

**Soil Based Key
to
Major Land Resource
Area (MLRA) 38,
Mogollon Transition,
Ecological Sites
Found in Arizona**

**Prepared by:
USDA – NRCS
Arizona State Office**

Major Land Resource Area 38, Mogollon Transition


Major Land Resource Area (MLRA) 38, Mogollon Transition, is found in central Arizona and southwestern New Mexico. It occurs in the transitional area between the low deserts of southern Arizona and New Mexico and the high deserts found on the Colorado Plateau.

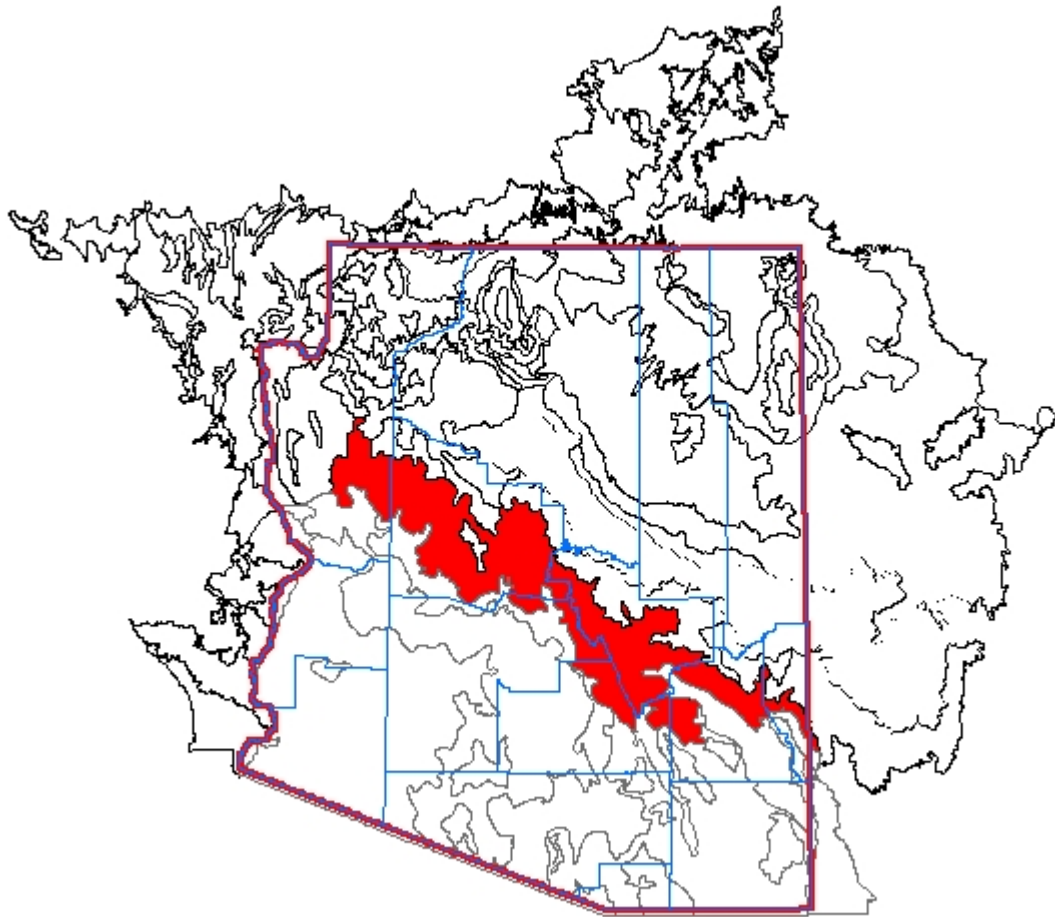
The climate of the area is warm (thermic) and dry (ustic aridic) to wet (typic ustic). Elevations range from below 3000 feet to 7000 feet.

In Arizona the MLRA is separated into three Common Resource Areas (CRA):

38.AZ1 – Lower Mogollon Transition	Page 83
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Common Resource Area 38.AZ1 – Lower Mogollon Transition

<p>CRA 38.AZ1 – Lower Mogollon Transition</p>	
<p>Elevations range from 3000 to 4500 feet and precipitation averages 12 to 16 inches per year. Vegetation includes canotia, one-seed juniper, mesquite, catclaw acacia, jojoba, turbinella oak, ratany, shrubby buckwheat, algerita, skunkbush, tobosa, vine mesquite, bottlebrush squirreltail, grama species, curly mesquite, desert needlegrass and New Mexico feathergrass. The soil temperature regime is thermic and the soil moisture regime is ustic aridic. This unit occurs within the Transition Zone Physiographic Province and is characterized by canyons and structural troughs or valleys. Igneous, metamorphic and sedimentary rock classes occur on rough mountainous terrain in association with less extensive sediment filled valleys exhibiting little integrated drainage.</p>	



**Common Resource Area 38.AZ1, Lower Mogollon Transition,
Ecological Site List**

Site ID Number	Site Name
R038XA101AZ	Breaks12-16" p.z.
R038XA102AZ	Clayey Upland12-16" p.z.
R038XA103AZ	Clay Loam Upland12-16" p.z.
R038XA104AZ	Granitic Hills12-16" p.z.
R038XA105AZ	Limestone Hills12-16" p.z.
R038XA106AZ	Limy Upland12-16" p.z.
R038XA107AZ	Loamy Bottom12-16" p.z.
R038XA108AZ	Clayey Slopes12-16" p.z.
R038XA109AZ	Loamy Upland12-16" p.z.
R038XA110AZ	Meadow12-16" p.z.
R038XA111AZ	Sandy Bottom12-16" p.z.
R038XA112AZ	Sandy Loam12-16" p.z.Deep
R038XA113AZ	Sandy Loam Upland12-16" p.z.
R038XA114AZ	Schist Hills12-16" p.z.
R038XA115AZ	Volcanic Upland12-16" p.z.
R038XA116AZ	Shallow Upland12-16" p.z.
R038XA117AZ	Volcanic Hills12-16" p.z.Clayey
R038XA118AZ	Basalt / Sandstone Hills12-16" p.z.
R038XA119AZ	Granitic Upland12-16" p.z.
R038XA120AZ	Limestone Slopes12-16" p.z.
R038XA121AZ	Schist Upland12-16" p.z.
F038XA122AZ	Juniperus osteosperma/Yucca baccata-Ephedra viridis/Bouteloua curtipendula-Pleuraphis jamesii
F038XA123AZ	Populus fremontii-Fraxinus velutina/Muhlenbergia rigens-Poa fendleriana
F038XA124AZ	Prosopis velutina/Atriplex canescens-Krascheninnikovia lanata/Pleuraphis mutica-Sporobolus airoides
R038XA125AZ	Sandy Wash12-16" p.z.
R038XA126AZ	Limy Slopes12-16" p.z.
R038XA127AZ	Sandstone Upland12-16" p.z.
R038XA128AZ	Limestone Upland12-16" p.z.
R038XA129AZ	Basalt Hills12-16" p.z.
R038XA130AZ	Sandy Loam Upland12-16" p.z.Fine, Gravelly
F038XA131AZ	Juniperus osteosperma/Quercus turbinella-Purshia stansburiana/Bouteloua gracilis
F038XA132AZ	Juniperus osteosperma-Pinus edulis/Ceanothus greggii-Purshia stansburiana/Poa fendleriana
R038XA133AZ	Volcanic/Metamorphic Hills12-16" p.z.

R038XA134AZ	Granitic/Schist Hills12-16" p.z.Paralithic
R038XA135AZ	Diabase Hills12-16" p.z.
R038XA136AZ	Tuff Hills12-16" p.z.


Key to Ecological Site found in Common Resource Area 38.AZ1, Lower Mogollon Transition

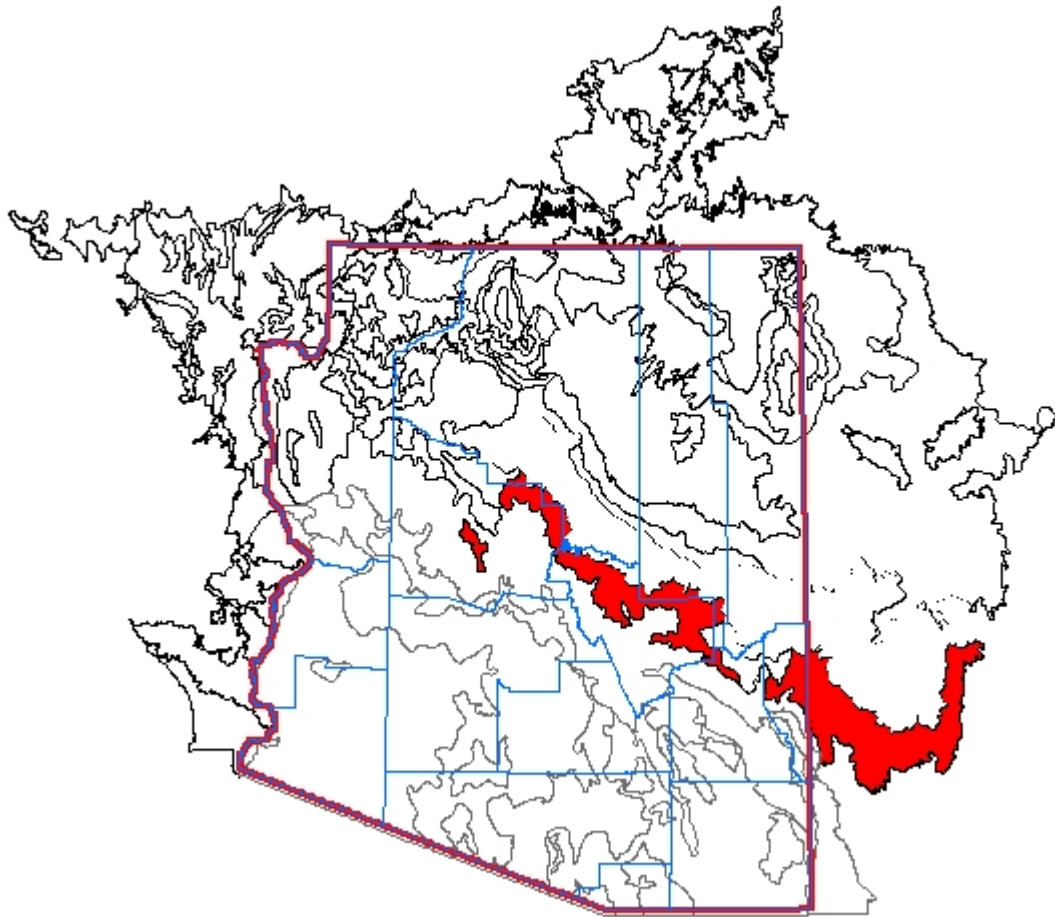
- I. Flooded (bottom position, flooded from the valley-side or over-bank)
 - A. Soils with a perennial high water-table (3-15 ft.)
 - 1. Soils sandy, gravelly, cobbly and with redox features - Sandy Bottom, POFR2, FRVE2*
 - 2. Soils loamy to clayey with redox features - Meadow*
 - B. Soils without a high water table (3-15 ft)
 - 1. Soils sandy - Sandy Bottom*
 - 2. Soils sandy loam to clay loam - Loamy Bottom*
 - 3. Soils clayey (vertic) - Clayey Bottom*
- II. Not Flooded (upland position, receives only precipitation)
 - A. Slopes less than 15%
 - 1. Soils calcareous throughout
 - a. Soils shallow (less than 20 inches deep)
 - 1. Soils with a lime cemented hardpan – Limy Upland ([R038XA106AZ](#))
 - 2. Soils underlain by limy schist, diorite or diabase – Shallow Upland, limy*
 - a. Soils moderately deep to deep (30 to 60 inches)
 - 1. Soils with an argillic horizon - Loamy Upland, limy*
 - 2. Soils non calcareous in upper 10 inches
 - a. Soils shallow (less than 20 inches deep)
 - 1. Soils underlain by granite, schist and rhyolite – Granitic Upland*
 - 2. Soils underlain by basalt, andesite and related rocks
 - a. Soils clay loam to clay - Volcanic Upland ([R038XA115AZ](#))
 - b. Soils moderately deep to deep (30 to 60 inches)
 - 1. Soils without an argillic horizon
 - a. Soils loamy fine sand to sandy loam – Sandy Loam, Deep*
 - 2. Soils with an argillic horizon
 - a. Soils with sandy loam surface 4 in. or thicker – Sandy Loam Upland*
 - b. Soils with sandy loam surface less than 4 in. – Loamy Upland ([R038XA109AZ](#))
 - c. Soils with a loam surface - Loamy Upland ([R038XA109AZ](#))

- d. Soils with a surface (not vertic) –
Clay Loam Upland ([R038XA103AZ](#))
 - e. Soils with a clayey surface (vertic)
 - 1. Soils not skeletal (< 35% coarse fragments) –
Clayey Upland ([R038XA102AZ](#))
 - 2. Soils skeletal (> 35% coarse fragments) –
Clayey Upland, Stony*
- B. Slopes greater than 15%
 - 1. Soils very shallow (less than 10 inches deep)
 - a. Soils over welded volcanic tuff and ash –
Tuff Hills ([R038XA136AZ](#))
 - 2. Soils shallow (less than 20 inches deep)
 - a. Soils calcareous throughout
 - 1. Soils over limestone, marl and related rocks –
Limestone Hills ([R038XA105AZ](#))
 - 2. Soils over diabase and related rocks –
Diabase Hills ([R038XA135AZ](#))
 - 3. Soils over sandstone and related rocks - Sandstone Hills*
 - 4. Soils over layered basalt, sandstone & volcanic ash -
Basalt /Sandstone Hills ([R038XA118AZ](#))
 - b. Soils non calcareous in upper 10 inches
 - 1. Soils over granite, gneiss, rhyolite (acid igneous) -
Granitic Hills ([R038XA104AZ](#))
 - 2. Soils over schist bedrock - Schist Hills ([R038XA114AZ](#))
 - 3. Soils over weathered volcanic and metamorphic
bedrock –
Volcanic/Metamorphic Hills ([R038XA133AZ](#))
 - 4. Soils over hard basalt, andesite, tuff (basic igneous)
 - a. Soils loamy - Volcanic Hills*
 - b. Soils clayey (smectitic) –
Volcanic Hills, clayey ([R038XA117AZ](#))
 - 5. Soils over quartzite parent material - Quartzite Hills*
 - 3. Soils moderately deep and deep (30 to 60 inches)
 - a. Soils calcareous throughout
 - 1. Soils dark colored in the surface 5 inches (10YR,3/2) -
Limy Slopes ([R038XA126AZ](#))
 - b. Soils non calcareous in the upper 10 inches
 - 1. Soils sandy loam to clay loam - Loamy Slopes*
 - a. Soils clayey- Clayey Slopes ([R038XA108AZ](#))

* Site descriptions for these ecological sites are not completed

Common Resource Area 38.AZ2, Middle Mogollon Transition

CRA 38.AZ2 Middle Mogollon Transition	
<p>Elevations range from 4000 to 5500 feet and precipitation averages 16 to 20 inches per year. Vegetation includes turbinella oak, Wright silktassel, hollyleaf buckthorn, desert buckbrush, one-seed juniper, alligator juniper, pinyon, algerita, sugar sumac, prairie junegrass, blue grama, curly mesquite, bottlebrush squirreltail, muttongrass, cane beardgrass, plains lovegrass and bullgrass. The soil temperature regime ranges from thermic to mesic and the soil moisture regime is aridic ustic. This unit occurs within the Transition Zone Physiographic Province and is characterized by canyons and structural troughs or valleys. Igneous, metamorphic and sedimentary rock classes occur on rough mountainous terrain in association with less extensive sediment filled valleys exhibiting little integrated drainage.</p>	



**Common Resource Area 38.AZ2, Middle Mogollon Transition,
Ecological Site List**

Site ID Number	Site Name
R038XB201AZ	Breaks16-20" p.z.
R038XB202AZ	Clayey Upland16-20" p.z.
R038XB203AZ	Clay Loam Upland16-20" p.z.
R038XB204AZ	Granitic Hills16-20" p.z.
R038XB205AZ	Limestone Hills16-20" p.z.
R038XB206AZ	Limy Upland16-20" p.z.
R038XB207AZ	Loamy Bottom16-20" p.z.
R038XB208AZ	Loamy Slopes16-20" p.z.
R038XB209AZ	Loamy Upland16-20" p.z.
R038XB210AZ	Meadow16-20" p.z.
R038XB211AZ	Sandy Bottom16-20" p.z.
R038XB212AZ	Schist Hills16-20" p.z.
R038XB213AZ	Volcanic Upland16-20" p.z.
R038XB214AZ	Shallow Upland16-20" p.z.
R038XB215AZ	Volcanic Hills16-20" p.z.Clayey
R038XB216AZ	Clayey Upland16-20" p.z.Stony
F038XB217AZ	Pinus edulis-Juniperus osteosperma/Bouteloua curtipendula- Bouteloua gracilis
R038XB218AZ	Sandstone Hills16-20" p.z.
R038XB219AZ	Sandy Upland16-20" p.z.
R038XB220AZ	Basalt Hills16-20" p.z.
R038XB221AZ	Sandstone/Mudstone Hills16-20" p.z.
R038XB222AZ	Volcanic Hills16-20" p.z.
R038XB223AZ	Quartzite Hills16-20" p.z.
R038XB225AZ	Clayey Swale16-20" p.z.
R038XB226AZ	Loamy Swale16-20" p.z.
F038XB227AZ	Pinus monophylla-Juniperus deppeana/Bouteloua curtipendula
F038XB228AZ	Platanus wrightii-Populus fremontii/Muhlenbergia rigens
F038XB229AZ	Quercus/Fallugia paradoxa-Vitis arizonica/Muhlenbergia rigens-Elymus arizonicus
R038XB230AZ	Diabase Hills16-20" p.z.
R038XB231AZ	Clayey Slopes16-20" p.z.

Key to Ecological Site found in Common Resource Area 38.AZ2, Middle Mogollon Transition

- I. Flooded (bottom position, flooded from the valley-side or over-bank)
 - A. Soils with a perennial high water-table (3-15 ft.)
 - 1. Soils sandy, gravelly, cobbly and with redox features – Sandy Bottom, Subirrigated, PLWR2, POFR2*
 - 2. Soils loamy to clayey with redox features - Meadow*
 - B. Soils without a high water table (3-15 ft)
 - 1. Soils sandy - Sandy Bottom, QUERC*
 - 2. Soils sandy loam to clay loam - Loamy Swale ([R038XB226AZ](#))
 - 3. Soils clayey (vertic) - Clayey Swale ([R038XB225AZ](#))
- II. Not Flooded (upland position, receives only precipitation)
 - A. Slopes less than 15%
 - 1. Soils calcareous throughout
 - a. Soils shallow (less than 20 inches deep)
 - 1. Soils with a lime cemented hardpan - Limy Upland*
 - 2. Soils underlain by limy schist, diorite or diabase - Shallow Upland, Limy **
 - a. Soils moderately deep to deep (30 to 60 inches)
 - 1. Soils with an argillic horizon - Loamy Upland, Limy **
 - 2. Soils non calcareous in upper 10 inches
 - a. Soils shallow (less than 20 inches deep)
 - 1. Soils underlain by granite, schist and rhyolite – Granitic Upland**
 - 2. Soils underlain by basalt, andesite and related rocks
 - a. Soils clay loam to clay – Clayey Upland, Shallow**
 - b. Soils moderately deep to deep (30 to 60 inches)
 - 1. Soils without an argillic horizon
 - a. Soils loamy fine sand to sandy loam - Sandy loam, Deep**
 - 2. Soils with an argillic horizon
 - a. Soils with sandy loam surface 4 in. or thicker – Sandy Loam Upland**
 - b. Soils with sandy loam surface less than 4 in. Loamy Upland ([R038XB209AZ](#))
 - c. Soils with a loam surface – Loamy Upland ([R038XB209AZ](#))
 - d. Soils with clay loam surface (not vertic) - Clay Loam Upland ([R038XB203AZ](#))

- e. Soils with a clayey surface (vertic)
 - 1. Soils not skeletal (< 35% coarse frags) - Clayey Upland ([R038XB202AZ](#))
 - 2. Soils skeletal (> 35% coarse frags) – Clayey Upland, Stony*


B. Slopes greater than 15%

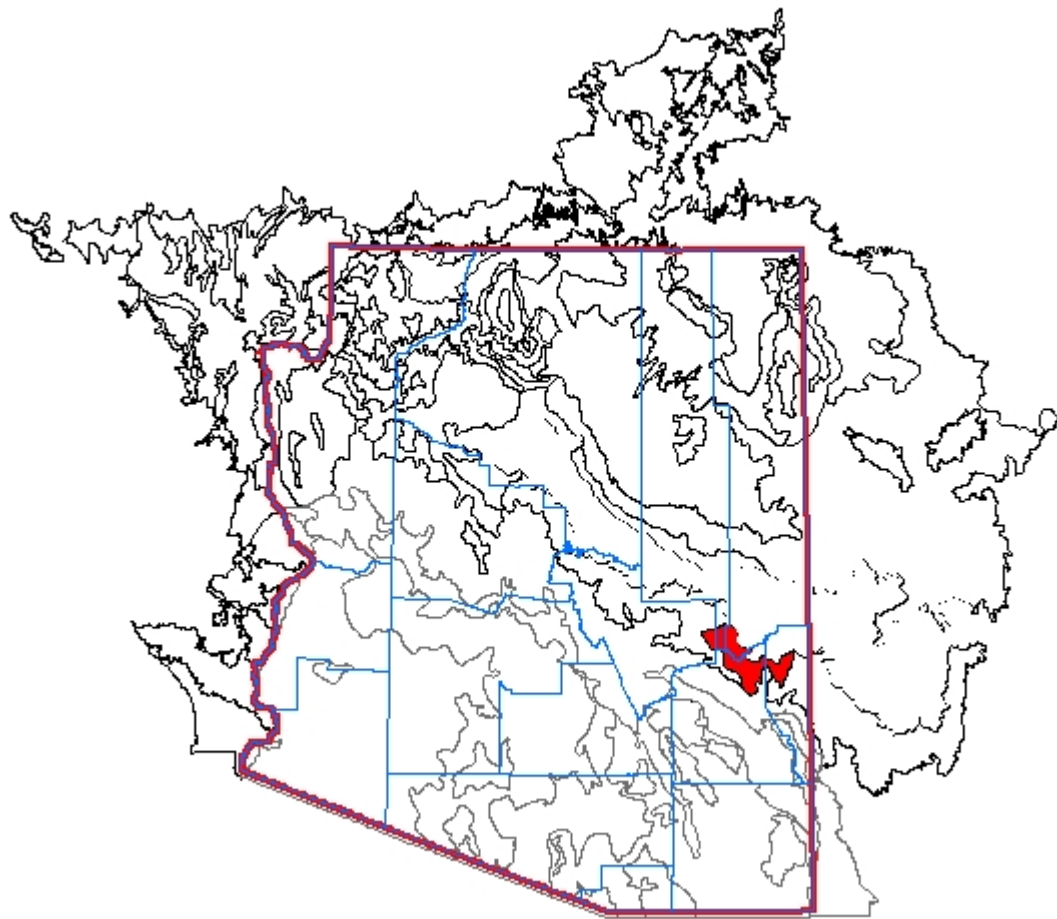
- 1. Soils shallow (less than 20 inches deep)
 - a. Soils calcareous throughout
 - 1. Soils over limestone, marl and related rocks – Limestone Hills*
 - 2. Soils over diabase and related rocks – Diabase Hills ([R038XB230AZ](#))
 - 3. Soils over sandstone and related rocks - Sandstone Hills*
 - b. Soils non calcareous in upper 10 inches
 - 1. Soils over granite, schist, gneiss, rhyolite (acid igneous) - Granitic Hills ([R038XB204AZ](#))
 - 2. Soils over basalt, andesite, welded tuff (basic igneous)
 - a. Soils loamy - Volcanic Hills*
 - b. Soils clayey (smectitic) – Volcanic Hills, Clayey ([R038XB215AZ](#))
 - 3. Soils over quartzite parent material – Quartzite Hills*
- 2. Soils moderately deep and deep (30 to 60 inches)
 - a. Soils calcareous throughout
 - 1. Soils dark colored in the surface 5 inches (10YR,3/2) - Limy Slopes*
 - b. Soils non calcareous in the upper 10 inches
 - 1. Soils sandy loam to clay loam - Loamy Slopes*
 - 2. Soils clayey - Clayey Slopes*

*Site descriptions for these ecological sites are not completed.

** These sites may occur, but have not yet been confirmed.

Common Resource Area 38.AZ3, Upper Mogollon Transition

<p>CRA 38.AZ3 – Upper Mogollon Transition</p> <p>Elevations range from 5100-7000 feet and precipitation averages 20 to 27 inches per year. Vegetation includes Gambel oak, Arizona white oak, Emory oak, pinyon, alligator juniper, one seed juniper, Arizona cypress, ponderosa pine, shrubby buckwheat, sacahuista, skunkbush sumac, Wright siltassel, blue grama, sideoats grama, muttongrass, western wheatgrass, and bottlebrush squirreltail. The soil temperature regime is mesic and the soil moisture regime is typic ustic. This unit occurs within the Transition Zone Physiographic Province and is characterized by canyons and structural troughs or valleys. Igneous, metamorphic and sedimentary rock classes occur on rough mountainous terrain in association with less extensive sediment filled valleys exhibiting little integrated drainage.</p>	
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**Common Resource Area 38.AZ3, Upper Mogollon Transition,
Ecological Site List**

Site ID Number	
R038XC301AZ	Mountains20-24" p.z.
R038XC302AZ	Clayey Upland20-24" p.z.
R038XC303AZ	Clay Loam Upland 18-22" p.z.
R038XC304AZ	Clayey Slopes20-24" p.z.
R038XC305AZ	Diabase Hills20-24" p.z.
R038XC306AZ	Granitic Hills20-24" p.z.
R038XC307AZ	Loamy Upland 18-22" p.z.
R038XC308AZ	Loamy Swale20-24" p.z.
R038XC309AZ	Volcanic Upland 20-24" p.z.Clayey
F038XC310AZ	Pinus edulis-Pinus monophylla var. fallax/Cercocarpus-Ceanothus/Hesperostipa-Muhlenbergia
F038XC311AZ	Pinus edulis-Pinus monophylla var. fallax/Bouteloua-Hesperostipa
F038XC312AZ	Platanus wrightii-Populus angustifolia/Rhus/Elymus-Juncus
F038XC313AZ	Pinus ponderosa-Quercus/Muhlenbergia rigens-Elymus
F038XC314AZ	Pinus ponderosa-Quercus gambelii/Muhlenbergia emersleyi-Elymus elymoides
F038XC315AZ	Pinus ponderosa-Quercus grisea/Bouteloua curtipendula-Poa fendleriana
R038XC316AZ	Loamy Slopes 18-22"
R038XC317AZ	Volcanic Hills, Clayey 18-22"
R038XC318AZ	Limestone Hills18-22"
R038XC301AZ	Mountains20-24" p.z.
R038XC302AZ	Clayey Upland20-24" p.z.
R038XC303AZ	Clay Loam Upland 18-22" p.z.
R038XC304AZ	Clayey Slopes20-24" p.z.
R038XC305AZ	Diabase Hills20-24" p.z.
R038XC306AZ	Granitic Hills20-24" p.z.
R038XC307AZ	Loamy Upland 18-22" p.z.
R038XC308AZ	Loamy Swale20-24" p.z.
R038XC309AZ	Volcanic Upland 20-24" p.z.Clayey
F038XC310AZ	Pinus edulis-Pinus monophylla var. fallax/Cercocarpus-Ceanothus/Hesperostipa-Muhlenbergia
F038XC311AZ	Pinus edulis-Pinus monophylla var. fallax/Bouteloua-Hesperostipa
F038XC312AZ	Platanus wrightii-Populus angustifolia/Rhus/Elymus-Juncus
F038XC313AZ	Pinus ponderosa-Quercus/Muhlenbergia rigens-Elymus

F038XC314AZ	Pinus ponderosa-Quercus gambelii/Muhlenbergia emersleyi-Elymus elymoides
F038XC315AZ	Pinus ponderosa-Quercus grisea/Bouteloua curtipendula-Poa fendleriana
R038XC316AZ	Loamy Slopes 18-22"
R038XC317AZ	Volcanic Hills, Clayey 18-22"
R038XC318AZ	Limestone Hills 18-22"

**Key to Ecological Site found in Common Resource Area 38.AZ3,
Upper Mogollon Transition**

No ecological site key is available at this time.

