

March 2004 Scientist Trip

News Flash!

After the educational study was completed and the Kanu o ka 'Aina and Kamehameha Schools students departed Waipi'o Valley on Friday, March 12th, 2004, Bishop Museum scientists Ron Englund and David Preston remained in the valley to conduct additional stream research. We were staying at the old Araki Hotel, very near the Hi'ilawe Stream road crossing. Starting just above the Hi'ilawe Stream road crossing, Ron and David spent Saturday taking stream flows and water quality readings upstream to above the Edith Kanaka'ole Foundation taro 'auwai intakes. Saturday was a hot, muggy and still day with no rain falling during our day of fieldwork. The rain started as a gentle drizzle late Saturday evening, but by around 11-12 pm lightning and thunder started, an unusual event for Waipi'o Valley. Around 1:00 am Sunday morning a huge thunder crash awoke us, and then the heavy downpour really began.

When we attempted to drive across Hi'lawe Stream at 8:00 am that morning we found a raging, chocolate colored river full of large tree branches floating by at very fast speed. We were trapped, as the river was far too high to drive even the biggest four-wheel drive across, and this road is the only way out of Waipi'o Valley. However, that was just the beginning of the rain! The rainfall continued to intensify but there was little we could do except as the road in both directions was now a raging torrent. At 9:30 am we decided to see if we could find the stream gage we had used with the students just two days earlier. This numbered, steel gage had a reading of 1.29-1.3 feet on March 12 but now it was barely visible and the water was 3 inches over the top of the gage which has a maximum reading of 3.3 feet. Where turbidity measured only 0.36 Ntu units during the student study of the clear, low stream it now measured an amazing 106 Ntu units at the gage. But it kept raining, and the stream kept coming up.

The peak of the storm occurred Sunday, March 14th, around 1:00-1:30 pm at Hi'ilawe Stream, and the stream came up at least 8 feet above normal levels seen on Saturday. Even worse hit was the main stream in Waipi'o, the Wailoa River. At least 3 people had to be rescued by helicopter from the raging waters, including a woman and infant. Fortunately nobody was hurt during this flood, but many houses were damaged. Most devastated were the Waipi'o Valley taro farmers as they have a badly damaged crop that will be hurt by the cold mountain rainwaters and many plants were destroyed by physical effects of the floodwaters. The flood waters also completely scoured the stream channel, and now the 'auwai or channels to irrigate the taro field are in many places 6 ft above the stream where the water must come from. This means that there will be no water that is required for taro growing until the farmers can repair their irrigation system.

How will this flood affect native stream animals and the stream? The stream channel has changed drastically since the students left Friday, March 12th. Large boulders have come down from the mountain, and slow-water pools have turned into fast-water riffles. Expect a very different looking stream next time you come to Hi'ilawe!

Native animals are highly adapted to this type of flooding and will be just fine, as they have evolved to live in highly changeable streams. One beneficial aspect is that the alien species have less tolerance for flooding and can get swept out to sea. In fact, Ron and David saw many introduced green swordtail fish stranded on the roads right after the flooding, but we saw no native fish even though we know the streams contain many native 'o'opu (fish). The flood will benefit native stream species because the green swordtail fish carry many harmful parasites and eat young native 'o'opu and native insects.