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# The Looming Fire Problem in the East

Dr. Lincoln Bramwell\*

Thanks for having me here. I have to reiterate what Dr. Kaye said—what a perfect day for talking about fire. As I drove here I watched this great smoke column behind your university and I thought, “Awesome! No wonder we’re meeting today!”

First I want to tell you a story about a fire in Maine. Maine’s winters are long. I’m originally from California so Maine’s winters seem particularly long to me. Spring is always eagerly anticipated and in this particular year rain fell through April, May, and most of June until the sun finally came out and a really nice summer ensued. Mount Desert Island, off the southern coast, enjoyed one of the most beautiful Indian Summers in memory, but the autumn rains never came. Through that summer and into the fall, Maine received only 50% of its normal rainfall. Vegetation became bone dry. By October, the island experienced the driest conditions in memory. On Friday, October 17th, a citizen reported smoke coming out of a cranberry bog near the city dump. At first, the fire burned relatively slowly. Three days later, it covered 169 acres and local authorities had not done much to tame it; but on October 21 strong winds fanned the flames and the blaze raged out of control as it burned over 2,000 acres. From that date, the pace of the blaze intensified. Nearly 2,300 acres burned on October 22. That afternoon, the winds suddenly changed direction again and increased to gale force proportions as a dry cold front moved across the island sending the inferno directly toward the town of Bar Harbor.

In less than three hours the fire traveled six miles leaving behind a three-mile wide path of destruction as it started sweeping down toward

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The following article is a transcript of Dr. Bramwell’s presentation at the Penn State Environmental Law Review Symposium: Fire in the Eastern U.S., April 1, 2010.

Millionaires Row. This row of stately summer cottages, and I use that term loosely, along Frenchman Bay were worth millions of dollars. Bar Harbor residents not actively fighting the fire fled towards the ocean. Local fisherman prepared to evacuate people by boat; we believe at least 400 people left by sea. Finally, by 9 PM, bulldozers plowed open a pathway through the rubble on Route 3 and about 700 cars carrying over 2,000 people began driving north to Ellsworth. According to eyewitness reports, flames flickered overhead and firebrands pelted the cars, but the motorcade made it safely to its destination. No deaths occurred that day but another 11,000 acres burned. An additional 2,000 acres burned before authorities declared the fire under control on Oct. 27, 10 days after the fire's first report.

In all, nearly 17,000 acres burned on Mount Desert Island. Over 10,000 acres of this covered Acadia National Park. Property damage was extremely high due to Millionaires Row. State-wide, more than 200,000 acres burned, 850 permanent homes burned, and 400 seasonal cottages were destroyed in "the year that Maine burned." The year was 1947.<sup>1</sup>

The point of telling you this story is to counter-balance a perception that the East never burns. There is a famous story from 2002 as the Rodeo-Chediski fire raged in Arizona and Governor Jane Hall took some jabs at federal fire management, claiming there was nothing to learn from the East: "Nobody from the East Coast knows how to manage these fires."<sup>2</sup> Quite the contrary, there is much to learn from fire in the East.

First, I want to highlight a couple of historic fires to illustrate what I consider a looming problem of fire in the East. Some of the largest recorded fires in America occurred in the East and Midwest. A couple that you should know about include the 1825 Miramichi Fires in New Brunswick, Canada and northern Maine which burned nearly 3 million acres and killed somewhere between 160 to 500 people. In 1871, the Peshtigo fire in Wisconsin burned 3.7 million acres and killed over 1,500 people; this is six times the number of people that died in the Great Chicago Fire that same year. Hundreds more would have died in the Peshtigo Fire if the people fleeing the burn had not found a couple of rivers and Green Bay. Again, in 1894, Hinckley, Minnesota, 1.4 million acres burned and over 400 people died.<sup>3</sup>

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1. See generally STEPHEN PYNE, FIRE IN AMERICA: A CULTURAL HISTORY OF WILDLAND AND RURAL FIRE 61-63 (Princeton University Press 1982); Austin H. Wilkins, *The Story of the Maine Forest Fire Disaster*, 46 J. FORESTRY 568 (1948); Herman H. Chapman, *Local Autonomy Versus Forest Fire Damage in New England*, 47 J. FORESTRY 101 (1949).

2. See ROGER G. KENNEDY, WILDFIRE AND AMERICANS: HOW TO SAVE LIVES, PROPERTY, AND YOUR TAX DOLLARS 116 (Hill and Wang 2006).

3. See PYNE, *supra* note 1, at 45-62, 199-219.

What these historic fires had in common is that they followed people. Specifically, they followed the great timber harvests across the Northeast and Lakes States. Logging is really messy. Loggers drop all kinds of trees and take only the profitable ones, leaving behind piles of branches and little trees, what we call logging slash. Slash piles provide the ideal fuel conditions for fires to spread. Fires are continuing to track people in the East, but instead of the 19<sup>th</sup> century model where fires followed logging, in the late 20<sup>th</sup> and into the 21<sup>st</sup> centuries the fires are following people's homes.

More and more people are moving to sylvan retreats along the borders of public lands so they can live among the forest and trees. This development is a phenomenon that I refer to as wilderburbs. This trend really began in the 1950's. Developers started capitalizing on relatively isolated areas of scenic beauty by developing clusters of homes in rural valleys and up mountain slopes that still lay within commuting distance of metropolitan centers where they could work. People move to these developments to live among the splendor of wild surroundings while striving to maintain suburban security, protection of their investment, and control of the environment. The resulting wilderburb is a new middle landscape where the middle, upper-middle, and upper classes live beyond the urban fringe in what they perceive is an "untamed landscape," while feeling safe from the threats of the natural environment. These wilderburbs are neither truly wild nor completely suburban. Instead, they function as a new low-density rural development where people feel they can live in approximate wilderness while still maintaining levels of personal security and control of their surroundings and accessibility to the city like in the suburbs.<sup>4</sup>

This type of development has a lengthy history. Wealthy Americans have been building country homes outside of urban areas for hundreds of years in America. An example of this is not too far from State College, Pennsylvania, in the eastern part of Pennsylvania, where the founder of the US Forest Service, Gifford Pinchot's family built their country retreat from New York City in Milford, Pennsylvania. These country homes evolved into the country club movement before the middle class began entering into the urban fringe through street cart suburbs in the 19<sup>th</sup> century. But following World War II, the first mass produced city-size suburbs, such as Levittown, attracted millions of people to move out from urban areas with their promises of single family dwellings, grass yards, and an easy commute by car into the city. The

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4. See generally LINCOLN BRAMWELL, *WILDERBURBS: AN ENVIRONMENTAL HISTORY OF RURAL DEVELOPMENT IN THE WEST* (University of Washington Press, forthcoming).

dramatic rise in federal highway construction added to this and suburbs spread further and further from the urban core. In the 1980s, many businesses relocated to rural areas in order to reduce capital expenditures and to obtain tax incentives, taking their employees with them. Most recently, the information revolution has allowed people, information, and capital to move further and further from the traditional workplace—further from the urban core. Nowadays, you can telecommute, which many people do. This short history of suburbs combined with an appreciation and desire for living in wild landscapes to create this low-density rural development. These new real-estate designs attract people looking for environmental amenities, like clean air, mountain scenery, and who are willing to pay the price for losing the convenience of suburbs.<sup>5</sup>

Wilderburbs represent the physical construction of a house in the woods combined with the mental construction of suburban safety. I'll explain how this relates to fire, but there is one other big shift that has really been fueling these rural developments and that is the shift in the 1990s of the federal tax code. Beginning in the 1990s, the federal government began taxing timber companies, including giants such as Weyerhaeuser, as well as small, family-owned operations, differently. Before, commercial forest owners were taxed on the amount of timber that they harvested each year. But the change taxed not only the acreage they harvested, but also the amount of stumpage they held, meaning the amount of trees that they own. Suddenly it became a double tax and, particularly for small landowners, but also for large timber companies as well, that change in the tax code suddenly made their commercial timber harvesting operations untenable.<sup>6</sup> During the last two decades a large

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5. See generally LOUIS GALAMBOS & ERIC JOHN ABRAHAMSON, ANYTIME, ANYWHERE: ENTREPRENEURSHIP AND THE CREATION OF A WIRELESS WORLD (Cambridge University Press 2002); JOEL GARREAU, EDGE CITY: LIFE ON THE NEW FRONTIER (Anchor Books 1991); DOLORES HAYDEN, BUILDING SUBURBIA: GREEN FIELDS AND URBAN GROWTH, 1820-2000 (Pantheo, 2003); KENNETH T. JACKSON, CRABGRASS FRONTIER: THE SUBURBANIZATION OF THE UNITED STATES (Oxford University Press 1985); LOUIS H. MASOTTI & JEFFREY K. HADDEN, EDS., THE URBANIZATION OF THE SUBURBS (Sage Publications 1974); ZANE L. MILLER, SUBURB: NEIGHBORHOOD AND COMMUNITY IN FOREST PARK, OHIO, 1935-1976 (University of Tennessee Press 1981); Mary Corbin Sies, *North American Suburbs, 1880-1950*, 27 J. URB. HIST. 313 (2001); Timothy J. Gilfoyle, *White Cities, Linguistic Turns, and Disneylands: The New Paradigms of Urban History*, 26 REVS. IN AM. HIST. 175 (1998); Richard Harris & Robert Lewis, *The Geography of North American Cities and Suburbs, 1900-1950: A New Synthesis*, 27 J. URB. HIST. 262 (2001); William Sharpe & Leonard Wallock, *Bold New City or Built-Up 'Burb'?: Redefining Contemporary Suburbia*, 46 AM. Q. 4 (1994).

6. See Clark S. Binkley, *The Rise and Fall of the Timber Investment Management Organizations: Ownership Changes in US Forestlands*, 2007 Pinchot Distinguished Lecture, Pinchot Institute for Conservation (Mar. 2, 2007) (transcript available at

number of companies, with Weyerhaeuser being one of the last, made the switch from timber harvesting companies to real-estate development companies. They are now timber investment management organizations (“TIMO”) or real-estate investment trusts (“REIT”). These companies now operate as development companies because under the federal tax code their lands are no longer double taxed. As publicly traded companies, these companies are really attractive to industrial investors, such as pension funds, because their profitability is calculated on the rate of growth of trees, generally measured at 4% annually. This stable rate of growth on investment has made TIMOs and REITs popular investments. However, institutional investors expect some sort of a turnover in the trees every ten to fifteen years; they expect pieces of property to liquidate into cash. This turnover rate is much higher than the 50 to 100 year time frame under which a large corporation like Weyerhaeuser manages its land. These former timber companies, that are now real-estate development companies, feel pressure from industrial investors expecting a turnover in land at the range of every ten to fifteen years, so the company sells a lot more private forest lands into residential development. Therefore, this seemingly innocuous change in the federal tax code helps to explain a dramatic spike in the number of new wilderburbs in the last few years.

According to Ohio State University, 36.9% of the American landscape, excluding federal lands, is comprised of low-density settlement.<sup>7</sup> Interestingly, only 9% of the population lives there. These figures speak volumes about current land use in the U.S. Roughly 9% of the population is using almost 37% of the available land, much of it around the edges of public lands. The Forest Service has been tracking this trend for a number of years in a publication series titled “Forests on the Edge.”<sup>8</sup> The Forest Service was interested in the number of, and impacts for, both the ecosystem and management that developments on the edge of national forests posed. It is a premium selling point for a real-estate company’s development to border public lands. If the view in front of you is national forest, national park, national wildlife refuge, or any other type of federal land, it is going to stay that way. The fact that

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<http://www.pinchot.org/files/Binkley.DistinguishedLecture.2007.pdf>. See generally National Timber Tax Website, [www.timbertax.org](http://www.timbertax.org).

7. For these figures and more on rural development visit Ohio State University’s Agricultural, Environmental and Developmental Economics department’s website. See generally The Ohio State University—Department of Agricultural, Environmental and Development Economics, [www.aede.osu.edu](http://www.aede.osu.edu).

8. See generally SUSAN STEIN, ET AL., U.S. DEP’T AGRIC. FOREST SERV., *Forest on the Edge: Housing Development on America’s Private Forests*, PNW-GTR-636 (2005).

you will not have a shopping mall or condominium complex spring up in five years is a really attractive selling point.

Rural development is very prevalent in the East. The original modeling for the "Forest on the Edge" series was concerned with the forests that protected the watersheds of navigable streams and those that supplied water to communities. They found that the top 15 watersheds threatened by development all lay in the East. Two cases that are featured in the series I want to bring to your attention. The first is Bangor, Maine. As you can see from the current model of residential density around watersheds compared with the prediction for 2030, the level of development is expected to make a sharp rise. This is in an area that you might not think of as being heavily threatened by development. If you go to page thirteen, this example makes a little more sense. The counties in focus are close enough to serve as bedroom communities to Atlanta. As you can see, the rural area surrounding suburban Atlanta is predicted to grow at a tremendous rate over the next twenty years.

What does this have to do with wildfire? This article is not supposed to be about residential development or crowding forests, but it is a paper about wildfire in the East. The problem lies where these two issues intersect. Rural development is complicating wildland fire management. It not only complicates management, it also puts more people at risk of wildfire. Just as wildfire followed logging in the 19<sup>th</sup> century, fire is following wilderburbs in the 21<sup>st</sup>. Rural development today is pushing new ignition sources further into the woods. Ignition sources include our cars, homes, power sources to our homes, and our outdoor activities. Forest Service fire researcher Jack Cohen recently studied burn patterns in rural developments that lost homes to wildfires and found that the trees in between the homes often times survived while the homes burned to the ground. He concluded that homes often provided the fuel for a wildfire and facilitate its spread to other homes through a rural development. This is just one factor that is making fire on the forest edge more unpredictable and more difficult to deal with each passing year.<sup>9</sup>

Another problem with wildfire on the edge of rural developments is the public's high expectations for the Forest Service to control wildfires. The agency is partly to blame for this assumption; over the last century its fire prevention message was too effective; and its fire suppression efforts were too extensive over the last century. When wildfires break out near their rural homes, many people now expect that the agency will automatically respond with air tankers, helicopters, hotshot crews and

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9. See generally Jack Cohen, *The Wildland-Urban Interface Fire Problem: A Consequence of the Fire Exclusion Paradigm*, FOREST HIST. TODAY 20 (Fall 2008).

engines. The reality is that the agency cannot. It does not have the resources to protect every rural structure. The primary responsibility of the Forest Service's fire management is not to protect private structures built outside the boundaries of the National Forests, but rather the National Forests themselves. The increasing amount of rural development makes the possibility of protecting these communities even less tenable.

This brings me to my last point about fire in the East. Wildfires threatening homes in the West grab all of our attention but there is a looming problem in the East. My last two slides illustrate this problem with maps and graphs taken from the National Interagency Coordination Center's summary report on wildland fire statistics for 2009.<sup>10</sup> The first slide is a map of significant fires last year. As you can see, a lot of them occurred in the East, particularly in Florida and in the Appalachians. The last slide shows two graphs depicting the "Total number of fires" and "Number of human caused fires." I think this is really fascinating because the Northeast and the Southeast, basically everything east of the Mississippi River, accounts for 69% of the total number of fires that started in 2009. Now this doesn't mean the total acres burned, if you looked at this figure the pie chart would be reversed, but a high portion of the total number of fires that federal and state agencies responded to were in the East. Again, the number of human caused fires, predominantly by accident, occurred overwhelmingly in the East.

In my opinion, the number of people moving into rural development is on a collision course with fire. Fire will become more prevalent as more people move into the undeveloped fringes of cities in the East. Tomorrow's disaster fires may be found just as often in the East as in the West.

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10. See generally NAT'L INTERAGENCY COORDINATION CENTER, WILDLAND FIRE SUMMARY AND STATISTICS ANNUAL REPORT 2009, *available at* [http://www.predictive-services.nifc.gov/intelligence/2009\\_statssumm/intro\\_summary.pdf](http://www.predictive-services.nifc.gov/intelligence/2009_statssumm/intro_summary.pdf).



