

Major Land Resource Area 040X

Sonoran Basin and Range

Accessed: 05/11/2025

Ecological site keys

MLRA 40-2 Ecological Sites

- I. Bottom position (plant community reliant upon run-on from valley-side or over-bank)
 - A Slightly to strongly saline soils ($EC_e \geq 4$ dS/m) ... R040XB227AZ – Saline Bottom 7"-10" p.z.
 - B Non-saline to very slightly saline soils ($EC_e < 4$ dS/m)
 - 1 Soils with water table available to plant community
 - i. Soils with visible reduction-oxidation features ... F040XB215AZ – Sandy Bottom, Woodland 7" - 10" p.z.
 - ii. Soils without reduction-oxidation features ... F040XB214AZ – Loamy Bottom, Woodland 7"-10" p.z.
 - 2 Soils without a water table available to the plant community
 - i. Narrow drainage, active channel $\leq 4'$ width ... R040XB229AZ – Sandy Loam Drainage 7"-10" p.z.
 - ii. Wide drainage, active flow path $>4'$ width
 - a. Soils sandy ... R040XB216AZ – Sandy Wash 7"-10" p.z.
 - b. Soils fine sandy loam to clay loam ... R040XB211AZ – Loamy Swale 7"-10" p.z.
 - c. Soils clayey ... R040XB203AZ – Clayey Swale 7"-10" p.z.
- II. Upland position (plant community reliant upon on-site precipitation, run-on $\leq$ run-off)
 - A. Slightly to strongly saline soils ($EC_e \geq 4$ dS/m)
 - 1 Soils sandy, eolian ... R040XB224AZ – Sandy Upland, Saline 7"-10" p.z.
 - 2 Soils sandy loam ... R040XB226AZ – Sandy Loam Upland, Saline 7"-10" p.z.
 - 3 Soils loam to clay loam ... R040XB225AZ – Loamy Upland, Saline 7"-10" p.z.
 - 4 Soils silty to clayey with salic or natric horizon ($<12"$) ... R040XB223AZ – Clayey Upland, Saline 7"-10" p.z.
 - B. Non-saline to very slightly saline soils ($EC_e < 4$ dS/m)
 - 1 Gently sloping terrain (slopes predominantly $\leq 15\%$)
 - i. Soil surface armored with interlocking rock fragments, 1-3" vesicular horizon ... R040XB230AZ – Desert Pavement 7"-10" p.z.
 - ii. Soil surface without interlocking rock fragments
 - a. Soils shallow ($\leq 20"$ depth)
 - 1) Soils calcareous ... R040XB210AZ – Limy Upland 7"-10" p.z.
 - 2) Soils non-calcareous ... R040XB220AZ – Granitic Upland 7"-10" p.z.
 - b. Soils moderately deep to deep ($>20"$ depth)
 - 1) Soils calcareous
 - a) Soils skeletal ... R040XB208AZ – Limy Upland, Deep 7"-10" p.z.
 - b) Soils not skeletal
 - (1) Soils loamy, not gypsic ... R040XB207AZ – Limy Fan 7"-10" p.z.
 - (2) Soils loamy and gypsic ... R040XB234AZ – Limy Fan, Gypsum 7" -10" p.z.
 - 2) Soils non-calcareous

a) Soils with an argillic (or clay cambic) horizon

- (1) Soils with sandy loam surface ≥ 4 " depth ... R040XB218AZ – Sandy Loam Upland 7"-10" p.z.
- (2) Soils with loam surface (any depth) OR sandy loam surface < 4 " depth ... R040XB213AZ – Loamy Upland 7"-10" p.z.
- (3) Soils with clay loam surface (not vertic) ... R040XB205AZ – Clay Loam Upland 7"-10" p.z.
- (4) Soils with clayey surface (vertic) ... R040XB204AZ – Clayey Upland 7"-10" p.z.

b) Soils without an argillic horizon

- (1) Soils sandy, eolian ... R040XB217AZ – Sandy Upland 7"-10" p.z.
- (2) Soils loamy fine sand to sandy loam, alluvial ... R040XB221AZ – Sandy Loam, Deep 7"-10" p.z.

2 Steeply sloping terrain (slopes predominantly $> 15\%$)

i. Soils shallow (≤ 20 " depth)

a. Soils calcareous

- 1) Surface fragments black or nearly so (Munsell color value < 4) ... R040XB201AZ – Basalt Hills 7"-10" p.z.
- 2) Surface fragments not black (Munsell color value ≥ 4)
 - a) Parent material weathered/fractured (can dig into with shovel) ... R040XB202AZ – Paralithic Hills 7"-10" p.z.
 - b) Parent material indurated (cannot dig into with shovel) ... R040XB231AZ – Lithic Hills 7"-10" p.z.

b. Soils non-calcareous in upper 10 inches

- 1) Parent material weathered/fractured (can dig into with shovel) ... R040XB206AZ – Shallow Hills 7"-10" p.z.
- 2) Parent material indurated (cannot dig into with shovel) ... R040XB222AZ – Volcanic Hills 7"-10" p.z.

ii. Soils moderately deep to deep (> 20 " depth)

- a. Soils fine sand, eolian ... R040XB232AZ – Sandy Slopes, Dunes 7"-10" p.z.
- b. Soils calcareous, not gypsic ... R040XB209AZ – Limy Slopes 7"-10" p.z.
- c. Soils calcareous and gypsic ... R040XB233AZ – Limy Slopes, Gypsum 7"-10" p.z.
- d. Soils non-calcareous in the upper 10 inches ... R040XB212AZ – Loamy Slopes 7"-10" p.z.