

Bay Area Science Festival “Insect Respect” Tour at UC Elkus Ranch

UC Elkus Ranch offered its first ‘Insect Respect’ tour this past **Sunday, October 25th** as part of the **Bay Area Science Festival’s Explorer Days** sharing the facility with new visitors from across five counties. Children and adults (30 total) from across the Bay Area came to share a unique hands-on experience gaining a better understanding of the insect world and the many ecosystem services our six legged neighbors provide. Ranch Director Dr. Virginia Bolshakova kicked-off the event with a discussion about what traits make an insect an insect. Live Madagascar hissing cockroaches offered entomological diplomacy as children and adult participants jumped at the chance to hold them! Despite much tummy (or abdomen) tickling, the cockroaches refused to make a hiss!



Virginia and Casey Hubble then led an interactive tour of the Purisima Creek that runs through the Center and provides the life water for the ranch. Everyone was ready to get their feet wet on the topic of stream invertebrates. We learned that many kinds of invertebrates can be found in the stream, and that biologists use certain species as indicators in determining the overall health of a stream. Families participated in a ‘catch and release’ survey, collecting invertebrate fauna from in and around the flowing waters to measure the biotic index.

After lunch many kids tested their pallets by eating barbequed insects. These crunchy mealworm snacks are a tasty way to add some protein to your diet, and are a valuable food source in many cultures around the world. Entomophagy, the practice of consuming insects, has served as a nutritional, tasty and safe food source for people for tens of thousands of years all over the planet!



UC Berkeley graduate students, Madison Dipman and Lisa Treidel, led the afternoon tour through the gardens of Elkus Ranch - exploring the micro world of decomposers and pollinators. After learning about the Waggle Dance in bees, both children and adults buzz-waggled around the garden in a tag team game that simulated the foraging behavior of honey bees. A trip through the barn yard led to compost piles where kids were able to sift through the decomposing layers and discover the diversity of insects required to break down organic material. Once fully decomposed, this material becomes Elkus Ranch’s ‘Black GOLD’ soil amendment feeding our lush gardens. Finally, the tour wrapped-up with some chicken love and goat hugs – an important part of this amazing adventure! Many thanks to our courageous and enthusiastic

visitors who made this Bay Area Science Festival Explorer Day a great success! Hope to see everyone back at the ranch one day soon! - **Elkus Ranch BARF (Beneficial Arthropod Research Farm) Team**

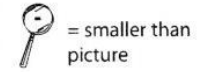
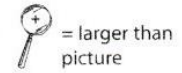
Group 1: These are sensitive to pollutants. Circle each animal found.



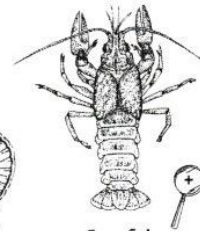
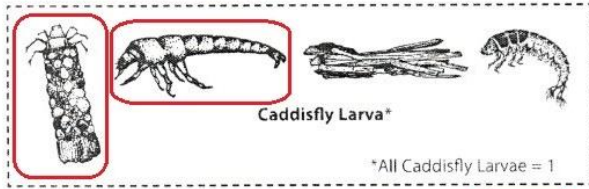
No. of group 1 animals circled:

0

Relative Size Key:

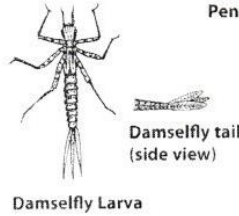


Group 2: These are semi-sensitive to pollutants. Circle each animal found.

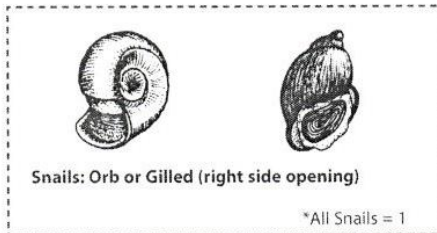


No. of group 2 animals circled:

4



Group 3: These are semi-tolerant of pollutants. Circle each animal found.



No. of group 3 animals circled:

0

Group 4: These are tolerant of pollutants. Circle each animal found.



No. of group 4 animals circled:

3

For more information, call (608) 265-3887 or (608) 264-8948.

Download and print data sheets from watermonitoring.uwex.edu/wav/monitoring/sheets.html

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Water Action Volunteers

Recording Form for the Citizen Monitoring Biotic Index

Name: Insect Respect

Date: 10/25/15

Stream Name: Purisma Creek

Time: _____

Location: UC Elkus Ranch bridge

Station Number: _____

(County, Road, Intersection, Other)

At this point, you should have collected a wide variety of aquatic macroinvertebrates from your three sites. You will now categorize your sample, using the *Key to Macroinvertebrate Life in the River* to help you identify the macroinvertebrates found. **The number of animals found is not important; rather, the variety of types of macroinvertebrates and their tolerance to pollution tells us the biotic index score.** Before you begin, check off the habitats from which you collected your sample (see right).



Riffles



Undercut banks



Snag areas, tree roots, submerged logs



Leaf packs

1. You should have removed large debris (e.g. leaves, rocks, sticks) from your sample and placed this material in a separate basin (after removing macroinvertebrates from it).
2. Check the basin with the debris to see if any aquatic macroinvertebrates crawled out. Add these animals to your prepared sample.
3. Fill the ice cube tray half-full with water.
4. Using plastic spoons or tweezers, (be careful not to kill the critters – ideally, you want to put them back in their habitat after you're finished) sort out the macroinvertebrates and place ones that look alike together in their own ice cube tray compartments. Sorting and placing similar looking macroinvertebrates together will help insure that you find all varieties of species in the sample.
5. Refer to the *Key to Macroinvertebrate Life in the River* and the *Citizen Monitoring Biotic Index* to identify the aquatic macroinvertebrates:
 - A. On the back of this page, circle the animals on the index that match those found in your sample.
 - B. Count the number of types of animals that are circled in each group and write that number in the box provided. Do not count individual animals in your sample. Only count the number of types of animals circled in each group.
 - C. Enter each boxed number in work area below.
 - D. Multiply the entered number from each group by the group value.
 - E. Do this for all groups.
 - F. Total the number of animals circled.
 - G. Total the calculated values for all groups.
 - H. Divide the total values by the total number of types of animals that were found: **TOTAL VALUES (b.) / TOTAL ANIMALS (a).**
 - I. Record this number.

SHOW ALL MATH (Use space below to do your math computations)

No. of animals circled from group 1 0 x 4 = 0

No. of animals circled from group 2 4 x 3 = 12

No. of animals circled from group 3 0 x 2 = 0

No. of animals circled from group 4 3 x 1 = 3

7	15
TOTAL ANIMALS (a):	TOTAL VALUE (b):

Index score:

2.14

How Healthy is the stream?

Good	2.6 - 3.5
Fair	2.1 - 2.5
Poor	1.0 - 2.0

Divide totaled value (b) 15 by total no. of animals (a) 7 for index score:

Report your results online at www.uwex.edu/erc/wavdb or submit your data to your local coordinator.
Call your local monitoring coordinator if you have questions about sampling or determining the Biotic Index Score.





THANK YOU for a
GREAT Day at
Elkus Ranch!!