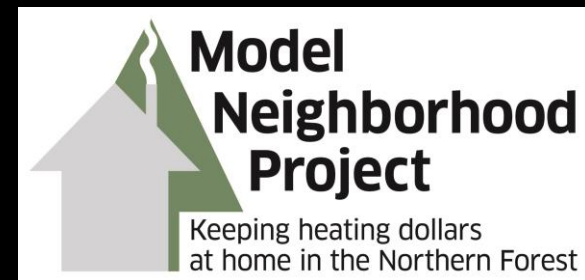
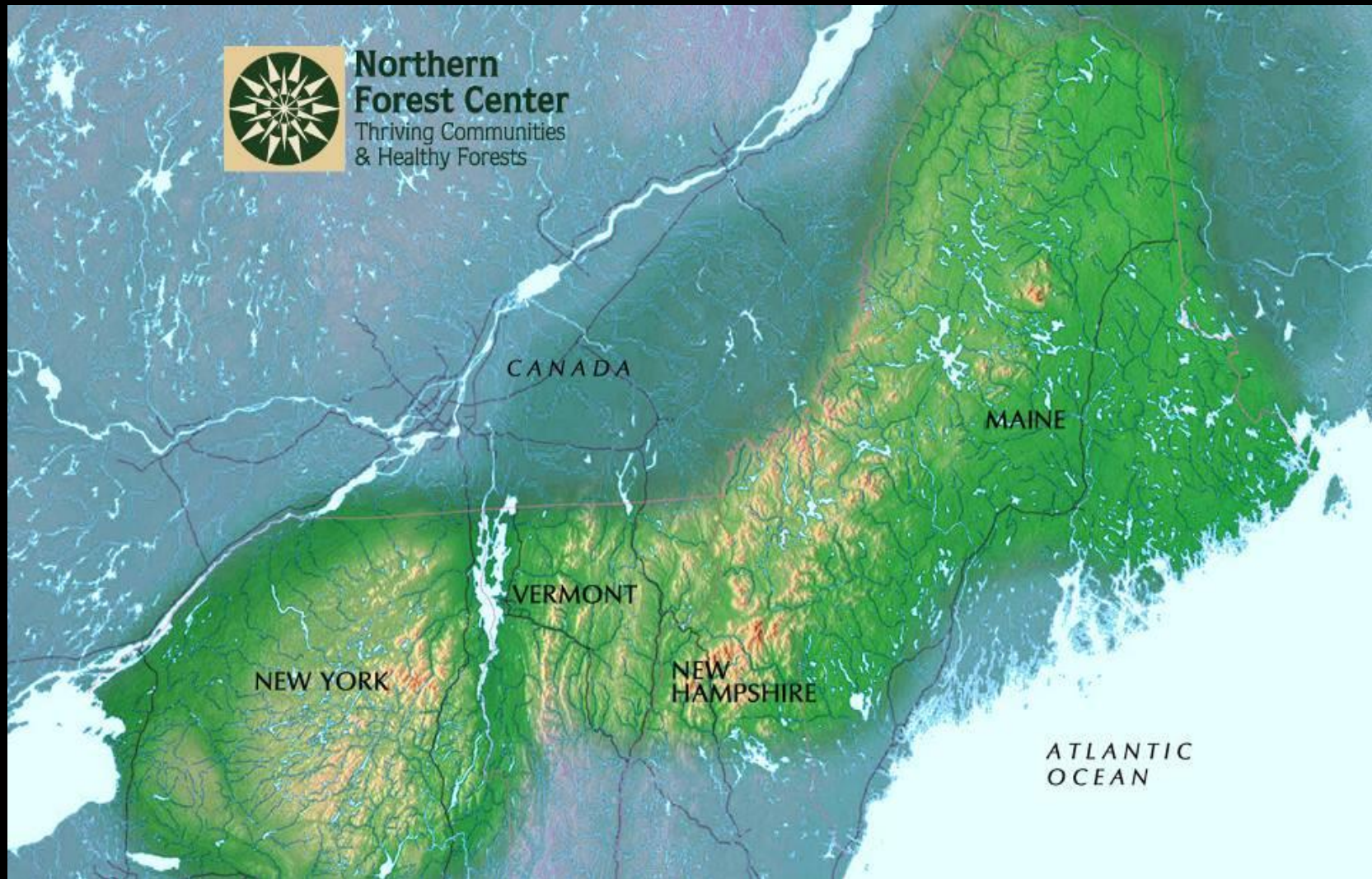


The Model Neighborhood Project and the Transition to Modern Wood Heat

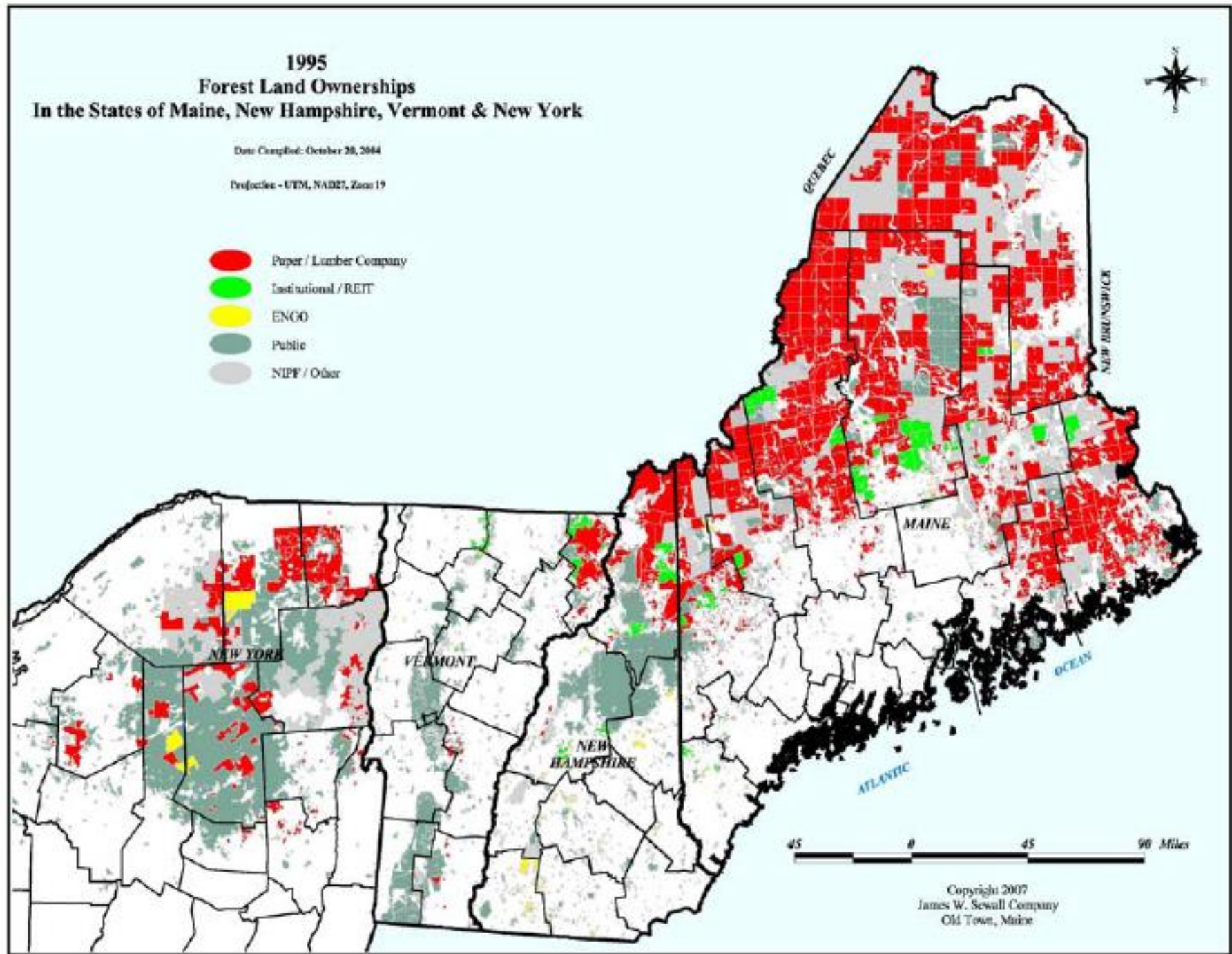




The Center helps create economic opportunity and community vitality from healthy working forests

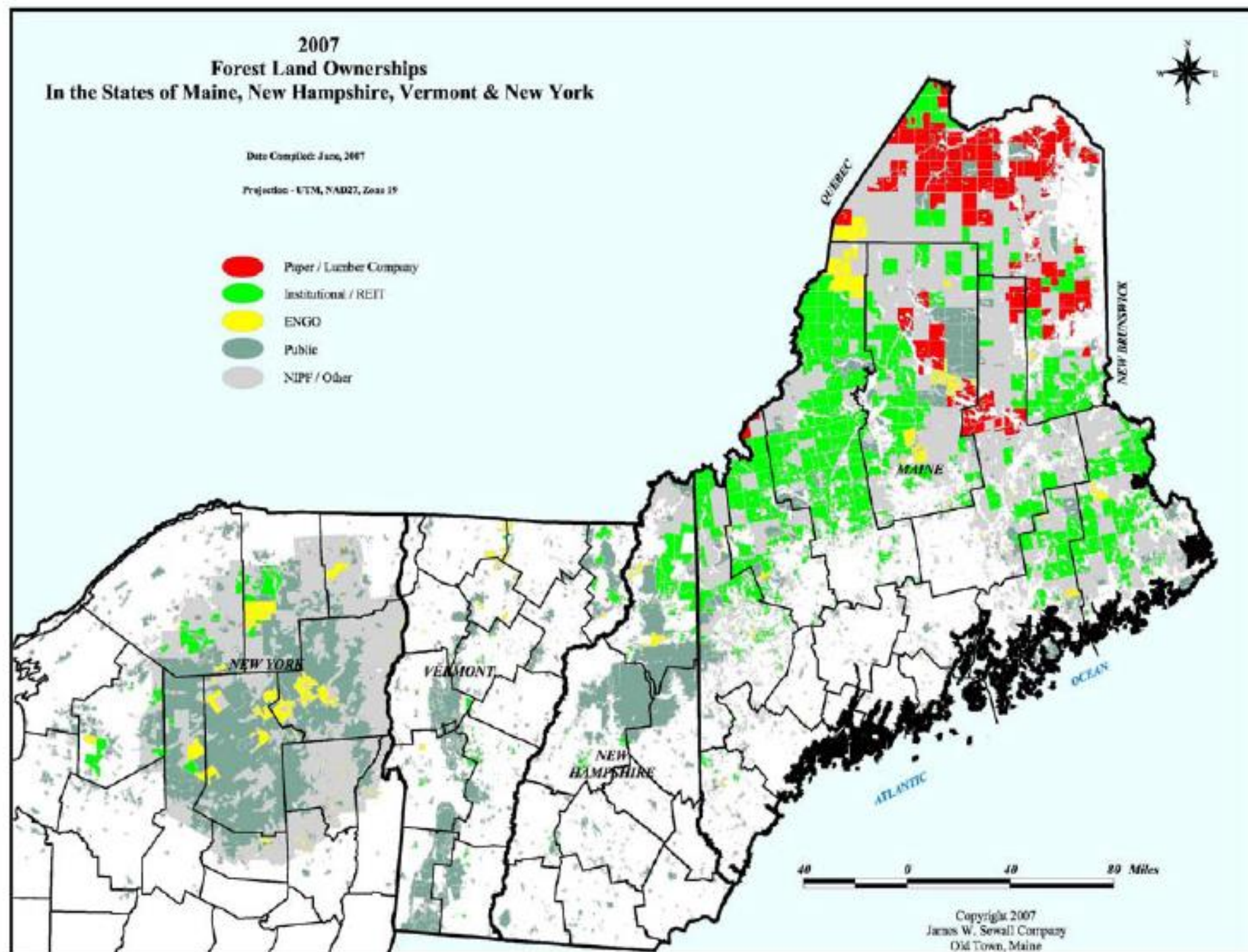
- Rural Destination Tourism
- Wood Products Manufacturing
- Biomass Heat
- Ecosystem Services
- Community Forests

Figure 2.10 Northeastern Timberland Ownership, 1995



Source: James W. Sewall Co.

Figure 2.11 Northeastern Timberland Ownership, 2007



76°W

74°W

72°W

70°W

68°W



Northern Forest Sustainable Economy Initiative



Percent Change in Population, 1980-2005

Percent Change

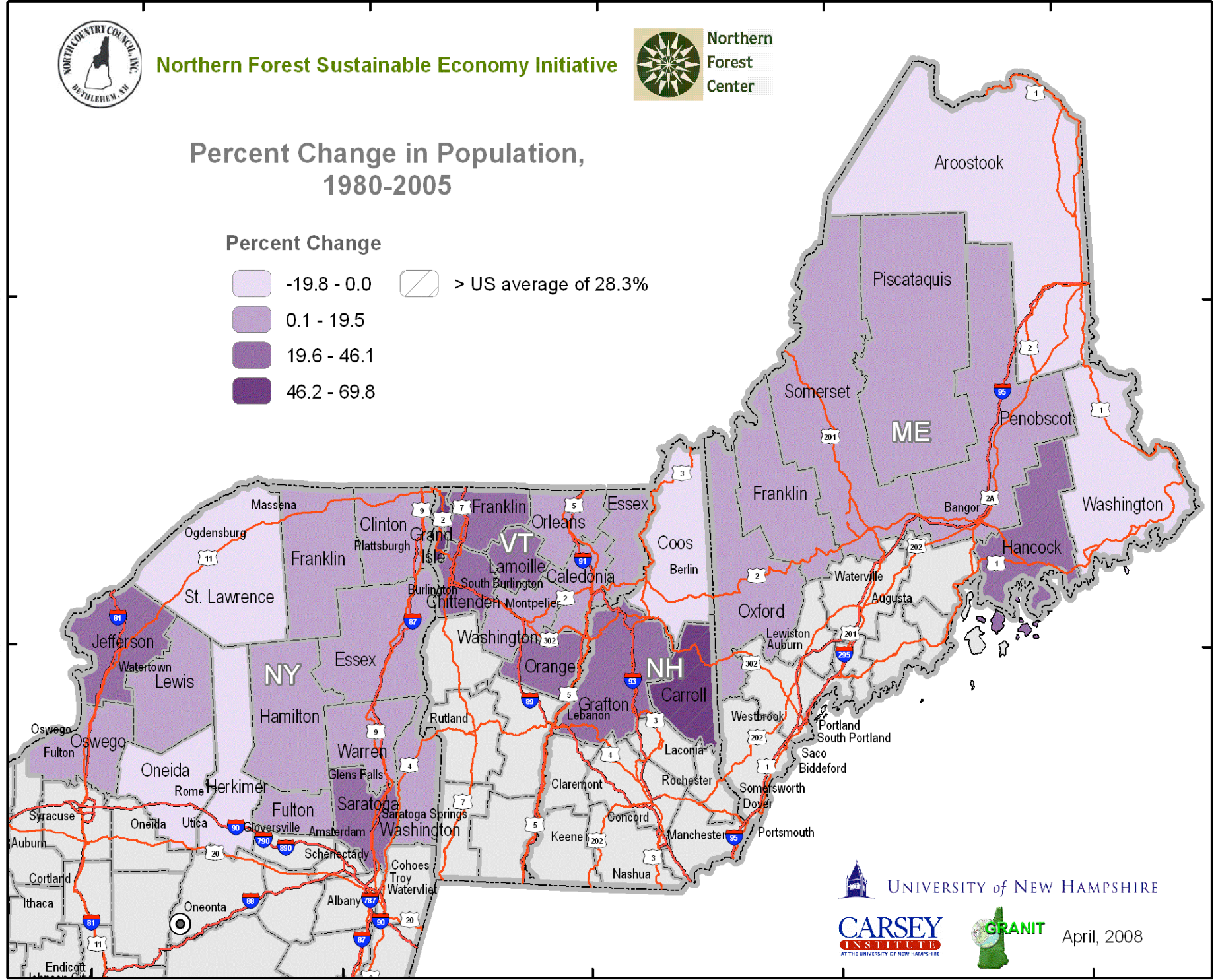
- 19.8 - 0.0
- 0.1 - 19.5
- 19.6 - 46.1
- 46.2 - 69.8
- > US average of 28.3%

46°N

46°N

44°N

44°N



76°W

74°W

72°W

70°W

68°W

76°W

74°W

72°W

70°W

68°W



Northern Forest Sustainable Economy Initiative



Northern Forest Center

Average Wage Per Job, 2004 (2005 Dollars)

Average Wage

- \$23,376 - \$25,181
- \$25,182 - \$29,903
- \$29,904 - \$33,580
- \$33,581 - \$38,742

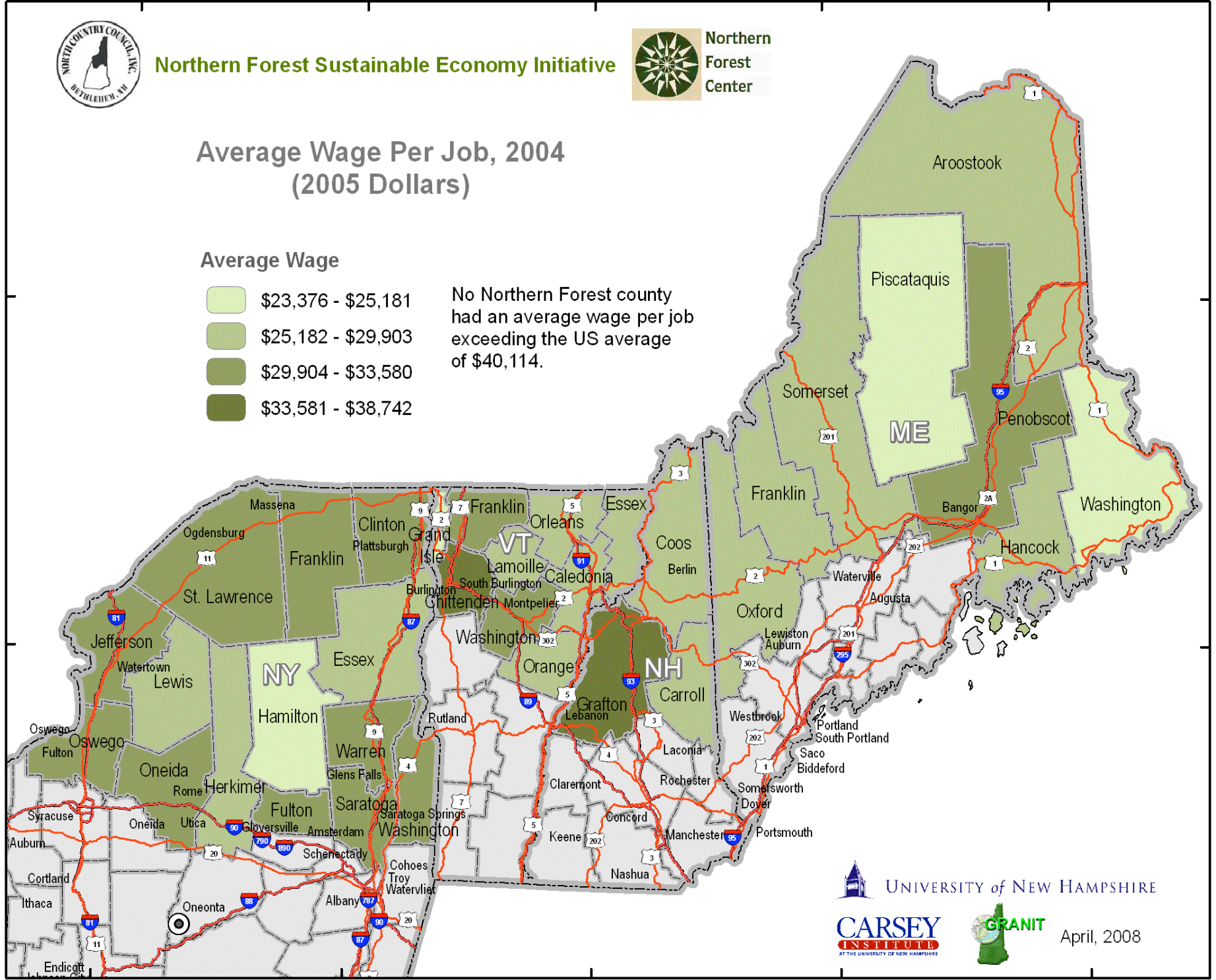
No Northern Forest county had an average wage per job exceeding the US average of \$40,114.

46°N

44°N

46°N

44°N



UNIVERSITY of NEW HAMPSHIRE



April, 2008

76°W

74°W

72°W

70°W

68°W

Creating New Forest Markets: New Hampshire

Helping Communities Benefit from Forest-Based Economic and Conservation Initiatives

Community Forest Opportunities & Enhancements

Assisting communities to acquire and manage forestland for multiple community benefit

Biomass Heating

Assisting in biomass assessment and implementing demonstrated projects

- Berlin Model Neighborhood Project
- AHEAD Affordable Housing Small Boiler Installation
- Colebrook District Heating Project
- Milan Town Office Feasibility Study

Wood Products

Manufacturing Innovation

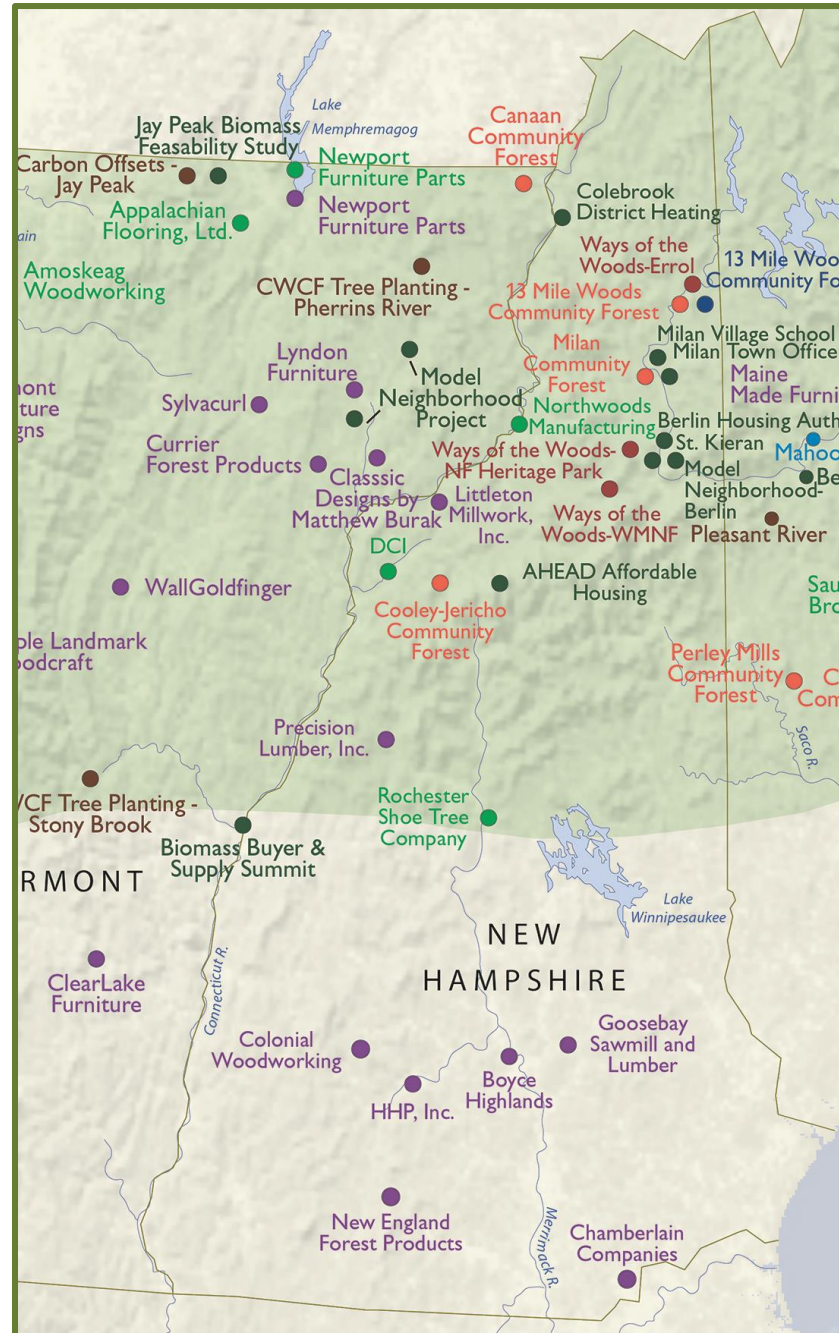
Catalyzing innovation in the wood products industry and helping to build a robust, highly-skilled workforce

Tourism Enhancement

Enhancing tourism infrastructure, developing a quality label, and coordinating custom itineraries to enhance wages

Ways of the Woods

Celebrating the heritage of the Northern Forest with an educational exhibit on wheels (7 stops)



Regional Initiatives and Collaborations to Implement Strategies

- Northern Forest Investment Initiative
- Northern Tier Farm and Forest Jobs Accelerator
- Community Forest Collaborative
- Regional Wood Products Consortium
- Keeping Maine's Forests
- Maine Woods Consortium
- Androscoggin High Peaks Collaborative
- Coos Entrepreneurial and Business Development Strategic Initiative
- Northern Forest Tourism Network with the Northern Forest Canoe Trail

Regional Forest Health and Community Benefit

- Forest Stewardship study
- Biomass Harvesting Guidelines
- Community Forest Economic Impact Assessment
- Economic Importance of the Forest Based Economy Studies

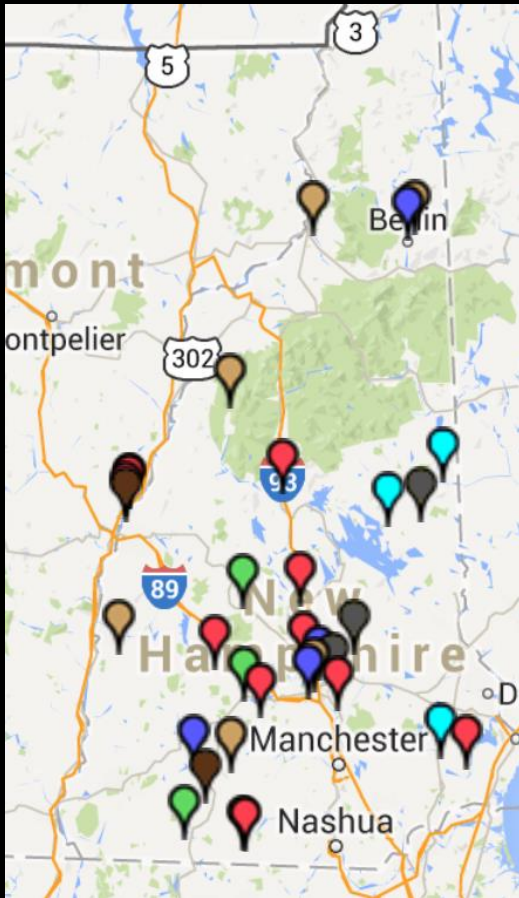
Watershed and Carbon Services

Creating new markets for ecosystem services on private lands



People in the Northern Forest spend \$1.8 billion on heating oil annually - \$1.4 billion of which leaves the regional economy.

Our heating dollars could benefit the Northern Forest instead.



Merrimack Valley High School (2006), Winnisquam High School (2009), Crotched Mountain Rehabilitation Center (2007)



The Exchange
Police Training & Use Of Deadly Force



Word Of Mouth
NYU Journalism Professor: Hack Me!



Blogs
Take This Survey: NHPR Wants To Hear From You!

North Country

4:58 PM MON NOVEMBER 11, 2013

Looking To Save Money, More Companies, Towns Turn To New Boilers That Heat With Wood

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By CHRIS JENSEN



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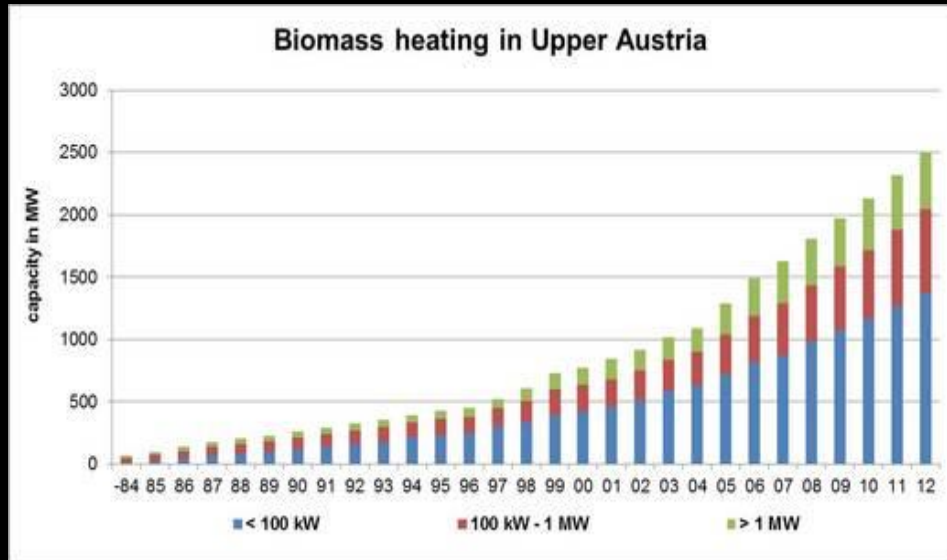


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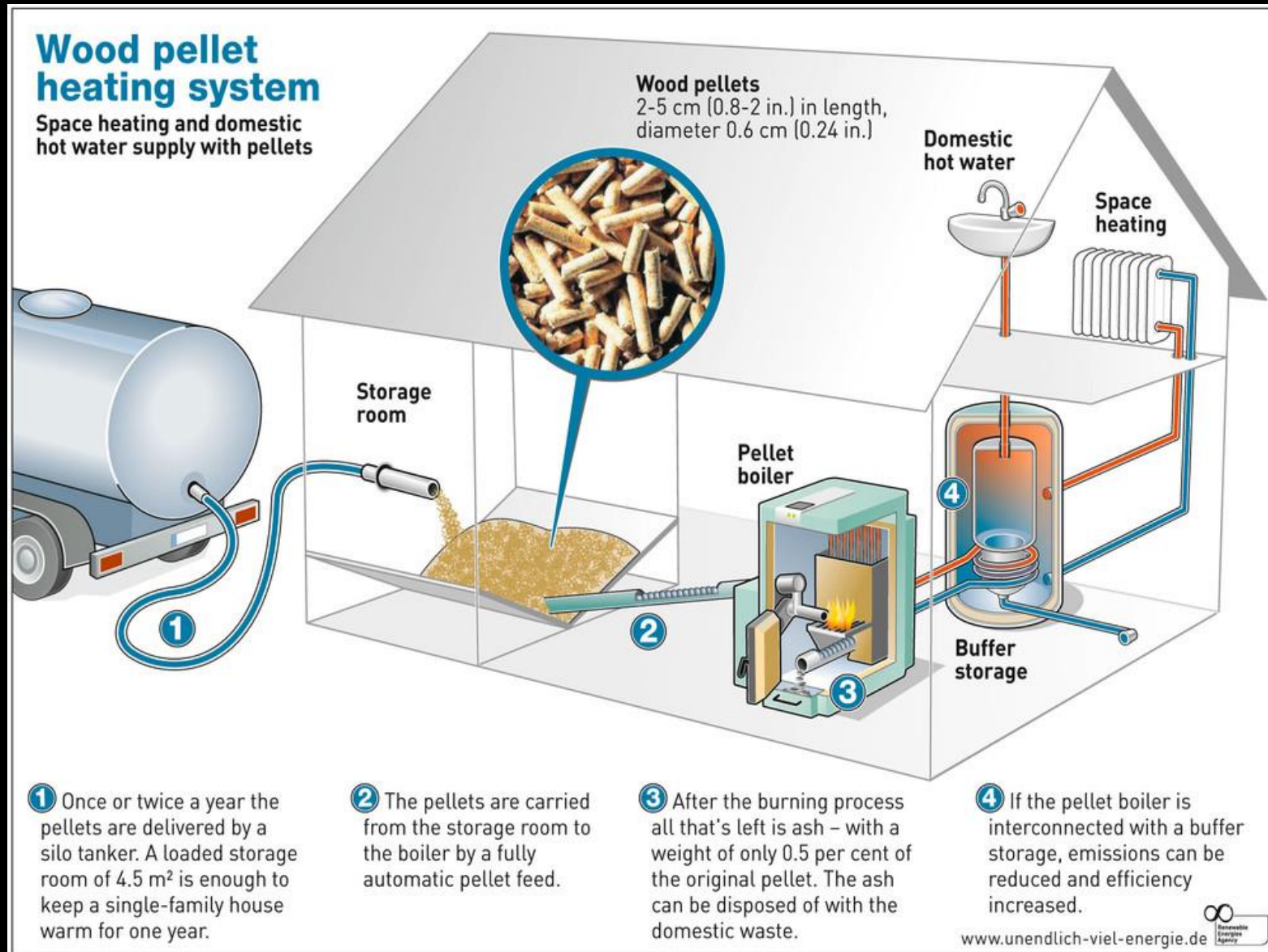
[View all podcasts & RSS feeds](#)

Upper Austria:

“Carrots, sticks & tambourines” result in biomass for 15% of energy consumption, over 40,000 installations, 300 district heating systems, over 40% municipalities heating with biomass.



A Better Way to Heat Our Homes!



This is a generalized pellet system diagram: The type and location of pellet storage varies by household, as do other elements of the heating system.

Modern Wood Pellet Heating

THEN

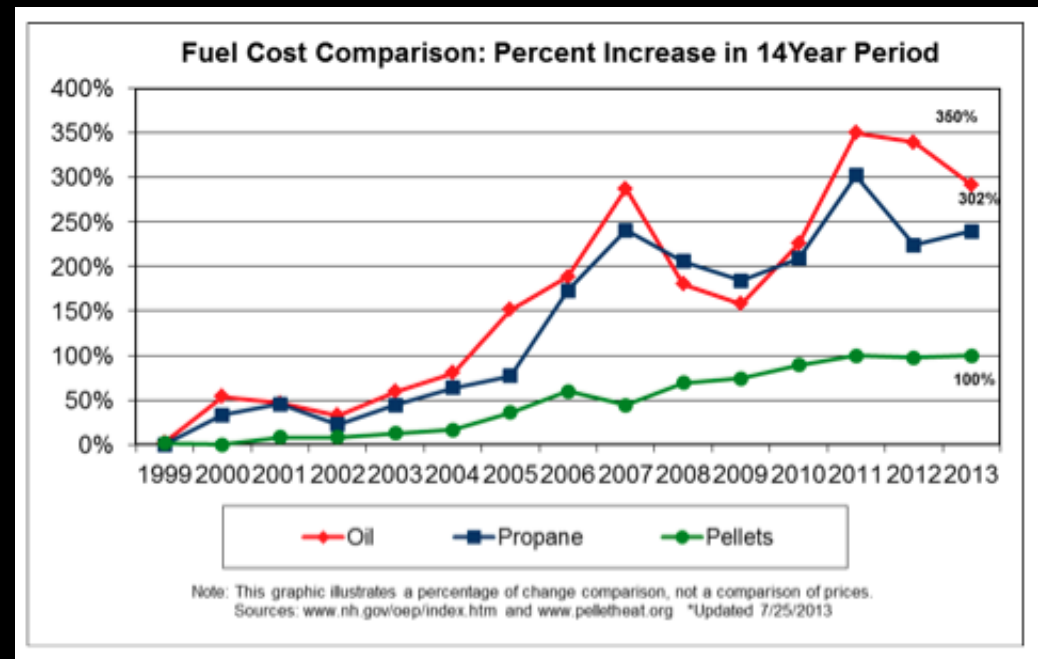
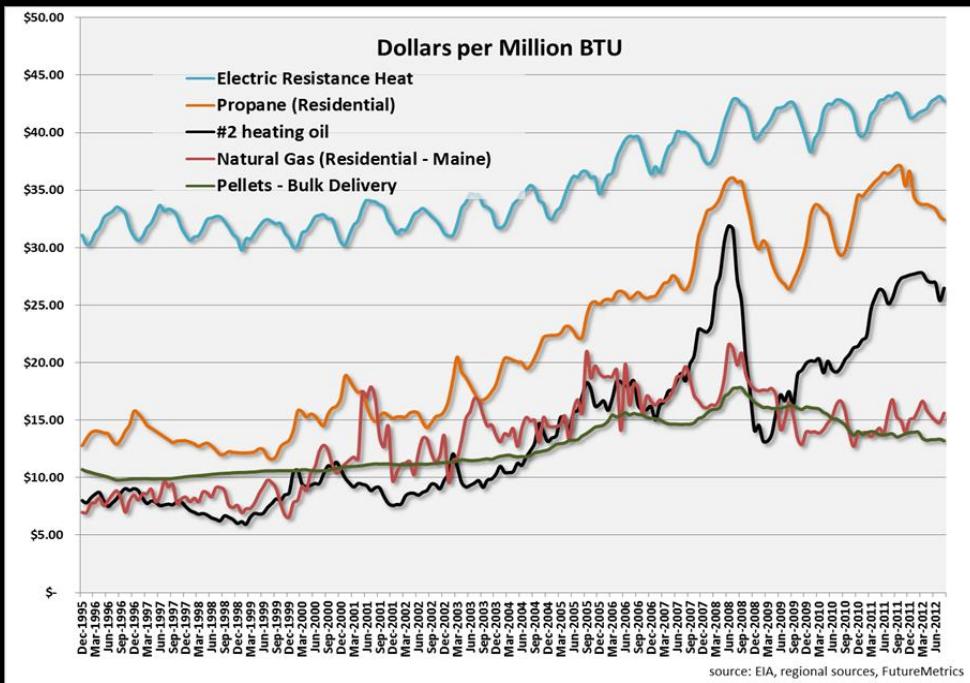


NOW



Benefits of Modern Wood Pellet Heating

- 100% of fuel costs stay in region vs. 22% with oil
- 30-40% cost savings (or more!) for people who switch from oil to pellets



Benefits of Modern Wood Pellet Heating

Stabilize and increase employment in forest-related businesses



Benefits of Modern Wood Pellet Heating

Provide economic incentives to landowners to maintain forests & use sound forestry practices



Benefits of Modern Wood Pellet Heating

Minimizes ecological risk and pollution impact of fossil fuel extraction and processing.



Benefits of Modern Wood Pellet Heating

Local Ownership & Control



Keeping our heating dollars at home
in the Northern Forest!

Why has market development been slow?

- Little public awareness
- High upfront cost
- Lack of readily available financing
- Misconceptions about safety and air quality
- Lack of state and federal support

The Model Neighborhood Project addresses these issues.



Model Neighborhood Project



1. Provide direct financial incentives to offset the high cost of pellet boilers
2. Create “reference populations” with clustered demand for fuel and service
3. Track and promote individual and community benefits of fuel switching
4. Increase sales volume and encourage competition to bring costs down
5. Engage the financial industry to improve access to consumer financing
6. Advocate for federal and state policy to bring wood pellet fuel and boilers into parity with other renewable energy products



Pilot Model Neighborhood: Berlin, NH

- Subsidies toward purchase of qualifying boilers
- Partnered with ARRA-funded BetterBuildings for energy efficiency upgrades
- 40 homes, 2 affordable housing properties and a community arts center



Increase familiarity with modern wood pellet heating



Develop infrastructure needed for more widespread adoption of modern wood pellet boiler heating



Combine heating system retrofits with energy efficiency measures

Note the spray foam insulation!



Reference Populations & Testimonials

“The previous owner spent \$6,000 a year on oil. At the rate we’re using pellets, we’ll save \$2,000 - \$3,000 a year, maybe more.”

*Jayco Laughton
Berlin, NH
homeowner*





“This is a great idea. It will keep jobs here. I’ll have the satisfaction of keeping my money in the USA. It makes sense that this is the fuel of the future, especially up here. We have so much wood.”

-Marc Tremblay,
Berlin, NH homeowner.

Create Anchors in Affordable Housing & Community Facilities



Berlin Housing Authority, St. Kieran Community Center for the Arts, Notre Dame Senior Housing

- Between energy efficiency upgrades & pellet boilers, annual savings of \$11k at BHA and \$8k at St. Kieran – more programming!
- Shaheen: “Win – win – win!”

Promote Individual & Community Benefits



The Model Neighborhood Project is helping homeowners in Berlin, NH, switch from oil to wood pellets, saving thousands of dollars and boosting the local economy. The project will support 6.5 jobs/year for 25 years!

Real Time Results: Berlin Model Neighborhood Project


Results based on tons of pellets burned since Feb. 1, 2012.



\$92,746

Savings on Fuel

Amount saved by homeowners who switched to wood pellets


See the math 



639 TONS

Net Greenhouse Gas Reduction

Net carbon dioxide avoided by not burning oil.


See the math 



\$353,102

Total Impact Value to Local Economy

Total impact of dollars continuing to circulate in local economy.

See the math 

Berlin Results:

- **\$93,000 saved since 2011**
- **\$353,000 total economic impact to date**
- **25 year projection:**
 - **1.2 million gallons of oil not used**
 - **\$2 million saved by homeowners**
 - **\$6.4 million total economic impact**



Next in New Hampshire...

- NH Wood Energy Support Team
- Financing
- More public education
- Ensure awareness of incentives
- Colebrook district heating
- Model Neighborhood II?



Model Neighborhood Projects Across the Northern Forest

In progress
in Farmington, Maine



Northeast Kingdom,
VT launch expected
in late spring



In development,
central Adirondacks



Policy Support for Wood Pellet Boiler Market Development:

Recent Support:

- **HUD rule change** to consider pellet boilers an “acceptable conventional heating source” (Sen. Collins, ME)
- **State incentives** to encourage adoption of pellet heating systems

Still Needed:

- **Federal tax credits** such as those offered for wind and solar projects – Biomass Thermal Utilization Act
- Funding for **USDA Community Wood Energy Program**



An Overview of Biomass Thermal Energy Policy Opportunities in the Northern Forest Region

	NY	VT	NH	ME	MA
Flexible Boiler Regulations		√	√		
Sales Tax Exemption on Biomass Appliances			N/A	Partial	Partial
Sales Tax Exemption on Biomass Fuel		√	N/A	Residential only	Residential only
State Income Tax Credit			N/A		
Pellet Boiler Incentives		√	√		√
PACE Financing		√			
Thermal RPS			√		Almost
State Grants for Biomass Thermal Projects	√	√	√	√	√
Government "Lead by Example" for Biomass Thermal		√			√
System Benefits Charge		For Wx only			
Mandatory Renewable Energy Targets Applied to Building Codes					

Incentives Available

NH Public Utilities Commission

- PUC pellet boiler rebates
- Renewable energy credits – program in development
- Renewable Energy Fund (40% of 2012 funding went to wood heat projects)

www.puc.nh.gov/Sustainable%20Energy/SustainableEnergy.htm

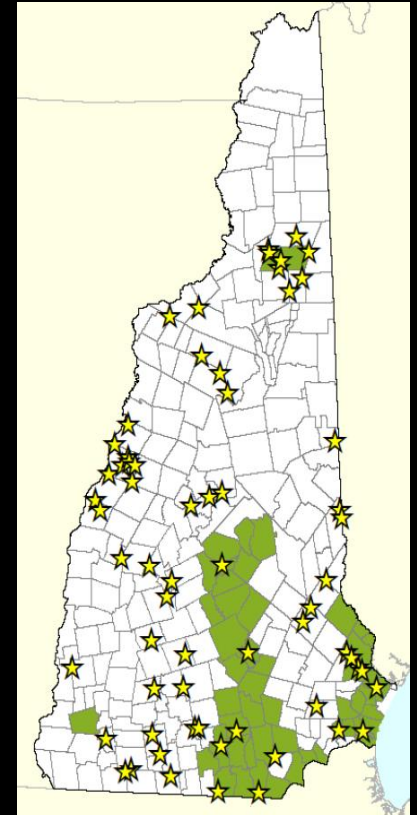
USFS Wood Energy Support Team – NH

- \$250,000 3-year grant for education & technical assistance – program in development

USDA Rural Development

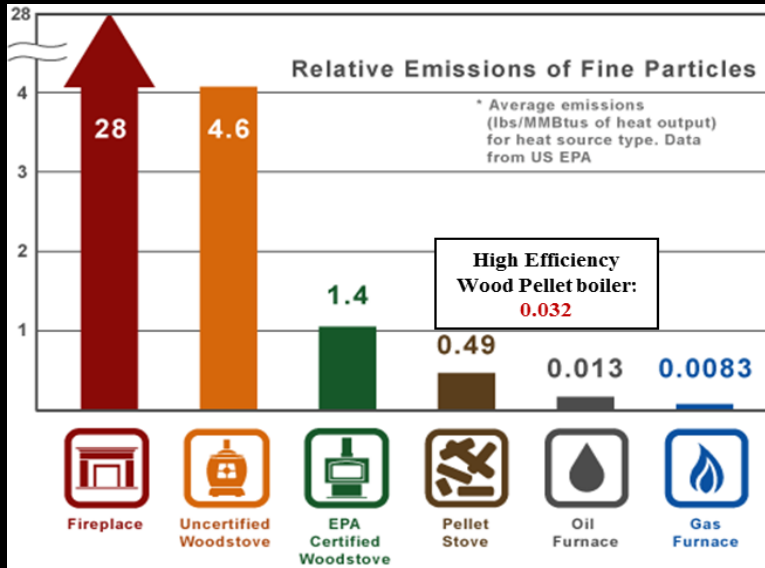
- Community Facilities grants & loans:

<http://www.rurdev.usda.gov/vtnh-comfacloangrant.html>



Health & Environmental Issues

- Air quality
- Carbon emissions
- Forest sustainability



Events & Resources

- Northeast Biomass Heating Expo: April 9-11 in Portland, ME.
<http://nebiomassheat.com/>
- Biomass Energy Resource Center: <http://biomasscenter.org/>
- USFS Wood Education & Resource Center:
<http://na.fs.fed.us/werc/biomass/index.shtm>
- Biomass Thermal Energy Council: <http://biomassthermal.org/>
- NH Institutional Wood Energy Users: www.wood2energy.org
- Northern Forest News Digest:
www.northernforest.org/northern_forest_news_digest.html



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