Strategies for Forestry Success: Examples from the Early Years of the Pennsylvania Forestry Association

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Founded in 1886, the Pennsylvania Forestry Association (PFA) worked tirelessly to awaken the state government and people to the dangers of forest destruction. In its journal, Forest Leaves, the PFA advocated forest conservation and wise utilization of resources. It also educated the public about forest science. The article describes some of the successful conservation strategies derived from the first 20 years of Forest Leaves.

Keywords: forest history, Pennsylvania, conservation management

The practice of forestry has become increasingly challenging in recent years. Society gives conflicting and contradictory signals as to what it wants from forests and how it wants forests managed. Foresters are often frustrated by a perceived loss of the public’s trust and a loss of influence over forestry policy decision-making.

At times like these one can gain perspective on today’s problems by looking back to how previous generations dealt with difficult issues. Cheng and Daniels (1995) showed the importance of re-examining previous work on forest policy issues to better understand the forest resource problems of today, in their case the 1940s era.

This article examines the work of the Pennsylvania Forestry Association (PFA), which was founded as an educational and advocacy group in Philadelphia in 1886. The PFA was successful, at the state level, in expressing the need for forest conservation to an indifferent public and convincing state policy makers to enact new laws and fund programs to deal with forest loss and destruction. By 1903, when Pennsylvania opened a forest warden training academy at Mont Alto, the Commonwealth had already acquired nearly 570,000 acres in state forests and was rapidly purchasing more; had created a cabinet-level Department of Forestry; had rewritten and put real teeth into laws against forest fires; and was beginning programs to educate the public about the need for forest conservation. The strategies the PFA used so effectively are expressed in the articles of the organization’s conservation journal: Forest Leaves.

The Forest Conservation Issue in the Late 19th Century

The problem of the loss of forest resources and a general natural resource degradation from excessive timber harvesting and land clearing, starting in colonial times through the 19th century, has been well documented. Concerns over the declining condition of American forests developed slowly from the 1860s onward. Pisani (1985) detailed the rise of a conservation movement from 1865 to 1890. He showed that fears of timber famine, the loss of productive farmlands, and supposed declines in rainfall after deforestation were reasons behind the concerns. Pisani also pointed out that dire warnings from history gathered from the decline of ancient Mediterranean civilizations that were sounded in George Perkins Marsh’s revolutionary and influential work Man and Nature: The Earth as Modified by Human Action (1864) raised the alarm and inspired many others to write about the link between human actions and the productivity of the land. Miller (2000) argued that the decade of the 1870s was critical in laying the groundwork for subsequent achievements in conservation. He showed that first-generation conservation leaders such as Franklin B. Hough (strongly influenced by Marsh), who used census data to demonstrate that over-harvesting was causing the excessive loss of forest resources; Charles Sprague Sargent, who wrote a Smithsonian Institution report in 1884 detailing the present and worsening condition of America’s forests; and F.P. Baker, who wrote an extensive report on European forestry based on the 1878 Paris Universal Exposition and advocated forestry laws in the United States, had limited success in influencing change in the United
States but paved the way for a second generation of forestry leaders.

Much of the struggle for forest conservation occurred at the state and local levels. The existence of local organizations and their level of interaction and cooperation is demonstrated in the following optimistic Forest Leaves editorial (Birkinbine 1893):

Forestry is now recognized by the general government as well as by the governments of a number of states. With active Forestry Associations in Pennsylvania, New York, Ohio, Minnesota, Kentucky and Colorado, and organizations closely allied in interest in other states; with the Forestry Division of the Department of Agriculture at Washington, seeking to disseminate knowledge as to arboriculture and the utilization of various woods. With special commissions studying the forestry problems of Pennsylvania, New York, New Hampshire, Vermont and Michigan, added to a widespread influence resulting from the excellent exhibition of forest products and forest development in connection with the World’s Columbian Exposition at Chicago, we see much of encouragement. To these may be added the public meetings of the American Forestry Association, and other kindred societies, the Forestry Congress held at Chicago in October, the growing observance of Arbor Day in various states, and the interest exhibited by those who are educating the youth of to-day, making a résumé which marks real progress.

Pennsylvania Forests and the Rise of the PFA

Pennsylvania was named, in part, for its vast forests, which included well-stocked hardwood and softwood stands. This abundant resource supported a large sawmill industry, provided hemlock bark for the tanning industry, and produced many rotations of small timber for charcoal for an extensive iron smelting industry. However, by the 1880s the situation of Pennsylvania’s forests was indeed grim. In his report for a typical year, 1896, Forestry Commissioner Joseph Rothrock reported nearly 180,000 acres of forest had been destroyed by fire for an estimated loss of $557,000, an immense sum in those days (Rothrock 1897). Rothrock (1895) also reported that eight hard-hit counties paid more than $665,000 to repair bridges damaged from flooding in the preceding 4 years. At that time Pennsylvania had few effective methods to encourage forest conservation. Enforcement of the forest fire laws was left to the counties and municipalities, whose officials were reluctant to arrest known arsonists who were their neighbors and friends. Locally set property taxes favored the rapid conversion of undeveloped forested lands into farm lands, even though with its abrupt topography, much of the state was not suitable for farming (Gilmore 2002). The prevailing mentality was a hold-over from the colonial era where the forest was a nearly impenetrable barrier to settlement. The people of Pennsylvania were only just beginning to believe in the need to conserve natural resources.

Clepper (1945), in his history of the forest conservation movement in Pennsylvania, describes a comprehensive series of colonial and state laws designed to prevent the destruction of forests. Clepper concluded that none of the legislation, “...appears to have accomplished the desired result, which was to protect and rehabilitate the woodland of the state.” According to Thomas (1977), the statewide effort to protect Pennsylvania’s forests began in earnest with the appointment of Dr. Joseph T. Rothrock in 1877 to deliver the Michaux forestry lectures for the American Philosophical Society. Rothrock, a medical doctor and botanist, was then a professor at the University of Pennsylvania. In his travels around Pennsylvania, in scientific expeditions to Alaska, British Columbia, and the western United States, and in his correspondence with conservationists around the country, Rothrock had become increasingly concerned over the destruction of the forests. In the 17 years he gave the lectures and in countless talks around the state, Rothrock strove unceasingly to awaken the people of Pennsylvania to the environmental catastrophes they faced.

Partially as the result of Rothrock’s lectures, out of general concern over the decline of the state’s forests, and influenced by their knowledge of the dire national situation gained from the work of the conservationists on the national stage mentioned earlier, a small group of public-spirited citizens, consisting mainly of prominent women from Philadelphia, founded the Pennsylvania Forestry Association (PFA) in 1886. The founders of PFA believed that publicity, education, and new state laws and policies could alleviate the problem of the destruction of forests. They knew that the battle would not yield quick results and were prepared for a long and strenuous campaign.

The PFA launched its new journal, Forest Leaves, in July 1886. First appearing irregularly as a newsletter, it soon contained more and longer articles and was published on a bimonthly schedule. Forest Leaves served many purposes. It helped build the association and motivate members. It provided forestry news from around the state, nation, and world. It presented current knowledge of tree species, forest science, and forest management to the interested layperson. Most importantly, Forest Leaves served as a forum for developing ideas in forest conservation while keeping the focus on the forestry issues of Pennsylvania.

Conservation Strategies

The early issues of Forest Leaves reveal a group deeply concerned about the forests of Pennsylvania. They were seeking to understand the workings of forests from the level of the individual tree to large-scale ecosystem processes. The depth of their knowledge is surprising and often very comprehensive, even when compared to our knowledge today, yet they obviously had a long way to go. For example, several articles assert that forests attract rainfall, a belief that even then was being debunked. The writers can often be seen trying to define American forestry for American conditions, unique from European forestry. They were also trying to influence public opinion and policy in Pennsylvania. From the now musty pages of Forest Leaves we can find strategies or principles of forest activism, “agitation” as it was then called, which are still applicable today. As evidenced from articles in the first 20 years of Forest Leaves the conservation strategies of the PFA can be summarized as:

- **Strive for fundamental reform.**
- **Be patient but persistent. Keep a positive message.**
- **Make as many allies as possible.**
- **Stress education at all levels.**
- **Emphasize that forests are for the use of the people.**
- **Respect private ownership of land.**
- **Demonstrate that forestry can pay for itself in the long run.**
- **Be aware of the larger context, national and international, to show that forestry is part of a larger movement.**
- **Never lose sight of local issues.**

Following are examples of how the PFA used these strategies.

**Strive for Fundamental Reform.** The problems of destructive timber harvesting and catastrophic forest fires resulted from many individual actions, but they were also caused by the lack of comprehensive, enforced laws and policies at the state level. The PFA worked very hard to convince suc-
cessive legislatures and governors to make changes. These eventually included the creation of a permanent forestry department, the acquisition by the Commonwealth of forest reserves on the most sensitive or most degraded sites (such as the headwaters of the major rivers), the elimination of tax barriers to forest investment, and the uniform enforcement of forest fire laws at the local level. At the beginning of each legislative session, the proposed new bills were published in *Forest Leaves*. Editorials and articles encouraged the readers and members to contact their local representatives. Although few in number, the PFA had many prominent citizens as members and was able to make its voice heard.

**Be Patient, but Persistent. Keep a Positive Message.** In the early years of the PFA, most forest-related proposals had difficulty passing the legislature. For example, the state-appointed Forestry Commission of 1887 served as a fact-finder, but its recommendations were generally ignored. While praising the work of the commission, an 1889 *Forest Leaves* editorial wished that the Commonwealth had more highly valued their contribution by compensating the members and paying for the data analysis (Anonymous 1889a).

A legislative bill to make the volunteer Forestry Commission permanent was blocked in the State House of Representatives. In a subsequent editorial, the PFA wryly commented that “...the rising tide of public opinion in favor of forest protection was shown to have not yet reached the representatives of the people. The bill was first practically killed by scaling down the appropriation called for and other objectionable amendments, and then reported negatively” (Anonymous 1889b).

However, in the same article the PFA was pleased to report the repeal of the fence law of 1700. This law mandated that to protect land from grazing, it was the landowner’s responsibility to build a fence strong enough to keep out wandering livestock. A landowner could be held liable for damages to the offending animals if any were injured while trying to remove them from the property. This colonial-era law led to the common ground grazing of livestock on any undeveloped land, greatly reducing the ability of forests to regenerate and wasted a great deal of lumber building the impervious fences required.

Over the years, the PFA always thanked the Governors for their support of forestry, even when their actions didn’t quite meet expectations. It never criticized or impugned the motives of opponents in the legislature. It publicized examples of good forest management, no matter how small, among private landowners in the state. It praised examples where the local governments were doing their duty by enforcing the forest fire laws and criticized those who weren’t.

**Make as Many Allies as Possible.** Although the principal officers of the PFA and most of the writers in *Forest Leaves* were men, women were instrumental in forming the PFA and supporting its efforts. At the 20th annual meeting of the PFA, President John Birkinbine reflected that “Like many other progressive measures, forest reform received its initial impetus from public-spirited women, and their influence has continued during the life of the Pennsylvania Forestry Association.” (Birkinbine 1906)

The organization maintained good relations with women’s groups. An interesting letter sent by the Pennsylvania Federation of Women’s Clubs to member clubs around the state gives general objectives and specific instructions on how to promote forestry (Anonymous 1902). It said that with regard to forestry, each club’s primary objective should be to “…develop or to maintain public interest in forestry generally, and in the Department of Forestry especially, with a view to effective support of the policy of the Department.” Secondary objectives were to promote tree-planting in streets, school grounds, and other places, to establish parks, to protect native plants, and to preserve beautiful places.

As it is today, much of the forestland was owned by farmers. The PFA worked hard to recognize the work of and create good relations with farmers’ organizations (Rothrock 1894). *Forest Leaves* included several articles showing the importance of healthy forests to farms. After the creation of the Pennsylvania Department of Agriculture in 1895, which included a new Division of Forestry, the PFA worked to make the Secretary of Agriculture an ally of the forestry cause.

The cause of parks and urban trees was not specifically part of the larger forest conservation problems. However, it was crucial to building support for conservation. Also, a major concern of the PFA founders was to expand and promote the parks of Philadelphia. *Forest Leaves* ran many stories on improvements in parks. These included articles on how to improve the survival and condition of urban trees. The PFA saw the planting of new trees in cities as a learning opportunity for schoolchildren.

The harvesting practices of lumber companies, the high consumption of wood for railroad ties, and the frequent starting of forest fires by stray cinders from passing trains were recognized as prime culprits in the destruction of forests. The PFA chose to work cooperatively with these groups to improve their practices rather than attack them directly. In his annual address of Dec. 1893, PFA President John Birkinbine, himself a mining engineer, said: “The usefulness of the Association has not been hampered by antagonisms engendered through controversies with those whose business interests are associated with the denudation of forests...the organization took the position that he who used the most wood should be the strongest advocate of forestry, and it has constantly sought to enlist such in the work undertaken” (Birkinbine 1894).

**Stress Education at All Levels.** The PFA was an ardent supporter of Arbor Day programs in the schools. There was then no fixed date for Arbor Day. Instead, each spring the Governor issued a new proclamation, which *Forest Leaves* then published. For the spring 1887 Arbor Day, Governor Beaver supervised the planting of 14 trees in front of the Governor’s Mansion. The report lists the efforts of schools around the state, including 1,745 trees planted by students in the York schools. In the Northeast Grammar School in Philadelphia, students raised funds among themselves to purchase 15 trees for their school to replace some that had been destroyed by fire (Anonymous 1887). There was also a fall Arbor Day designed for schools that couldn’t fit the spring date into their schedules. Speakers were often arranged for conservation programs at the schools.

There were proposals to include forestry courses for students in the State Teacher’s Colleges (Anonymous 1890). The Superintendent of Education agreed to distribute the PFA’s series of forestry primers to the State Teacher’s Colleges (Fisher 1892). The primers were short reports highlighting issues such as the role of teachers in conservation (Welsh 1892), the need to reform the property tax on timber lands (Rothrock 1892a), and the waste of lumber used to build fences to protect land from roaming livestock (Rothrock 1892b).
Dr. Rothrock wrote a series of articles, appearing in most issues, highlighting an individual tree species. These articles, illustrated with photographs, were presented in a conversational, friendly style. They usually described the species’ physical characteristics, gave an overview of its silviculture, and highlighted a notable individual of the species. Other authors contributed articles concerning aspects of forestry including nursery and propagation techniques, tree diseases, and speculations on forest ecology. In the era before the strict enforcement of copyright laws, there was no difficulty in reprinting relevant articles from newspapers and other publications.

Emphasize that Forests Are for the Use of the People. Forest Leaves proclaimed the wonders of nature, yet all the arguments for conservation were made in terms of their impacts on people. The loss of forests meant the loss of forest products. Flooding and erosion could destroy homes and ruin agriculture. The loss of the forests would even threaten civilization itself.

The Commonwealth’s new forest reserves were truly the people’s forests. In the rules for the state forests published in 1902, the citizens were guaranteed access to the forests for camping and hiking (Rothrock 1902). Hunting and fishing were also encouraged, as long as sportsmen followed applicable regulations. Recreation in the forests was seen as a healthful activity to recover from the stresses of city life. Dr. Rothrock was a champion of fresh air to help cure tuberculosis patients in this preantibiotic era. He founded a campground on South Mountain, near Mont Alto, PA that later became one of the Commonwealth’s largest tuberculosis sanatoriums.

Respect Private Ownership of Land. The PFA always supported private ownership of forests. Reflecting on ways that the Commonwealth could control its natural resources, State Forester George Wirt, Rothrock’s protégé who worked very closely with him, said in a 1904 speech, quoted in Forest Leaves, that Pennsylvania could limit or restrict forest operations on private property (Wirt 1904). He went on to reject this proposition out of hand, saying: “It would be looked on as a restriction of private rights, and coercion would be met with opposition.” Instead, Wirt favored creating conditions to make good forest management profitable on private lands or having the Commonwealth own critical parts of the forest lands.

The PFA agreed that landowners had the right to determine what to do on their property. It believed landowners should be educated and encouraged to do the right thing to conserve their forests. In part, the state forests would serve as demonstrations of good forest management techniques. The encouragement of landowners required creating a property tax policy that would encourage the long-term ownership and investment in forestry. The PFA supported a state law giving rebates for property owners who replanted forests. It also supported reducing taxes for natural, unlogged forests.

The PFA supported the rights of landowners whose trees were damaged when new telephone lines crossed their property or when existing lines were being maintained. The customary practice at that time was for the contractors to cut trees with impunity. The PFA publicized the lawsuits and appeals of several homeowners who sued both the telephone company and its contractors when they destroyed trees on their property. The cases were eventually upheld in Superior Court (Anonymous, 1896, 1898, 1901).

Demonstrate that Forestry Can Pay for Itself in the Long Run. In his many writings in Forest Leaves, Rothrock was always unequivocal that forestry could not succeed on mere "sentiment." He insisted that when the timber on the forest reserves had regenerated and could be harvested, the forests would be net contributors to the Commonwealth. In a speech in Philadelphia, Wirt defined forestry as the proper handling of forest investments (Wirt 1903). Wirt and Carl Schenck (the German-born forester who succeeded Gifford Pinchot as the forester for the Vanderbilt estate in North Carolina, where he founded the Biltmore School), in separate articles, explored the effect of different time spans and discount rates on the profitability of forest investments. They believed that under the right conditions forestry could be profitable both on public and private lands (Schenck 1900, Wirt 1905). Forest Leaves also reprinted the work of Pinchot when he was Director of the Division of Forestry (the predecessor of the USDA Forest Service), demonstrating the profitability of private woodlands (Birkinbine 1898, Pinchot 1905).

Be Aware of the Larger Context, National and International, to Show that Forestry Is Part of a Larger Movement. Forest Leaves kept track of forestry issues all over the United States. It published reports of new forestry associations forming in states such as New Hampshire, Minnesota, and Colorado. It published statistics on forest acreage and forest losses around the country, as they became available. Forest tree species and the ecology of forests in other regions were also discussed.

Forestry developments in the neighboring states of New York, which was then in the process of creating the Adirondack Wilderness Park, and New Jersey, which had very severe forest fire problems, were closely followed.

Beginning in 1891, Forest Leaves became the official publication of the American Forestry Association (AFA). Reports from its annual meetings and conference papers were regularly published. Bernard E. Fernow, then chief of the US Bureau of Forestry and the General Secretary of the AFA, contributed many papers on a wide range of forestry topics including silviculture, wood technology, forest economics, and the forest policy options.

Forest Leaves had a strong international component. Americans looked to Europe for examples of how forests could be managed. Among several other authors, Pinchot (1891, 1892) contributed an article on government forestry in Europe and forest management in Switzerland. Mira Lloyd Dock (1900), the pioneering woman conservationist, reported on her study tour of German forestry conditions and compared her findings to Pennsylvania’s conditions. Her report to the Pennsylvania Secretary of Agriculture was subsequently published by the department. Articles on interesting tree species and forest oddities around the world were included.

Never Lose Sight of Local Issues. The editors of Forest Leaves never lost sight of their primary goal to restore and make productive the forests of Pennsylvania to improve the lives of its citizens. All the editorials and articles in every issue made this their primary focus. By necessity they were early practitioners of the modern aphorism: “Think globally, but act locally.” Unlike the western United States, all the land in Pennsylvania was privately owned. The Commonwealth’s new state forests were purchased parcel by parcel. For forest conservation to have any chance of success it needed the active cooperation of private landowners and all the residents of Pennsylvania, particularly those who lived in the rural areas.
Present-Day Applications

The strategies described above are in some ways so general that they would apply to any organization. But their successful application by the PFA in the cause of forest conservation should resonate with today’s foresters. Following are just a few problems that could benefit from their use.

Certification of forestry practices is a time-consuming and expensive practice no matter which certification standard is used (Cubbage et al. 2003), yet almost the entire forest products industry has adopted forest certification. Many state forest systems have gained or are working toward certification. As these organizations have found, forest certification is a great opportunity to educate interested individuals and organizations about forest practices. It also helps build allies from would-be opponents. Although the standards are set at regional or national levels, meeting them involves local practices in each forest management unit. This can’t help but build support for continuing forest management at a local level.

Foresters often lament that the public doesn’t understand how forest practices and that forests products are a renewable resource. If we went to farmers’ organizations we would probably hear the same complaints with regard to farm products. Yet every forester has an obligation to also be an educator and to find opportunities to meet and talk to people. In most issues of the Forest Source there are examples of SAF chapters and state societies who are making great strides in this area. Greater efforts are needed from every forester in this area.

Significant changes in forest ownership patterns are underway. For example, the size of nonindustrial private forests is falling as the number of owners increases (Mehmood and Zhang 2001). This presents great challenges for foresters in delivering services to new landowners and encouraging them to practice active forest management on their lands. They also present great opportunities, such as creating a new “boutique” style of forestry (Hull et al. 2004). Strategies of education, making new allies, and dealing with property rights and local issues will be more important than ever in the new ownership environment.

Summary and Conclusion

The situation facing the advocates of forestry in the 19th and early 20th centuries was different from the modern situation. Instead of polarized interest groups with rigid and inflexible positions, they were facing a general ignorance of the importance of forests and a general opposition to new regulations and government programs. The majority of people in that era still saw forests as a hindrance and barrier, much as their colonial forefathers had. They were only just beginning to understand the extent of their loss. Yet the main conservation issues then were the same as today: How should forests be used, who should make the decisions, and who should share in the benefits?

Many of the conservation problems the PFA was concerned with would not be resolved for a long time to come. A law giving forest lands favorable property tax treatment was overturned in 1906. The correct way to tax forest lands in Pennsylvania still has not been resolved to everyone’s satisfaction (Jacobson and McDill 2003). The annual catastrophic forest fire season was not stopped until many years later. However, there was no going back for Pennsylvania, which has today recovered most of its forests and has one of the most valuable hardwood forests in the United States.

The great challenges of yesterday encouraged creative thinking and positive approaches to solving problems. The strategies used by the early conservationists of the Pennsylvania Forestry Association are as valid and useful today as they were in the 19th century.

Literature Cited

Anonymous. 1901. Superior Court decides that tree owners have rights. Forest Leaves 8(3):35–37.
Miller, C. 2000. 130 years ago... The pivotal decade: American forestry in the 1870’s, J. For. 98(11):6–10.
Rothrock, J.T. 1892b. Wasted resources. Forest Leaves 2(8):118–120.


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