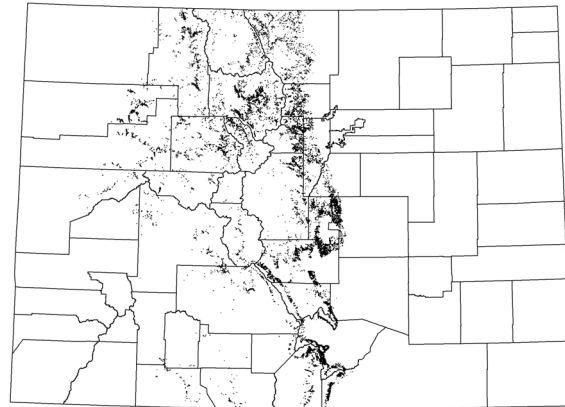


ROCKY MOUNTAIN SUBALPINE-MONTANE RIPARIAN WOODLAND



S. Spackman



extent exaggerated for display

ABIES CONCOLOR FOREST ALLIANCE

Abies concolor - *Picea pungens* - *Populus angustifolia* / *Acer glabrum* Forest

ABIES LASIOCARPA SEASONALLY FLOODED FOREST ALLIANCE

Abies lasiocarpa / *Alnus incana* Forest

Abies lasiocarpa / *Carex aquatilis* Forest

Abies lasiocarpa / *Ledum glandulosum* Forest

Abies lasiocarpa / *Salix drummondiana* Forest

ABIES LASIOCARPA TEMPORARILY FLOODED FOREST ALLIANCE

Abies lasiocarpa / *Mertensia ciliata* Forest

Abies lasiocarpa / *Trautvetteria carolinensis* Forest

PICEA ENGELMANNII SEASONALLY FLOODED FOREST ALLIANCE

Picea engelmannii / *Caltha leptosepala* Forest

Picea engelmannii / *Equisetum arvense* Forest

PICEA ENGELMANNII TEMPORARILY FLOODED FOREST ALLIANCE

Picea engelmannii - *Populus angustifolia* / *Heracleum maximum* Forest

PICEA ENGELMANNII TEMPORARILY FLOODED WOODLAND ALLIANCE

Picea engelmannii / *Cornus sericea* Woodland

PICEA PUNGENS TEMPORARILY FLOODED WOODLAND ALLIANCE

Picea pungens / *Alnus incana* Woodland

Picea pungens / *Betula occidentalis* Woodland

Picea pungens / *Cornus sericea* Woodland

Picea pungens / *Equisetum arvense* Woodland

Picea pungens / *Rosa woodsii* Woodland

POPULUS TREMULOIDES FOREST ALLIANCE

Populus tremuloides / *Corylus cornuta* Forest

POPULUS TREMULOIDES SEASONALLY FLOODED FOREST ALLIANCE

Populus tremuloides / *Calamagrostis canadensis* Forest

POPULUS TREMULOIDES TEMPORARILY FLOODED FOREST ALLIANCE

Populus tremuloides / *Alnus incana* Forest

Populus tremuloides / *Betula occidentalis* Forest

Populus tremuloides / *Cornus sericea* Forest

Populus tremuloides / *Ribes montigenum* Forest

Populus tremuloides / *Salix drummondiana* Forest

Populus tremuloides / *Senecio bigelovii* var. *bigelovii* Forest

Populus tremuloides / *Veratrum californicum* Forest

Overview: This linear riparian woodland system is comprised of seasonally flooded forests and woodlands found at montane to subalpine elevations in the Rocky Mountain cordillera, from southern New Mexico north into Montana, and west into the Intermountain region and the Colorado Plateau. This system contains the conifer and aspen woodlands that line first- and second-order montane streams. Although many of the association names have been simplified to include a single overstory species, Colorado occurrences of the *Abies lasiocarpa* or *Picea engelmannii* series typically contain both species.

Characteristic species: Dominant tree species include *Abies lasiocarpa*, *Picea engelmannii*, *Pseudotsuga menziesii*, *Picea pungens*, *Populus tremuloides*, and *Juniperus scopulorum*. Other trees that may be present include *Alnus incana*, *Abies concolor*, *Pinus contorta*, *Populus angustifolia*, *Acer negundo*, and *Juniperus osteosperma*.

Environment: These are communities tolerant of periodic flooding and high water tables. Snowmelt moisture in this system may create shallow water tables or seeps for a portion of the growing season. Stands in Colorado typically occur at elevations between 6,000-10,830 feet (1,800-3,300 m) and are confined to specific riparian environments occurring on floodplains or terraces of rivers and streams, in V-shaped, narrow valleys and canyons (where there is cold-air drainage). Less frequently, occurrences are found in moderate-wide valley bottoms on large floodplains along broad, meandering rivers, and on pond or lake margins.

Dynamics: Many first- and second-order streams run through subalpine spruce-fir or aspen forests providing habitats for obligate riparian shrubs, forbs, and grasses, forming riparian *Abies lasiocarpa*-*Picea engelmannii* or *Populus tremuloides* plant associations. Although *Abies lasiocarpa* and *Picea engelmannii* are not obligate riparian species, the two species strongly influence many subalpine riparian ecosystems. The fire frequency of *Abies lasiocarpa* and *Picea engelmannii* in moist areas is lower than on the dry upland sites, but the trees in riparian areas do burn. Following a crown fire, both *Abies lasiocarpa* and *Picea engelmannii* colonize the burned area. *Picea engelmannii* establishment is greater for the first several decades, but as the ground becomes shaded, *Abies lasiocarpa* seedlings increase in abundance.

Variation: This system is distinguished from the adjacent upland forest and woodland communities by the presence of obligate riparian species. Community composition may be determined by a combination of floodplain width and steepness, streamflow volume and flooding patterns, and adjacent upland vegetation.



J. Rocchio

Rank:	A	B	C	D
① CONDITION				
Community structure	Species composition is primarily of native species with a diverse physiognomic structure.	Species composition is primarily of native species.		
Natural hydrologic regime	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.
Exotic species (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.
Disturbance 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.
② SIZE				
Linear miles	>1.5	1.0-1.5	0.5-1.0	< 0.5
③ LANDSCAPE CONTEXT				
Area hydrology	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.
Surrounding land	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.
Connectivity	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.