

March 2004 Student Trip

First group of student scientists collect baseline data in the field!

The initial student data collecting field trip of the study took place on March 11-12, 2004, when twelve 7th grade students from Kamehameha Schools/Kea'au and four 6th/7th grade students from Kanu o ka 'Aina worked at the field site in Waipi'o Valley. The students were accompanied by five teachers from the two schools. Guiding the students were three scientists and an educator from Bishop Museum, and the education specialist of the state's aquatic resources division (DAR).

The students began their experience the first morning by conducting cultural protocol at the valley lookout, asking permission to enter and work in the valley. The two school groups alternated in performing four oli (chants) and they were done with strength and humility.

Some of the students walked in to the valley, while others, along with teachers and scientists, drove in 4-wheel drive vehicles. The "home base" was the old Araki Hotel located not too far in to the valley at the Hi'ilawe Stream road crossing.

Students began their field study with a discussion of Hawai'i stream ecology and the goals of the stream restoration study. They stated their scientific questions (what they're trying to find out in this study), some of the hypotheses (scientific predictions) and how they will be collecting data to test their hypotheses.

Following the discussion, the students divided into three working groups and began data collecting at Hi'ilawe Stream. They worked at a site just upstream from the county road crossing (a short walk from Araki's). Scientists taught the students the data collection methods and use of the equipment (instruments had been calibrated earlier in the trip at the Hilo DAR station). The participating scientists included:

Ron Englund, aquatic biologist and project director of the Waipi'o Valley Stream Restoration Study,
David Preston and Myra McShane, scientists from Bishop Museum, and John Kahiapo, education specialist of Hawaii Division of Aquatic Resources.

Groups worked their way upstream as they collected data at intervals. The following methods of data collecting were conducted by rotating groups:

- Stream Flow – measuring the total amount of water flowing in the stream by using a staff rod and flow meter to measure stream depth and velocity at specific points.
- Water Quality – instruments were used to take water temperature, dissolved oxygen levels, conductivity and turbidity.
- Habitat Mapping – stream width was measured at regular intervals, and stream habitats were measured to determine total amount of slow (pool), medium (run), and fast (riffle/cascade) habitats.
- Random Sampling of Insects – insects were collected using the “Sorber” method of sampling, at points along the stream randomly selected.

John Kahiapo also helped the students to catch and observe native o’opu (later released) and introduced prawns, which was a thrill! The data collected by the students over the two-day period will be calculated and posted on this website.

At the end of the day, students went to the estuary where the stream meets the ocean. John explained the importance of the estuary and the migration of Hawaii’s native stream fish and invertebrates down to the ocean (as larvae) and back up the stream (as juveniles). He caught some juvenile o’opu and put them on a device that he invented to observe their upstream migration behavior. Small trickles of water are run down the side of a small plexi wall; the fish are placed in a trough at the bottom of the wall, and they begin climbing up the trickles of water. Holding on with their pelvic fins, the fish make their way to the top of the wall!

Finally, some students went swimming in the ocean and a picnic dinner at the beach was enjoyed by all!