

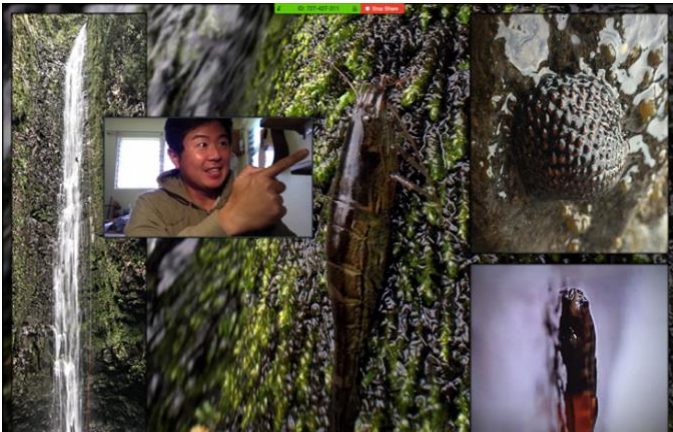
# Nā Wai 'Ekolu: Distance learning and virtual stream biodiversity lessons (Grade K-2)

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The COVID-19 pandemic continues to affect our lives in enumerate ways, especially to the education of our keiki. Social distancing guidelines and safety of our loved ones has made conventional classroom learning almost impossible, and we hope your institutions have heard your voices to what is best for you and your students. Nā Wai 'Ekolu would also like to respect your decisions and conform to whatever form of learning you and your administration feel benefits our community the best. Although we do not anticipate having any physical contact with any of you this fall, we've been busy developing a suite of resources for educators / students. Both pre-recorded and live virtual in-class stream biodiversity lessons / field trips are available, until we are able to safely interact with you all in person at [nawaiekolu.org/stream-biodiversity](http://nawaiekolu.org/stream-biodiversity).

## Lesson 1: Introduction to stream animals and how they are indicators of stream health.



Participants are able to view videos and photos of native / non-native animals from Hawaiian streams, as well as engage in interactive activities. The entire lesson is intended to be 20 minutes and is flexible for breaks or Lesson 2 activities in between.

Option A: Live via Zoom, Webex, Google Meet, etc.  
Option B: [pre-recorded video segments](#) of above:  
Part1 (7:39) [Hawaiian Stream Animals, Life Cycle, Climbing](#)  
Part2 (10:08) [Human Impacts, Invasive Species, Restoration](#)  
optional(6:53) [Detailed review of animal identification\\*](#)  
Videos downloadable in [GoogleDrive](#) upon request  
Option C: Story Map where students can read / view info, photos, and videos at their own pace.

\* = may be grade 3+

## Lesson 2: Interactive activities for the classroom or for review at home

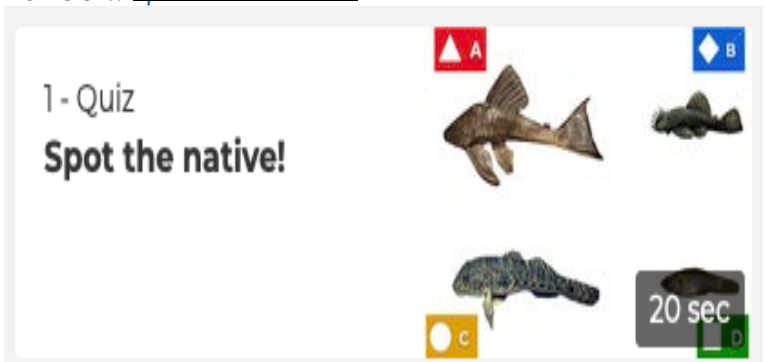
Since we are not doing any student field trips this fall, we will not be conducting Lesson 2 as we have in the past, where we rehearse field methods, safety protocols, and ethics. However, online materials are available for lecture review, animal identification, and counting of both native and invasive species. Many of these are also applicable for use in Lesson 4 (See Page 2).

Online interactive image:

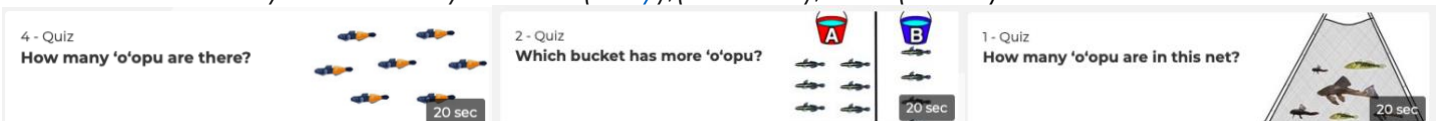
[Is this animal native or invasive?](#)



Kahoot!: [Spot the native!](#)



Kahoot!: How many natives do you see? ([Easy](#)), ([Medium](#)), and ([Hard\\*](#))



We would be happy to provide you the above content offline if this better suits your classroom needs.

## Lesson 3: Virtual field trips

Physical student field trips are not available at this time, but live field trips via videoconference will still be scheduled upon request. We have had success at several study sites with online classes this past spring / summer, running a 1st-person POV while catching, identifying and counting stream animals. We have yet to test the cellular reception at all of our sites and may take some testing with your videoconferencing platform. Live virtual field trips can take anywhere between 20 to 45 minutes, and is flexible with your class time. If either time, video-conferencing technology, and cellular reception is limiting, recorded virtual field trips are available at 8 different stream sites:

*Option A: Live Field Trip with Uncle Cory via video-conferencing platform (E.g. Zoom, Webex, etc.)*

*Option B: Recorded field trip via Youtube video at one of the following study sites:*

[Kaimukī High School site](#), Mānoa-Pālolo Stream  
[Kānewai Lo'i site](#), Mānoa Stream  
[Mānoa Park site](#), Mānoa Stream  
 Lyon Arboretum, 'Aihualama (Mānoa) Stream

[Saint Louis School site](#), Pālolo Stream  
[Ānuenue School site](#), Pālolo Stream  
[Hālau Kū Māna study site](#), Makiki Stream  
 Washington Middle School, Makiki Stream



Recorded Hālau Kū Māna virtual field trip, April 2020.

*Option C: Field trip video files are available upon request to share with students as appropriate.*

During live field trips, students/teachers will be responsible for keeping track of native / invasive animals identified by Uncle Cory, as well as the counts for each. The teacher must host the videoconference, and also be responsible for student behavior online. The teacher must moderate or facilitate any comments or questions by the students during the field trip while Uncle Cory is in the stream. He will be able to communicate via earbuds /microphone, but may not be able to see the screen at all times. Recorded field trips can be used to supplement the live field trip. All field activities will conclude with a summary about what animals were found and what they tell us about the health of the stream. Data collected from the field trip(s) can also be used for Lesson 4.

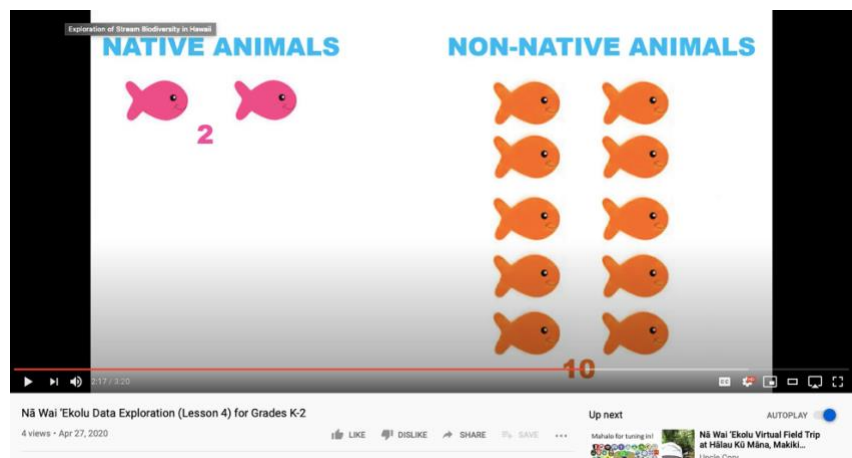
**Lesson 4: Place-based science curricula designed to fit the next generation science standards.**

Lesson plans, tutorial videos, and assignments are available for the following:

[Grades K-2: What's In a Number?](#)

Using field trip data, students will explore and visualize numbers. In deepening their number sense, students will then understand more fully their impact on stream health through the removal of invasive species.

[Lesson Plan](#) and [Tutorial Video](#)



How healthy are stream ecosystems?

[Use sample data to determine the number of native and invasive stream fauna at a site](#)

[Answer questions about your data](#)