



Northern Research Station Forest Inventory and Analysis



ANALYTICAL SCIENCES GROUP UPDATE

FY2014

2014 Northern FIA Regional Management Team Meeting
Madison, WI

TOPICS

- ✘ State reporting
- ✘ Regional analyses
- ✘ National-scale projects
- ✘ P2+
- ✘ NWOS
- ✘ ASG Goals
- ✘ FIA Symposium

State Reporting

- Continue to produce 24 annual reports each year. In FY2013:
 - All reports used the national FIA template (Resource Update series)
 - All reports completed on time*
- Comprehensive 5-yr reports completion:
 - FY14: Ohio, Vermont/New Hampshire completed
 - FY15: New York, Connecticut/Rhode Island/Massachusetts (SNE), Minnesota, Iowa, Missouri, Indiana, Maine



Forests of Wisconsin, 2013

This resource update provides an overview of forest resources in Wisconsin based on an inventory conducted by the U.S. Forest Service, Forest Inventory and Analysis (FIA) program at the Northern Research Station in cooperation with the Wisconsin Department of Natural Resources. Data estimates are based on field data collected using the FIA annualized sample design and are updated yearly. The estimates presented in this update are for the measurement year 2013 with comparisons made to data reported in 2008. The sample plot population in Wisconsin consists of 12,545 plots, collected across a period of 5 years (about 2,500 plots, or about 20 percent of the data per year). The estimates in 2013 consist of 5 years (100 percent) of data collected using the annualized sampling and estimation procedures. Growth, removals, and mortality estimates are based on 5 years of data (100

percent of the total sample), or 12,545 plots. The data used in this publication were accessed from the FIA database in March and April, 2014.

Overview

Wisconsin is home to 17.1 million acres of forest land. Forested area has increased by about 2.4 percent (404,000 acres) since 2008 (Table 1). The number of live trees on Wisconsin's forest land in 2013 was estimated at 11.4 billion trees, an increase of 4.2 percent from 2008. Net volume experienced an increase of about 6.5 percent. Average annual net growth and average annual mortality increased by 4.9 and 10.5 percent, respectively, since 2008, but average annual harvest removals decreased by 1.6 percent (Table 1). Similar trends were observed on Wisconsin's timberlands (Table 1).

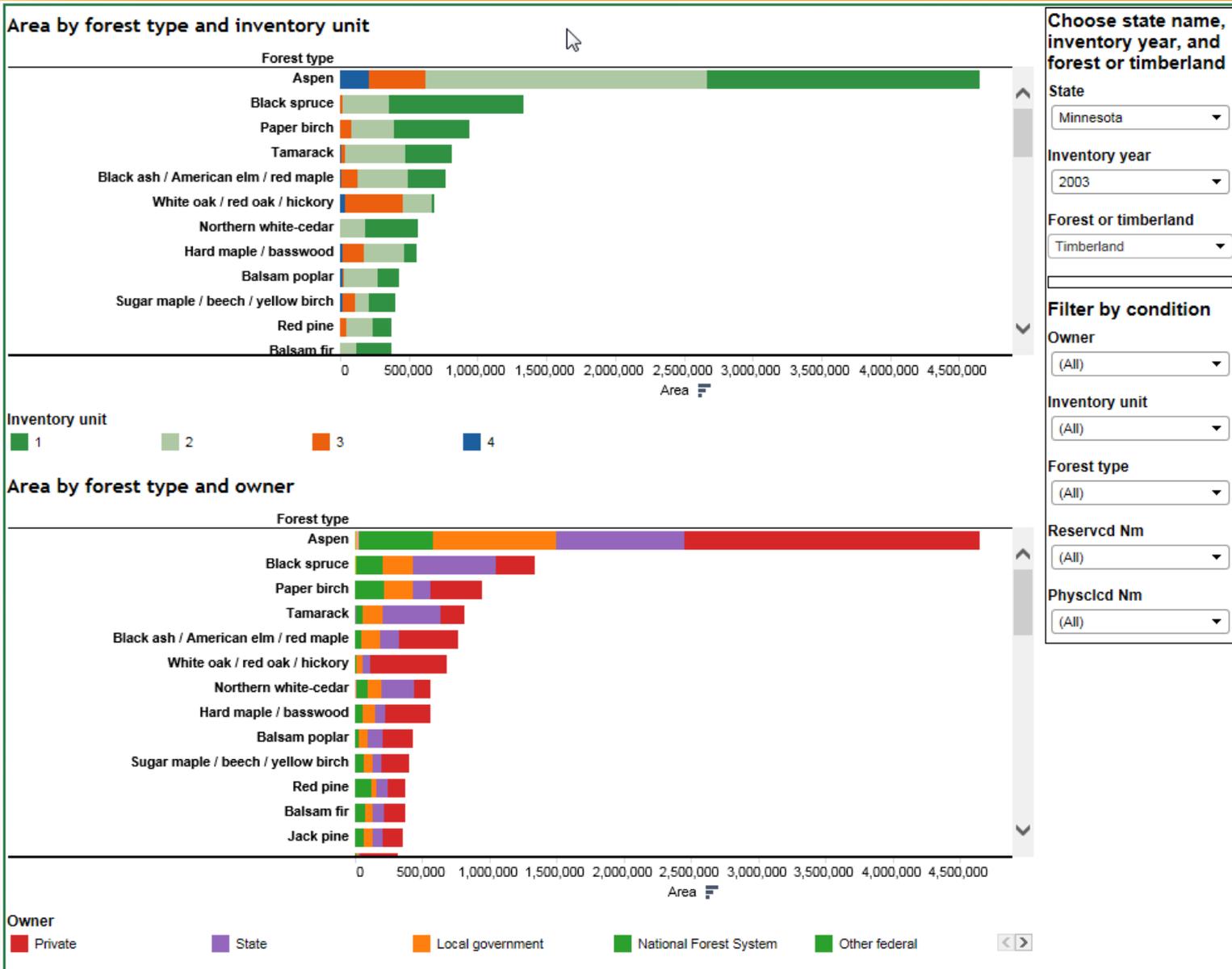
Table 1.—Wisconsin forest statistics, change between 2008 and 2013

	2008 Estimate	Sampling error (percent)	2013 Estimate	Sampling error (percent)	Change since 2008
Forest Land					
Area (thousand acres)	16,897.2	0.8	17,101.2	0.8	2.4
Number of live trees ≥1 in diameter (million trees)	10,919.1	1.1	11,375.6	1.1	4.2
Net volume in live trees ≥5 in diameter (million cubic feet)	23,344.3	1.0	24,754.7	0.9	6.5
Live tree (≥ 1 in diameter) aboveground biomass (thousand oven-dry tons)	603,869.5	0.9	640,469.2	0.8	6.1
Annual net growth live trees ≥5 in (million ft ³ /yr)	621.6	2.2	652.5	1.9	4.9
Annual harvest removals of live trees ≥5 in (million ft ³ /yr)	352.1	5.3	346.5	4.7	-1.6
Annual mortality of live trees ≥5 in (million ft ³ /yr)	378.3	2.7	507.5	2.3	10.5
Timberland					
Area (thousand acres)	16,206.7	0.5	16,588.2	0.5	2.3
Number of live trees ≥1 in diameter (million trees)	10,611.2	1.1	11,040.6	1.2	4.0
Net volume live trees ≥5 in diameter (million cubic feet)	22,563.8	1.0	24,015.7	1.0	6.4
Live tree (≥1 in diameter) aboveground biomass (thousand oven-dry tons)	586,542.7	0.9	621,763.8	0.9	6.0
Net growth of growing-stock trees (million ft ³ /yr)	568.5	2.1	599.1	1.9	-1.7
Annual harvest removals of growing-stock trees (million ft ³ /yr)	290.5	5.5	303.3	4.9	1.6
Annual mortality of growing-stock trees (million ft ³ /yr)	200.4	3.0	235.2	2.5	17.4

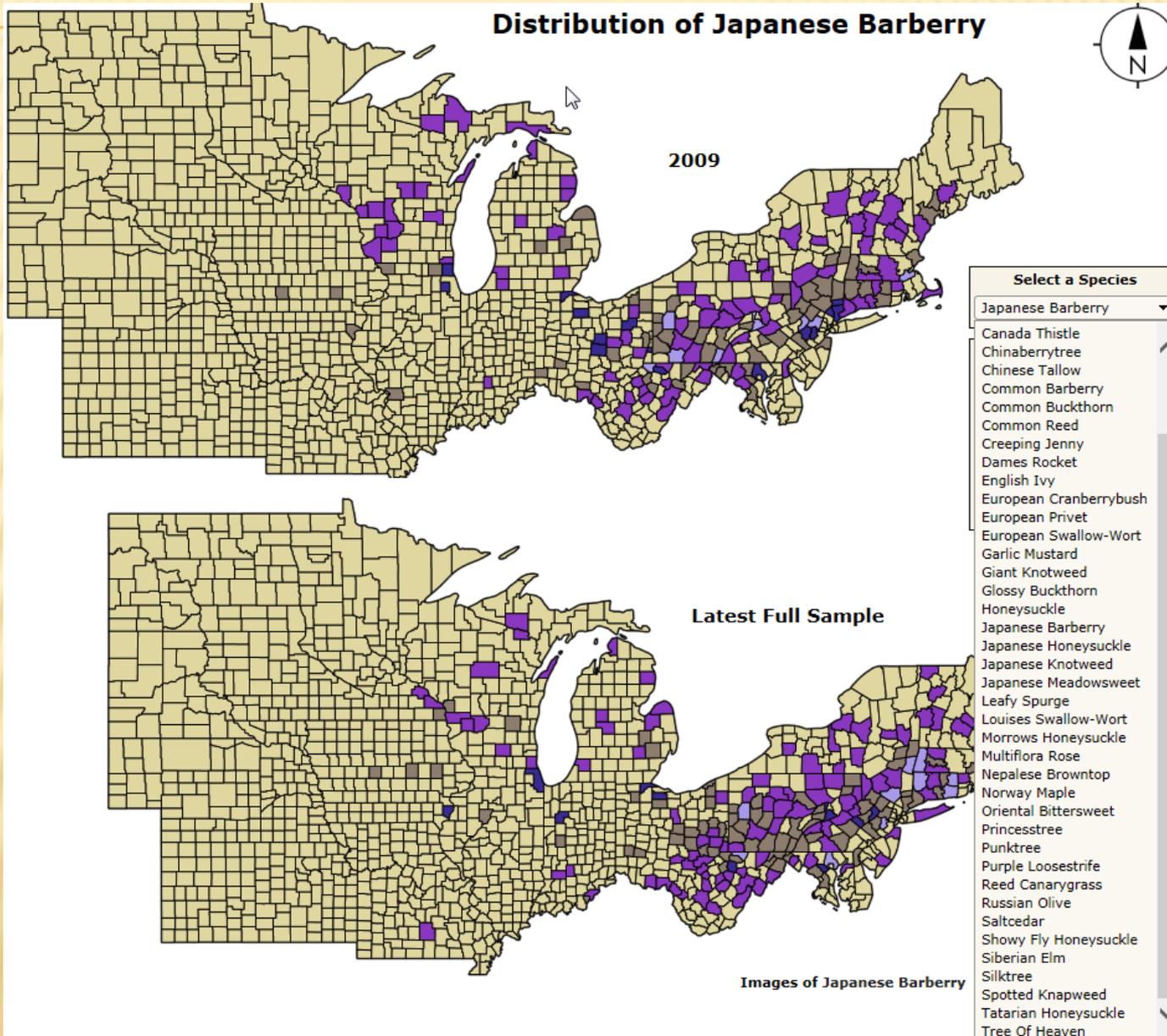
State Reporting

- Exploring new avenues for annual state reports
 - Web-based, interactive graphics; no annual written report
 - Much more content possible than traditional annual report
 - Traditional outputs still there
 - Links to multiple issues
 - Currently evaluating software options (e.g., Tableau)
 - Scott Pugh demo tomorrow

State Reporting – Interactive Graphics



State Reporting – Issues



State Reporting – Issues

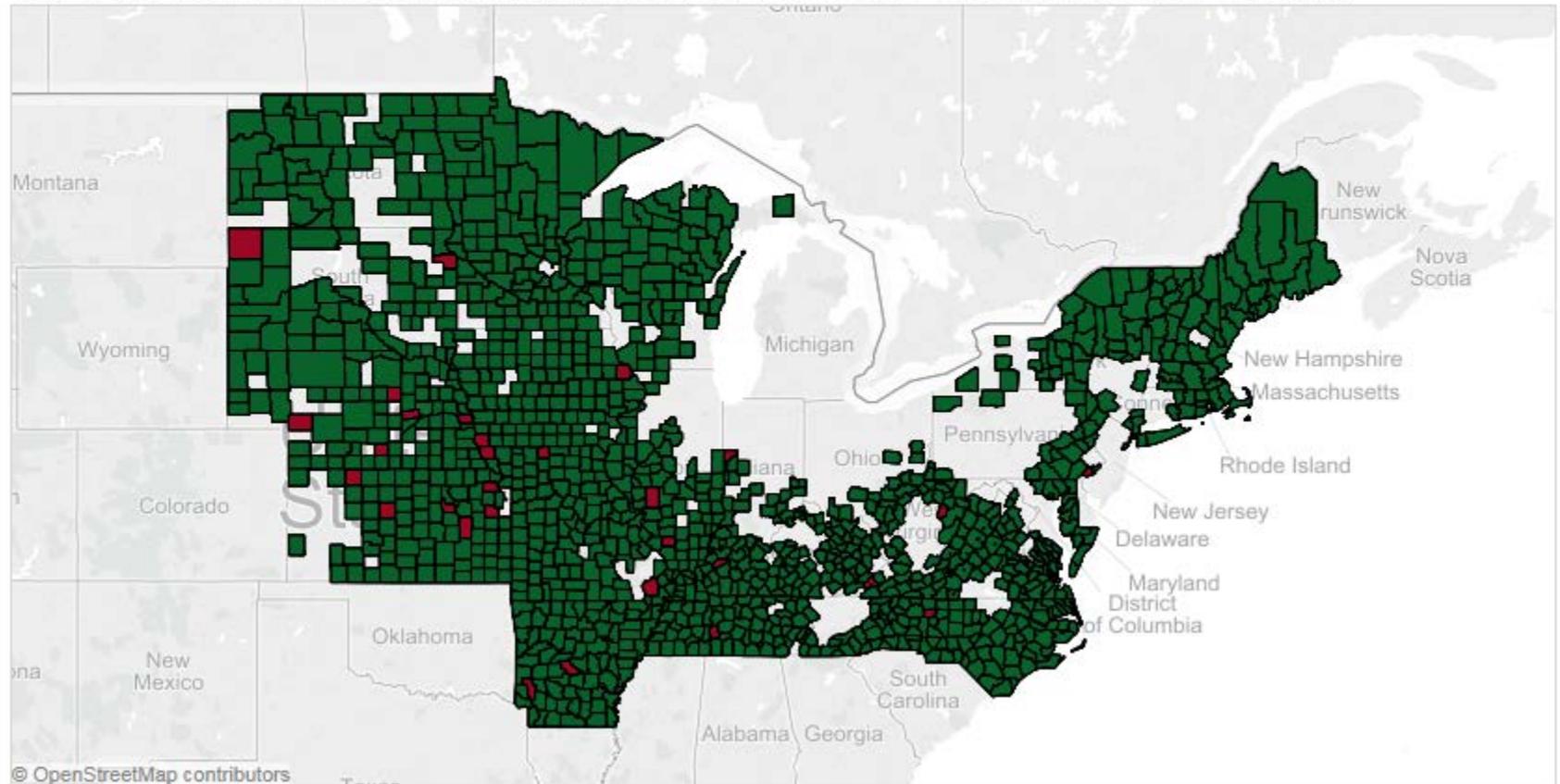
Counties that don't have known EAB infestations but with elevated ash mortality (>1% = above background mortality) are shown in red.

EAB Infests the Ash Resource of the United States

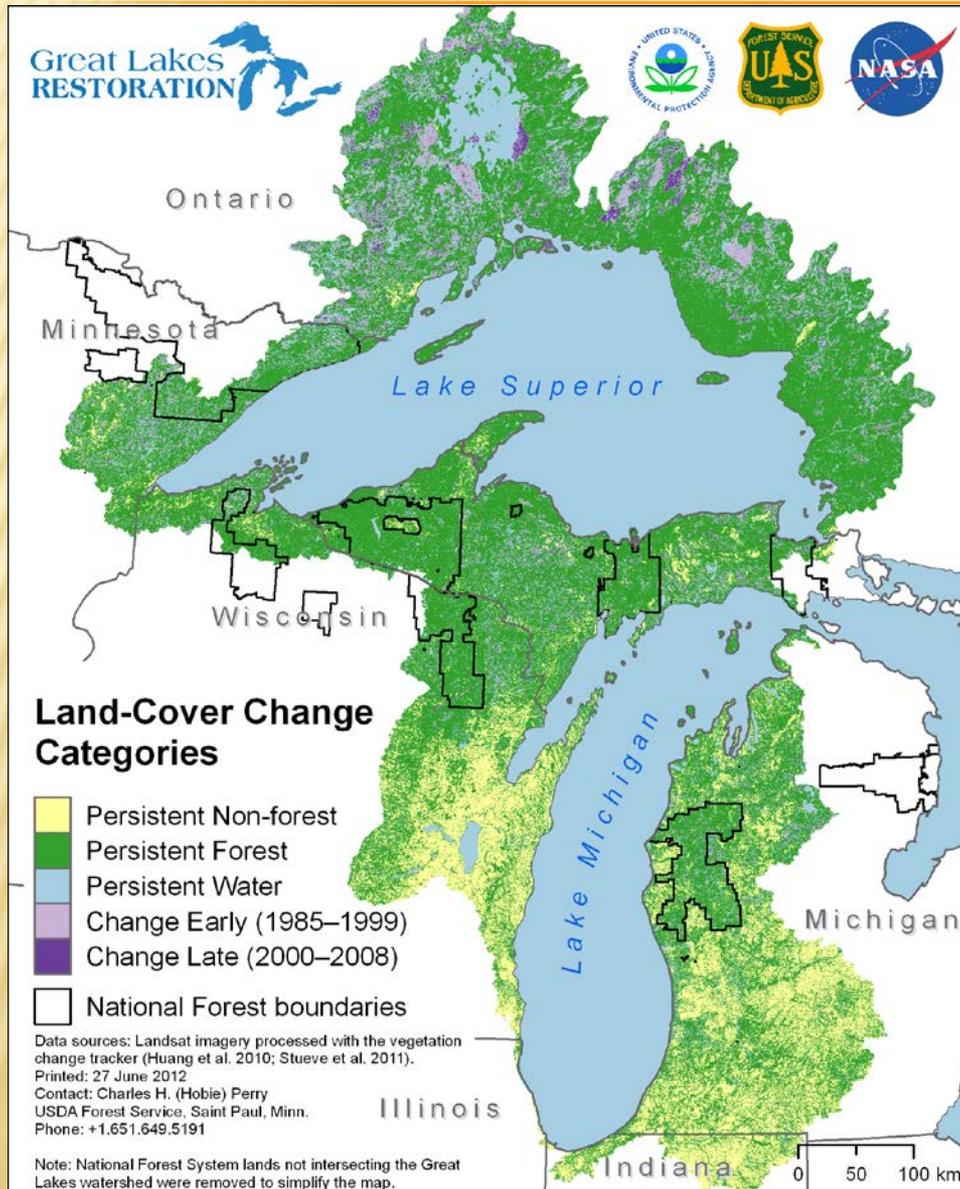
Ash Mortality Increases with EAB Infestation

EAB Early Detector and Proportion of Ash Uninfested Counter

Currently Uninfested Counties In Red Have Elevated Ash Volume - Potential EAB Early-Detection

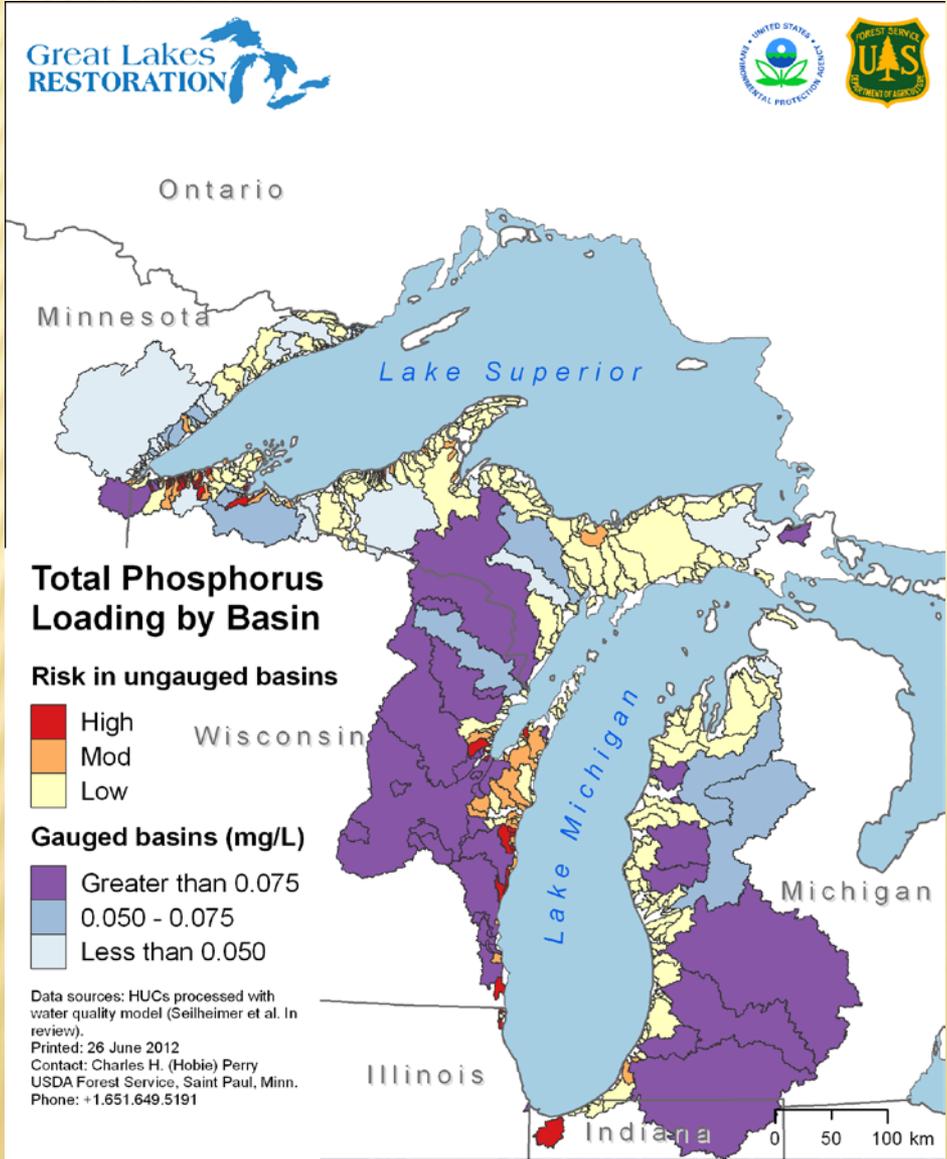


Regional Analysis – GLRI



**Vegetation
Change Tracker
(VCT) output
published as a
research dataset
(RDS).**

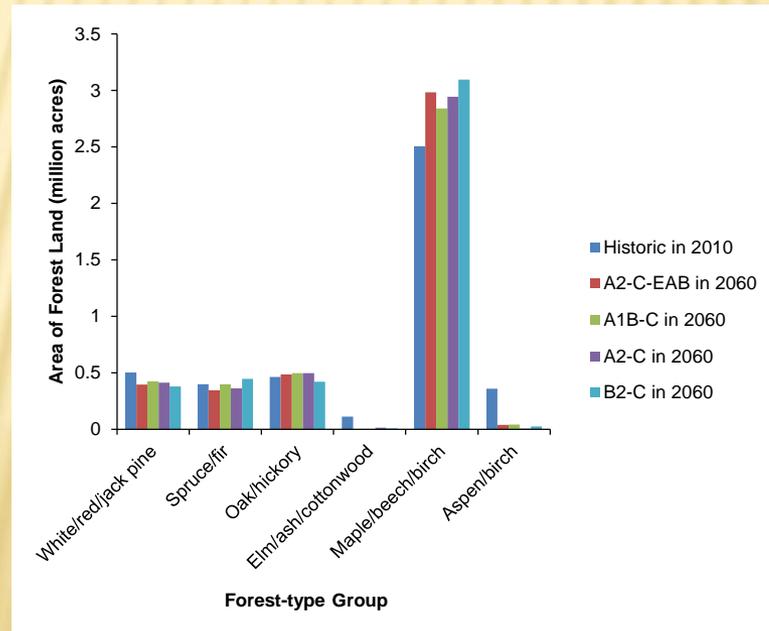
Regional Analysis - GLRI



Identification of at-risk landscapes and prioritizing for restoration.

Regional Analysis – Northern Forest Futures

- Final ‘Futures’ GTR is in revision and should be published in a few months.
 - Similar organization to ‘current status’ GTR
 - Focus on projections to 2060
- ‘Futures’ content is now a product line that is being included in 5-year reports (Pat Miles).



Regional/National Analysis: RMAP

RMAP

- Modeled distributions of 12 tree species in New York. 2014. Riemann, Wilson, Lister, et al.
- Modeled distributions of 12 tree species in [each NRS state]. In Prep. Riemann et al.
- Forest Canopy Cover Disturbance in the Lake Superior and Lake Michigan Basins of the USA and Canada (1985-2008). In Review. Perry, Nelson, Housman, et al.
- Map of distribution of six forest ownership types in the conterminous United States. 2014. Hewes, Butler, Liknes, et al.

Regional/National Analysis: RDS

RDS

- GLRI forest disturbance (Perry et al. In Progress)
- Western Great Lakes stand age (Nelson et al. In Progress)
- pGNN-based datasets: many unrealized opportunities. In Development. Wilson et al.
- Public and private forest ownership in the conterminous United States: distribution of six ownership types - geospatial dataset. 2014. Hewes, Butler, Liknes, et al.
- Forest canopy disturbance geospatial data for Lake Michigan basin, USA, 1985-2008. 2014. Housman, Nelson, Perry, et al.
- Forest canopy disturbance geospatial data for Lake Superior basin, USA, 1985-2008. 2014. Housman, Nelson, Perry, et al.

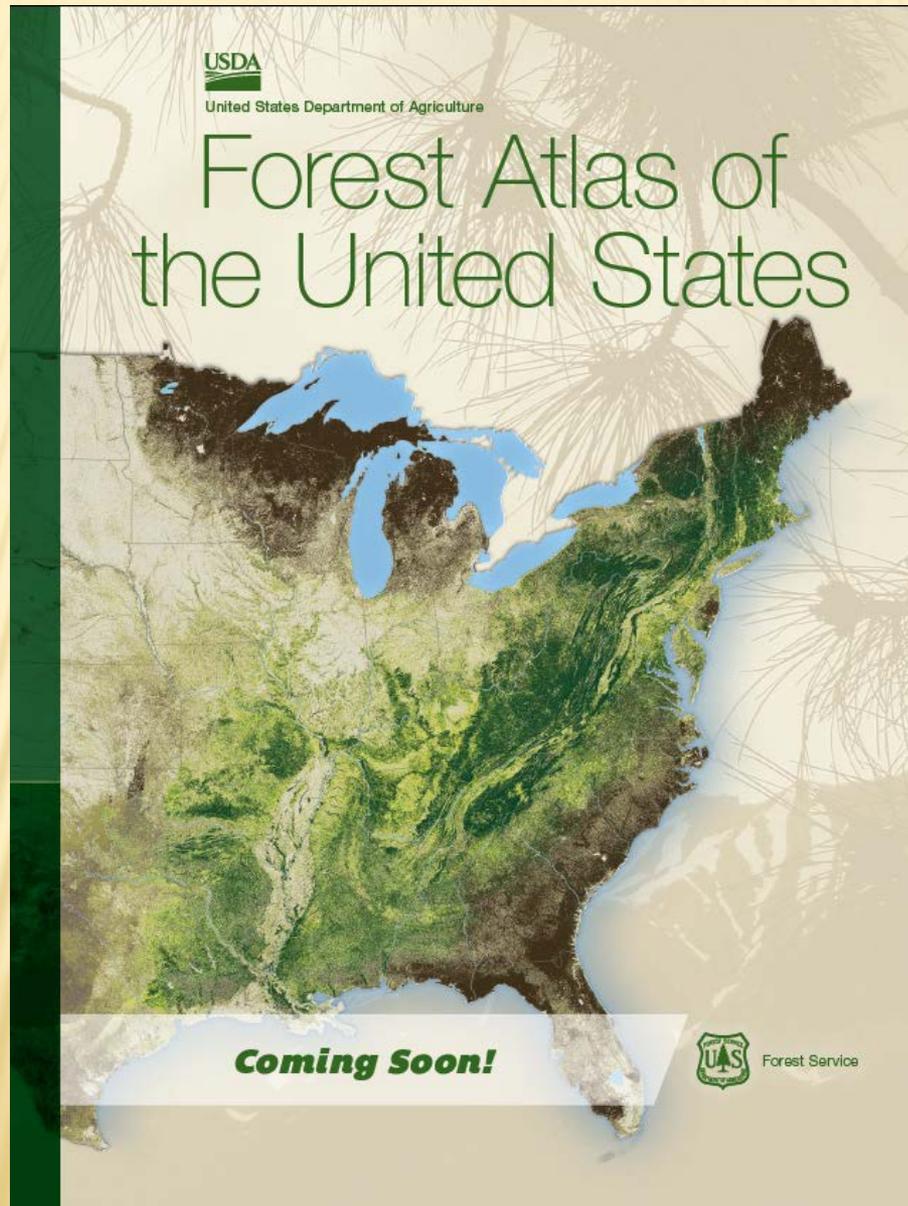
Regional/National Analysis: RDS

5 of the Top 10 Data Sets (based on FY 2014 downloads)

- 2) Wilson, Barry T.; et al. 2013. Live tree species basal area of the contiguous United ... RDS-2013-0013
- 3) Wilson, Barry T.; et al. 2013. Forest carbon stocks of the contiguous United States ... RDS-2013-0004
- 7) Hewes, Jaketon H.; et al. 2014. Public and private forest ownership in the ... RDS-2014-0002
- 8) Liknes, Greg; et al. 2013. Historical woodland density of the conterminous United ... RDS-2013-0006
- 9) Nelson, Mark D.; et al. 2010. Forest ownership in the conterminous United States ... RDS-2010-0002

All R&D data archive datasets are accessible from science.gov

National Projects - FIA Map Atlas



National Projects - FIA Map Atlas



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National Projects - FIA Biomass Study

- ✘ Team composed of USFS, Industry, University.
- ✘ Three years of data collection, ~700 felled trees.
- ✘ Substantial legacy data has been obtained from other studies, industry work, etc.
- ✘ Continual FIA funding is challenging; seeking other funding sources; see the flyer for overview.

P2+ Forest Health Indicators

- ✘ Maintained intensity at 12.5% of P2 sample (2X P3)
- ✘ Crowns – Dieback and Uncompacted Crown Ratio
- ✘ Veg – Cover by height layer for various growth forms (e.g., tree, shrub, forb, graminoid)
- ✘ Regen – Browse, Site Limitations, Seedling by height class, Seedling source (McWilliams later today)
- ✘ Invasives – Cover by species
- ✘ DWM – Reduced to 2 transects per subplot

National Woodland Owner Survey

✘ FY14

- + Completed Data Processing!!
- + Finished data estimation and tabling systems!
- + Produced new Forest Ownership Map
- + Began process of integrating NWOS into NIMS
- + Helped, through the Family Forest Research Center (FFRC), an intensification of the NWOS in Vermont

National Woodland Owner Survey

✘ FY15 Products

- + Summary brochure
- + Documentation
- + Journal article
- + GTR with over 2,000 tables (42 for the US, regions, and every State)

✘ New NWOS hire

✘ Data delivery

- + NWOS TableMaker
- + Tableau (?)

✘ National collection of names and addresses (CoreLogic)

✘ Identification of TIMOs and REITs

National Woodland Owner Survey

- ✘ OMB packaged to be submitted in December 2014 with anticipation of being approved and in the field by the first quarter of 2017
 - + New Science Modules (sent to a subset of respondents from across the US) on:
 - ✘ Climate Change
 - ✘ Wildfire
 - ✘ Invasive Plants
 - ✘ Decision Making
 - ✘ Landowner Values
 - + Urban Forest Owners Survey
 - + State intensifications, where there is interest and funding

ASG Goals

✘ Techniques

- + Content Delivery (Data visualization, Interactive storytelling, Reporting improvements, Science communication)
- + Improve use of remotely-sensed information
- + Database value-added, Trends testing

ASG Goals

- ✘ Analysis
 - + Enhanced Core Reporting
 - + Socioeconomic Analysis
 - + Ecosystem Services
 - + All Lands Inventory
 - + Trends and Futuring

2015 FIA Symposium

- NRS hosted 2012 in Baltimore, MD
- 2014 postponed due to IUFRO/SAF
- PNW hosts 2015 Symposium in Portland, OR
 - Planning committee convened
 - Likely December 2015 date

QUESTIONS ??

