

The Ancient Montezuma Baldcypress at Los Peroles, San Luis Potosi, Mexico

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The oldest known trees in Mexico are found in a remarkable wetland in the rain shadow of the Sierra Madre Oriental near Rio Verde, San Luis Potosi. These exceptional Montezuma baldcypress (*Taxodium mucronatum*) include trees over 1000 years old that are widely spaced along the springs and stream channels that emerge from a mesquite grassland. Montezuma baldcypress is the national tree of Mexico, and the largest individuals at Los Peroles are some 22 meters tall and 2 meters in diameter. Dendrochronological analyses of core samples indicate that the living baldcypress at this site range in age from 200- to over 1140-years old. We believe that the great antiquity of the baldcypress trees, the emergence of the aquifer, the clear waters of the peroles (kettles), and the endemic flora and fauna, make this a wetland of international significance worthy of serious conservation attention. This paper briefly outlines the natural resources of the Los Peroles site, and proposes the protection and rehabilitation of this unique forested wetland.

The wetland appears to cover some 300 hectares, but it subject to dramatic seasonal fluctuation in water level and the full dimensions have not been determined. Widespread surface inundation during the summer rainy season recedes to the permanent springs and stream channels during the dry season. The spring pools are up to 30 meters in diameter, and are reported to be over 50 meters deep. The springs are isolated in the arid landscape, and several species of native cichlid fish are present in the waterways. Indigenous aquatic plants are abundant in and adjacent to water. A thick carpet of native aquatic grasses and herbaceous plants cover the seasonal wetland, including *Spartina spartinae*. No non-native species we noted in the wetland by a professional botanist from the Universidad Autonoma de San Luis Potosi during a visit to the site in November 2003.

The site is surrounded on higher ground by mesquite bosque and arid rangelands. Some of the mesquite woodlands include large and apparently old individual mesquite and acacia trees, but Montezuma baldcypress is dominant in the sparsely forested wetlands. During our visit in November 2003, literally thousands of Monarch butterflies were hovering around the still green canopies of the deciduous baldcypress trees. Monarchs nearly covered some trees, hanging from the cypress branches and from each other in thick masses of butterflies. This site is apparently used as a stopover on the annual Monarch migrations to and from Michoacan.

The Los Peroles site is located some 20 km north-northeast of Rio Verde at an elevation of 1039 meters (22° 11.19'N and 99° 54.01'W). The surrounding region is sparsely populated, but the wetland and mesquite grasslands are used for grazing (including cattle, goats, and horses). There is evidence for seasonal burning of the *Spartina*, and grazing of the baldcypress regeneration. Grazing may have inhibited cypress regeneration for the past century because there are very few young trees at the site. However, we estimate that the annual income from grazing the wetland probably does not exceed \$300 (US).

We believe that the preservation and restoration of this exceptional forested wetland would bring economic and environmental benefits. Fencing to eliminate grazing would probably be adequate to restore the natural regeneration of the wetland vegetation, which remains in fair shape despite the grazing. A tourist infrastructure already exists in the town of Rio Verde, primarily due to the famous springs of Media Luna nearby. Los Peroles is accessed by all weather gravel roads, which pass through two small villages that could directly benefit from increased ecotourism. Camping could easily be easily accommodated in the immediate vicinity of the wetland. Soil, water, and vegetation surveys of the Los Peroles wetland have been

conducted by scientists at INIFAP (Instituto Nacional de Investigaciones de Forestales, Agrícolas, y Pecuarias) and the Universidad Autónoma de San Luis Potosí (e.g., Villanueva Díaz, J. and A. Hernández R., 2002), and there is strong professional interest in the conservation of this unique aquatic ecosystem. We have recently visited the famous wetlands at Cuatrociénegas de Carranza, Coahuila, and in many respects the Los Peroles wetlands are superior. The wetlands at Los Peroles are larger, are not developed, and are enhanced by the large Montezuma baldcypress trees, the oldest known living trees in the Republic of Mexico.



Figure 1. Ancient baldcypress at Los Peroles, San Luis Potosí, Mexico. A) *Spartina* and *Taxodium* dominate the savanna-like wetland; B and C) the oldest-known tree in Mexico, a 1140-year old Montezuma baldcypress; D) clear stream and indigenous aquatic vegetation.