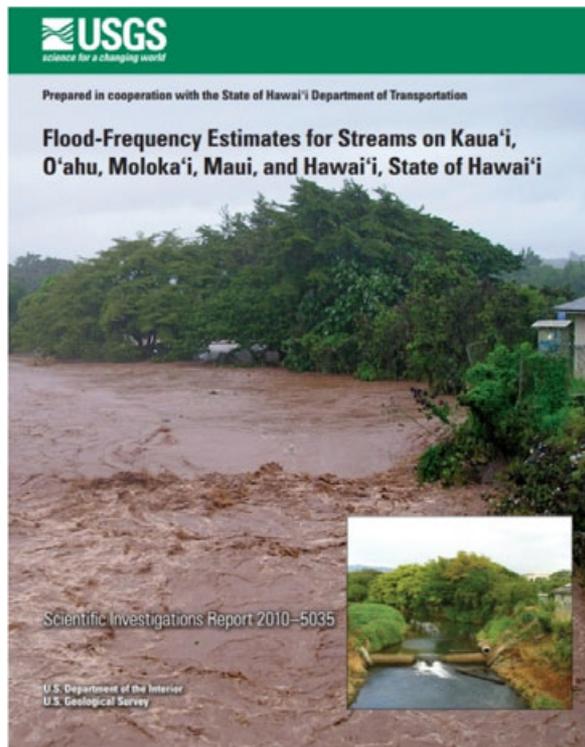


# Deliverables

## USGS Publications

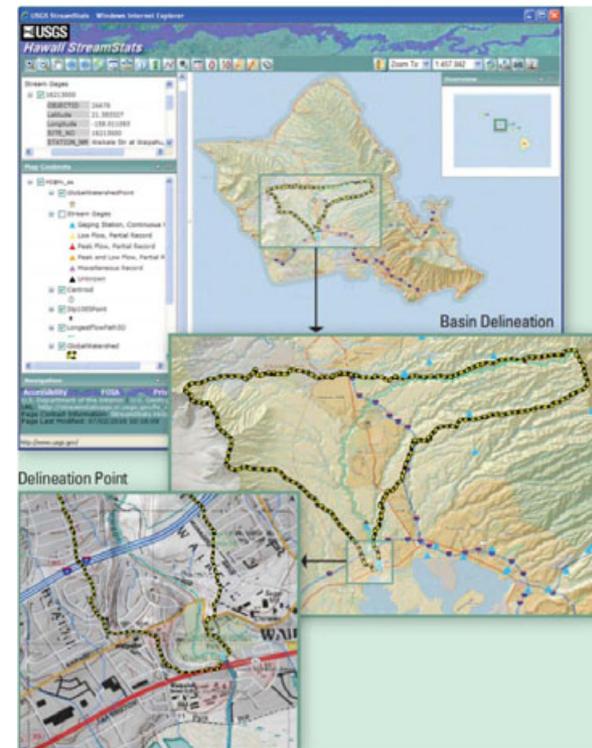
A USGS Scientific Investigations Report will be published for each phase of the study.

*Example: Flood-frequency study report*



## StreamStats (web-based application)

A new tool within StreamStats that allows the user to estimate natural low-flow availability at ungaged sites in Hawai'i.



# Budget and funding sources

## Estimated budget

Phase 1	2.5 yrs	\$ 350,000
Phase 2	4.5 yrs	\$ 2,000,000
<b>Total</b>	<b>7 yrs</b>	<b>\$ 2,350,000</b>

## Cost share

USGS (50%)      \$ 1,175,000

## Potential cooperating agencies:

- Commission on Water Resource Management
- Department of Hawaiian Home Lands
- Office of Hawaiian Affairs
- Department of Agriculture
- Department of Health
- DLNR, Division of Forestry and Wildlife
- DLNR, Land Division
- Honolulu Dept. of Planning and Permitting
- Honolulu Board of Water Supply
- Maui County Department of Water Supply
- U.S. Army Corps of Engineers

*streamstats.usgs.gov*  
*hi.water.usgs.gov*

QUESTIONS  
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