

Carlton Ridge Research Natural Area

Field Trip Report and Status Update

by Steve Shelly

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A group of about 25 MNPS members escaped the heat for a day on September 8, 2007, and ventured to the top of Carlton Ridge, in the Bitterroot Mountains southwest of Missoula. We were fortunate to be joined by Steve Arno and Clint Carlson, two U.S. Forest Service scientists now retired from the Rocky Mountain Research Station. Steve and Clint were heavily involved in the establishment of the Carlton Ridge Research Natural Area (RNA), which since 1987 has permanently protected 920 acres within the unique subalpine forests on the ridge. The ridge has always been a special place for western Montana residents and visitors alike, and in the fall the changing golden foliage of the alpine larches is even visible from downtown Missoula.

Since 1952 the Forest Service has designated 65 RNAs in Montana, encompassing a total of 91,086 acres. These protected areas thus constitute one of the largest natural area systems in the state aside from the designated wilderness areas and National Parks. These RNAs are actually part of a national network of sites protected in perpetuity on federal lands, and in Montana they represent a wide variety of plant communities, including grasslands, shrublands, forests, aquatic and riparian habitats, and alpine areas. Numerous rare plant communities and unique features are protected as well, such as peatlands and springs. Especially noteworthy is fact that these RNAs protect 102 populations of rare plants in the state, representing 61 species of conservation concern that are tracked by the Montana Natural Heritage Program. As a result, these RNAs make a significant contribution to the protection of plant species and natural community diversity in Montana.

In the case of Carlton Ridge, the RNA protects the best known example of an alpine larch (*Larix lyallii*) forest on deep subalpine soils known to occur in the northern Rocky Mountains. Most alpine larch stands in the region are found in areas with rocky, skeletal soils; these more typical habitats occur on coarse talus and boulder slides. The

upper slopes of Carlton Ridge escaped glaciation, however, which led to the development of these unusually well-developed high-altitude soils. This deep mantle of weathered soil is very well drained, and supports the open park-like stand of alpine larch. During the winter, southwesterly winds blow much of the snow over the ridge onto the north-facing slopes in the open larch forest. This combination of deep snowdrifts and good soil has resulted in an unusually productive site compared to other ridges in the Bitterroot Mountains. In many areas the understory is dominated by red mountain heath (*Phyllodoce empetrifomis*) and Hitchcock's woodrush (*Luzula hitchcockii*), which affords a very unique feel to these forests. Despite their rather small diameters (typically 18 to 25 inches), the age of many of the larch trees exceeds 400 years. Whitebark pine (*Pinus albicaulis*) is also present along the ridge, but is not nearly as abundant as the alpine larch.

Another important feature of this RNA is a zone of hybridization where the altitudinal ranges of western larch (*Larix occidentalis*) and alpine larch overlap. In this lower portion of the RNA, trees having characteristics of both species have been studied by Clint and Steve, and shown to be the result of crossing between these two species. Such a phenomenon is of great interest to plant ecologists and silviculturists, and is a prime example of the scientific importance of RNAs.

The Carlton Ridge RNA has been in the news over the last several years, as it is adjacent to areas on the Lolo and Bitterroot National Forests that have been suggested for development of a large ski area (the Bitterroot Resort). Unless a catastrophic natural event adversely affects the ecological features that an RNA was established to protect, the areas are designated in perpetuity, so the land within the currently designated boundary would not be subject to development. Any future development proposed near the RNA would be analyzed fully in the context of the Lolo and Bitterroot National Forest plans. Revision of such Forest plans is currently on hold nationally, pending the resolution of a lawsuit regarding the Forest Service planning regulations.

In the meantime, if the heat returns to the Missoula valley later this summer, it would be well worthwhile to take a day hike up to the Carlton Ridge RNA (from the Mormon Creek trailhead). The alpine larch stand is unlike any other forest in western Montana,

and the beauty and uniqueness of this RNA will offer a welcome change of pace from life in the bustling valleys below.