



URBAN FORESTS & URBAN TREE USE  
*OPPORTUNITIES ON LOCAL, STATE, NATIONAL AND  
INTERNATIONAL SCALES*

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## Urban Forests and Urban Tree Use

### *Opportunities on Local, State, National, and International Scales*

#### Introduction

Traditionally, the core responsibilities of an urban and community forester revolved around tree planting, tree removal, and tree maintenance. These responsibilities have expanded over the last few decades to include management considerations such as water flow and water quality, air pollution mitigation, air temperature modification, carbon sequestration, human health, invasive plants, wildlife management, and tree (wood) utilization.

In October 2010, Dovetail Partners published a report on the evolving nature of urban forestry as a “discipline that mirrors many of the considerations and complexities of traditional forest management”.<sup>1</sup> This current report (2014) focuses on urban tree use (wood utilization) as one of the many opportunities being explored in innovative ways by urban and community (municipal) foresters and arborists. This report is divided into broad sections – local, state, national and international – but it is not intended to be an all-inclusive review of the status of urban and community tree use. Rather, the intent is to highlight urban and community forestry and tree-use examples from various viewpoints, and to underscore the scope of the ‘movement’ from local to an international perspective.

#### The Trees Where People Live

In a thought-provoking commentary in *The Forestry Source*<sup>2</sup> Gordon Mann argues, “If we do an excellent job in managing the trees where people live, we can increase the appreciation for the trees in the [rural] forests.” Mann’s argument basically boils down to this – manage trees in urban and community forests and people will appreciate the benefits and resources ALL trees provide.

#### Urban Forestry and Community Forestry

This report focuses on *urban forestry* (urban forest management) as it is practiced in *urban areas* as defined by the Bureau of the Census. These areas include (1) urbanized areas with populations of 50,000 or more, (2) places that contain some urbanized areas within their boundaries, or (3) places with at least 2,500 people and located outside of urbanized areas.

*Community forestry* is a phrase that can mean one thing in Mexico or Nepal, and different things in the United States. For example, in the Pacific Northwest, where the federal government is the major landowner, community forestry might refer to the process by which loggers, environmentalists, and others come together to craft a vision for the management of public lands. In New England, community forestry can mean the management of predominantly rural *town forests* by local municipalities.

In this report, *community forestry* and *urban forestry* are used interchangeably to describe tree and forestry activities practiced in population centers, whether large or small.

Urban tree utilization (wood use)<sup>3</sup> is a field where great potential exists. This potential is based upon the growing urban populations and large areas of urban forests in many communities in the

<sup>1</sup> See [http://www.dovetailinc.org/report\\_pdfs/2010/dovetailurbanforestry1010-1.pdf](http://www.dovetailinc.org/report_pdfs/2010/dovetailurbanforestry1010-1.pdf).

<sup>2</sup> June 2014, p. 8. Commentary by Gordon Mann titled “The Trees Where People Live.” (*The Forestry Source* is a publication of the Society of American Foresters).

<sup>3</sup> Urban tree utilization refers to using trees that ‘come down’ or should ‘come down’ for various reasons such as pest attacks, storms, old age, public safety, development, etc. Urban tree utilization, in the context of this report, does NOT imply or support the cutting of healthy urban trees for the purpose of tree harvesting as is often done in rural or commercial forests.

United States and other parts of the world. Today there are about 4 billion urban trees in the U.S., with another 70 billion trees growing in metropolitan areas.<sup>4</sup> As urban land in the U.S. expands, so do the urban forests. Urban land in the lower 48 states increased from 2.5% of total land area in 1990 to 3.1% in 2000, an increase in area about the size of Vermont and New Hampshire combined. Researchers from the U.S. Forest Service forecast that urban land in the coterminous U.S. will nearly triple in size to over 8% of the U.S. land base by 2050, an area larger than the state of Montana.<sup>5</sup>

The number of trees, and hence the volume of wood, removed annually from our nation's urban forests is significant. Estimates of removal (due to insect and disease pests, wind storms and other natural disasters, construction, hazard trees, mortality, etc.) range from 16 to 38 million green tons per year. Even the lower value of these estimates is larger than total annual harvests from America's federally owned National Forests.

As of 2012, more than 80% of Americans live in urban areas. Some states have even higher rates of urban populations; for example, 95% of Californians live in urban areas.<sup>6</sup> According to the World Health Organization (WHO), as of 2014, 54% of the world's population lives in urban areas.<sup>7</sup> The United Nations (UN) estimates that 70% of the world's population will live in cities by 2050.<sup>8</sup>

Urban tree utilization can provide a teachable opportunity for transferring knowledge about tree use in an urban or community setting to tree use in a rural or natural forest. It can be done in a way that touches many people's lives.

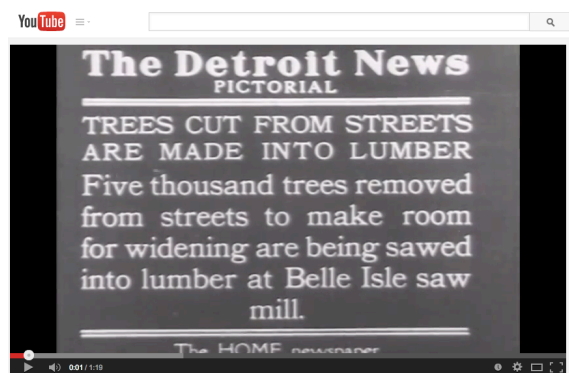
## Local Scale

The push to manage urban trees and utilize urban wood is not new (see sidebar), and today the 'movement' to use urban trees for traditional wood products is growing at a pace too rapidly to list all the firms engaged in the activity in this report. From east to west, and north to south, entrepreneurs, small businesses and communities across the U.S. (and other countries) are tapping into a raw material that, in some places, has been overlooked for many years.

### Is Urban Wood Utilization New?

It is easy to imagine that urban forestry and urban wood utilization are a recent phenomenon. However, that is not entirely true. Evidence suggests that recovery of wood products from urban trees can be documented in the U.S. for nearly 90 years.

A YouTube video provides footage of lumber being milled on Detroit's Belle Isle in 1928. It is reported that 5,000 trees were removed for a street-widening project, and they were milled into lumber. The slabs from the sides of the logs were cut into cordwood. The news headline from 1928 reports that nearly 100,000 board feet of lumber valued at \$50,000 were sawn from trees cut in Detroit that year.



Watch the video on YouTube:

<http://youtu.be/R40h534Y18Y>

<sup>4</sup> See sidebar for definition of urban areas. Metropolitan areas, in contrast, are typically not defined by places (urban areas) but rather by counties. For example, the New York metro area covers 36 counties in NY, NJ, CT and PA.

<sup>5</sup> See Dovetail Report: Urban Wood Utilization and Industrial Clusters, available at: [www.dovetailinc.org](http://www.dovetailinc.org)

<sup>6</sup> <http://www.reuters.com/article/2012/03/26/usa-cities-population-idUSL2E8EQ5AJ20120326>

<sup>7</sup> [http://www.who.int/gho/urban\\_health/situation\\_trends/urban\\_population\\_growth\\_text/en/](http://www.who.int/gho/urban_health/situation_trends/urban_population_growth_text/en/)

<sup>8</sup> <http://www.cbsnews.com/news/un-world-population-increasingly-urban/>

For example, *Goby Walnut* in Portland, Oregon, custom mills black walnut and other specialty hardwoods from ‘salvage’ or hazard trees primarily from homeowners, municipalities, and tree service firms (<http://www.gobywalnut.com/>). *Wood From the Hood*, based in Minneapolis, Minnesota, tracks its trees by zip codes and uses urban trees to produce a range of consumer products including flooring, cutting boards, picture frames, cribbage boards and more (<http://woodfromthehood.com/>). *City Bench* in Higganum, Connecticut, specializes in “singular furniture from city trees with designs that keep the tree in the wood.” Each piece comes with a “story of origin” and they can sometimes provide an actual street address for the tree involved. (<http://www.city-bench.com/>). All of these and other innovative firms (see sidebar examples) have demonstrated a desire to utilize urban and community trees to their highest use, keeping the trees from a chipper, or worse, from being disposed into a landfill. The process of salvaging urban trees sequesters carbon in the wood while creating beneficial value-added uses and reducing the strain on municipal infrastructure.

In addition to individual businesses, some communities are re-thinking the use of trees that ‘come down’ as part of a broader urban forestry program. Raleigh, North Carolina, and Richmond, Virginia, are examples of cities investigating different strategies to make better use of materials resulting from tree removals.

Oshkosh and Oak Creek, Wisconsin, recently hosted urban logging demonstrations.<sup>9</sup> Both of these municipal demonstrations highlighted traditional logging equipment in a city park and boulevard tree environment. The purpose of the demonstrations was to identify low-impact and more efficient tree removal methods that can capture and maximize useable wood derived from urban trees. The goal is to prevent waste and reduce environmental impacts when trees have to be removed.

### Urban Wood Companies & Organizations

*A sampling of local urban wood businesses and organizations from the U.S. and Canada*

Goby Walnut and Western Hardwoods  
Portland, OR

<http://gobywalnut.com/>

Wood From the Hood  
Minneapolis, MN

<http://woodfromthehood.com/>

City Bench  
Higganum, CT

<http://city-bench.com/>

CitiLog  
Pittstown, NJ

<http://citilogs.com/>

Milwaukee Woodworks  
Milwaukee, WI

<http://www.milwaukeeewoodworks.com>

Apollo Wood Recovery  
Fontana, CA

<http://apollowood.com>

Vancouver Island Woodworkers Guild  
Victoria, BC

<http://www.viwig.com>

Urban Hardwoods  
Seattle, WA

<http://www.urbanhardwoods.com>

Baraboo Woodworks  
Madison, WI

<http://baraboowoodworks.com/>

Craftsmen Supply  
Tampa, FL

<http://www.craftsmensupply.com/>

Urban Tree Salvage  
Toronto, ON

<http://www.urbantreesalvage.com/>

The Urbanwood Project  
Ann Arbor, MI

<http://urbanwood.org/>

New York Heartwoods  
Warwick, NY

<http://www.newyorkheartwoods.com/>

<sup>9</sup> Numerous people and agencies supported and/or participated in these events. The lead person in both demonstrations was Don Peterson, Consulting Forester, Sustainable Resources Institute, Crystal Falls, Michigan.

These businesses, communities, and programs highlight some of the potential of the urban wood utilization ‘movement’ on the local level. Readers of this report can undoubtedly think of many other local examples, within the U.S. and elsewhere.

## State Scale

In addition to many local efforts to make better use of urban and community trees, there are a number of statewide efforts worth noting.<sup>10</sup> Today, at least 39 states across the United States have universities or colleges with forestry degree programs accredited by the Society of American Foresters, including 10 states with Urban Forestry degree programs.<sup>11</sup>

The Connecticut Department of Energy and Environmental Protection, Division of Forestry, recently released a 30-page booklet titled *The Use of Wood from Urban and Municipal Trees*.<sup>12</sup> The booklet highlights activities in Connecticut regarding the use of wood from urban and municipal trees ([http://www.ct.gov/deep/lib/deep/forestry/urban\\_forestry/biomass\\_final-6-29-14.pdf](http://www.ct.gov/deep/lib/deep/forestry/urban_forestry/biomass_final-6-29-14.pdf)).

Another state-based publication, available from Purdue Extension in Indiana, is titled *Urban Wood and Traditional Wood: A Comparison of Properties and Uses* (<https://extension.purdue.edu/extmedia/FNR/FNR-490-W.pdf>).<sup>13</sup> As the title implies, this publication describes key differences between wood products from rural (traditional) forests and those available from urban forests. The significance of this document is that urban wood use has grown to the point where a publication is necessary to compare its properties and uses to wood products from rural forests.

In the state of Washington, the *2015 Washington State Envirothon* will focus on the issue of urban forestry.<sup>14</sup> The Envirothon is an annual event in which teams compete by demonstrating their knowledge of environmental science and natural resource management. Six regional competitions are hosted across the state each year, with top county winners moving on to the State Envirothon Competition. A focus on urban forestry in 2015 aims to connect students, schools and communities with statewide urban forestry efforts. North American Envirothon is a program for high school students with winning teams from the state (U.S.) and provincial (Canada) level competing annually (<http://www.envirothon.org/>).

Both California (San Francisco) and North Carolina (Asheville, Durham, and Charlotte) have hosted statewide conferences on urban tree utilization. These conferences covered many topics including marketing urban wood, certification of urban forest products, urban tree business opportunities in the public sector, and urban tree utilization business clusters.

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<sup>10</sup> As noted earlier, the complete array of wood products sourced from urban and community forests is NOT described in this report. Energy (for district heat as one example), firewood (for homeowners), chips (for pulp and paper mills), mulch/landscape material, railroad ties, lumber and more can be manufactured from non-commercial forests. The intent of this report is to highlight urban wood utilization activities not described in earlier Dovetail reports.

<sup>11</sup> See listings at: <http://safnet.org/education/accreditation.cfm>

<sup>12</sup> Authors of this June 2014 publication are Chris Donnelly, Urban Forestry Coordinator, and Gabriella Doria, Research Assistant, CT DEEP, Division of Forestry.

<sup>13</sup> Authors of this September 2014 publication are Dan Cassens, Professor of Wood Products and Extension Specialist, Purdue University, and Edith Makra, Chairman, Illinois Emerald Ash Borer Wood Utilization Team.

<sup>14</sup> <http://dnrtreelink.wordpress.com/2014/09/08/the-2015-washington-envirothon-urban-forestry/>



Also coming from California, the California Certified Urban Forester Program is expanding to receive national recognition via the Society of American Foresters certification programs. The redesign is expected to be completed in 2015. For more information, see: <http://www.caufc.org/California%20Certified%20Urban%20Forester%20Program>

Wisconsin has recently organized a diverse group of urban wood professionals, businesses, and nonprofit organizations that recycle urban trees back into the social and economic lives of the community. *Wisconsin Urban Wood* is devoted to using trees (from communities and municipalities) to manufacture products locally that reduce transportation costs and emissions, support local economies, and bring out the artistry of a community with quality goods and services (<http://www.wisconsinurbanwood.org/>).

This is not an exhaustive list of state-level urban forestry and urban forest product efforts. In fact, an online search of just about any state along with the words “urban forest” is likely to produce information about ongoing efforts and initiatives.

## National Scale

The Urban Forest Products Alliance (UFPA) was formed in 2010 with the mission of advancing the sustainable recovery and the highest and best use of the products of urban forests (<http://www.urbanforestproducts.org>). Members of UFPA include forestry, tree care, wood processing, and green building interests. One of the greatest contributions of UFPA to-date has been a sharing of ideas, and exchange of information, via the UFPA LinkedIn group.<sup>15</sup> The group is open to the public for online participation and sharing of ideas related to urban forest products. To-date, there are more than 1,000 members on the UFPA online community at LinkedIn from across the United States and several other countries.

A key factor in growing the use of urban wood nationally has been the participation of leading companies and sharing of information in forest sector publications. Wood-Mizer LLC, headquartered in Indianapolis, Indiana, is a manufacturer of portable sawmills and a host of other forest products and services. The Spring 2014 issue of the *Wood-Mizer Way* magazine focused on sawing urban trees with the cover story titled, “The Emerging Economy of Urban Wood.”<sup>16</sup> The CEO of Wood-Mizer, Richard Vivers, succinctly summed up the ‘movement’ by saying the urban wood sector is “growing every day.”

Another publication with national implications due to the spread of the emerald ash borer, is *Wood Utilization Options for Urban Trees Infested by Invasive Species* by Brashaw et al. 2012. Also, *Sawmill and Woodlot* magazine, published in Belfast, Maine, has featured at least six stories since 2012 focusing on urban tree utilization. Clearly, the above examples demonstrate that the written word on the topic of urban tree use has reached a national audience.

The U.S. Forest Service, Northeastern Area, State and Private Forestry (S&PF), has been a leader since the 1980s in the urban tree utilization ‘movement.’ Beginning in October 2011, the S&PF Wood Education and Resource Center (WERC) has hosted a quarterly webcast and conference call devoted to urban tree utilization issues.<sup>17</sup> Also, S&PF issued one of the first publications on the

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<sup>15</sup> To join the UFPA LinkedIn group, go to: <http://www.urbanforestproducts.org/ContactUs.html>.

<sup>16</sup> See <http://www.woodmizer.com/us/ResourceCenter/WoodMizerMagazines/WoodMizerWay.aspx>

<sup>17</sup> An archive of past webcasts and conference calls can be found at: <http://www.na.fs.fed.us/werc/eab.shtm>.

topic of urban tree use titled *Recycling Municipal Trees: A Guide for Marketing Sawlogs from Street Tree Removals in Municipalities*.<sup>18</sup>

In addition to urban tree utilization, urban forestry has evolved and become inclusive of urban tree management planning, stewardship and education efforts on local, state and national levels. On the local level, multi-disciplinary collaboration has been forged between urban forest managers, tree care professionals and multiple municipal government agencies such as Public Works and Parks and Recreation departments. On the state and national levels, non-profits and national-level industry organizations have led the way. See the following text box for examples that showcase such work.

### **Urban Forestry - Management Planning, Stewardship & Education**

#### *San Francisco Urban Forest Plan*

<http://www.sf-planning.org/index.aspx?page=3166>

The San Francisco Urban Forest Plan is a collaborate project overseen by the San Francisco Planning Department, San Francisco Department of Public Works and non-profit Friends of the Urban Forest. A final draft of the plan was recently released in Fall 2014. This citywide planning document recognizes the environmental, economic and social benefits that the city's urban forest provides while highlighting potential threats and long-term health issues of their urban trees.

#### *Seattle reLeaf*

<http://www.seattle.gov/trees/>

Seattle reLeaf is a City of Seattle program that focuses on urban forest education, outreach, planting, management and regulations. In September of 2013, Seattle reLeaf released an Urban Forest Stewardship Plan that was adopted by the city and served as an update to its 2007 Urban Forest Management Plan. Seattle reLeaf has also worked with the Seattle Urban Forest Interdepartmental Team to update citywide urban forest policies and regulations, including the Management Plan, a Department of Transportation Street Tree Ordinance, and Department of Planning and Development private property tree regulations.

#### *Sustainable Urban Forest Coalition*

<http://www.urbanforestcoalition.com>

The Sustainable Urban Forest Coalition (SUFC) is an advocacy initiative of the International Society of Arboriculture consisting of 28 national (U.S.) organizations that seeks to address a unified urban forest agenda to integrate trees as a 'vital component of sustainable infrastructure for every community'. Its focus consists of promoting urban forest and green infrastructure benefits.

#### *Urban Tree Alliance*

<http://www.urbantreealliance.org>

The Urban Tree Alliance is an urban forest advocacy non-profit based in Madison, WI that provides tree education, management, maintenance, and planting with the goal of preserving and growing the city's urban forest canopy. It also provides urban wood utilization services focused on woody biomass opportunities and custom wooden furniture. The organization highlights urban tree care as accessible to all by offering subsidized services to low-income property owners and near-market rate services to individuals making above the median income in Dane County, WI. Every service provided by the organization is geared towards private property owners in order to fill the gap that municipal programs fail to address in the urban forest.

<sup>18</sup> See <http://www.treearch.fs.fed.us/pubs/12865>.

Currently, the Tree Care Industry Association (TCIA) is leading the effort to develop Urban Forest Product standards. The effort was launched in 2011 and the new standard aims to complement existing standards that address proper tree care, including pruning, planting, transplanting and tree risk assessment standards. More information about the urban forest products standard development process is available at the TCIA website: <http://tcia.org/business/ansi-a300-standards/current-projects>.

The latest version of the LEED green building standard, LEED v.4, includes recognition of the environmental benefits of salvaging urban wood. In the LEED v.4 standard for “Building Design and Construction: Multifamily Midrise” the definition of reclaimed material under this criterion provides opportunities for obtaining points for wood use. Eligible for credit as reclaimed material are wood byproducts which are further defined as items from secondary manufacturers; products made from felled, diseased, or dead trees from urban or suburban areas; products made from orchard trees that are cut for replacement; and wood recovered from landfills or water bodies. For further discussion, see the Dovetail report addressing LEED v.4, available at: [http://www.dovetailinc.org/report\\_pdfs/2014/dovetailleedv4081314.pdf](http://www.dovetailinc.org/report_pdfs/2014/dovetailleedv4081314.pdf).

## International Scale

Although it could be argued that the publication *Harvesting Urban Timber: A Complete Guide* (Sherrill 2003) is national in scope, it is included in the ‘international section’ because its breadth and depth is all encompassing, and should be used as a reference within and outside the United States. Sherrill’s book is a comprehensive guide to the use of urban and community trees. The publication explains in detail topics such as felling, safety, sawing (logs to lumber), drying, hiring a sawyer, and more.<sup>19</sup>

The Forest Products Society (FPS) is an international not-for-profit technical association founded in 1947 to provide an information network for all segments of the forest products industry. The FPS publishes the *Forest Products Journal* (FPJ), which is a peer-reviewed periodical that reports on technical research findings at the applied or practical level that reflects on the current state of wood science and technology. In Fall 2014, (Vol. 64, No. 5/6) a ‘technical note’ titled “What Is Urban Wood Waste?” appeared in the FPJ. The essence of the technical note explored the various definitions of urban wood waste. The significance of the article is that it introduced urban wood waste (including urban trees) to an international audience in the form of a peer-reviewed article.

In recent years, there have been efforts to increase recognition of urban forest products within third-party forest certification programs. For example, at the last two international general assemblies for the membership of the Forest Stewardship Council (FSC), motions were put forward to recognize urban wood within the chain-of-custody system (e.g., as reclaimed content) and to move forward with a certification standard for urban forests.<sup>20</sup> Although these efforts within the FSC membership have been unsuccessful thus far, they highlight interests in urban forests and urban forest products within international organizations and well beyond the United States. For example, the European Forum on Urban Forestry provides a venue for urban forestry professionals, scientists and policy-makers to come together through annual events. The Forum is associated with the International

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<sup>19</sup> “Harvesting Urban Timber” will soon be available as an E-book from Amazon.

<sup>20</sup> For the most recent FSC motion addressing urban wood, see: <http://ga2014.fsc.org/motion-updates-194.motion-16-supporting-responsible-urban-forestry-by-recognizing-salvaged-urban-wood-as-reclaimed-creation-of-fsc-urban-forestry-standards>



Union of Forest Research Organizations (IUFRO) Urban Forestry Unit and held its 17<sup>th</sup> international conference in June 2014.<sup>21</sup> The broad international participation in the IUFRO Urban Forestry Unit illustrates a long history of urban forestry. One example is the research associated with a longstanding practice of urban forest care in Japan.<sup>22</sup>

### **The Bottom Line**

Urban and community forestry has evolved from practices such as tree planting and removal, tree maintenance, and pest control. This report has highlighted that urban tree utilization has emerged as an integral part of urban and community tree management programs. From local knowledge, urban forest products have advanced to a widely recognized movement as evidenced by increasing policy support, infrastructure and governance. Urban tree utilization and more holistic stewardship of our urban forest resources provide useful products for communities and their citizens. An added benefit is that urban forestry and urban wood utilization sensitizes people in population centers to utilization and management techniques applied in rural or natural forests, more effectively creating a greater awareness of sustainable forest management as a whole.

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<sup>21</sup> <http://www.efuf2014.org/>

<sup>22</sup> For examples, see: <http://www.metla.fi/iufro/iufro95abs/d6pap135.htm> and [http://www.iufro2010.com/presentation/24\\_August/3\\_Sub-Plenary\\_13/4\\_8.24\\_SP13\\_401\\_Jay\\_Bolthouse.pdf](http://www.iufro2010.com/presentation/24_August/3_Sub-Plenary_13/4_8.24_SP13_401_Jay_Bolthouse.pdf)

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