

Bosco Clima: the meteorological monitoring network that protects the forests of Verbano



Bosco Clima Project

The Weather Monitoring Network that Protects the Verbano Forests

Bosco Clima (<https://boscoclima.vallidelverbano.va.it/>) is an initiative promoted by the Comunità Montana Valli del Verbano in collaboration with the Campo dei Fiori Regional Park, the University of Insubria, the Centro Geofisico Prealpino, Lipu (Lega Italiana Protezione Uccelli) and Cast (Centro per un Appropriato Sviluppo Tecnologico), with the contribution of [Fondazione Cariplo](#). The project is designed to **counteract the effects of climate change in forest areas** and increase the **resilience of the territory**, applying a science-based approach and emphasising the importance of research. The main objective is to improve the ability of habitats in the area to adapt to extreme weather events, such as fires, floods, landslides and droughts, which have been on the increase in recent years in the province of Varese.

The importance of weather stations in environmental monitoring

One of the most important aspects of the project is **meteorological monitoring**, made possible thanks to the installation of a network of **meteorological stations** provided by LSI LASTEM. These tools allow the collection of weather and climate data essential for analyzing environmental changes and predicting any extreme phenomena. Thanks

to this monitoring network, the Bosco Clima project is able to provide increasingly precise information on local atmospheric conditions, such as temperature, humidity, precipitation, wind speed and direction and hydrological levels. This data is essential to quantify the long-term impact of climate change on land and ecosystems and to provide real-time information when extreme weather events occur, thus contributing to the **prevention of natural disasters**.

A strategic local monitoring network

The **meteorological stations** are distributed in different strategic areas, from the mountain slopes to the coastal areas of Verbano, guaranteeing homogeneous and precise data collection. The objective is to create a dense and efficient **meteorological monitoring network**, capable of supporting **climate risk prevention** and **management activities**.

Types of LSI LASTEM meteorological stations used

The meteorological stations installed within the Bosco Clima project are 3 different types, based on the parameters they need to monitor:

- **Complete stations:** characterize the climatic conditions of the forest on the different slopes and altitudes. They measure air temperature, humidity, precipitation, speed and wind direction, solar radiation, soil moisture and temperature;
- **Rainfall stations:** they integrate the distribution of the complete stations on the territory to better represent the maximum rainfall in the event of intense and localized rainfall events that can produce landslides and floods;
- **Hydrological monitoring stations:** monitoring of the level of the Boesio stream.

Why is meteorological monitoring essential?

In the last 50 years, average temperatures in the Varese area and in the Verbano valleys have increased by **2.7 degrees**, in line with the increase in the Alpine area, about double the global average. This increase has led to an intensification of extreme weather phenomena such as torrential rains, landslides, forest fires, heat waves and droughts. **Monitoring** through a network of **advanced meteorological stations** is therefore essential to

understand atmospheric conditions in real time and intervene in a timely manner to safeguard the territory.

The data collected make it possible to **prevent hydrogeological risks**, optimize resources for forest management and raise awareness of climate change issues.

Community involvement and future strategies

In addition to data acquisition, the Bosco Clima project involves a strong involvement of the local community through the **ClimAttivo** program. This program aims to **raise citizens' awareness** of sustainable behavior and to create a network of "Climate friends" families. The project highlights how everyone can actively contribute to environmental protection with **concrete actions** to **reduce emissions** and **improve the management of natural resources**.

Conclusion

The Bosco Clima project is building a cutting-edge **meteorological monitoring** system, essential for adapting to climate change and protecting the territory. Furthermore, thanks to the second tranche of financing, additional stations will be installed, thus expanding the coverage of the territory and improving the effectiveness of monitoring. The role of collecting and analyzing meteorological data is increasingly central to **ensuring a sustainable future and environmental protection**, especially in a scenario of increasingly rapid and devastating **climate changes**.