Global snow monitoring has long been hampered by the difficulty of measuring Snow Water Equivalent (SWE). While snow depth and density can produce SWE, these measurements are limited geographically. The forthcoming NASA-ISRO Synthetic Aperture Radar (NISAR) mission offers a new horizon for snow monitoring. The NISAR satellite is equipped with an L-band radar, and it will observe the Earth's surface at an approximate resolution of 10 meters, with a revisit frequency of twice every 12 days. The data from this mission can be used to estimate changes in snow depth and SWE. This work uses NISAR-like data from the NASA JPL UAVSAR sensor to estimate total snow depth using machine learning (ML) algorithms. We demonstrate the potential of generating snow depth maps from L-band radar systems using ML algorithms. Our findings are a step towards developing a global snow depth prediction system that provides valuable information for water resource management, flood forecasting, and avalanche hazard assessment, provided that accurate and representative training data is available. By showcasing the effectiveness of UAVSAR data in snow depth estimation, this work is a proof of concept for using L-band data to estimate total snow depth in preparation for the NISAR mission.