Geological Map of the Western Side of the Lower Ica Valley (Southern Peru)

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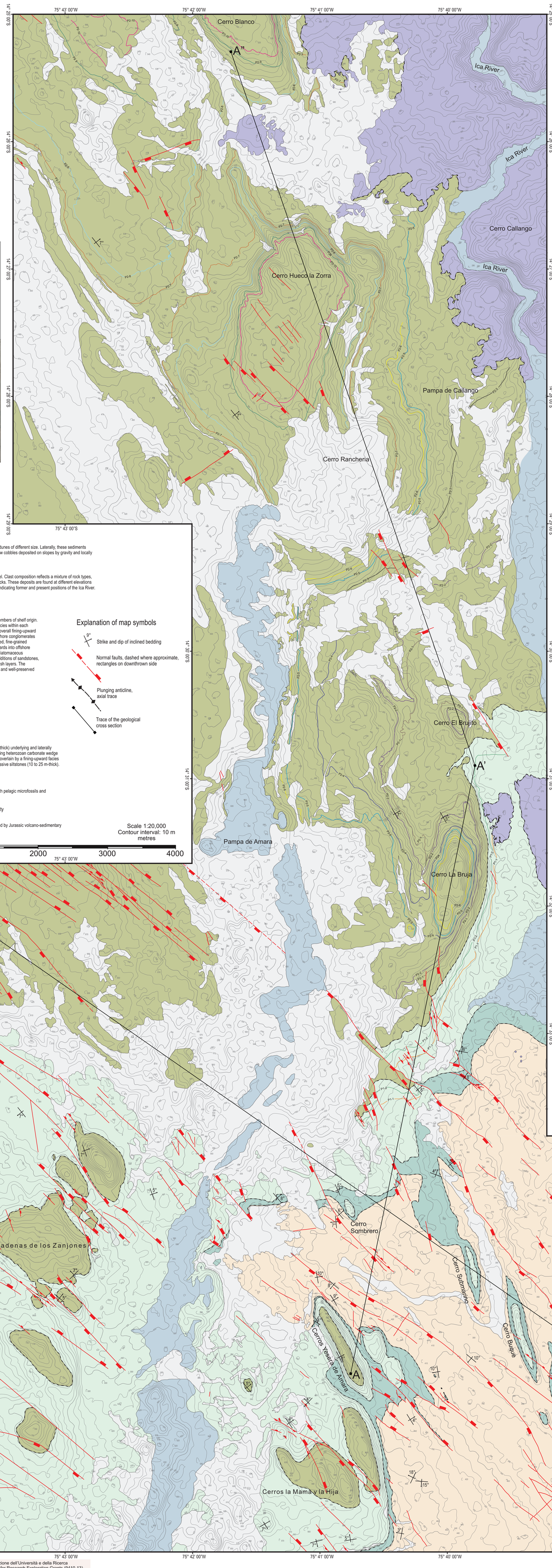
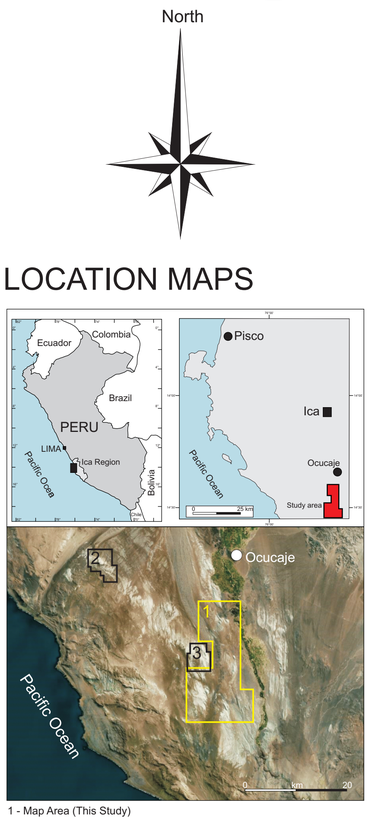




1 - Map Area (This Study)

Other Geologic Maps
2 - Di Celma et al. (2016a)
3 - Di Celma et al. (2016b)

LEGEND

Quaternary surficial map units

Eolian deposits and colluvium (Holocene and upper Pleistocene)

Unconsolidated, well-sorted, fine- to medium-grained sand, forming dunes of different size. Laterally, these sediments interfinger with unconsolidated sand and gravel with some silt and few cobbles deposited on slopes by gravity and locally derived from surficial map units and bedrock formations.

Alluvial deposits (Holocene and Pleistocene)

Unconsolidated silt, sand, and well-rounded pebble and cobble gravel. Clast composition reflects a mixture of rock types, including volcanic and subordinate metamorphic and sedimentary rocks. These deposits are found at different elevations along the margin of the valley and beneath the modern valley floor, indicating former and present positions of the Ica River.

Cenozoic units

Pisco Formation (late Miocene)

P2-10
P2-9
P2-8
P2-7
P2-6
P2-5
P2-4
P2-3
P2-2
P2-1 — P2 Allomember
PE0.2 unconformity
P1-2
P1-1 — P1 Allomember
PE0.1 unconformity
P0 Allomember
PE0.0 unconformity
PE0 unconformity

It comprises three allomembers of shelf origin. Vertical progression of facies within each allomember displays an overall fining-upward trend that includes nearshore conglomerates and thoroughly bioturbated, fine-grained sandstones grading upwards into offshore sandy siltstones and/or diatomaceous mudstones with minor additions of sandstones, dolomitic horizons, and ash layers. The formation contains a rich and well-preserved vertebrate fauna.

Chilcatay Formation (late Oligocene-early Miocene)

Massive, medium- to fine-grained sandstones and siltstones (>70 m thick) underlying and laterally interfingering with a coarse-grained, SW-dipping, basinward-prograding heterozoan carbonate wedge (35 m thick). The clinostratified calcarenitic wedge is unconformably overlain by a fining-upward facies succession composed of basal sandstones gradually overlain by massive siltstones (10 to 25 m-thick).

CE0 unconformity

Otuma Formation (late Eocene-early Oligocene)

Basal mollusk-bearing sandstones and overlying silty sandstones with pelagic microfossils and clupeoid fish scales.

OE0 unconformity

Basement (pre-Cenozoic)

Lower Paleozoic granitoid rocks of the San Nicolás batholiths covered by Jurassic volcano-sedimentary rocks of the Guaneros Formation.

Explanation of map symbols

Strike and dip of inclined bedding

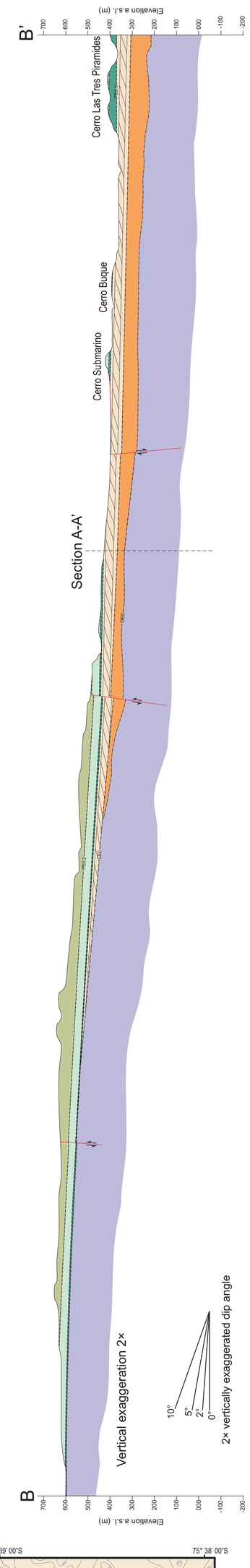
Normal faults, dashed where approximate, rectangles on downthrown side

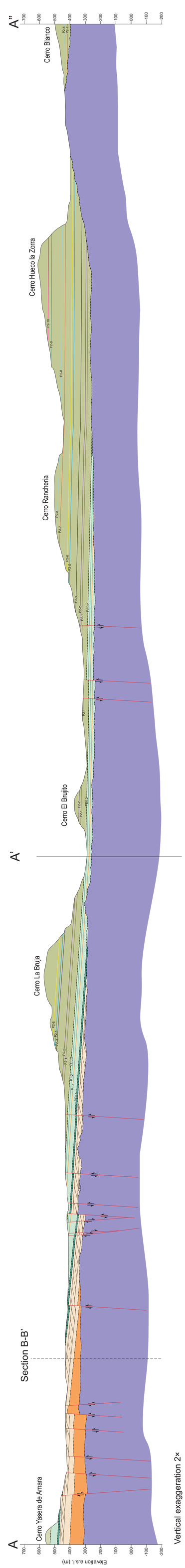
Plunging anticline, axial trace

Trace of the geological cross section

Scale 1:20,000
Contour interval: 10 m
metres

0 1000 2000 3000 4000





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