The 1995 Adirondack Blowdown: An Analysis of the Ecological and Sociological Phenomena

BY JONATHAN MEADE

Introduction

The Adirondacks are a unique human ecosystem in today’s world of fragmentation and disconnect from the natural world. Residents are intricately and obviously tied to the fluxes of the resources of the ecosystem. They are both immediately involved in the manipulation of the resource base (e.g. logging), and also at the whim of the state land planners who determine the zoning and land use restrictions within the Park boundaries. As a result, there is an inherent patchiness in the Adirondacks, one where disturbances such as the storm in 1995 are prominent sources of changes in the resource base.

The impacts of a perturbation of the resource base on the social ecology of the region have been addressed here by utilizing Burch’s social ecology framework and patch dynamic heuristic (Burch unpublished). Because the relationship of the social ecosystem and the natural ecosystem are so tightly joined in the Adirondacks, it was hypothesized that the events in each realm influence the concurrent changes in the other system. However, it is important to understand that these two “systems” are part of one larger human ecosystem.

The Storm Event

The storm hit the western areas of the park hardest, with a majority of the downed timber found in designated wilderness lands. However, a substantial amount of timber was also found near residents’ homes and property. Clean up in the town of Star Lake took days and cost as much as the yearly budget of the town (Response to the Adirondack Windstorm of July 15, 1995). Another area affected significantly by the storm was Wanakena, a region where outdoor recreation provides a great portion of the revenue for both the residents and the park.

The storm lasted only a few hours, but the repercussions will be felt for decades. It was the severe impact and lasting changes to the ecology of the region that spurred a debate over salvaging the downed timber.

State lands were most severely affected: 429,909 acres were affected on Forest Preserve lands¹, with 968,888 total acres damaged across the park. High winds caused over $200 million in damage to timber and $4-5 million in damages to trails and campgrounds while damages to private lands was estimated at $39 million (Response 1995). Just over 10% of the total impacted area was severely affected. Approximately 50 million trees were downed in the Adirondack region in a mostly patchy pattern. However, it is important to keep in mind that only 0.25% of the total area of the park was impacted by the storm. The damage might have been worse if the summer

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had been wet as in the months previous to the 1950 hurricane.

After the blowdown, the scope of those involved broadened quickly beyond those immediately affected by the storm. Timber companies, sawmills, citizen groups both local, regional, and national, local governments, state government, the Adirondack Park Agency (APA), the New York State Department of Environmental Conservation (DEC), and others all had a hand in the aftermath of the blowdown and the manner in which the events played out. The committee to investigate the incident was formed immediately after the storm to assess the storm’s impact on the ecology, sociology, and economy of the region. This committee, made up of state officials, scientists and college professors, locals and concerned citizen groups, met regularly in the months after the storm to produce a summary document on the impacts of the storm and weigh the alternatives available to respond.

In forest ecology, catastrophic wind events “reset the clock” by removing the overstory and canopy and allowing the young trees and plants in the understory and regeneration at ground level to grow rapidly. This stand initiation phase precedes all other stand development phases. It can be expected that the areas of the forest affected by the derecho will reach the old growth phase in approximately another 100 years. The DEC Response (1995) report provided evaluations of various alternative actions, indicating that if the salvage operation were to be enacted, it would create edge habitat and so benefit species such as deer, bears and rodents. Removal of the downed trees would, however, eliminate much of the increased cover and forage for species and so would negate any beneficial effects of the windthrow to wildlife and plants. Salvage of the downed and snapped trees would also impact the long term future of the forests by removing future denning and nesting sites as well as a substantial portion of the carbon load which would otherwise return to the soil as nutrients.

The Issues
The most crucial issues raised in regard to the salvage debate were (1) whether or not to salvage the downed timber, (2) whether it was legal to salvage on state lands, and (3) what dangers if any would result from either salvaging or not salvaging. There were five private landowners severely affected by the storm. Lassiter Properties, International Paper (IP), Whitney Park, Adirondack Club, and Brandreth Park control 22,500 acres that were impacted by the storm. These private industries calculated their losses at $2.6 million in damages while there was determined to be $2 million in damages to state campgrounds (Folwell 1995). Timber companies began to salvage timber on their properties shortly after the storm to recover potential revenues. Simultaneously, trails and roads were opened as quickly as possible by the DEC. Rangers surveyed the blowdown areas immediately after the storm, closing trails that were impassable, clearing ones with little damage and re-marking trails and trailheads obfuscated by the downed timber which was piled up to 12 trunks deep in some places. Nearly 100 miles of trails were impacted (Response 1995).

In addition to the salvage debate, fire protection and prevention became an important issue. With such an large fuel load pulsed into the ecosystem, the potential for widespread fires was perceived by many residents to be substantial. The three parts of high fire potential are fuel, topography, and weather; the post-blowdown Adirondacks had only one. Fuel loads were twice normal levels at nearly 150 tons/acre, but patchy and wet topography work against large-scale fires in the Adirondacks today (Folwell 1995).

The fire history of the park played a role in shaping the present and future policy of the APA towards management of the state’s timber reserves. At

<table>
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<tr>
<th>Degree of Damage</th>
<th>Forest Preserve</th>
<th>State Forests</th>
<th>Private Lands</th>
<th>Total</th>
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<tbody>
<tr>
<td>Light</td>
<td>343,281</td>
<td>3,082</td>
<td>480,711</td>
<td>827,074</td>
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<tr>
<td>Moderate</td>
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<td>39,225</td>
<td>103,906</td>
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<td>1,448</td>
<td>12,401</td>
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<tr>
<td>Total</td>
<td>429,909</td>
<td>6,642</td>
<td>532,337</td>
<td>968,888</td>
</tr>
</tbody>
</table>
Essentially, it was the historical context of the situation that made the present day event into a larger than life decision process.

They used as fodder for their own fires the salvage operation and permitting process after the 1950 hurricane as well as the massive and extensive fires that ranged across the park at the turn of the century. Essentially, it was the historical context of the situation that made the present day event into a larger than life decision process.

The issuance of a permit from the DEC to salvage timber downed in the Five Ponds Wilderness Area and other State Preserve lands was requested from a timber company interested in salvaging the downed wood. The APA was required to make a decision regarding the permit but, because a majority of the timber was softwood and pine, a quick decision was necessary before the timber became discolored, diseased, or otherwise rendered useless for salvaging.

Because any permit to salvage on state lands is in direct violation of the State Constitution, an amendment to the Constitution is necessary for a salvage operation of this magnitude to be carried out. So while the protection of the forest reserves might seem watertight by legal standards, the precedent of the '51-'54 salvaging operation provided some reasonable basis for issuance of another permit. One of the biggest reasons the '51-'54 salvage is significant in light of the '95 blowdown is that, strangely, the attorney general's actions were never challenged in court as unconstitutional.

Social Analysis

The ecosystem of the Adirondacks is inherently patchy, stemming from three strongly influencing forces. The first is the natural disturbance regime that dictates many small-scale, but highly influential disturbances such as microbursts. Because the Adirondacks were created by frequent glaciation over ancient mountain ranges, the patchwork of lakes, streams and microclimatic communities is clearly a candidate for patch dynamic analysis. The second influential force is the patchy distribution of people and settlements near lakes and rivers. The management of the park, with its zoning and land use restrictions and development plans, has helped create and facilitate the patchy network of the human ecosystem. The third source of patchiness is the demographics and nature of the Adirondack communities themselves. For example, Tupper Lake's more modest resident population is vastly different from Lake Placid's wealthy seasonal residents and commercial businesses.

Figure 2 graphically demonstrates the circular nature of ecosystem patch dynamics. By starting with the resource fluxes, the reverberations of a perturbation to the system can be traced along
the circle. A storm that severely impacts the rate of flow of resources from the land (e.g. timber revenues) can be viewed as a perturbation to the resource base of the land. The local public’s perception was that the storm negatively impacted the resource base, “their” resource base, and as a result, the energy, money, or materials from the land could be recovered and should be collected through a salvage operation. The resource flux influenced the landscape level dynamics through differentially affecting communities and landholders both public and private.

The time and spatial elements of the storm and the storm history are also important to the analysis of the decision not to salvage. The summer and fall of 1995 were especially wet and so the potential for fire was reduced. Further, the fact that it impacted most severely the areas of old growth near Cranberry Lake and the Five Ponds Wilderness Area lends support to the argument not to salvage for fear of further damaging particularly sensitive and pristine areas. The impact of the storm on the human portion of the Adirondack ecosystem was also limited by the fact that the storm generally impacted wilderness areas more so than human settlements. The storm’s impact on the resources is part of the continuous perturbation regime of the Adirondacks and its effects on the patch dynamics was predictable.

The output of changes in the patch dynamics of the ecosystem in this case includes changes in availability of timber on private lands, heightened fears of fire, and ecological changes in the forest structure. The impacts on wildlife and trees discussed previously would fall in this category. However, it is important to note that the spatial changes in the output on the scale of the ecosystem will be unique to the western areas most impacted by the storm. As a result, the increases in deer density, species diversity changes, nutrient, air and water quality changes will be localized to the storm’s impact area.

The consequences of changes in the output of ecosystem functions and components might be increases in hunting and decreases in tourism. Large changes in the structure of the forest stands severely affected by the storm will result in changes in carbon dioxide sequestering, productivity and health. As such, it can be expected that the long-term consequences of the storm on the ecosystem would be drastically affected by salvaging or not salvaging, particularly at the forest stand level. A generalization might be made that future consequences in the ecosystem with a salvage operation would approximate a clear-cut logging operation, while the ecosystem might respond very differently to the storm without removing the downed timber.

The human population of the Adirondacks is a significant driver of the ecosystem, but not nearly so influential as the management plans made at the state level. However, the perturbation fluxes themselves can become the drivers of the system if their effects are exacerbated or amplified by management actions in response to the flux. The frequency of natural storms is not so low as to preclude this effect. Additionally, the natural disturbance
regime and private logging operations are also influential in driving the system’s patch dynamics. The effects of both on the stability of the human ecosystem is unclear, but may not manifest for many years. In 1995, the driver of the resource fluxes was most clearly the land management planning at the state and regional levels.

The community filter in this case is a wide class difference among the permanent and seasonal residents of the park. It is a significant factor in the way the human ecosystem responds to the resource perturbations. The driver of the Adirondacks at large is translated into a highly localized source of power. That power rests with the APA, the governor, and the wealthy and influential residents who have the ability to control politics and land use decisions at the regional level.

As a result, while communities often are more directly tied to the resource fluxes and the patch dynamics of the ecosystem, antagonism exists between the residents and the decision-makers at the regional level. It is unique that the patchiness of the region has persisted, due perhaps to the strength of the community-level voice in response to resource fluxes. The communities act to filter the effects of the several drivers (e.g. management planning, perturbations, commercial logging) through their stability and strength, diminishing the drastic effects these drivers can have. The reverse can also occur, however, as communities themselves begin to drive resource fluxes at the regional level through combined actions.

There is a highly structured agency mechanism for addressing situations in the Adirondacks. The APA, DEC, and the governor’s office wield great power though, in theory, match their actions to the communities’ interests, they are more responsive to the larger community of New York State. In this case especially, the state-level population was a more important constituent for two reasons. The location of the resource impact in wilderness areas and the resulting localization of profits from the salvage stimulated a larger interest in the debate over salvaging. Second, the requirements of the state constitution required a broader audience.

The two agencies’ actions are largely dictated by the land use management plan for the entire park and the state constitution itself. These detailed restrictions get translated to the residents and public at large and are perceived as dictatorial and overly restrictive on the part of the agencies. These regulations provide the basis for the resulting patchwork of land uses in the park because of the highly restrictive zoning laws. That the regulations for managing resources in the Adirondacks are far more stringent than in most areas dependent on forest products results in a greater effectual impact than any single resource perturbation, particularly one where the various scales of the ecosystem disagree on the changes in the normative regulations necessary.

The highly centralized power structure and the inherent inflexibility in making land use decisions has created a patchy network across the Adirondack Park that insulates the natural and human ecosystems from catastrophic disaster, but also forces the agency’s hands when confronted with a situation such as the 1995 blowdown. Faced with a difficult situation, their decision was essentially predetermined by the existence of unchangeable restrictions in resource use. The policy was in effect, already in place before they were required to decide. Unfortunately, the broad uncertainty in the media reports and the lack of confidence in that policy caused a broad and heated debate where there should not have been one.

The storm devastated nearly a million acres of state and private timberlands and, in doing so, created both a political and economic situation that required swift and precise action. The above analysis indicates that in the Adirondack region, the ecological system is indeed intricately tied together with the human social system to form a true human ecological system. This is indicated most clearly by the vehemence with which so many argued concerning such a small fraction of the total area of the park. While the storm affected many of the resources in the park, the major decision park administrators were faced with was whether or not to salvage on state lands. There seemed to be sufficient policy structure for the decision process to proceed in the storm’s aftermath. However, any substantive planning for addressing perturbations to the timber industry and resource base of the region was absent. While the restrictions on general resource use were in place, regulations concerning resource fluxes were not, and the 1951
salvage precedent served to confuse the decision process. When combined with the relatively high rate of turnover in the state and park administration, this lack of planning will most likely become a formidable problem to be overcome in the future. After the blowdown, little was done to devise a planning procedure for dealing with future events. There seems to be a perception, at least at the agency level, that events and perturbations such as the 1995 blowdown are so infrequent that either planning is unnecessary or would be unproductive. In truth, the DEC and the APA could benefit from a plan for ecological disasters, particularly since the region's economy is so intricately tied to the ebb and flow of timber and other resources. Analysis of the costs and benefits which stem from differential management of public and private lands in the Adirondacks might help inform the residents (and non-residents) about how the multi-tiered protection of forested lands in the Adirondacks provides a greater total benefit than one use of these lands.

The social and ecological systems were found to inform each other significantly, both directly and indirectly through industry, property rights mechanisms, and events such as the derecho of 1995. A "seat of the pants" approach to dealing with large scale fluxes to the ecosystem is entirely inappropriate for a group of state level agencies charged with perpetual management of an enormous tract of land, particularly one where the relationships between humans and the ecological systems are so tightly tied. Minor variations in the context of the post-blowdown human ecosystem could have resulted in a drastically different conclusion to the salvage debate and a potentially significant change in the human ecosystem of the Adirondacks. One of the major driving factors in the decision not to salvage was the depressed timber prices. At a time when prices were high, the decision to salvage might have garnered far more support from the timber industries and less cooperation may have been experienced. It is interesting to note that the concurrence of ecological and political changes, manifested as the blowdown and a change in political administration at the state level, resulted in a seriously confused initiation of the decision process, but ultimately led to a concise and efficient solution to the problem. As a result, there was great openness in the debate from the beginning.

Notes

1 The Adirondack Park is divided into several land classifications based on allowable development intensity. The original Park was created by consolidating forested state lands and designating them Forest Preserve. There are also state park lands, as well as private and commercially held lands within the boundaries of the Park.

Sources Cited


