

PILOT SITE DESCRIPTION - LTSER platform Lautaret-Oisans

The **LTSER platform Lautaret-Oisans** site provides unique off-campus facilities and expertise to conduct long-term monitoring programs and research projects on mountain social-ecological systems and critical zone. The LTSER platform Lautaret-Oisans is one of the four French sites that has been selected as a pilot site in the recently funded European project eLTER PLUS (2020-2025). It is co-located with a flux tower site (Fluxalp) that is part of the French ICOS-ecosystem network since 2019 and includes experimental facilities that are part of the AnaEE RI. The platform includes several instrumented sites of the Zone Atelier Alpes (a member of the RZA national RI, dedicated to research and monitoring of mountain social-ecological systems) and of the CRYOBCLIM observatory (member of the OZCAR national RI, dedicated to the monitoring of seasonal snow cover and glaciers).

The site comprises an ensemble of high-elevation watersheds including glaciers, rocks and screes, and large areas of above-forest grazed grasslands. The elevation gradient spans from 1800 m to 3200 m. The scenic landscape attracts thousands of tourists per year and the Lautaret garden, which is operated by UAR 3370 CNRS/UGA, provides unique opportunities to connect people and environmental science.

Several reasons justify the selection of the LTSER platform Lautaret-Oisans as a pilot site for WP5: (i) the mountain environment which poses specific challenges in terms of instrumentation and communication protocols because of the complex topography and of the seasonal snow cover, (ii) an existing dense network of sensors for climate and hydrology, soil science and ecology to monitor and understand the impact of climate and land use changes on nutrient cycling, biodiversity and mountain tourism, (iii) the well-established relationships with several stakeholders (National Park, municipalities, farmers, tourists) and (iv) the facilities and expertise provided by the UAR 3370 CNRS/UGA that is operating the platform (see partner 39).



Overview of the Roche Noire watershed in the vicinity of the Lautaret pass (French Alps, 2052 m a.s.l.). This high-elevation watershed is one of the highly instrumented site of the LTSER Lautaret-Oisans and includes a flux tower and two additional weather stations, three hydrological stations, several time-lapse cameras and dozens of miniaturized loggers for the measurement of soil temperature and humidity. Permanent plots for monitoring plant biodiversity changes have been established since 2010.