Stipa comata - Yucca glauca Herbaceous Vegetation

COMMON NAME	Needle-and-thread - Soapweed Yucca Herbaceous Vegetation
SYNONYM	Needle-and-thread - Soapweed Mixedgrass Prairie
PHYSIOGNOMIC CLASS	Herbaceous vegetation (V)
PHYSIOGNOMIC SUBCLASS	Perennial graminoid vegetation (V.A)
PHYSIOGNOMIC GROUP	Temperate or subpolar grassland (V.A.5)
PHYSIOGNOMIC SUBGROUP	Natural/semi-natural (V.A.5.N)
FORMATION	Medium-tall bunch temperate or subpolar grassland (V.A.5.N.d.)
ALLIANCE	*Stipa comata* Bunch Herbaceous Alliance

CLASSIFICATION CONFIDENCE LEVEL 2

USFWS WETLAND SYSTEM Upland

RANGE
Globally
This community is found only in Wyoming.

Fort Laramie National Historic Site
This community is most common on upland sites on Bureau of Land Management lands northwest and south of the NHS. *Artemisia filifolia* does occur in *Stipa comata* - *Bouteloua gracilis* - *Carex filifolia* Herbaceous Vegetation within the NHS but, at these sites, shrub cover usually is less than 10%.

ENVIRONMENTAL DESCRIPTION
Globally
Stands of the narrower *Stipa comata* - *Yucca glauca* Herbaceous Vegetation are found only along ridge tops and a short distance down the adjacent slopes (Thilenius et al. 1995). The broader *Yucca glauca* / *Calamovilfa longifolia* Shrub Herbaceous Vegetation, into which it is suggested *Stipa comata* - *Yucca glauca* Herbaceous Vegetation be placed, apparently occurs on a broader range of ridge tops and upper slopes.

Fort Laramie National Historic Site
This community occurs on sandy soils on rolling terrain and on slopes to 18 degrees. There is no apparent correlation with aspect.

MOST ABUNDANT SPECIES
Globally

Statum	Species
Shrub	*Yucca glauca*
Herbaceous	*Calamovilfa longifolia, Stipa comata, Bouteloua gracilis*

Fort Laramie National Historic Site

Statum	Species
Shrub	*Artemisia filifolia, Yucca glauca*
Herbaceous	*Stipa comata, Bouteloua gracilis, Carex filifolia*

DIAGNOSTIC SPECIES
Globally
Yucca glauca, Calamovilfa longifolia, Stipa comata

Fort Laramie National Historic Site
Artemisia filifolia, Stipa comata, Bouteloua gracilis

VEGETATION DESCRIPTION
Globally
Stands of the narrower *Stipa comata* - *Yucca glauca* Herbaceous Vegetation (Thilenius et al. 1995) contain an open to moderately-dense (at least 10% cover), low shrub layer above a species-rich herbaceous layer. Dominance of the shrub layer by *Yucca glauca* is characteristic (average cover in 6 stands was 9.8%). *Artemisia tridentata* ssp. *wyomingensis* and *Artemisia cana* ssp. *cana* may be present but are sparse and contribute little cover. In the herbaceous layer, *Stipa comata* and *Calamovilfa longifolia* co-dominate (16% cover and 8% cover respectively), and *Bouteloua gracilis* and *Carex filifolia* often are present but contribute much less cover than do *Stipa* or *Calamovilfa*. Forbs are common but contribute little cover; *Artemisia frigida* has the highest constancy, but no forb is characteristic of the association. Litter covers up to ca. half of the ground surface, and most of the rest of the ground surface is bare soil.

Fort Laramie National Historic Site
This community typically is dominated by *Stipa comata* and *Bouteloua gracilis* in the herbaceous stratum, with greater than 10% low shrub cover dominated by *Artemisia filifolia*. *Yucca glauca* can be common as well. *B. gracilis* is the more dominant herbaceous species in some areas, as is *Carex filifolia. Tradescantia occidentalis* and *Opuntia fragilis* frequently occur in this community. The latter is occasionally abundant. *Andropogon hallii* occurs occasionally in small patches. Small patches of *Calamovilfa longifolia* are common. In some areas, such as old disturbed areas on Bureau of Land Management land northwest of the park (pipeline), large stands of *Calamovilfa longifolia* occur.

OTHER NOTEWORTHY SPECIES Information not available.

CONSERVATION RANK G2?

RANK JUSTIFICATION

DATABASE CODE CEGL001706

COMMENTS
Globally
This association is currently considered a temperate, mid-grass, bunchgrass grassland. But as described by Thilenius et al. (1995), the reference from which it was named, it is characterized by a low shrub layer of at least ca. 10% cover, and so should probably be considered a sparse shrub type in the *Yucca glauca* Shrub Herbaceous Alliance (V.A.7.N.h. in TNC's national vegetation hierarchy) and renamed *Yucca glauca* / *Stipa comata* Shrub Herbaceous Vegetation.

Furthermore, it appears to be the same as the *Yucca glauca* / *Calamovilfa longifolia* Association (CEGL001456) from Montana, as suggested by the following evidence. First, the two types are markedly similar in species composition. Percent constancy and percent canopy cover of the major species in the *Yucca glauca* / *Calamovilfa longifolia* association are as follows (Prodgers 1978): *Yucca glauca* 100% (22.5%), *Stipa comata* 33% (0.2%), *Calamovilfa longifolia* 83% (15.6%), *Schizachyrium scoparium* 67% (11.3%), *Bouteloua gracilis* 67% (3.2%), Carex filifolia 50% (5.6%). In the Yucca glauca / Stipa comata shrub-steppe, percent constancy and percent canopy cover of the major species are quite similar (Thilenius et al. 1995): *Yucca glauca* 100% (9.8%), *Stipa comata* 100% (16.3%), *Calamovilfa longifolia* 100% (8.7%), *Schizachyrium scoparium* not listed; *Bouteloua gracilis* 83% (8.2%), *Carex filifolia* 83% (7.1%).

Second, stands of the two types occur on similar substrates. Stands of the *Yucca glauca* / *Calamovilfa longifolia*

association occur on sandstone and scoria substrates (Prodgers 1978), and stands of the *Yucca glauca* / *Stipa comata* shrub-steppe occur on sandstone outcrops (Thilenius et al. 1995). Third, the authors of the *Yucca glauca* / *Stipa comata* shrub-steppe (Thilenius et al. 1995) originally identified a *Yucca glauca* / *Calamovilfa longifolia* type on sandstone outcrops and sandy soils, based on a reconnaissance of vegetation in the Cheyenne River Basin. They then sampled 6 stands and revised their original type to the *Yucca glauca* / *Stipa comata* shrub-steppe of sandstone outcrops. Surveys by George Jones in the Cheyenne River Basin suggest that the original concept of the *Yucca glauca* / *Calamovilfa longifolia* type on sandstone outcrops and sandy soils applies well to the vegetation.

Fort Laramie National Historic Site
This community intergrades with *Stipa comata* - *Bouteloua gracilis* - *Carex filifolia* Herbaceous Vegetation. At some sites, especially on the BLM land south of the NHS, *Bouteloua gracilis* is dominant, and *Stipa comata* is rare or absent, probably due to grazing (*S. comata* is known to be a decreaser and *B. gracilis* an increaser in these situations; USDA Forest Service 1937). *Carex filifolia*, also an increaser (Jones 1992), contributes substantial cover in some areas. Low shrubs occasionally contribute greater than 25% cover. However, these stands are included in this community rather than being segregated as a shrubland community.

REFERENCES

Johnston, B. C. 1987. Plant associations of region two. Edition 4. R2-ECOL-87-2. USDA Forest Service, Rocky Mountain Region. Lakewood CO. 429 pp.

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