

Katmai National Park and Preserve: a huge wilderness with lots of bears and few human footprints

by Ed Berg

Katmai National Park and Preserve is a huge piece of wild Alaska. It has a few fly-in lodges, and a 23-mile one-lane road from Brooks Camp out to the Valley of Ten Thousand Smokes, but that's about it for human infrastructure in 3.7 million acres. There are few developed private inholdings and no native villages. The high volcanic mountains along Cook Inlet are often shrouded in clouds. The mountains open to the Bristol Bay lowlands to the west through enormous lakes such as Naknek, Becharof, and Iliamna that make the Kenai Peninsula's Tustumena and Skilak lakes look like small puddles.

In my Refuge Notebook of August 11th, I described the first leg on my recent lichen collecting trip to Katmai National Park, which began with six days at Hallo Bay Wilderness Camp on the western coast of the Shelikof Strait. My next stop was Kukaklek Lake, a large remote lake at the north end of the park, where I worked with National Park Service ecologist Amy Miller and NPS intern Tara Harrington collecting lichens in subalpine tundra.

Our campsite at Kukaklek Lake was in open tundra offset from a major brown bear "right-of-way," with bears moving generally east to west along the north shore of the lake. We set up our portable electric fence around our tents and were able to sleep at night with minimal expectations of unwanted visitations. These battery-powered portable electric fences, designed for livestock, are a major technological break-through for safer camping in bear country, if you can handle 10 pounds or so of extra weight and 10-15 minutes to string up the 2-wire fence. This fence can save your camp from being dismembered by a curious bear, as well as preventing bears from learning about people and camps as food sources.

From Kukaklek Lake we flew to Brooks Camp, a major center of "industrial" bear viewing situated on a short river flowing from Brooks Lake into Naknek Lake. The brown bears (and photographers) congregate at the river falls for intense salmon fishing. Only 40 people are allowed on the viewing platform at a time, and they are periodically rotated on and off by

park rangers. The bears deploy themselves at the falls according to social status. One huge old boar had the prime fish-grabbing spot at the top of the falls. Every few minutes, he would snag a sockeye trying to make a mid-air leap up the six foot high falls, take a bite or two and casually drop the carcass, which would then be retrieved by eager sub-adults and sows with cubs waiting downstream in the riffles below the falls.

Katmai was set up as a National Monument in 1918 to protect the volcanic features present, especially the Valley of Ten Thousand Smokes created by the 1912 eruption of Novarupta Volcano. This eruption dumped 700 feet of pyroclastic flow deposits in the valley, and dropped as much as a foot of ash on Kodiak Island, 60 miles to the east. Park naturalist Peter Hamel drove Amy and I out to the Valley of Ten Thousand Smokes, and provided an excellent narrative on the history of the Park and the geology of the 1912 eruption.

The Valley of Ten Thousand, I should say in all honesty, no longer smokes, as the ash deposits have long since cooled down. Streams have cut steep-walled channels through the sandy ash, and perpetual winds have kept much of the ash moving and prevented revegetation of most of the valley floor. I sampled the lichens and mosses recolonizing the bare ash, and found many of the same disturbed soil colonist species that I would find in a road cut on the Kenai, such as *Racomitrium*, *Polytrichum*, and *Stereocaulon*.

I also collected delicate cryptogamic soil crusts that are the first step in plant succession in arid areas. These black crusts—typically composed of algae, fungi, lichens and mosses—help stabilize wind blown soil particles, retain water, provide nitrogen (from nitrogen-fixing blue-green algae), and generally prepare a seed bed for higher plants.

The final leg of our trip took us to Naknek Lake and the town of King Salmon, west of the park. National Park Service pilot Allen Gilliland flew us to the Bay of Isles on the east end of Naknek Lake to look at stands killed by the recent spruce bark beetle outbreak. The Alaska Peninsula is pretty much the western limit of white spruce and is now the "hot spot" of beetle kill in

Alaska.

We also saw hundreds of acres of mountain alders that were severely damaged by a defoliating caterpillar, *Sunira verberata*. I was surprised to learn that this insect managed to kill or greatly weaken the alders after just two or three years of defoliation. Most trees and shrubs can withstand several years of defoliation, admittedly with reduced growth but surviving nonetheless. This insect is native, not a foreign import, but it has no previous history of breaking out on a large scale, so both the scale and the mortality of this outbreak are a puzzle. It is possible that warmer and drier summers since 2002 have promoted growth

of the insect population and perhaps drought-stressed its alder host. We have not however seen such an outbreak on the Kenai, despite similar weather conditions, so climate warming is probably only part of this story.

A map and information about Katmai National Park and Preserve can be viewed at: <http://www.katmai.national-park.com/map.htm>. A very informative article on electric bear fences for camping is at <http://www.udap.com/tomsmith.doc>.

Ed Berg has been the ecologist at the Kenai National Wildlife Refuge since 1993. Previous Refuge Notebook columns can be viewed on the Web at <http://www.fws.gov/refuge/kenai/>.