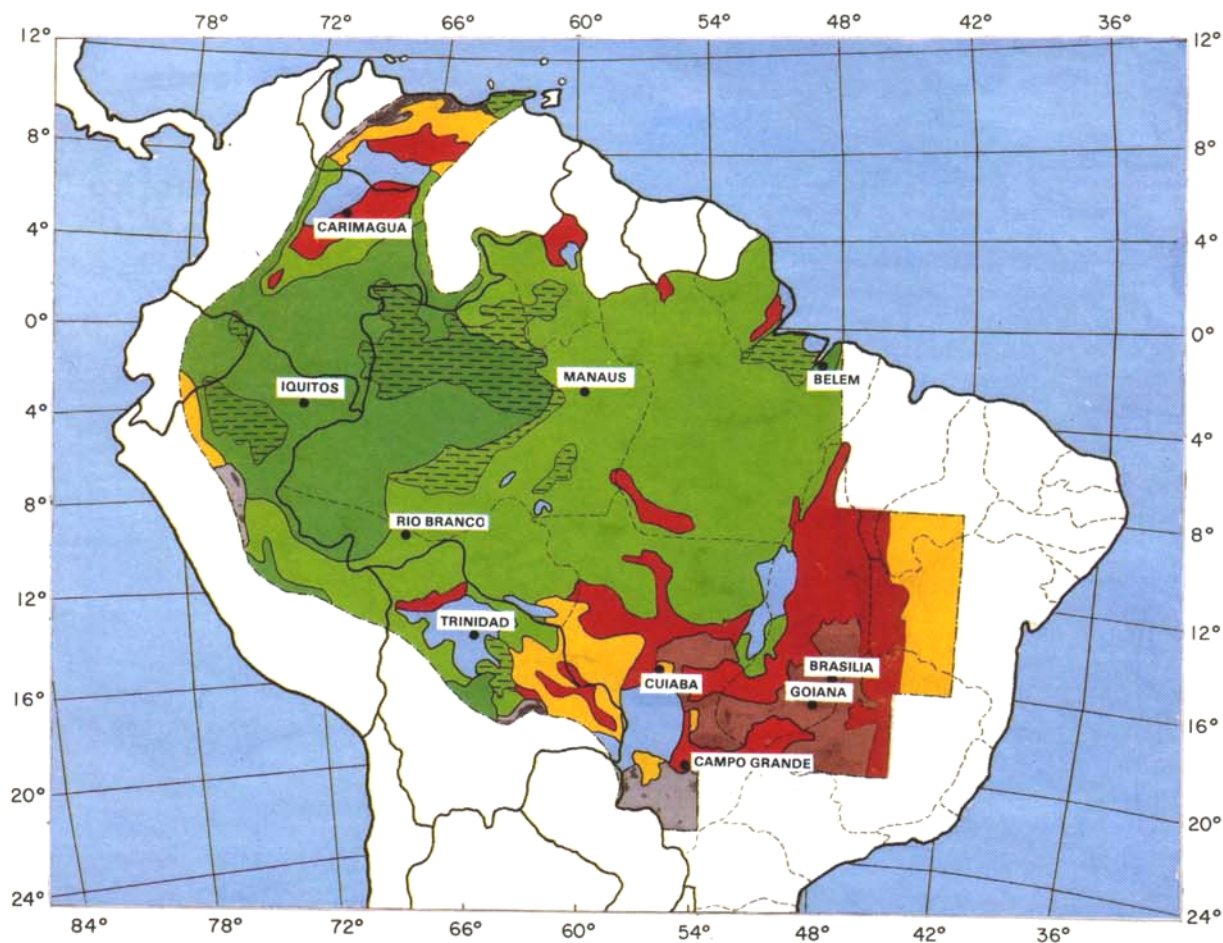


# AGROECOLOGICAL ZONES OF TROPICAL PASTURES PROGRAM



**Well-Drained Isohyperthermic Savannas**  
WSPE<sup>a</sup> 900–1060 mm, 6–8 months wet season,  
WSMT<sup>b</sup> > 23.5°C

**Well-Drained Isothermic Savannas**  
WSPE 900–1060 mm, 6–8 months wet season,  
WSMT < 23.5°C

**Poorly Drained Savannas** (found in  
lowlands of tropical South America,  
in varying climatic circumstances)

**Semi-Evergreen Seasonal Forest**  
WSPE 1061–1300 mm, 8–9 months wet season,  
WSMT > 23.5°C

**Tropical Rain Forest**  
WSPE > 1300 mm, > 9 months wet season,  
WSMT > 23.5°C

**Poorly Drained Forest Regions**

**Deciduous Forests, Caatinga<sup>c</sup> etc**

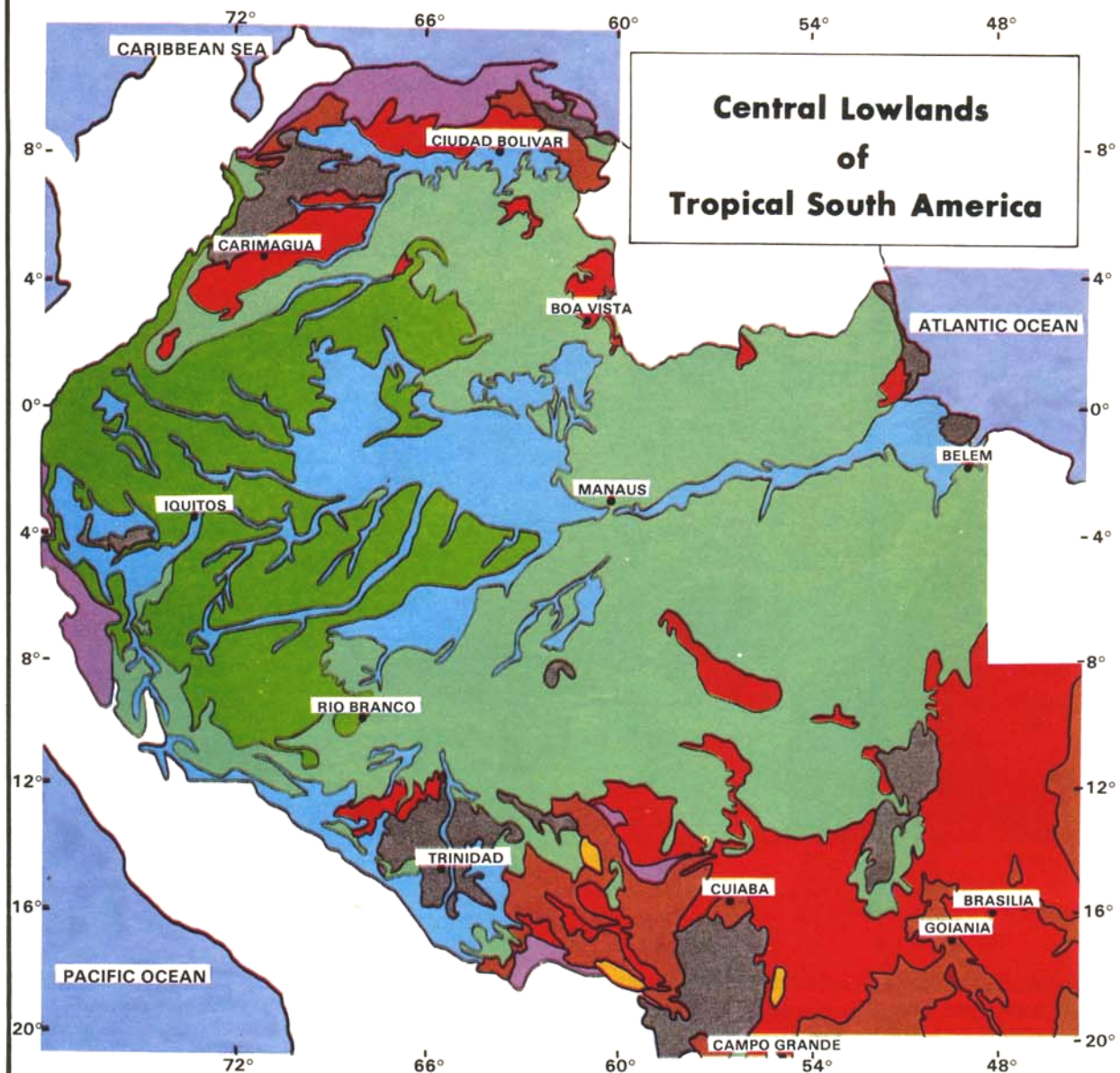
**Others<sup>c</sup>**

a. Total wet-season potential evapotranspiration

b. Wet-season mean temperatures

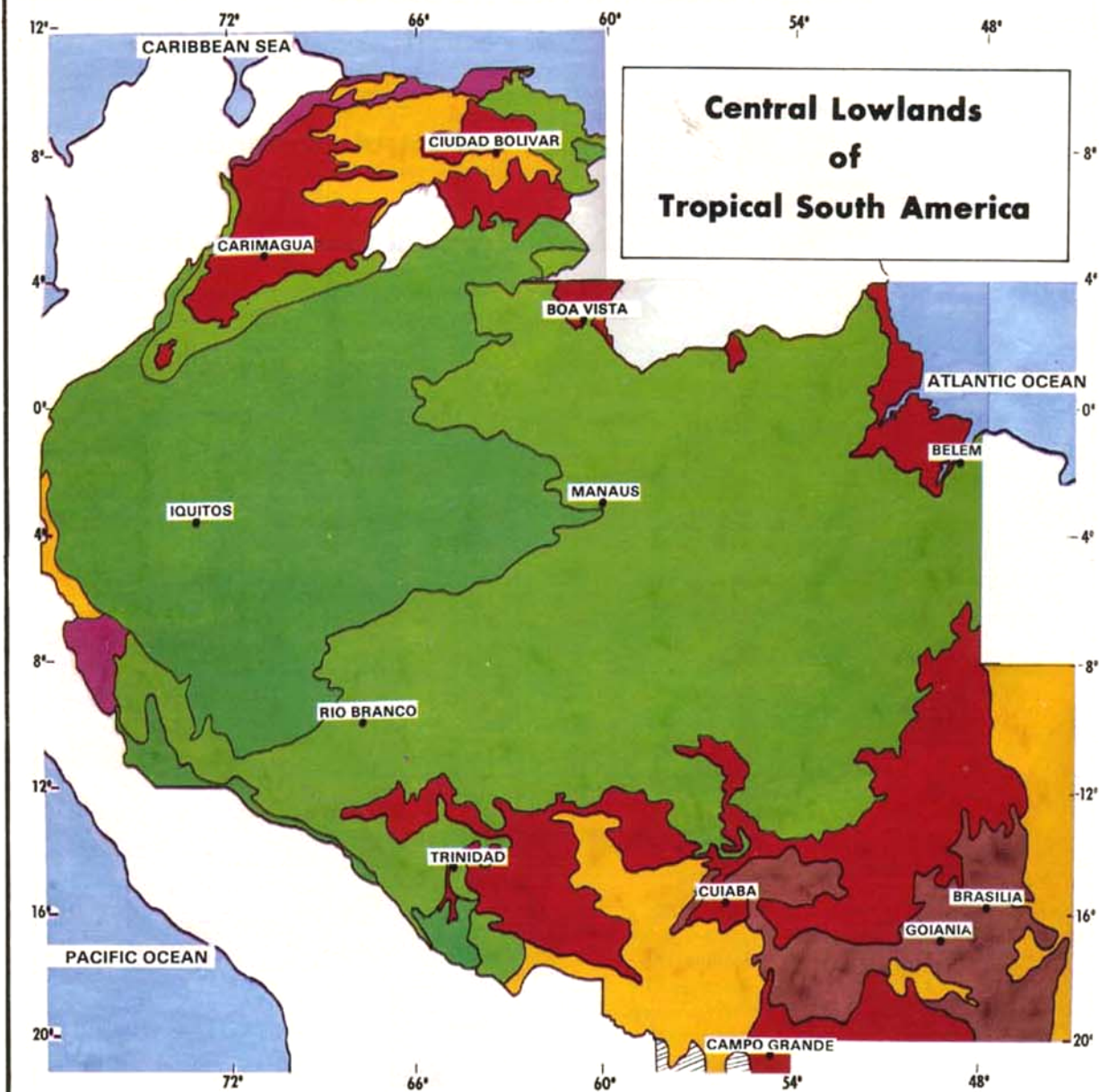
c. Not included within target area of Tropical Pastures Program

## NATURAL VEGETATION CLASSES





# CLIMATIC SUBREGIONS












- a**  WSPE<sup>a</sup> > 1300 mm, > 9 wet mos.,  
WSMT<sup>b</sup> > 23.5°C
- b**  WSPE 1061–1300 mm, 8–9 wet mos.,  
WSMT > 23.5°C
- c**  WSPE 900–1060 mm, 6–8 wet mos.,  
WSMT > 23.5°C
- d**  WSPE 900–1060 mm, 6–8 wet mos.,  
WSMT < 23.5°C

- e**  WSPE < 900 mm, < 6 wet mos.,  
WSMT > 23.5°C
- f**  Subtropical
- o**  Others

<sup>a</sup>. WSPE = Total wet-season potential evapotranspiration.  
<sup>b</sup>. WSMT = Wet-season mean monthly temperature.

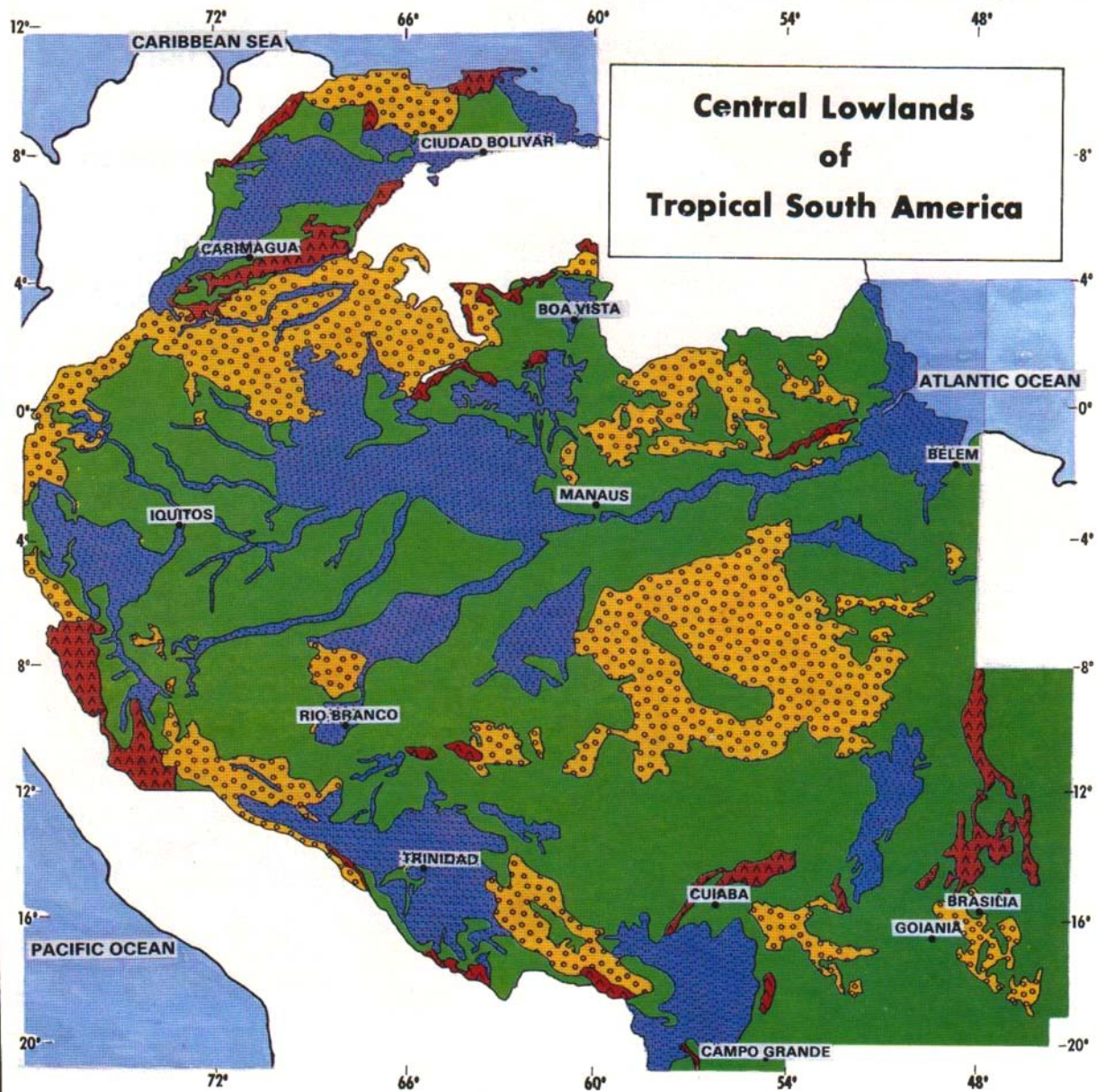
# PHYSIOGRAPHIC REGIONS



- |  |   |
|--|---|
| A  Amazon Basin       | M  Mojos Pampas  |
| B  Brazilian Shield   | O  Orinoco Basin |
| E  Elbow of the Andes | P  Pantanal      |
| F  Andean Foothills   | R  Paraná Basin  |
| G  Guyana Shield      |   |



# TOPOGRAPHIC CLASSES



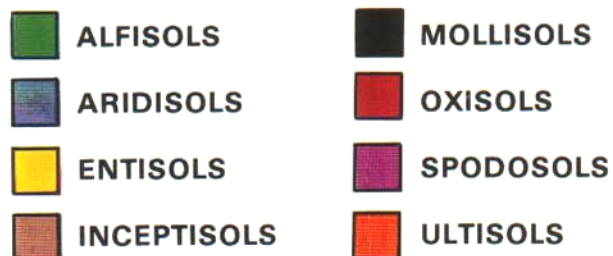
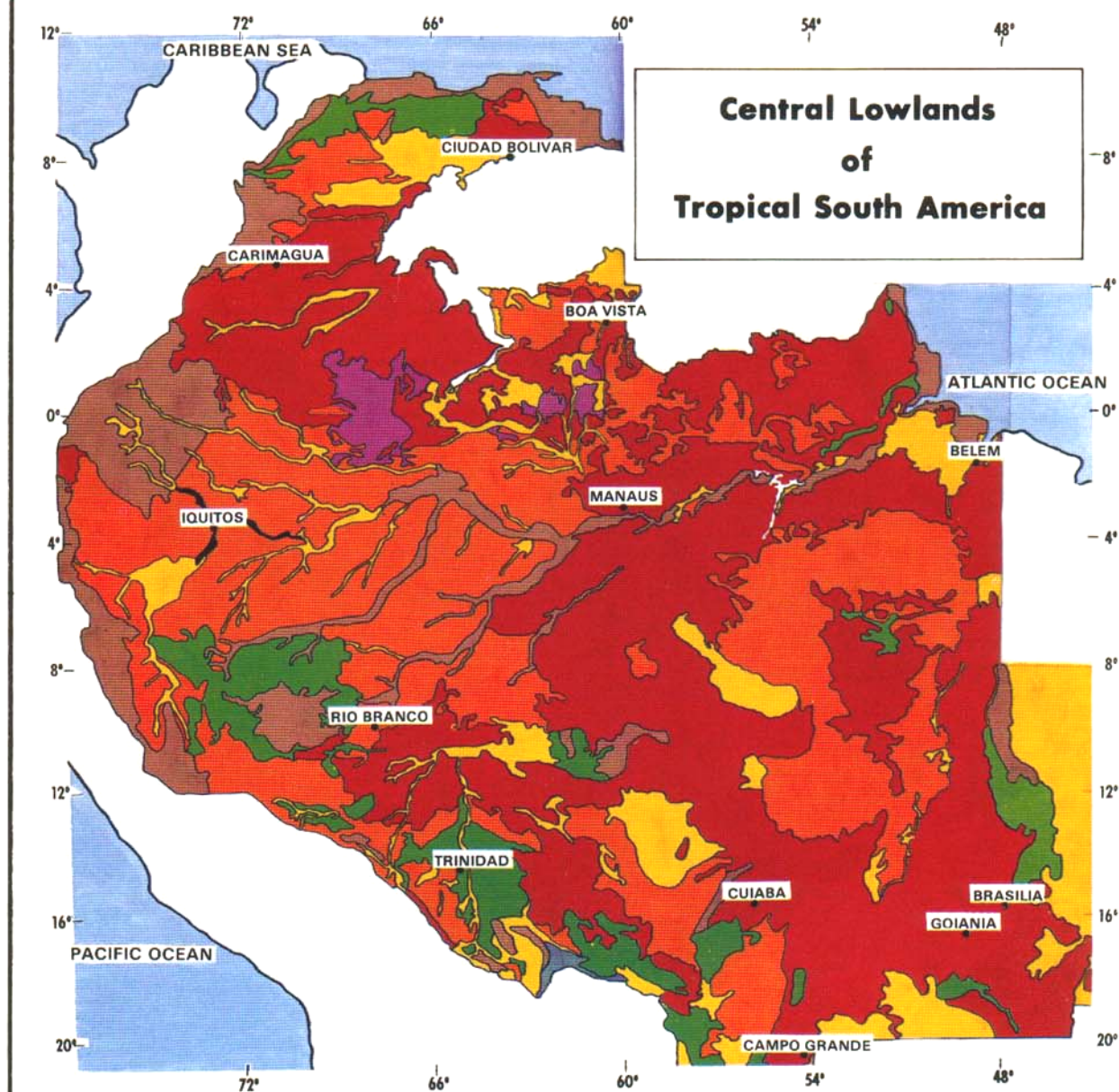
FLAT, POORLY DRAINED

8-30% SLOPES

< 8% SLOPES

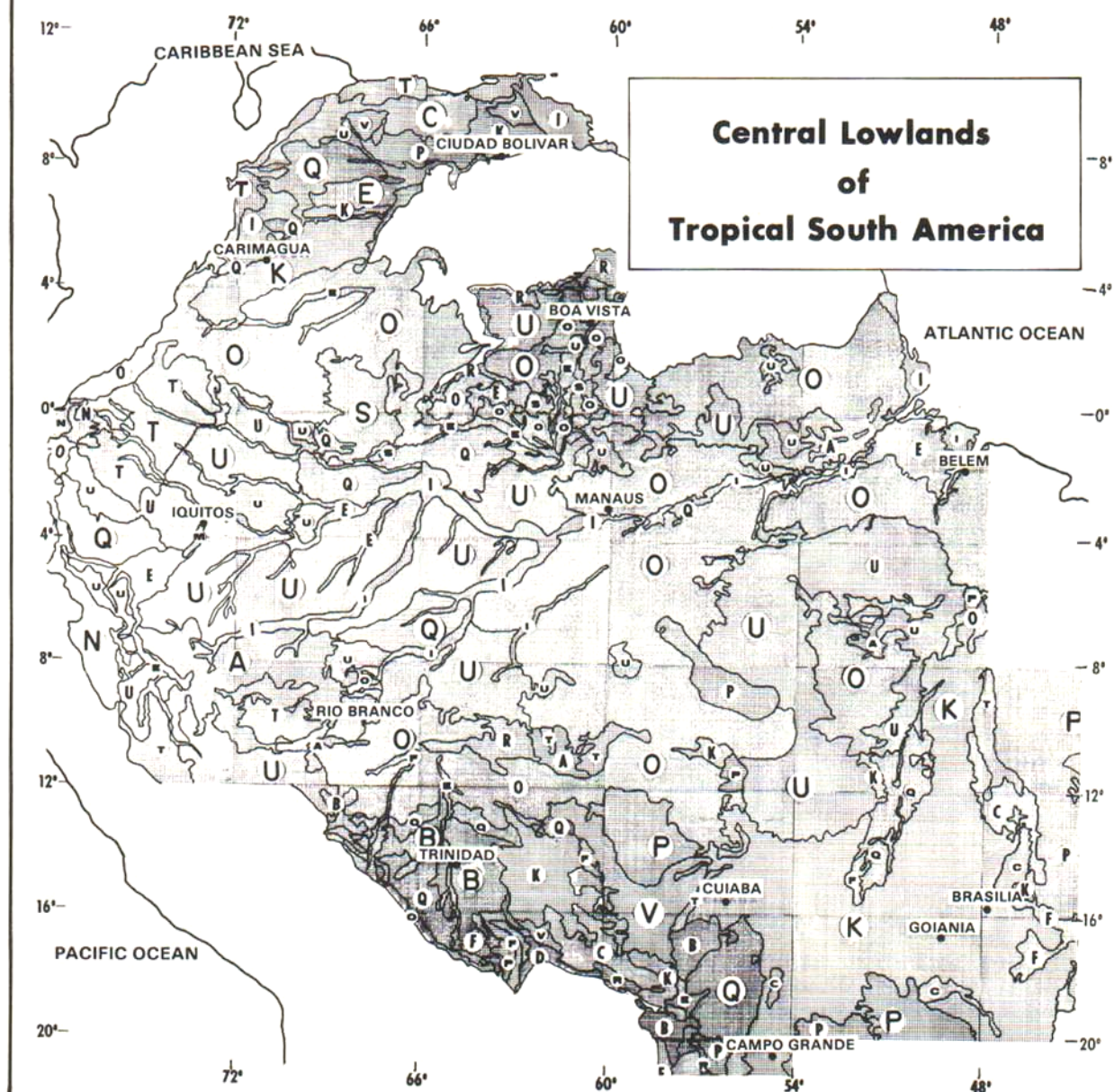
> 30% SLOPES

## SOIL ORDERS/SOIL TAXONOMY





# SUBORDER SOIL CLASSES/ SOIL TAXONOMY



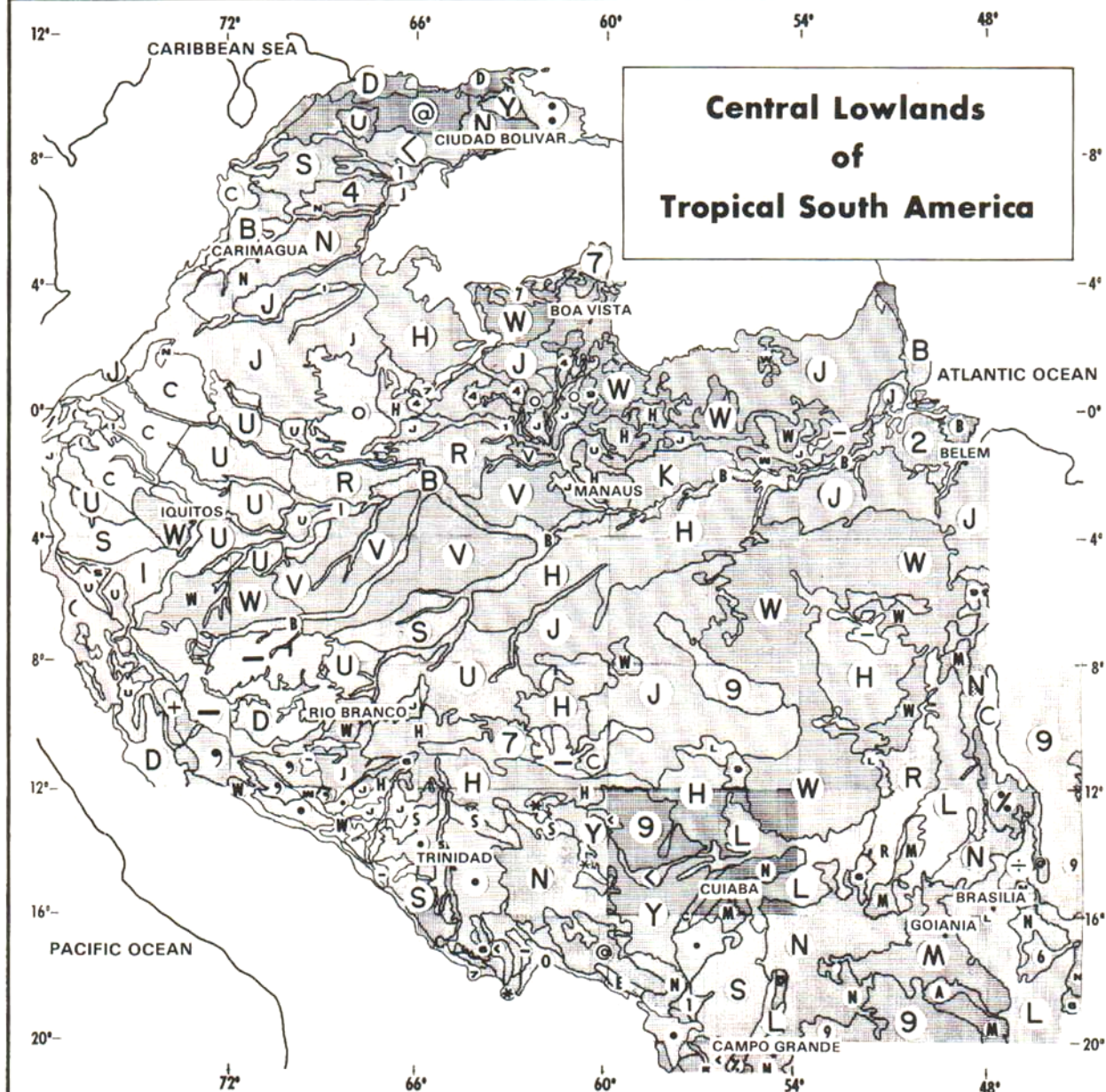
B Aqualfs  
A Udalfs  
C Ustalfs  
X Xeralfs  
D Orthids  
E Aquents  
F Fluvents  
R Orthents

P Psamments  
N Andepts  
I Aquepts  
T Tropepts  
M Aquolls  
G Udolls  
H Ustolls

J Aquox  
O Orthox  
K Ustox  
S Aquods  
Q Aquults  
U Udults  
V Ustults



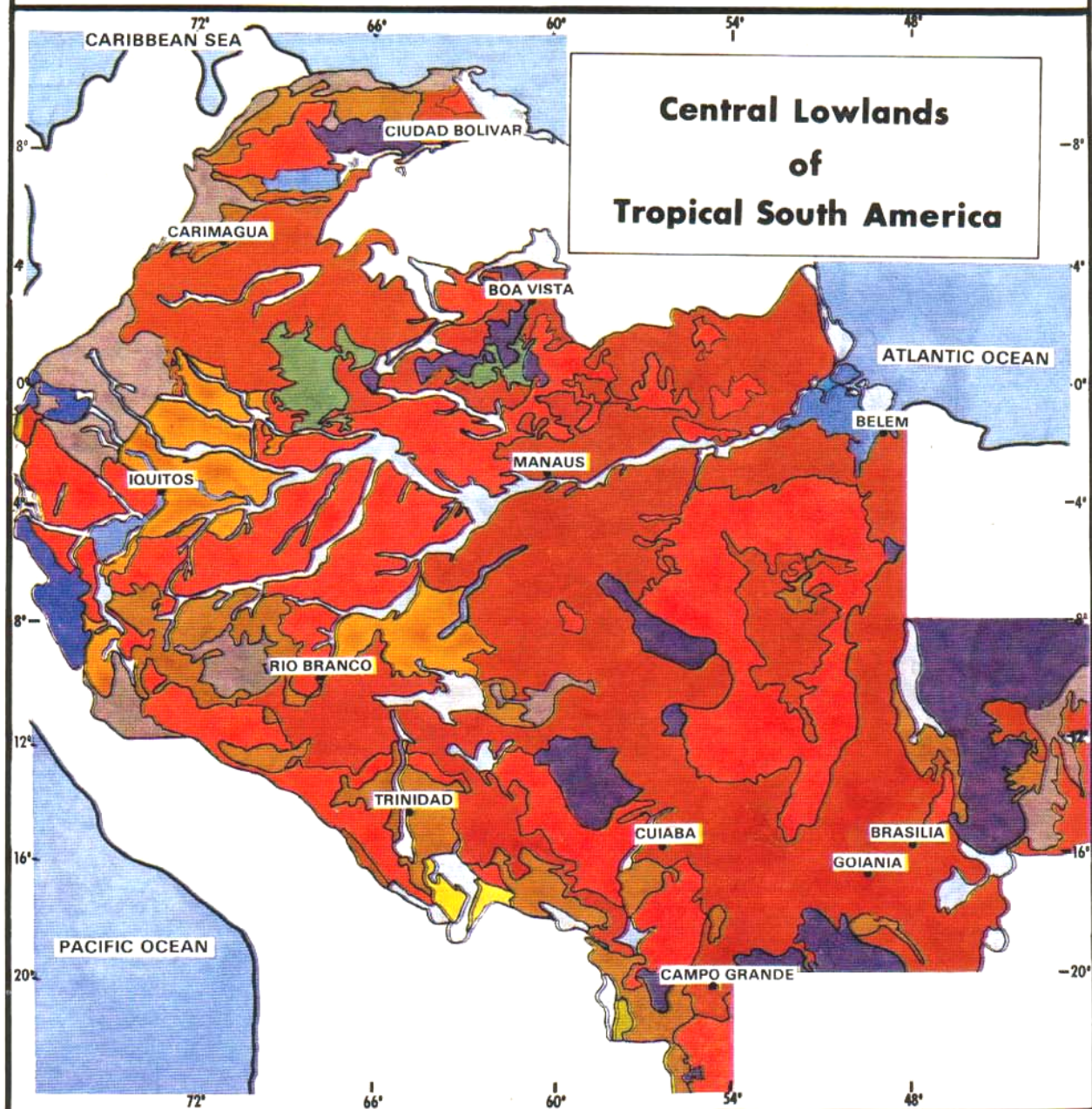
# GREAT GROUP SOIL CLASSES/SOIL TAXONOMY



\ Natraqualfs (AAQNA)	4 Psammaquepts (EAQPS)	: Sulfaquepts (IAQSU)	N Haplustox (OUSH)
• Tropaquepts (AAQTR)	5 Tropaquepts (EAQTR)	B Tropaquepts (IAQTR)	O Tropaquepts (SAQTR)
+ Hapludalfs (AUDHA)	6 Tropofluvents (EFLTR)	C Dystropepts (ITRDY)	P Albaqualfs (UAQAL)
\$ Rhodudalfs (AUDRH)	) Ustifluvents (EFLUS)	D Eutropepts (ITREU)	Q Paleaquepts (UAQPA)
— Tropudalfs (AUDTR)	* Xerofluvents (EFLXE)	- Ustropepts (ITRUS)	R Plinthaqualfs (UAQPL)
@ Haplustalfs (AUSHA)	7 Troporthents (EORTR)	E Haplaquolls (MAQHA)	S Tropaquepts (UAQTR)
& Natrustalfs (AUSNA)	8 Ustorthents (EORUS)	F Argiudolls (MUDAR)	T Hapludults (UUDHA)
Paleustalfs (AUSPA)	9 Quartzipsamments (EPSQU)	; Haplustolls (MUSHA)	U Paleudults (UUDPA)
% Rhodustalfs (AUSRH)	> Tropopsamments (EPSTR)	G Plinthaquox (OAQPL)	V Plinthudults (UUDPL)
÷ Tropustalfs (AUSTR)	< Ustipsamments (EPSUS)	H Acrosthox (OORAC)	, Rhodudults (UUDRH)
7 Haploxeralfs (AXEHA)	( Dystrandepts (IANDY)	I Eutrothox (OOREU)	W Tropudults (UUDTR)
Camborthids (DORCM)	/ Hydrandepts (IANHY)	J Haplorthox (OORHA)	Y Haplustults (UUSHA)
1 Fluvaquepts (EAQFL)	= Haplaquepts (IAQHA)	K Umbriorthox (OORUM)	Z Paleustults (UUSPA)
2 Haplaquepts (EAQHA)	A Humaquepts (IAQHU)	L Acrustox (OUSAC)	X Rhodustults (UUSRH)
3 Hydraquepts (EAQHY)	# Plinthaquepts (IAQPL)	M Eutrustox (OUSEU)	10 Chromudents (VUDCH)

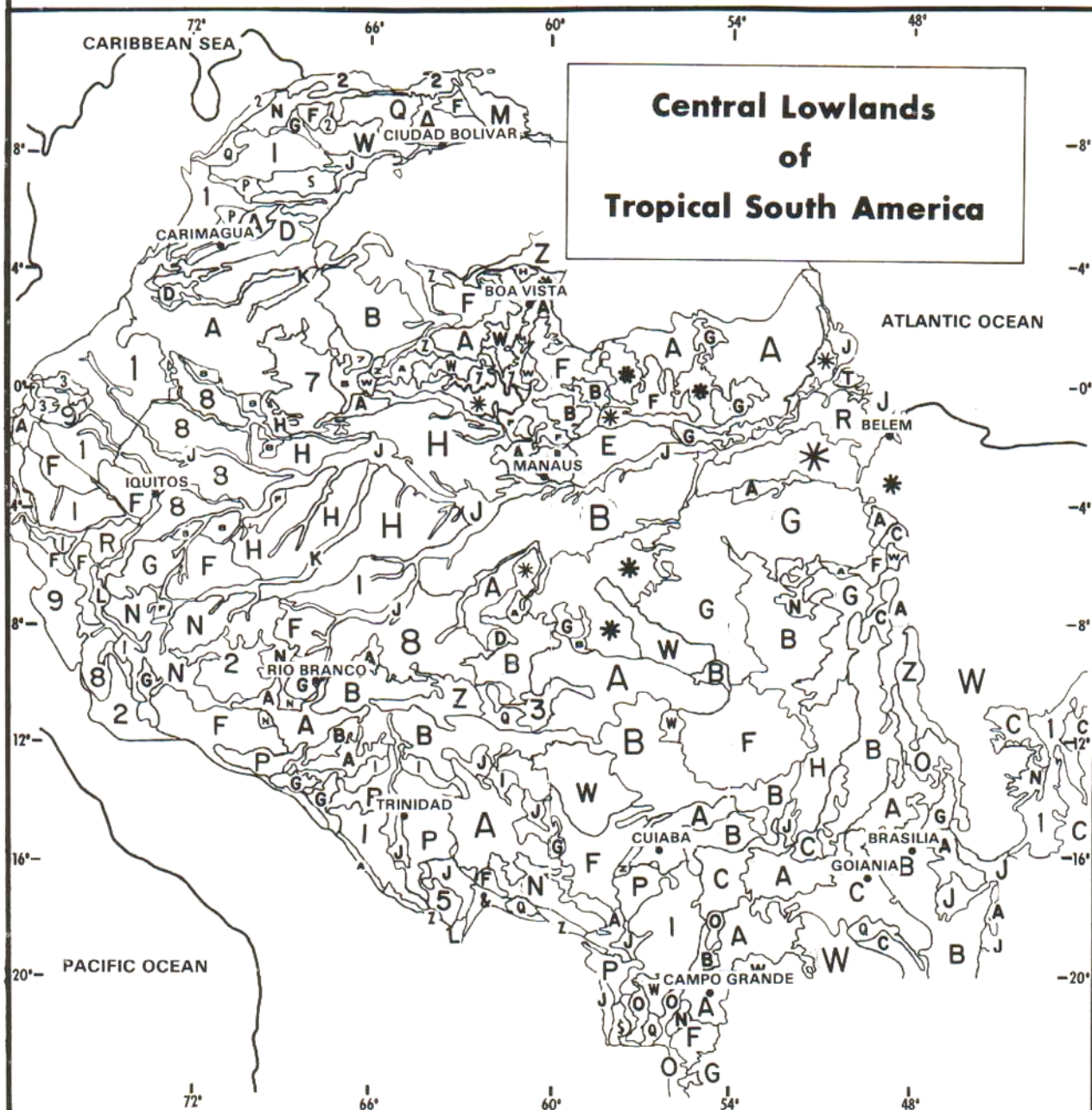


# GENERALIZED SOIL MAP/FAO-UNESCO LEGEND



- |           |           |            |
|-----------|-----------|------------|
| Ferrasols | Cambisols | Planosols  |
| Acrisols  | Regosols  | Solonetz   |
| Fluvisols | Podzols   | Solonchaks |
| Luvisols  | Nitisols  | Yermosols  |
| Gleysols  | Andosols  | Xerosols   |
| Arenosols | Phaeozems | Vertisols  |
| Lithosols |           |            |

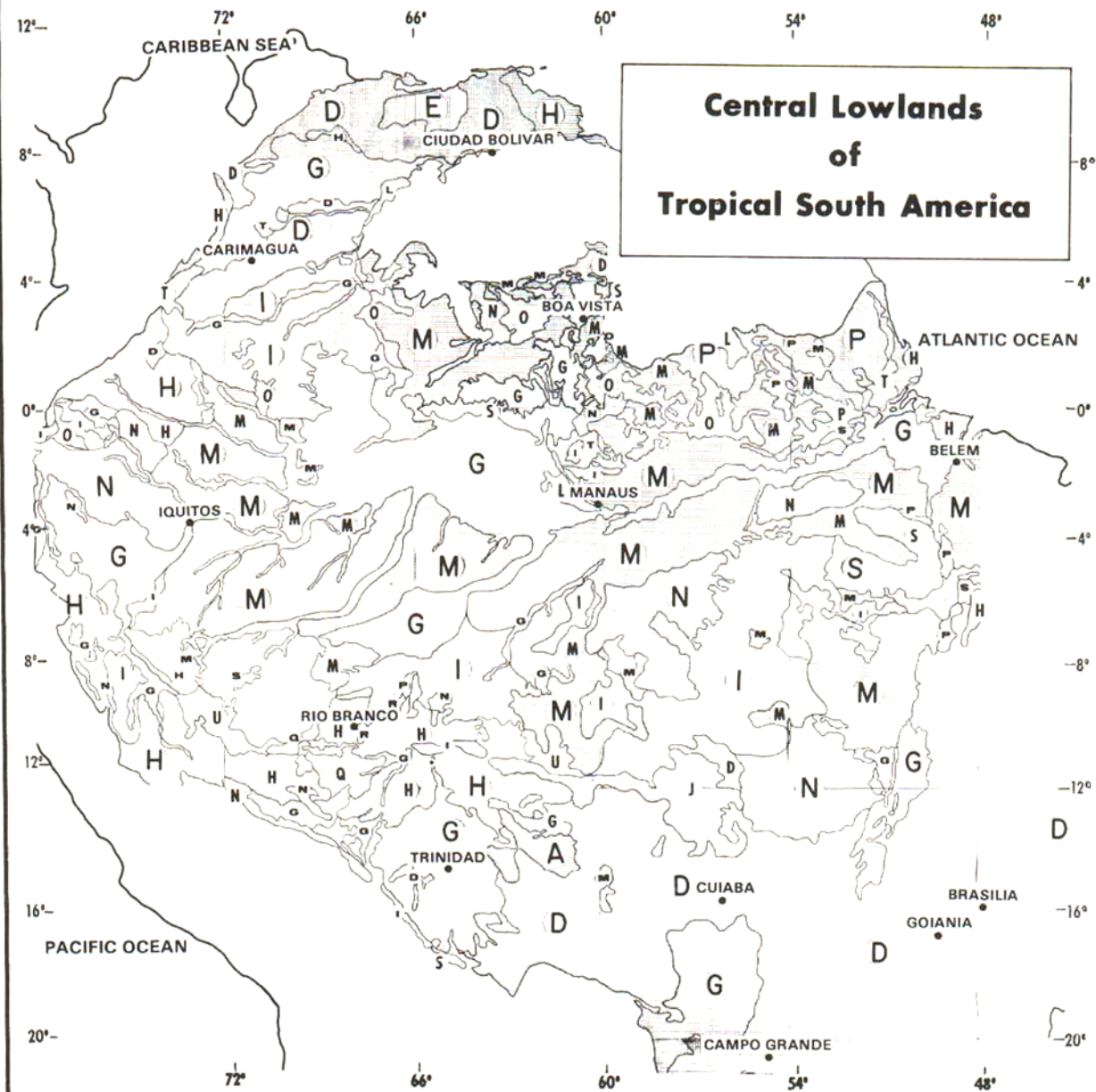
# SOIL UNIT MAP/FAO-UNESCO LEGEND



* Xanthic Ferralsols (Fx)	K Dystric Fluvisols (Jd)	V Plinthic Gleysols (Gp)	8 Dystric Nitosols (Nd)
A Orthic Ferralsols (Fo)	L Calcaric Fluvisols (Jc)	W Ferralic Arenosols (Qf)	9 Humic Andosols (Th)
B Acric Ferralsols (Fa)	M Thionic Fluvisols (Jt)	Y Albic Arenosols (Qa)	X Luvic Phaeozems (Hl)
C Rhodic Ferralsols (Fr)	N Orthic Luvisols (Lo)	Z Lithosols (I)	Haplic Phaeozems (Hh)
D Plinthic Ferralsols (Fp)	O Chromic Luvisols (Lc)	1 Ferralic Cambisols (Bf)	# Dystric Planosols (Wd)
E Humic Ferralsols (Fh)	P Gleyic Luvisols (Lg)	2 Eutric Cambisols (Ba)	+ Gleyic Solonetz (Sg)
F Ferric Acrisols (Af)	Q Ferric Luvisols (Lf)	3 Dystric Cambisols (Bd)	\$ Orthic Solonetz (So)
G Orthic Acrisols (Ao)	R Eutric Gleysols (Ge)	4 Calic Cambisols (Bk)	@ Gleyic Solonchaks (Zg)
H Plinthic Acrisols (Ap)	S Dystric Gleysols (Gd)	5 Eutric Regosols (Re)	& Haplic Yermosols (Yh)
I Gleyic Acrisols (Ag)	T Humic Gleysols (Gh)	6 Dystric Regosols (Rd)	% Luvic Xerosols (Xl)
J Eutric Fluvisols (Je)	U Mollic Gleysols (Gm)	7 Gleyic Podzols (Pg)	10 Chromic Vertisols (Vc)



## SOIL FERTILITY/FCC SYSTEM



**FCC MODIFIERS:** a = Al Toxic, d = dry, e = low ECEC, g = gley, h = acid, i = phosphorus fixation, k = potash deficient.

**MODIFIER COMBINATIONS:**

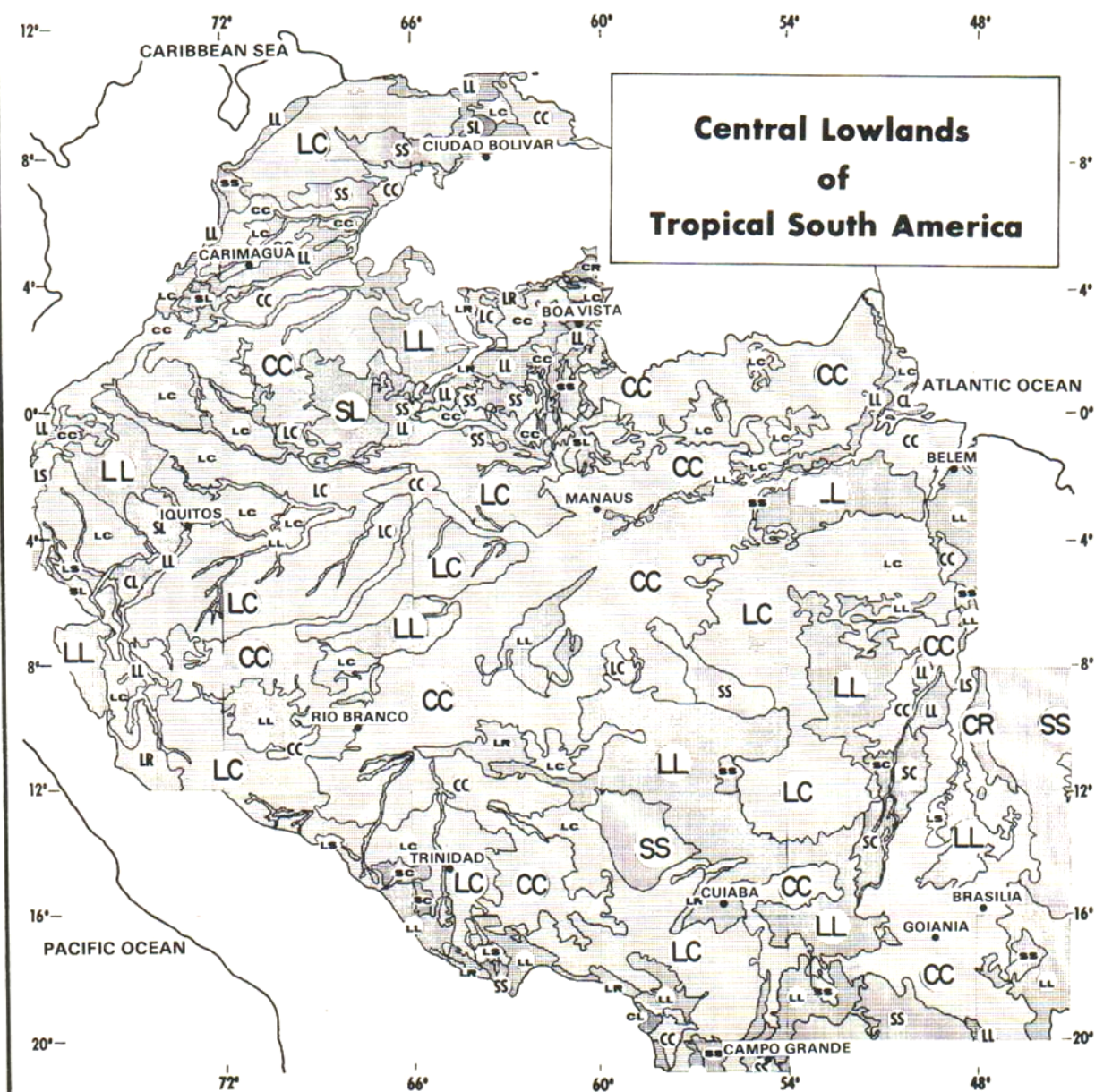
D = contains "d"  
G = contains "g"  
H = h  
I = ha

J = hae  
K = haei  
L = hai  
M = hak

N = hake  
O = hakei  
P = haki  
Q = hei

$$\begin{aligned} R &= hi \\ S &= hk \\ T &= hke \\ U &= k \end{aligned}$$

# SOIL TEXTURAL CLASSES/FCC SYSTEM



**S** Sand                      **C** Clay  
**L** Loam                     **R** Rock

**NOTE:** The first letter of the code indicates topsoil (0-20 cm) texture. The second letter indicates subsoil (21-50 cm) texture.