

## POTENTIAL NATURAL VEGETATION – NEW MEXICO

Descriptive legend for vegetation classification system used in mapping the Potential Natural vegetation of New Mexico

CD1a	<p><b>CREOSOTEBUSH – BUSH MUHLY ASSOCIATION</b> At one time these were predominately grasslands with scattered creosotebush. Principal grasses were black grama, bush muhly, scattered tobosa in rills, and creosotebush.</p>	GD2b	<p><b>MIXED SALTBUSH-RICEGRASS ASSOCIATION</b> Characterized by little or no ground cover to a sparse cover of shadscale and Indian ricegrass in association with galleta, blue grama, and scattered juniper, pinyon, serviceberry, and bitterbrush. This is an aggregation of distinct communities which do not comply to the true association concept.</p>
CD1b	<p><b>CREOSOTEBUSH – TARBUSH ASSOCIATION</b> Originally these were predominately creosotebush and tarbush overstory with scattered plants of threeawns, bush muhly, fluffgrass, desert bailey, yucca, broom snakeweed, and various species of cacti.</p>	GD2c	<p><b>SHADESCALE-MIXED GRAMAS-JUNIPER ASSOCIATION</b> Sparse to fair cover of shadscale in association with sideoats and blue grama, sand dropseed, and fourwing saltbush.</p>
CD2a	<p><b>WHITETHORN ASSOCIATION</b> This is primarily an Arizona Association and occurs in small amounts in extreme Southwestern New Mexico. This is a shrub dominated site. Mapping scale did not allow for delineation.</p>	GD2d	<p><b>FOURWING SALTBUSH-ALKALI SACATON-GREASEWOOD ASSOCIATION</b> Consists of fourwing saltbush with sparse understory of alkali sacaton and scattered greasewood.</p>
CD2b	<p><b>CATCLAW ASSOCIATION</b> Primarily an Arizona association which occurs in small amounts around Carlsbad, New Mexico and in Southwestern New Mexico in greater amounts. This is a shrub dominated site.</p>	CG1a	<p><b>VINE MESQUITE ASSOCIATION</b> This is primarily an Arizona association occurring in Southern New Mexico. Mapping scale did not allow for delineation.</p>
CD4a	<p><b>FOURWING SALTBUSH-ALKALI SACATON ASSOCIATION</b> These may support little or no vegetation. Alkali sacaton, tobosa, vine-mesquite, burrograss, and saltgrass are the principal grasses. The more common shrubs are tuberaled saltbush, fourwing saltbush, tarbush, and iodinebush.</p>	CG1b	<p><b>BURROGRASS ASSOCIATION</b> Dominated by burrograss in conjunction with tobosa, and inclusions of gyp grama, gyp dropseed, coldenia and fluffgrass.</p>
CD4b	<p><b>FOURWING SALTBUSH-TOBOSA ASSOCIATION</b> Vegetation consists mainly of alkali sacaton, sand dropseed, gyp dropseed, gyp grama, fluffgrass, coldenia, fourwing saltbush and traces of mesquite, creosotebush and tarbush.</p>	CG1c	<p><b>FLUFFGRASS ASSOCIATION</b> Mapping scale did not allow for delineation of this association on the map.</p>
GD1a	<p><b>BIG SAGEBRUSH ASSOCIATION</b> The more common grasses are western wheatgrass, galleta, alkali sacaton, blue grama, and sand dropseed. Scattered clumps and/or trees of pinyon pine and juniper do occur on a submarginal basis.</p>	CG2a	<p><b>MIXED GRAMA-ROSETTE SHRUB ASSOCIATION</b> A wide variety of grasses, shrubs, and scattered trees dominated by sideoats, blue and black gramas in association with beargrass, sotol, ocotillo, cacti and scattered shrub juniper.</p>
GD2a	<p><b>MIXED SALTBUSHES-ALKALI SACATON ASSOCIATION</b> Areas are sparsely covered by several species of saltbushes; including shadscale, nuttall's saltbush, mat saltbush, and fourwing saltbush in association with alkali sacaton, galleta, poverty threeawn, sand dropseed, blue grama, and Indian ricegrass.</p>	CG2b	<p><b>MIXED GRAMA-THREEAWN ASSOCIATION</b> Black grama and perennial threeawns are the dominant species. In association will be moderate amounts of blue, hairy and sideoats gramas with occasional plants of mesa and sand dropseed. Care must be taken not to confuse this association with associates of other mixed grama and black grama associations.</p>
		CG2c	<p><b>MIXED GRAMAS-TOBOSA ASSOCIATION</b> A mixture of grama grasses but principally black grama in association with tobosa, threeawns, burrograss, dropseeds, and scattered yucca.</p>

CG2d	<b>MIXED GRAMAS-CURLY MESQUITE-JUNIPER ASSOCIATION</b> Dominant vegetation consists of a mixture of gramas consisting of sideoats, blue, hairy and black gramas in association with curly mesquite and scattered, shrub juniper.
CG3a	<b>BLACK GRAMA-MIXED DROPSEED ASSOCIATION</b> Dominated by black grama in association with mesa dropseed, sand dropseed, spike dropseed, giant dropseed, and scattered yucca.
CG3b	<b>BLACK GRAMA-BUSH MUHLY-CREOSOTEBUSH ASSOCIATION</b> This association is similar to the creosotebush-bush muhly (CD1b) association except dominant grasses are black grama and bush mulhy in association with scattered creosotebush. Associated species are fluffgrass, blue grama, threeawns and various species of cacti.
CG4a	<b>MIXED DROPSEEDS-BLACK GRAMA ASSOCIATION</b> Dropseed species including giant dropseed, mesa dropseed, sand dropseed and spike dropseed dominate the vegetation in association with black grama, yucca, and in some areas sand sagebrush.
CG4b	<b>SACATON-GIANT DROPSEED-BLUESTEM ASSOCIATION</b> A Southern Great Plains association which extends into New Mexico, but mapping scale did not allow for delineation.
CG4c	<b>MIXED DROPSEEDS-INDIAN RICEGRASS ASSOCIATION</b> Dominated by dropseeds including sand dropseed, mesa dropseed and spike dropseed in association with the cool season component Indian ricegrass. Scattered sand sagebrush, yucca, and broom dalea are present.
CG4d	<b>SACATON-TOBOSA ASSOCIATION</b> Giant sacaton and alkali sacaton dominate in association with tobosa. Inclusion areas of gyp grama, gyp dropseed, and coldenia will also exist.
GG1	<b>INDIAN RICEGRASS-GALLETA SERIES</b> A grass dominated site, principally Indian ricegrass and galleta associated with Mormon tea, blue grama, sand dropseed, threeawns, boom snakeweed, and scattered big sagebrush.
GG1a	<b>GALLETA-INDIAN RICEGRASS-JUNIPER ASSOCIATION</b> Galleta and Indian ricegrass dominate in association with blue grama, sideoats grama, threeawns, and sand dropseed. Scattered juniper is characteristic of the area.

GG2	<b>INDIAN RICEGRASS-BIG SAGEBRUSH SERIES</b> Dominated by Indian ricegrass and big sagebrush in association with sand dropseed, galleta, threeawns, and blue grama. Inclusions of western wheatgrass and rabbitbrush are common.
GG2a	<b>GALLETA-BIG SAGEBRUSH ASSOCIATION</b> Dominated by galleta and big sagebrush in association with sand dropseed, Indian ricegrass, threeawns and blue grama. Inclusions of rabbitbrush are common.
GG2b	<b>WESTERN WHEATGRASS-BIG SAGEBRUSH ASSOCIATION</b> Characteristically, this is a big sagebrush savannah, dominated by western wheatgrass, in association with galleta, blue grama, and winter-fat. Small inclusions of rubber rabbitbrush and broom snakeweed are common.
GG3	<b>ALKALI SACATON-SALTBUSH SERIES</b> A complex pattern of vegetation characterized by alkali sacaton, shadscale, fourwing saltbush, interspersed with inclusions of western wheatgrass, blue grama, and rabbitbrush. This is an aggregation of distinct communities which do not comply to the true series concept.
GG4	<b>MIXED GRAMA-WESTERN WHEATGRASS SERIES</b> Consists of a mixture of sideoats, black, blue and hairy gramas interspersed with western wheatgrass and minor amounts of threeawns, ring muhly and vine mesquite. Large areas within this series may have scattered juniper.
GG4a	<b>MIXED GRAMA-JUNIPER ASSOCIATION</b> This association has an aspect dominance of juniper with an ecological dominance of sideoats black and blue gramas with considerable amounts of western wheatgrass. Inclusions consist of needlegrass, Indian ricegrass, junegrass, species of muhlenbergia, with scattered rabbitbrush, broom snakeweed, and oakbrush.
PG1a	<b>BLUE GRAMA-WESTERN WHEATGRASS ASSOCIATION</b> Vegetation dominated by blue grama with a cool season component of western wheatgrass. Associated species are bottlebrush squirreltail and minor amounts of threeawns, ring muhly, winterfat, and fringed sage.
PG1b	<b>BLUE GRAMA-BUFFALO GRASS ASSOCIATION</b> Blue grama dominates in association with buffalograss, galleta, sand dropseed and threeawns. Broom snakeweed and cacti may be associated in some areas. Shallow, high lime soil inclusions will have sideoats grama and little bluestem.

PG1c	<b>BLUE GRAMA-GALLETAS ASSOCIATION</b> Dominated by blue grama with relatively high percentages of galleta and associated species of sand dropseed, threeawns, ring muhly, broom snakeweed, cacti, yucca, and cholla.
PG1d	<b>BLUE GRAMA-BLACK GRAMA ASSOCIATION</b> A plains vegetation dominated by blue grama and black grama and the associated species of sand dropseed, New Mexico feathergrass and threeawns. Inclusions of sideoats grama, little bluestem, skunkbush sumac, yucca, and broom snakeweed are common to the area.
PG1e	<b>BLUE GRAMA-NEEDLEGRASS ASSOCIATION</b> Predominantly blue grama in association with New Mexico feathergrass and/or needleandthread together with the associated species of sideoats grama, black grama, and sand dropseed. Inclusions of western wheatgrass, winterfat, and scattered, small areas of pinyon and juniper are common.
PG1f	<b>BLUE GRAMA-WINTERFAT ASSOCIATION</b> Mapping scale did not allow for delineation of this association on the map.
PG2	<b>MIXED GRAMA SERIES</b> An area not dominated by blue grama that may include scattered juniper in association with sideoats grama, black grama, and hairy grama. Minor associated species may include sand dropseed, winterfat, cholla and broom snakeweed.
PG2a	<b>SIDEOATS GRAMA-LITTLE BLUESTEM-JUNIPER ASSOCIATION</b> Dominated by sideoats grama and little bluestem with scattered juniper indigenous to the area. Blue grama, black grama, New Mexico feathergrass, sand dropseed, yucca and broom snakeweed are associated species.
PG2b	<b>SIDEOATS GRAMA-BLUE GRAMA ASSOCIATION</b> Sideoats grama and blue grama are co-dominant. Associated species include sand dropseed, New Mexico feathergrass, little bluestem, and scattered, shrub Juniper.
PG2c	<b>SIDEOATS GRAMA-BLACK GRAMA ASSOCIATION</b> Sideoats grama dominates the composition along with black grama with lesser amounts of blue grama, hairy grama, threeawns, yucca and broom snakeweed. Scattered inclusions of juniper are evident in some areas.

PG2d	<b>SIDEOATS GRAMA-CURLY MESQUITE ASSOCIATION</b> Mapping scale did not allow for delineation of this association, but occurs as inclusions in PG2 series.
PG2e	<b>SIDEOATS GRAMA-METCALF JUHLIY-JUNIPER ASSOCIATION</b> Scattered Juniper dots the area with the dominant vegetation being sideoats grama, Metcalf muhly and the associated species of blue grama, hairy grama, black grama, plains bristlegrass, hairy and rough tridens, threeawns, yucca, sotol, sacahuista other shrubs and cacti.
PG2f	<b>SIDEOATS GRAMA-NEW MEXICO FEATHERGRASS-BLACK GRAMA ASSOCIATION</b> Transitional between the blue grama-needlegrass and blue grama-black grama associations. It has a co-dominance of sideoats, New Mexico feathergrass, and black grama with associated species of sand dropseed, yucca, broom snakeweed, threeawns, and ring muhly.
PG2g	<b>SIDEOATS GRAMA-LITTLE BLUESTEM ASSOCIATION</b> A dense cover of sideoats grama and little bluestem associated with blue grama with smaller amounts of western wheatgrass, galleta, and buffalo grass occupying the site.
PG2h	<b>MIXED GRAMA-JUNIPER ASSOCIATION</b> An aspect dominance of juniper with an ecological dominance of sideoats grama and blue grama. Black grama, galleta, sand dropseed, tridens and threeawns are associated species. Inclusions of sacahuista, yucca, and some shrub oak may be evident in certain areas.
PG3	<b>BUFFALOGRASS-BLUE GRAMA SERIES</b> A short grass plains dominated by buffalograss and blue grama with associated species including galleta, vine mesquite, alkali sacaton and tobosa.
PG3a	<b>BUFFALOGRASS-BLUE GRAMA-MESQUITE ASSOCIATION</b> Does not occur on the Potential Vegetation map because of scale. Will be found on the Present (existing) Vegetation map as an associes.
PG4	<b>SACATON-FOURWING SALTBUSH SERIES</b> An associational complex dominated by alkali sacaton and fourwing saltbush. Occasionally minor amounts of various associated species may occur.

PG4a	<b>ALKALI SACATON ASSOCIATION</b> Dominated primarily by alkali sacaton. Normally a monoculture association.
PG4b	<b>Fourwing saltbush ASSOCIATION</b> Dominated primarily by fourwing saltbush. A near monoculture with sparse grass understory.
P1	<b>MIXED BLUESTEM SERIES</b> A tall grass area dominated by little bluestem and sand bluestem.
P1a	<b>MIXED BLUESTEM-SANDSAGE ASSOCIATION</b> Consists of little bluestem and sand bluestem in co-dominance with sand sagebrush. Associated species include silver bluestem, sand dropseed, sideoats grama, blue grama, Indiangrass, switchgrass, giant sandreed and yucca.
P1b	<b>MIXED BLUESTEM-SHINNERY ASSOCIATION</b> Co-dominants are bluestem species and shinnery oak. Associated species include giant dropseed, sand dropseed, sideoats grama, plains brisleggrass, black grama and yucca.
P1c	<b>LITTLE BLUESTEM-DIDEOATS GRAMA ASSOCIATION</b> Soils heavier in texture than on P1a or P1b, generally calcareous in the upper two feet. Little bluestem and sideoats grama dominate the vegetation. Blue and hairy grama will be common. Scattered juniper will be common but there will be an absence of other woody plants.
MG1	<b>THURBER FESCUE SERIES</b> Dominated by Thurber fescue. Will contain appreciable Arizona fescue and mountain muhly. Subdominants will include bluegrass species and sedges. Local aggregations of little bluestem and sideoats grama will occur at lower elevations on warmer aspects. At higher elevations and more moist conditions bromegrasses and cinquefoil may be common. The series is generally a park-like area within the Montane Region. Soil formation restricts forest cover. Associations have not been delineated because of mapping scale and the degree of aggregation between associations.
MG1a	<b>THURBER FESCUE-ARIZONA FESCUE ASSOCIATION</b> The highest elevation grassland of the series. Thurber fescue will dominate, often to near monoculture stands. Arizona fescue is a co-dominant for the association, but may not be interspersed with Thurber fescue.

MG1b	<b>ARIZONA FESCUE-MOUNTAIN MUHLY ASSOCIATION</b> Generally located below MG1a in elevation. Arizona fescue and mountain muhly are co-dominants and generally are well interspersed.
MG2	<b>MOUNTAIN MUHLY-PINE DROPSEED SERIES</b> Occurs in park-like areas or with savannah-like overstory, primarily in the ponderosa pine series. Mountain muhly is the primary dominant. Pine dropseed is a secondary dominant. Other species include sideoats grama, little bluestem, junegrass and squirreltail. Upper limits of blue grama will occur in this series.
MG3	<b>MIXED BLUEGRASS-MIXED SEDGE SERIES</b> A park-like grassland located primarily in the Douglas fir series. Local soil formation restricts forest cover. Numerous species of blue grasses, sedges and rushes dominate the potential. Currently many of the areas are in successional monocultures of Kentucky bluegrass. The series is not delineated because of mapping scale.
MG4	<b>MIXED SEDGE-TUFTED HAIRGRASS SERIES</b> A park-like grassland located primarily in the Subalpine Forest Region. Several sedge species co-dominate the series with tufted hairgrass. Kentucky blue grass has naturalized to become an associated species. Forbs commonly associated with the true alpine will be found here, but in lesser amounts. The series is not delineated because of mapping scale.
R	<b>RIPARIAN REGION</b> A narrow region along major water drainages with at least a high water table or frequent flow. Vegetation potential is variable based on the vegetative region in which it is located. Because the mapping scale is small, all riparian series have been collectively mapped to the Region level. Recognized series currently include cottonwood-desert willow, mesquite bosque, walnut and willow-sycamore.
MS1	<b>OAK-BRUSH SERIES</b> Transition area between grasslands and Ponderosa Pine and may be interspersed with Coniferous Woodland Region, generally on steep, rocky slopes. Oak species will dominate in conjunction with at least one other brush species. Understory vegetation is variable but will often include blue grama and a higher amount of forbs than adjacent grasslands. Mapping scale often did not allow for delineation of this series from coniferous woodland series. Similarly, individual associations are often too small to delineate on the map.

MS1a	<b>GAMBEL OAK-MOUNTAIN MAHOGANY ASSOCIATION</b> An example of the type of associations present in the series where Gambel oak and mountain magogany are the co-dominant species.
MS2	<b>BRUSH-JUNIPER SERIES</b> Similar to MS1 in location and mapping delineation from coniferous woodland series. Juniper will occur in co-dominance with a deciduous brush species. Understory vegetation will generally include blue grama, spike muhly, mountain muhly, needlegrass species, Arizona fescue and numerous forbs.
CW1	<b>PINYON-JUNIPER SERIES</b> Areas where single leaf pinyon pine is the primary dominant with juniper the secondary dominant. No appreciable woody understory is present. May include scattered ponderosa pine, generally at higher elevations. Herbaceous understory is variable, depending on elevation, aspect and local soils.
CW1a	<b>PINYON-JUNIPER-OAK ASSOCIATION</b> Similar in appearance to CW1 with gambel oak in motts or uniformly dispersed through the association.
CW1b	<b>PINYON-JUNIPER-BIG SAGEBRUSH ASSOCIATION</b> Similar in appearance to CW1 with big sagebrush uniformly dispersed through the association.
CW2	<b>JUNIPER-PINYON SERIES</b> Areas where juniper is primary dominant with Mexican pinyon pine the secondary dominant. This series is generally located further south or at lower elevations in warmer climate than CW1 and may include small amounts of low-growing oak species in the understory.
CW2a	<b>JUNIPER-PINYON-OAK ASSOCIATION</b> Similar in appearance to CW2 with low-growing forms of oak, primarily wavy leaf oak, growing in motts or in a reasonably uniform stand as an understory to the juniper and pinyon.
CW2b	<b>JUNIPER-PINYON-BIG SAGEBRUSH ASSOCIATION</b> Located in northern part of the state. Separated from CW2 because of the uniform stand of big sagebrush throughout the understory.
CW2c	<b>JUNIPER-BIG SAGEBRUSH ASSOCIATION</b> Similar to CW2b, usually at lower elevations, without pinyon pine present.

CW2d	<b>CURLY MESQUITE-JUNIPER ASSOCIATION</b> Primarily an Arizona association dominated by curly mesquite and blue grama. Associated grasses include sideoats, hairy and sprucetop grammas. Juniper occurs in a savannah and may technically be a grassland area with scattered juniper. The association has limited extent in New Mexico primarily in the western edge of Gila National Forest.
CW2e	<b>REDBERRY JUNIPER ASSOCIATION</b> Located in the Guadalupe mountain area where redberry juniper is dominant, often the only juniper species present and may be associated with lesser amounts of deciduous shrubby species. A blue grama grassland understory prevails. Mapping scale did not allow for delineation.
CW3	<b>ARIZONA CYPRESS SERIES</b> An Arizona series that may be observed in isolated location in New Mexico.
S1	<b>BRISTLECONE PINE SERIES</b> A series level of vegetation found in isolated areas at higher elevations adjacent to talus slopes or deeply fractured rock which are not delineated because of mapping scale.
S2	<b>ENGELMANN SPRUCE SERIES</b> Not delineated because of mapping scale. Corkbark and alpine fir are associated species and may provide associations or communities within the series.
S2a	<b>ENGELMANN SPRUCE-TRUE FIR ASSOCIATION</b> Located primarily in northern New Mexico. Dominant vegetation is Englemann spruce, corkbark and alpine fir with little understory vegetation.
M1	<b>DOUGLAS FIR SERIES</b> Montane region where Douglas fir dominates. It may have associated species of spruce, ponderosa pine, limberpine and aspen. Little woody understory vegetation is present.
M1a	<b>DOUGLAS FIR-ENGELMANN SPRUCE ASSOCIATION</b> Douglas fir dominates the association with Engelmann spruce as a secondary species.

M1b	<p><b>DOUGLAS FIR-PONDEROSA PINE ASSOCIATION</b> Douglas fir is a definite dominate over ponderosa pine. Generally occurs with a nearly closed canopy. Care should be taken to observe differences from M2a as successional patterns of this association are very similar to potential in M2a.</p>
M2	<p><b>PONDEROSA PINE SERIES</b> Located below the Douglas fir series in elevation. Ponderosa pine dominates the series. Because of wider species adaptability more associations are present in this series than in M1. Associations with Douglas fir, pinyon-juniper and alligator juniper are recognized.</p>
M2a	<p><b>PONDEROSA PINE-DOUGLAS FIR ASSOCIATION</b> A more open canopy than M1b with ponderosa a definite potential dominant and Douglas fir a sub-dominant. May include snowberry, oceanspray, currants and kinnikinnick. Limited grass production exists, but includes Arizona and Thurber's fescue and mountain brome.</p>
M2b	<p><b>PONDEROSA PINE ASSOCIATION</b> Nearly pure stands of ponderosa pine with small amounts of Douglas fir and pinyon pine. Often the stand is a near savannah with an understory of mountain mahogany, serviceberry and bitterbrush. Limited grass production is present but represents a wide variety of species as observed in MG1b.</p>
M2e	<p><b>PONDEROSA PINE-GAMBEL OAK ASSOCIATION</b> Ponderosa pine clearly dominates with gambel oak subordinate. Usually an open canopy with reasonable woody understory of species common to the Mountain Shrub Region. Low-growing oaks, skunkbush and mountain mahogany are the most prevalent understory woody plants.</p>

M2f	<p><b>PONDEROSA PINE-ROCKY MOUNTAIN JUNIPER ASSOCIATION</b> Ponderosa pine dominates the area with rocky mountain juniper as a subordinate. Usually the association is found with a moderately open canopy. Canopy may close appreciably if gambel oak is found as an associated species. Other understory woody plants may include skunkbush and mountain mahogany. Blue grama, spike muhly and needlegrass may be present as herbaceous species.</p>
M2g	<p><b>PONDEROSA PINE-ALLIGATOR JUNIPER ASSOCIATION</b> Very similar to M2f except that alligator juniper replaces rocky mountain juniper as a subordinate.</p>
A	<p><b>ALPINE REGION</b> A small area generally not delineated because of mapping scale and limited amount present in the state. Currently a Lichen series and Meadow series are recognized to differentiate between dry and wet situations, respectively. Willow-sedge, Sedge-Tufted hairgrass and sedge-grass-forb associations are recognized in the meadow series. Lack of species taxonomy prohibits further species listing.</p>
A2b	<p><b>SEDGE-TUFTED HAIRGRASS ASSOCIATION</b> Mapably located in Mt. Wheeler area. A complex of sedges in conjunction with tufted hairgrass dominate the area. Some forbs including pussytoes and iris are present.</p>