Geologists study the Earth and the forces that shape its solid, liquid, and gaseous components. They may work in myriad sectors, including parks; oil and gas; mining; academia; and environmental firms. Michael Loso is the park geologist at Wrangell-St. Elias National Park & Preserve in Copper Center, Alaska, which is the country’s largest and most heavily glaciated national park. Much of his work therefore focuses on glaciology—the study of ice formations and their effects on landscapes.

Work overview
My duties are split between two main things. The first is glacier monitoring. Wrangell-St. Elias has thousands of glaciers, and understanding how they are changing and the consequences of those changes is important. It is also important to be able to predict the changes to increase the safety of visitors, staff, and infrastructure. My other set of duties falls into the broader category of doing whatever is needed of a geologist in the park. For instance, I oversee mining in the park, as well as the cleanup and monitoring of old, abandoned mining lands; I keep track of rivers that erode and damage roads and airstrips; and I study landslides.

I have a typical day in the summer and a typical day in the winter. Summer is when I go out into the field to take measurements and perform studies, so I’m either doing fieldwork, getting ready to do field work, or returning from a trip and cataloging data. It’s
a busy time, with lots of traveling on foot or via small airplanes and helicopters. The winter is when I do everything else. I write papers, meet with colleagues, write funding proposals, and conduct media interviews, making use of all the data I collected in the summer. I train park staff and other local guides so that they can spread what I’ve learned to more people. I also give talks at scientific conferences and to members of the public.

My favorite part of the job is when I get to be a geologist in the sense of solving puzzles—figuring out what happened to make a landscape the way it is. For example, a few years ago, a university geologist doing research in the park flew over a remote valley and took photos of some really big, unusual sediment deposits. No one had heard of anything happening there that would explain them. We got a group of scientists together, conducted research in the valley, and over the course of several years, pieced together that a glacier had suddenly collapsed and slid down the mountainside, forming a muddy torrent of ice, water, rocks, and other debris. My least favorite parts of the job are the paperwork and dealing with bureaucracy.

Career highlights
I’ve had opportunities to climb numerous mountains and visit some really spectacular places, on foot or with helicopters, through my work, and that’s been exciting and fun. My favorite landscapes are around glaciers—I love how glaciers carve those areas wide open.

Career path
In college, I was initially planning to major in telecommunications and film. But I was also going to the mountains a lot for fun, backpacking, hiking, and climbing, and I was curious about what I was seeing. I realized I could take classes to learn more about these subjects. I eventually switched my major to environmental studies.

After graduation, I worked as a nomadic climbing guide and outdoor educator, in Alaska, Washington, and Wyoming. I then got a master’s degree in botany and found a job running the college field studies program at the Wrangell Mountain Center, where students would come from all around the country to live in the mountains for two months and do field studies. After a while, I decided that I wanted to learn more myself, so I got a PhD in earth sciences.

I then became an assistant professor at Alaska Pacific University in Anchorage. I got tenure, and expected to stay for the long term. But after 10 years, an opportunity opened up with the park service that lured me out of academia. Ever since my first trip to Alaska, the place I consistently kept returning to was Kennicott Valley in the Wrangells. It’s a glacial valley with two towns in it. Here, I had done my field research and, years later, bought property and built a vacation home. The park service job was an opportunity to do what I loved in the place in the world I loved most, and I couldn’t pass it up. I’ve been a geologist with the park for the past seven years.

Knowledge, skills and training required
To have a career as any type of park scientist, you need at least a master’s degree in some field of science. A PhD is not necessary for most of these jobs, but it can be useful for some. You also have to be physically fit, and know how to travel safely in the wilderness.

Advice for students
Do your best at whatever you’re doing. When I was young, I had a lot of jobs (such as working in restaurants) that weren’t related to what I do now. Some were fun, and some were not, but I always did my best anyway. It taught me a good work ethic, and better positioned me to get jobs doing things I eventually realized I really wanted to do, because I had good references. If you don’t like a job, put effort into getting a better one, but don’t develop a reputation as a slacker because you will lose out on opportunities.

If you don’t yet know what you want to be doing when you’re 50, it’s OK. I never had a clear vision of what I wanted to do as a career, but I still ended up with a cool job. At each step along the way, I just tried to honor my interests in the moment, and that eventually led me to where I am now.

BONUS POINTS

Loso’s Education: BS in environmental studies, University of California, Santa Barbara; MS in botany, University of Vermont; PhD in earth sciences, University of California, Santa Cruz

On the Web: https://www.nps.gov/gis/storymaps/MapSeries/V1/index.html?appid=c91be37c36ca4db88be7a68721da52fa#map

Related Careers: Park biologist, archaeologist, botanist