

THURSDAY, MAY 30, 2024



The Republican.

200 YEARS OLD. BRAND NEW EVERY DAY.



PLUS

HOLYOKE

HCC students hunt campus woods for salamander pathogen



Holyoke Community College student Holly Tighe of Northampton, left, and her lab partner Chayton Honeywell of Belchertown, swab a salamander for the presence of *Batrachochytrium salamandrivorans*, an emerging pathogen lethal to salamanders. (SUBMITTED)

ENVIRONMENTAL SCIENCE students at Holyoke Community College spent their last Friday class of the spring semester searching the wet woods behind campus for something no one wants to find.

It's called *Batrachochytrium salamandrivorans*, an emerging pathogen lethal to salamanders. But don't even ask the instructor, Associate Professor Laurel Carpenter, how to pronounce that. "We just call it 'Bsal,'" she said.

The good news is the virulent Bsal fungus that has ravaged certain salamander species in Europe and Asia has not yet been found in North America.

The hunt for it, though, is on. Students from HCC and other colleges across the country are participating in a group project with a very clandestine sounding title: the Student



A salamander is swabbed. (SUBMITTED)

Network for Amphibian Pathogen Surveillance. Known by its acronym SNAPS, the program is supported by the U.S. Geological Survey and Environment and Climate Change Canada.

"Bsal is yet to be detected in North America but its accidental introduction is likely, making the early detection of Bsal essential for minimizing its negative impact," says

the SNAPS website. "Unfortunately, early detection is inherently challenging, requiring broad and long-term surveillance that can be expensive, time-consuming and logistically challenging. The Student Network for Amphibian Pathogen Surveillance leverages student-power to conduct ongoing and cost-effective Bsal surveillance by incorporating surveillance into undergraduate curriculum."

To detect Bsal, however, one must first locate salamanders to examine, and lots of them. Fortunately, there are many in and around the stream that runs behind the west side of the HCC campus.

"We basically just went around and turned over logs, rocks and leaves," said Holly Tighe of Northampton, a student in Carpenter's People and the Environment class. "They like to hide."

SEE SALAMANDERS, PAGE C4



Instructor Laurel Carpenter, right, HCC associate professor of environmental science, helps a student swab a salamander for the presence of the Bsal fungus. (SUBMITTED)



Salamanders

CONTINUES FROM PAGE C1

The three sought-after species were the two-lined salamander, the red eft salamander, and the red-backed salamander — the ones most at risk.

Once located, the salamanders, carefully handled by students wearing blue lab gloves, were temporarily remanded via plastic bag to a portable lab table on a nearby trail, where they were measured and gently swabbed — on their backs, under their bellies, on their claws, and under their chins. The swabs were then swished around inside small, solution-filled vials — kind of like taking a COVID-19 test — with each vial then labeled and logged on a chart. The salamanders were then returned to the general areas where they were found.

“We need to collect at least 30 unique samples,” Carpenter said.

The vials were destined for a lab at the University of Vermont in Burlington, where they will be analyzed for the presence of the Bsal fungus.

People should care about the results, Carpenter said, because salamanders, like amphibians in general, are important environmental indicators.

“They are both predators and prey,” she said. “They eat many of the insect pests that can cause disease. In some areas, they are also an important food source. Without them, some food chains would collapse. Salamanders are also susceptible to toxins in the environment. Their health or absence can alert us to possible concerns. They act as a sort of canary in the coal mine for us.”