## CONNECTICUTVIEW 2021 - 2022 ACTIVITIES

The goals of ConnecticutView are to further the awareness and promote the use of remote sensing technology, from space borne sensors to ground based systems, within the state of Connecticut. To meet these goals, ConnecticutView engages in various academic and outreach activities targeted at the education of K - 12 students, undergraduate students, graduate students, and the public. In addition, remote sensing technology is used to develop data and information that address specific issues within Connecticut.

Invasive Plant Monitoring: During the project year of 2021-2022, ConnecticutView launched a new research initiative focused on invasive plant distribution mapping in Connecticut forests' understory. Among other anthropogenic and natural disturbances, Connecticut forests are being dramatically exposed to the expansion of invasive plant species. Increased temperatures due to climate change and forest disturbances, such as Gypsy moth caterpillar damage provide conditions more conducive to spread and survivability for other invasive plants. The 2020 Forest Action Plan from the Connecticut Department of Energy and Environmental Protection has identified taking measures to control and manage invasive plants in Connecticut forests as a key priority. Among the list of invasive plant species, two invasive plant species significantly contribute to the degradation of habitat: Japanese barberry (*Berberis thunbergii*) and multiflora rose (*Rosa multiflora*). In the absence of predation and disease in their introduced environments, these two invasive species present serious threats to forest ecosystem health and biodiversity. Japanese barberry and multiflora rose can damage the structure of native plant communities, prevent native seedling regeneration, and diminish the overall productive capacity of the forest, depreciates native songbird habitat, *and* pose risk on human health. We are in the process of analyzing Sentinel-2 timeseries imagery to identify probable phenological windows to discern invasive understory from native plants and forest overstory.

The information on project scope and preliminary results of the multi-temporal analysis is being shared via an ESRI Story Map accessible through the ConnecticutView website.
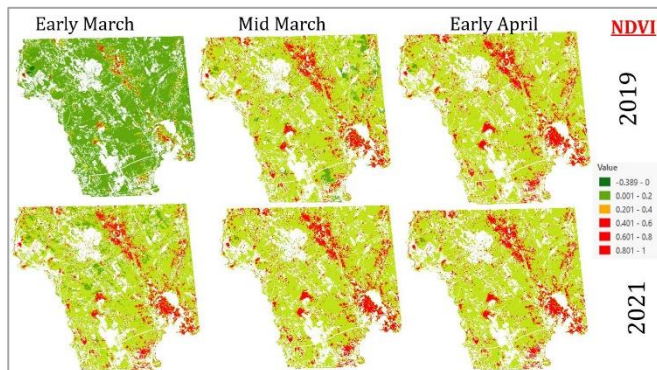
Examples for forest understory infested with (A) Japanese Barberry (B) multi-flora rose. We are utilizing Town of Mansfield and UConn Forest (C) as one of the candidate study sites to investigate Sentinel-2 imagery derived NDVI timeseries This area is heavily infested with both Japanese barbery and multiflora rose. Preliminary findings suggest that mid-March to early-April NDVI could be a probable window to identify invasive understory.
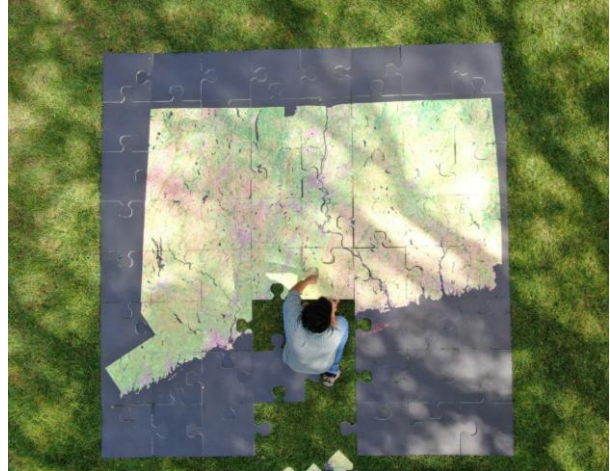

Connecticut Invasive Plant StoryMap. Study results are being incorporated to the StoryMap as the research progresses.
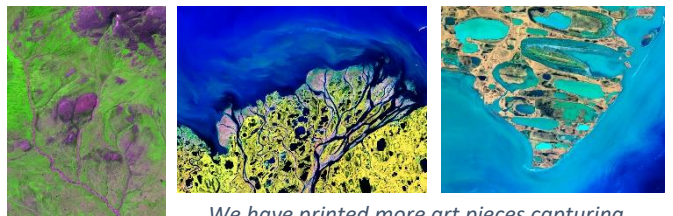
BENEFITS TO CONNECTICUT

While small in area, Connecticut is a diverse state. Connecticut has an abundance of forest, numerous water bodies, and the state borders the Long Island Sound, an ecologically important estuary into which a majority of Connecticut watersheds drain. Connecticut also has a high population density with its associated urban and suburban development, road networks, and golf courses. As such, remote sensing technology can serve as a valuable tool to assist in the monitoring and management of the diverse Connecticut landscape and help educate the citizens on the impacts of human activities on the earth, both locally and globally. Imagery can also serve to highlight the beauty of the planet on which we live.

Setting up the floor puzzle in front of the UConn College of Agriculture, Health and Natural Resources.

- Provide remote sensing based informational and data products that address issues specific to Connecticut to improve monitoring and management of the landscape.
- Expose K-12 students to remote sensing technology and provide educational outreach programs and materials.
- Provide quality imagery through "Our Earth Revealed" satellite image exhibit to expose the public to local and global landscapes.

We have printed more art pieces capturing different landscapes to showcase in local public libraries as part of Earth as Art galleries

CONNECTICUTVIEW CONSORTIUM MEMBERSHIP

ConnecticutView collaborates with various partners on a per-project basis. Current partners include:

ConnecticutView Principal Investigator:

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