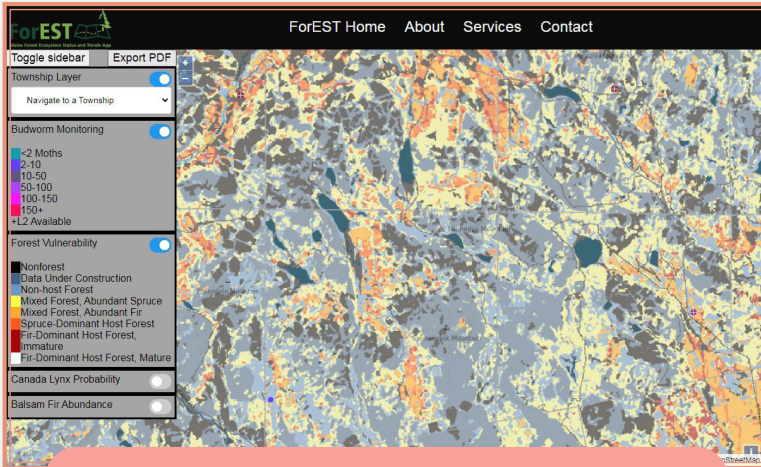# Intelligent GeoSolutions

Forest Ecosystem Status and Trends (ForEST) App

Forest vulnerability layer using our predictive model based on multiple forest, topographic, and climatalogical factors.

What Is the ForEST App?

The ForEST app is a geospatial tool that harnesses state-of-the-art machine learning methods for mapping forest conditions. Developed at the University of Maine, this interactive web mapping application provides decision support to private and public forest managers, natural resource agencies, conservation organizations, and regional stakeholders.

ForEST distills the complexity of regional forest conditions down to the key information relevant to forest management/conservation planning in advance of the oncoming spruce budworm outbreak.

forestapp.acg.maine.edu

The eastern spruce budworm is believed to be the most damaging forest insect in Maine and North America. Outbreaks of the insect that kills balsam fir and spruce trees occur every 30 to 60 years. Severe defoliation already has occurred in southern Quebec; outbreak populations of SBW are now appearing in Maine.

The ForEST App allows users to:

✓ **View state-of-the-art maps of forest conditions derived from satellite imagery**

✓ **Explore regional budworm population monitoring data**

✓ **Evaluate forest risk in areas of interest**

✓ **Identify natural resource tradeoffs**

✓ **Download GeoPDFs**

ForEST App

ForEST: A unique web application designed to facilitate interpretation of current forest resource and habitat conditions, recent trends, and projected futures under management, disturbance, and climate scenarios. We use FIA data to train and validate machine learning models used to map forest conditions.

The ForEST Team

Dr. Erin Simons-Legaard
Research Assistant Professor in Forest Landscape Modeling

Dr. Kasey Legaard
Research Assistant Professor of Geospatial Analytics and Machine Learning

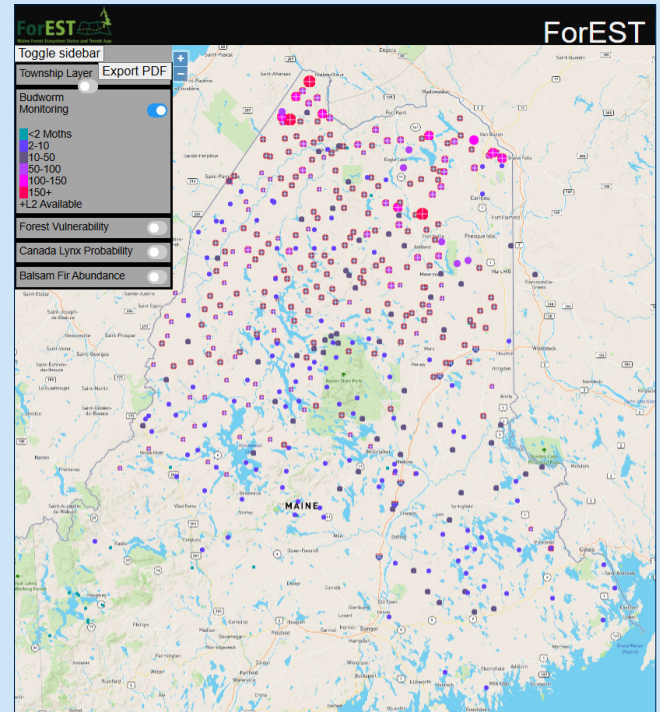*Aaron Weiskittel*
Professor, Forest Biometrics & Modeling
Director, Center for Research on Sustainable Forests

Dr. Torsten Hahmann
Associate Professor in the School of Computing & Information Science

Chris Wilson, Data Architect Advanced Computing Group
Leo Edmiston-Cyr, Special Project Assistant

ForEST
Maine Forest Ecosystem Status and Trends App

State-level sample view showing the ability to browse any specific spruce budworm data point and visusualize the year over year measurements.
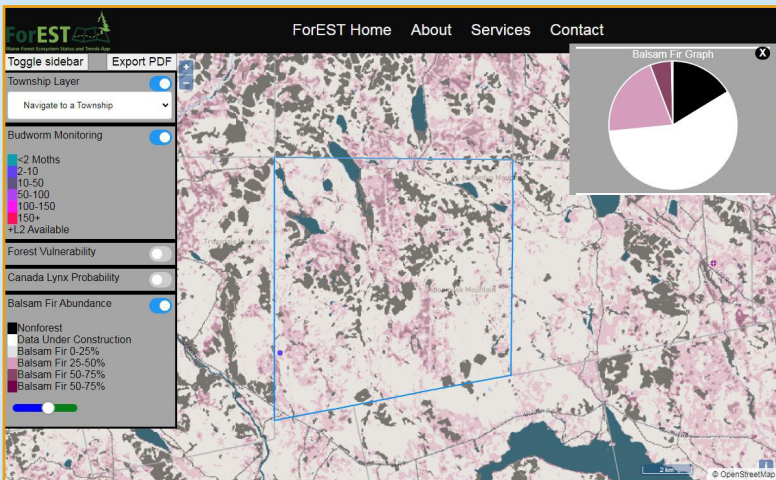
Example of satellite imagery processed to identify a particular species abundance (Balsam Fir)

Intelligent GeoSolutions

Offering High Value, Low Cost Geoinformatics for Land Managers

The team at IGS develops sophisticated machine learning algorithms that provide near real time, highly accurate geospatial information about forest attributes of high relevance to forest management, scalable to large areas using satellite imagery and USFS FIA plot data.

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