

Weathering damage on Pharaonic sandstone monuments in Upper Egypt

Maps of weathering forms

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The monument mapping method was applied as an experienced non-destructive procedure for the documentation and evaluation of weathering forms. Three areas at the Karnak Temple were mapped. According to level IV of the classification scheme of weathering forms, all individual weathering forms and their intensities were mapped and were illustrated in separate maps according to the four groups of weathering forms. The maps were evaluated quantitatively with respect to type, intensity, combination and distribution / zonation of weathering forms. The results were used for the deduction of information on weathering processes and the development of weathering damage. Salt weathering can be considered as a significant weathering process affecting the sandstone monuments in Upper Egypt.

Karnak Temple, Ramesses III Temple, part of the ESE - facade



Karnak Temple, Ramesses III Temple, entrance



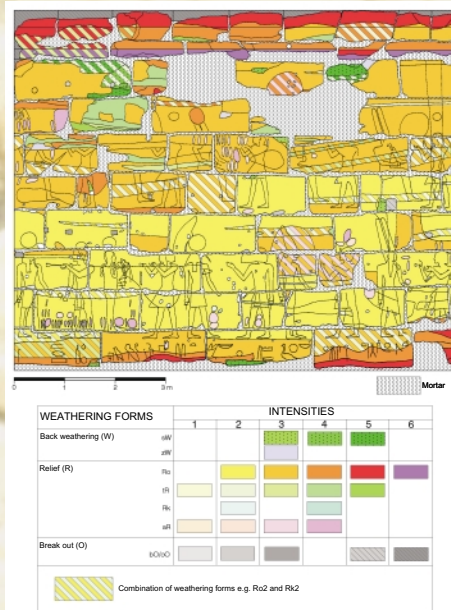
Karnak Temple, Ramesses III Temple, ESE - facade with marked investigation area



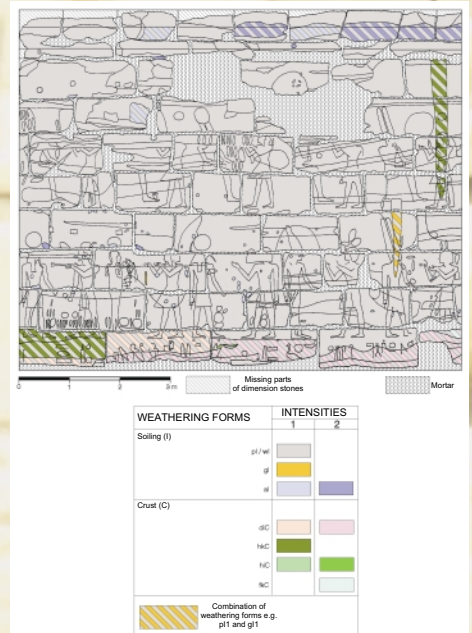
Monument mapping



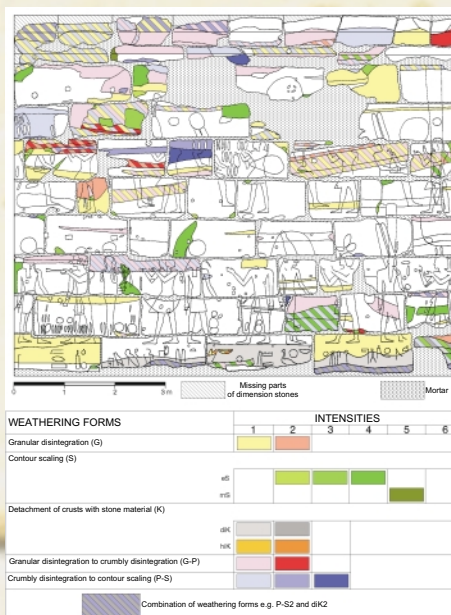
Karnak Temple, Ramesses III Temple, SSW - facade



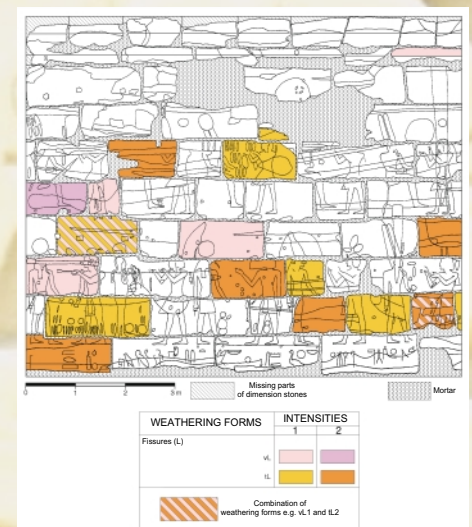
Map of weathering forms - group 1 of weathering forms "loss of stone material"



Map of weathering forms - group 2 of weathering forms "discoloration / deposits"



Map of weathering forms - group 3 of weathering forms "detachment"



Map of weathering forms - group 4 of weathering forms "fissures / deformation"