

Remote sensing for bark beetle outbreaks monitoring: a review

Review type article as a teamwork of SCERIN countries and possibly as a base for joint SCERIN project proposal

Field stages: green-attack, red and grey attack

- **RS data used for BB outbreaks detection and monitoring including time series (inter-annual, multitemporal)**

- platform: satellite, UAV, aerial

- sensors: Optical, LiDAR, thermal?

- resolution: different spatial, spectral and temporal resolutions

- **RS methods used for BB outbreaks monitoring**

- early detection of BB

- spectral x structural indicators (optical x LiDAR data)

- **Accuracy Assessment of the BB stages detection from different types of the data**

- methods of results validation

- ability for assessment of: green-attack, red and grey attack stages classification accuracy using different types of data (spectral ranges) and detection methods

- **Based on seminar talks:** Monitoring of spread of BB calamity in SCERIN using remote sensing: areal extent (antemporal development) of BB spread in SCERIN/individual countries, levels of impact – based on literature review and inputs from the seminar

- **Remote sensing in forest practice, inventory and reporting of BB outbreaks :** compare methodologies in SCERIN (developed and published methodologies for BB outbreaks monitoring using RS)

- **List/examples depicting interesting case studies:** cases of successful BB outbreak detection and prediction using remote sensing

Ultimately, we NEED predictive models of BB outbreaks based on RS.

Questions: if the underlying relationships between beetle outbreaks and environmental factors differ by country/area; can we address them using of RS in a consistent way or we need various approaches?

FOCUSS on SCERIN and BB attack and damage

Further ideas welcome!

Express your interest to participate in email to Lucie Kupková (lucie.kupkova@natur.cuni.cz) till February 15 2021

