

# New Kenai National Wildlife Refuge ecologist comes full circle

by Mark Laker

Looking at my calendar, it's hard to believe only two months have passed since I started my new job as an ecologist for the Kenai National Wildlife Refuge. It's been a year of major changes, peaking with my wedding this past June. Though it was hard to leave Juneau and Southeast Alaska, my home for 12 years, the rumor was it rains less on the Kenai Peninsula. After being delayed in Tok by an earthquake, we arrived in Kenai just in time for the rain and floods. Thankfully, the natural disasters have become less routine and my schedule more so. I'm also thankful for the great group of people I work with at the refuge.

It feels good to be back on the Kenai. I first came to the peninsula 20 years ago while helping an aunt, uncle and three cousins move to Homer. I arrived, more or less, fresh off the farm from Minnesota, the typical wide-eyed young boy with an intense curiosity of the natural world. After spending several months exploring Kachemak Bay, I decided it was time to sample the rest of the state. My study design was simple, systematic and cheap—hitchhike down any road I came across and sleep in a tent. Ever the keen observer, after a few months I noticed Alaska was very large. I would have to explore alternative sampling methods to tackle this problem.

Along with my new goal of exploring Alaska, my interests included furthering my education in science and biology and finding the finances to pay for it all. I pursued a Bachelor of Science degree in marine biology from the Florida Institute of Technology. I have to admit those Jacques Cousteau films of scuba diving in warm, clear water around coral reefs left strong impressions on my childhood mind during those long Minnesota winters. To finance my education and continue to explore Alaska, I fished commercially out of Dutch Harbor in the Aleutian Islands during the summer months between school semesters.

After finishing school and the fishing season, I decided to investigate that other part of Alaska—Southeast. You know, where the capital is. My plan was to spend the summer in Southeast then head back up to Alaska—I mean the “Interior.” To make a long

story short, I was pleasantly surprised with Southeast Alaska and stayed (12 years). I started working for the Forest Service at Admiralty Island National Monument as a fisheries technician. I enjoyed the work so much I went back to school for my master's degree in fisheries from the University of Alaska. I studied populations of cutthroat trout in Southeast Alaska lakes. We found populations varied a great deal from lake to lake and cutthroat trout are easy to catch. On some lakes with public recreational cabins, people were able to catch half the population of adult fish over one summer.

Counting fish is only one part of the equation in fisheries management. Habitat management is equally important, especially if you work for a federal land management agency and that's what it is paying you to do. Being the only fish biologist on a one million acre island, I had a lot of ground to cover. Again, with my keen observation skills, after a few summers tromping through the woods, walking up salmon streams and meeting bears, I realized not all fish habitat is equal, and I couldn't survey it all. It was the same dilemma as when I arrived in Alaska, too much to see and not enough time. Again I needed alternative sampling methods. Several years ago I read what I consider a good definition of science: the search for patterns in nature. Why are some lakes and streams more productive than others? Is there a pattern, could I find it, or better yet, had someone else?

The majority of fisheries research regarding habitat has been cause and effect. Studies such as the effect on salmon habitat of removing all the trees along a stream were common. I was looking for the bigger picture. Why did one region of the island have abundant fish populations and another lousy? What caused two similar lakes to have dramatic differences in fish populations? Why were some populations more sensitive to disturbances? It was more in the discipline of ecology than fisheries that I started finding answers.

Ecology is the study of the relations and interactions of animals and their environment. In the field of ecology, things were really happening. With computers becoming faster and more powerful, revolutionary

software tools were being developed and made available. Based on this technology, geographic information systems (GIS) were developed for land management agencies. These systems were built to display and produce digital maps of any surveyed resource. Common resources that were mapped included vegetation (forest, brush or alpine), water (lakes, streams or ice) and geology (volcanic, metamorphic, sedimentary, etc.). It was now possible to efficiently describe resources over a large land mass. In the search for patterns in nature this was the dream tool. Better yet, there was a lot of work already done and available. A good example is Robert Bailey's Ecoregions of the United States ([http://www.fs.fed.us/land/ecosysmgmt/ecoreg1\\_home.html](http://www.fs.fed.us/land/ecosysmgmt/ecoreg1_home.html)). Bailey used climate and geology to explain patterns in vegetation and animals across the United States.

At this point I knew I was close to taking that next big step to better understanding the fisheries resources on Admiralty Island. There was one minor problem, I was missing information about all the non-fish resources. I became a real information hound—addict may be a better description. I found several good sources to keep me supplied for a few years. A great public resource is the Alaska Geospatial Data Clearing House (<http://agdc.usgs.gov>). Here you can download stuff like topographic maps.

Things were finally starting to come together; patterns were emerging from the piles of data I had accumulated. I found several interesting relationships between the geology and fish productivity. When I tossed in vegetation, things really got exciting. I get chills just thinking about it. Looking at a handful of maps, I could do a pretty good job of predicting the fish resources. Now I was able to visualize and de-

scribe, in a general way, large regions of land I could never physically get around to seeing. As a manager, this allows me to better focus limited resources within a very large chunk of public land and stretch those taxpayer dollars as far as possible.

Eventually, I changed occupations and began working as an ecologist. This better reflected my evolving interest in natural resource management and the work I was doing. Life after fish included bears, newts, goshawks, water quality and all kinds of vegetation. In addition to analyzing the information being collected in the field, there was the responsibility of proper study design and data storage. In the last few years, I've worked on national protocols for collecting and storing physical and biological data. I've also had the pleasure of participating in more esoteric endeavors such as measuring wilderness character. The quality of a study, or map, is only as good as the information collected. Additionally, ensuring collected information is made available to other researchers is plain good science. Though not as exciting as radio-collaring bears, I find this latter work rewarding, which is fortunate because it will be a large part of my job here on the Kenai National Wildlife Refuge.

Being here on the Kenai Peninsula, I feel I have come full circle from that day 20 years ago when I set out from Homer to see the natural wonders of Alaska. With piles of data around me, I'm starting to feel those chills again.

*Mark Laker is the new ecologist and statistician for the Kenai National Wildlife Refuge. For more information about the Refuge, visit the headquarters in Soldotna, call (907) 262-7021. Previous Refuge Notebook columns can be viewed on the Web at <http://kenai.fws.gov>.*