

Hesperostipa comata Needle-and-thread Grass

by Kathy Lloyd
Montana Native Plant Society

Needle-and-thread grass must have been one of the expedition's least favorite things that grew in the valleys and plains in summer and fall. They would have traveled through this grass on Montana prairies both in 1805 and 1806. Needle-and-thread grass is an apt descriptor for this native. The sharp seed has a long, twisted awn that, in response to humidity changes, screws the seed into the soil, or into your shoes, pants, or socks! I imagine that Lewis's dog Seaman was not pleased either, and pulling seeds from his coat must have been a nightly ritual during the summer and fall. Lewis and Clark botany scholars are not certain who collected the needle-and-thread grass specimen that is housed in the Lewis & Clark Herbarium in Philadelphia. We know it was collected on July 8, 1806, and both Clark and Lewis were in areas that support populations of the species. The two men had separated on July 1st and on the 8th of July Lewis was in Lewis & Clark County east of Lewis & Clark Pass heading to the Sun River. Clark was in Beaverhead County and his party set up camp at Camp Fortunate along the Beaverhead River. The grass can be found today in both locations.

Regardless of who collected the specimen, it is an important botanical notch in Montana's belt. The specimen at the Academy of Natural Sciences bears an original annotation by Frederick Pursh that reads, "Valeys of the Missouri on the Rocky mountain. Jul. 8th 1806." Lewis's journal entry for July 26, 1805, when he was near the mouth of Sixteenmile Creek on the Broadwater-Gallatin county line in Montana reads, "the high lands are thin meagre soil covered with dry low sedge and a species of grass also dry the seeds of which are armed with a long twisted hard beard at the upper extremity while the lower point is a sharp subulate firm point beset at it's base with little stiff bristles standing with their points in a contrary direction to the subulate point to which they answer as a barb and serve also to pres it forward when once entered a small distance. these barbed



Photo: Drake Barton

Hesperostipa comata (Needle-and-thread Grass)

seed penetrate our mockersons and leather leggings and give us great pain untill they are removed. my poor dog suffers with them excessively, he is constantly binting and scratching himself as if in a rack of pain."

Needle-and-thread grass is an important component of plains and prairies in Montana, but also occurs in forested and shrub-steppe communities. It grows throughout the western and midwestern United States and Canada, and can be found in Indiana, Texas, and south into Mexico. It even occurs as far east as Rhode Island and New York. It is considered rare in Ontario, Canada and in Oklahoma.

Needle-and-thread grass is currently known by the scientific name *Hesperostipa comata*, although many know it as *Stipa comata*, and it is placed in the grass family (Poaceae). Frederick Pursh, when he reviewed some of the plant specimens from the Lewis and Clark expedition, applied the name *Stipa juncea* to the species. As it turned out, our needle-and-thread grass was new to science and the old name that Pursh used was invalid.

Needle-and-thread grass is considered a cool-season, perennial bunchgrass. The small bunches are from one to three inches in diameter, widely

spaced and fairly shallow-rooted, although some of the branched roots may reach as deep as five feet. This grass species is common on dry hills and plains, and on stony and sandy soils with a slightly high pH and low water-holding capacity. In Montana, needle-and-thread grass can be found at elevations as high as 8,000 feet in areas with at least 10 inches of precipitation a year. The grass thrives, however, in areas with up to 18 inches of precipitation.

Needle-and-thread grass has some value for livestock and wildlife such as mule deer, especially early in the spring, and the grass is preferred forage of black-tailed jackrabbits, black-tailed prairie dogs, northern pocket gophers, and desert cottontails. Since the grass greens up early in the spring it can be overgrazed if other forage is limited. In the summer the sharp awn can injure the mouths of grazing animals.

This native grass species has been used to stabilize eroded or degraded sites and has been used to help reclaim mining sites in the state. It is considered to be moderately to highly drought-resistant, which is a plus for native plant reclamation sites. In addition, it recovers well from periods of drought. Although the plant becomes dormant during periods of hot weather, it will green up again in the fall if there is sufficient moisture.

There is evidence to indicate that American Indians burned native prairies at fairly frequent intervals, and needle-and-thread grass occurs in habitats that generally experienced frequent fire intervals (from six to 41 years). Needle-and-thread grass sprouts from the caudex following fire, if the heat wasn't great enough to kill the underground parts, and it takes from two to 10 years for the grass to recover.

Native American tribes used needle-and-thread grass seeds as toys and make believe spears and arrows. The Blackfoot used needle-and-thread grass as an indicator for the best time to hunt buffalo cows in the fall. When the grass became open and the seed heads spread out, it was time to hunt!

Take time to hunt for needle-and-thread grass yourself, and be mindful of the need for preserving our remaining native prairies.