

"For the past 50 years, there has been some speculation that White Mountain might be higher than Mt. Whitney," wrote award winning surveyor Robert Nielsen of Reno's Summit Engineering in Professional Surveyor. Nevadans and Californians near the state line continue to question why Mt. Whitney in the Sierra Nevada, and not White Mountain in the White-Inyo Range east of Bishop, has been identified as the highest point in the continental United States for more than 100 years.



Nielsen, using modern scientific techniques including a global positioning system (GPS), addressed the long-standing question of whether Mt. Whitney or White Mountain is the highest summit in the lower 48 states as part of his senior project at California State University, Fresno, in late May/early June 1996. As a student in the Surveying Engineering Program, Nielsen and his colleagues organized four summit crews to climb the four highest peaks in California: Mt. Whitney, Mt. Williamson, White Mountain, and North Palisade. "Our goal," wrote Nielsen, "was to take simultaneous GPS observations from the tops of four, 14,000'-plus mountains, my high elevation test base."



North Palisade was scaled first, beginning on May 31, followed by Mt. Williamson, and then White Mountain. The Mt. Whitney summit crew was forced to turn back after a storm the week before left the trail to the summit almost entirely covered with ice and snow. Fortunately, placing GPS equipment on Mt. Whitney was not essential in measuring its height. By the evening of Monday, June 3, the crewmembers had completed all work possible under the conditions.

"The intention of the experiment was not to determine accurate 'real world' positions for the newly set mountaintop stations," Nielsen noted in his article, "but rather to determine whether low-lying satellites could yield better precisions when added to the traditional satellite geometries." He selected Mt. Williamson and White Mountain as the two controls as they flanked North Palisade on either side and allowed the shortest baseline design.

The results of the study led to Robert Nielsen winning the National Society of Professional Surveyors' Student Project of the Year Award for 1998. In measuring California's highest mountains using high precision GPS technology beyond the project's original design, Nielsen discovered the mountains had long been improperly ranked in their relative elevations. Previously, only Mt. Whitney had been accurately surveyed for elevation. In Nielsen's project, the heights of the four summits were measured to within inches of their absolute positions.



According to the scientific results, the four highest peaks in California, beginning with the highest, are Mt. Whitney, 14,500'; and the highest mountain in the continental United States; Mt. Williamson, 14,382.3'; North Palisade, 14,255.9'; and White Mountain,

14,243.2', reversing the order of the third and fourth highest peaks.

In the end, science, and not hearsay and speculation, demonstrated that White Mountain, lower than Mt. Whitney by over 250 feet, is not even close to being the highest mountain in the lower 48 states. Currently, the peak near California's boundary with Nevada is considered the 22nd highest mountain. With further GPS surveys of mountain summits in the Rocky Mountains, White Mountain's rank may change again.

All photographs courtesy of Scotty Strachan & Barry Beck.

Top photo: Mt. Whitney from the west, 5/5/2003.

Middle photo: White Mt Peak in background as seen from the southwest over the Sierra Crest. In the foreground is Norman Clyde Peak, 5/5/2003.

Bottom photo: Mt. Williamson from the north with Mt. Whitney in the right-hand background, 5/5/2003.

(Original version in *Sierra Sage*, Carson City/Carson Valley, February 2004)