

## **SLIDE PRESENTATION THE CLASSIC APPALACHIANS: PHYSICAL GEOGRAPHY AND WILDERNESS EXPERIENCE**

It is the conventional wisdom of geologists that, with respect to geologic structure, the Appalachians are the world's classic mountain range. From New York to Alabama there is a cross-section that is unsurpassed on the planet for clarity and uniformity of pattern. Although there are local variations, to know it anywhere is to know it everywhere. In the words of a prominent structural geologist, "The Appalachian chain is the most elegant on earth." From a single, unified geologic history has emerged four parallel physiographic provinces, often separated by crisp boundaries, with different geology, landforms, drainage patterns, forest types, and resources. These varied characteristics correlate to the provinces and sub-provinces, as do socio-economic numbers, cultural traits, and historical experience among the region's inhabitants. From southeast to northwest, these provinces are the Piedmont, Blue Ridge, Ridge and Valley, and Plateau. The Ridge and Valley Province especially features near perfect topographic expression of the underlying geology. Over one billion years four major orogenies, mountain building episodes, deposited rock strata more than twelve miles thick. The last orogeny, about 250 million years ago, pushed up mountains of perhaps Andean magnitude. Over the past 200 million years over 25,000 feet of strata has eroded away and washed out to sea. The sequence and characteristics of the four provinces are simply the result of the lateral compressive force created by the collision of the plates forming the super-continent Pangea. As one travels southeast toward the zone of collision, the rocks are increasingly deformed and metamorphosed by heat and pressure. In brief, this fact, followed by differential erosion on strata of differing hardness, explains the present form of the Appalachians. Although a mere remnant of their former magnificence, these remain world-class mountains.

This presentation of 240 slides covers the Appalachians from the middle Virginias to north Alabama and Georgia. Content includes geologic cross-sections, aerial photography, and images of mountain landscapes. Most conspicuous are photos of caves and caving, whitewater rafting and canoeing, mountain biking, and many hundreds of miles of day hiking and backpacking. Most participants are student members of the Union College Appalachian Wilderness Club (since 1980) and the Pine Mountain Grotto (since 1992), the southeastern Kentucky chapter of the National Speleological Society. Appalachian limestone landscapes known as karst feature 22,000 known caves with an aggregate mapped passage length of about 3,000 miles. These numbers continually increase as cavers explore and survey into the unknown.

