Date of Field Investigation: November 18, 2008  Time (24-hour): 1030 - 1500

CWRM Staff: Ed Sakoda, Dean Uyeno, and Chui Ling Cheng

Individuals Present: DAR - Skippy Hau; Wailua Valley - Ed Wendt and Carl Wendt

Hydrologic Unit: Waiokamilo (6055)

Stream Name: Kualani Stream

Findings:

The purpose of the field visit was to get a better understanding of the Lakini taro patch, its auwai, and Kualani Stream. At 1030 hours, CWRM staff, Skippy, Ed and Carl Wendt arrived at the Hana Highway bridge that crosses Waiokamilo Stream and Kualani Stream. Staff took photographs of both streams upstream and downstream from the bridge. The streams had high flows from the heavy rain*. Downstream from the bridge, Kualani Stream is diverted at Dam 4 for the Na Moku Project taro loi. Kualani Stream continues to flow downstream from the bridge for about 80 feet and then merges with Waiokamilo Stream. Staff walked down Wailua Road from Hana Highway to see the auwai for the Na Moku Project. Water that exits the Na Moku Project taro loi, continues under Wailua Road to more taro fields in the valley.

The next destination was the Lakini taro patch. Kikokiko Falls on Waiokamilo Stream could be seen while walking up the taro patch from Hana Highway. At the end of Lakini is Dam 1 where Kualani Stream is diverted for the taro patch. Dean Uyeno and Ed Wendt continued to hike up Kualani Stream from the dam for another 200 feet. The streambank was heavily vegetated with California grass. Photos were taken at the point where water diverted from Waiokamilo Stream (at Dam 2) enters Kualani Stream. Dean continued further upstream past the inflow from Waiokamilo, however the area was heavily overgrown with California grass and difficult to continue further. Kualani Stream is relatively small, however water was flowing beneath the California grass. Upon their return, the group walked to the concrete diversion box near Lakini. Water outflow from Lakini flows under Hana Highway to a concrete junction box which distributes the water into an Upper Ditch, Lower Ditch, and a third ditch for the Wailua taro patches. At the time of this visit, water to the Upper Ditch was blocked off by a wooden board. Carl Wendt indicated that normal water flow is insufficient to meet the water needs to taro loi serviced by the upper ditch.

At approximately 1330, everyone arrived at Wailua Valley State Wayside. Following Ed and Carl Wendt, CWRM staff and Skippy hiked mauka along the service road to Wailua Valley in search of Kualani Stream. The service road continues in an open pasture where Kualani Stream crosses. That part of the stream is very narrow and overgrown with vegetation. Then, everyone hiked into the forest and found Kualani Stream. Dean Uyeno, Chui Ling Cheng, and Skippy Hau continued to hike upstream along Kualani Stream to Kualani Falls. CWRM staff was not able to take GPS coordinates of the waterfall because the satellite signal was blocked by the mountain. From the waterfall, CWRM staff and Skippy hiked downstream and met up with the rest of the group. The group continued to hike downstream until the stream reaches the open pasture near the service road.

Staff left Wailua Valley State Wayside at 1500 hours, and continued to document high flows in Wailuanui Stream. Refer to Field Investigation Report FI2008111804 (East Maui, Wailuanui, high flow) for more information.

*Heavy rain fell on East Maui on the morning of Nov. 18. USGS rain gage (Station 204916156083701) in West Wailuaiki near Keanae recorded 1.8 inches of rain on Nov 18, and 0.82 inches on Nov. 19. Most of the rain fell on the early morning of Nov. 18, between 12AM and 3:30AM. The nearest USGS active stream gage with real-time data is located on West Wailuaiki Stream (Station 16518000). At approximately 12:00AM on Nov. 18, discharge in West Wailuaiki Stream began to increase from 2.7CFS to a peak flow of 2,010 CFS at 9:45AM. By Nov. 26, streamflow returned to 3.7 CFS. Refer to FI2008111801 (East Maui, Palauhulu, high flow) for real-time rainfall and discharge graphs.
Image Listing:

File Name: FI20081118015
Brief Description: Waiokamilo Stream downstream from Hana Highway.

File Name: FI20081118017
Brief Description: Waiokamilo Stream downstream from Hana Highway.

File Name: FI20081118019
Brief Description: Waiokamilo Stream upstream from Hana Highway.

File Name: FI20081118021
Brief Description: Waiokamilo Stream upstream from Hana Highway.

File Name: FI20081118022
Brief Description: Kualani Stream downstream from Hana Highway.

File Name: FI20081118024
Brief Description: Kualani Stream upstream from Hana Highway.

File Name: FI20081118026
Brief Description: Kualani Stream upstream from Hana Highway.

File Name: FI20081118028
Brief Description: Bridge on Hana Highway that crosses Waiokamilo Stream and Kualani Stream.

File Name: FI20081118029
Brief Description: Dam 4 of the auwai for the Na Moku Project, downstream from Hana Highway.

File Name: FI20081118030
Brief Description: Kualani Stream and the auwai for the Na Moku Project, downstream from Hana Highway but upstream from Dam 4.

File Name: FI20081118031
Brief Description: Auwai for the Na Moku Project, downstream from Hana Highway.

File Name: FI20081118032
Brief Description: Kualani Stream and the auwai for the Na Moku Project, downstream from Hana Highway but upstream from Dam 4.

File Name: FI20081118033
Brief Description: Auwai for the Na Moku Project, downstream from Hana Highway.

File Name: FI20081118034
Brief Description: Confluence of Kualani Stream and Waiokamilo Stream downstream from Hana Highway.

File Name: FI20081118038
Brief Description: Auwai for the Na Moku Project, downstream from Hana Highway.

File Name: FI20081118045
Brief Description: Lakini taro patch.

File Name: FI20081118049
Brief Description: Dam 1 upstream of the Lakini taro patch. Kualani Stream flows into the auwai for Lakini.

File Name: FI20081118051
Brief Description: Kualani Stream upstream of Dam 1.

File Name: FI20081118052
Brief Description: Kualani Stream upstream of Dam 1.

File Name: FI20081118055
Brief Description: Kualani Stream upstream of Dam 1.

File Name: FI20081118057
Brief Description: Kualani Stream upstream of Dam 1.

File Name: FI20081118058
Brief Description: Kualani Stream upstream of Dam 1.

File Name: FI20081118059
Brief Description: Concrete diversion box downstream of Hana Highway.

File Name: FI20081118061
Brief Description: Concrete diversion box downstream of Hana Highway.

File Name: FI20081118065
Brief Description: Taro patches in Wailua Valley.

File Name: FI20081118066
Brief Description: Kikokiko Falls on Waiokamilo Stream.

File Name: FI20081118068
Brief Description: Kualani Stream upstream from Hana Highway.

File Name: FI20081118070
Brief Description: Kualani Stream upstream from Hana Highway, on the way to Kualani Falls.

File Name: FI20081118071
Brief Description: Kualani Stream upstream from Hana Highway, on the way to Kualani Falls.

File Name: FI20081118072
Brief Description: Kualani Falls on Kualani Stream.

File Name: FI20081118075
Brief Description: Kualani Falls on Kualani Stream.

GPS Listing:

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

File Name: FI20081117wp.shp
Brief Description: Waypoints recorded during the field visit from Nov. 17-19, 2008.

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

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<thead>
<tr>
<th>WP No.</th>
<th>Latitude</th>
<th>Longitude</th>
<th>Brief Description</th>
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<tr>
<td>009</td>
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<td>Dam 4 on Kualani Stream to divert water to the Na Moku Project</td>
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<td>010</td>
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<td>Water from the Na Moku Project auwai flows under Wailua Road</td>
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<tr>
<td>011</td>
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<td>Downstream auwai outflow from Lakini taro patch</td>
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<td>012</td>
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<td>-156.13927924</td>
<td>Upstream auwai outflow from Lakini taro patch</td>
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<tr>
<td>013</td>
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<td>Main auwai intake to Lakini taro patch that splits to upper and lower taro patches</td>
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<tr>
<td>014</td>
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<td>Dam 1 on Kualani Stream diverting water for Lakini taro patch</td>
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<tr>
<td>015</td>
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<td>-156.14040786</td>
<td>Inflow to Kualani Stream from Waiokamilo Stream</td>
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<td>016</td>
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<td>-156.13900892</td>
<td>Concrete diversion box below Hana Highway</td>
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<tr>
<td>017</td>
<td>20.8388057</td>
<td>-156.14144512</td>
<td>Kualani Stream crossing the service road</td>
</tr>
</tbody>
</table>

Attachments:

Brief Description:
1. Image Contact Sheet

Recommendations:
Flagging tape of a different color. Staff used yellow flagging tape to mark the trail to Kualani Stream. However, the tape cannot be easily distinguished from the trees in the forest.