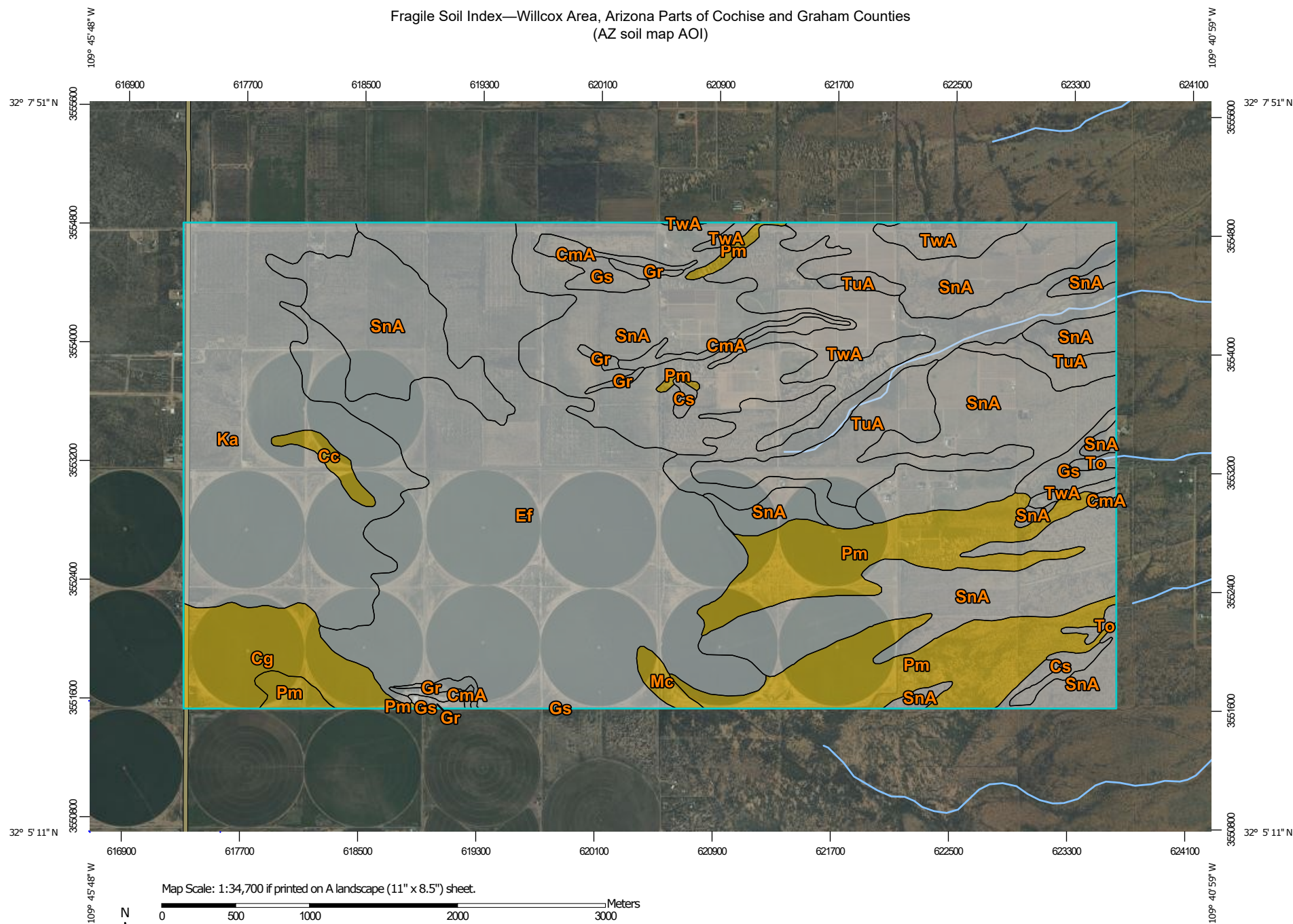
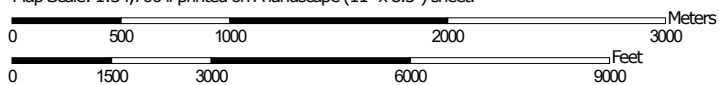


Fragile Soil Index—Willcox Area, Arizona Parts of Cochise and Graham Counties
(AZ soil map AOI)



Map Scale: 1:34,700 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84



Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

5/5/2023
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Fragile Soil Index—Willcox Area, Arizona Parts of Cochise and Graham Counties
(AZ soil map AOI)

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

Soil Rating Polygons

-  Extremely fragile
-  Highly fragile
-  Fragile
-  Moderately fragile
-  Slightly fragile
-  Not fragile
-  Not rated or not available

Soil Rating Lines

-  Extremely fragile
-  Highly fragile
-  Fragile
-  Moderately fragile
-  Slightly fragile
-  Not fragile
-  Not rated or not available

Soil Rating Points

-  Extremely fragile
-  Highly fragile
-  Fragile
-  Moderately fragile
-  Slightly fragile
-  Not fragile

 Not rated or not available

Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Willcox Area, Arizona Parts of Cochise and Graham Counties

Survey Area Data: Version 16, Aug 29, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 13, 2020—Feb 15, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Fragile Soil Index

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
Cc	Cogswell clay loam	Fragile	Cogswell (100%)	Poor structure (1.00)	22.9	0.4%
				Very low organic matter (0.90)		
				Low vegetative cover (0.88)		
				Dry (0.80)		
				Nearly level (0.02)		
Cg	Cogswell clay	Fragile	Cogswell (100%)	Poor structure (1.00)	171.7	3.3%
				Very low organic matter (0.90)		
				Low vegetative cover (0.88)		
				Dry (0.80)		
				Nearly level (0.02)		
CmA	Comoro sandy loam, 0 to 2 percent slopes	Not rated	Comoro (100%)		45.6	0.9%
Cs	Cowan sandy loam	Not rated	Cowan (100%)		23.1	0.5%
Ef	Elfrida silty clay loam	Not rated	Elfrida (100%)		1,313.9	25.6%
Gr	Grabe sandy loam	Not rated	Grabe (100%)		29.8	0.6%
Gs	Grabe loam	Not rated	Grabe (100%)		54.1	1.1%
Ka	Karro loam	Not rated	Karro (100%)		709.7	13.8%
Mc	McAllister loam	Fragile	McAllister (100%)	Poor structure (1.00)	18.8	0.4%
				Very low organic matter (0.90)		
				Low vegetative cover (0.88)		
				Dry (0.80)		
				Nearly level (0.02)		
Pm	Pima loam	Fragile	Pima (100%)	Low vegetative cover (0.88)	515.6	10.1%

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Very low organic matter (0.84)		
				Dry (0.80)		
				Weakly structured (0.75)		
				Nearly level (0.02)		
SnA	Sonoita sandy loam, 0 to 2 percent slopes	Not rated	Sonoita (100%)		1,590.2	31.0%
To	Torrifluvents	Not rated	Torrifluvents (100%)		13.4	0.3%
TuA	Tubac sandy loam, 0 to 2 percent slopes	Not rated	Tubac (100%)		205.6	4.0%
TwA	Tubac sandy clay loam, 0 to 2 percent slopes	Not rated	Tubac (100%)		415.0	8.1%
Totals for Area of Interest					5,130.1	100.0%

Rating	Acres in AOI	Percent of AOI
Fragile	729.1	14.2%
Null or Not Rated	4,400.5	85.8%
Totals for Area of Interest	5,130.1	100.0%

Description

Soils can be rated based on their susceptibility to degradation in the "Fragile Soil Index" interpretation. Fragile soils are those that are most vulnerable to degradation. In other words, they can be easily degraded; they have a low resistance to degradation processes. They tend to be highly susceptible to erosion and can have a low capacity to recover after degradation has occurred (low resilience). Fragile soils are generally characterized by a low content of organic matter, low aggregate stability, and weak soil structure. They are generally located on sloping ground, have sparse plant cover, and tend to be in arid or semiarid regions. The index can be used for conservation and watershed planning to assist in identifying soils and areas highly vulnerable to degradation.

Depending on inherent soil characteristics and the climate, soils can vary from highly resistant, or stable, to vulnerable and extremely sensitive to degradation. Under stress, fragile soils can degrade to a new altered state, which may be less favorable or unfavorable for plant growth and less capable of performing soil functions. To assess the fragility of the soil, indicators of vulnerability to degradation processes are used. They include organic matter, soil structure, rooting depth, vegetative cover, slope, and aridity.

The organic matter content indicates the capacity of the soil to resist and/or recover from degradation processes. Organic matter improves the soil pore structure, increases water infiltration, and reduces soil compaction and soil erosion. Soil structure indicates the capacity of the soil to resist degradation from accelerated water erosion (by increasing the amount of infiltration). Pore structure is the most important aspect of soil structure as pores provide habitat for organisms. Shallow soils are more vulnerable to degradation processes because they have limited rooting depth and have a reduced amount of material from which to form new soil. As erosion removes the upper soil profile, productivity will decline if the subsoil is limiting for crop growth. Vegetative cover is very important as uncovered soil is most vulnerable to the processes of soil erosion, both by wind and water. Slope (a measure of the steepness or the degree of inclination) indicates the degree of vulnerability to erosion and mass movement. Aridity is defined by the shortage of moisture. Lack of water is a main factor limiting biological processes and the ability of the soil to resist and/or recover from degradation.

Soils are placed into interpretive classes based on their index rating, which ranges from 0 to 1. An index rating of 1 is the most fragile, while a rating of zero is the least fragile. Interpretive classes are as follows:

Not Fragile (index rating less than or equal to 0.009) These soils have a very high potential to resist degradation and be highly resilient. They are highly structured with an organic matter content greater than 5.7%, are nearly level, are deep or very deep, have greater than 85% vegetative cover, and are in a climate that is wet or very wet.

Slightly Fragile (index rating less than 0.009 and less than or equal to 0.209)
These soils have a high potential to resist degradation and be resilient. They are:

— Poorly structured to weakly structured soils that have an extremely low to moderate content of organic matter, are very deep, have high vegetative cover, occur on nearly level ground, and are in wet or very wet climates;

— Highly structured soils that have a very high content of organic matter, are very shallow to moderately deep, have high vegetative cover, occur on nearly level ground, and are in wet or very wet climates;

— Highly structured soils that have a very high content of organic matter, are very deep, have low to moderately high vegetative cover, occur on nearly level ground, and are in wet or very wet climates;

— Highly structured soils that have a very high content of organic matter, are very deep, have high vegetative cover; are on slopes greater than 3%, and are in wet or very wet climates; or

— Highly structured soils that have a very high content of organic matter, are very deep, have high vegetative cover; occur on nearly level ground, and in semi-dry to mildly wet climates;

Moderately Fragile (index rating greater than 0.209 and less than or equal to 0.409) These soils have a moderate potential to resist degradation and be moderately resilient. They are:

— Highly structured soils that have a very high content of organic matter, are very shallow, have high vegetative cover, occur in nearly level to moderately sloping areas, and are in semi-dry climates;

— Poorly structured soils that have an extremely low content of organic matter, are deep, have low vegetative cover, occur in nearly level areas, and are in wet or very wet climates;

— Poorly structured soils that have an extremely low content of organic matter, occur on gentle to very steep slopes, have high vegetative cover, and are in wet or very wet climates;

— Weakly structured soils that have a very low content of organic matter, are deep, occur in nearly level to gently sloping areas, have high vegetative cover, and are in semi-dry climates; or

— Weakly structured soils that have a very low content of organic matter, are very shallow to very deep, occur in nearly level to strongly sloping areas, have high vegetative cover, and are in mildly wet climates.

Fragile (index rating greater than 0.409 and less than or equal to 0.609) These soils have a low potential to resist degradation and low resilience. They are:

— Well structured soils that have a low content of organic matter, are shallow to very deep, have moderate to moderately high vegetative cover, occur on steep slopes, and are in dry climates;

— Well structured soils that have a low content of organic matter, are shallow to very deep, have a low vegetative cover, occur in nearly level to gently sloping areas, and are in dry climates;

— Well structured soils that have a low content of organic matter, are deep, have low vegetative cover, occur on nearly level to very steep slopes, and are in a semi-dry climate;

— Moderately structured soils that have a very low content of organic matter, are deep, have moderately high vegetative cover, occur on moderately steep to very steep slopes, and are in semi-dry climates; or

— Weakly structured soils that have a low content of organic matter, occur on moderately steep to very steep slopes, have low vegetative cover, and are in wet or very wet climates.

Very Fragile (index rating greater than 0.609 and less than or equal to 0.809)
These soils have a very low potential to resist degradation and very low resilience. They are:

— Weakly structured soils that have an extremely low content of organic matter, are deep, have low vegetative cover, occur on nearly level to very steep slopes, and are in dry climates;

— Weakly structured soils that have an extremely low content of organic matter, are shallow to very deep, have low vegetative cover, occur on nearly level to very steep slopes, and are in very dry climates; or

— Poorly structured soils that have an extremely low content of organic matter, are very shallow, have no vegetative cover, occur on steep slopes, and are in mildly wet to wet climates.

Extremely Fragile (index rating greater than 0.809 and less than or equal to 1.0)
These soils can have no potential to resist degradation and no resilience. They are:

— Poorly structured soils that have an extremely low content of organic matter, are very shallow, have low vegetative cover, occur on very steep slopes, and are in dry or very dry climates;

— Weakly structured soils that have a very low content of organic matter, are nearly level to very deep, have low vegetative cover, occur on very steep slopes, and are in dry climates; or

— Very shallow soils on steep slopes.

The interpretive rating is based on soils that occur in the dominant land use for the map unit component and may not represent soils that occur in site-specific land uses.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher