

11TH BOULDER COUNTY ECOSYSTEM SYMPOSIUM

Human Connections with Natural Systems

The Intangible Values of Wilderness

Dave Gustafson (City of Boulder, Open Space and Mountain Parks Department)

There are many intangible uses of Boulder 's Open Space and Mountain Parks. I'll discuss what intangible values are and how people have different definitions of the term "wilderness." The presentation will dwell on legendary environmentalist Sigurd Olson and his expert insight into the intangibles. [*Reflections from the North Country*, Sigurd Olson, Knopf, 1976, available at the Boulder Public Library, also reprinted 1998, Fesler-Lampert Minnesota Heritage.]

Pristine No More? Air Pollution and the Alpine of Boulder County

Dr. William Bowman (University of Colorado)

The alpine zone has generally been spared most of the direct impacts of human development. However, it is subject to the influences of "indirect" effects, including climate change and air pollution. Regional emissions of nitrogen (N) containing compounds have increased dramatically over the past 4 decades as a result of agricultural, industrial, and suburban development. Input of this N into the alpine has the potential to significantly influence the composition of plants and aquatic life as well as the functioning of the ecosystem. Measurement of precipitation chemistry indicates N deposition has increased, most notably at high elevations. Experiments and monitoring plots on Niwot Ridge and Rocky Mountain National Park indicate that biotic changes consistent with an increase in N deposition are occurring, and that it could have important impacts on the future of what are considered to be among Boulder County 's most pristine ecosystems.

R.S. 2477: Access Then and Now

Shannon Walker-Lembke

In 1866 a portion of the Lode Mining Act allowed for the creation of rights-of-way across unreserved public lands to allow access to homesteads and

mining claims. These rights-of-way were declared constructed public highways under R.S. 2477. Many things have changed since 1866. While R.S. 2477 was repealed in 1976, any existing R.S. 2477 rights-of-way were still considered constructed public highways. Today, any R.S. 2477 rights-of-way that are contested must be settled in court. Since there were many mining claims and homesteads in Boulder County, there are many pieces of public and private property affected by R.S. 2477 - and the potential for many court cases. Uses of a R.S. 2477 right-of-way for access today are very different than uses in 1866. The land use in Boulder County has also changed significantly since 1866. A public highway may no longer be in the public's best interest in all cases for access using a R.S. 2477 right-of-way.

Since R.S. 2477 is a federal law, action is needed at the federal level to support use of R.S. 2477 in ways that reflect both the needs of the public and needs of the land. Action at the state and county level is also needed to assure that the interests of stakeholders affected by use of Boulder County natural lands are considered when making decisions regarding right-of-way claims. Stakeholders potentially affected by decisions regarding R.S. 2477 in Boulder County include hikers, naturalists, property owners, recreation groups, and environmental groups. Taking no action to establish a framework for making R.S. 2477 right-of-way decisions means many court cases and long periods of time before final decisions are made.

[The goal of the presentation is to educate the public regarding R.S. 2477 right-of-way issues and concerns. My position is not for or against R.S. 2477 per se, rather it is for making changes at the federal and state level to prevent every contested right-of-way from having to go to court, to require decision-makers to consider today's circumstances when making decisions regarding R.S. 2477, and to assure some level of consistency regarding R.S. 2477 rights-of-way. I am a member of a non-partisan group that is working to educate the public and officials at the federal, state, and county levels to be aware of the need to take action regarding R.S. 2477 so that access is allowed where it should be and in a manner that makes sense while recognizing the conditions and concerns of the present.]

Butterfly Species on a Managed Montane Land

Janet Chu (Volunteer Naturalist, Boulder County Parks and Open Space)

Butterfly records have been kept on July 4 annually for 20 years at the Cal-Wood Education Center, near Jamestown. This land is approximately

1,000 acres, and is being placed into a Conservation Easement with Boulder County . For the past five years the outdoor education center has had around 4,000 visitors annually; fewer in previous years since the early '80's. The year-round staff directs these students and adult visitors to certain “high use areas”, while restricting the use on about 75% of the acreage.

The butterfly populations maintain their numbers in the native blossoming plants and grasses. The varied habitats cover large meadows, ponds, ponderosa pines, rocky slopes, intermittent stream gullies and high points. Therefore this ecosystem provides ideal habitats for a variety of butterflies. The Cal-Wood 4th of July Count is reported to the North American Butterfly Assn, which publishes annual records for 400+ counts in US and Mexico. Cal-Wood has had the national high species count for Rocky Mountain Phoebus Pamassian, Queen Alexandra's Sulphur , Canyon Bramble Hairstreak, Dotted Blue, Common Alpine, Persius Duskywing, Mottled Duskywing, and Pahaska Skipper. The changes among the species observed seems not to be associated with the people usage, but more with the trend of warmer drier weather. Three rare butterfly species have been observed; Snow's skipper, Ottoe skipper, and Aragos skipper. We record new species and have found the lower elevation warmer-loving butterflies more common in the last 3 years than in the past.

What Bats do for People. What People are Doing for Bats

Lauren Golten (University of Colorado , BCNA Research Grant recipient)

As well as being astounding products of evolution, bats are important to both human and non-human ecosystems. Among their roles are consuming vast amounts of insects, pollinating plants, dispersing seeds, and contributing nutrients to nutrient-poor cave ecosystems. However, in part because they have long been misunderstood and unnecessarily feared, some bat species and populations are currently in decline. The Colorado Bat Society, founded in 1990, strives to encourage understanding, appreciation, and conservation of Colorado 's bats.

In Boulder County , we have documented nine of the 18 bat species known to occur in Colorado . Documented human impacts on bats in the area include disturbance by humans entering cave roosting sites, maternity colony disturbance at rock crevices located on climbing routes, and contamination of water resources. Potential impacts include human-caused

landscape changes such as forest thinning, trail building, and alteration of water resources.

We are currently in the third year of an ongoing study at Boulder County 's Heil Valley Ranch. The main objectives are to:

1. assess the abundance and diversity of the property's bat populations;
2. locate maternity roosts for protection, and determine home ranges of radio-tagged bats;
3. generate a call library of local bat species to facilitate non-invasive acoustic monitoring; and,
4. determine the effects of forest thinning on foraging patterns. Preliminary data are promising for the ability to distinguish species by their calls, and suggest that thinned forests may expand foraging area for bats at the Ranch.

[See the [Colorado Bat Society](#) website for more about bats in Colorado.]

Mammals of Boulder County: Then and Now

Dr. David Armstrong (University of Colorado)

The biota of any place at any particular time is a progress report on evolutionary and ecological processes. The mammalian fauna of Boulder County includes some 90 species, more than in the entire state of Kansas or Nebraska . That fact is due to ecological opportunity (topographic diversity coupled with climatic change over time, to produce a variety of habitats over time). The most important influences in the extant fauna clearly were (and now are) the Laramide Revolution, Pleistocene events, the arrival of Paleolithic humans (and much later of Neolithic humans), and finally the arrival of (eventually fossil-fueled) Industrial humans. The integrity of ecological systems--including the mammalian fauna--is now effectively in human hands. Because we cannot do nothing, we might as well do the "right thing." That includes assuring the integrity of local landscapes for the benefit of future generations. . .of both people and other native mammals.