

Decision-tree for MLRA 41.2, SA-2, Ecological Sites in Southwest New Mexico		Site Description	ESD Name	ESD Number
I. Flooded (low lying landscape position, evidence of water flow and/or high production, narrow inset fans, bottomlands, river flood plains or meadows; Flooded soils group)				
		i. These soils are deep and clayey textured. They have thin (1-2 inch) surface horizons that range from clayloam to silty clay in texture. They exhibit strong vertic soil properties. Surface soils (10 inches) are usually non-calcareous, but some soils have calcic horizons below the argillic horizon. Aspect of this site is grassland with a scattering of desert shrubs and cacti. <i>Pleuraphis mutica</i> is the key indicator species of this site.	Clayey Swale 8-12" p.z.	R041XB202AZ
		ii. These are young soils on loamy to clayey alluvium of mixed origin. They are deep and moderately dark colored. Aspect of this site is dominated by western honey mesquite and giant sacaton and other grasses. <i>Prosopis glandulosa/Sporeobolus wrightii</i> are key indicator species of this site.	Loamy Swales 8-12" p.z.	R041XB209AZ
		iii. These soils are of various depth and textures. They have all formed in strongly saline and/or alkaline, basin floor alluvium. Aspect on this site is dominated by a warm perennial grass; alkali sacaton. <i>Atriplex obovata/Sporeobolus airoides</i> are key indicator species of this site.	Saline Bottom 8-12" p.z.	R041XB211AZ
II. Not flooded (hills, convex portions of piedmont slopes, broad basin floors)				
	A. Slopes generally < 15%, no exposed rock, piedmont and basin floor landforms.			
		1. Soil surface is loamy sand to medium sandy loam. Subsoil is nongravelly and not finer than clay loam. (Sandy soils group)		
		i. These are deep, well drained, saline and sodic soils. They are sandy to loamy with a surface cap of loamy fine sand to sandy loam. Aspect of this site is dominated by salt tolerant shrubs. <i>Atriplex polycarpa</i> is the key indicator species of this site.	Saline Upland 8-12" p.z.	R041XB212AZ
		ii. Soils are deep, somewhat excessively drained. They are loamy sand throughout and these soils may or may not be slightly calcareous. Aspect of this site is made up predominantly of warm season grasses with a mixture of forb and shrub species. <i>Atriplex canescens/Yucca elata/Sporeobolus contractus/Sporeobolus flexuosus</i> are the key indicator species of this site.	Sandy Upland 8-12" p.z.	R041XB214AZ
		2. Soil surface is fine sandy loam to clay loam, subsoil is non gravelly loam to clay (Loamy soils group)		
		i. These soils are well drained, variable in texture, stratified and high in soluble gypsum (5-30% by volume). They are moderately deep to deep and underlain by gypsum deposits in places. Coarse fragments in the soil profile are usually large gypsum crystals. These soils have formed in relict lacustrine deposits and may be slightly saline and sodic as well. Aspect of this site is dominated by creosote bush with lesser amounts of other shrubs like whitethorn acacia. <i>Larrea tridentata/Acacia constricta</i> are the key indicator species of this site.	Gypsum Upland 8-12" p.z.	R041XB219AZ
		3. Soil surface gravelly, soil profile gravelly to skeletal, does not have carbonates. (Gravelly soils group) If calcareous go to 4.		

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			i. These soils are moderately deep to deep and clayey textured. They have thin (1-2 inch) surface horizons that range from clayloam to silty clay in texture. They exhibit strong vertic soil properties. They can have well developed covers of surface gravels and cobbles. Surface soils (10 inches) are non-calcareous, but some soils have calcic horizons below the argillic horizon. Aspect of this site is grassland with a scattering of desert shrubs and cacti. <i>Pleuraphis mutica</i> is the key indicator species for this site.	Clayey Upland 8-12" p.z.	R041XB203AZ
			ii. These soils are moderately deep to deep and clayey textured. They have thin (1-2 inch) surface horizons that range from sandyloam to loam in texture. They lack vertic soil properties. They usually have well developed covers of surface gravels and cobbles. Surface soils (10 inches) are non-calcareous, but some soils have calcic horizons below the argillic horizon. Aspect is a mixture of perennial grasses and desert shrubs and cacti.. <i>Opuntia phaeacantha/Opuntia kunzei/Pleuraphis mutica/Aristida</i> are key indicator plant species.	Clay Loam Upland 8-12" p.z.	R041XB204AZ
			iii. These soils are moderately deep to deep and loamy textured. They have thin (2-4 inch) surface horizons that range from sandyloam to loam in texture, over an argillic horizon. Surface soils (10 inches) are non-calcareous, but some soils have calcic horizons below the argillic horizon. Some soil series have a lime or silica cemented pan at moderate depths. Aspect is a mixture of perennial grasses and desert shrubs and cacti. <i>Prosopis glandulosa /Ephedra fasciculata/Pleuraphis mutica/Aristida spp.</i> are key indicator plant species.	Loamy Upland 8-12" p.z.	R041XB210AZ
			iv. These soils are deep and loamy textured. They have thick (4-16 inch) surface horizons that are sandyloam in texture, over an argillic horizon. Surface soils (10 inches) are non-calcareous, but some soils have calcic horizons below the argillic horizon. Aspect is a mixture of perennial grasses and desert shrubs and cacti. <i>Prosopis glandulosa/Yucca elata/Ephedra fasciculata /Muhlenbergia porteri/Bouteloua eriopoda</i> are key indicator plant species.	Sandy Loam Upland 8-12" p.z.	R041XB215AZ
		4. Soils are calcareous.			
			i. These are deep, loamy soils; calcareous to the surface. Aspect is a shrub-land dominated by creosotebush. <i>Larrea tridentata/Muhlenbergia porteri</i> are key indicator plant species.	Limy Fan 8-12" p.z.	R041XB206AZ
			ii. These soils are well drained, coarse textured, stratified and high in calcium carbonates. They are shallow and underlain by lime and/or silica cemented pans or very gravelly, lime cemented, conglomerate. They have formed in old fan deposits. Aspect is dominated by creosote bush. <i>Larrea tridentata/Muhlenbergia porteri/Aristida</i> spp. are key indicator plant species.	Limy Upland 8-12" p.z.	R041XB208AZ
	B. Slopes generally > 15%, often revealing exposed rock, pediments, hills, mountains, lava flows.				
		1. Soil depth <50 cm			
			i. Soils are shallow and very shallow; developed in place on granite and related rocks. They are very gravelly and cobbly both in the profile and on the surface. They have moderately rapid infiltration rates with low water-holding capacity. Aspect is grassland with small trees and shrubs. <i>Pleuraphis mutica</i> is the key indicator plant species.	Granitic Hills 8-12" p.z.	R041XB205AZ
			ii. These soils range from very gravelly sandy loams to loams. The soils are very shallow to shallow over limestone bedrock and very calcareous. Areas of limestone rock outcrop occur as thick (2-20 feet thick) ledges on steep slopes. Aspect is dominated by desert trees, especially canotia, and a great variety of desert shrubs and half shrubs. <i>Canotia holacantha/Parthenium incanum/Larrea tridentata/Aristida/Tridens muticus</i> key indicator plant species.	Limestone Hills 8-12" p.z.	R041XB220AZ

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			iii. These are shallow, calcareous, loamy soils on basic igneous bedrock like basalt, andesite and related tuffs, agglomerates and welded ash. Bedrock is hard and un-weathered. Soils are very gravelly and cobbly in the profile. They have well developed covers of gravels and cobbles. Aspect is a mixture of desert trees, shrubs, succulents and perennial and annual forbs and grasses. <i>Larrea tridentata</i> / <i>Acacia/Bouteloua eriopoda</i> / <i>Muhlenbergia porteri</i> are key indicator plant species.	Basalt Hills 8-12" p.z.	R041XB223AZ
		2. Soil depth >50 cm			
			i. These soils are well drained, variable in texture, stratified and saline and/or sodic. They have formed in old lacustrine deposits and may have strata of gypsum as well. Gypsum can be 5 to 20% by volume in the soil profile. Aspect is dominated by shrubs like creosote bush, shadscale, rayless goldenhead, white bursage, desert saltbush, fourwing saltbush and whitethorn acacia. <i>Larrea tridentata</i> / <i>Atriplex confertifolia</i> / <i>Pleuraphis mutica</i> / <i>Aristida</i> spp. are the key indicator plant species.	Breaks 8-12" p.z.	R041XB201AZ
			ii. These soils are well drained, coarse textured, stratified and high in calcium carbonates. They are moderately deep to deep and underlain in places by very gravelly, lime cemented, conglomerate. They have formed in old fan deposits. Aspect is dominated by creosote bush and whitethorn acacia. <i>Larrea tridentata</i> / <i>Acacia constricta</i> / <i>Muhlenbergia porteri</i> / <i>Aristida</i> spp. are key indicator plant species.	Limy Slopes 8-12" p.z.	R041XB207AZ
			iii. These soils are moderately deep to deep and clayey textured. They are gravelly to very gravelly in the soil profile. They have thin (1-2 inch) surface horizons that range from sandyloam to loam in texture. They lack vertic soil properties. They usually have well developed covers of surface gravels and cobbles. Surface soils (10 inches) are non-calcareous, but some soils have calcic horizons below the argillic horizon. Aspect is a mixture of perennial grasses and desert shrubs and cacti. <i>Opuntia phaeacantha</i> / <i>Pleuraphis mutica</i> / <i>Hilaria belangeri</i> are key indicator plant species.	Clayey Slopes 8-12" p.z.	R041XB216AZ
			iv. These are deep soils that are variable in texture, ranging from sandy loam to clayloam. The soils are calcareous and have soluble gypsum (1 to 10%) in the profile. Areas of sandstone rock outcrop occurs as thin (1-2 feet thick) ledges on steep slopes. Aspect is dominated by desert trees, especially canotia, and shrubs. <i>Canotia holacantha</i> / <i>Acamptopappus sphaerocephalus</i> / <i>Tridens muticus</i> / <i>Aristida</i> spp. are key indicator plant species.	Sandstone / Mudstone Hills 8-12" p.z.	R041XB225AZ
			v. These soils are well drained, variable in texture, stratified and high in soluble gypsum (5-30% by volume). They are moderately deep to deep and underlain in places by gypsum. Coarse fragments in the soil profile are usually large gypsum crystals. These soils have formed in relict lacustrine deposits. Aspect is dominated by creosote bush and whitethorn acacia. <i>Larrea tridentata</i> / <i>Acacia neovernicosa</i> / <i>Pleuraphis mutica</i> / <i>Aristida</i> spp. are key indicator plant species.	Gypsum Slopes 8-12" p.z.	R041XB231AZ