

C A R E E R P R O F I L E

Kristine VanWilgen-Hammitt
Science Teacher,
Bemidji High School
Bemidji



Lakes, snow, and students are a big part of Kristine VanWilgen-Hammitt’s work day. She teaches environmental science, biology, and exercise science at Bemidji High School.

VanWilgen-Hammitt’s environmental science class includes units on water quality and bioindicators. She and her students study principles of fisheries management and lake management in spring. In winter, they learn about snow and water purification, and study the effect of road salt on water quality. Along with teaching, VanWilgen-Hammitt also adapts curriculum for special education and gifted students to ensure each student is challenged and learning.

To VanWilgen-Hammitt, being a teacher is much more than knowing and passing along information. Every day she thinks about what each student needs to learn most. “The thing I love about teaching is that every day is different,” she says.

VanWilgen-Hammitt encourages young people who are interested in teaching as a career to volunteer at a variety of places—science centers, youth organizations, community education classes, on the field or track. That will help them learn what it’s like to work with students and decide whether it’s right for them.

Related careers:
college professor,
environmental educator,
naturalist

C A R E E R P R O F I L E

**Erika Rivers
Lakes Planner,
Minnesota DNR
Grand Rapids**



Erika Rivers likes lakes, and she likes talking to people. As a DNR lakes planner, she spends a lot of time talking to people about how they can protect Minnesota’s lakes by keeping the shoreline as natural as possible. Her work ranges from speaking at lake association meetings, to conducting research by surveying both people and lakeshores, and helping DNR revise shoreland rules.

“Minnesota is losing native habitat in and around our lakes and rivers at an alarming rate,” Rivers says. “I encourage private shoreland homeowners, lake associations, and local government units to keep shorelands as natural as possible; to restore shorelands that have been altered by past development practices; and to enact shoreland ordinance protections that encourage native vegetation and minimize human impacts.”

Rivers first became interested in shoreland protection after seeing native species disappear at the lake cabin she visited as a child. She encourages students who are interested in a career like hers to take lots of science and math classes in high school and both communication and science classes in college. She says a graduate degree is usually necessary for a natural resources career today.

**Related careers:
community liaison,
extension educator,
natural resources specialist**

C A R E E R P R O F I L E

Jennifer Olson
Water Resources Specialist,
Emmons & Olivier Resources, Inc.
Oakdale



Can we build roads, houses, office buildings, and industrial parks and still protect the environment? Helping make sure water resources stay safe during development is something geologist Jennifer Olson does every day. When people decide to make a change to the landscape, they call on a water resource specialists like Olson or someone like her to look at the water resource in the area and help plan ways to protect it.

You might think Olson’s job would involve getting her feet wet. But most days you’re more likely to find her at a computer than in a creek. When a new project is proposed, she looks up information about water resources in the area, teams with colleagues to put together a water protection plan, then works with government agencies and others to turn the plan into reality.

“I’ve always been an environmentalist at heart, starting back when I was a little girl,” Olson says. “I remember reading stories in National Geographic and thinking I wanted to do something that would make a positive impact on the environment.”

To get where she is today, Olson pursued a college degree in hydrogeology and environmental geology. That gave her a solid understanding of science and of how water and land interact. She recommends that others interested in following in her footsteps get a good education both in science and in the social aspects of water resources. Also important, she says, is “a willingness to try new things, and a dedication to making a difference.”

Related careers:
hydrologist,
engineer,
planner

C A R E E R P R O F I L E

Bernard Sietman
Malacologist,
Minnesota DNR
St. Paul



If you think you're immersed in your work, you should see Bernard Sietman. He's often in it over his head—literally. A malacologist (mussel scientist) with the DNR, Sietman spends some of his workdays in scuba gear sampling mussels at the bottom of the Mississippi or St. Croix rivers.

Mussels are among the world's most imperiled animals. Past problems with water quality in the Minnesota eliminated these aquatic invertebrates from many of the state's waters. Sietman studies mussels and habitat to understand where various species of threatened, endangered, and rare mussels live or historically lived, and what they need to survive. He then reintroduces mussels to areas from which they have been eliminated. To do that, he and colleagues survey rivers and lakes. They learn about when female mussels reproduce, and determine suitable host species for larval mussels, which must attach themselves to fish to survive. They then use information from their research and that of other scientists to grow juvenile mussels and reintroduce them to suitable areas within their historic range.

When he's not in scuba gear, Sietman conducts laboratory experiments to learn more about how various fish serve as hosts for microscopic mussel larvae. He also shares the results of his studies with others so they can help save mussels, too.

Sietman became fascinated with the diversity found among mussel species when he was taking an aquatic invertebrates class in college and has been working with mussels ever since. He says a sense of curiosity and experience in the outdoors are valuable attributes for success in his field. "Go fishing, camping, and hiking," Sietman recommends. "Wade around in a stream and get wet and dirty. Observe and appreciate nature." A college degree in biology or environmental science—preferably a graduate degree—is important preparation as well.

Related careers:
fisheries biologist,
ecologist

C A R E E R P R O F I L E

Bill Hansen
President,
Sawbill Canoe Outfitters, Inc.
Tofte



Bill Hansen’s parents started Sawbill Canoe Outfitters near Tofte, Minnesota, when he was 3 years old. Ever since, he’s been helping people enjoy Minnesota’s bountiful lakes by providing the equipment they need to travel in the Boundary Waters Canoe Area Wilderness.

“We enable people to visit one of the world’s most unique water-based wilderness areas,” Hansen says. “I love introducing people to the wilderness and watching them discover the joys of wilderness canoe camping.”

Hansen’s business depends on clean, healthy waterways that can provide recreational opportunities for people who visit northern Minnesota. A typical summer day might include renting canoes and giving visitors advice on choosing a route, as well as sweeping the floor and maintaining equipment. A typical winter day would include answering email, answering phone questions, shoveling snow, placing orders for equipment, fixing equipment, and enjoying some cross country skiing. Hansen loves living and working right on the edge of a big lake. His only wish is that he could go on more canoe trips himself.

How would a person prepare for a career like his? Hansen recommends spending as much time as you can in the wilderness. Business skills like accounting and human resources management are also important, as is the ability to fix just about anything.

Related careers:
fishing guide,
resort owner

C A R E E R P R O F I L E

Dennis Lindeke
Assistant Plant Manager,
Metro Council Environmental Services
Cottage Grove



Each day, millions of gallons of wastewater go down the drain in Twin Cities homes and workplaces. Dennis Lindeke is one of the people who makes sure that water is clean when it is released to the area's beautiful river systems.

Before modern wastewater treatment facilities like the one Lindeke manages were built, people were sickened by waterborne diseases, and few game fish swam in this stretch of the Mississippi River. Thanks to modern facilities, waterborne disease is now rare, and you can catch trophy walleye and bass in the corridor between Minneapolis and Hastings.

Lindeke is responsible for maintaining the function of the biological processes that cleanse wastewater. He also works with his staff to keep mechanical equipment in good shape and monitors effluent to make sure it meets strict water quality standards. He says the favorite part of his job is working with people who are dedicated to keeping Minnesota's waterways healthy and clean.

"We are very proud of what we do, day-to-day," he says. "It is really an amazing thing—in a period of about eight hours, we take the pollutants out of the wastewater and discharge very clean water back in to the rivers."

The job gets more challenging every year, however, as wastewater experts learn more about hard-to-remove pollutants such as pharmaceuticals, nutrients, and heavy metals and try to figure out ways to deal with them.

Why would a person choose a career in wastewater treatment? Lindeke does what he does because he cares about the environment. He likes the challenge, too, of needing to know a lot about a lot of different things. People in his position often have engineering or science degrees and use chemistry, biology, math, mechanical and electrical systems, personnel management, writing, and public speaking skills every day.

Related careers:
water treatment plant operator,
chemical engineer

C A R E E R P R O F I L E

Career Profile
Kevin Reuther
Legal Director, Minnesota Center for
Environmental Advocacy
St. Paul



It's important to have laws that protect water. It's also important to make sure those laws accomplish what they are intended to accomplish. Environmental lawyer Kevin Reuther is one person who helps do just that.

Reuther acts as a legal advocate for Minnesota's water resources when state agencies make rules related to water and decide how to enforce them. He also takes water resources' side in court. When all else fails, he may file a lawsuit against a government agency that his organization thinks is not working hard enough to protect water. By getting the judicial branch of government involved, he helps ensure that laws designed to protect water are effective.

Feeling good about making the world a better place is Reuther's favorite part about being a legal director for nonprofit environmental agency. On the other side of the coin, changes in policies and laws rarely happen quickly, so sometimes it's hard not to get discouraged. But even little successes make it worthwhile.

"Working for a nonprofit comes with lots of sacrifices—no big-money salary, no fancy offices," Reuther says. "Nearly all of our cases are truly like David vs. Goliath. And we often lose. But I would never trade the feeling I have as I bike home from a long day's work—the benefit of doing a job you love and feeling good about it."

Students interested in a career in environmental law should be active and involved in school and community activities. Hard work and good grades will help, too. Even though Reuther and others in his profession have been doing their job for a long time, there will always be a need for more.

Related careers:
nonprofit director,
lobbyist