

A MORPHOTYPE CATALOG OF LEAVES FROM THE MIDDLE EOCENE COCKFIELD FORMATION, TN

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Leaf Shape



Obovate, the widest part of the leaf is in the distal third of the blade



Elliptic, the widest part of the leaf is at the middle of the blade



Ovate, the widest part of the leaf is in the proximal third of the blade



Oblong, opposite margins of the leaf parallel, at least near the middle of the leaf

Lobation



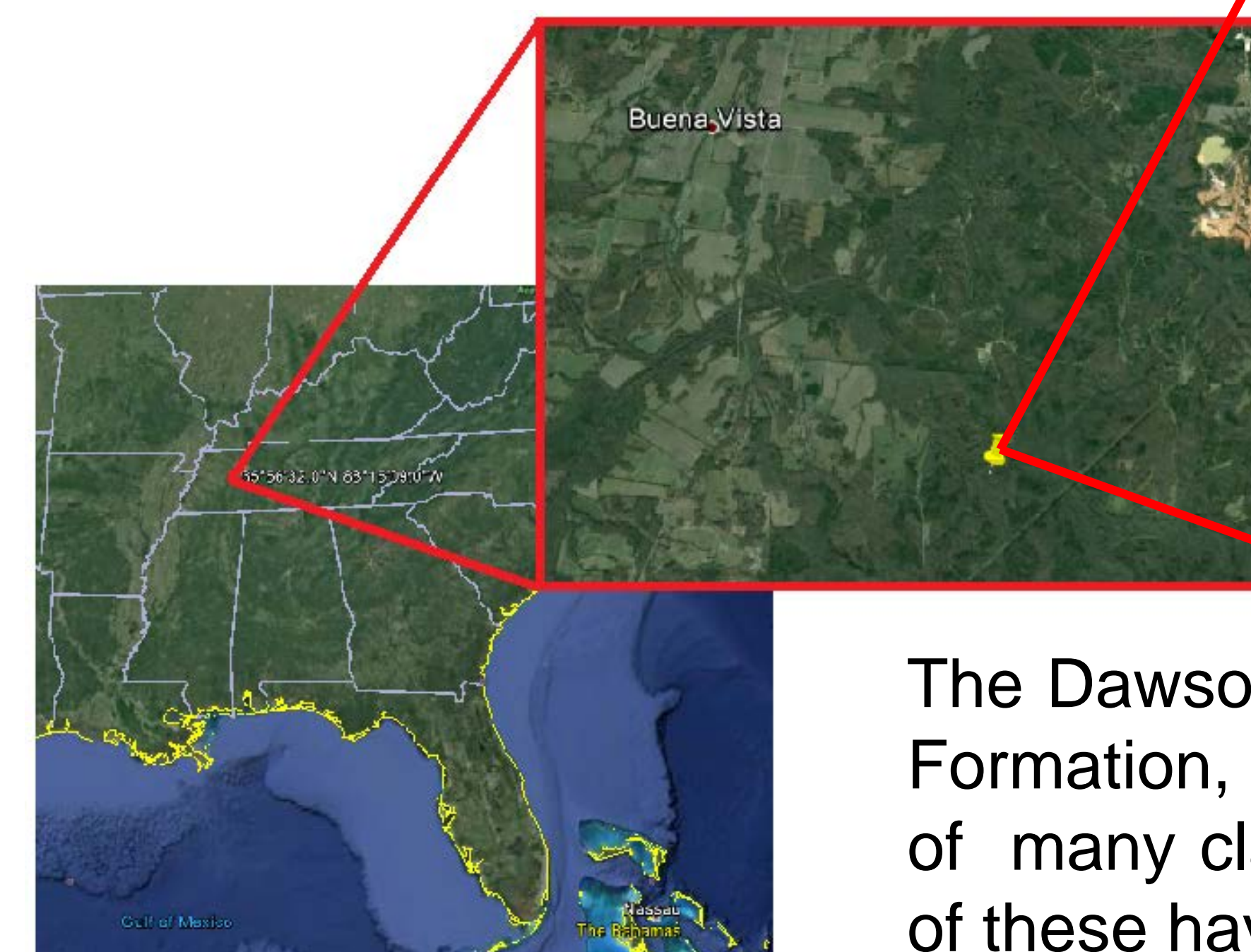
Lobed, leaf with lobes forming a sinus in between



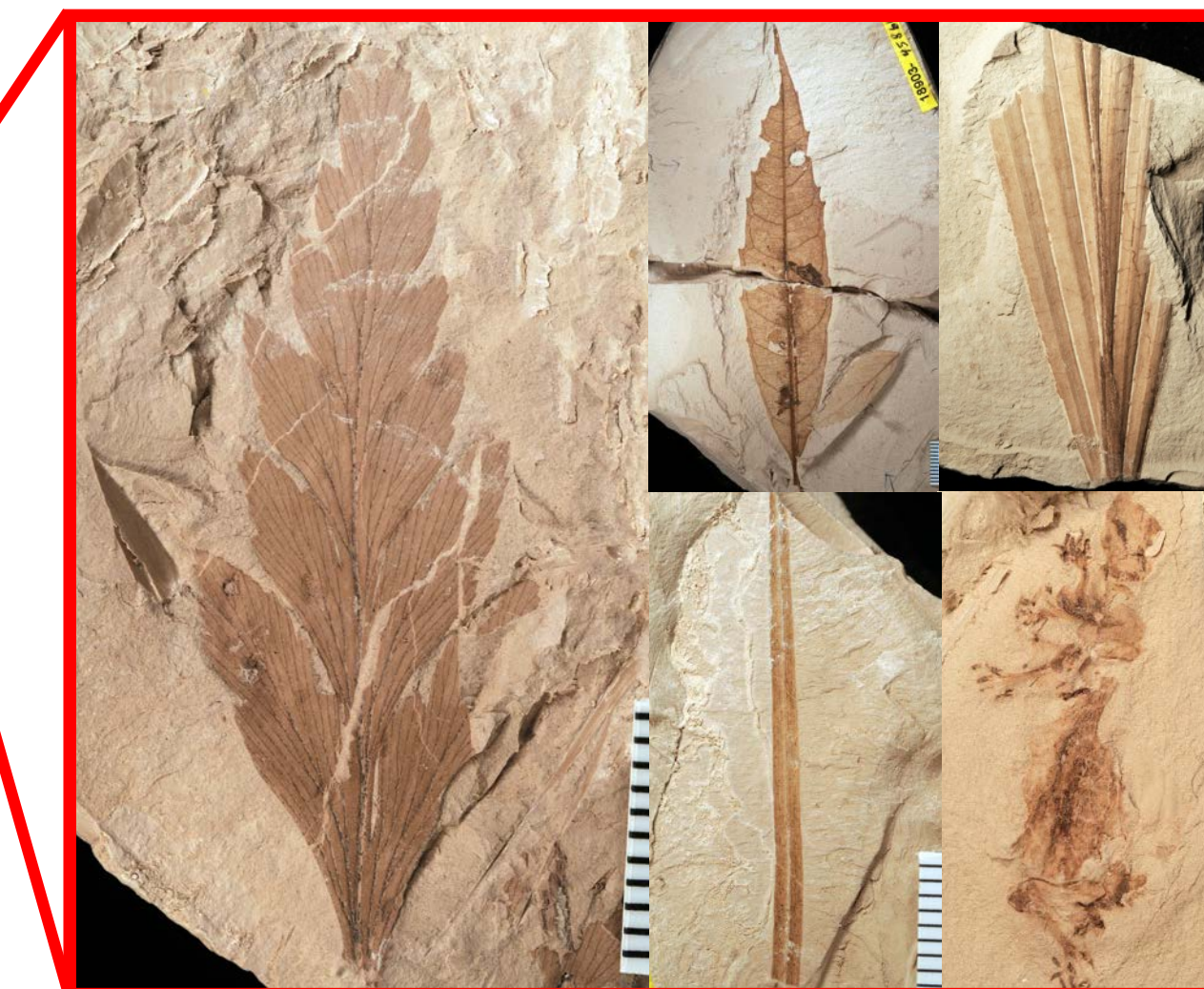
Palmately lobed, lobes with a primary vein originating at the leaf base

Introduction

The Florida Museum of Natural History collected fossilized leaves from the Dawson's Pit in Tennessee in 2001



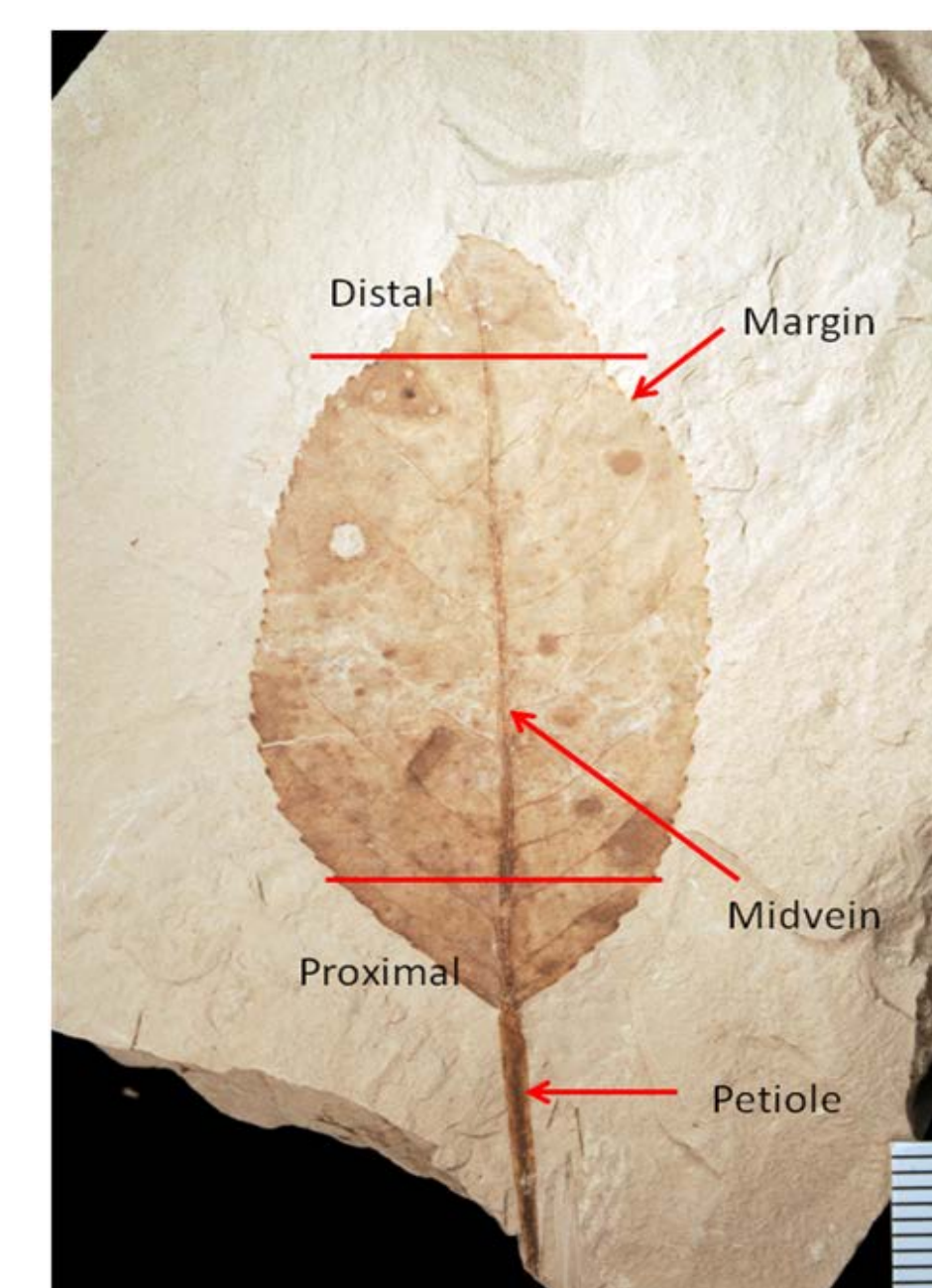
Paleocene	Upper	54.5	Wilcox Gr.	Tuscaloosa Fm.
	Lower			
Eocene	Lower			
				Hatchegibbee Fm.
				Meridian Sand
				Tallahatta Fm.
				Winona Fm.
				Zilpha Shale
Middle		41.3	Cook Mtn. Fm.	
Upper				
Yazoo clay undifferentiated				



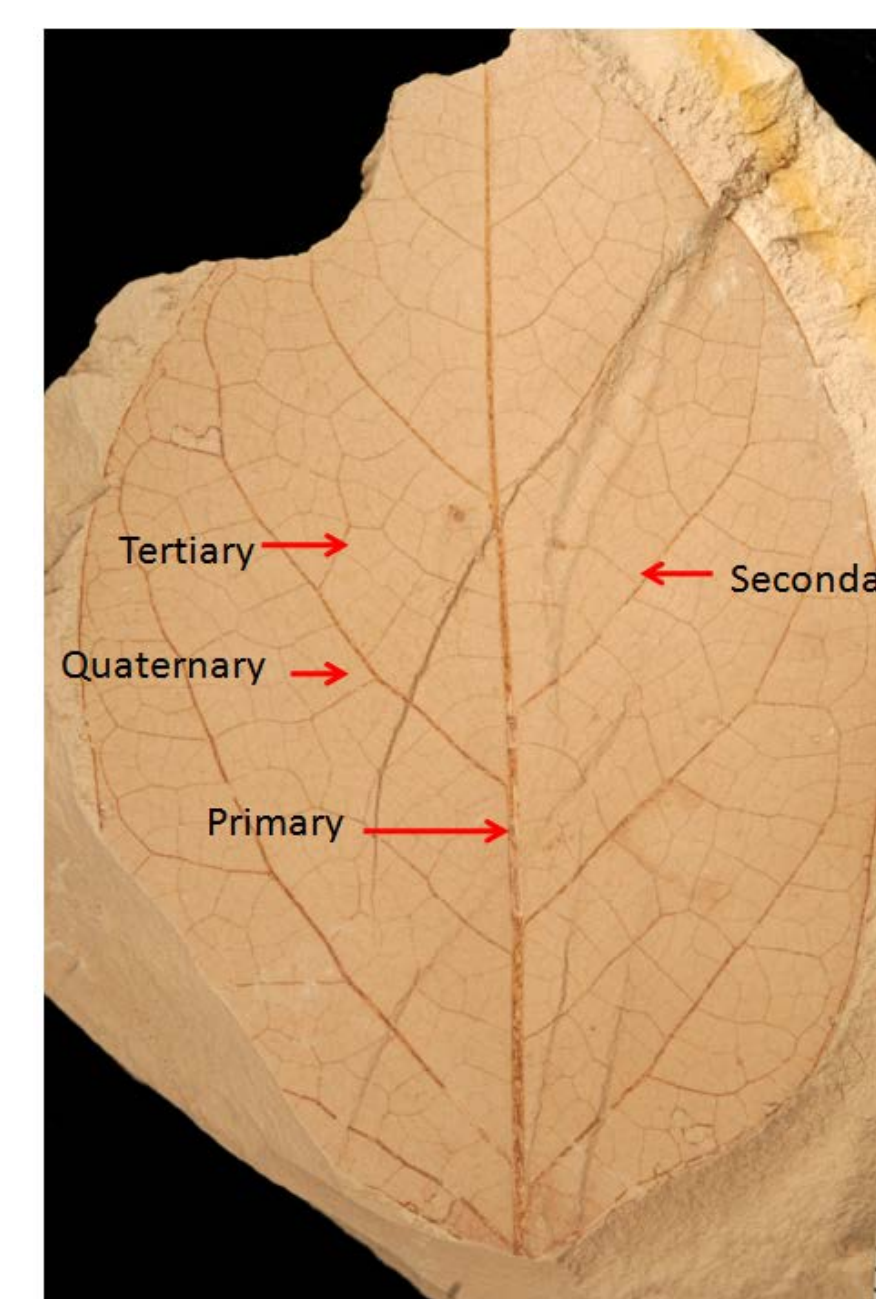
The Dawson Pit plant locality is in the Middle Eocene Cockfield Formation, within the Claiborne Group. This formation consists of many clay lenses interpreted as oxbow lake deposits. Many of these have well-preserved leaves (Potter and Dilcher, 1980).

Methods & Preliminary Results

The objectives of this project is to describe the diversity of the fossilized leaves and use them to interpret paleoclimate. First, the specimens are sorted by morphological characters into morphotypes (species) and then into taxonomic groups such as dicots, monocots, and ferns. Finally, the proportion of dicot morphotypes with smooth margins will be used to calculate paleotemperature



Important parts of a simple pinnate leaf



Vein orders used for leaf identification



Dicot, Usually with primary and secondary veins branched



Monocot: Usually with parallel primary and secondary veins

Preliminary Results: The presence of palms fronds and the abundance of leaves with smooth margins suggest a subtropical environment in Tennessee during the Late Eocene.

Secondary Veins



Craspedodromous, secondary veins terminate at the margin



Semicraspedodromous, secondary veins branch near margin, one branch terminates at the margin



Eucamptodromous, secondary veins curve toward the apex



Brochidodromous, secondary veins form loops at the margin

Margin Character



Toothed, marginal projections supplied by secondary veins



Smooth/Entire, margins without projections