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For Immediate Release
Oct. 2, 2024

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A Lesson in Water Stewardship

Career Tech Agriscience students learn how to monitor groundwater use

TRAVERSE CITY, Mich. – Michigan is known to have a vast supply of fresh water flowing from the Great Lakes and thousands of inland lakes, rivers and streams that exist across the state. Even with this abundant supply, water is a vital resource which is often taken for granted.

Students from the Northwest Education Services (North Ed) Career Tech Agriscience program in Traverse City recently took part in a two-day course to learn about local environmental stewardship efforts focused specifically on groundwater monitoring. The objective was to identify sources of water, such as rain, snowmelt, underground wells, lakes, rivers and streams, and to learn about the earth's aquifers – layers of water-bearing materials, such as rock or sediment, found deep below ground which store a large amount of the planet's water.

The event was organized by Midwest Water Stewards – a group of farmers and agribusinesses dedicated to responsible stewardship of water resources – and sponsored by Iott Seed Farms and Potato Growers of Michigan Inc.

Day one was spent at Iott Seed Farms in Kalkaska with Dennis Iott, where students performed a field test to probe the farm's well-monitoring site and recorded live data that measured groundwater depth when the irrigation system was in use versus how the groundwater recovered in the well after the system was turned off. Day two was spent on a nearby branch of the Manistee River at another monitoring site to measure the rate of water flow across the streambed and to learn if the river was connected to the groundwater aquifer system below the streambed which stores and supplies water to surrounding wells and springs.

In 2021, Todd Feenstra, owner of Tritium Inc., a hydrogeologic consulting firm that works closely with Midwest Water Stewards, began groundwater monitoring in the region to learn if local farming practices were sustainable. With their research came the desire to educate others on their stewardship efforts, which led the team to invite North Ed Career Tech Agriscience instructor Brian Matchett and his high school students out for field day discovery trips to help collect data, verify results and apply science theory to learning about groundwater monitoring.

“It is fun to watch the minds of these students come alive,” said Feenstra, as he and his team of field scientists waded in the streamwater to help students use the equipment and take measurements. “Our hope is that these kids are inspired by today’s science lesson and walk away with a better understanding of the importance of being good stewards of the water resources around us.”

“As educators, we hope to inspire our students and help them develop critical thinking skills,” said Agriscience instructor Brian Matchett. “We know real-life, hands-on learning opportunities like this can be incredible experiences for them.”

North Ed Career Tech, located at 880 Parson Road in Traverse City, offers more than 20 programs to high school juniors and seniors from North Ed’s service area including Antrim, Benzie, Grand Traverse, Kalkaska and Leelanau counties. For more information, visit Career Tech’s website at www.NorthwestEd.org/career-tech/.

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Photos with suggested captions:

North Ed Career Tech student, Carter Massey, senior from Bellaire High School, inserts a flow meter into the streambed to get a live reading that measures the rate of water flow in the North Branch of the Manistee River off of Mecum Road in Kalkaska County.

North Ed Career Tech Agriscience students talk with geologist Todd Feenstra, owner of Tritium Inc., about their observations of the surrounding stream and the impact that might have on the water levels and rate of flow across the streambed.

Left: North Ed Career Tech students Bailey Ray, Mancelona High School senior, and Thomas Mckee, Kalkaska High School junior, pound a PVC pipe into the riverbed and use a tape measure equipped with an electronic probe that emits a loud beep when it comes in contact with water.

Right: North Ed Career Tech student Jack Matchett, Traverse City Central High School junior, measures the depth of the waterbed from the top of the PVC pipe to the bottom of the riverbed before inserting an electronic probe into the pipe to get an internal reading of the presence of water.

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