AmericaView and Landsat

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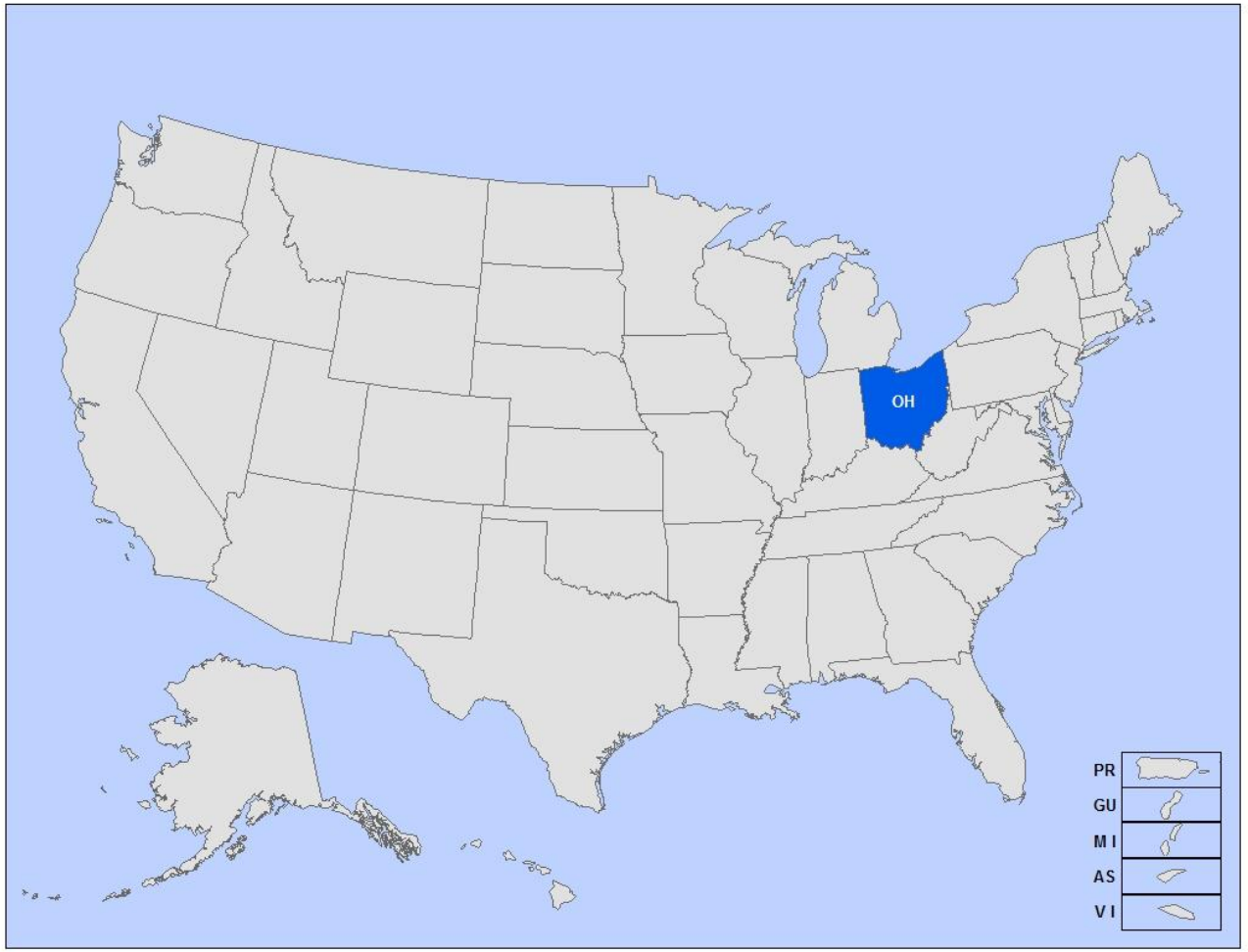
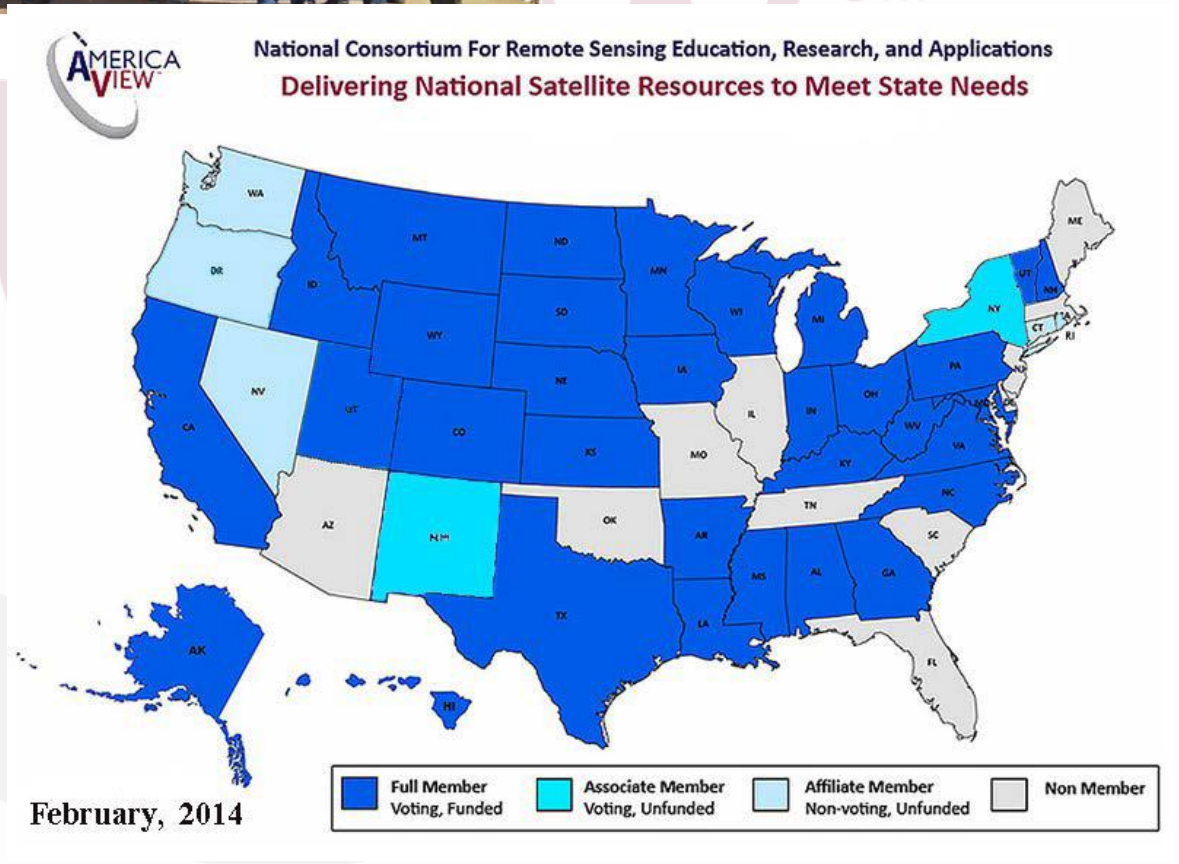
What is AmericaView

- University-led, state-based consortium
- Dedicated to advancing remote sensing:
  - Data availability and distribution
  - Education
  - Outreach
  - Research and technology transfer
- Funded under the USGS National Land Remote Sensing Education Outreach and Research Activity (NLRSEORA)

Origins



Current Membership



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How Activities are Structured

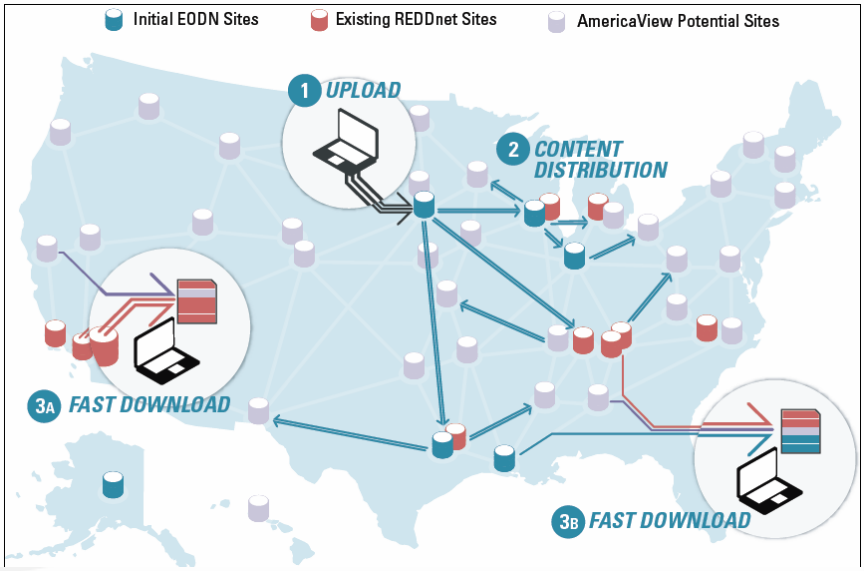
- States develop annual workplans
- Based on determined state-based priorities (within funding constraints)
- Highly collaborative
- Highly leveraged

Data Archive and Distribution

- Reduced priority for many states
- Formatting and access still a priority for some states
- Current archive near 1 TB
- Existing multi-state project

  Earth Observation

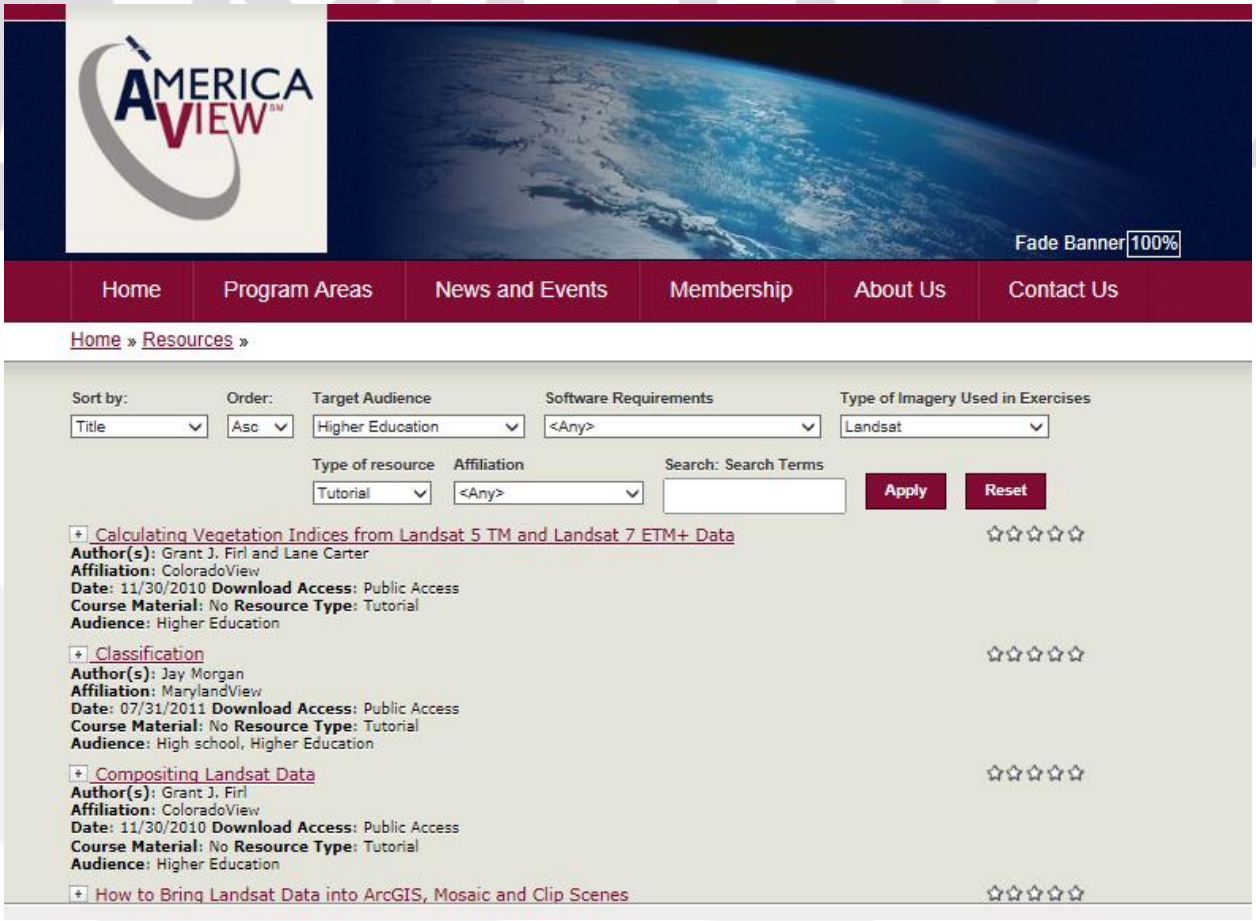
  Depot Network



Education

- K-16 basic STEM education
- University and college level courses
  - AmericaView University
- Workforce development
- Since 2008
  - > 23,000 K-12 students, 1,600 K-12 teachers
  - > 2,300 current workforce
  - 27 new higher education courses

Education Resource Portal



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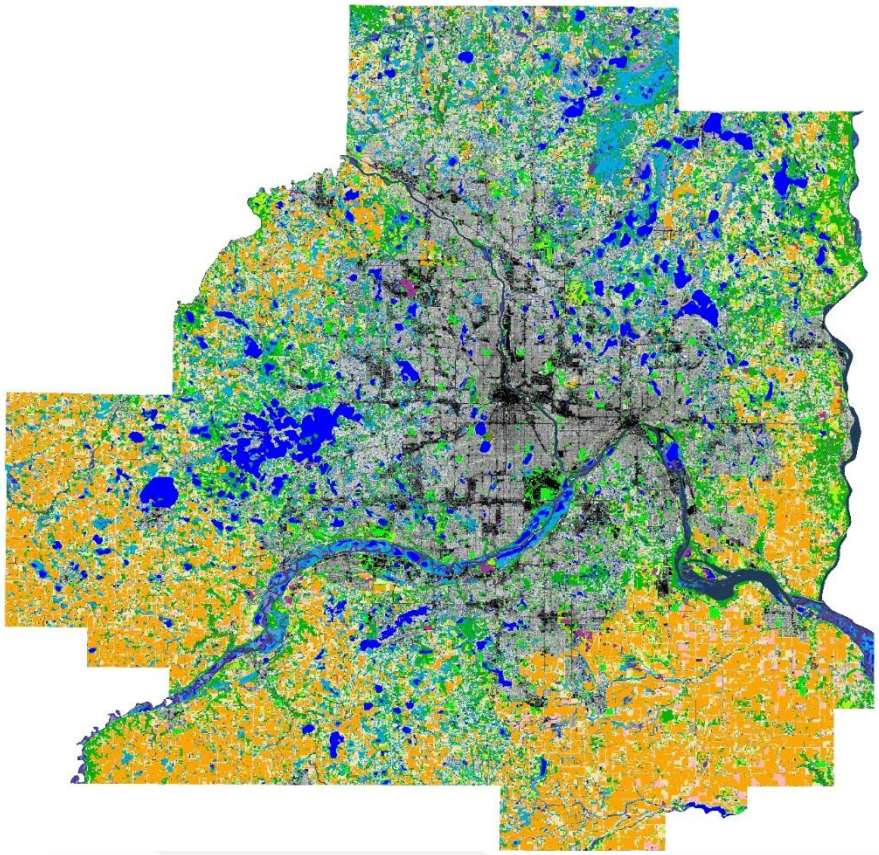
Outreach

- Congressional education/informational visits
- Public outreach

Applied Research

- Supporting 70-80 research projects each year
- Research areas include:
  - Ecological monitoring
  - Climate change
  - Agricultural management
  - Wildfire risk assessment
  - Vegetation phenology
  - Wetland function
  - Invasive species monitoring
  - Land use/land cover change
  - Natural hazards
  - Water quality monitoring
  - Transportation management

State-Driven Applied Research – MNView



2011 Land Cover

Level 2 Classes

Wetlands

- Lakes & Ponds
- Emergent Wetlands
- Forested Wetlands
- Shrub Wetlands
- Rivers

Uplands

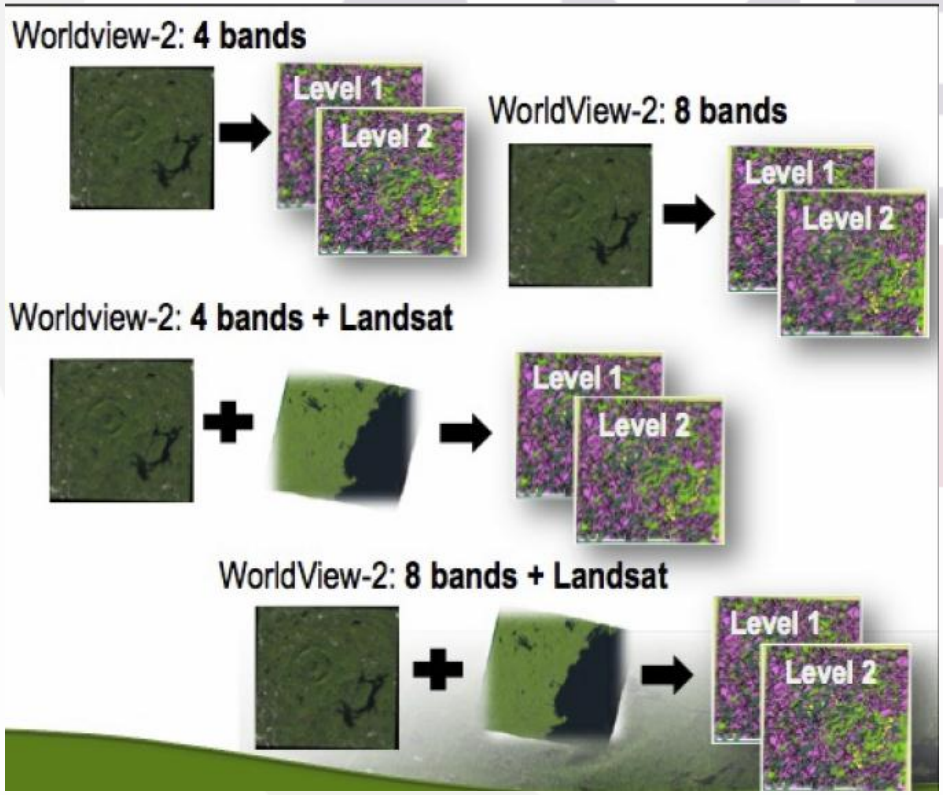
- Deciduous Forest
- Conifer Forest
- Mixed Forest
- Managed Grass
- Grassland
- Row Crops
- Hay and Pasture
- Small Grains
- Extraction

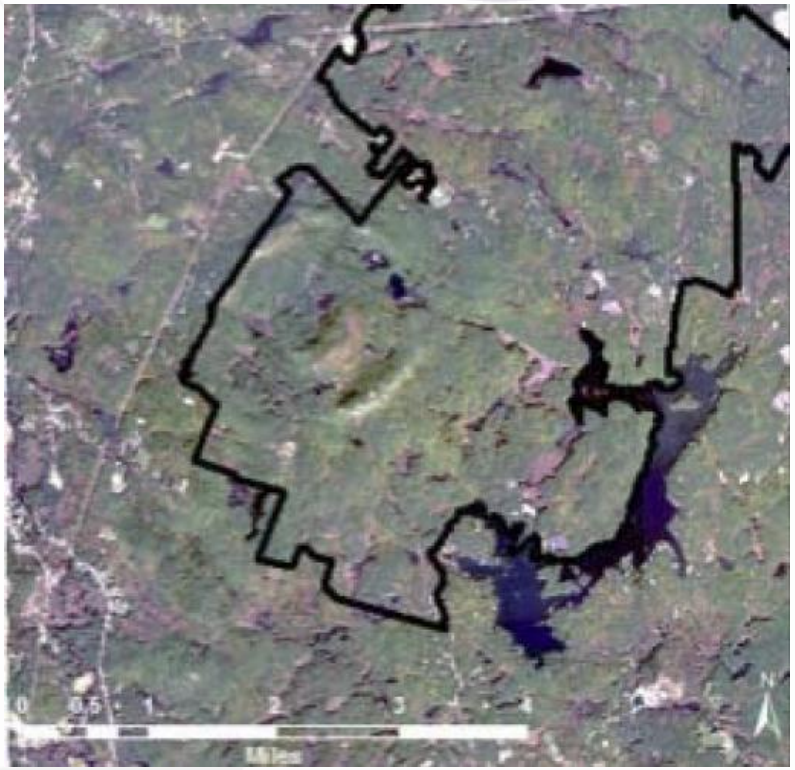
Urban / Developed

1 % Impervious 100

A combination of multitemporal Landsat data and lidar data with object-based image analysis enabled accurate level 1 and 2 land cover classifications for 2011 of the seven-county Twin Cities Metropolitan Area. The classifications also include percent impervious area for the urban class.

State-Driven Applied Research – NHView





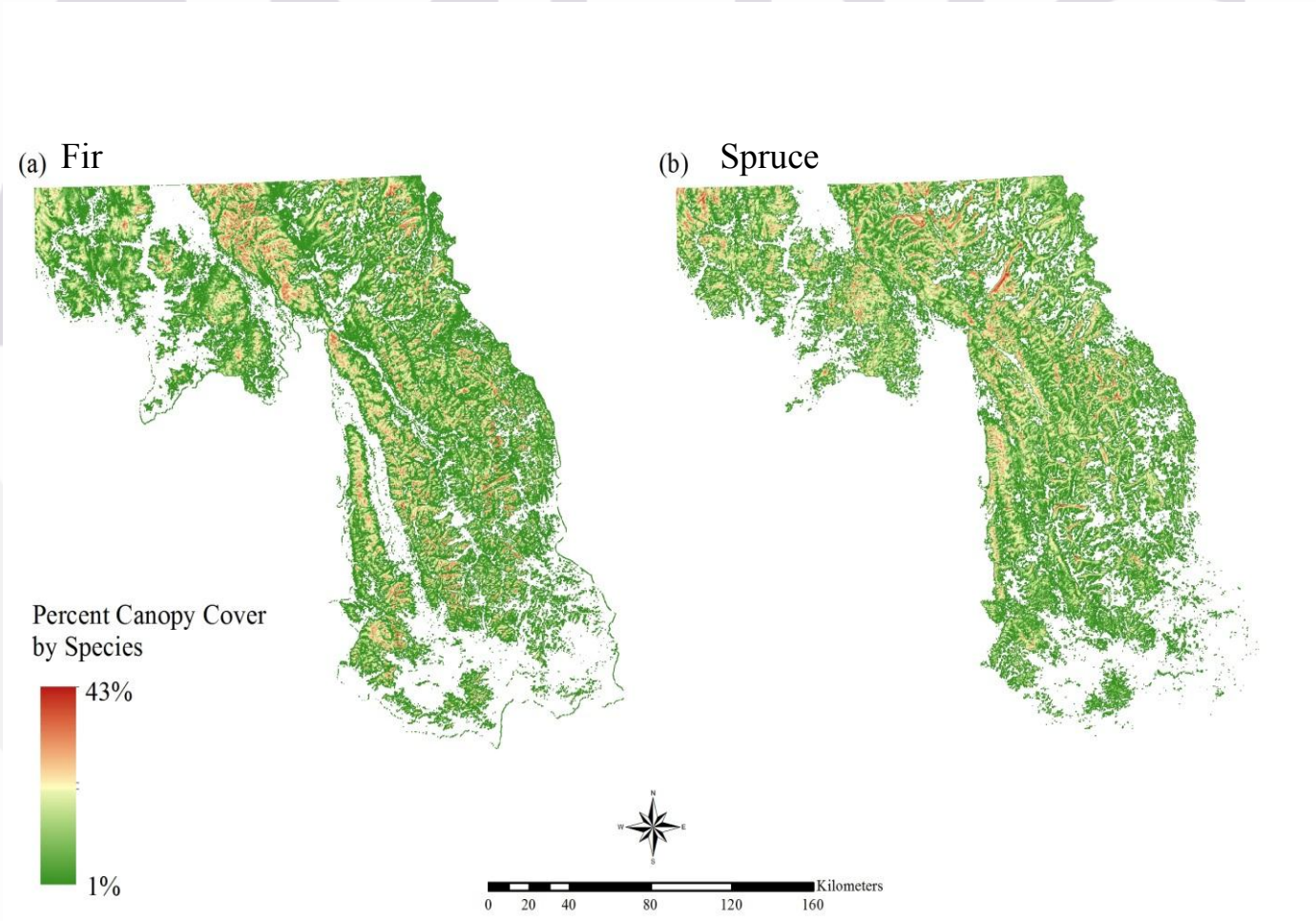
State-Driven Applied Research – VAView

In GY 2011, Virginia View integrated Landsat imagery into a layer within the InFOREST online mapper. This server-based web mapping application was designed to provide landowners, natural resource planners, educators, and the public with access to local forest ecosystem information. InForest is available at www.inforest.frec.vt.edu.

State-Driven Applied Research – MTView

AmericaView Classification Methods Accuracy Comparison (ACMAC) Program						
	Random Forest	Support Vector Machines	C5.0	CART	Logistic Model Trees	Multivariate Adaptive Regression Splines
Random Forest	--	RF+9.7	RF+2.2	RF+20.2	RF+7.1	RF+12.3
Support Vector Machines	RF+9.7	--	C5.0+10.0	SVM+10.5	LMT+2.5	SVM+2.6
C5.0	RF+2.2	C5.0+10.0	--	C5.0+21.1	C5.0+5.3	C5.0+10.5
CART	RF+20.2	SVM+10.5	C5.0+21.1	--	LMT+12.6	MARS+7.4
Logistic Model Trees	RF+7.1	LMT+2.5	C5.0+5.3	LMT+12.6	--	LMT+5.2
Multivariate Adaptive Regression Splines	RF+12.3	SVM+2.6	C5.0+10.5	MARS+7.4	LMT+5.2	--

State-Driven Applied Research – MTView



Acknowledgments

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