

Sierra Nevada Blue flies high

BY LINDA KAPPEN

The Sierra Nevada Blue (*Agriades podarce klamathensis*), aka Gray Blue, is a butterfly in the family Lycaenidae. This species is endemic to our area in the Siskiyou and Southern Oregon Cascade mountain ranges.

In 2012 my son Dakota and I hiked into Bigelow Lakes basin. I observed these butterflies and took photos, then sent the pictures of a pair I hadn't seen before to an entomologist friend, Dana, who verified my identification of the Gray Blue. This sighting was a documented record for Josephine County, as it was 30 miles west of the known populations at Mount Ashland.

The Sierra Nevada Blue is one-half inch or less in size. The males are grayish blue above. The females are blended lighter brown above. Below they both have black spots ringed in white and are darker along the borders with white fringes. They can be found from late June to early August. The female lays her eggs on the host plant, and the caterpillars overwinter at a small larval stage. In our areas the host plants are the Alpine Shooting Star, *Dodecatheon alpinum*, and the Jeffrey's Shooting Star, *Dodecatheon jeffreyi*, which both grow in specialized high-mountain meadow habitats at 5,000- to 7,000-foot elevations.

The Sierra Nevada Blue is considered a species of concern because its hostplants grow in

fragile, wet, headwater meadows and along meadow streams. These can be easily damaged by unnatural activities such as cattle grazing, off-road vehicles, and even heavy hiking traffic. These activities damage the functional ecosystem to our headwaters that also support other wildlife. Naturally occurring threats, such as climate change, can also result in damaging droughts and wildfires in these areas.

While monitoring Sierra Nevada habitat on the Siskiyou Crest, I have witnessed fluctuations in the population of this butterfly. When cows graze in these meadows, they cause extreme damage by eating plant life to ground level and leaving deep footprints. In the years with cows, the butterfly counts dropped dramatically because of this damage.

In comparison, at Bigelow Lakes, a local environmental group, KS Wild, began buying cattle allotments in the basin,

Sierra Nevada Blues favor habitat along streams and wet meadows. Photo: Linda Kappen.



thus removing cattle from the equation since 2009. Now the host plant grows thick at its bloom time, and other wildflowers follow. I believe, after observing the thin populations on the Siskiyou Crest, that the population of the Sierra Nevada Blue at Bigelow Lakes has been saved.

This butterfly mates in the meadow and does not travel very much outside its habitat. A friend and I witnessed hundreds of Sierra Nevadas flying around us as we stood at the edge of one of the meadows at Bigelow Lakes. Having done butterfly blitzes (a citizen-scientist way of taking inventory of butterflies) and a few NABA (North American Butterfly Association) counts, I was able to estimate between 400 and 500 butterflies flying around us.

Observing so many Sierra Nevada Blues in the protected meadows at Bigelow

Sierra Nevada Blues can be found in the Bigelow Lakes area. Photo: Linda Kappen.



Male (left) and female Sierra Nevada Blue (aka Gray Blue) butterflies share a perch. Photo: Linda Kappen.

Lakes, I am concerned about the danger to the moist meadow habitats on the Siskiyou Crest in the headwaters of our watersheds. A beautiful butterfly living in some of our most beautiful landscapes is a treasure we should try to protect.

I would like to add a link to a real-life study of these areas for you to view and consider. This is the Siskiyou Chapter Native Plant Society of Oregon's YouTube Channel: bit.ly/SCNPSOregon. At the beginning of the video entitled "TALK: Public Land Grazing in the Siskiyou Mountains," they speak of a locally invasive plant, then the high mountain habitat presentation begins.

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Ecological benefits of prescribed fire

BY CHRIS ADLAM

I recently hiked the Sterling Mine Ditch Trail, looking for signs of past fires. It was a beautiful hike, with the balsamroots and mariposa lilies in their full glory, but something looked wrong: We saw few signs of recent fire activity. And that is a bad thing.

Before the removal of Indigenous people and the start of fire suppression, this area of oak woodland, grassland, and chaparral would have burned every three to five years. You can still find clues to this frequent burning. For example, I found a dead fire-scarred tree on private land nearby with evidence of 17 fires! (See photo.) And that number doesn't include fires so mild they didn't leave scars. The owner of that property is aware of problems caused by the lack of fire and has been conducting prescribed burns to reverse the damage. And prescribed burns are a good thing.

Fire shapes ecosystems by opening the way for species that enjoy sunny, open conditions. It is a friend to pines, which have adjusted to life with fire by growing thick bark, dropping its lower branches

as it grows so fire can't climb them, and using thick sheaths of long needles to protect their growth buds from scorch. Surface fires cause pines to make more resin, which is the trees' immune system, protecting them against beetle attacks. By cleaning out undergrowth, fire also helps pines because pines can't grow in the shade and their seedlings can't root in deep litter. Without fire, shade-tolerant species like firs tend to take over and eventually outcompete our sun-loving species. Unfortunately, these dense, shady forests are more vulnerable to drought, so the firs end up dying also. Prescribed fire lessens competition and shifts stands back towards drought- and fire-resistant species, which are also important for wildlife and understory plants.

Plants and animals in our region have lived with frequent fire for thousands of years. Many of our wildflowers need bare mineral soil to germinate their seeds. Their regeneration is impaired by deep litter and duff that builds up without fire. Some species have seeds that require heat to germinate, like manzanita and buckbrush. The only manzitanas on the ditch trail are relicts of decades-old fires; there are no seedlings, no new generation.

Because there is no new growth, there is also less food for deer and elk. Ungulates prefer succulent young shoots, common after a fire. In other parts of the country, hunters commonly use fire to enhance habitat for game species,

including ungulates, pheasants, and quail. In 1916, Klamath River Jack, a Karuk man, wrote to the US Forest Service to explain that Native people use fire partly for this reason. He pointed out that deer were dying from eating grass that had soured from too much shade after the agency outlawed burning. The USFS ranger took no notice, and today sour grass and sick deer are the norm except where tribes or others burn to maintain healthy foraging grounds. There the deer and grasses recover in abundance and health.

All the benefits of fire could hardly be described in a short article, but here are a few more. First, fire helps with water retention, as the removal of leaf litter that would otherwise intercept rainfall allows water to reach plant roots rather than evaporating back into the atmosphere. Second, the charred material fire leaves behind is nature's biochar, adding carbon to the soil, recycling nutrients, and increasing water retention. Many people will also appreciate that fire burns ticks and poison oak, at least for a short while.

Fire also teaches us about our responsibility to care for our cherished landscapes. On the Sterling Mine Ditch trail, dead manzanita piles up and drought-stricken Douglas-firs turn orange and die. Poison oak abounds, while grasslands shrink.

But there are promising signs that we will rise to this challenge. Prescribed Burn Associations are making prescribed fire accessible to private landowners, forest restoration collaboratives are building partnerships between communities



Numerous fire scars (marked by arrows on detail photo above) on a dead pine tree show how common fire was until the early 20th century. Photo: Chris Adlam.

Fawn lilies thrive in what was a poison oak thicket until a prescribed burn three years before. Photo: Chris Adlam.



and agencies, and tribes are leading a cultural shift in our relationship with fire. Prescribed fire is not the only tool we have to maintain healthy ecosystems, but it is a critical piece of a great puzzle that includes all of us and our plant and animal neighbors.

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