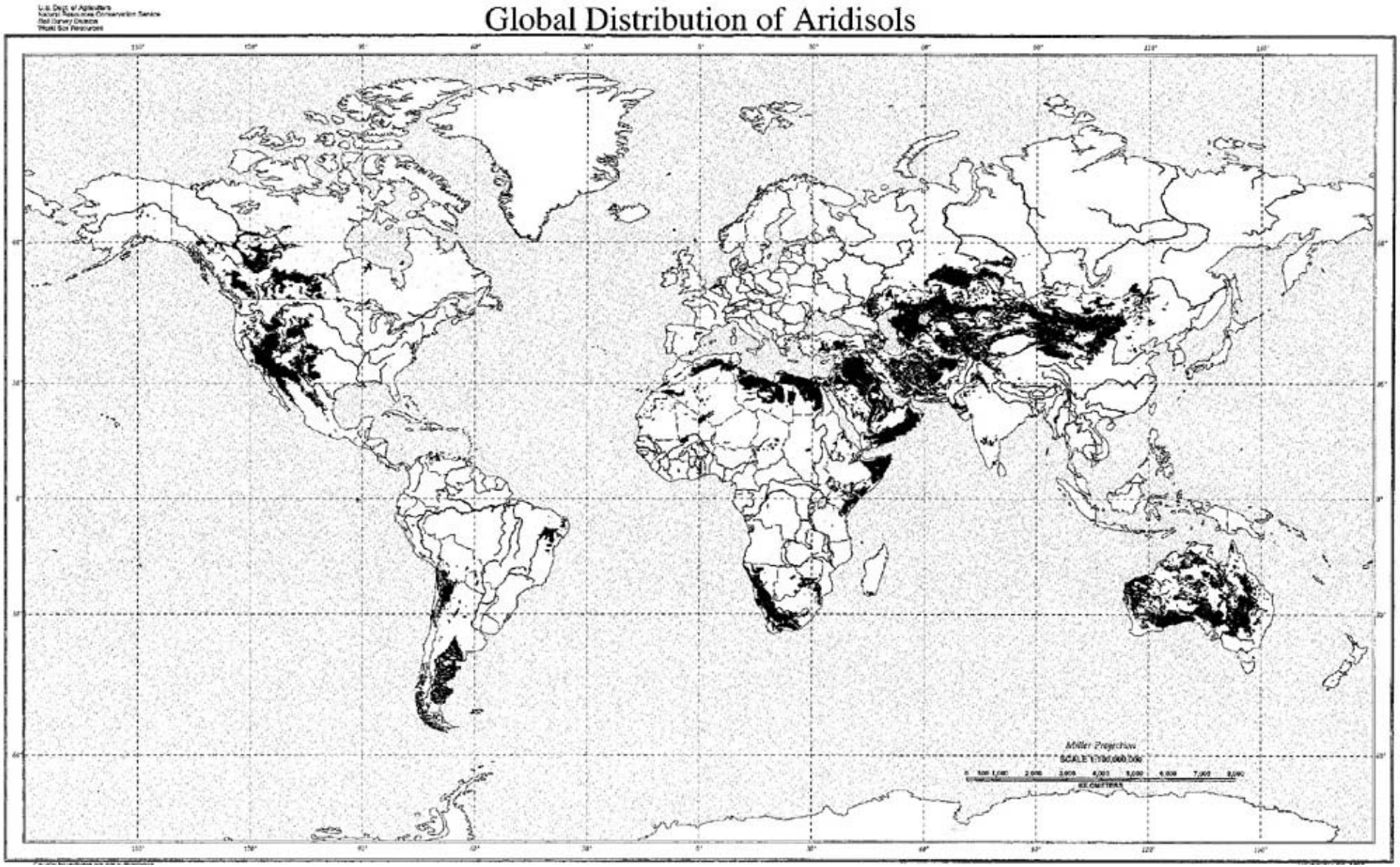
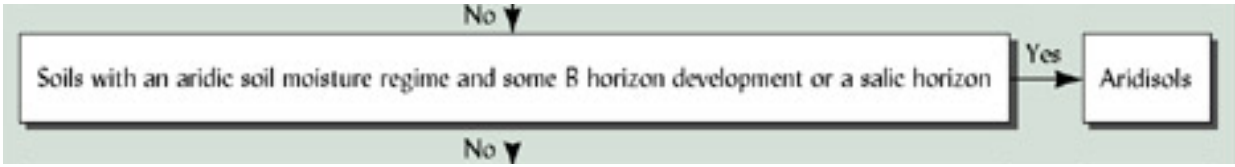
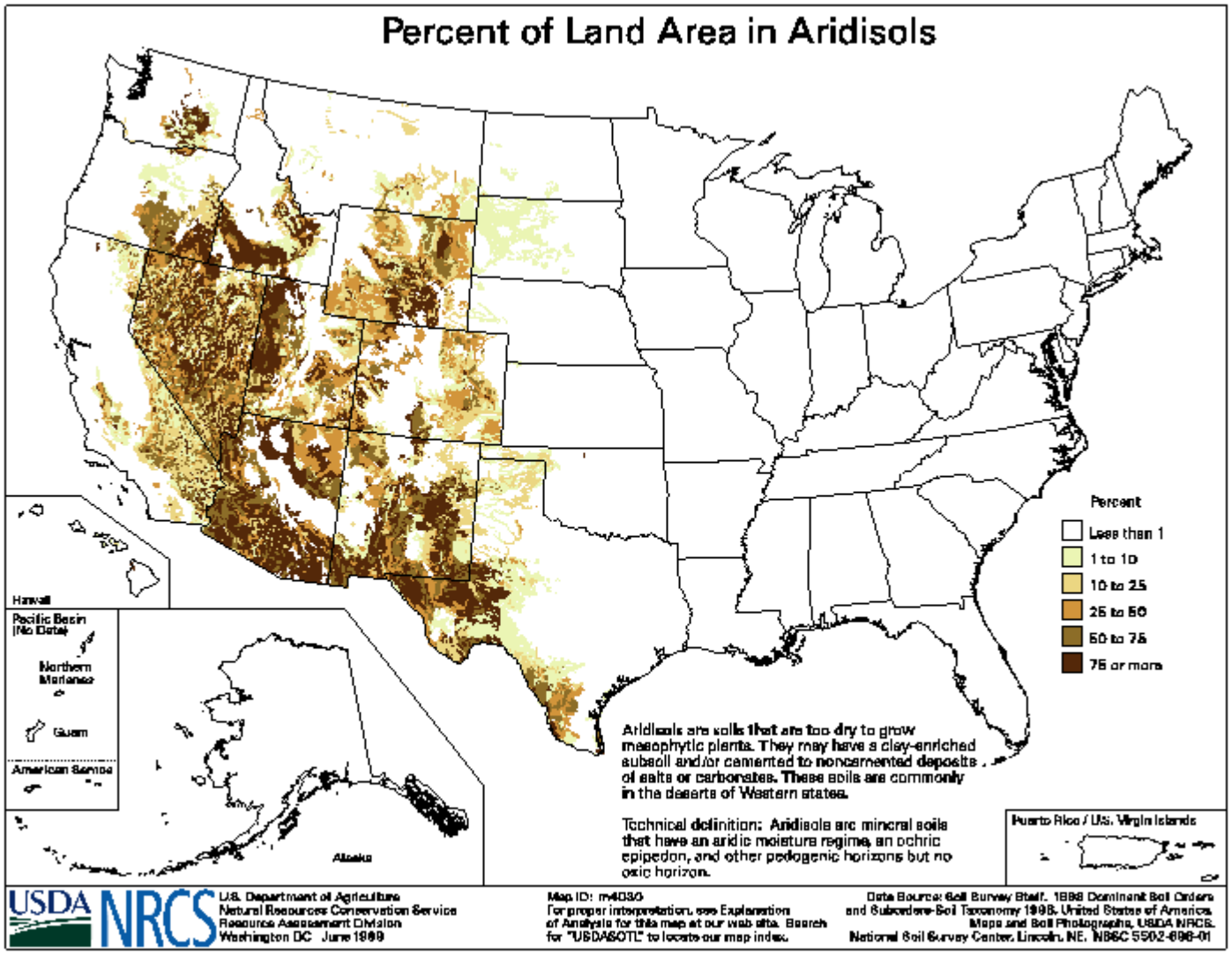
ARIDISOLS

Soils of arid region (classified by climate)

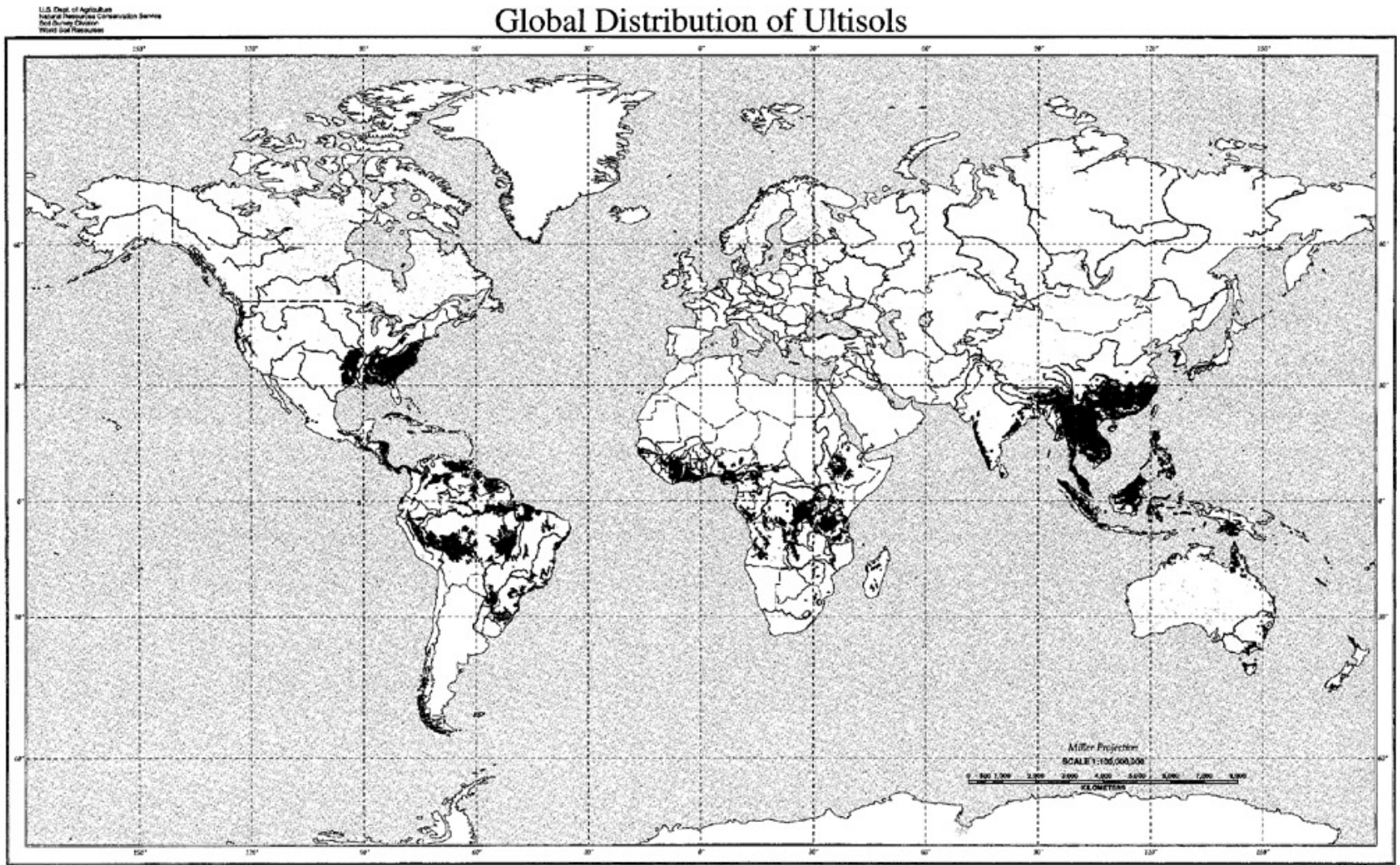



No
Soils with an aridic soil moisture regime and some B horizon development or a salic horizon
Yes
Aridisols
No

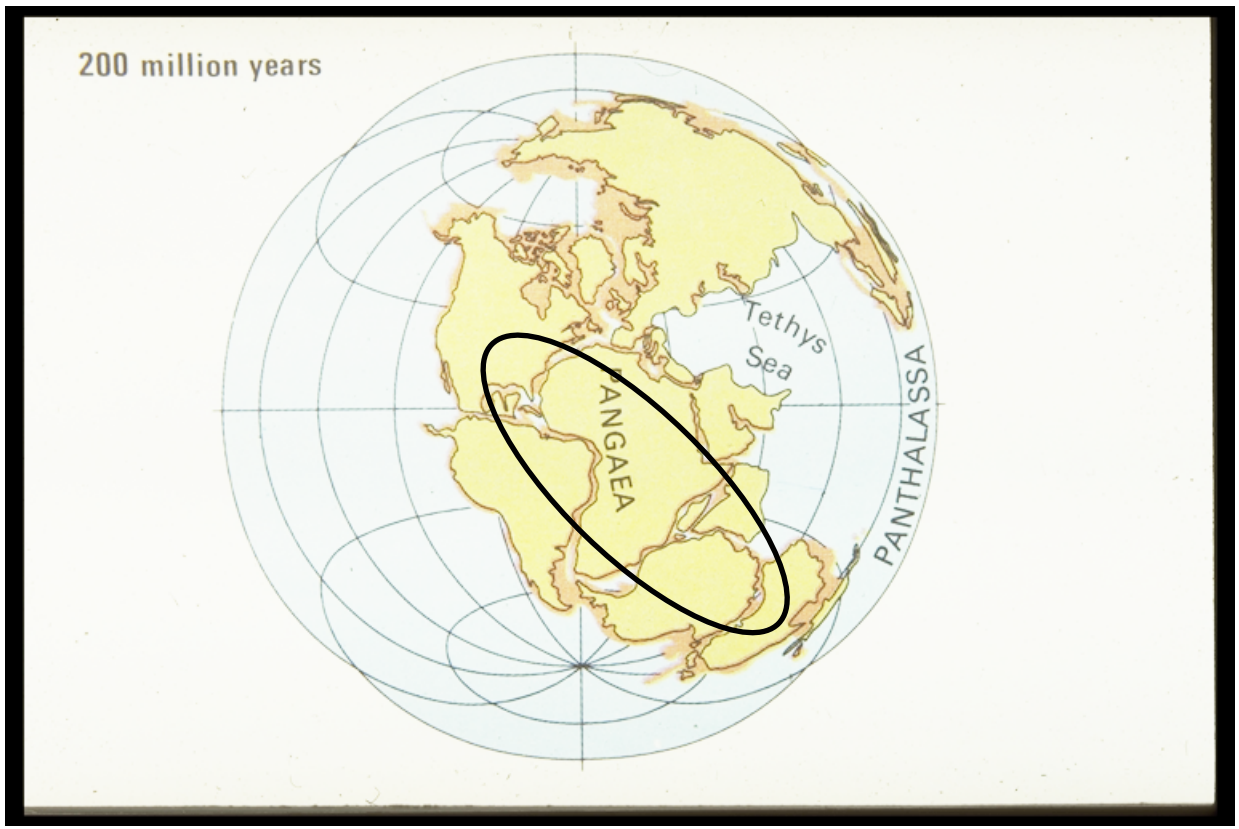

Percent of Land Area in Aridisols
Percent
Less than 1
1 to 10
10 to 25
25 to 50
50 to 75
75 or more
Hawaii
Pacific Basin (No Data)
Northern Marianas
Guam
American Samoa
Alaska
Puerto Rico / US. Virgin Islands
Aridisols are soils that are too dry to grow mesophytic plants. They may have a clay-enriched subsoil and/or cemented to noncemented deposits of salts or carbonates. These soils are commonly in the deserts of Western states.
Technical definition: Aridisols are mineral soils that have an aridic moisture regime, an ochric epipedon, and other pedogenic horizons but no oxic horizon.
USDA NRCS
U.S. Department of Agriculture
Natural Resources Conservation Service
Resource Assessment Division
Washington DC June 1999
Map ID: nr4030
For proper interpretation, see Explanation of Analysis for this map at our web site. Search for "USDASOTL" to locate our map index.
Data Source: Soil Survey Staff. 1998 Dominant Soil Orders and Suborders-Soil Taxonomy 1998. United States of America. Maps and Soil Photographs, USDA NRCS. National Soil Survey Center, Lincoln, NE. NSSC 5502-696-01

ULTISOLS

Similar to Alfisol, but <35% base saturation
Result of more intense weathering & leaching, or weathering over a longer time.
Often redder in color than Alfisol due to oxides.

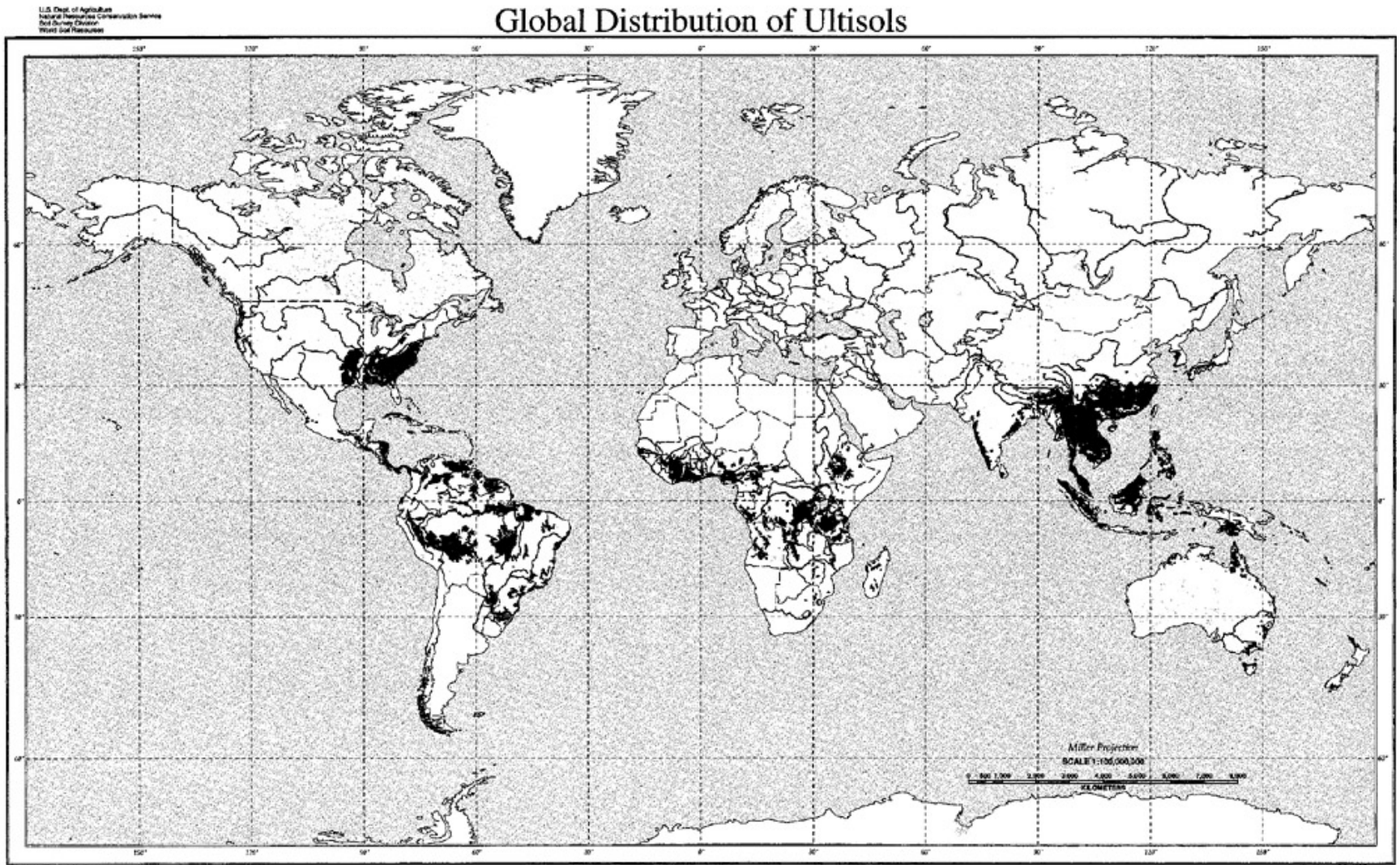


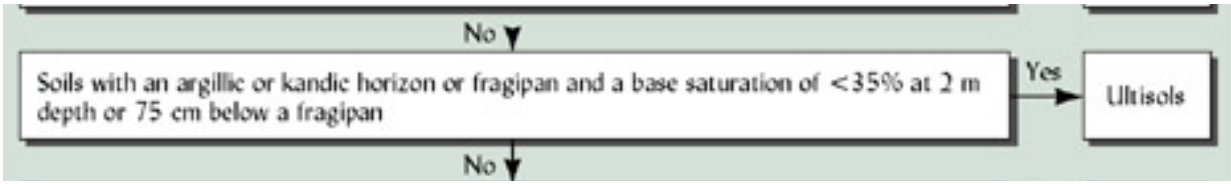
The region inside the black oval was the continental interior of Pangaea 200 million years ago

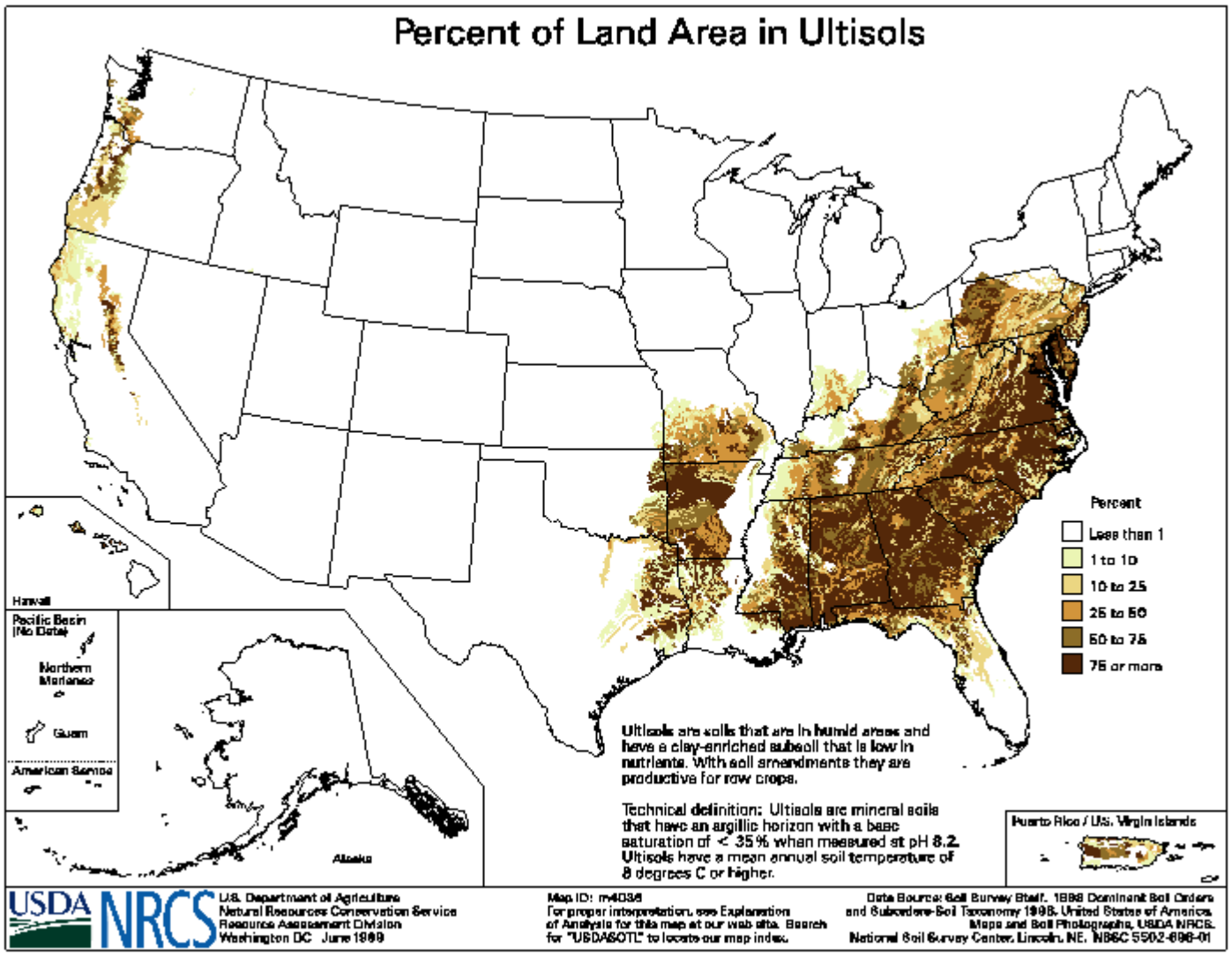


ULTISOLS

Similar to Alfisol, but <35% base saturation
Result of more intense weathering & leaching, or weathering over a longer time.
Often redder in color than Alfisol due to oxides.

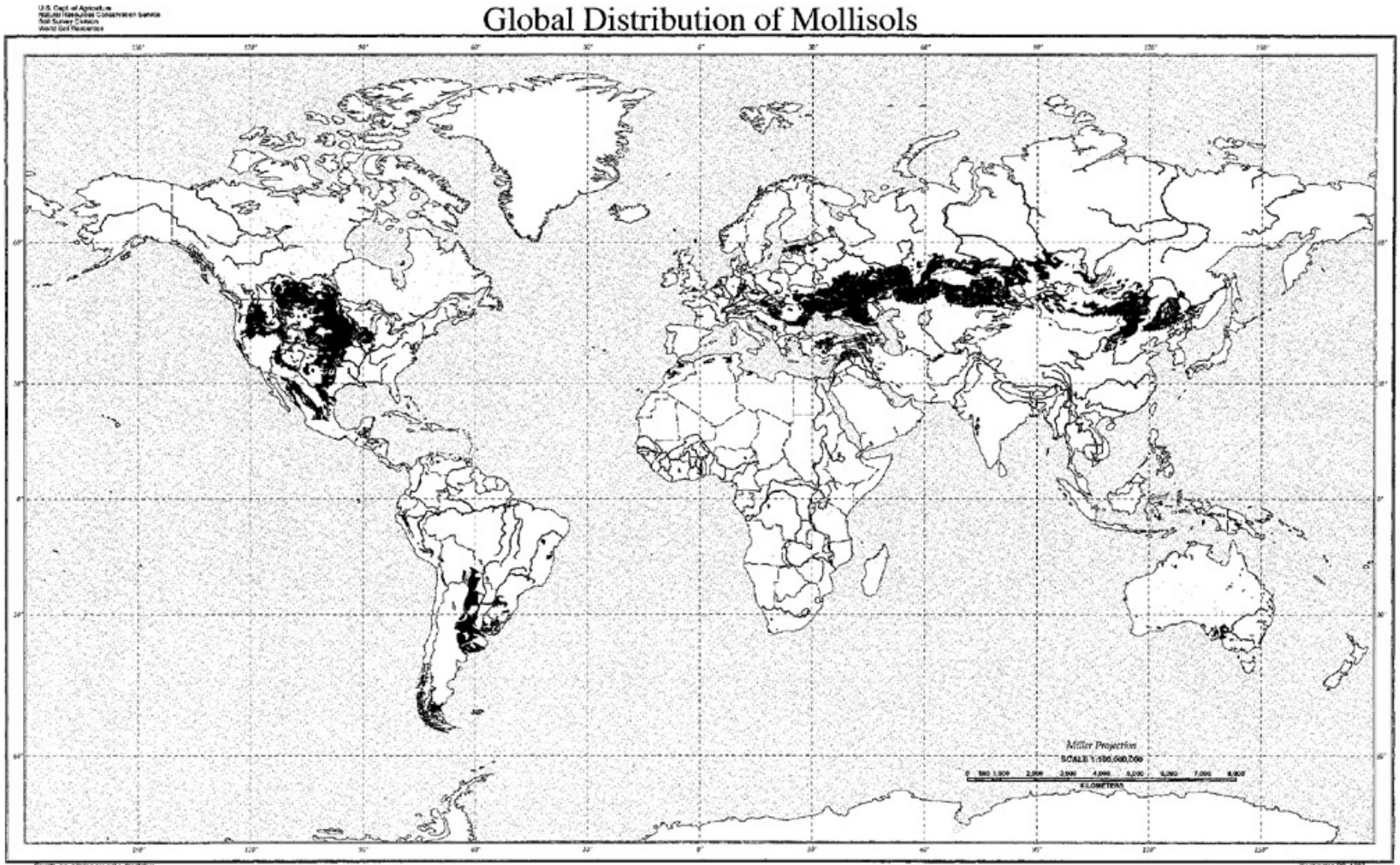



No
Soils with an argillic or kandic horizon or fragipan and a base saturation of <35% at 2 m depth or 75 cm below a fragipan
Yes
Ultisols
No


Percent of Land Area in Ultisols
Percent
Less than 1
1 to 10
10 to 25
25 to 50
50 to 75
75 or more
Hawaii
Pacific Basin (No Data)
Northern Marianas
Guam
American Samoa
Alaska
Puerto Rico / Us. Virgin Islands
Ultisols are soils that are in humid areas and have a clay-enriched subsoil that is low in nutrients. With soil amendments they are productive for row crops.
Technical definition: Ultisols are mineral soils that have an argillic horizon with a base saturation of < 35% when measured at pH 8.2. Ultisols have a mean annual soil temperature of 8 degrees C or higher.
USDA NRCS
U.S. Department of Agriculture
Natural Resources Conservation Service
Resource Assessment Division
Washington DC June 1999
Map ID: nr4038
For proper interpretation, see Explanation of Analysis for this map at our web site. Search for "USDASOTL" to locate our map index.
Data Source: Soil Survey Staff. 1998 Dominant Soil Orders and Suborders-Soil Taxonomy 1998. United States of America. Maps and Soil Photographs. USDA NRCS. National Soil Survey Center, Lincoln, NE. NSSC 5502-696-01

MOLLISOLS

High surface accumulation of organic matter
Surface horizon is dark, high in bases, well-structured
Dominant natural vegetation is prairie grasses

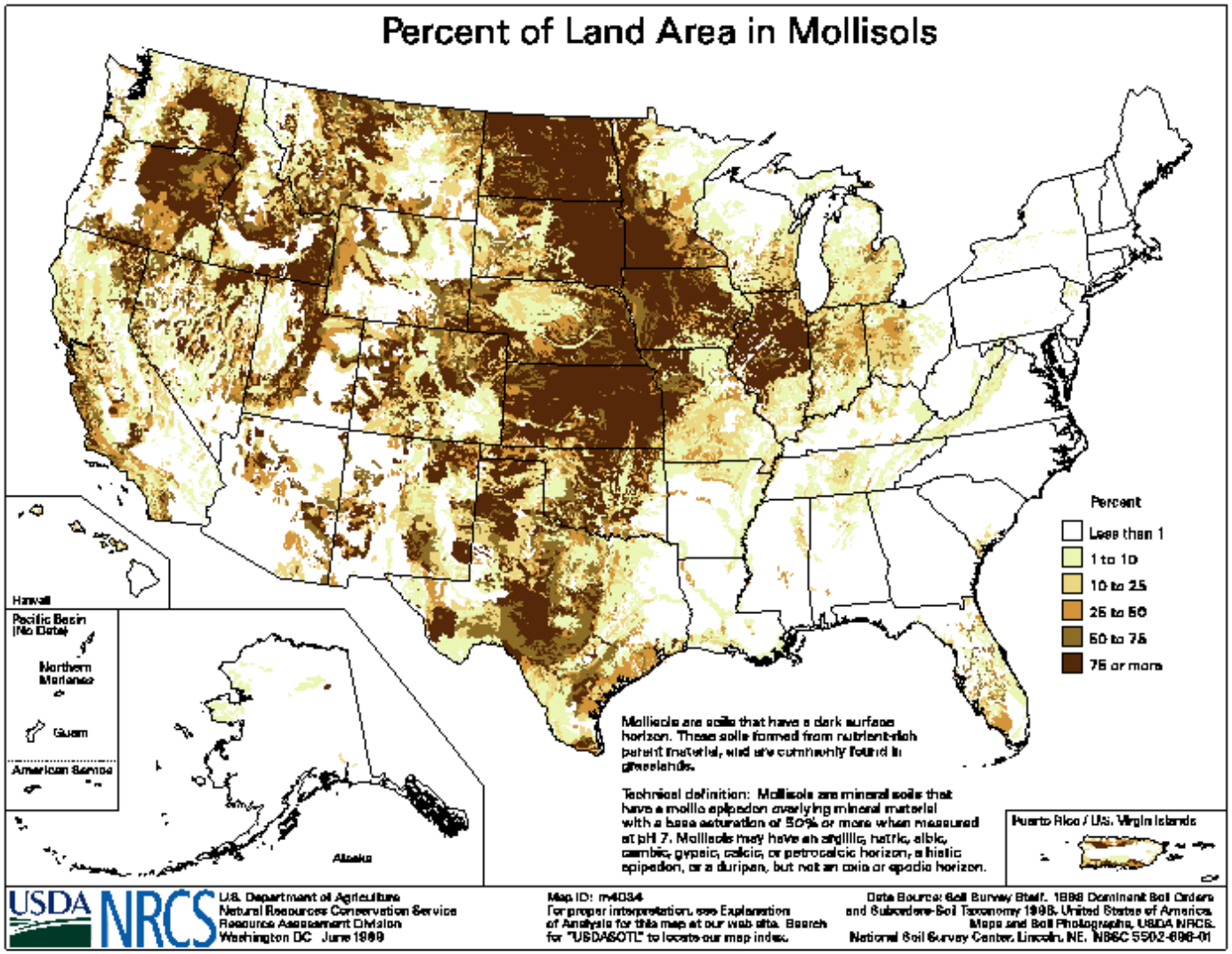


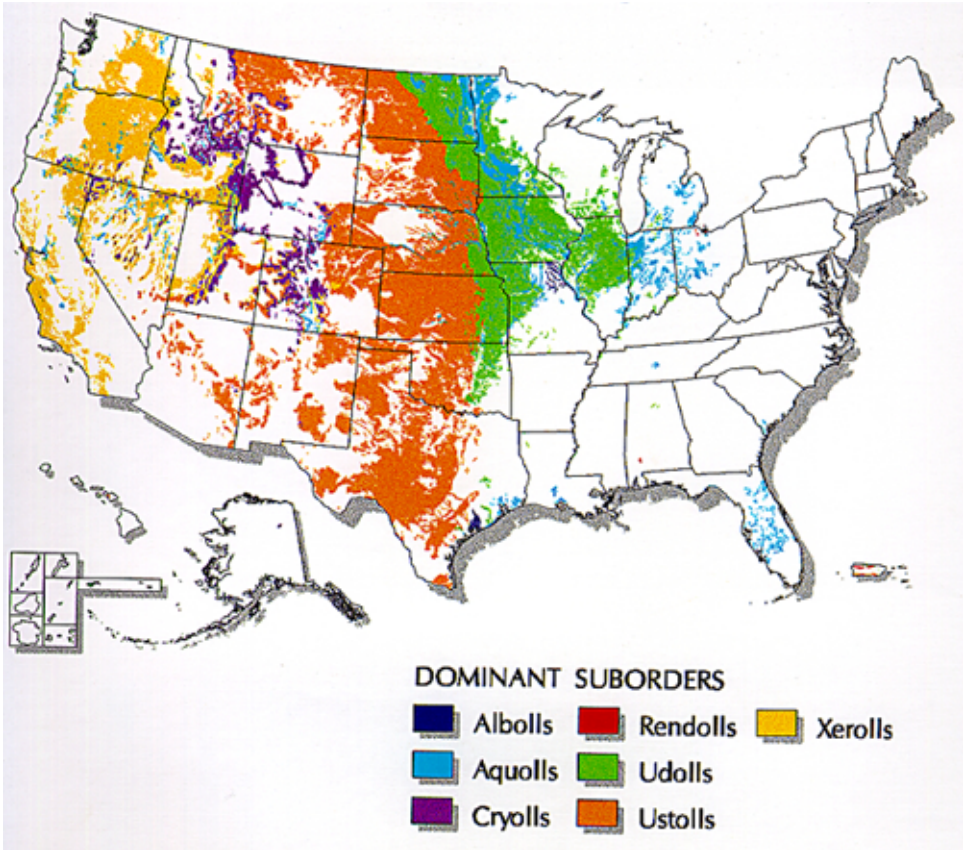
No

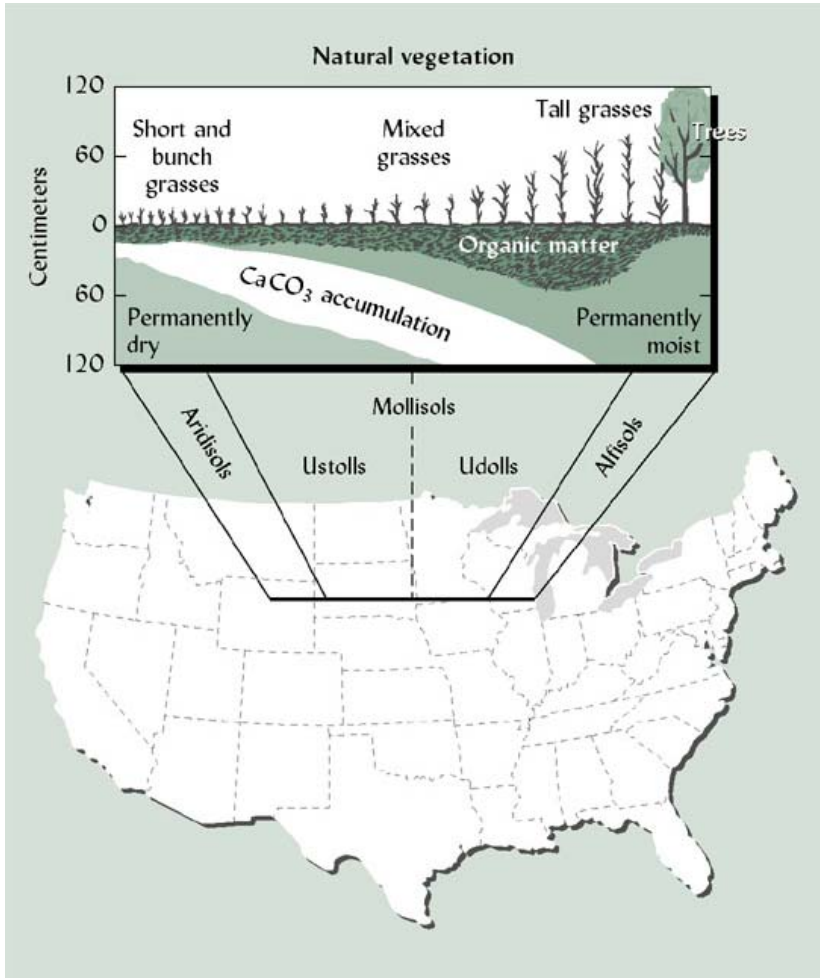
Soils with an argillic or kandic horizon or fragipan and a base saturation of <35% at 2 m depth or 75 cm below a fragipan

Yes → Ultisols

No

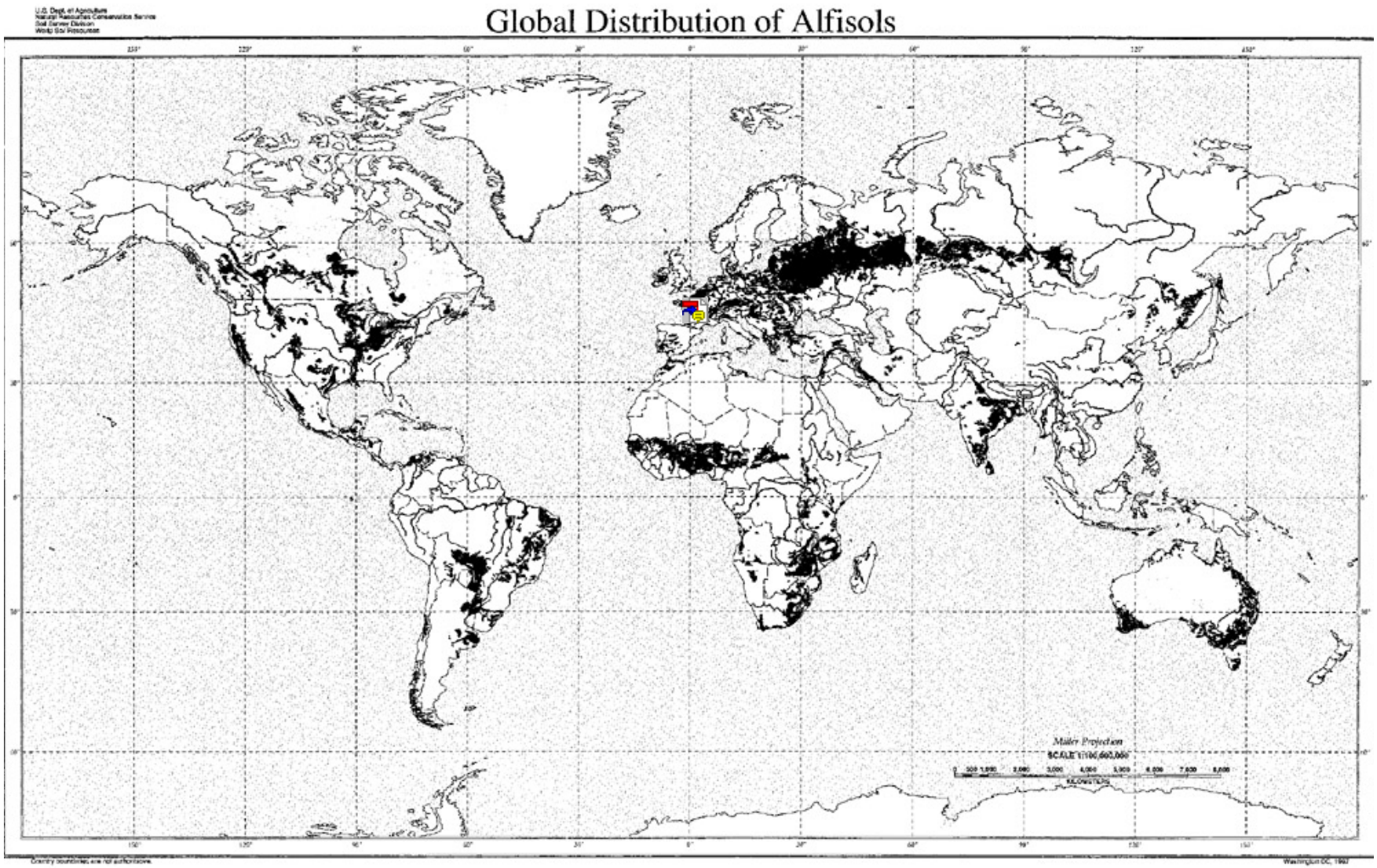



DOMINANT SUBORDERS
Albolls
Rendolls
Xerolls
Aquolls
Udolls
Cryolls
Ustolls


Natural vegetation
120
60
0
60
120
Centimeters
Short and bunch grasses
Mixed grasses
Tall grasses
Trees
Organic matter
$CaCO_3$ accumulation
Permanently dry
Permanently moist
Aridisols
Ustolls
Mollisols
Udolls
Alfisols

ALFISOLS

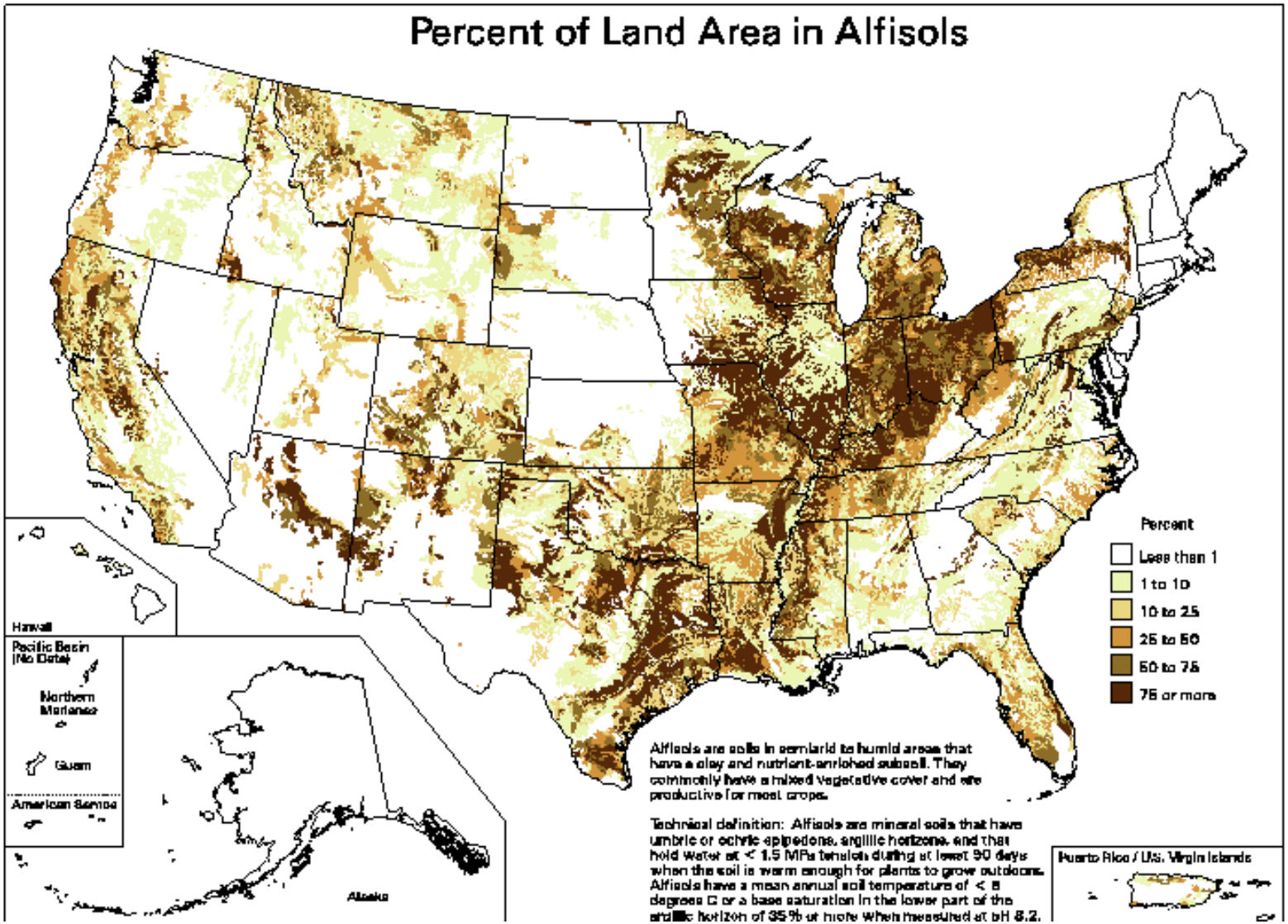
Accumulations of translocated clay in subsoil (B_t)
At least 35% base saturation
Little organic matter accumulation in surface



No

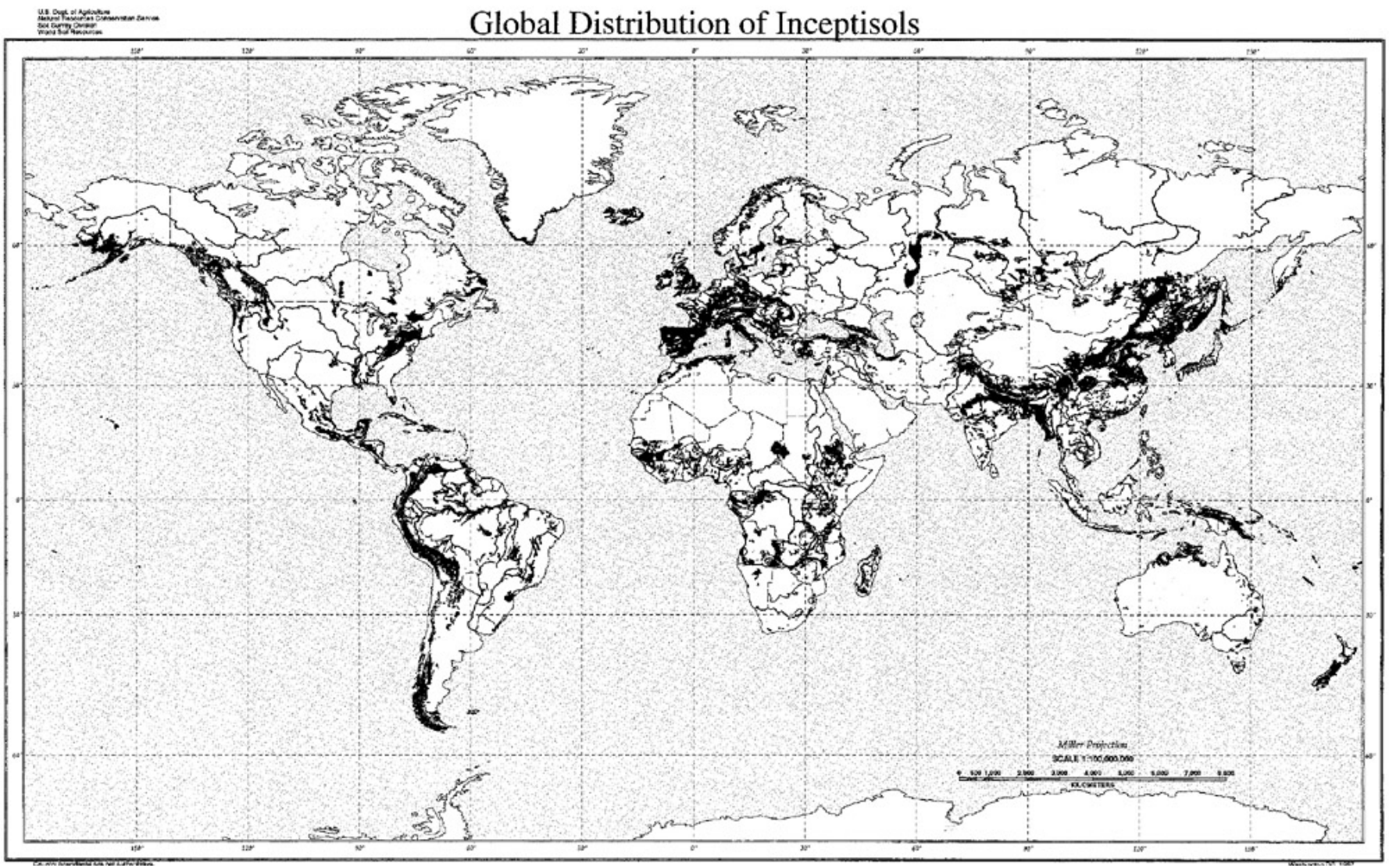
Soils with an argillic, kandic or natric horizon or a fragipan with clay skins — Yes → Alfisols

No



INCEPTISOLS

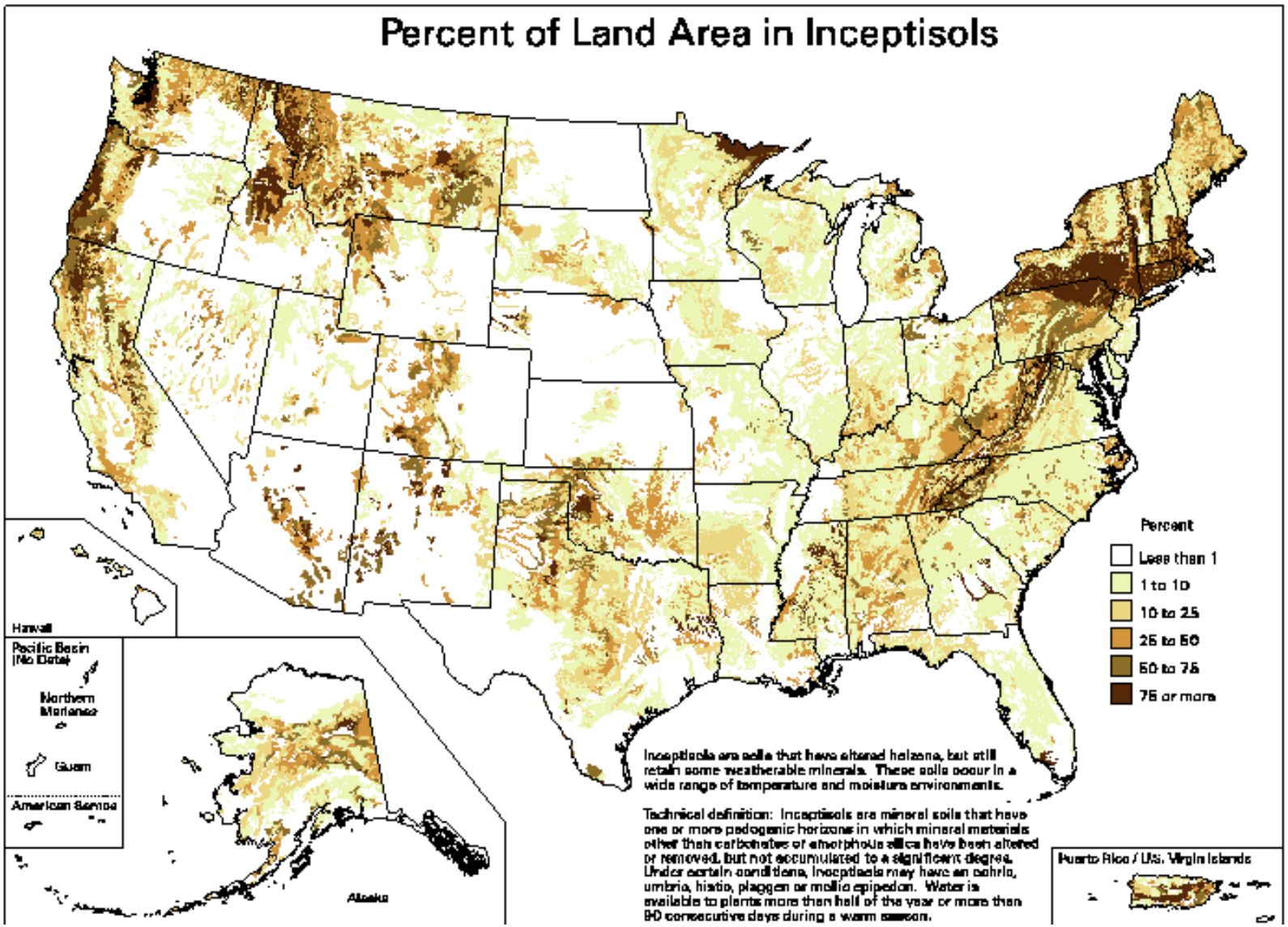
Horizons of alteration (cambic = structure or color)
Insufficient eluviation/illuviation to have an argillic horizon.



No

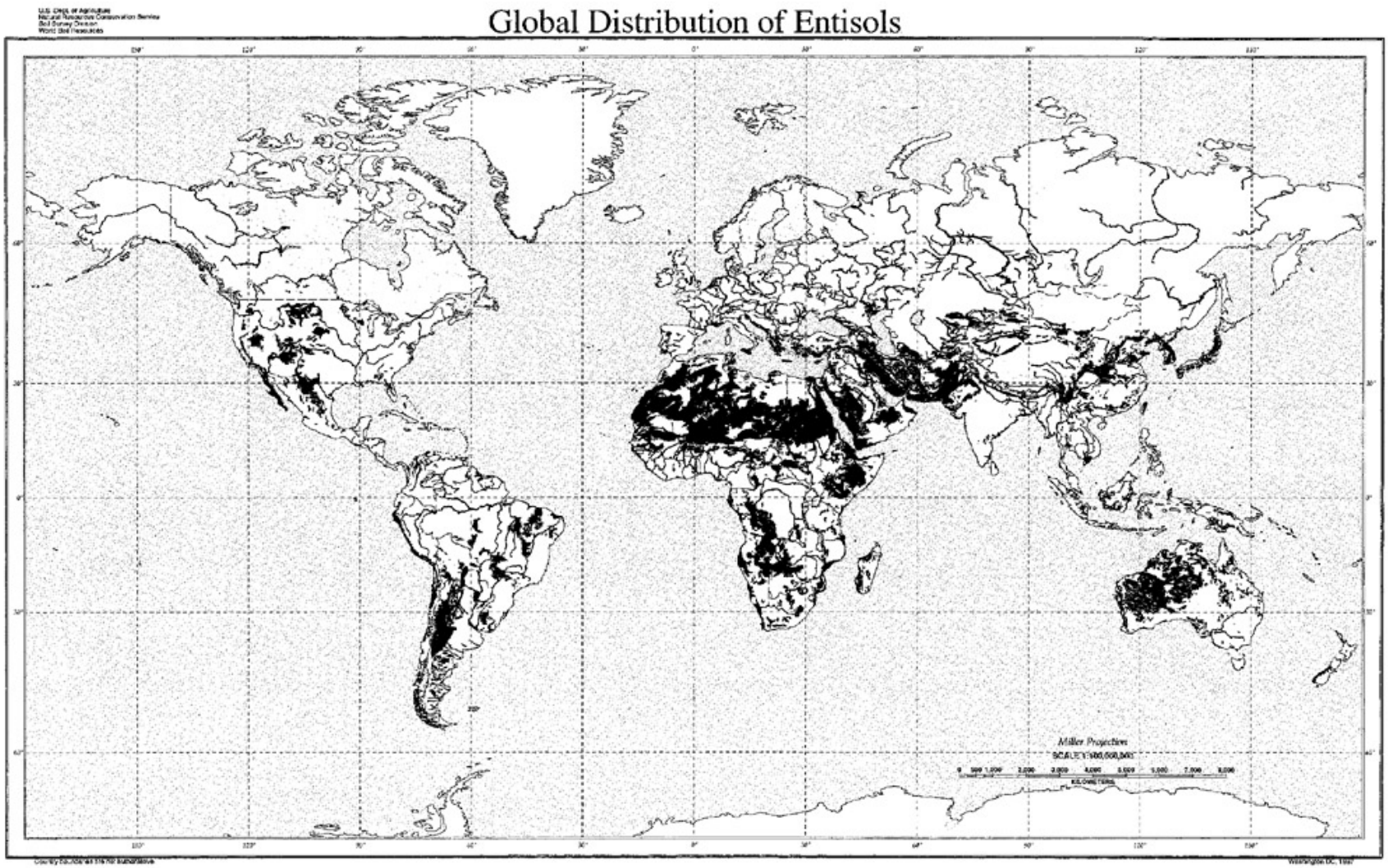
Soils with a cambic, sulfuric, calcic, gypsic, petrocalcic, or petrogypsic horizon, or with a mollic, umbric, or histic epipedon, or with an exchangeable sodium percentage (ESP) of >15%, or a fragipan — Yes → Inceptisols

No



ENTISOLS

Do not shrink-swell
Not well-developed, young soils
Found in all climates, vegetation

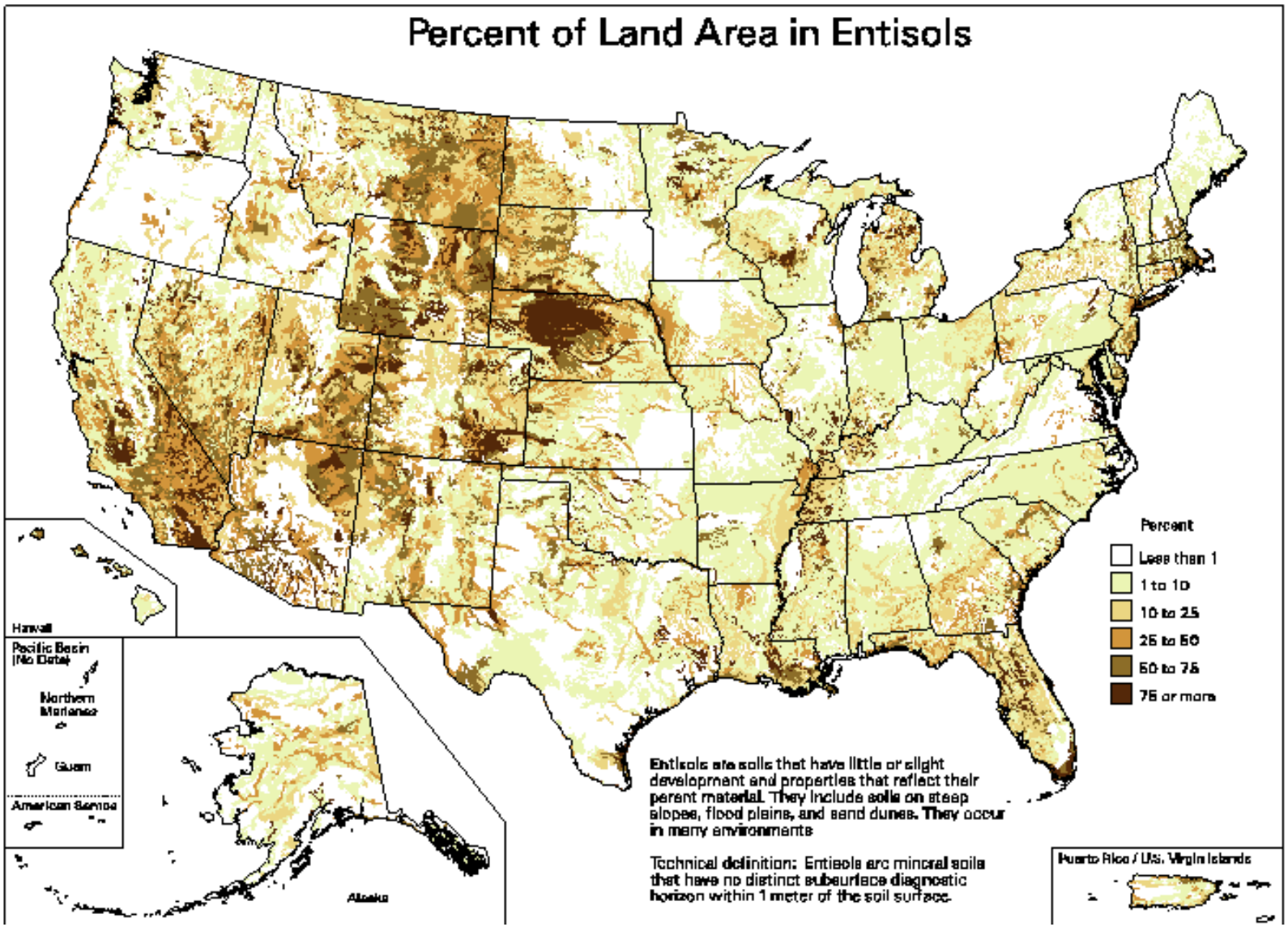


No

Other soils

Yes

Entisols



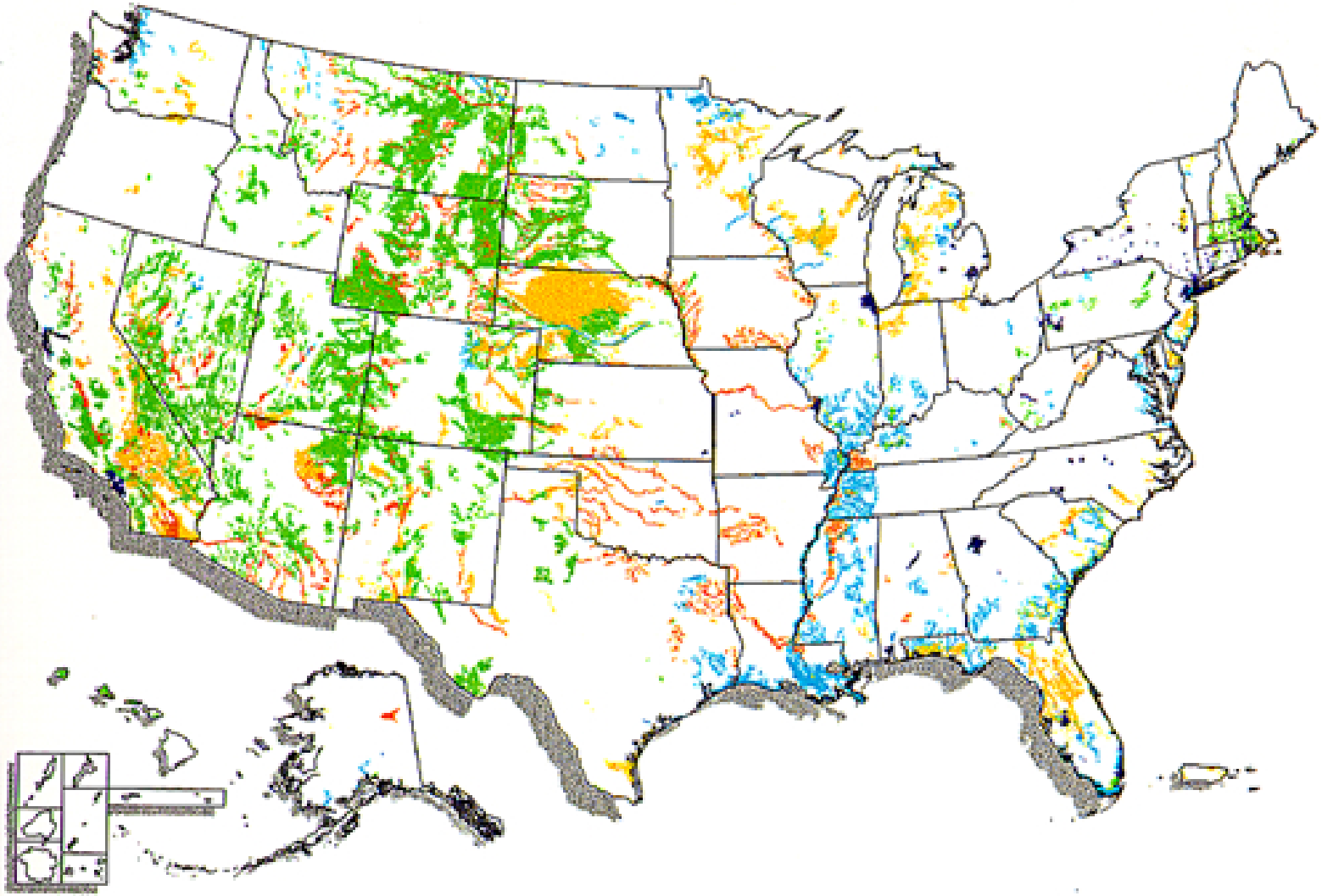

DOMINANT SUBORDERS
Aquents
Orthents
Arents
Psamments
Fluvents

TABLE 3.4 Approximate Land Areas of Different Soil Orders as Percentages of the Ice-Free Land in the World and in the United States

The major land use and natural fertility status of these soils are also given.

Soil order	Percent of ice-free land[a]		Major land uses	Natural fertility
	Global[b]	United States[c]		
Alfisols	9.65	14.51	Crops, forests, range	High
Andisols	0.70	1.74	Tundra, forests, crops	Moderate to high
Aridisols	12.10	8.78	Range, crops	Low to moderate
Entisols	16.29	12.16	Range, forest, crops, wetlands	Low to moderate
Gelisols	8.61	7.50	Tundra, bogs	Moderate
Histosols	1.18	1.28	Wetlands, crops	Moderate to high
Inceptisols	9.91	9.11	Forests, range, crops	Low to High
Mollisols	6.94	22.40	Crops, range, wetlands	High
Oxisols	7.56	<0.01	Forests, crops	Low
Spodosols	2.58	3.27	Forests, crops	Low
Ultisols	8.52	9.61	Forests, crops	Low to moderate
Vertisols	2.44	1.72	Crops, range, wetlands	High
Shifting sands or rock	14.07	7.81		

[a] Total global ice-free land area = 129,788,231 km^2. Total U.S. land area estimated from STATSGO as 8,739,275 km^2.
[b] Global areas calculated from FAO world database by USDA/NRCS Soil Survey Division, World Soils Resources, Washington, D.C.
[c] U.S. areas calculated from State Soil Geographic Data Base (STATSGO) taxonomically amended in 1997 by USDA/NRCS Soil Survey Division, National Soil Survey Center, Lincoln, Nebraska.