SWIFTT

Satellites for Wilderness Inspection and Forest Threat Tracking

SWIFTT will provide forest managers with affordable, simple and effective remote sensing tools backed up by Copernicus-satellite imagery and powerful machine-learning models

Join our community!

Forests around the world provide home and livelihood not only to **billions of people**, but also to the majority of Earth's land biodiversity, and play a key role in responding to the challenges imposed by **climate change**.

The ever more frequent extreme weather events make trees more vulnerable to **insects and pathogens**, damage and uprooting by **strong winds** and to becoming dry fuel for **wildfires**, which spread faster and burn for longer.

With **early and targeted action**, these threats can be contained, and the ecological and economic impacts can be reduced.

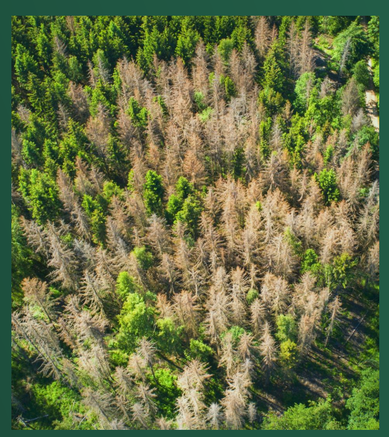
The **SWIFTT** platform will allow forest managers to **prevent, estimate and mitigate** the impact of windthrow, insect outbreaks, and wildfires.

As such, **SWIFTT** will make Europe better positioned to **preserve forests, biodiversity,** and to **fight climate change.**

SWIFTT has been awarded a highly competitive grant in the **Horizon Europe** funding programme, selected in the topic 'EGNSS & Copernicus applications fostering the European Green Deal' managed by **EUSPA**.

The consortium partners will receive a cumulative **€2.8M grant** from EUSPA / European Commission between **2022 and 2025**.

INSECT OUTBREAKS



- In European forests, the bark beetle (*Ips typographus*) has been a major source of **insect outbreaks**.
- While epidemic scale infestations are infrequent, their **ecological and financial impacts** are catastrophic.
- Over the coming decades, they are projected to increase as **climate change** provide the conditions for increased insect breeding.

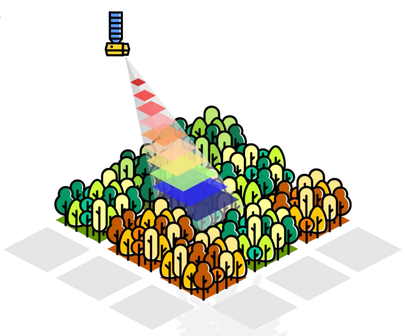
WINDTHROW

- **Windthrow** accounts for more than half of all damaged timber in European forests.
- **Climate change** leads to more frequent and severe storms, and consequently **increases windthrow damage**.
- Currently there is no solution for monitoring windthrow damage to mitigate its **subsequent effects**, such as dry fuel for **fires** or dead wood from which **insects** can breed and spread.

WILDFIRES

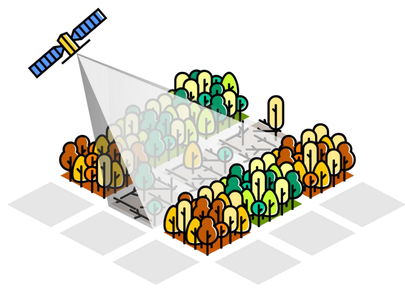
- Every year **65 thousand fires** occur in Europe, burning approximately **500 thousand hectares** of wildland and forests.
- **Climate change** is set to increase the duration and frequency of heat waves and droughts, providing **more dry fuel for wildfires** which spread faster and burn for longer.
- Existing technologies work with low-resolution data, limiting fire risk prediction quality.

EARLY DETECTION OF INFESTATIONS



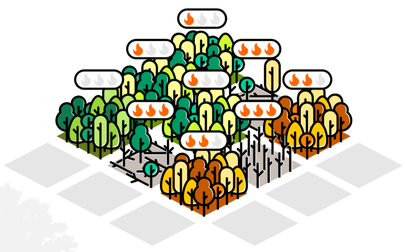
- **SWIFTT** models integrate data from Copernicus Sentinel-2's instruments, which allow us to **differentiate healthy trees** from those suffering **from insect infestation or disease**.
- With it, the **SWIFTT** platform will allow **early detection of insect-infested trees**, helping foresters map dieback in their forests, coordinate sanitary cuts, and **prevent their spread**.

FASTER POST-STORM RESPONSE



- **SWIFTT**'s models use Copernicus Sentinel-1's SAR data to detect the **presence or absence of trees** on a given plot, regardless of cloud cover, making it ideal for mapping **windthrown forest damage** shortly after a storm.
- The **SWIFTT** platform will help foresters to **quickly measure damage** from a recent event and coordinate a **faster post-storm response**, limiting the risk of future threats.

MORE EFFICIENT FIRE PREVENTION



- **SWIFTT** will **identify areas at risk of wildfires at higher resolutions** than current services by applying a variety of state-of-the-art techniques satellite imagery.
- With the incorporation of insect outbreak and windthrow data, it will also be possible to **predict the areas to which fires are most likely to spread**, allowing forest managers to proactively and efficiently allocate resources for fire prevention.

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