

In 2005, an international colloquium was held in France and in the United States that examined many aspects of the Franco-American forestry connections. The papers from the colloquium will be published as Common Goals for Sustainable Forest Management: Divergence and Reconvergence of American and European Forestry, a joint publication by the Pinchot Institute and the Forest History Society. This article is adapted from the book's introduction, and, except where noted, all citations refer to essays in the forthcoming book.

THE DIVERGENCE & RECONVERGENCE OF

EUROPEAN & AMERICAN FORESTRY

On July 1, 2005, France and the United States pledged to expand their cooperation on forest conservation and management, with one another and in other parts of the world still striving to shift from unsustainable exploitation of their forest resources to sustainable forest management. Signing

the agreement were Jean-Jacques Benezit, Director of International Affairs in the French Ministry of Agriculture, and Dale Bosworth, Chief of the U.S. Forest Service in the Department of Agriculture. Strong support for this renewed high-level cooperation on forestry matters was voiced by Jean-David Levitte, French Ambassador to the United States; John Turner, U.S. Assistant Secretary of State for Oceans and International Environmental and Scientific Affairs; Michael Johanns, U.S. Secretary of Agriculture; and Mark Rey, U.S. Undersecretary of Agriculture for Natural Resources and Environment.

This pledge of renewed cooperation between France and the U.S. is symbolic in many ways. It was signed on July 1, the one hundredth anniversary of the establishment of the U.S. Forest

Service in the Department of Agriculture, which followed the transfer of the responsibility for managing the federal forest reserves (now national forests) to the Forest Service from the Department of the Interior on February 1, 1905. Further, the agreement was signed at the very desk used by Gifford Pinchot when he served as the first Chief Forester of the United States Forest Service.

There being no forestry school at any university in the U.S. in Pinchot's time, he had received his professional education at the French national forestry school, the *École Nationale Forestière* in Nancy, in 1889. Like Pinchot, many of the other early leaders in forestry in the U.S. received their training at European forestry schools. They brought back with them the sum of experience,

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and knowledge of forest science and forestry practice, developed in Europe over more than a thousand years. Adapting this knowledge to the unique ecological, economic, and social circumstances in the U.S. at the time, Gifford Pinchot and his contemporaries launched not only the Forest Service, but the profession of forestry itself in America. Through Pinchot and others, Europe made a major contribution to accelerating the transition in the U.S. from our own unsustainable exploitation of forests to conservation and sustainable forest management as we know it today.

The signing of this agreement, on the centennial anniversary of the founding of the U.S. Forest Service, marked the culmination of an international colloquium organized by the Pinchot Institute, the U.S. Forest Service, and the *École Nationale du Génie Rural des Eaux et des Forêts*,¹ to examine the common roots of forest science and forestry practice, the divergent paths followed by European and American forestry during the 20th century, and the reconvergence that is taking place in the 21st century around common concerns such as conserving biological diversity, protecting water quality, and promoting sustainable forest management in both developed and developing countries. The colloquium took place in 2005 in two stages, first in Nancy,

France, at the *École Nationale du Génie Rural des Eaux et des Forêts* on March 7–9, and second at Grey Towers National Historic Site in Milford, Pennsylvania, on June 27–29.

DIVERGENCE AND RECONVERGENCE

Forestry in Europe and the United States share common roots, not only in terms of the practice of silviculture, but in the institutional, legal, and policy framework that forms the basis for sustainable forest management. Sustainable forest management, as the term is currently applied, explicitly incorporates ecological and social considerations as well as economic ones. European forestry institutions, especially educational institutions such as the *École Nationale Forestière* in Nancy, France, contributed in important ways to the introduction of basic principles of forestry to the United States in the late 19th century, and catalyzed the nation's transition from unsustainable exploitation of its forest resources to the conservation and sustainable management of those resources.

Early American forestry leaders who received their training in Europe, such as Gifford Pinchot, quickly recognized that the



COURTESY OF STEVEN ANDERSON

*The American contingent at the first colloquium outside the gates of the *École Nationale des Eaux et Forêts* in Nancy, France. The colloquium was held in two parts in two countries. While in Europe, participants also went to the Sihlwald Forest in Zurich, Switzerland. In the United States, participants visited the Cradle of Forestry near Asheville, North Carolina, and also Grey Towers National Historic Site in Milford, Pennsylvania, the home of Gifford Pinchot.*



Franz Schmithüsen, professor emeritus and former chair of Forest Policy and Forest Economics at the Swiss Federal Institute of Technology in Zurich, addresses the colloquium participants at the Sihlwald Forest in the vicinity of Zurich. The Sihlwald was one of the locations visited by Gifford Pinchot in the spring of 1890 when he spent a month with Forstmeister Meister, the forester in charge of the Sihlwald.

silviculture and forest science they had been taught there would have to be adapted to the very different circumstances prevailing in the U.S. at that time, not only in terms of different forest types, but also to respond to important social, economic, cultural, and political differences. The institutional, legal, and policy framework for forestry in the U.S. developed along distinctly different lines than in Europe, and continued to do so throughout the 20th century. It also evolved at a far faster rate, so that during the last half of the 20th century, forestry in the U.S. was already struggling to address significant changes in social values and perspectives regarding forests and forestry, changes that are only now sweeping through forestry in Europe.

At the start of the 21st century, European and American forestry institutions are focusing on many of the same concerns—sustainable wood production, biodiversity conservation, protection of water quality, climate change mitigation, and promoting sustainable economic development in rural communities as a few examples. This reconvergence is resulting in increased cooperation in the development of new forest science and technologies among individual scientists and forestry practitioners, and new strategic alliances among forestry institutions involved with research, technical assistance, and forest management. Increasingly, this cooperation is taking place not on European or U.S. soil, but in developing countries in Africa, Asia, and Latin America that are at the point in their own history where they are struggling to

make the transition from unsustainable resource exploitation to resource conservation and sustainable use.

This historical evolution is the focus of a new book, *Common Goals for Sustainable Forest Management: Divergence and Reconvergence of American and European Forestry*. It is based on a series of invited contributions to a two-part symposium—one part in France, the other in the U.S.—which was organized by the Pinchot Institute for Conservation to commemorate the centennial of the U.S. Forest Service in 2005. It was edited by a distinguished multinational panel that included V. Alaric Sample (Pinchot Institute), Steven Anderson (Forest History Society), Franz Schmithüsen (Swiss Federal Institute of Technology), Dennis LeMaster (Purdue University), and Dominique Danguy des Deserts and Patrice Harou [both of the *École Nationale du Génie Rural des Eaux et des Forêts (ENGREF)*, the French national forestry school at Nancy].

HISTORICAL ROOTS

Sustainable forest management in Europe developed over a period of more than a thousand years, dating back to medieval edicts governing woodcutting and the taking of game animals in royal forests. The framework of legal principles underlying forest use and management goes back at least to the *Corpus Juris Civilis* compiled by the Roman Emperor Justinian in the 6th century. The



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Dale Bosworth, Chief of the U.S. Forest Service, and René Mangin, Conseiller Régional de Meurthe et Moselle, shake hands after a tree planting ceremony at the French National Institute for Agricultural Research. A similar event took place at the Cradle of Forestry in North Carolina several months later.

Romans introduced the concept of privately-owned forests (*res in patrimonio*) to lands which previously had been treated as commons. Following the fall of Rome, the Barbarians of central and northern Europe enacted the first Germanic forestry laws between the 5th and 7th centuries, promulgating fines and punishments for forest trespass and declaring all forests, except royal territories, commons subject to free public use.²

Canute, ruler of England, Denmark, and Norway in the 11th century, established laws granting private ownership and use of forests, and also reserved royal forests for the protection of both wild game and the woods themselves. As populations in Europe increased, impacts on the forests also increased, prompting the enactment of forest protection laws in Europe and in Norman England. Tensions over the enforcement of these notoriously strict laws governing the use of forest lands helped give rise to the *Magna Carta* and its accompanying *Magna Foresta* in the 13th century. In the early 19th century, the Napoleonic Code swept away many of the remaining vestiges of feudalism, and opened forests throughout the portion of Europe once conquered by Napoleon to private ownership and use.

Forest science and the practice of silviculture also came of age in Europe in the 18th and 19th centuries.³ The concept of managing forests for a sustained yield of wood arose out of economic and social problems created by forest exploitation for shipbuilding, charcoal making, and other uses that made it difficult for

local communities to meet their needs for fuelwood, fodder, and food. Selective harvesting systems based on coppicing (regeneration through stump sprouts), coppicing-with-standards (leaving occasional large trees to provide for forest regeneration from seeds as well as sprouting), and high forests (regenerated primarily through seeding and planting) helped sustain forests for a variety of uses, theoretically in perpetuity. Tree breeding and the introduction of new species brought about higher forest productivity, along with the use of even-age silvicultural systems involving the periodic clearing and regeneration of larger areas of forests under the “regulated forest” concept.

CHANGING SCIENCE AND SOCIAL VALUES

In much of Europe during the 20th century, preferred species of trees, such as Norway spruce and European beech, came to be planted over large areas, often with only a single species represented. In recent years, many problems with this approach have become apparent, including insect outbreaks, severe weather damage, and disease problems. These problems have had major economic impacts, and have caused European forestry to shift back toward mixtures of commercial and native species. Forestry in Europe is also changing in response to evolving social values and cultural perspectives regarding forests, and the need to provide greater protections to natural characteristics not usually

found in large monocultures of non-native tree species.⁴

Ironically, forest scientists and forest managers have for most of the past two centuries focused on methods by which to maximize wood production; having been highly successful in accomplishing this, however, European foresters are finding that social goals relating to forests have changed in the meantime. An entirely new set of social and economic challenges have arisen in European forestry, and the traditional institutions of forestry research, forest management, and forestry education are struggling to meet these new challenges.

These kinds of challenges are not new to forestry in the U.S. where, interestingly enough, these kinds of environmental, economic, and social concerns arose decades earlier than in Europe. Some of the unique frontier values shaped the early American view of forests, and helped drive the wave of deforestation and forest exploitation that swept across America during the 19th century. It was the widespread environmental and economic damage from this exploitation that caused scientists and authors such as George Perkins Marsh, Charles Sprague Sargent, and John Aston Warder to sound the alarm, and call for government action to halt the devastation of the nation's forest resources.⁵

It was into this set of circumstances that young Gifford Pinchot was thrust, urged by his father to go to Europe to study forestry, and bring back to America a more enlightened approach to utilizing its forests. The notion that a forest could be cut and at the same time preserved was indeed a foreign concept to 19th-century America, as it rushed to open its last frontiers, capitalize on its natural assets, and join the industrial revolution sweeping through Europe at the time. Pinchot's family itself had once made its fortune in the lumber business, clearing timber and abandoning the land in the style that was customary and accepted at the time, a fact that may have had some bearing on Pinchot's choice of profession.

Pinchot's conservationist tendencies have more in common with those of another icon of the American conservation movement, John Muir, than previously thought. Conventional wisdom holds that Muir regarded Pinchot's utilitarian approach to forests as anathema to his own preservationist approach, and that the feeling was mutual. In fact, many of Pinchot's writings and public pronouncements at the time reveal a strong tendency toward forest protection. Use of the federal forest reserves and other public lands by local individuals was inevitable, Pinchot reasoned, so the most practical approach is to allow such uses, but regulate them to prevent resource depletion or long-term damage to the land's productivity. In fact, an examination of Muir's writings at the time finds that he too understood this approach, but also regarded some landscapes as almost sacred in their pristine form, to be held inviolate by any human exploitation. Unfortunately for history, and for the relationship between these two early conservation leaders, they differed over one particular landscape—Hetch Hetchy Valley in Yosemite National Park. Particularly ironic is that, long after Muir's death in 1914, Pinchot increasingly favored strong governmental intervention to protect forests on private as well as public lands in the U.S., eventually becoming highly critical of the close association between the lumber industry and his beloved U.S. Forest Service.⁶

The evolution of the Forest Service to being the nation's largest single timber producer by the mid-20th century had a major impact on the national forests, but also on the public perception

of the Forest Service itself. With Europe still reeling from the devastation of World War II, the U.S. economy was the fastest growing in the world at mid-century. The American spirit was one of unflagging optimism and confidence that, with a combination of economic resources and technological know-how, anything was possible. Forest science and the practice of forestry in the U.S. focused almost entirely on maximizing wood production, and were very successful in achieving that goal. But as is occurring now in Europe, social values and public preferences shifted in the meantime. Forestry found itself out of step with the rest of society, and subject to a storm of public criticism that foresters—most of whom considered themselves to be conservation-minded—struggled to understand. Now, after nearly four decades of controversy over timber harvesting and other forest practices, forestry in the U.S. seems to have come full circle. Timber harvesting on the national forests has declined from previous record levels, and the focus has shifted more toward what it was a century ago—watershed protection, ecological restoration, forest health, maintaining forest extent, and wood harvesting mostly by regional and community-based firms for local processing and economic development.⁷

ANTICIPATING THE FUTURE

European and American forestry are facing similar challenges and opportunities in the 21st century. At no time in history has there been greater public interest in the conservation and sustainable management of forests—in Europe, in the U.S., and throughout the world—than at present. There is widespread recognition that maintaining forests is an essential prerequisite to conserving biological diversity, including habitat for threatened or endangered plant and animal species as well as for game species. Protecting water quality from forested watersheds has become a critical need in many parts of the world as a growing proportion of the population becomes concentrated in urban centers. Increasingly urbanized populations also mean that forests and other natural areas are becoming more important for outdoor recreation and relief from the pressures of urban life. More people are coming to understand the value of wood as a renewable resource, and that it can substitute for other kinds of building materials whose mining or manufacturing have a far greater impact on the natural environment. Most recently, there is growing recognition of the important role forests play in mitigating global climate change, either through sequestration of carbon dioxide, or by substituting “biofuels” for fossil fuels in energy production, a major source of greenhouse gases.

The controversies and public debates over timber harvesting and other forest practices in Europe and the U.S. have stimulated many different efforts to define “sustainable forestry.” Separate efforts to do so have led to a remarkably consistent identification of “generally accepted principles of sustainable forest management.”⁸ Increasingly, these principles are finding their way into international trade in forest products through new mechanisms like independent third-party certification. “Green” certification aims to give confidence to the purchaser of a wood product that it is from a well-managed forest, whether the purchaser is an individual consumer or a company intent on demonstrating its commitment to environmental stewardship. Over time, certification may reward conscientious forest managers with greater market

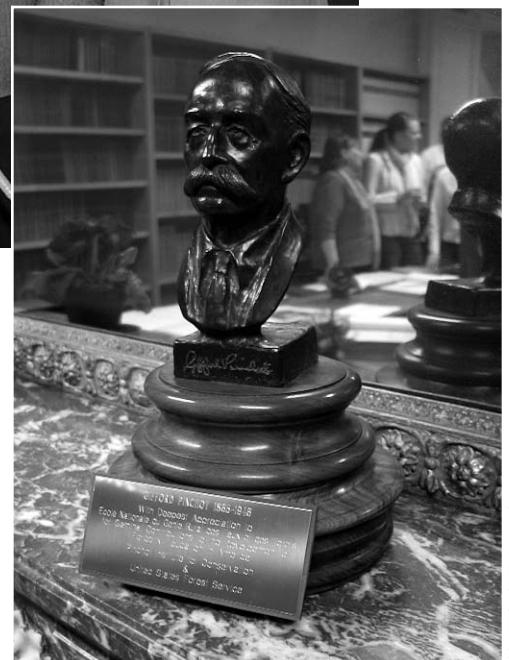


COURTESY OF STEVEN ANDERSON

Dominique Danguy Des Deserts, Director of École Nationale du Génie Rural des Eaux et des Forêts (ENGREF), holds a bust of Gifford Pinchot that was presented by V. Alaric Sample (2nd from left), president of the Pinchot Institute for Conservation, in recognition of the contribution the French National Forestry School made to educating American foresters in the late 19th and early 20th centuries. Also participating in the presentation were (far left) Peter O'Donohue, U.S. Department of State Office of Oceans and International Environmental and Scientific Affairs; (2nd from right) Dale Bosworth, Chief of the U.S. Forest Service; and Cyrille Van Effenterre, Director General, ENGREF.

share, while gradually eliminating market access to wood from exploited or endangered forests.

These basic principles are becoming the core of forest management planning for the future, both in Europe and the U.S.⁹ Internationally, they are increasingly being manifested in the influences that European and American forestry professionals are having on key institutions such as the United Nations Food and Agriculture Organization (FAO) forestry program.¹⁰ New concepts and policies emerging from the broader international dialogue on forestry increasingly involve private and nonprofit organizations as well as government entities.¹¹ Multi-lateral and multi-sectoral (e.g., private enterprises and nonprofit organizations, not just governments) cooperation and action will be needed if forest conservation and sustainable forest management is ever to be achieved at the global level.¹² Sustainable forest management has a key role to play in poverty alleviation in developing countries, not only through maintaining community supplies of fuelwood and fodder, but in protecting water supplies and water quality in rural areas often devastated by drought and water-borne diseases. As local economies are increasingly drawn into the global economy, developing countries are becoming the fastest growing sources—and markets—for wood and wood-fiber products. Ensuring that these develop in ways that can be sustained over the long term will



COURTESY OF ED BRANNON

The bust of Gifford Pinchot awaits placement in the school's library.

be a major challenge for the developing countries themselves, but also for multi-lateral development banks and sources of private capital that fund major forest development projects.

All of this has significant implications for forestry education in Europe, in the U.S., and throughout the world. This colloquium was inspired by the important contributions that forestry education at European universities made to the United States at a critical stage of its development as a nation, by educating Gifford Pinchot and other early forestry leaders. Having recognized the importance of the U.S. developing forestry education programs of its own, Pinchot helped establish a new forestry school at Yale University. More than 50 additional forestry programs have since developed in the U.S., mostly at state universities. However, the enrollments in forestry programs at universities in both Europe and the U.S. have been steadily declining for several years.¹³ Forestry programs at many universities have been blended into broader

programs in agriculture or environmental sciences. At other universities, the forestry programs have simply disappeared altogether.

What is particularly ironic is that this decline in university-based forestry programs is coming at a time of unprecedented world-wide public concern over forest conservation, when there has never been a greater need for competent, well-trained forestry professionals. Such professionals are needed in the field where they can develop a first-hand understanding of resource problems and their underlying causes, and find effective means by which to address these problems. But experienced, knowledgeable, and articulate forestry professionals are also needed at the highest levels of governments and private enterprises, to guide policymaking so that it is practical and effective, and so that unintended negative consequences are avoided.

Forestry education in Europe and the U.S. has made important contributions to sustainable forestry over the past century. But in many cases, these institutions are not capable of preparing the next generation of forestry professionals for the new set of challenges they will be facing. How can forestry education adapt to these changing needs? Creative partnerships and strategic alliances that allow university-based forestry programs to combine their strengths and share resources internationally—such as “distance learning” programs that allow students around the world to take on-line classes with top professors at many different universities in a single degree program—will be essential to meeting the world’s changing needs for forestry education.

CONCLUSION

This colloquium marked the centennial of the U.S. Forest Service, and acknowledged the important role of European forestry educators in fostering the development of forest science and the practice of forestry in the U.S. Although scientific and technical exchange in forestry between the U.S. and Europe has been going on for more than a century,¹⁴ today’s challenges in forest conservation and sustainable forest management will require far more than developed countries assisting one another and learning from one another’s experiences. There are many countries in the world that are today striving to make that same transition that was so important to the U.S. at the time of Gifford Pinchot—from unsustainable exploitation of their forests to conservation and sustainable management.

In his 1911 book, *The Fight for Conservation*, Gifford Pinchot wrote: “A nation deprived of its liberty may win it; a nation divided may reunite; but a nation whose natural resources are destroyed must inevitably pay the penalty of poverty, degradation, and decay.”¹⁵ In our interconnected global society, no individual nation can suffer such a fate without affecting other nations halfway around the world. On the other hand, a nation that achieves success in sustaining its resources and its people becomes a positive force in the global economy and contributing citizen in the global community.

Addressing the new and growing cadre of forestry professionals in the U.S. that he helped to inspire, Pinchot also wrote, “Our responsibility to the Nation is to be more than just good stewards of the land. We must be constant catalysts for positive change.”¹⁶ Today, our responsibility is to the global community, and it is in part through expanded international cooperation that we will fulfill that responsibility to be constant catalysts for

positive change, and continue to advance conservation and sustainable forest management. □

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NOTES

1. Other sponsoring organizations included: the Forest History Society, Swiss Federal Institute of Technology (ETH), Forest Research Institute of Baden-Wuerttemberg, University of Freiburg, Pennsylvania Bureau of Forestry, National Forest Foundation, Society of American Foresters, Stihl, Blooming Grove Hunting & Fishing Club, American Chestnut Foundation, and the Biltmore Estate.
2. David Adams, “European Forest Conditions Prior to 1805.”
3. Marie-Jeanne Lionnet and Jean-Luc Peyron, “European Silviculture and the Education of Gifford Pinchot in Nancy”; Heinrich Spiecker, “The Evolution of Forest Management in Europe”; and Yves Birot and Françoise Houllier, “Science and the Forest: Achievements, Evolution, and Challenges.”
4. Franz Schmithüsen, “European Forests: Heritage of the Past and Options for the Future”; Christian Barthod, “Man, Nature, and Forest: The Great Debates of Ideas”; and Konstantin Von Teuffel, “New Challenges for Forestry in Germany.”
5. Michael Williams, “Forest Policy in America as a Developing Nation: Jeffersonian Democracy, the Taming of the American Wilderness, and the Rise of the Conservation Movement”; and Char Miller, “*Le coup d’oeil forestier*: Shifting Views of Federal Forestry in America, 1870–1945.”
6. John Perlin, “Breaking Old Stereotypes: John Muir, Gifford Pinchot, and American Forestry.”
7. Paul Hirt, “Back to the Future: The Rise, Decline, and Possible Return of the U.S. Forest Service as a Leading Voice for Conservation in America, 1900–2000.”
8. V. Alaric Sample, “The Emerging Consensus on Principles of Sustainable Forest Management: Common Goals for the Next Century of Conservation.”
9. Jean-Jacques Benezit and Cyrille Van Effenterre, “The National Forest Program and the National Strategy for Biodiversity in France”; Michel Vernois, “The Future of Wood in Our Evolving Societies”; and Dennis C. Le Master and Franz Schmithüsen, “The Continuing Evolution in Social, Economic, and Political Values Relating to Forestry in the United States and in Europe.”
10. Jean-Paul Lanly, “European and U.S. Influence on Forest Policy at the Food and Agriculture Organization of the United Nations.”
11. Gérard Buttoud, “The International Dialogue on Forests: Convergences and Divergences between Europe and the United States.”
12. Jeff Burley, “The Role of Forest Conservation in Meeting Global Challenges of the 21st Century: The Necessity for International, Multisectoral Cooperation.”
13. J.E. de Steiguer, Patrice Harou, and Terry L. Sharik, “The Evolution of Forestry Education in the United States and Europe: Meeting the Challenge of Sustainable Forestry.”
14. Françoise Le Tacon, “A Historical Perspective on French-US Forestry Cooperation.”
15. Gifford Pinchot, *The Fight for Conservation* (New York: Doubleday, Page & Co., 1911), 123.
16. Pinchot, *The Fight for Conservation*, quoted in Dale Bosworth, “Statement Before the United States Senate Committee on Energy and Natural Resources Concerning the Forest Service Fiscal Year 2006 Budget, March 2, 2005.” Accessed at: <http://www.fs.fed.us/congress/109/senate/budgetary/bosworth/030205.html>.