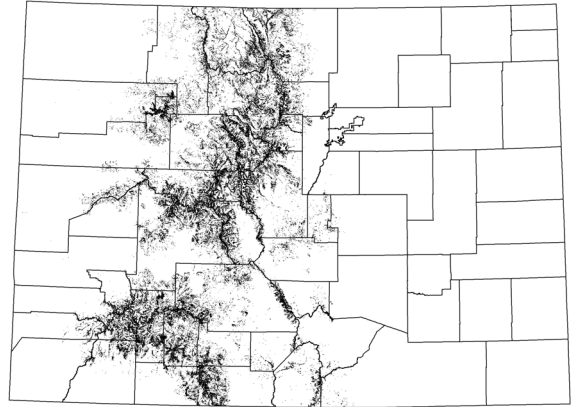


# ROCKY MOUNTAIN SUBALPINE-MONTANE RIPARIAN SHRUBLAND



M. Aikten



extent exaggerated for display

- ACER GLABRUM TEMPORARILY FLOODED SHRUBLAND ALLIANCE  
*Acer glabrum* Drainage Bottom Shrubland
- ALNUS INCANA SEASONALLY FLOODED SHRUBLAND ALLIANCE  
*Alnus incana* - *Salix (monticola, lucida, ligulifolia)* Shrubland  
*Alnus incana* / *Equisetum arvense* Shrubland
- ALNUS INCANA TEMPORARILY FLOODED SHRUBLAND ALLIANCE  
*Alnus incana* - *Salix drummondiana* Shrubland  
*Alnus incana* / *Calamagrostis canadensis* Shrubland  
*Alnus incana* / *Cornus sericea* Shrubland  
*Alnus incana* / Mesic Forbs Shrubland  
*Alnus incana* / Mesic Graminoids Shrubland
- BETULA NANA SEASONALLY FLOODED SHRUBLAND ALLIANCE  
*Betula nana* / Mesic Forbs - Mesic Graminoids Shrubland
- BETULA OCCIDENTALIS SEASONALLY FLOODED SHRUBLAND ALLIANCE  
*Betula occidentalis* / Mesic Graminoids Shrubland  
*Betula occidentalis* Shrubland
- BETULA OCCIDENTALIS TEMPORARILY FLOODED SHRUBLAND ALLIANCE  
*Betula occidentalis* / *Cornus sericea* Shrubland  
*Betula occidentalis* / *Maianthemum stellatum* Shrubland
- CORNUS SERICEA TEMPORARILY FLOODED SHRUBLAND ALLIANCE  
*Cornus sericea* / *Heracleum maximum* Shrubland  
*Cornus sericea* Shrubland
- DASIPHORA FRUTICOSA TEMPORARILY FLOODED SHRUBLAND ALLIANCE  
*Dasiphora fruticosa* ssp. *floribunda* / *Deschampsia caespitosa* Shrubland
- SALIX BEBBIANA TEMPORARILY FLOODED SHRUBLAND ALLIANCE  
*Salix bebbiana* / Mesic Graminoids Shrubland  
*Salix bebbiana* Shrubland
- SALIX BOOTHII SEASONALLY FLOODED SHRUBLAND ALLIANCE  
*Salix (boothii, geyeriana)* / *Carex aquatilis* Shrubland  
*Salix boothii* / *Calamagrostis canadensis* Shrubland
- SALIX BOOTHII TEMPORARILY FLOODED SHRUBLAND ALLIANCE  
*Salix boothii* - *Salix geyeriana* Shrubland  
*Salix boothii* / *Carex utriculata* Shrubland  
*Salix boothii* / *Deschampsia caespitosa* - *Geum rossii* Shrubland  
*Salix boothii* / Mesic Forbs Shrubland  
*Salix boothii* / Mesic Graminoids Shrubland
- SALIX BRACHYCARPA SEASONALLY FLOODED SHRUBLAND ALLIANCE  
*Salix brachycarpa* / *Carex aquatilis* Shrubland  
*Salix brachycarpa* / Mesic Forbs Shrubland
- SALIX DRUMMONDIANA SEASONALLY FLOODED SHRUBLAND ALLIANCE  
*Salix drummondiana* / *Carex utriculata* Shrubland
- SALIX DRUMMONDIANA TEMPORARILY FLOODED SHRUBLAND ALLIANCE  
*Salix drummondiana* / *Calamagrostis canadensis* Shrubland  
*Salix drummondiana* / Mesic Forbs Shrubland
- SALIX GEYERIANA SEASONALLY FLOODED SHRUBLAND ALLIANCE  
*Salix geyeriana* / *Calamagrostis canadensis* Shrubland  
*Salix geyeriana* / *Carex aquatilis* Shrubland  
*Salix geyeriana* / *Carex utriculata* Shrubland
- SALIX GEYERIANA TEMPORARILY FLOODED SHRUBLAND ALLIANCE  
*Salix geyeriana* - *Salix monticola* / *Calamagrostis canadensis* Shrubland  
*Salix geyeriana* - *Salix monticola* / Mesic Forbs Shrubland  
*Salix geyeriana* / Mesic Forbs Shrubland  
*Salix geyeriana* / Mesic Graminoids Shrubland

*Salix geyeriana* / *Poa palustris* Shrubland  
 SALIX LIGULIFOLIA TEMPORARILY FLOODED SHRUBLAND ALLIANCE  
*Salix ligulifolia* Shrubland  
 SALIX LUCIDA TEMPORARILY FLOODED SHRUBLAND ALLIANCE  
*Salix lucida* ssp. *caudata* / *Rosa woodsii* Shrubland  
 SALIX MONTICOLA TEMPORARILY FLOODED SHRUBLAND ALLIANCE  
*Salix monticola* / *Angelica ampla* Shrubland  
*Salix monticola* / *Calamagrostis canadensis* Shrubland  
*Salix monticola* / *Carex aquatilis* Shrubland  
*Salix monticola* / *Carex utriculata* Shrubland  
*Salix monticola* / Mesic Forbs Shrubland  
*Salix monticola* / Mesic Graminoids Shrubland  
 SALIX PLANIFOLIA SEASONALLY FLOODED SHRUBLAND ALLIANCE  
*Salix planifolia* / *Caltha leptosepala* Shrubland  
*Salix planifolia* / *Carex aquatilis* Shrubland  
*Salix planifolia* / *Carex utriculata* Shrubland  
*Salix planifolia* / *Carex scopulorum* Shrubland  
*Salix planifolia* / Mesic Forbs Shrubland [Provisional]  
 SALIX PLANIFOLIA TEMPORARILY FLOODED SHRUBLAND ALLIANCE  
*Salix planifolia* / *Calamagrostis canadensis* Shrubland  
*Salix planifolia* / *Deschampsia caespitosa* Shrubland  
 SALIX WOLFII SEASONALLY FLOODED SHRUBLAND ALLIANCE  
*Salix wolfii* / *Carex aquatilis* Shrubland  
*Salix wolfii* / *Carex utriculata* Shrubland  
 SALIX WOLFII TEMPORARILY FLOODED SHRUBLAND ALLIANCE  
*Salix wolfii* / *Deschampsia caespitosa* Shrubland  
*Salix wolfii* / *Fragaria virginiana* Shrubland  
*Salix wolfii* / Mesic Forbs Shrubland

**Overview:** This system is found throughout the Rocky Mountain cordillera from New Mexico north into Montana, and also occurs in mountainous areas of the Intermountain region and Colorado Plateau. These montane to subalpine riparian shrublands may occur as narrow bands of shrubs lining streambanks and alluvial terraces, or as extensive willow carrs in broad, hummocky floodplains and subalpine valleys.

**Characteristic species:** The dominant shrubs reflect the large elevational gradient and include *Alnus incana*, *Betula nana*, *B. occidentalis*, *Cornus sericea*, *Salix bebbiana*, *S. boothii*, *S. brachycarpa*, *S. drummondiana*, *S. eriocephala*, *S. geyeriana*, *S. ligulifolia*, *S. monticola*, *S. planifolia*, and *S. wolfii*. Generally the upland vegetation surrounding these riparian systems are either conifer or aspen forests.

**Environment:** This system is more commonly found at higher elevations, but occurs anywhere from 5,600 to 11,800 ft (1,700-3,595 m). Occurrences can also be found around seeps, fens, and isolated springs on hillslopes away from valley bottoms. This system often occurs as a mosaic of multiple communities that are shrub- and herb-dominated and includes above-treeline, willow-dominated, snowmelt-fed basins that feed into streams.

**Dynamics:** Many of the plant associations included in this system are associated with beaver activity, which can be important for maintaining the health of the riparian ecosystem. Beaver dams abate channel down cutting, bank erosion, and downstream movement of sediment. Beaver dams raise the water table across the floodplain and provide year-round saturated soils. Plant establishment and sediment build-up behind beaver dams raises the channel bed and creates a wetland environment.



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**Variation:** At lower elevations in the range of this system, occurrences are more likely to be non-willow shrublands dominated by *Alnus incana*, *Betula occidentalis*, or *Cornus sericea*. At the highest elevations communities dominated by short-statured species such as *Betula nana*, *Salix brachycarpa*, *S. planifolia*, and *S. wolfii* are most common.

Rank:	A	B	C	D
<b>① CONDITION</b>				
<b>Community structure</b>	Species composition is primarily of native species with a diverse physiognomic structure.	Species composition is primarily of native species.		
<b>Natural hydrologic regime</b>	Intact, including an unaltered floodplain. No or little evidence of alteration due to drainage, flood control, irrigation canals, livestock grazing, digging, berming, mining, or vehicle use.	Intact or slightly altered by local drainage, flood control, irrigation canals, livestock grazing, digging, mining, vehicle use, or roads. Alteration is easily restorable by ceasing such activities.	Altered by upstream dams, local drainage, diking, filling, digging, mining, or dredging. Alteration is extensive but potentially restorable over several decades.	Not restorable. System remains fundamentally compromised despite restoration of some processes.
<b>Exotic species</b> (e.g., <i>Phalaris arundinacea</i> , <i>Taraxacum officinalis</i> , <i>Trifolium repens</i> , <i>Poa pratensis</i> , <i>Agrostis stolonifera</i> ).	No or very few exotic species present with no potential for expansion.	Few exotic species with little potential for expansion if restoration occurs.	May be widespread but potentially manageable with restoration of most natural processes.	Invasive exotic species may be dominant over significant portions of area, with little potential for control.
<b>Disturbance</b> excessive grazing or other human activity, e.g., channeling, or road construction.	Stream banks are not overly steepened, the channel not overly widened, nor unvegetated by excessive grazing.	Stream banks may show some local deleterious effects from excessive livestock grazing or other human activity.	Stream banks have been severely altered. Vehicle use or grazing disturbance, if present, is extensive and significant enough to have notable impact on species composition and soil compaction, causing excessive erosion.	Disturbance to site not restorable.
<b>② SIZE</b>				
<b>Linear miles</b>	>1.5	1.0-1.5	0.5-1.0	< 0.5
<b>③ LANDSCAPE CONTEXT</b>				
<b>Area hydrology</b>	No evidence of human-caused alteration of hydrology, especially upstream of occurrence and within the watershed.	Little evidence of human-caused alteration of hydrology, especially upstream of occurrence and within the watershed.	Local or moderate human-caused alteration of hydrology may be present, for example small tributary dams or irrigation ditches.	Major human-caused alteration of hydrology. Large dams and numerous diversions are within watershed.
<b>Surrounding land</b>	Uplands surrounding occurrence and within the watershed are largely unaltered by urban or agricultural uses (>90% natural), and have few to no recent (<20 years) clearcuts (<25% of landscape).	Uplands surrounding occurrence and within the watershed are largely unaltered by urban or agricultural uses (60 to 90% natural), and retain much connectivity. Uplands may be managed forest landscape with limited clearcuts, mining, or numerous roads.	Uplands surrounding occurrence or upstream watershed are fragmented by urban or agricultural alteration (20 to 60% natural).	Uplands surrounding occurrence mostly converted to agricultural or urban uses, including ski area development. Riparian occurrence may be reduced to a narrow strip with a significant edge effect.
<b>Connectivity</b>	No unnatural barriers present. Connectivity to habitats allows natural processes and species migration to occur.	Few barriers present. Some natural processes such as flooding, may be slightly compromised. No regional dam upstream.	Limited connectivity. Some barriers are present, and natural processes few.	Connectivity and natural processes are nonexistent.