



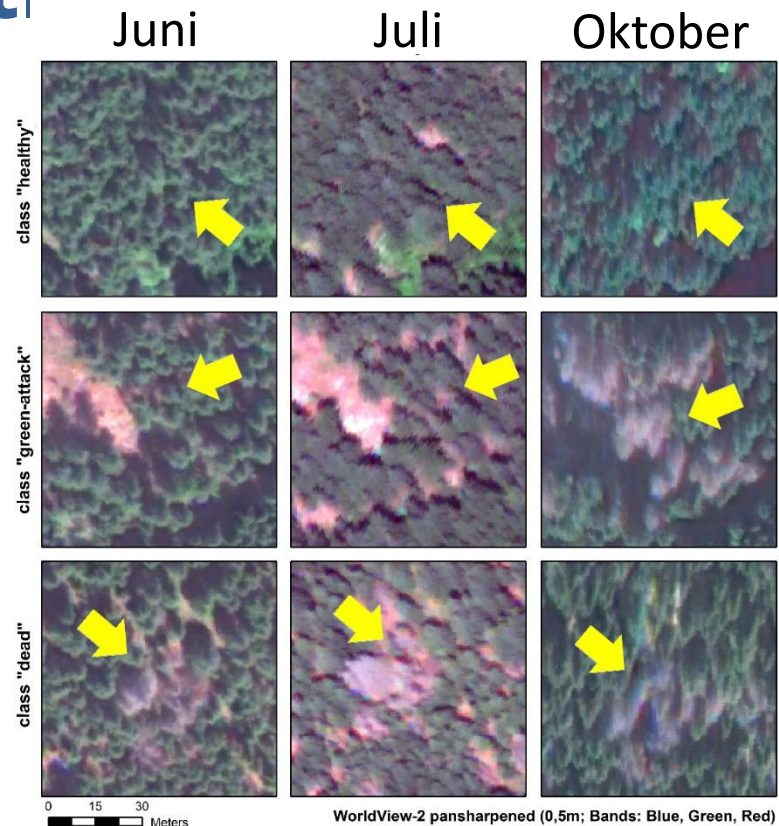
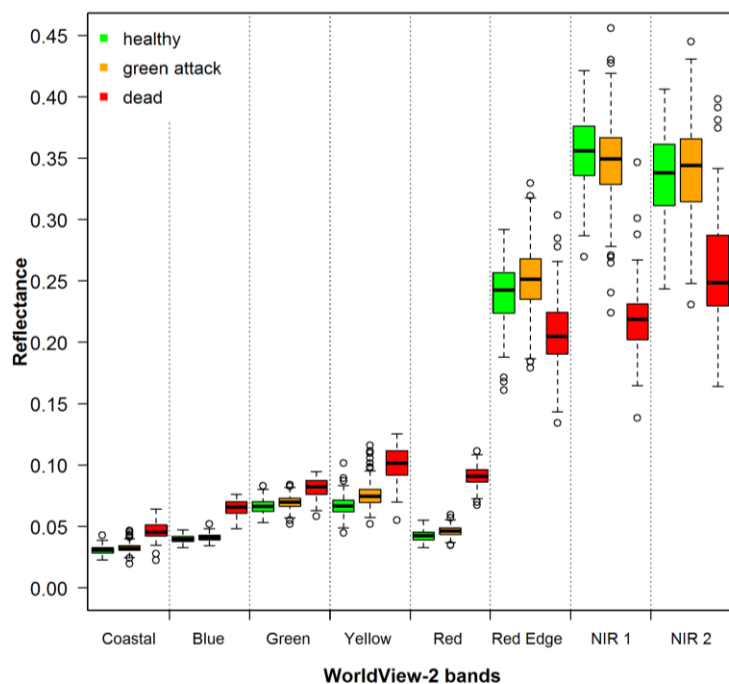
Early detection based on remote sensing

**Kick off Meeting
zoom | 09.04.2021**

Immitzer BOKU

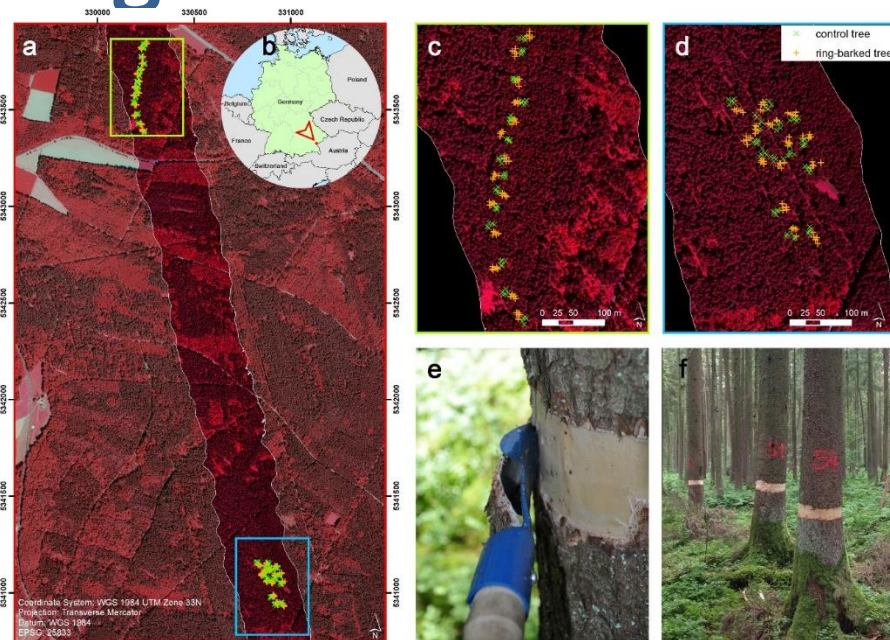
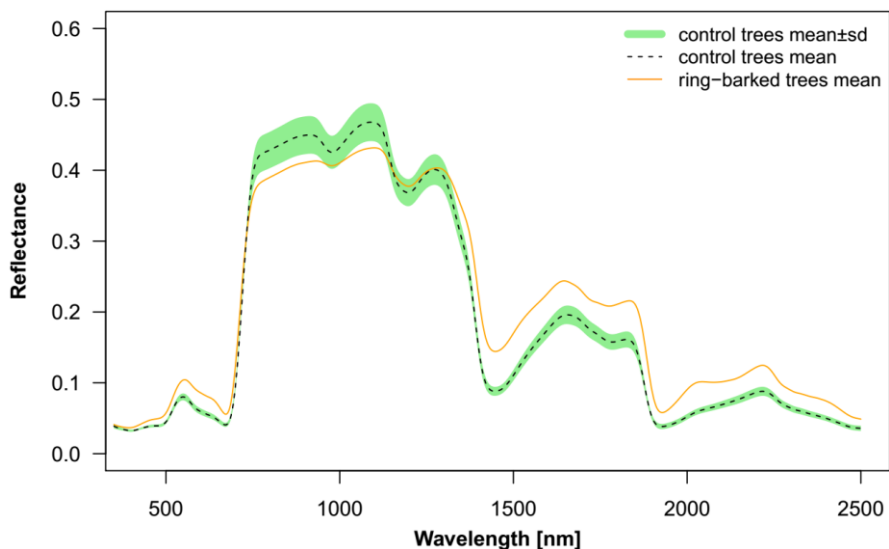





Case study 1 – bark beetle

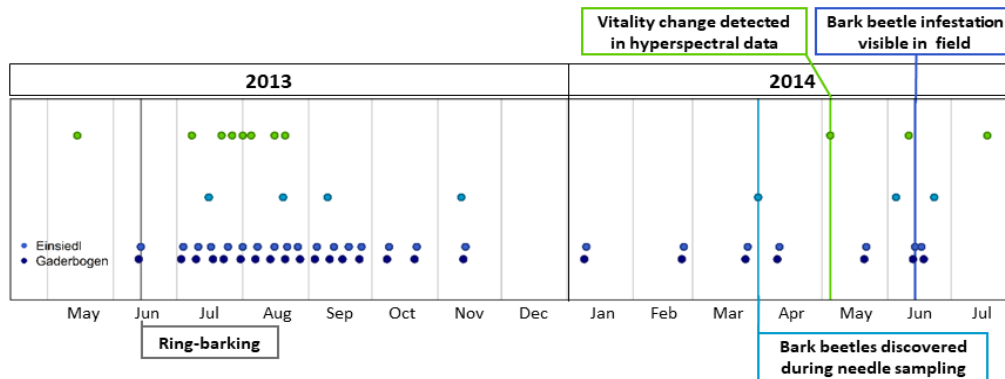




Case study 2 ring barking

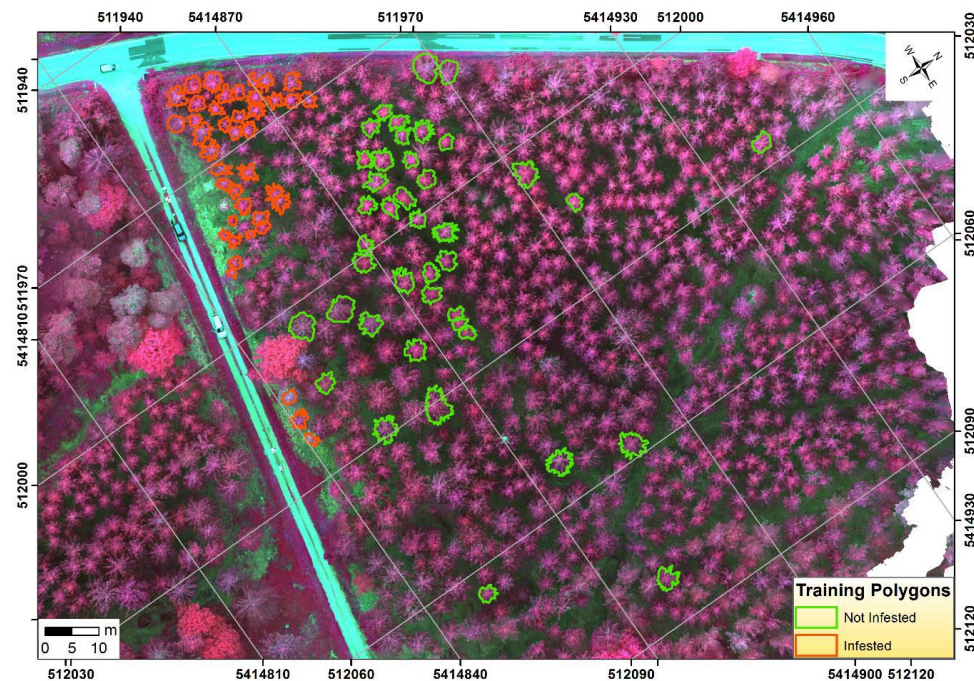
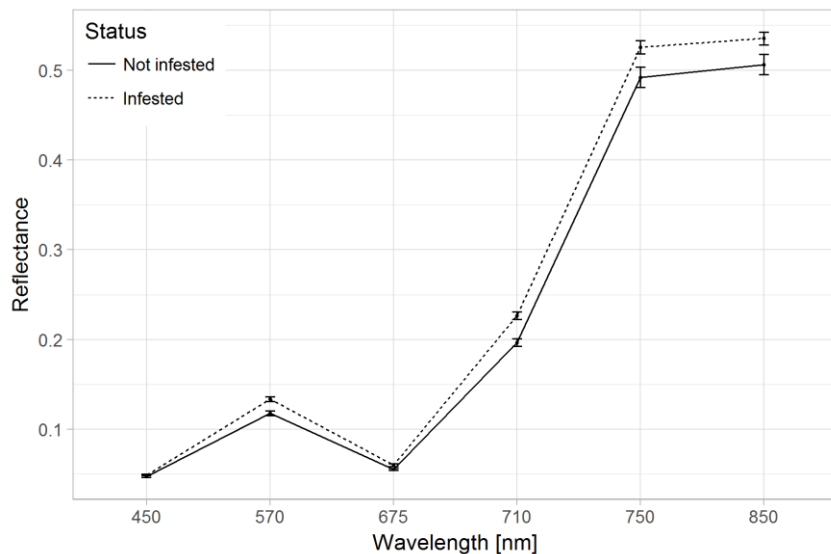


- Hyperspectral airborne data 
- Needle sampling 
- Crown condition assessment 





Case study 3 UAV



		Reference Data		Total	User's accuracy
CLASS		Not Infested	Infested		
Classification	Not Infested	35	5	40	87.5%
	Infested	6	36	42	85.7%
Total		41	41	82	
Producer's accuracy		85.4%	87.8%		
Overall accuracy		86.6%			
Kappa		0.732			

Features: PC1_95P, PC1_75P, PC5_StDev, B4_Mean, SAVI_StDev, B4_MEDIAN, PC1_90P, H450.8_75P, H710.8_95P, B6_StDev, H710.2_MEDIAN, H710.1_MEDIAN



Operational system - green attack detection

- Continuous data acquisition
- High spatial resolution
- High spectral resolution

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- We need an accurate tree species map!
- All infested trees must react in the same way...