



UAV and multispectral camera to map stressed forest area

Introduction

In the context of precision forestry, and to monitor potential issues related to stress on a per-tree basis for forest managers, it is necessary to employ tools capable of rapidly mapping this information in order to implement adaptive silvicultural practices. Within the GO-SURF project, conducted in forests directly managed by the operational group partners, the use of drones equipped with multispectral cameras (Micasense) was tested and implemented to map stressed areas. The use of the drone, equipped with automatic flight capabilities, allowed for the creation of high-resolution multi-temporal orthophotos and the identification of areas where a reduction in photosynthetic activity was observed. The multispectral cameras and the use of this data have allowed for the prompt identification during GO-SURF of stressed areas, primarily caused by oak forests. In this context, it was possible to monitor these areas affected by prolonged periods of drought. Monitoring with the use of drones allows for the observation of the development of these stresses and the impacts they have on the forests. Moreover, the camera permits to identified not-stressed plant that can be assumed as more resilient.

Lessons learned

The forest managers have highlighted the ease of using drones, even though the multispectral cameras used in the project are quite expensive. Further tests with lower-cost cameras are, therefore, necessary. However, the prompt observation of stress can enable the implementation of silvicultural strategies to mitigate the problem. Furthermore, from the analysis of stress at the individual plant level, it is possible to identify the more resilient plants that could be selected as seed plants to produce seedlings for future reforestation efforts.

For further information contact









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Further information

<https://www.go-surf.it/>



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