

Classifications of Karst, Parakarst & Pseudokarst

Karst

Para-Karst

Hypo-Karst

Pseudo-Karst

Non-Karst

	Solution Dominant			Chemical Weathering			Physical weathering & erosion			Phase change		Mass Movement		Biol	Const- ructional
	Lime-stone	Salts (fast)	Quartz (slow)	Tafoni	Granite	Laterite	Water (sea)	Piping	Wind	Lava	Ice Snow	Gravity	Tectonic		
Sweeting 1972															?
Otvos 1976															?
Cigna 1978 & IUS															?
Kempe & Halliday, 1997				?	?	?	?		?				?	?	?
Wray															?
Grimes, 1997															
This Conference															

KARST

“Karst landforms (caves, sinkholes, underground drainage etc) formed by solution of carbonate rocks”

PARAKARST

“karst-like landforms formed by solution of non-carbonate rocks. Solution contributes, but may not be the dominant process”

Tachy-parakarst is dominated by fast and extensive solution (e.g. gypsum and rock-salt)

Brady-parakarst has slow and only partial solution – other erosional processes generally dominate.

* **Silicate “Karst”** is a type of “brady-parakarst”. It includes...

- * Laterite “karst” (deep chemical weathering followed by piping etc)
- * Quartz Sandstone “karst” (partial solution followed by piping etc)
- * Other rocks – e.g. Granite karren, "volcanokarst" (rapid weathering of volcanic ash), etc.
- * Chemical weathering (more than just solution) = tafoni, granite, ...

PSEUDOKARST

“karst-like landforms formed entirely by processes other than solution”

* **Hypokarst** (phase changes between solid-liquid-gaseous states)

- * Lava caves (and other volcanic cavities)
- * Glacier Caves (and ablation of snow)
- * Thermokarst (freeze-thaw in permafrost areas)
- * Sea caves
- * Piping
- * Wind erosion
- * Mass movement (& tectonic movement)
- * Biogenic (animal burrowing, mining, sewers)
- * Constructional Caves (e.g. behind tufa waterfalls, within coral reefs).

POLYGENETIC

- * Boulder caves (solution, weathering, mass movement, piping, ...)
- * Tafoni (solution, chemical weathering, case-hardening, wind, gravity)

NON-KARST

* Ruiniform Terrain - is not really “karst-like” - the distinctive features are due to structural control of the weathering & erosion, not the nature of that process (solution or otherwise)

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