



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
 Stream Protection and Management Branch

FIELD INVESTIGATION REPORT
FI2009020901 (East Maui, Wailua Valley Taro)

Date of Field Investigation:	February 9, 2009	Time (24-hour):	1000 - 1730
CWRM Staff:	Ed Sakoda, Dean Uyeno, and Chui Ling Cheng		
Individuals Present:	Alan Murakami, Ed Wendt, Amanda Martin, Kimo Day, Steven Hookano		
Hydrologic Unit:	Wailuanui (6056)		
Stream Name:			

Findings:

CWRM staff departed Oahu for Maui at 0600 hours.

The purpose of this field visit was to get a better understanding of the taro patches in Wailua Valley, with main focus on water flow from the sources and through the taro patches before water returns to the stream. CWRM staff had previously digitized the Wailua Valley taro patches from available aerial imagery. Maps were prepared to help staff collect additional data in the field, which included 1) water flow from the upper, lower, and middle ditches to the taro patches; 2) flow through the patches in the valley; 3) auwai system and location in relation to the patches; 4) locations of return flow from the auwai to the stream; and 5) operator of the general area where taro was cultivated at the time of the field visit.

At 1000, CWRM staff met with Alan Murakami, Ed Wendt, Amanda Martin, Steven Hookano and Kimo Day in Wailua Valley. Staff began data collection at the southwestern end of the valley, where most of the patches were fed by Wailuanui Stream (intake at Wakani Falls / Pond). A majority of the patches were operated by Kimo Day (upper patches) and Bush Martin (lower patches). From the auwai, Kimo Day led Alan Murakami and staff to the intake at Wakani Pond. On the way to the intake, water level in the auwai was less than one foot. At Wakani Pond, Alan Murakami inspected the intake and pulled out rocks, debris and a large log that were clogging the intake. Hiking back from Wakani Pond, water level in the auwai was about 2 feet. This event clearly illustrated the importance of auwai and intake maintenance in optimizing water flow to the taro patches.

The taro patches to the north were fed by water from Waiokamilo/Kualani Streams (flowing through Lakini). Staff hiked about 400 meters northwest along the lower ditch until reaching a location where the entire Wailua Valley could be viewed. Steven Hookano explained the overlay of the valley, who maintained each general area where taro was cultivated at the time. The middle ditch could be seen to run across the center of the valley. It mainly feeds taro patches belonging to the Nakanelua and Young (Steven Hookano's uncle) families. The upper patches in the center of the valley were overgrown with grass whereas most of the lower patches were cultivated at the time of the visit. Hiking back along the lower ditch, the farmers explained that pumpkin (instead of taro) was planted along the lower ditch due to the lack of water.

After lunch at approximately 1400, Steven Hookano led staff to the center of the valley. Staff collected information on water flow, primary patch operators, and whether the patches were in cultivation. The same survey was done to the lower patches in the center of the valley where a majority of the patches were maintained by Steven Hookano.

Staff concluded the field investigation at 1730 hours.

Image Listing: (Attach PDF of image contact sheet)

File Name:	Brief Description:
20090209001	Wailua Valley taro patches fed by Waikani Falls / Pond.
20090209002	Wailua Valley taro patches fed by Lakini.
20090209008	Auwai dividing the patches that are fed by Waikani Falls / Pond (left) and those fed by Lakini (right).
20090209012	Lower patches fed by Lakini.
20090209016	Pipe outflow from taro patch to auwai.
20090209024	Taro patches belonging to Kimo Day. These patches were fed by Waikani Falls / Pond.
20090209026	Taro patches belonging to Kimo Day. These patches were fed by Waikani Falls / Pond.
20090209031	Taro patches belonging to Kimo Day, and a 6-inch pipe that took water from Waikani Falls / Pond to the taro patches.
20090209032	General area fed by Waikani Falls / Pond.

20090209033	General area fed by Lakini.
20090209035	A 6-inch pipe with water from Waikani Falls / Pond to the taro patches.
20090209048	Intake pipe (6-inch) at the beginning of the auwai taking water from Waikani Falls / Pond.
20090209049	Where water from Waikani Falls / Pond splits into two pipes.
20090209051	Where water from Waikani Falls / Pond outflows into the auwai.
20090209057	Waikani Falls.
20090209058	Wailuanui Stream downstream of Waikani Falls.
20090209065	Alan Murakami clearing the intake at Waikani Pond.
20090209069	Where water from Waikani Falls / Pond outflows into the auwai after clearing of the intake at Waikani Pond.
20090209070	Location where water from Waikani Falls / Pond outflows into the auwai after clearing of the intake at Waikani Pond.
20090209077	Where water from Waikani Falls / Pond outflows into the auwai after clearing of the intake at Waikani Pond.
20090209080	Auwai full with water from Waikani Falls / Pond after clearing of the intake at Waikani Pond.
20090209100	Lower ditch in Wailua Valley.
20090209114	Pumpkin patch along the lower ditch in Wailua Valley.
20090209118	Overlooking the center of Wailua Valley at the lower ditch.
20090209120	Taro patches belonging to Nakanelua and Young families. These patches were fed by the middle ditch.
20090209134	Middle ditch in Wailua Valley.
20090209139	Young's family taro patches in the center of Wailua Valley.
20090209148	Steven Hookano's taro patches in Wailua Valley.
20090209149	Middle ditch in Wailua Valley.

GPS Listing:

Shapefiles: (List file names of all shapefiles created and a brief description of each)

<u>File Name:</u>	<u>Brief Description:</u>
FI20090209wp.shp	Waypoints recorded with the GPS unit during the field visit.

Waypoints: (List all waypoints in decimal degrees and provide a brief description of each)

<u>WP No.</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Brief Description:</u>
027	20.835936	-156.13598	Waikani Pond: Outflow of 8-inch cast-iron pipe to unlined auwai
028	20.836238	-156.135933	Waikani Pond: Waste gate on auwai
029	20.837203	-156.135644	Auwai from Waikani Pond: Water flows into two 10-inch PVC pipes
030	20.837478	-156.13579	Auwai from Waikani Pond: Water outflow from two 10-inch PVC pipes
031	20.838253	-156.135995	Auwai from Waikani Pond: Culvert, auwai flows across in concrete flume
032	20.83852	-156.136169	Auwai from Waikani Pond: Culvert, auwai flows across in concrete flume
033	20.838857	-156.136381	Auwai from Waikani Pond: Culvert, auwai flows across in 6-inch PVC pipe
035	20.839259	-156.136662	Wailua Valley taro patches: Y-Junction on 6-inch PVC pipe

Attachments:

- Brief Description:**
- Image Contact Sheet

Recommendations:

IMAGE CONTACT SHEET



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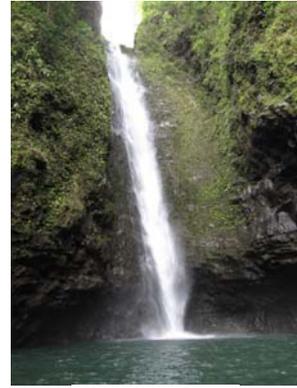
IMAGE CONTACT SHEET



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IMAGE CONTACT SHEET



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