The Mount Washington Observatory is a private, non-profit scientific and educational institution. Its mission is to advance understanding of the natural systems that create the Earth's weather and climate, by maintaining its mountaintop weather station, conducting research and educational programs and interpreting the heritage of the Mount Washington region.

The first regular meteorological observations on Mount Washington were conducted by the U.S. Signal Service, a precursor of the Weather Bureau, from 1870 to 1892. The Mount Washington station was the first of its kind in the world, setting an example followed in many other countries.

The Mount Washington Observatory reoccupied the summit in 1932 through the enthusiasm of a group of individuals who recognized the value of a scientific facility at that demanding location. In April of 1934, observers measured a wind gust of 231 mph, which remains a world record for a surface station. In spite of the hardships imposed by their environment, observers regularly monitored weather under the auspices of the U.S. Weather Bureau, and conducted landmark research in short-wave radio propagation, ice physics and the constitution of clouds. The relationship with the U.S. Weather Service has always been close, but the Observatory is not a part of any government agency.

The Observatory continues to record and disseminate weather information. It also serves as a benchmark station for the measurement of cosmic ray activity in the upper atmosphere, develops robust instrumentation for severe weather environments and conducts many types of severe weather research and testing. The term outpost can be defined as a small group stationed away from the main body; it is also referred to as an outlying or frontier settlement. These definitions lend a sense of endangerment associated with the word, as well as the understanding of an important mission. Of the scores of mountaintop scientific stations that eventually followed its lead, the Mount Washington station is perhaps the only one that can be said to have remained in continuous operation with an active and expanding mission.