

NICARAGUA

Cailagua, El Muerto and Montelimar: Nicaraguan Millenary Rock Art at Risk

Among the numerous features that distinguish present day Nicaragua is an abundance of pre-Columbian rock art, or petroglyphs. Petroglyphs are often associated with ancient sites all over the country. Rock art pervades settings as diverse as the volcanic tuff walls of Cailagua in Masaya, basaltic rock engravings along riversides in Matagalpa and the Segovias and crosses and spiral forms more characteristic of Chontales and parts of the Atlantic and central regions. As yet there is no organised catalogue of known petroglyphs, making it harder to protect, preserve and study these unique forms of expression.

While the majority of petroglyphs are not near highly active or populated areas, there are three very important sites that are in urgent need of attention; this is due to anthropogenic activity combined with disturbances in their setting. The sites especially at risk are the Montelimar Cave near the Pacific coast in the department of Managua, Cailagua in Masaya and Isla del Muerto in the Zapatera Archipelago in Granada. On two prior occasions, unsuccessful rescue and protection project requests were submitted to international organisations. The petroglyphs at all three sites were engraved upon volcanic tuff: consolidated ash that solidified as it cooled. Consolidated volcanic tuff is quite susceptible to the ravages of hydrologic and erosive processes, unless the surface has the time to stabilise with time. Tuff is intensively quarried in the Pacific region, because it is a readily found and workable material appropriate for construction; there are at least two petroglyph sites that recently disappeared because of quarrying activity.

Over time, many petroglyphs have developed a protective patina that often stabilises the engraved surface. The patina can be organic, mineral or a combination. Because Montelimar, Cailagua and El Muerto are in readily accessible areas, near significant populations, and because they cover large areas with intricate designs, chalk is constantly used to make the forms more readily visible to the casual visitor. Needless to say, the repetitive use of chalk abrades the protective and stable surface, allowing moisture to infiltrate the tuff matrix. The petroglyphs undergo numerous swelling and contraction cycles that eventually result in spalling and destruction of the original engraved surfaces.

Montelimar Cave

The Montelimar Cave is located along the central Pacific coast, in the department of Managua, nearly 60 kilometres from the capital city and very close to one of the most-developed tourist attractions in the region. The petroglyphs are routinely part of guided tours for guests of the Montelimar Beach Resort. The cave itself measures about 3 metres in depth by less than 2 metres in height and 10 metres in width. The petroglyphs are found along the wall and ceiling. Of the three sites this is the only one that is characterised by remnants of red and blue pigments overlying the engravings. The small cave formed as a result of numerous flooding episodes when the nearby river (currently about 35 metres away) swelled and the currents gradually eroded the area differentially. As well as the constant unrestricted visits to the cave, with the concomitant addition of new engravings (vandalism), there are two other insidious threats: there are substantial lime deposits in the vicinity of the cave, which cement producers procure using heavy machinery within less than 100 metres; also, water is seeping through the ceiling area (evidenced in petroglyph spalling calcareous deposits in fissures).



One of the Montelimar petroglyphs, with chalk

Isla del Muerto

El Muerto Island is part of the Zapatera Archipelago near Granada. The island is located in Lake Nicaragua and is part of the Zapatera National Park. Ideally, national parks should be allocated the highest level of protection available. In reality, there are not enough resources available to closely supervise and protect the site, as the designation would require. The petroglyphs extend over a volcanic-tuff shelf that measures slightly more than 350 square metres (35 metres wide by 10 metres high). In the last few years, tourist traffic has increased substantially. As a result, the numerous visitors that walk on the petroglyph surface and trace the contours with chalk are adding to their degradation. In recent years the Pacific region of Nicaragua has experienced episodes of above-average precipitation. Because the tuff was deposited as ash atop a hill, differential erosion of the underlying soil matrix is undermining the integrity of the tuff layer, by allowing the more easily displaced organic soil to evacuate the area immediately underneath the tuff. The process results in the fracture and detachment of large blocks of tuff. Although the known petroglyphs have not yet been affected by the erosion of the underlying soil, within the next three to five seasons it is very likely that we would be witness to the irreversible destruction of these ancient wonders.

Evidence of vandalism and spalling on the Cailagua petroglyphs.





Blocks of tuffaceous layer breaking off as a result of erosion in the underlying soil layer at El Muerto

Cailagua

As early as 1852, Ephraim G. Squier, then United States of America's Chargé de Affaires for Central America, documented the Cailagua petroglyphs. They are distributed over more than 100 metres of tuff wall surfaces and are located along the Cailagua drainage creek. The designs are thought to have been made in several episodes, and may have served to record, commemorate or depict actual or mythical events. Sadly, there are two instances where modern day names have been carved alongside ancient petroglyphs.

Cailagua ends in a spectacular fall of 65 metres. It is widely known that the rainy season currents can be strong enough to drag oxcarts, livestock and people to their precipitous demise. The waters that collect from a drainage basin of more than 400 square kilometres end at the escarpment wall on the edge of the Masaya Lagoon, a crescent-shaped, water-filled extinct volcanic crater

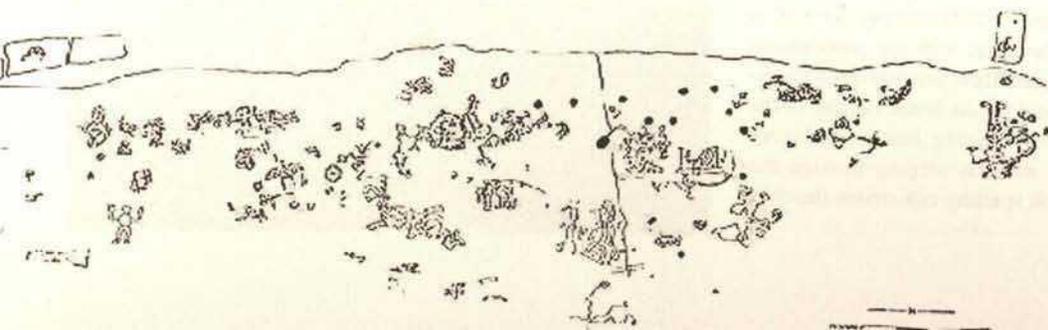
measuring 5 kilometres across. However, because the city of Masaya has no organised underground drainage system, whatever lies on the street surface ends up in the lagoon – via Cailagua. Needless to say, the immense volume of water and materials that flow through Cailagua in the six-month long rainy season further erode and abrade the walls, impacting the petroglyphs. Also, much of the neighbourhood refuse, including metal, construction disposal and plastic packaging is routinely dumped into the canals that feed Cailagua, further complicating the situation. The recent earthquake in Masaya has resulted in increased construction and demolition activity, thus intensifying the threat of destructive erosion.

Action Needed

Because of the dearth of funding available, some of the more important base studies by experts such as hydrological engineers and geologists have not been undertaken. Thus, management proposals for all three sites rely heavily on the assessment and evaluation of interested parties whose expertise is in other fields. The first necessary step would be the regulation of access to prevent further vandalism and damage by visitors. In the case of Montelimar, a buffer zone where heavy equipment is not to be used must be negotiated with the cement producers. Next, a plan to stabilise the petroglyphs and attenuate erosive processes is of the utmost importance. The third phase would be to develop a plan that promotes the sites and limits access, thus protecting the petroglyphs. After an initial investment it is very likely that all three sites could become self-sustaining because of their location near areas normally visited by tourists.

In spite of the numerous instances of rock art in the territory that is now Nicaragua, with a few exceptions (such as Suzanne Baker's work in the Ometepe Island Petroglyph Project), little energy has been devoted to the serious study and interpretation of petroglyphs. Those found on tuff are certainly among the most vulnerable. However, in the present situation it is very likely that some of the best-known ones may disappear before anyone takes up such an initiative.

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Isla El Muerto petroglyph ensemble. The engravings are all on the surface shown in the figure above.