

Pa‘ēpa‘ē O Waikolu: *A place-based, real-world stewardship, community science approach to K-12 watershed & stream ecosystems education.*

PROGRAM OVERVIEW

Your student’s teacher has elected to have their class participate in our watershed health & stream biodiversity monitoring program. Our 4-lesson sequence is designed to align with and deepen the Next Generation Science Standards being taught in the classroom through real world, place-based field experience & participation in “community science” – where citizens collaborate with trained scientist to pinpoint problems facing the community, develop methods of study that suit the culture and composition of the group, and collect, analyze, & present data that advances community priorities in public policy. Through keeping track of the populations of our freshwater stream animals in Mānoa, Pālolo, & Makiki, we can use this data as one indicator in assessing the health of our streams as we advocate for necessary protections and policy change.



In lesson 1, students attend a lecture with stream scientist Cory Yap that covers...

- Intro to native & non-native stream animals
- Natural & human-made threats facing our native stream animals & watershed health
- How we can collaborate to address these threats through stewardship & “community science”

In lesson 2, students simulate the field procedure from start to finish

- learn their specific field roles & how to collaborate with members of their stream team
- ID fish as “native” or “invasive” from printed images “caught” in their nets.
- Learn safety & behavioral expectations
- get sized for specialized footwear to be worn in the stream for safety

In lesson 3, students participate in the field procedure by

- Enacting their specific roles used to herd fish downstream
- Catching native & invasive fish & sorting for population count data collection

In lesson 4, students bring data from the field back into the classroom for analysis, comparing data collected at the site over the years, ultimately leading to students determining a “score” for their stream section using the Hawai‘i Stream Index of Biological Integrity. Knowing this score can help students become active in protecting the freshwater stream ecosystems that provide life to our islands and develop ideas for stewardship activities & legislative action geared towards improving stream and watershed health.

SAFETY AND OTHER CONCERNS

Safety & health of students is our top priority. When students leave the 4 walls of the classroom and enter an outdoor learning space, many uncontrolled natural variables come into play that can pose a risk to student safety. For this reason, no one is "required" to go into the stream. We ask that you discuss with your student the importance of following all behavioral and safety protocols stated in our lessons and make an informed decision about your student's participation. Some things to consider are featured below...

Supervision

We require schools to coordinate teachers & chaperones to cover a minimum of...

- 1 adult to 5 students for grades K-5,
- 1 adult to 7 students for grades 6-8, and
- 1 adult to 10 students for grades 9-12

Group rotation sizes can be as small as 12 students, or as large as 30 students at one time, and will vary by age of students and study site. *If your school requires a lifeguard* or first responder to be present during the field activity, your school/instructor will be responsible for coordinating and paying for their service.

Weather & Stream Flow

Our staff constantly monitors the weather to properly forecast safe conditions to enter the streams. If a rain or flood event seems likely, we will cancel the field trip the moment a threat becomes present. Students will not enter any stream where the flow rate could easily knock them over or the depth exceeds "knee high". Students wear provided, specialized, felt-bottom footwear to help them grip the rocks and find stable footing.

General Environmental Concerns- [\[for specific risks regarding land based & urban water pollution click here\]](#)

Many people lose or dump personal and industrial waste in our streams resulting in the presence of sharp objects such as bicycles & tents, and invisible pollutants such as pesticides. Natural forces of rain & wind push debris such as branches and leaf litter into the streams, and move rocks on the stream bed resulting in uneven & unpredictable terrain. Our urban channelized stream tunnels and bridges also provide shelter and privacy for some of our houseless neighbors. While we have not had any negative encounters, some of these folks may be experiencing mental crises. Our staff visits the stream site 1-3 days prior to student field trips to assess safety threats. We talk to residents, report crime concerns to HPD, remove visible object threats, assess rock movement, and cut vegetation back to ensure clear walking paths are free of tripping hazards and plant materials that could cut or irritate students' skin.

Biological Contaminants

Leptospirosis and other bacteria are present in at least some amount in almost all streams in Hawai'i.

Rules we set to prevent illness from contact with biological contaminants...

- Those with open cuts, specifically arm or leg below the knees or elbows, will not be permitted to participate. We define an "open cut" as a recent wound that is either actively bleeding, has not formed a scab, or one that allows water to enter into the bloodstream. Scabs & open cuts on the torso are not considered high risk.
- There will be no intentional swimming or submerging of the head or the body above the knee.
- No running, jumping, or rock hopping is allowed.
- No splashing or horseplay that could result in water contacting students' mouth or eyes.
- Do not touch eyes, nose or mouth. Sweat and face itches happen. We remind students to try and use their clothed shoulder to alleviate these annoyances once their hands have contacted the water.
- Keep mouths closed unless actively communicating about the stream survey. Excessive talking increases the risk that stream water will enter the mouth, as well as creates noise that disrupts the procedure & neighbors
- All students will wash hands with antibacterial soap (provided) before eating snack or getting on the bus.

**If parents do not want their student touching stream animals, please let the instructor know before the activity.

First Aid

Lead members of our staff are CPR & First Aid trained. In the event that any general first aid is needed; we will have basic first aid kits on hand to treat the injury. In the case of more serious injury, we will call 911 immediately. **In 8 years and over 400 field trips, students have gotten minor scratches, bee stings, become soaked from a slip; but we have never had to call 911, had any serious injuries, nor had students contract leptospirosis.** It is the responsibility of every student & adult participant to act in good will of the other members of the group to ensure we continue this record of safety and success.



Pa'ēpa'ē O Waikolu: Stream Biodiversity Program with 'Iolani School and the University of Hawai'i at Mānoa

K-12 Student / Volunteer Assumption of Risk, Release and Indemnity Agreement

Name of Participant: _____ Grade: _____ Age: _____

School/Org: _____ Date: _____

Section 1: Code of Conduct

This event is planned and conducted by 'Iolani School and the University of Hawai'i at Mānoa Center for Conservation Research and Training (UH-CCRT). Our TOP priorities are participant safety, sound data collection, and respect for the animals, natural habitat and the communities we enter to do this work. All participants are responsible for their own actions & adhering to rules set by authoritative personnel or volunteers supervising the activity.

Specific guidelines for conduct include:

- A. Behaviors & actions in-line with the stated safety standards, values and image of 'Iolani School and the UH-CCRT, while on-site in our communities. Participants shall show respect & care for other participants, property, facilities, and equipment used during the activity or event. They shall assume financial restitution or relationship repair for any damages they cause.
- B. Tobacco products, drugs, alcohol, weapons and fireworks will not be tolerated. Parents and youth participants, chaperones & adult volunteers understand and accept the responsibility for following the above guidelines, and realize that failure to do so may result in a participant being excluded from the activity and/or made ineligible to participate in future UH-CCRT / Iolani School sponsored activities.

initial to show agreement: _____

Section 2: Assumption of Risk and Release

I/We, the undersigned certify that the above individual is in good physical health and is able to participate in all activities of the above named program.

I/We, am/are responsible for making my coordinating institution & the above named program staff aware of any physical limitations, allergies, or other bodily or mental ailments that may hinder my level of involvement and thus should determine the role I serve in this activity.

I/We acknowledge that the activities I will engage in with this program involve physical activity in or around streams and estuaries, that may be dangerous, and that the activities involve unknown and unanticipated risks and dangers that can result in emotional or physical injury, death to myself or to other people. I understand that the risks could include without limitation; slips, falls, drowning, or other accidents that simply cannot be eliminated without jeopardizing the essential qualities of the activities.

I/We understand that I/We should be covered, on the date of the activity, by a private medical and liability policy; and I/We further understand that neither the University of Hawaii nor 'Iolani School provide such insurance or otherwise indemnify individuals with respect to injuries or other liabilities arising out of participation in the above named program.

Therefore, in consideration of all above individuals being permitted to participate in the above named program, I/We hereby agree to assume all risks and responsibilities surrounding his/her/their participation in the above named program. I/We have read and understand any and all written materials setting forth the requirements for participation in the referenced activity, as well as those explained by the instructor(s), and I/We agree to strictly observe them.

Further, I/We do for myself, my heirs, executors, and administrators hereby accept full responsibility for my/my child's participation and agree to indemnify, release and discharge the University of Hawaii, 'Iolani School, State of Hawaii, its officers, employees, agents, and assigns from any and all claims or actions for property damage, personal injury, and/or death arising from such participation in the above named program or growing out of or caused by any acts or omissions of the above individual during their participation in above named program.

initial to show agreement: _____

Section 3: Medical Consent

I/We, the undersigned, consent to and authorize any medical professional and others working under their supervision to treat the above individual for any injury or illness arising from or related to participation in the above named program.

I/We further agree to pay any and all medical expenses, costs and other charges and to release and discharge and hold harmless the University of Hawaii, 'Iolani School, State of Hawaii, City and County of Honolulu, its officers, employees, community partners, business / land owners, agents, and assigns from and against any liability or any claims or demands arising from or connected with such medical treatment or care.

initial to show agreement OR "X" to opt out: _____

Section 4: Publicity Release

By indication of signature below, I authorize the UH-CCRT and 'Iolani School unlimited permissions to use, publish and republish for purposes of advertising, public relations, trade, education or any other lawful use, the right to utilize any media of or by me, including but not limited to photographs, video or audio of me (and/or my property), or any written or electronic end product created by me as a result of my participation in this program. Use includes but is not limited to posting it on the UH-CCRT and 'Iolani School websites. I waive any rights, claims, or interests I may have to control the use of my identity or likeness in the photographs, video or audio, and agree that any uses described herein may be made without compensation or additional consideration of me. I also give the above fore-mentioned parties the right to utilize information I provide in any of their evaluation reports and exhibit this work publicly or privately. I further consent that my name and identity may be revealed therein or by descriptive text or commentary.

initial to show agreement OR "X" to opt out: _____

Sign below to confirm you have read this waiver in its entirety and grant your student permission to participate:

Signature of Parents/Guardian(s) or Adult Volunteer **Date**

Print Name(s) of Parents / Guardians or Adult Volunteer