

THE TEAYS RIVER

The Teays River was an ancient stream, comparable in size to the modern Ohio River, that once drained much of the east-central U.S., including nearly two-thirds of Ohio. It was destroyed by the glaciers of the Pleistocene Ice Age about 2 million years ago. Remnants of the valley of the Teays River are preserved as flat-bottomed valleys in hilly, unglaciated southern Ohio and as deep valleys now filled with sediment in the glaciated portion of the state.

The Teays River system originated long before 2 million years ago, in the Tertiary Period, and had its headwaters in western North Carolina near Blowing Rock. It flowed northward across Virginia and West Virginia, where its course is marked by the valleys of the modern New River (a misnomer, as it is actually very old) and the Kanawha River. From St. Albans, West Virginia, the Teays flowed westward to Wheelersburg, Scioto County, Ohio, and then northward to Chillicothe, Ross County. This valley segment is dramatically visible on satellite imagery.

Chillicothe marks the southward limit of glaciation in central Ohio, and the valley of the Teays disappears beneath glacial sediments (drift) at this point. However, by means of water wells and other data, the buried Teays valley has been traced beneath the glacial drift northwestward across Pickaway, Fayette, Madison, Clark, Champaign, Shelby, Auglaize, and Mercer Counties to the Ohio-Indiana border. At the Ohio-Indiana border the valley of the Teays appears to be continuous with a buried valley that has been traced westward across Indiana and Illinois, where it emptied into an embayment of the ocean, now occupied by the Mississippi River. In Ohio, this buried valley is up to 2 miles wide and in some areas lies beneath more than 500 feet of glacial drift.

THE END OF THE TEAYS AND CREATION OF THE OHIO RIVER

The earliest of three or more major glacial advances destroyed the Teays River system in western Ohio. The edge of the glacier created a massive dam that blocked the northward-flowing Teays and created a major lake in southern Ohio. The lake waters rose to an elevation of nearly 900 feet, creating an intricate pattern of long finger lakes in tributary valleys. Numerous ridge tops poked above the waters as islands.

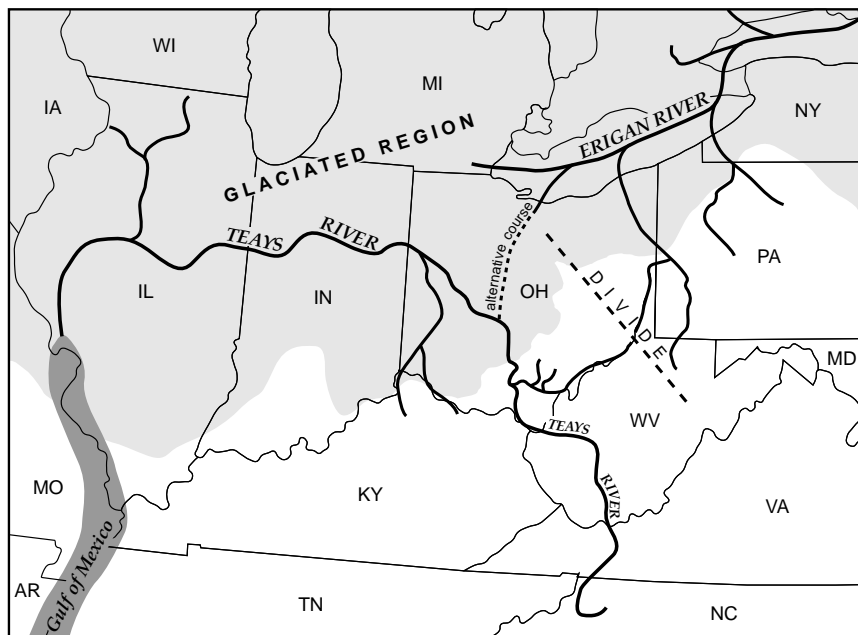
This lake is estimated to have covered an area of nearly 7,000 square miles (modern Lake Erie has an area of 9,910 square miles) in southern Ohio and parts of West Virginia and Kentucky. It is named Lake Tight in honor of the pioneering study of the Teays system by Denison University professor William George Tight (1865-1910). Lake Tight is estimated to have existed for more than 6,500 years as interpreted from seasonal layers in the sediment deposited on the lake bottom. This lake clay is known as the Minford clay, named for a Scioto County community. It is mined in some areas as a raw material for making brick and other ceramic products.

Eventually the waters of Lake Tight rose to an elevation sufficient to breach drainage divides and create new drainage channels, which in some cases were opposite in direction to the original Teays drainage. These new drainage channels cut below the elevation of the Teays, forming a new drainage system known as Deep Stage. This event marked the beginning of the modern Ohio River drainage system, although it would require many further modifications from later glaciations to finally shape the present course of the modern Ohio River.

In recent years there has been debate among geologists as to the course of the Teays across the

glaciated portion of Ohio. Some suggest that the deep buried valley in western Ohio that is interpreted to be the valley of the Teays was formed by a meltwater stream flowing along the ice front of an early glacier. These geologists prefer the explanation that the actual course of the preglacial Teays River was northward through the central part of the state, where it connected with a now-vanished ancestral system, known to geologists as the Erikan River, in what is now the Lake Erie basin.

This question of the course of the Teays is not easily answered because the valleys of the Teays and other drainage systems were greatly modified by the erosive action of several Pleistocene glaciers. These valleys either have been destroyed or are now deeply buried beneath thick glacial deposits. Part of the answer may be determined from maps of the bedrock surface beneath the glacial drift, which show the course of preglacial valleys. Such maps, known as bedrock-topography maps, depict the configuration of the bedrock surface as if all overlying unconsolidated sediment had been removed. Bedrock-topography maps for many Ohio counties and 7.5-minute quadrangles are available from the Division of Geological Survey.



Classic interpretation of the preglacial Teays River and an alternative course (dashed line) favored by some geologists. The entire extent of the Teays and its tributaries north of the glacial border is buried beneath thick glacial drift. Northern Ohio was drained by the Erikan River, which followed the axis of what is now Lake Erie, and flowed into the ancestral St. Lawrence River. Neither the Great Lakes nor the Ohio River existed at this time.

FURTHER READING

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The Division of Geological Survey GeoFacts Series is available on the World Wide Web: http://www.dnr.state.oh.us/odnr/geo_survey/



Eastward view across an abandoned segment of the preglacial Teays River valley near Wheelersburg, Scioto County. The valley is about 1.5 miles wide at this point and 150 feet higher in elevation than the modern Ohio River. Photo by Wilber Stout.

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