

## DOES YOUR SNOW SAMPLER OVERMEASURE?

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If you are using the Standard Federal or Mt. Rose snow tubes and weighing scales to measure snow water equivalent, you are not alone. A large volume of snow data is still obtained by this method, and will continue well into the foreseeable future. As more people begin to rely on automatic sensors for their snow data, it is important to realize that such sensors do not measure the same as the manual core sampler. This discrepancy was the subject of several years of research that went into the Western Snow Conference's Report on Metrication of Manual Snow Sampling Equipment.

The determination of the accuracy of various types of snow tubes and cutter systems was investigated and evaluated for all historically available test data. The report describes the procedure for correcting the measurements made with the Standard Federal as well as a variety of other tubes and cutters. All small diameter cutters have been shown to overmeasure by an amount that is related directly to the type of cutter and to snow depth. The report further shows that there is no apparent relationship between overmeasure and other factors such as snow density, crystal formation and weather conditions. The corrections presented are based on close to 200 formal tests by four different agencies in Canada and the United States over four years plus random testing by others during the last 20 years.

While it is generally agreed that a truly universal sampler will be metric, the timing of conversion has not yet been set. The official metric design approved by the Western Snow Conference incorporates the overmeasure, so that the absolute snow water equivalent is obtained during normal sampling operations. In the meantime, the significance of the report's data is in being able to accurately determine the absolute equivalent of present equipment for comparison with other sensors.

All practicing hydrologists and water managers making use of snow data are interested in data accuracy. In the past when all data was produced by the cutters for indexing, the natural overmeasure was usually not pertinent. As the use of other sensors develops and snow research expands, the overmeasurement can no longer be ignored. It is the expressed desire of the WSC that the report be given the widest distribution in the snow data community. The authors welcome comments and suggestions, which can be directed to them directly or to the Secretary. The report, Metrication of Manual Snow Sampling Equipment, is available from the Secretary at cost (U.S. \$10.00):

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