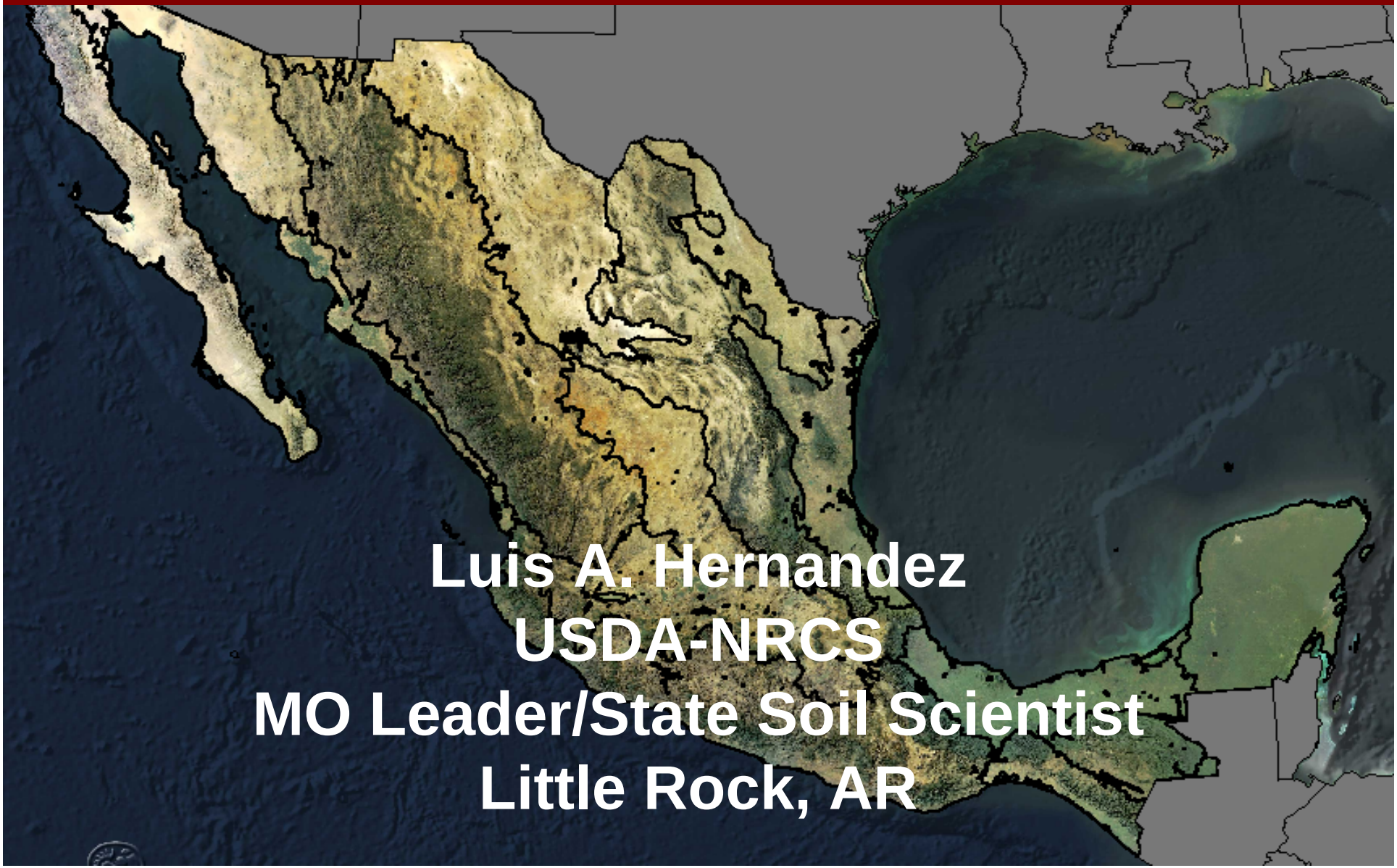
SOILS OF MEXICO



Luis A. Hernandez
USDA-NRCS
MO Leader/State Soil Scientist
Little Rock, AR

DISCUSSION TOPICS:

- NCSS Activities in Mexico
- Mexico Soil Survey Program
- Soils of Mexico

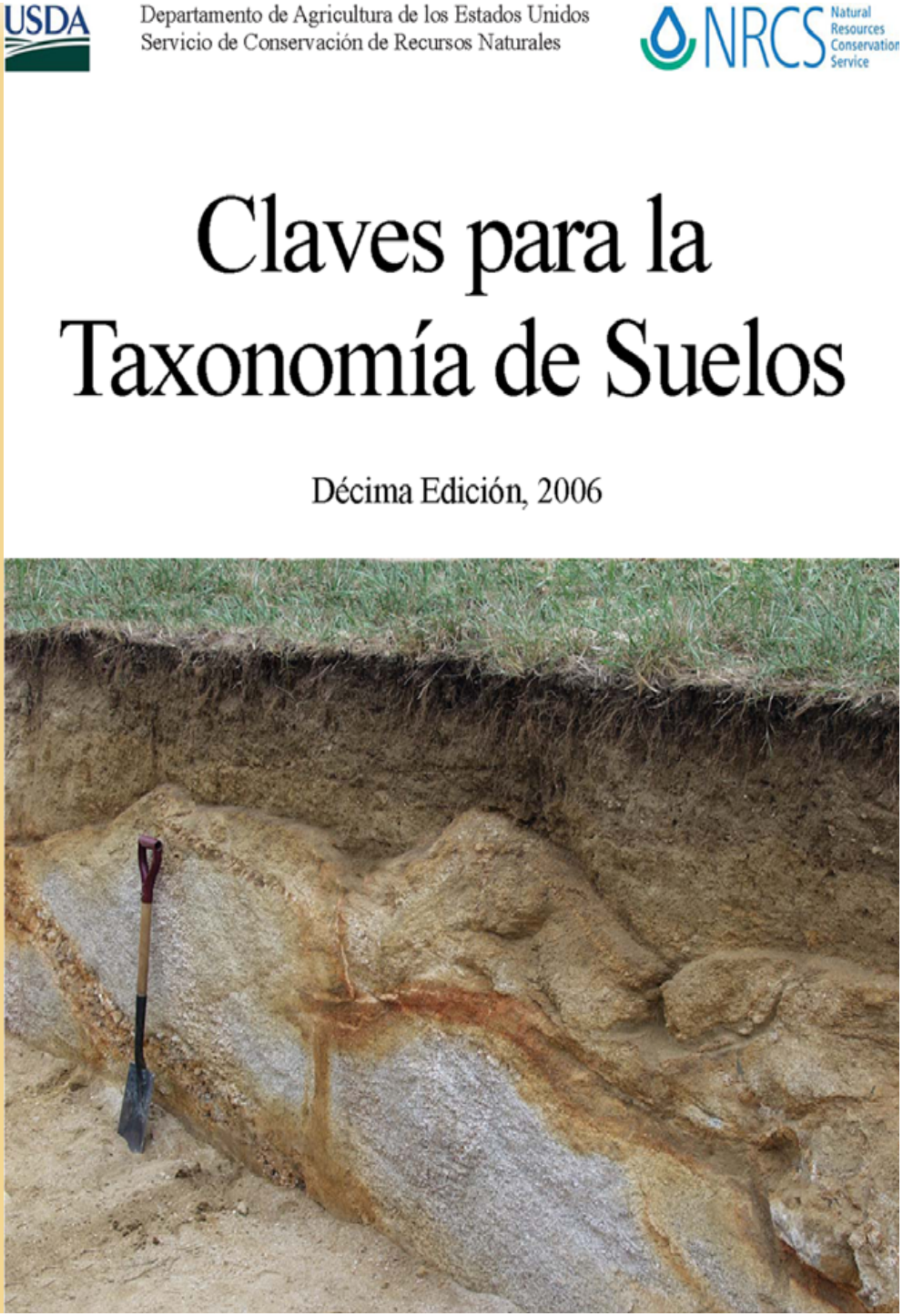
NCSS Activities in Mexico

- Technology Transfer & Training
  - Soil Classification

Keys to Soil Taxonomy Spanish Translation

Available online at:

http://soils.usda.gov/technical/classification/tax_keys/

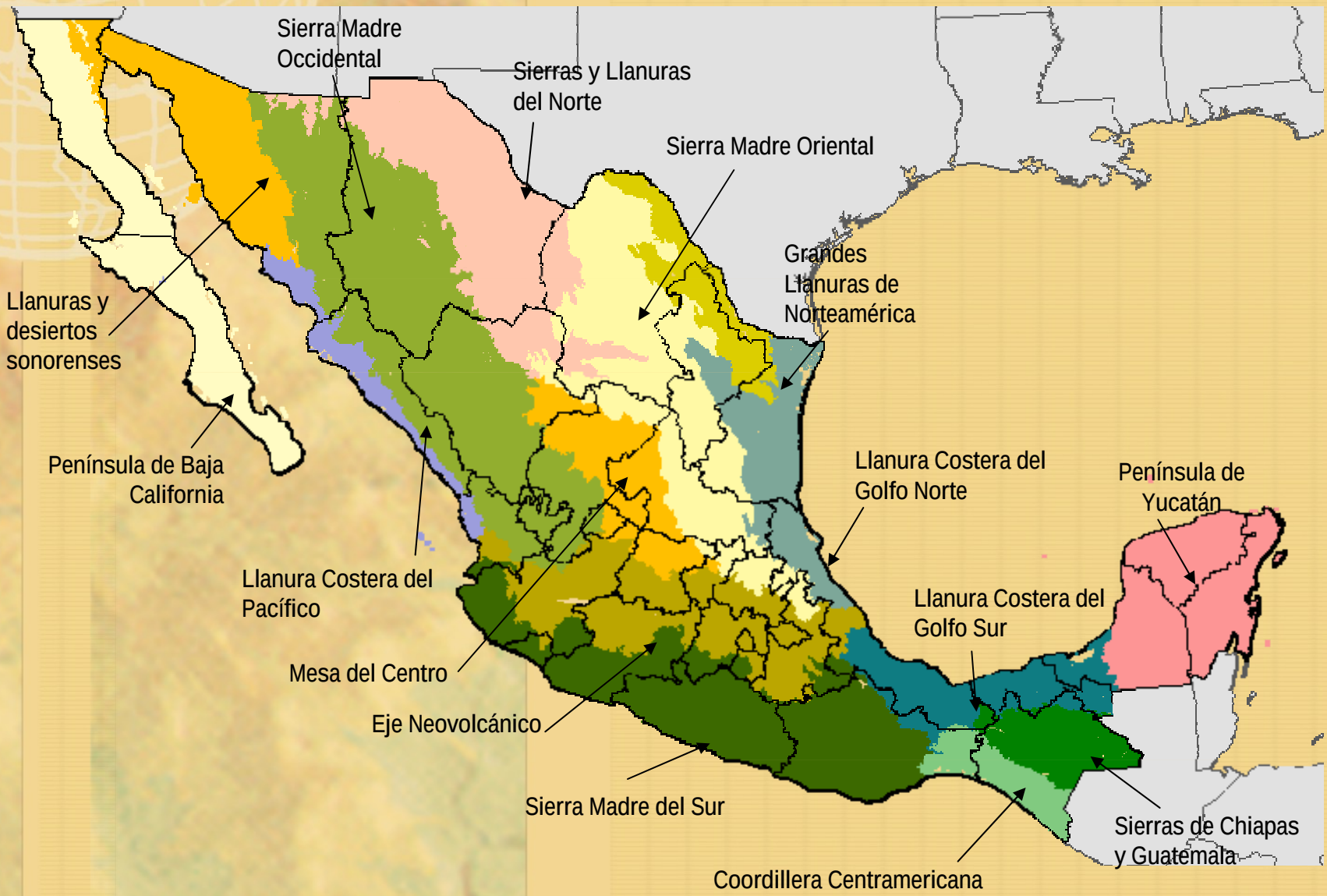


Universities & Institutions

- Universidad Nacional Autonoma de Mexico, Mexico City
- Universidad Michoacana de San Nicolas de Hidalgo, Morelia
- Universidad Autonoma de Tlaxcala
- Universidad Juarez Autonoma de Tabasco
- Universidad Autonoma de San Luis Potosi
- Colegio de Post-Graduados, Chapingo & Tabasco Campus
- Instituto Nacional de Estadistica, Geografia e Informatica (INEGI), Aguacalientes

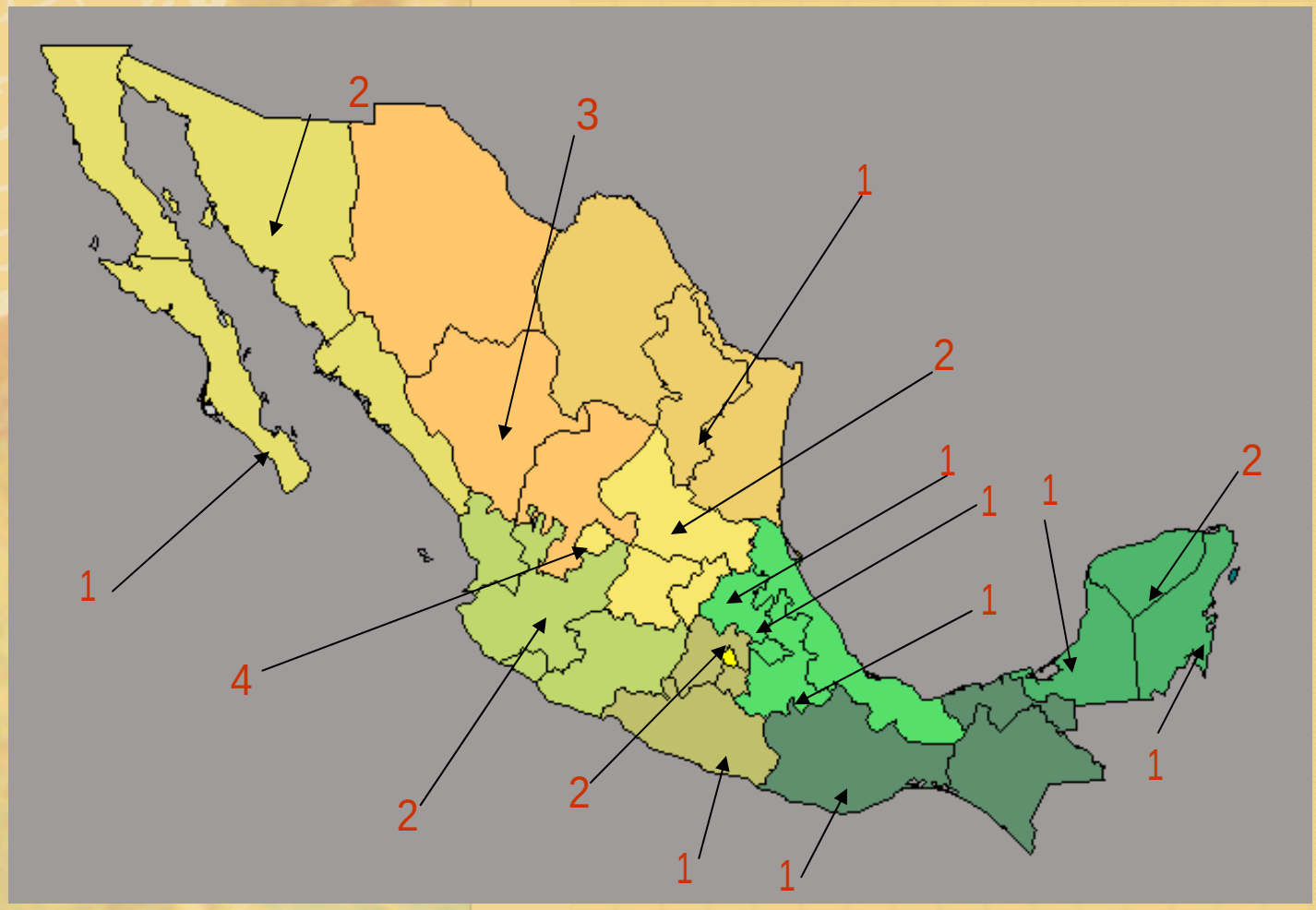
MEXICO SOIL SURVEY PROGRAM

LAND RESOURCE REGIONS - 15



MAJOR LAND RESOURCE AREAS - 84

DISTRIBUTION OF SOIL SCIENTISTS



26 Field Soil Scientists

SOIL DESCRIPTION, SAMPLING & ANALYSIS

Characterization Data

54,000 studied pedons

23,000 pedons with lab data

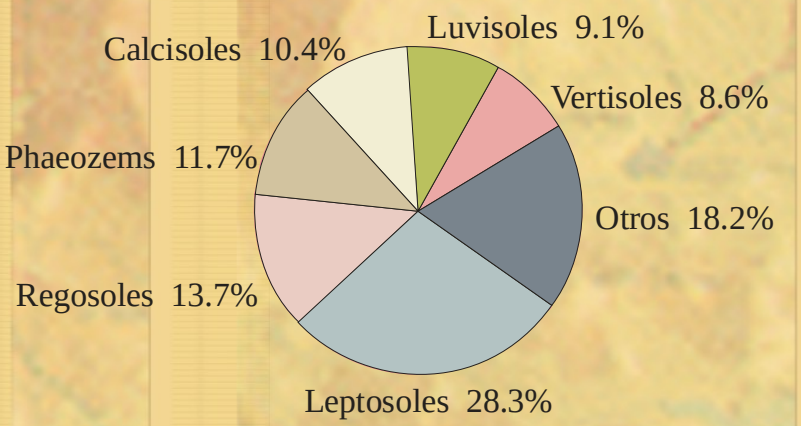
AVAILABLE SOIL MAPS

Scale at 1:1,000,000

Scale at 1:250,000

Scale at 1:50,000 (32% of the territory)

DOMINANT SOIL GROUPS - WRB



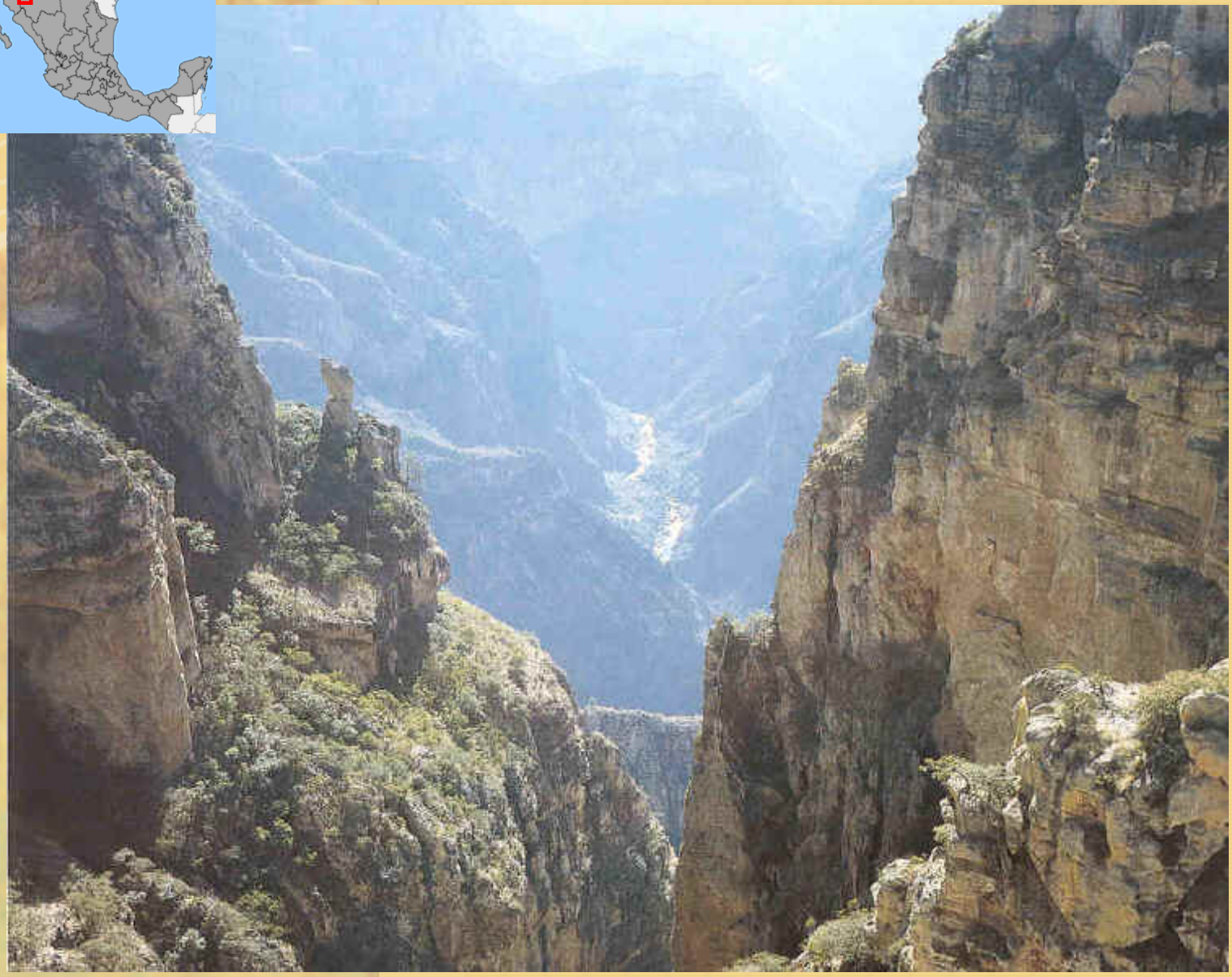
Source: Continuo Nacional de Edafología 2007.

Name	Area (km^2)	Area (%)
Leptosoles	542994.6	28.32
Regosoles	262806.7	13.70
Phaeozems	224789.0	11.72
Calcisoles	199114.8	10.38
Luvisoles	173778.6	9.06
Vertisoles	165069.3	8.61
Cambisoles	81547.5	4.25
Arenosoles	35453.0	1.85
Solonchaks	34940.4	1.82
Kastañozems	33543.2	1.75
Gleysoles	28169.4	1.47
Fluvisoles	25384.7	1.32
Chernozems	24655.4	1.29
Andosoles	24241.6	1.26
Umbrisoles	13663.0	0.71
Durisoles	10977.6	0.57
Acrisoles	9628.9	0.50
Planosoles	8234.0	0.43
Solonetz	8114.8	0.42
Gypsisoles	5587.1	0.29
Nitosoles	2730.4	0.14
Lixisoles	1070.2	0.06
Histosoles	910.0	0.05
Ferralsoles	225.0	0.01
Plintosoles	61.1	0.00
Antrosoles	4.87	0.00
	1917690.4	100.00

Sierras Madre

Leptosoles (very shallow to bedrock)

28.3% of the national terrotory



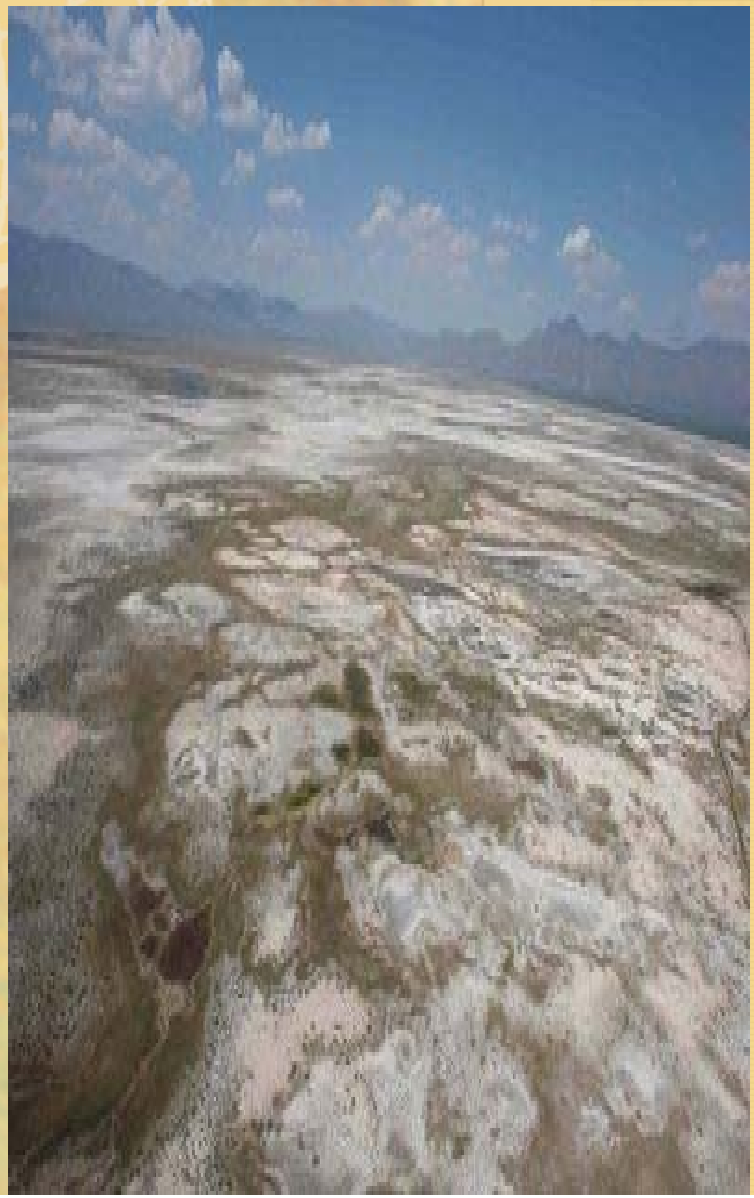
Regosoles (Entisols)

13.7% of the national territory

Solonetz (Natric Horizon)

0.42% of the national territory

Gypsisoles



0.29% of the national territory

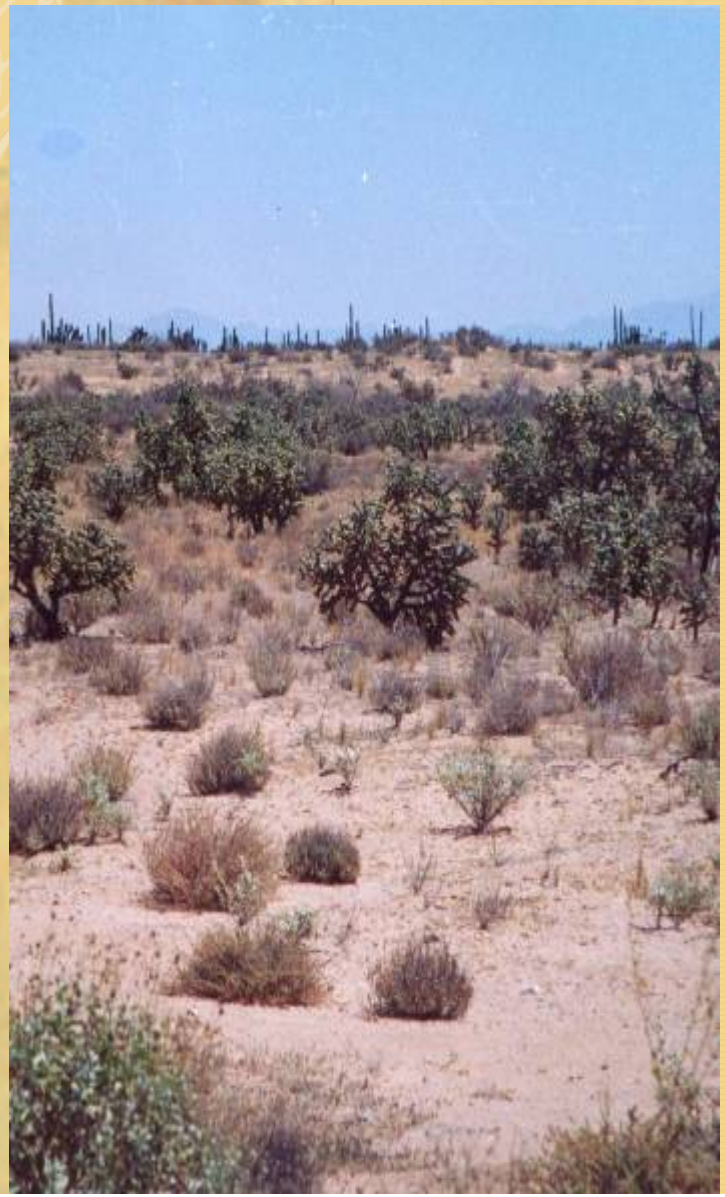
Luvisoles (Alfisols)

9.06% of the national territory

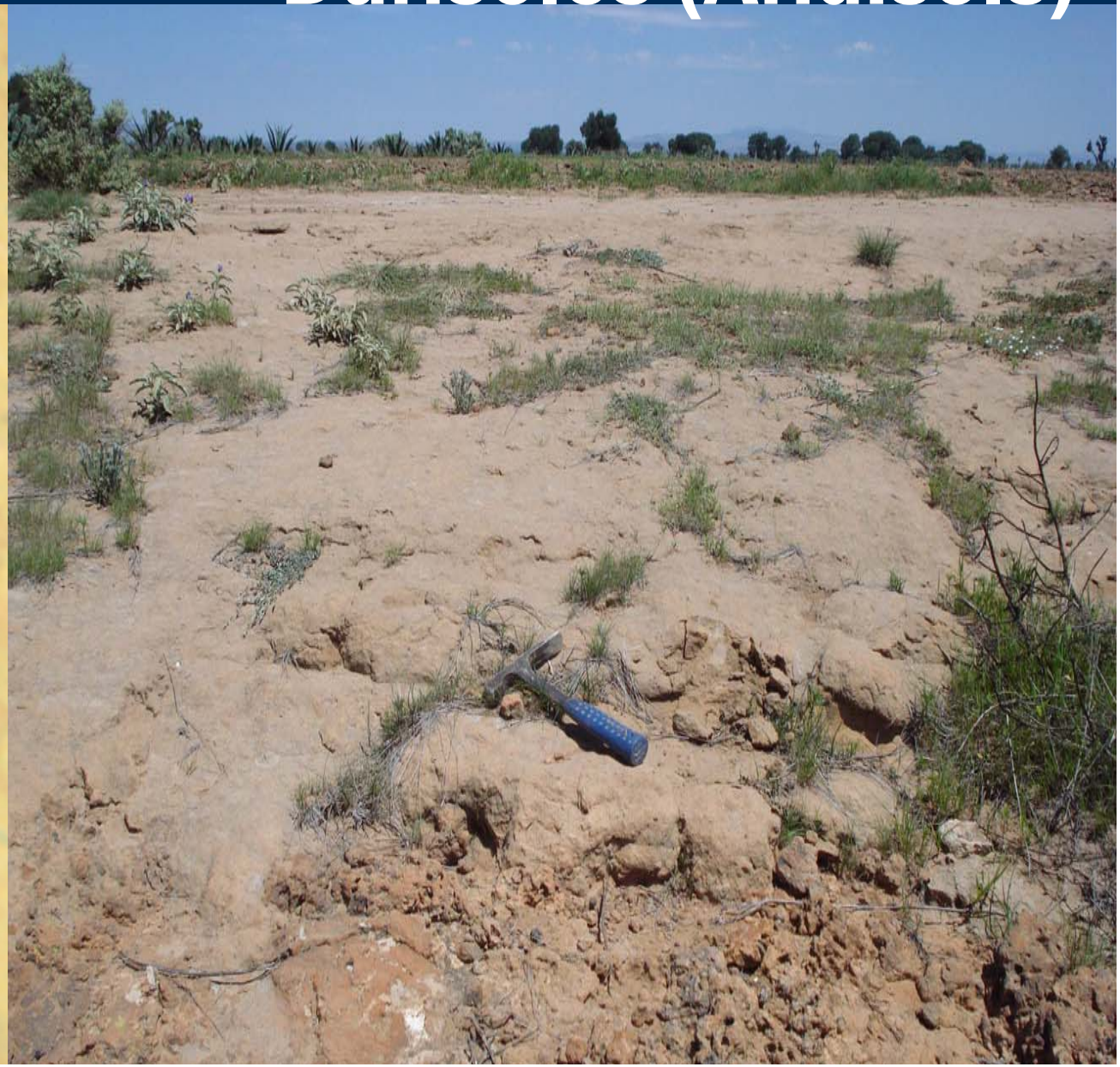
Mesas Centrales

Calcisoles (Aridisols)

10.38% of the national territory

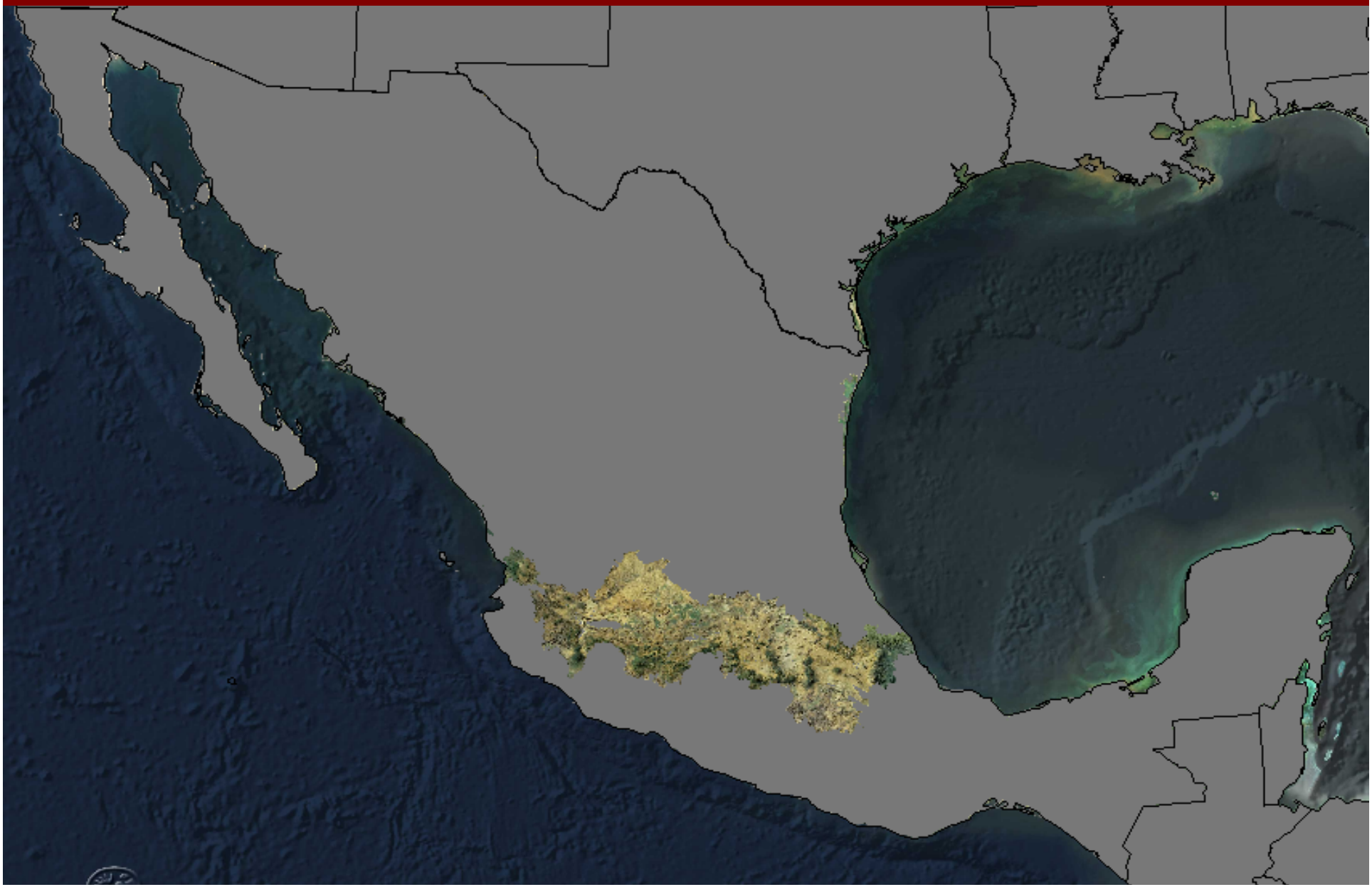


Durisoles (Aridisols)



0.57% of the national territory

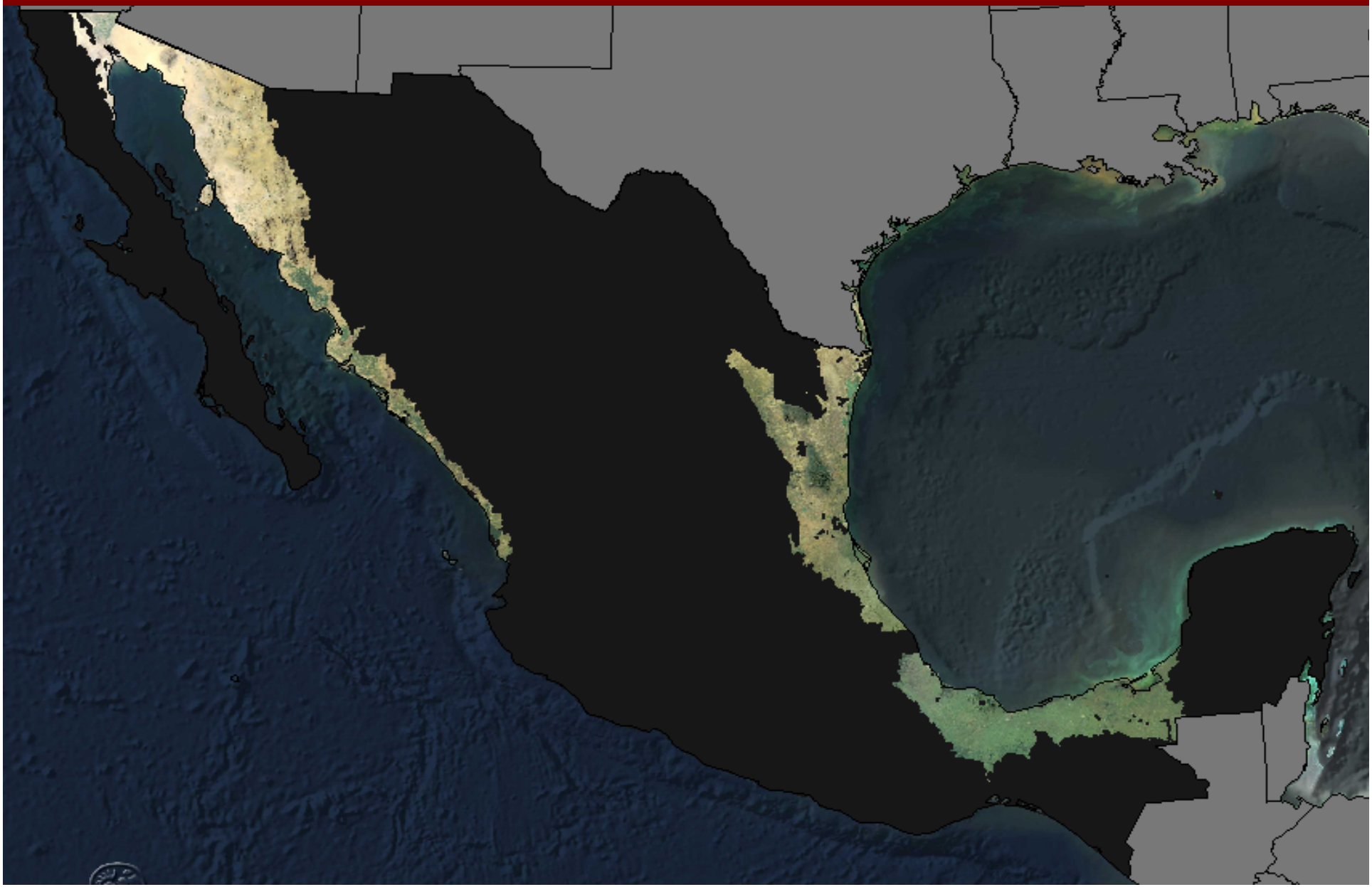
Volcanic Region



Andosoles (Andisols)

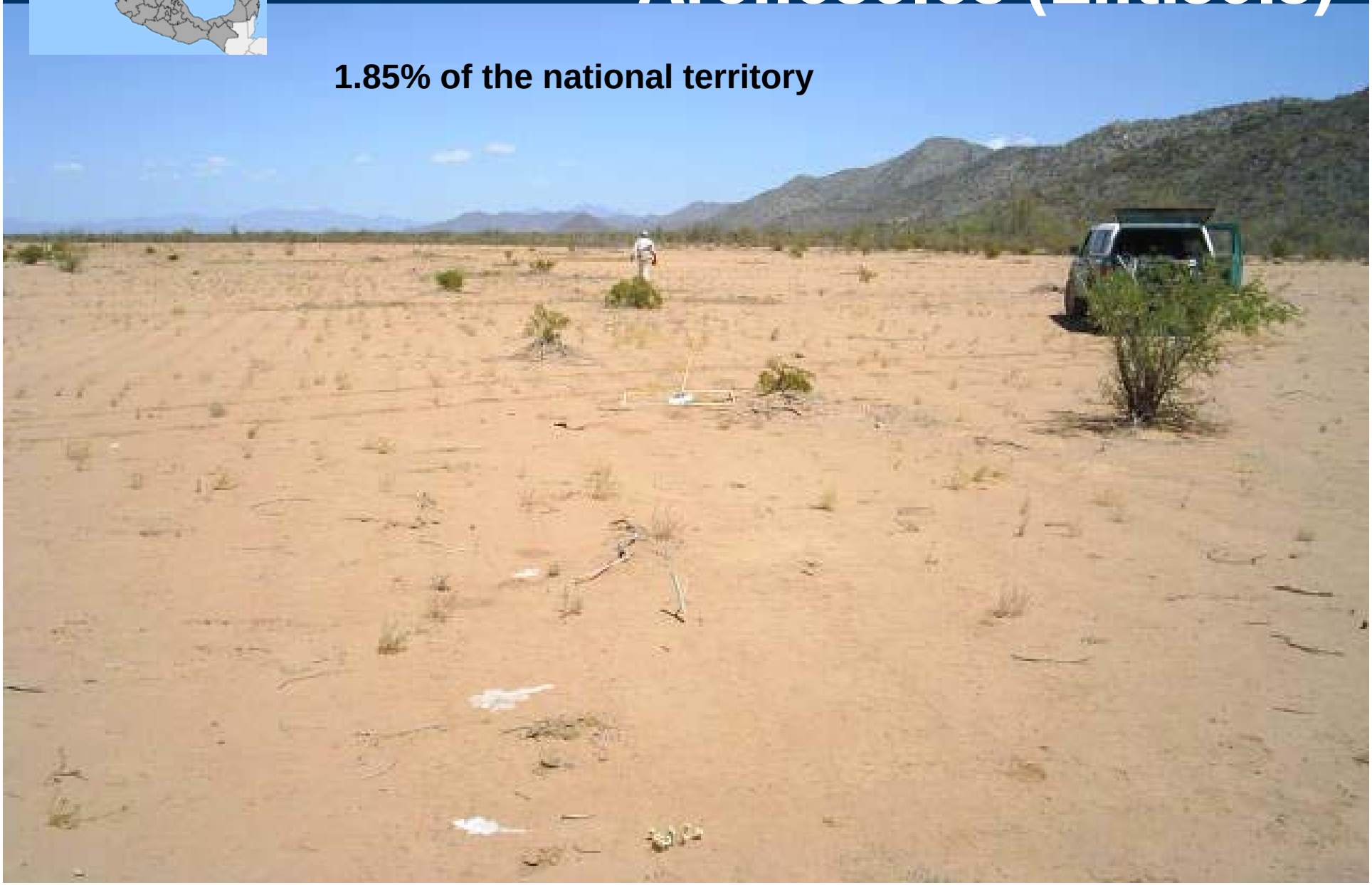
1.26% of the national territory

Coastal Plains



Arenosoles (Entisols)

1.85% of the national territory



Vertisoles (Vertisols)

8.61% of the national territory

Southern Mexico

Acrisoles (Ultisols) y Nitisoles

0.64% of the national territory

Stagnosoles (Aquic Conditions)

Ferralsoles y Plintosoles (Oxisols)

Antrosoles (Anthropogenic Soils)

Criosoles (Gelisols)

CATALONIA COOPERATIVE SOIL SURVEY PROJECT

CATALONIA, SPAIN

Area:

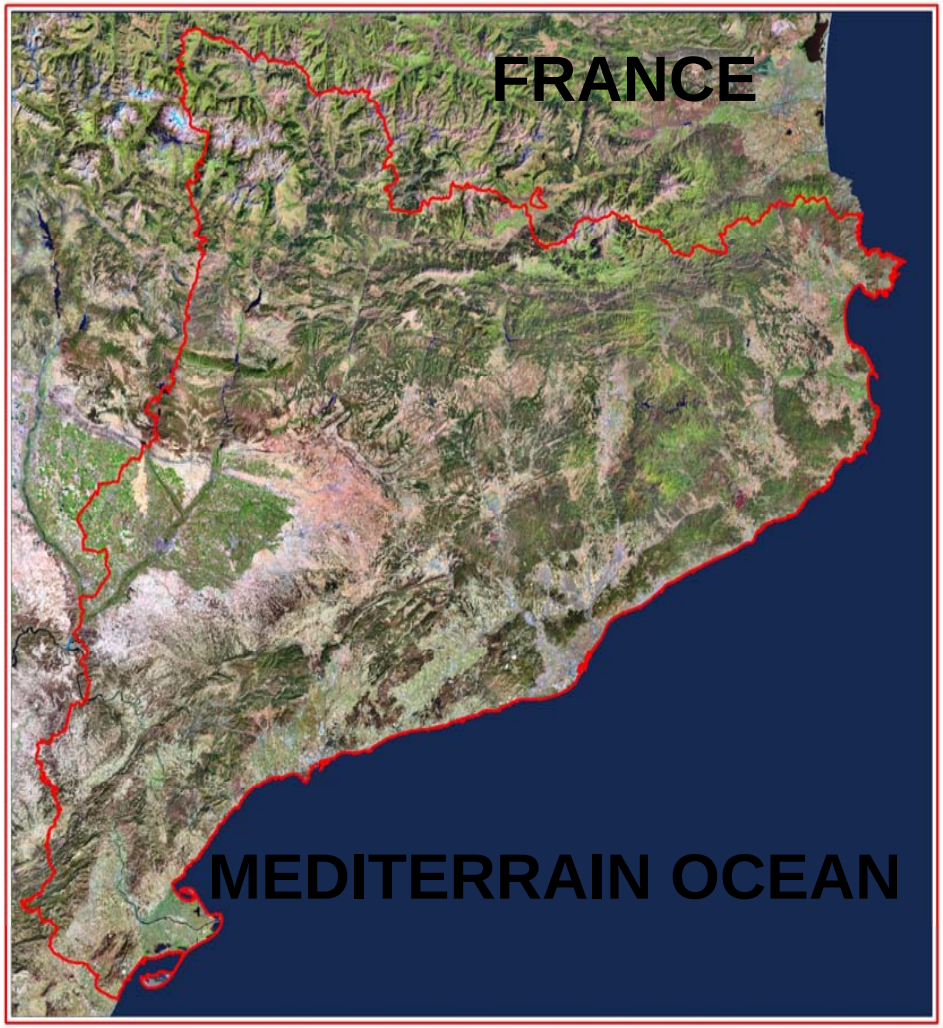
- 3.210.667 ha
- 7.930.372 acres

PHYSIOGRAPHY

Pyrenees mountain

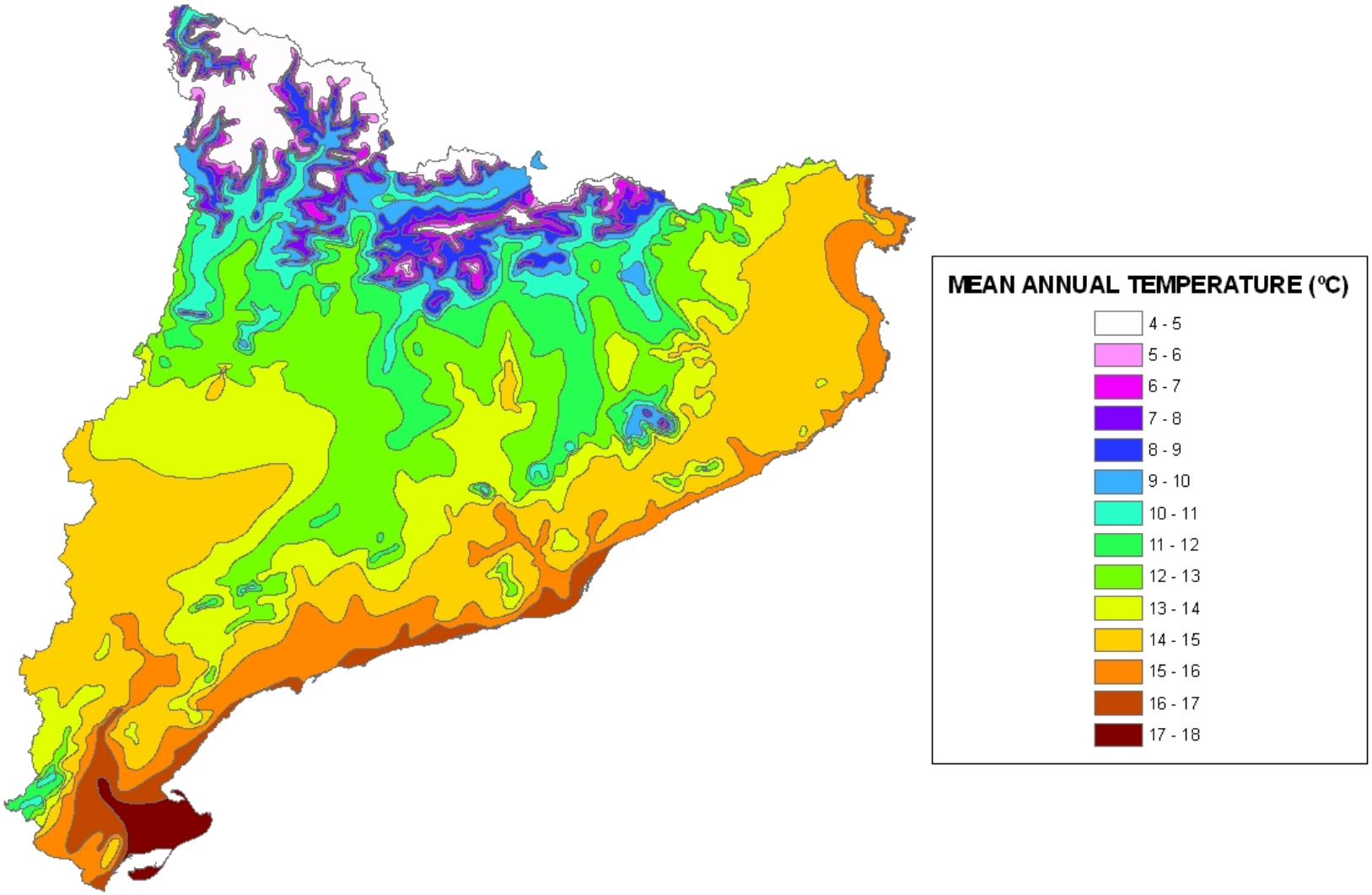
Catalan coastal ranges

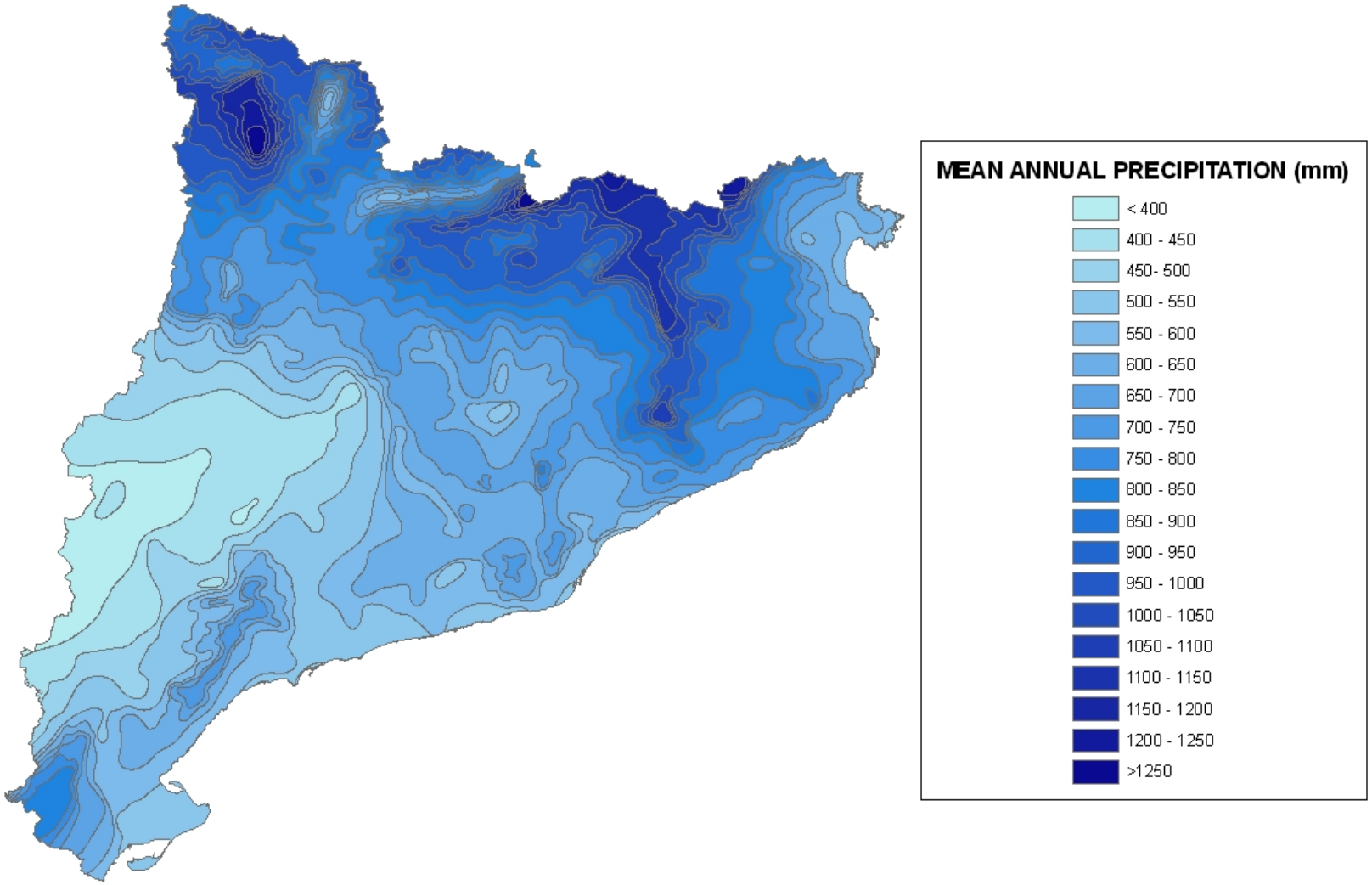
Ebro basin



Land Use:

- Forestry: 60%
- Agriculture: 29%
- Urban: 6%
- Miscellaneous: 5%


MEAN ANNUAL TEMPERATURE (ºC)
4 - 5
5 - 6
6 - 7
7 - 8
8 - 9
9 - 10
10 - 11
11 - 12
12 - 13
13 - 14
14 - 15
15 - 16
16 - 17
17 - 18

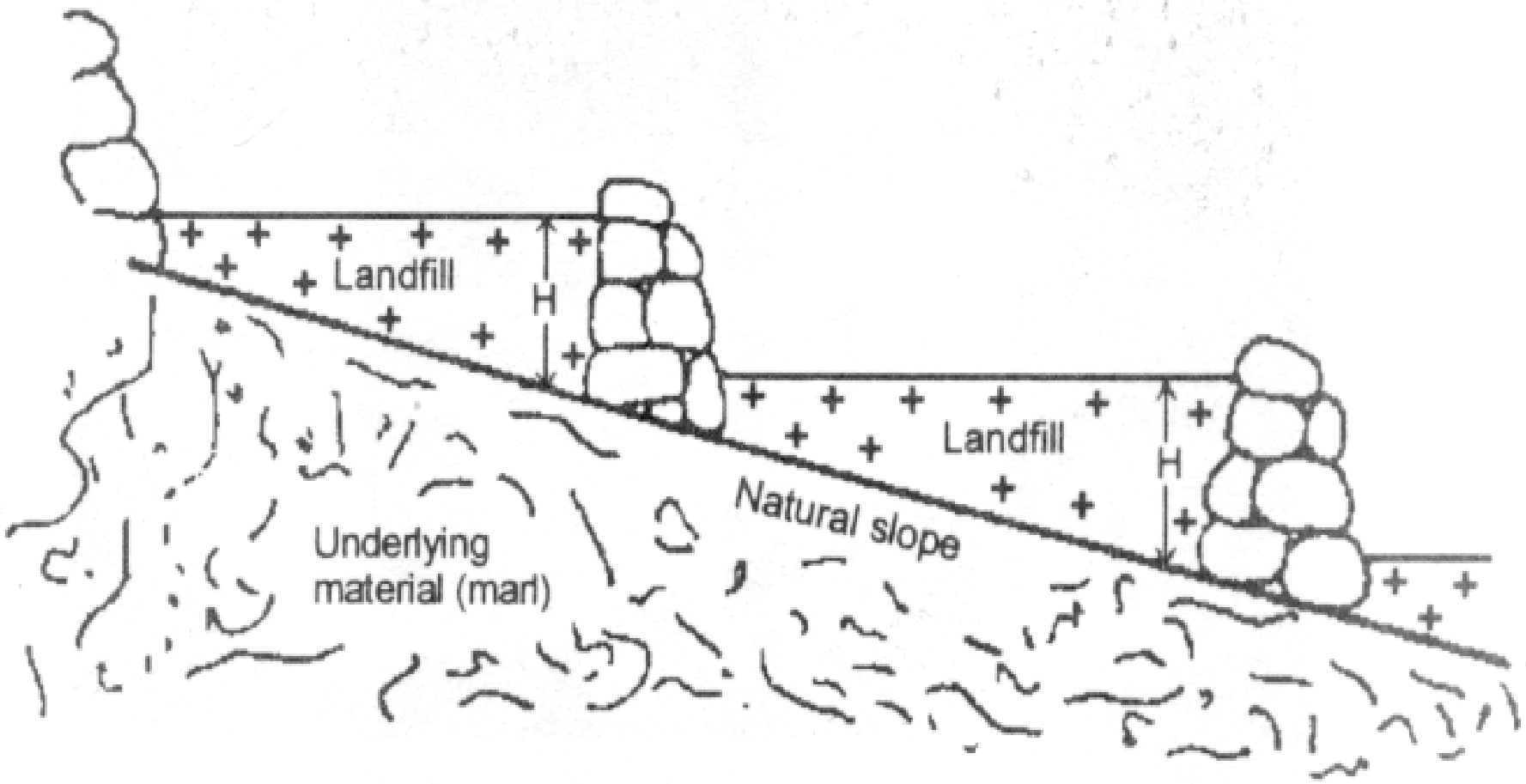

MEAN ANNUAL PRECIPITATION (mm)
< 400
400 - 450
450- 500
500 - 550
550 - 600
600 - 650
650 - 700
700 - 750
750 - 800
800 - 850
850 - 900
900 - 950
950 - 1000
1000 - 1050
1050 - 1100
1100 - 1150
1150 - 1200
1200 - 1250
>1250

CATALONIA COOPERATIVE SOIL SURVEY PROJECT

Project Objectives:

- **Soil Mapping of Catalonia**
  - **1:25,000**
  - **1:250,000**
- **Soil Database Development (attributes dataset)**
  - **Threats to Soil - soil erosion, salinitation, desertification, decline in organic matter, sealing, compaction, soil protection, etc.**
- **Soil Information System (spatial dataset)**

VOLS. Infraestructura

Legislated 4 Core Mission Functions
Vision

Bench Terraces