2.5 million hectares and one sustainable goal

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Abstract

Purpose – The purpose of this paper is to investigate historical environmental destruction and subsequent land use policies enacted over the last 400 years in the Adirondacks Park & Preserve – America's largest park and preserve in the lower 48 states.

Design/methodology/approach – The paper includes a historical analysis using an extensive literature review. The historical analysis is divided into four distinct waves of time analyzing the specific environmental destruction and the policies enacted. They closely mimic century waves: 1700s, 1800s, 1900s, and the present 2000s.

Findings – Findings indicate that each of the major policy or land use instruments applied to the Adirondack region were appropriate at the time, however, were retroactive approaches to stem widespread environmental devastation. These strong measures still impact the region today, impairing the 2.5 million ha and the ability to ensure a sustainable future of environmental protection, economic prosperity, and societal well-being. The conservation easement as a tool can proactively return the region to a sustainable balance.

Originality/value – While there have been studies analyzing the historical importance and others highlighting the political uniqueness of the Adirondacks, this paper fills the gap in reframing the history and policies in a sustainable planning paradigm. Exposing retroactive responses when the environment was on the brink of destruction, the paper suggests a proactive approach using the conservation easement. Here, sustainability can be achieved through partnership between government, non-profit, and private business. This collaboration can build on one of the best regional planning models in the nation and ensure a balance between environment, economy, and society for more than one century wave.

Keywords Sustainable environment, Regional planning, Adirondacks, Forest history, Forest management, Land conservation

Paper type Research paper

Introduction

A historical analysis of the Adirondack region reveals the importance of forest management, land protection, and the need for sustainable protection. However, the different strategies have often been rife with conflict, and seem to be divergent from the plans previously enacted. Since European colonization, beginning in the 1600s, the forest has seen a variety of strategic initiatives which include deliberate practices in response to rapid change, and periods of corruption and a lack of planning altogether. All of these were implemented by the state of New York with very little national involvement. The historical increments, or century waves, have continued to shape the social, economic, and environmental fabric of this two and a half million hectare region. While forest levels are returning to the days before colonization, the environmental, economic, and social future remains uncertain. Identifying the changing historical regimes of government oversight and regulation in the Adirondack region can inform and aid in the present land management policy discussions and decision making for this large expanse of land as well as others across the world.

Four eras of historical environment change can be clearly identified in the separate waves of time within the past 400 years. This paper does not focus on the period prior

World Journal of Science, Technology and Sustainable Development
Vol. 11 No. 2, 2014
pp. 82-92

2042-5945
DOI 10.1108/WJSTSD-03-2014-0003

to European colonization, where the Native American tribes had comparatively low-impact living for hundreds of years.

The 1700s brought war as the first wave. Both the Seven Years' War and the Revolutionary War had a great impact on the region. Armed conflict created a new use for the landscape and resulted in a state government creating a new land-tenure system. Land was mapped, sold, and even given away to soldiers and their families. The cold remoteness of the region precipitated the second wave in the 1800s – devastation of the environment. Timber barons, railroads, forges, and corruption took hold and changed the mountainous expanse further, eventually resulting in strong legislation. The third wave was in the 1900s, a reliance on automobiles and the construction of the interstate highway system. This change resulted in some of the strongest land use controls in the country.

Today, we have a notion of land tenure from the 1700s, a state forest preserve from the 1800s, and strong land use controls from the 1900s. At the present, the region is faced with modern pressures, but there is an opportunity to proactively plan for it. There are prospects for partnerships in this new period, and the working forest conservation easement might be the policy to guide us through the next wave of environmental planning in the Adirondacks.

Historical analysis

Upstate New York is a remnant of what was first settled by the Europeans in the 1600s. Prior to their arrival, human activity in the area involved a number of Native American tribes. In the Adirondack Mountains and Tug Hill Plateau, Iroquois villages dotted the landscape. The Five Nations included the Mohawk, Oneida, Onondaga, Cayuga, and Seneca tribes. While some Iroquois tilled the land for small-scale agriculture, the majority of the indigenous people of the region were hunters and gatherers. Their population density was low and their impact on the landscape was nominal (Otis, 2013), over 3,000 years (Johnson, 1998). These people prospered for a very long time with very little impression on the land.

European settlement immediately brought drastic regional changes. Within a few decades, Native American mortality rates reached 98 percent as a result of armed conflict and disease. The vast forests quickly began to be cleared for firewood, building materials, fences, potash, house wares, and ship masts. The surviving Native Americans saw the forests fall, the rivers flood, and the soils dry. The native Northern Forest was entering a new era of occupation and subsequent development (Harper *et al.*, 1990).

Wave 1 – war

It was war that marked the first round of regional destruction. The confrontations started as far back as 1609, when French adventurer Samuel de Champlain ventured into the woodlands of New York, near the present site of Ticonderoga, intent on making war with the Native Americans (Albers, 2000). Taking land from the Native Americans was not a problem, as Eurocentric property principles held that the indigenous tribes did not own the land. John Winthrop posited that the superior land tenure system was one of individual civil ownership and not a natural "commons" where all shared equal rights to all the lands. He further asserted that the land was a *vacuum Domicilium*, sitting without worth, awaiting a more productive people. Because the Native Americans did not enclose, settle, sow, or tend cattle on the land, it was there for the Europeans to take; and take they did (Cronon, 2003).

Europeans continued to affect the landscape with the French and Indian War (1754-1763) – also known as the Seven Years War. It transformed the woodlands into battlefields. Later that same century the British occupied the abandoned French forts during the American Revolutionary War. For almost 50 years troops, muskets, and death occupied the region. The woods had transformed into a war torn landscape.

When the USA gained its independence, many of the original colonies were in debt. Having just acquired all state lands from the British crown, New York, sold nearly all of it for pennies a hectare in order to discharge unpaid war borrowings (Adirondack Park Agency (APA), 2013a; Fisk, 2004). Timber harvesting began immediately.

Wave 2 – timber

Clearing the forest epitomized the destruction of the second wave. The new settlers began to clear the land for agriculture. Instantly, approximately 50 percent of the forest was "improved," mostly in the eastern and northeastern sections of what is today the 2.5 million hectare Adirondack Park & Preserve. Early farmers throughout the region used the earth responsibly. They cut and burned the trees and recycled the ashes, which they then leached through water to produce lye and then potash. Potash was used to create glass, soap, dye, fertilizer, and eventually became a component of early explosives, matches, and scouring wood (McMartin, 1994). The farmers were self-sufficient and usually could not clear more than half of their own individual properties, leaving the remainder as forested or wasted land – steep slopes, wetlands, and rocky areas (Klyza and Trombulak, 1999). The farming even became an early social experiment as 3,000 of these early settlers were African Americans, living on 40 acre plots, in an attempt to destroy slavery and racism in the country (Miller, 2013). All of these early residents lived off the land as pioneers in this dangerous wilderness, with much of the land still unexplored or inaccessible.

Technology changed this subsistence living after the turn of the nineteenth century. In 1813, the innovation of the single-log drive opened up much of the remote forests by transporting wood on smaller rivers and streams. Mills and towns sprung up alongside important waterways. Unregulated forest practices continued over the next few decades as pioneers built sawmills, iron ore extraction boomed, and smelting began. This decimated the region's forests by the 1840s. In order to create charcoal for the forges, industrialists cut and burned hundreds of thousands of acres. Vast areas were completely stripped, the soil eroded, and major floods ensued. New York peaked in their forest industry sometime between 1850 and 1870. By this time, the majority of the original old growth forest had been cleared and much of the forest had been logged off. By the turn of the century, over 70 percent of the forests had been harvested (Harper *et al.*, 1990; Klyza and Trombulak, 1994; Hennigan, 2004; New York State Department of Environmental Conservation (DEC), 2014).

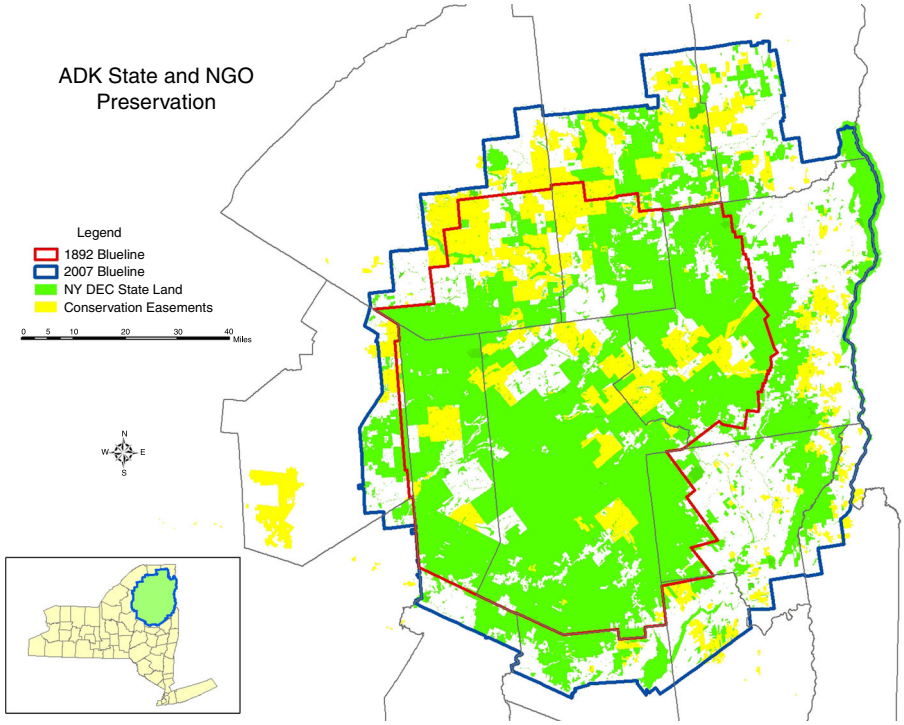
This devastation was noticeable. The citizens of the downriver cities, especially Albany and New York City, began to take notice of forest practices far north in the Adirondacks. They recognized that timber harvesting had depleted the watersheds and damaged much of the area. Action was required or flooding and water quality had the potential to get much worse, impacting a major part of the state population. New York State took action. In 1885, New York Governor David B. Hill signed the Adirondack Forest Preserve into law. This legislation created a three-member Forest Commission, hired forest wardens, regulated railroads to prevent fires, and mandated the state to pay local municipalities taxes for publicly owned park lands (Edmondson, 2000; Terrie, 2008). This legislation was timely because in 1892 railroads entered

into the once untouched northern woods of the Adirondacks (McMartin, 1994). Forestry, fire, and ecological pressures were mounting from the new level of human encroachment brought to the area by the trains. Unfortunately there was rampant corruption.

In 1892, New York officially created the Adirondack State Park. This legislation resulted in the drawing and mapping of a blue line that defined the park boundaries within which the state would target acquisitions of private property. The blue line initially surrounded an area composed of 20 percent public land and 80 percent private land (Hennigan, 2004) and included a total of 1,416,000 hectares (Edmondson, 2000). Figure 1 shows the original blue line of 1892 and the one of today.

In 1894, New York held a constitutional convention to formally create the Adirondack Park. An amendment to the state constitution was unanimously adopted by the convention and then approved by the entire state of New York (Hennigan, 2004; Terrie, 2008). The Adirondack Park & Preserve was finally born with these famous words:

> [...] the lands of the state, now owned or hereafter acquired, constituting the forest preserve as now fixed by law, shall be forever kept as wild forest lands. They shall not be leased, sold or exchanged, or be taken by any corporation, public or private, nor shall timber thereon be sold, removed, or destroyed (New York Department of State Division of Administrative Rules, 2004).



Notes: Map produced by Dan Moscovici – November 2009 GIS data. This maps shows the original 1892 blue line, the expanded blue line of today, and presented day protected lands
Source: NY State Geographic Data CD

Figure 1.
Map of Adirondack Park & Preserve (blue lines)

There were very few exemptions from the formidable rules of the Adirondack Preserve. Its strong tenets mimicked the philosophy of preservation began with Henry David Thoreau's famous words from his essay *Walking*: "in Wildness is the preservation of the world" (Thoreau, 1862). New York wanted to protect the natural landscape and reduce the rapid destruction of what was, until then, considered a never-ending and indestructible resource. This state regulation was some of the strongest seen across the USA. However, a new challenge emerged later in the century. Major development pressures, particularly from roads, was about to have a drastic impact. The interstate highway system was complete.

Wave 3 – regulation

Any changes or variances from the strict rules of the Adirondacks required the approval of two successive state legislatures and a majority of state voters. However, in 1958, the citizens voted on an exemption and granted project approval for the construction of interstate 87 on the park's eastern boundary (APA, 2013a). This new level of accessibility ushered in an era of vastly increased national interest in nature and the outdoors. With the completion of the highways, thousands of east coast urbanites drove north to hike peaks, camp, and downhill ski in the big and beautiful mountains (Sanford and Lapping, 2004). Upstate New York was now accessible to an exponentially greater number of people, who could, in a three- to five-hour drive access these remote areas from New York, Boston, Connecticut, and even Montreal (Terrie, 2008). In response to the new development pressure, in 1968, Governor Rockefeller suggested the creation of a National Park – which the locals protested. Alternatively, he appointed a Temporary State Commission on the Future of the Adirondacks. This Commission recommended "an independent, bipartisan Adirondack Park Agency should be created by statute with general power over the use of private and public land in the Park (Hennigan, 2004)." The plan also relinquished municipal planning and zoning authority. Locals were outraged at the governor for what they considered takings without just compensation.

The Adirondack Park Agency, an 11-member board, was created in 1971; their mission was to develop long range policies and management plans for both public and private holdings within the Park, and also to administer the Wild, Scenic, and Recreational Rivers System Act (Reynolds, 2011). The governor appoints eight of the seats, with the other three seats filled by the Secretary of State, the Commissioner of Environmental Conservation, and the Commissioner of Economic Development. In addition to the board, the agency currently has a total staff of 65 individuals (Morin, 2012). The APA guides land use using the public and private property classification system, and a permit system.

In 1972, the APA completed the Adirondack State Land Master Plan, which included nine land use classifications and regulated all public land. The following year, the Adirondack Park Land Use and Development Plan, with six land-use classifications for private land, was published (Hennigan, 2004). These two plans have revolutionized land use within the region, ensuring the proper siting of development and continued preservation.

Since the creation of the APA and the subsequent land use plans, all jurisdictions within the Adirondacks are classified, with each zone having different definitions and unique allowances. State properties, which constitute almost one million hectares (44 percent) of the almost 2.5 million hectare park and preserve fall into one of eight sections: wilderness, primitive, canoe area, wild forest, intensive use, historic, state

administration, and pending (Adirondack Park Agency (APA), 2013b). The wilderness and wild forest area comprises 95 percent of state land, 42 and 53 percent, respectively.

The State separated the private lands into six categories: hamlet, moderate intensity, low intensity, rural use, resource management, and industrial use. Resource management is the largest zone in the park with almost 630,000 ha. In addition, it developed regulations to buffer wilderness areas, highways, wetlands, shorelines, and the wild, scenic, and recreational river system, which act as overlay zones (APA, 2013b). Use of these private lands must rely on a permit system. Permits are required for all development, including: dwelling construction, the subdivision of land, activities affecting wetlands, changes of building use, the expansion or construction in commercial and industrial zones, all shoreline development, towers over 40 feet in height, and other unique instances (Adirondack Park Agency, 2014). International attention was given in 1989 when the United Nations Educational, Scientific, and Cultural Organization recognized approximately 1.6 million hectares of the Champlain-Adirondacks region as an International Biosphere Reserve (Dobbs and Ober, 1996).

Wave 4 – new protection

The limitations of only purchasing land outright for the Adirondacks were already becoming evident. The first, and most obvious, is the sheer cost. Realistically, it is not possible to afford all the land that should be conserved, and there continues to be a scarcity of funds for conservation. Second, acquisition frequently results in a mismatch of priorities between buyers and sellers and encourages a retroactive planning approach. Third, an outright purchase (fee-simple process) obscures the link between public and private goals. Tax breaks, incentives and the multiple ownerships and management techniques in preserved parcels create a mix of public and private actors with blurred lines (Fairfax, 2005). The conservation easement (or purchase of development rights) allows for private ownership, while ensuring there will be no future development. Preserved land can still be used for timber production, pays property taxes to the local government, and provides important conservation values (Moscovici, 2012).

Development rights can be purchased for historic viewsheds, agricultural land, recreational corridors, waterfronts, islands, and other natural areas, as well as other working landscapes like forestry, ranching, and mining. Land preservation can move beyond the effectiveness of regulation since it offers permanence. Furthermore, preservation can occur anywhere including the rural countryside, suburban rings and urban areas for the creation, preservation, and planning of parklands, greenways, trails, natural areas, farmland, forestland, and more (Daniels and Lapping, 2005; Lind, 2001; Gustanski and Squires, 2000; Diehl and Barrett, 1988).

American citizens are voting for this land use control too. From 1998 to 2002, 668 bond initiatives and voluntary tax measures passed approving conservation finance measures. These measures resulted in the generation of almost $25 billion. This trend continues. In 2008, 71 percent of ballot measures for land preservation were approved, nationally, totaling $8.4 billion in funding for the year. This significant funding must not be overlooked in the treasury for land preservation (Land Trust Alliance, 2009; Hopper, 2004). Simultaneously, the sheer growth in land trusts is indicative of a trend away from federal land ownership toward private partnerships. From 1980 to 2000, there was a 300 percent growth in the number of land trusts across the nation, from 431 to 1,263 (McQueen and McMahen, 2003). The non-profits have the ability to raise funds, create unique land deals, and transfer their titles to states for perpetual protection.

Fortunately, New York State has adequate funding to preserve forestland. The 1996 Clean Water/Clean Air Act and the 1998 New York State Open Space Conservation Plan generated $1.75 billion for environmental projects. From these funds, $150 million were set aside for open space (Harris and Jarvis, 2004). In addition, the state 1993 Environmental Protection Fund (EPF) allocates funding to purchase land for resource protection. As of 2009, the EPF allocated $4.5 million, in the Adirondacks, to protect 10,724 hectares of land. These funds leverage an additional $5 million in private funding and $2.5 million in federal funding as part of the matching grant program (Bicking, 2009). The Adirondack Park & Preserve is a target area for state conservation efforts because conservation dollars go farther than in more developed parts of the state.

At the turn of the millennium, warning shots of change, in the Adirondacks and across the Northern Forest, were heard as large timber companies began divesting millions of hectares in a single day. As predicted by the Governor's Task Force – no states were prepared to purchase all of these lands. The region was on the precipice of change and a creative planning approach was needed (Governors' Task Force, 1990; Reidel, 1990; Reidel, 1993). It was the partnerships between the state, timber companies, and non-profit organizations that allowed for permanent protection of 270,000 ha between 1999 and 2007. These partnerships, led by non-government organizations afforded flexibility, speed, and strong financing (Adirondack Council, 2007; Open Space Institute, 2008; Pataki, 2004; New York State Department of Environmental Conservation, 2005; The Nature Conservancy, 2005).

These deals show the state's transition from a "purchase-for-wilderness" model created in the 1800s, to purchasing conservation easements as the new state government strategy. Partnering with non-profit organizations and timber companies can benefit the regional environment, state economy, and the local citizens. However, all of these deals do not ensure a positive future, there are some warning signs. First, land preservation agreements have frequently been a reactive response to land sales. Second, should non-profits, with their specific agendas and out of state headquarters be planning on behalf of the state? Proactive and coordinated planning that strategically directs land preservation efforts is still needed.

Discussion

The land tenure system has changed significantly in the past 400 years. Originally, the Northern Forest was under a common indigenous ownership. It then transitioned to a farming community, next a landscape of timber extraction and forest devastation by relatively a small number of powerful settlers. It took decades before the governments became involved, attempting a return to the common ownership under a public paradigm. Centuries have passed and we are once again seeking a sustainable balance.

Forever wild is an excellent philosophy implemented by the State of New York; however, over a century later, in practice, it is having a detrimental impact on people, disrupting the social and economic component in the regional sustainable equilibrium. An evolution is needed for the twenty-first century, one in which there is a great respect for the working landscapes, one where residents maintain jobs, the environment has stewards, and forest sustainability is long term and predictable. The conservation easement is a successful and inexpensive technique for land use control in rural areas in the twenty-first century. However, we must be careful, the current legal background underlying the easements themselves require reform to ensure perpetuity and sustained public benefit. The conservation easement is not fully conceptualized in the

proper timeframe; since many of them are in perpetuity, future generations must be considered within the legal context and public benefits, so that they are not lost in a quagmire of litigation wherein their benefits and uses cannot be materialized (Pidot, 2005).

Furthermore, recent trends in the national economy, and specifically regarding preservation projects in this section of the state, suggest that the non-profits will have the greatest impact on the region in the next decade and beyond. There is a risk, however, that the Adirondacks is accepting all the funding it can (a majority coming from NGOs outside the region) for reactive purchases of the next big parcel in hopes of combating sprawl and taking over the lands of failing timber companies. To succeed, the preservation of this forested landscape requires a concerted effort on the part of the federal government, state agencies, NGOs, and the private sector to combat sprawl and maintain a sustainable forest-based economy, society, and environment.

Conclusion

In the mid 1800s, it seemed that the timber companies had certainly destroyed any chance for a primeval forest in the Adirondack. However, the forest is making a comeback. In 1882, only 25 percent of the forest remained in the region; today, over 62 percent is now forested (New York State DEC) (DEC, 2014). In 1892, when New York created the blue line, 80 percent of the land was private. Today, only 53 percent remains private, even after significant Park enlargement (Tuttle and Heintzelman, 2013). The region is left with a "forever wild" clause on state land, and a strong government land-use system for private land. The Adirondack Park Agency's regulatory power and some of the strongest rural zoning east of the Mississippi River could be one of the best models in the nation.

Many state regulations and policies have been enacted throughout the past 400 years and their legacies remain. War led to our current land tenure system. Rampant deforestation helped create the Adirondack Park & Preserve. Also, the interstate highway system precipitated a need for zoning and regulation on both public and private lands (the Adirondack Park Agency). As industry leaves the region and citizens struggle to prosper – the conservation easement may be a proactive solution to sustain these 2.5 million hectares in this next century wave and beyond.

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