

Vegetation management & risk analysis

Fine-scale assessment of vegetation risk to infrastructure using remotely sensing imagery and LiDAR data

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Vegetation management programs are pivotal for reducing forest risk to infrastructure and power outages for highly forested areas.

Remote sensing technology enables new opportunities for assessing forest risk to infrastructure at different spatial scales, in near real-time, and in three dimensions.

Our goal is to evaluate forest risk by creating datasets of tree physical structure and tree health condition using LiDAR data and high-resolution imagery for roadside forest.

The proposed tasks would provide fine-scale information for forest management within the integrated project.



After Isaias, Mansfield City Road
(Mansfield). [Aug. 06, 2020]



Vegetation Management, Route 32
(Mansfield). [Mar. 01, 2021].

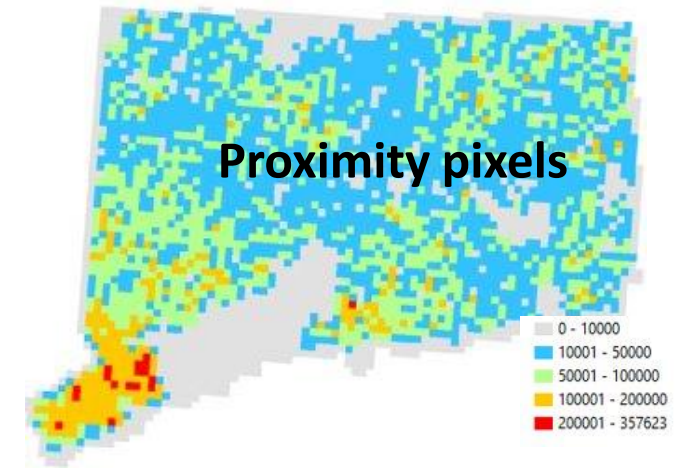
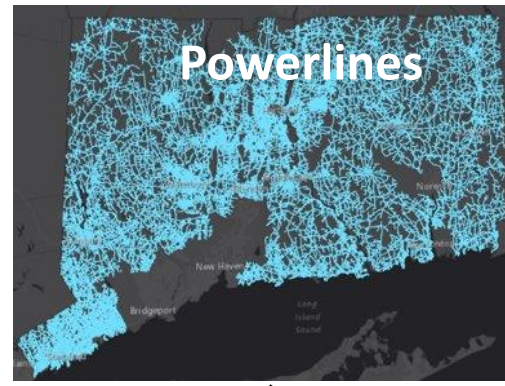
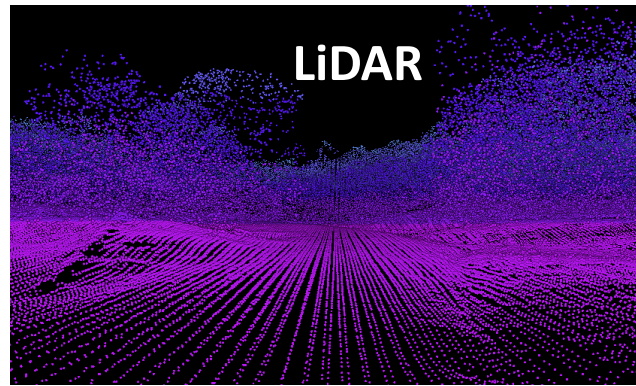
Task 1 - Estimate roadside canopy roughness, closure, and edge change using LiDAR.

Task 2 - Fine-scale roadside forest health condition mapping using high-resolution remote sensing imagery.

Task 3 - *Develop this task based on the needs and future directions of Eversource's Drone Program (Proposed: Rapid post-storm damage assessment using UAS).*

Deliverables

- Canopy roughness, closure, and edge change datasets
- Fine-scale roadside forest health condition maps
- AI-based algorithms/pipelines for forest parameter extraction/health monitoring
- Hand annotated benchmark data sets for AI model training purposes
- Reports on canopy roughness, closure, and edge change mapping
- Reports on fine-scale roadside forest health condition mapping

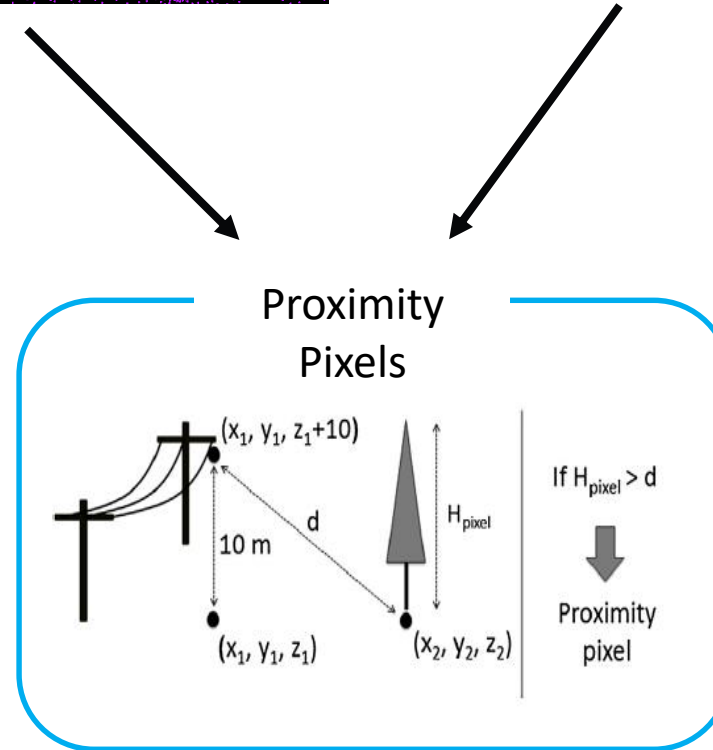


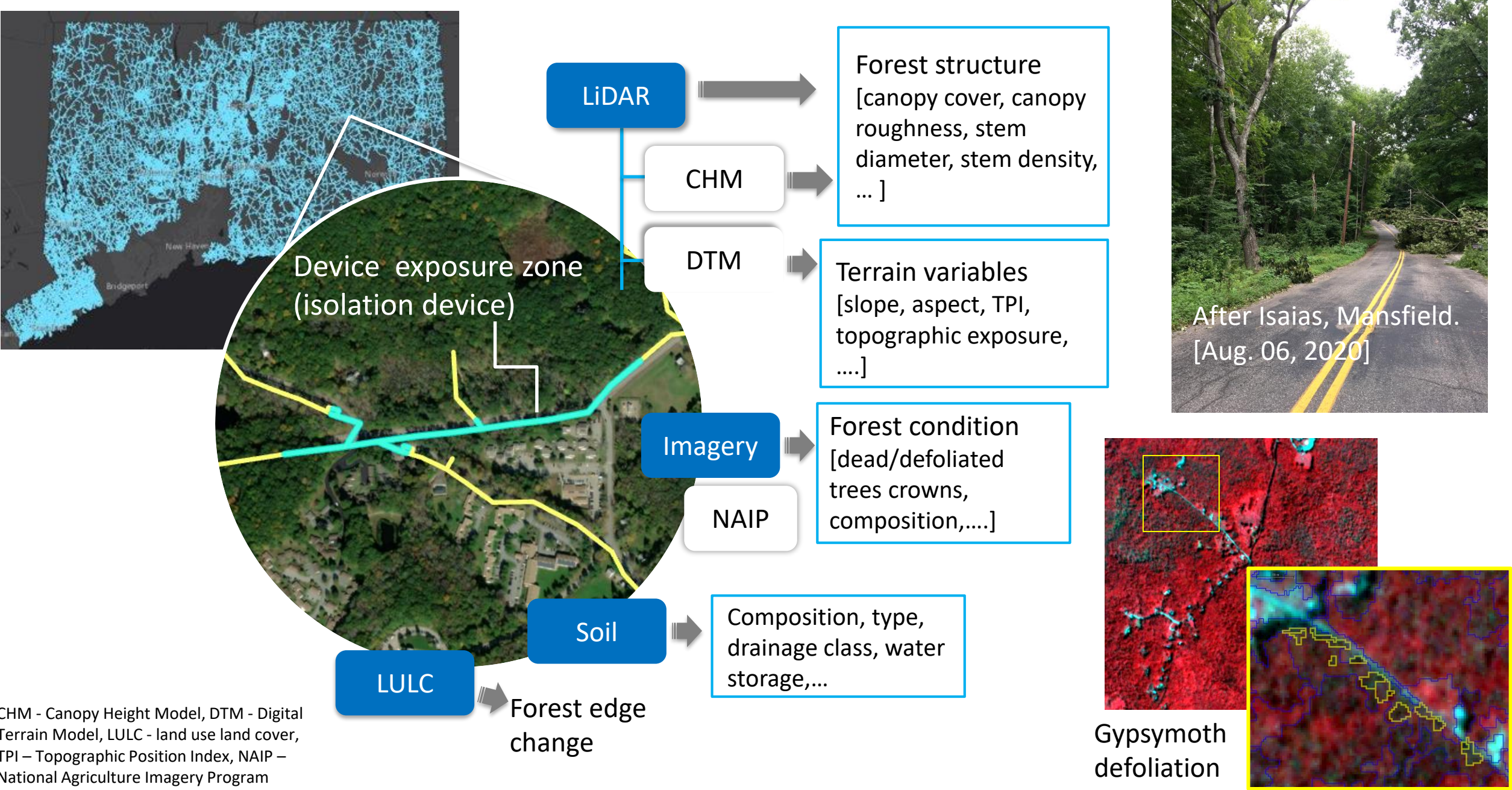
Trees capable of striking power lines – *Proximity pixels*.

Identify local environment conditions that affect tree failures.

Better understanding and localization of vegetation risk.

Improve targeted vegetation management programs.





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