

Exciting Discovery in the Alpine

By Ellen Anderson, Botanist, Juneau & Yakutat Ranger Districts and Admiralty National Monument

Half the fun of doing sensitive and rare plant surveys is actually finding some. Even more rewarding is finding something that has never been reported in Alaska before. That is exactly what happened during summer 2009 when I joined botanist Brad Kriekhaus (Sitka and Hoonah ranger districts) to conduct surveys on the alpine ridge north of Hecla Greens Creek Mine, north Admiralty Island.

Perched on the top of a rock outcrop was a beautiful clump of crab-eye lichen (*Acrosyphus sphaerophoroides* Lév). Another clump was found during that survey about 200 meters away on a similar outcrop. Subsequent 2010 surveys on the north and south ridges of the mine brought the total to 11 separate populations; several on both ridges,

all on rock outcrops between 795 meters and 964 meters elevation. Some rocks had several clumps in various stages of development.

This discovery is notable since, as of 1984, fewer than a dozen locations were known worldwide. Its distribution included reports in southern Mexico, Peru, South

Africa, Bhutan, southern China and Japan. Sites closer to the equator were at 4,000 m. In 1990, this lichen was found growing at elevations of 1,300 meters or less at three sites in British Columbia coastal mountains; in 2002 at one site in northern Washington's western Cascades.

It is not unknown for lichen species with such wide distribution to be found in Southeast Alaska, as we have other Asian, and even tropical South American lichens here. Our position on the Pacific Rim, mild climate, and many different, some difficult to access, distribution zones make it likely others are out there waiting to be found. In fact, a recent intensive inventory of lichens of the Klondike Gold Rush National Historic Park, including the Chilkoot Trail and White Pass area, revealed a total of 766 taxa: five are new to science; 75 have not yet been determined; 34 are new for North America; five eastern species reported for the first time in the west; and 196 taxa are new for Alaska. The researchers estimate there could be at least 1,000 lichen taxa in that area.

Crab-eye lichen is known to grow on wood and rock. Its heavy spores are produced in slightly recessed cups at the tips of the "crab eyes" and are more likely spread by animals than by wind. Evidence at the Greens Creek sites suggests birds are the main vectors for dispersal. The body of the lichen is solid, tough and difficult to break off by hand (personal experience), and could probably withstand the repeated perching



Crab-eye lichen with attendant mosses and other lichens. Photo by Ellen Anderson.



Botanists Brad Kriekhaus and Ellen Anderson examine a typical rock outcrop with crab-eye lichen on top. Photo by Thor Eide.

of birds. At one location bird droppings were on the crab-eye clump. Other lichens that prefer high nitrogen conditions, like those found on



A juvenile red-tailed hawk perched on a rock outcrop. Photo by Ellen Anderson.

or near bird perches, were observed below several of the populations. Positions of the outcrops in the landscape provided suitable observation points for birds; a juvenile red-tailed hawk was observed sitting on such an outcrop. I tested the idea of spores sticking to bird feet by touching the spore-forming tip; a cluster of black spores remained on my finger and did not dislodge with a simple shake.

The rarity of this species of lichen is currently not ranked globally, but is ranked S1 in Canada, meaning it is “Critically imperiled in state because of extreme rarity or some factor(s) making it especially vulnerable to extirpation from the state.” It has been recommended to receive a similar rank in Washington. The draft Alaska Rare Lichen List being prepared by Alaska Natural Heritage Program gives it a rank of S1. Bruce McCune and Linda Geiser remarked in their description of this species in *Macrolichens of the Pacific Northwest*, “Perhaps the rarest macrolichen in the PNW....”

So if you are fortunate enough to make a trip to the high country, keep an eye out for this stunning lichen. If you do find any, please record the location (GPS point is ideal), take some pictures, and let us know.