

ANNA CANDOTTI

Languages

German – native
Italian – native
English – C1

Skills

- Programming languages: R (advanced), Python (intermediate), JavaScript (basic)
- (Geo)statistical analysis and data visualization
- Collection, pre-processing and processing of optical (advanced), lidar (advanced) and radar (basic) satellite and UAV remotely sensed data
- Software: QGIS, ArcGIS, Grass, IDL, Envi, Terrset, Snap, Cloud Compare, Agisoft Metashape, EddyPro, LiDAR360
- GNSS and total station survey techniques
- Use of Spectroradiometers
- Analysis of eco-physiological data from IoT devices

Profile

Geographer with a particular interest in forest disturbance ecology, monitoring by means of close-range and remotely sensed data, integration between tower-based carbon/water fluxes and remote sensing derived products

Professional Experience

- Research fellowship**, Free University of Bozen-Bolzano (IT), 2025 - 2026 under the FORMA - Forest Robotic Monitoring and Automation “EFRE- FESR 2021-2027” project
- Forest Ecology PhD fellowship**, Free University of Bozen-Bolzano (IT), 2022 – 2025

Thesis title: Rise and fall of a Spruce Bark Beetle Infestation: Advanced Techniques for Early Stress Detection, Infestation Spread Prediction, and Post-damage Forest Management

Visiting scientist

- Forschungszentrum Jülich (Jülich (DE)), Institute of Bio- and Geosciences (IBG), Plant Sciences, Shoot Dynamics Group, Visiting period, February 2025- March 2025
- Max Planck Institute for Biogeochemistry, Dept. of Biogeochemical Integration / Climate Ecosystem Disturbance Interactions Group (Jena (DE)), Visiting period, February 2024- March 2024
- University of Graz, Institute of Geography and Regional Science/ Geospatial Technologies Group (Graz (AT)), Visiting period, January 2024

- Academic teaching assistant**, Free University of Bozen-Bolzano (IT)
- Course in *Forest Inventories*, academic years 2022-2023, 2023-2024, 2024-2025
 - Course in *Management of Mountain Forests*, academic years 2023-2024, 2024-2025

Education

- EEBIOMASS Training School 2025**, Max Planck Institute for Biogeochemistry, Jena (DE), May 2025
- Interdisciplinary summer school on forest ecosystems**, Ljubljana (SLO), July 2023, in relation to close-range technologies, biodiversity and modelling, 3DForEcoTech COST Action

Master Degree in Geography and Territorial Processes, Università di Bologna (IT), Sep 2019 – May 2022 (110/110 cum laude)

Co-supervision of master’s theses

- From space to spruce – Monitoring bark beetle infestation with PRISMA hyperspectral remote sensing*. Pauline Neuber, 2025. Master in Environmental Management in Mountain Areas, Free University of Bozen-Bolzano.
- Feature-based tree species identification in alpine forests, combining high-density LiDAR data and multispectral images*. Laurenz Reschberger, 2025. Master in Environmental Management in Mountain Areas, Free University of Bozen-Bolzano.
- A predictive model for susceptibility to European Spruce Bark Beetle (*Ips typographus*) attacks: a case study of Eastern South Tyrol*. Elena Pedevilla, 2024. Laurea magistrale in Geografia e processi territoriali, Università di Bologna.

Presentations at international conferences

-*Assessing the impact of meteorological drivers and within-footprint spatial heterogeneity on fluxes at a forest ecosystem site.* **Candotti** et al. Poster presentation at the eLTER Science Conference 2025, 23-27 June 2025, Tampere (FIN)

-*Spatial and temporal dynamics of a bark beetle-induced forest disturbance regime.* **Candotti** et al. Oral presentation at the EGU General Assembly 2025, 28 Apr-02 May 2025, Vienna (AT)

-*Disentangling Norway Spruce Responses to Bark beetle Infestation and Drought Stress by Continuous Eco-Physiological Monitoring and Field Spectroscopy.* **Candotti** et al. Oral presentation at the XXVI World Congress of the International Union of Forest Research Organization (IUFRO), 23-29 June 2024, Stockholm (SWE)

Presentations at workshops

-*Bark beetle caused spruce physiology changes: preliminary results from a manipulation experiment.* **Candotti** et al. Oral presentation at the First international workshop on Norway spruce – bark beetle interactions at the Study Centre for the Alpine Environment L. Susmel, San Vito di Cadore, 30 Sep – 01 Oct 2024

Co-author of presentations at national or international conferences

-*Integrating Sentinel-II NDVI data into eddy-covariance postprocessing.* Callesen, **Candotti**, Montagnani. Oral presentation at the INTERNATIONAL MOUNTAIN CONFERENCE, 14 - 18 Sep, 2025, Innsbruck (AT)

-*Forest stand characteristics and salvage logging strategies affect the dynamics of post-windthrow vegetation trajectories.* Grande, **Candotti**, Stein, Alberti, Lingua, Tomelleri. Oral presentation at the INTERNATIONAL MOUNTAIN CONFERENCE, 14 - 18 Sep, 2025, Innsbruck (AT)

-*On the Increasing Occurrence of a Green Christmas: A Perspective from Long-Term Eddy Covariance Observations on Winter Dormancy Interruptions in a Subalpine Forest.* Tomelleri, **Candotti**, Lemenkova, Collalti, Dalmonech, Saponaro, Castagneri, Montagnani. Oral presentation at the eLTER Science Conference 2025, 23-27 June 2025, Tampere (FIN)

-*Vaia, bostrico e pericolosità incendi: come sta cambiando l'infiammabilità a scala di popolamento e a scala territoriale: l'esempio della Provincia di Bolzano.* Passamani, **Candotti**, Gamba, Ellecosta, Pietrogiovanna, Tomelleri, Ascoli. Oral presentation at the XIV Congresso SISEF, Padova, 09-12 Sep, 2024

-*Forest structure effects on microclimate in beech forests: results from a multi-year monitoring transect across the Italian peninsula.* Tomelleri, **Candotti**, Alvites, Antonucci, Battipaglia, Belelli Marchesini, Castaldi, Coccozza, Da Ros, Gianelle, Hoshika, Lamantia, Massari, Sala, Santopuoli, Tognetti, Yates, Valentini. Oral presentation at the Microclimate Ecology and Biogeography Conference, Helsinki, 26-29 Aug, 2024

Peer-reviewed publications

-Candotti A., Ennemoser, M., Seeber, J., Tomelleri, E. 2025. Norway spruce dominates natural regeneration five years after a large-scale wind disturbance in the higher montane and lower subalpine belts in the eastern Alps. *Forest Ecology and Management* 595.

-Candotti A., Tomelleri, E. 2025. Assessment of regional scale-based bark beetle disturbance predisposition in complex terrain with earth observations. *Forestry: An International Journal of Forest Research*, 1–16.
<https://doi.org/10.1093/forestry/cpaf043>

-Candotti, A., De Giglio, M., Dubbini, M., Tomelleri, E. 2022. A Sentinel-2 Based Multi-Temporal Monitoring Framework for Wind and Bark Beetle Detection and Damage Mapping. *Remote Sensing* 14.

Other publications

-Candotti, A., Tomelleri, E. Borkenkäfer und Ökophysiologie der Fichte, *Agrar- & Forstbericht* 2023, Autonome Provinz Bozen - Abteilung Landwirtschaft