



**MOTTLES** is supported by the programme LIFE 2015 under the sub-programme Environment and Resource efficiency.

### Background (O<sub>3</sub>)

The ozone produced by human activity is a harmful greenhouse gas, not only for human health, but also for forests. European standards to protect vegetation from this air pollutant are currently based on O<sub>3</sub> concentration in the atmosphere, but they do not consider ozone taken by leaf stomata. There is consensus in science that policy makers should implement new protection criteria based on accumulated stomatal O<sub>3</sub> flux. Moreover, monitoring O<sub>3</sub> concentrations at remote forest sites is challenging because electricity is missing, and thus passive samplers are used, while high temporal resolution concentrations should be rather recorded to correlate O<sub>3</sub> data with stomatal uptake and epidemiological observations.

**MOTTLES proposes a long-term monitoring strategy in three EU countries (Italy, Romania and France) in order to produce new scientifically-based critical levels for forest protection against O<sub>3</sub>.**

**Coordinating Beneficiary:** CNR (Italy)

### Partners:

ACRI-HE (France); CREA (Italy); GIEFS (France); INCDS (Romania)

Start: **01/07/2016**

End: **30/06/2020**



More info::

Web site: <http://mottles.ipsp.cnr.it/>

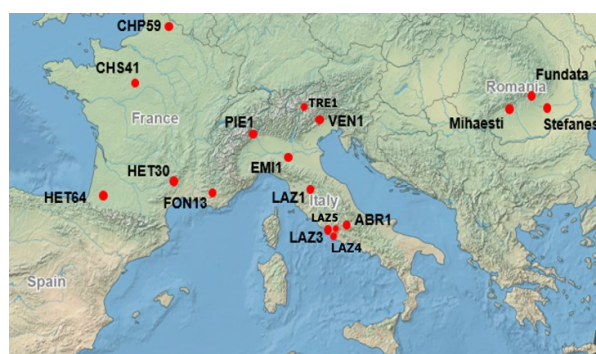
e-mail: [life.mottles@gmail.com](mailto:life.mottles@gmail.com)

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The new monitoring system is based on active monitoring of O<sub>3</sub> rather than passive monitoring

MOTTLES implements a network of 17 sites selected from the ICP Forests sites



By combining real time O<sub>3</sub> concentrations and meteorological parameters, **MOTTLES represents a novel and unique integrated approach able to estimate stomatal ozone fluxes** and responses to Climate change.

Plant response indicators of forest health and vitality (annual volume increment, hourly radial growth, annual site visible foliar injury and crown defoliation) are collected to derive and validate scientifically-sound critical levels.

### EXPECTED RESULTS

- **An innovative follow-up system** for continuous investigation of parameters affecting forest ecosystems sustainability
- Scientifically-based thresholds and critical levels for O<sub>3</sub>, as **new legislative standards**, for protecting forests against O<sub>3</sub> pollution and establishing a long-term monitoring strategy
- **Provision of open-access data** to the EU

