

# Geography in the News™

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## HOW BIG, HOW FAR?

How big is an acre? How far is a mile? Geographic illiteracy among U.S. students can be partially blamed on their lack of mental “yardsticks” against which to compare sizes and distances.

What size is your state? How does its size compare with France or Israel, for example? How many acres of rice are required to feed a Chinese family of three? How far could a Conestoga wagon with a team of oxen travel in a day in 1810? How fast did Hernando de Soto’s army move in the New World? How far is it between Kuwait and Baghdad? The list of geographic questions goes on and on. Most people quickly become efficient “mathematical geographers,” however, once they learn some dependable mental yardsticks.

Actual distances seem to be of declining concern in modern urban societies, as travel distances are often calculated in time. Examples are a 20-minute commute or a 15-minute walk. Nonetheless, sizes and distances do

matter in geographic literacy.

Regrettably, children may be insulated from creating mental yardsticks because many current textbooks contain few such size and distance comparisons. Yet there are easy ways to teach both children and adults to compare sizes and distances.

The first step is to use references with which the individual is intimately familiar. For example, one acre of land contains 43,560 square feet, almost meaningless to most everybody. Explaining that one acre is the size of a football field, including one end zone, however, brings instant recognition and provides a baseline for comparing sizes.

The average rural Oriental family of three can harvest enough rice to live on an acre of rice. The average rice crop takes 150 days to mature. If the family lives in subtropical Southern China, two crops per year may be possible, allowing a family to survive on one-half acre.

One mile extends 5,280 feet (1,609 meters). It is important to remember this number in order to carry out mathematical calculations. Few of us, however, can visualize 5,280 of anything. If an adult walks at a brisk pace over level ground, a distance of one mile can be covered in 15 minutes, or four miles per hour. Carrying a heavy load over rough terrain can cause speeds to drop from four miles per hour to two or less. Thus, a mental yardstick is established for a mile.

Paul Revere’s famous ride between Boston and Lexington covered only 16 miles in two hours, or a rate of

eight miles per hour. A Conestoga wagon with a team of oxen could plod along at about one or two miles per hour, averaging only 10 to 16 miles on good days. Hernando de Soto’s army probably moved at about the same speed as it crossed the Southeastern United States in 1539. Part of the reason for the army’s slow movement was that the Spanish were driving a herd of pigs which they used for food. The road distance recently covered by the U.S. military from Kuwait to Baghdad was about 500 miles (805 km.).

One of the best references for comprehending the relative sizes of large areas is to compare them to the area of known political units. Counties and states make good yardsticks. The average U.S. county contains 1,160 square miles (3,004 sq. km.). North Carolina is an average-sized state, containing 50,000 square miles (129,500 sq. km.), a nice round number. Alaska is 11 times larger than North Carolina, and Israel, excluding the occupied areas, is only one-seventh the size of North Carolina.

Although Americans must eventually learn to use the metric system in order to carry on international exchange, mental yardsticks (or metersticks) are critical to decision-making in a modern world. “Practice makes perfect!”

And that is Geography in the News. July 4, 2003. #683.

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