

Major Land Resource Area 040X Sonoran Basin and Range

Accessed: 06/22/2026

Ecological site group keys

MLRA 40

I. Additional water

A. Perennial water ... 040XESG09 – Riparian

B. Ephemeral water

1 Subsurface EC >4 ... 040XESG10 – Saline Bottoms

2 Subsurface EC <4

i. Sand >50% & Clay <25% for surface and subsurface ... 040XESG13 – Sandy Bottoms

ii. Sand <50% or Clay >25% for surface and subsurface ... 040XESG01 – Bottoms

II. Uplands

A. >75% bedrock outcrop ... 040XESG08 – Outcrops

B. <75% bedrock outcrop

1 Surface SAR >8, or Subsurface EC >8, or Surface EC >4 ... 040XESG11 – Saline Hills

2 Surface SAR <8, or Subsurface EC <8, or Surface EC <4

i. Gypsum >5% surface or >10% subsurface ... 040XESG06 – Gypsum

ii. Gypsum <5% surface and <10% subsurface

a. EC >1.5 surface or >2 subsurface ... 040XESG12 – Saline Uplands

b. EC <1.5 surface and <2 subsurface

1) Slope >35% & >40% surface rock ... 040XESG02 – Breaks

2) Slope <35% or <40% surface rock

a) Depth <30cm ... 040XESG16 – Very Shallow

b) Depth: 30-55cm ... 040XESG15 – Shallow

c) Depth >55cm

(1) Rock >30% surface or >30% subsurface ... 040XESG04 – Deep Rocky

(2) Rock <30% surface and <30% subsurface

(a) Clay >30% surface or >35% subsurface ... 040XESG03 – Clay Uplands

(b) Clay <30% surface and <35% subsurface

(1) Sand >75% or texture is Loamy Sand or sandier in surface & subsurface ... 040XESG14 –
Sandy Uplands

(2) Sand <75% or texture is Loamy Fine Sand or finer in surface & subsurface

(a) Clay <20% or texture is Sandy Loam or sandier in surface ... 040XESG07 –

Loamy Uplands

(b) Clay >20% or texture is Fine Sandy Loam or finer in surface ... 040XESG05 – Finer

Uplands

National Park Service

I. Additional water

A. Perennial water - 041XESG09 Riparian

B. Ephemeral water

1 Subsurface EC >4 ... 040XESG10 – Saline Bottoms

2 Subsurface EC <4

i. [Criteria]

a. Sand >50% & clay <25% for surface and subsurface ... 040XESG13 – Sandy Bottoms

b. Sand <50% or clay >25% for surface and subsurface ... 040XESG01 – Bottoms

II. Uplands

A. Surface SAR >8 ... 040XESG57 – Desert Saline Hills

B. Surface SAR <8

1 Gypsum >5% surface or >10% subsurface

i. Elevation - <2500 ft - 083BESG54 Gypsum Desert

ii. Elevation - 2500-3700 ft - 042AESG33 Gypsum Thornscrub

iii. Elevation - 3700-4500 ft - 042BESG55 Gypsum Semi-Desert Grassland

2 Gypsum <5% surface and <10% subsurface

i. Subsurface EC >8 or surface EC >4 ... 040XESG57 – Desert Saline Hills

ii. Subsurface EC <8 and surface EC <4

a. EC >1.5 surface or >2 subsurface

1) Elevation <2500 ft ... 040XESG58 – Desert Saline Uplands

2) Elevation - 2500-3700 ft - 041XESG39 Thornscrub Saline Uplands

b. EC <1.5 surface and <2 subsurface

1) Slope >35% & >40% surface rock

a) Elevation <2500 ft ... 040XESG50 – Desert Breaks

b) Elevation - 2500-3700 ft ... 040XESG17 – Thornscrub Breaks

2) Slope <35% or <40% surface rock

a) Depth <30cm

(1) Elevation <2500 ft ... 040XESG61 – Very Shallow Desert

(2) Elevation - 2500-3700 ft ... 040XESG46 – Very Shallow Thornscrub

b) Depth: 30-55cm

- (1) Elevation - <2500 ft ... 040XESG60 – Shallow Desert
- (2) Elevation - 2500-3700 ft ... 040XESG42 – Shallow Thornscrub
- (3) Elevation - 3700-4500 ft - 042AESG43 Shallow Semi-Desert Grassland

c) Depth >55cm

(1) Rock >30% surface or >30% subsurface

- (a) Elevation - <2500 ft ... 040XESG52 – Deep Rocky Desert
- (b) Elevation - 2500-3700 ft ... 040XESG25 – Deep Rocky Thornscrub
- (c) Elevation - 3700-4500 ft - 042AESG26 Deep Rocky Semi-Desert Grassland

(2) Rock <30% surface or <30% subsurface

(a) Clay >30% surface or >35% subsurface

- (1) Elevation - <2500 ft ... 040XESG51 – Desert Clay Uplands
- (2) Elevation - 2500-3700 ft ... 040XESG21 – Thornscrub Clay Uplands
- (3) Elevation - 3700-4500 ft - 041XESG22 Semi-Desert Grassland Clay Uplands

(b) Clay <30% surface or <35% subsurface

(1) Sand >75% or texture is loamy sand or sandier in surface & subsurface

- (a) Elevation - <2500 ft ... 040XESG59 – Desert Sandy Uplands
- (b) Elevation - 2500-3700 ft - 042CESG40 Thornscrub Sandy Uplands
- (c) Elevation - 3700-4500 ft - 042BESG41 Semi-Desert Grassland Sandy Uplands

(2) Sand <75% or texture is sandy loam or finer in surface & subsurface

(a) Clay <20% or texture is sandy loam or sandier in surface

- (1) Elevation - <2500 ft ... 040XESG56 – Desert Loamy Uplands
- (2) Elevation - 2500-3700 ft ... 040XESG34 – Thornscrub Loamy Uplands
- (3) Elevation - 3700-4500 ft - 042BESG41 Semi-Desert Grassland Sandy Uplands

(b) Clay >20% or texture is finer than sandy loam in surface

- (1) Elevation - <2500 ft ... 040XESG53 – Desert Finer Uplands
- (2) Elevation - 2500-3700 ft - 042AESG29 Thornscrub Finer Uplands
- (3) Elevation - 3700-4500 ft - 041XESG30 Semi-Desert Grassland Finer Uplands