THaW (Tree, Hedgerow and Woodland) Mapping Tools

Availability

If you are interested viewing or using either the **THaW Mapping Dataset** or the **THaW Change Detection tool** for non-commercial use, please contact Dr David Luscombe (d.j.luscombe@exeter.ac.uk).

Following publication later in 2021, it is anticipated that this dataset and tool will both be available via an online open access repository, © 2021. licensed under a CC BY-NC-SA 4.0 license. https://creativecommons.org/licenses/by-nc-sa/4.0/

The THaW Mapping Toolbox – This Toolbox autonomously and rapidly generates high resolution, baseline THaW maps, across landscape extents, using 2m² LiDAR Data and bespoke data processing approaches. See figure 1 for example outputs.

THAW Legend
- 🟧 Below 1.3m (Fragmented - Scrub, Bushes or Misc e.g. fence/dry stone wall <10m2)
- 🟧 Below 1.3m (Scrub, Bushes or Misc)
- 🟦 Below 3m (Managed Hedgerow, Large Bushes)
- 🟩 3m to 15m (Tree Canopy, Mature Hedgerow)
- 🟢 Above 15m (Contiguous Tree Canopy)
- 🟨 Above 15m (Individual Trees)
- 🟪 Change in last 3 months
- 🟥 Change for selected period

Fig 1: Screenshot from the Tree Hedgerow and Woodland (THaW) mapping and change detection tool showing an example from a mixed agricultural/urban extent in North Devon, UK. The coloured pixels correspond to the classes of tree and woodland defined in the legend. Small areas of woodland, mature and managed hedgerow, and individual /emergent mature trees, can all be seen within this relatively small extent.

The THaW Change Detection Tool

Drawing on THaW mapping data and spaceborne radar data, this tool adds an online platform which can autonomously detect changes to the mapped THaW habitats, through time. Using Sentinel I synthetic aperture radar (SAR) data, this tool enables remotely sensed canopy change detection to be mapped for any calendar quarter selected by the user, enabling close to real time tracking of canopy loss and woodland management. See figure 2 for example outputs.

Fig 2: Screenshot from the Tree Hedgerow and Woodland (THaW) mapping and change detection tool showing an example from a mixed agricultural extent in North Devon, UK. The red area, on the right-hand side of the image, highlights an area of canopy loss automatically detected during the 1st quarter of 2021. Such change is automatically derived using user defined time periods and detected using composite multitemporal satellite-borne radar (SAR) data.