On Sunday, August 3, 2003, nine middle school students from across the state of Iowa arrived on the campus of Lakeside Laboratory near Milford, Iowa. The five girls and four boys were excited to explore and learn about the natural areas around West Lake Okoboji and then teach what they learned to other people. Josh Rohret, a senior geology major at Iowa State University, and Andrea Madsen, a doctoral student in science education at ISU, supervised and conducted activities for the campers.

The entire group was pleased with the accommodations at Lakeside Lab. The girls stayed in the Main Cottage, while the boys stayed in the Faculty Cottage. The bathhouse was not far from either cottage. All of our meals were prepared by the mess hall staff.

After the students said good-bye to their parents, the entire group went swimming at Gull Point State Park. Once in the water, students began turning over rocks searching for eggs and small invertebrates. Such exploring, searching, and eager fascination with living things was exhibited each day by the campers.
Monday, August 4, 2003

Students spent the morning with Dr. Ken Lang, a professor of aquatic ecology at Lakeside Lab. Dr. Lang took the students out on a pontoon boat. Students measured the clarity of the lake water using a secchi disk. They also measured the temperature, dissolved oxygen and depth of the water using appropriate equipment. In the afternoon, students made graphs of this data and discussed role each abiotic factor played in the ecosystem of the lake.

In the afternoon, students went out on the lake again, this time in canoes. Samples of plants, rocks and water were collected and brought back to the Waite Teaching Lab. Students spent the rest of the afternoon finding invertebrates such as water scorpions, snails, damselfly nymphs, eggs, and other interesting water life. Field guides were available so students could identify what they found and learn more about the organisms.

In the evening, students wrote journal entries about their experiences. These times of regular reflection offered students insight into learning and teaching and were a refreshing respite from the busy-ness and fast pace of camp.

*Today I learned about how silt has smaller grains than sand and how ripples are made in the sand. I saw many animals I hadn’t ever seen before. It was a lot of fun just looking at organisms and trying to figure out what it was. ... I liked just being out on the water and taking measurements. I thought the limological graph was cool and it was interesting how it was upside-down compared to normal graphs. I would have never thought of that myself.*

~Anna Pierson, Coralville

*I taught two people how to use a canoe and was very impressed at how fast Kyle caught on. He is almost better than me. Canoeing is fun and I hope to do it again sometime this week. If I am in the same canoe as Kyle again I will let him sit in the back and do the steering.*

~Nick Erickson, Independence

*I was my first time out on a canoe. I was scared at first but slowly began to trust the canoe rocking back and forth on the water. ... I’m currently chasing some animal through the brush next to the lake. I haven’t identified it yet, but I know it is either a mouse or a lizard. I’m currently calling it a mousard. I found an owl feather in the woods next to the cabin. It was from the wing on a rather big owl.*

~Kyle Pulse, Pleasantville
Tuesday, August 5, 2003

Dr. Ken Lang accompanied the group to Cottonwood County, Minnesota. First the group visited an outcrop of Sioux Quartzite to view preserved mudcracks and glacial striations (scratches). Then the group visited the Jeffers Petroglyphs, where ancient Native American tribes had drawn pictures on the rock.

Since today was a rainy, cold day, the group spent the afternoon indoors learning about Iowa geology and the role of glaciers in shaping the Okoboji Lakes area. Later that evening, students examined a collection of preserved birds and mammals owned by the Lakeside Laboratory.

The petroglyphs were amazing. The native peoples stood in the very same spot I did as they carved their somewhat immortal pictures in the rock thousands of years ago. I believe that feeling is too awe inspiring to describe with words. Likewise, with the animals, I feel like a forensic scientists, looking at these specimens. But I also feel very strange, each of these animals had a life, memories, holding these things I feel strange in a spiritual way.

~Nick Erickson, Independence

We saw some really neat rocks. They were once sand that hardened with cracks, then the cracks got filled in. ... I noticed a few things about the birds. The feet differed because of what the bird does and eats. The song birds just had small feet when the loon had funky webbed feet and the hawks and owls had really long and dangerous talons. The birds’ beaks were different too. Some had tiny beaks and others had long, sharp hooked or long, thin and pointy. My favorite bird was the Willow Ptarmigan just because.

~Mary Lynch, Prole

Today I learned that the Indians burned the prairie. At home I have a yellow and black feather. Because I found it on the ground I didn’t know what bird it came from. At the lab this evening, I learned that the feather is from a gold finch.

~ Eloise Hoegh, Atlantic
Jane Shuttleworth, the environmental educator at Lakeside Lab, accompanied us to Fort Defiance State Park. On our forest hike, the students looked for evidence of “eating” in the forest. Students collected eaten leaves, fungi, insect galls, snails, lichens, and many other interesting things. In the afternoon, students set up learning centers about an aspect of the forest food chain. In the evening, our campers interacted with and taught the public at Lakeside Lab’s Wild Wednesday program. They impressed the adults there with their knowledge and enthusiasm!

Today we learned about forests and what’s in them. We rode to a state park where the forest was located. A guide named Jane told us all about the forests. She talked about the trees, leaves, tracks, fungi, and other things. It was really neat and exciting. I loved it!

~ Brandon Woods, Urbandale

Today I enjoyed learning about the different types of fungus. I learned what they eat, where their habitat is, and what they are known for. It was fun explaining things about the fungus to the older and younger people.

~ Katie Crimmins, Mason City

The forest projects were soooooo fun. I really liked teaching people new things. A lot of people told me that they didn’t know this or that. I’m glad people learned something new. I told the people some things I learned or thought was interesting like the birds being able to see red. I also helped them answer the questions or any of their own questions. I also told them about our trip to the woods. They all really like it I think.

~ Mary Lynch, Prole
I liked teaching the adults for a change and was surprised at how many questions they had.

~Nick Erickson, Independence

We caught snakes, toads, a vole, and a leopard frog but we set that free before we found out about the presentations. I like sharing my knowledge with other people. Not many of the people knew half the stuff I knew. That was surprising since most of the people (97%) were anywhere between 20-40 years older than me. I still haven’t caught the mouzard. I’m going to look for that right now. Bye.

~Kyle Pulse, Pleasantville

Thursday, August 7, 2003

Dr. Lang took the group to McBreen Marsh. The students were eager to enter the water and were surprised that their shoes sunk into mud and sometimes even came off! The students collected samples of cattails, sedges, and other aquatic plants. The students noticed the smell of the marsh and all the bubbles that rose to the surface of the water as they disturbed the mud. Initially, the students believed that the marsh water was full of oxygen due to all the bubbles. Through questioning and some telling, the students realized that the cattail marsh did not have a lot of other life such as frogs, turtles, or fish. They began to contemplate how little dissolved oxygen the marsh water must have, and how that is related to the smell of the marsh and the number of living creatures found there.

One of the students yelled something while in the marsh that became a theme for the day: “This is so gross, but it’s so neat!”

While at the marsh, the students learned how to measure ground water levels. Surveying equipment was set up in order to accomplish this task. Because the camp was held in August, the water table was very low.
During the afternoon, the group canoed on West Lake Okoboji, through canals, to a wetland. The students saw a lot of duckweed, many turtles, some fish, a decomposing badger, frogs, and several blue herons. Students were able to compare the marsh from the morning to the marshes and wetlands in the afternoon. The marsh pictured here was much larger than the marsh explored in the morning. It was a group effort to spot, catch and hold a painted turtle.

Friday, August 8, 2003

The students visited the Freda Hafner Kettlehole. Here they learned what a kettlehole is and how the glaciers helped to create it. The students enjoyed the walk around the rim of the kettlehole and looked for evidence of the presence of glaciers. Later in the morning, students visited the Cayler Prairie. Prairies in August are full of pollen—this did not bode well for some of the campers with allergies. Therefore, the visits to the kettlehole and prairie were shorter than originally planned.

The students visited the Silver Lake Fen complex near Lake City, Iowa. After our day at the marsh, students were able to see how fens at first look similar to marshes, but are different in many ways. Students were impressed with how soggy and spongy the ground was. They were delighted with the number of frogs seen at the fen, as well. Later in the day, the students visited the Spirit Lake Massacre site and the Dickinson County Fish Hatchery.
I learned about how glaciers move, form lakes, make tracks, and create kettles. I learned how a fen was formed, what they are, and what is in them. I loved making new friends and meeting new people. I loved catching and holding the snakes, frogs, toads, and vole. I loved Wild Wednesday.

~Brandon Woods, Urbandale

I learned how the water table works. I learned that forests have a canopy, understory, and floor.

~Katie Crimmins, Mason City

I enjoyed making the Wild Wednesday fungus project and sharing it with others. I enjoyed using the secchi disk.

~Eloise Hoegh, Atlantic

I learned that a fen is a place where the water table is very close to the surface. A marsh has almost no oxygen in it so very few animals and plants live there.

~Mary Lynch, Prole

I learned there is so much tiny life we can’t see in lakes. The smallest thing in the forest, like a rotting twig, has so much value. Even though insects are so cool it’s hard to keep them alive in captivity.

~Nick Erickson, Independence

I learned what a gall is and what purpose it serves. I learned of Inkapaduta and how he and his tribe helped save thousands of Indians’ lives.

~Mike Meyers, Albia

I learned that if you work hard enough it is possible to get along with anyone. Probably the most important thing I learned is how to be my self.

~Kyle Pulse, Pleasantville
Saturday, August 9, 2003

The morning was spent preparing for the parents’ arrival. Students took great pride in the presentations they gave to the parents. They were thrilled to show their family the animals they caught, the things they had collected, and to share all the things they had experienced and learned throughout the week.

From Andrea Madsen of the camp staff: “As one of the adults who worked with these middle school youth during the week, I must address that as a camp staff we could not have asked for a better group of students to work with. They were polite, considerate, and accepting of all students there. By the end of the week we were a close-knit group of people. Their enthusiasm and eagerness to explore the natural environment was refreshing and exciting. I thoroughly enjoyed working with these students and would love to have them return next summer.”