The variability in seasonal snow cover elicits strong impacts on glaciers, ecosystem dynamics, hydrological systems, and hazards. Understanding these impacts requires quantifying snow distribution and water storage in mountain snow packs using in-situ observations, remote sensing, and numerical modeling. Runoff models, which typically rely on gridded climate data and snow remote sensing products, would be greatly improved if uncertainties in estimates of snow depth and snow water equivalence (SWE) in complex topography could be reduced. The NASA-funded Community Snow Observations (CSO) project recruits winter backcountry recreationists to help increase the temporal and spatial coverage of snow depth observations in these areas. CSO citizen scientists use Mountain Hub, a multi-platform mobile and web-based crowd-sourcing application to record, submit, and instantly share geo-located snow depth and measurement location photos. Measurements by CSO citizen scientists have proven to be extremely valuable for hydrological modeling and snow remote sensing assessments where in-situ data are lacking. In a data-sparse watershed in the eastern Chugach Mountains, Alaska, we found that model simulations of snow processes significantly over-predicted snow depth, and that by assimilating CSO data into the snow model, error was significantly reduced, producing a better representation of actual snow depth conditions on the ground. Since its inception, the CSO project has grown considerably; we are expanding our modeling to new domains in western North America, engaging and recruiting a larger, more diverse community of citizen scientists, from elementary school students to professional outdoor athletes, and retaining interest in the project by providing regular project up-dates, and developing targeted engagement opportunities through new partnerships. We are also sharing data and results via our Application Programming Interface (API) in a number of ways, including allowing our collaborators to subset any range of citizen science observations and compare these with other related snow datasets, which will maximize the benefits of these highly valuable crowd-sourced data.