Where Do the Logs Go After Harvest?
A Look at the Role of Hardwood Exports

Matt Bumgardner, Forest Products Technologist, U.S. Forest Service

If you have recently harvested timber, a question you might have is, “Where did the logs go after they left my woodland?” Most likely, they were processed somewhere in the United States. Just over 2.3% of the total hardwood log volume harvested in the U.S. was exported in 2014, the latest year for which data are available. Considering only the higher value portion of the log market (sawlogs and veneer logs), the export volume was 6.8% (UNECE/FAO 2016). By contrast, 18.6% of the total volume of hardwood lumber sawn in the U.S. was exported, and the percentage would be much higher if considering only the graded (higher value) portion of the hardwood lumber market.

As shown in Figure 1, hardwood lumber exports have risen much faster than hardwood log exports since 2003. Hardwood lumber exports represented a $2.3 billion market in 2016, compared to $717.9 million for hardwood logs (USDA Foreign Agricultural Service 2017). After adjusting for inflation, the value of hardwood log exports has increased about 9.6% in the past 14 years; the inflation-adjusted value of hardwood lumber exports has increased by 31.3% for the same period.

Export markets were critical to U.S. hardwood sawmills during the Great Recession and associated housing crisis, and remain quite important today. Hardwood lumber exports dipped during the recession but quickly recovered to reach a record level in 2014 (Figure 1). Log exports have been slower to recover and have yet to reach the pre-recession peak of 2007. Although not as large as the market for hardwood lumber exports, the log export market can add value to timberland and it is important to keep abreast of changes.

Perhaps the most notable change in U.S. hardwood log exports has been a shift from Canada to China as the primary destination. As shown in Figure 2, China surpassed Canada in 2007, and represented a $404.6 million market for U.S. hardwood logs in 2016. Globally, there is a sharp drop-off in market size after Canada and China and the top 10 markets represent 91.9% of total exports (Table 1). However, U.S. hardwood logs were exported to 84 different destinations in 2016, mostly in relatively small amounts.

Red oak, walnut, and white oak topped the list for export species in 2016, with each representing over $100 million in export value (Table 2). Ash was approaching the $100 million mark as well. As shown in Figure 3, ash has been growing rapidly in importance as an export species. This is likely due, in part, to increased availability as landowners
harvest their ash timber in response to the emerald ash borer. It is also possible that strong demand for white oak (Figure 3) has contributed to the increased interest in ash, as ash and white oak are both open-grained species that offer a similar look when used in cabinets and furniture.

Table 1. Top 10 export destinations for U.S. hardwood logs, 2016.

<table>
<thead>
<tr>
<th>Destination</th>
<th>Value (million $)</th>
<th>Value (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. China</td>
<td>404.6</td>
<td>56.3</td>
</tr>
<tr>
<td>2. Canada</td>
<td>113.5</td>
<td>15.8</td>
</tr>
<tr>
<td>3. Vietnam</td>
<td>37.0</td>
<td>5.2</td>
</tr>
<tr>
<td>4. Japan</td>
<td>26.2</td>
<td>3.6</td>
</tr>
<tr>
<td>5. Italy</td>
<td>20.5</td>
<td>2.9</td>
</tr>
<tr>
<td>6. Germany</td>
<td>15.0</td>
<td>2.1</td>
</tr>
<tr>
<td>7. United Kingdom</td>
<td>13.7</td>
<td>1.9</td>
</tr>
<tr>
<td>8. Spain</td>
<td>13.4</td>
<td>1.9</td>
</tr>
<tr>
<td>9. South Korea</td>
<td>8.7</td>
<td>1.2</td>
</tr>
<tr>
<td>10. Turkey</td>
<td>7.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Rest of world</td>
<td>58.3</td>
<td>8.1</td>
</tr>
<tr>
<td>Total</td>
<td>717.9</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Figure 3. Top 5 U.S. hardwood log export species, 2003-2016.

Table 2. Top 8 U.S. hardwood log export species*, 2016.

<table>
<thead>
<tr>
<th>Species</th>
<th>Value (million $)</th>
<th>Value (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Red oak</td>
<td>151.5</td>
<td>21.1</td>
</tr>
<tr>
<td>2. Walnut</td>
<td>119.2</td>
<td>16.6</td>
</tr>
<tr>
<td>3. White oak</td>
<td>111.1</td>
<td>15.5</td>
</tr>
<tr>
<td>4. Ash</td>
<td>96.7</td>
<td>13.5</td>
</tr>
<tr>
<td>5. Maple</td>
<td>68.9</td>
<td>9.6</td>
</tr>
<tr>
<td>6. Yellow-poplar</td>
<td>27.2</td>
<td>3.8</td>
</tr>
<tr>
<td>7. Cherry</td>
<td>23.3</td>
<td>3.2</td>
</tr>
<tr>
<td>8. Birch</td>
<td>14.9</td>
<td>2.1</td>
</tr>
<tr>
<td>Not identified/Others</td>
<td>105.1</td>
<td>14.6</td>
</tr>
<tr>
<td>Total</td>
<td>717.9</td>
<td>100.0</td>
</tr>
</tbody>
</table>

* Values shown for individual species likely are slightly lower than the actual values because 14% of total exports were not identified by species in the export statistics.

China is by far the leading destination for ash and represented 87.7% of U.S. ash export value in 2016. China also was the leading destination for several other U.S. log species including red oak (68.7%), cherry (65.5%), walnut (50.2%), and white oak (32.7%). Canada was the leading destination for U.S. birch logs (94.1%) and all U.S. maple logs (68.1%).

In summary, the hardwood lumber derived from U.S. timber harvests is more likely to be exported than the logs themselves. While most hardwood logs are consumed domestically, exports are important to the industry and can provide market diversity beyond fluctuations in the U.S. economy.

References:

2017 Gwynne Conservation Area

Kathy Smith, Extension Program Director, Forestry

It is that time of year again when we are looking toward the 2017 Farm Science Review. This year’s Review is taking place September 19, 20, 21 at the Molly Caren Agricultural Center in London, Ohio. The Gwynne Conservation Area committee has worked hard to put together a series of talks that cover a broad range of topics. Check out the schedule to see what we have to offer this year.

Tickets for the 2017 Farm Science Review are now available for purchase online at fsr.osu.edu. Buying tickets online allows people to get the $7 early discount price even though they may not live near an Ohio State University Extension county office or participating agribusiness, which are selling tickets at that price.

A new online directory is available that allows people to perform keyword searches to locate exhibitors and to organize a lineup of events they want to attend. For those who prefer paper, a map is provided in the middle of the program that you pick up at the Review.

<table>
<thead>
<tr>
<th>Destination</th>
<th>Value (million $)</th>
<th>% of Total Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>717.9</td>
<td>78.4</td>
</tr>
<tr>
<td>Japan</td>
<td>105.1</td>
<td>11.8</td>
</tr>
<tr>
<td>Korea</td>
<td>111.1</td>
<td>12.4</td>
</tr>
<tr>
<td>Germany</td>
<td>14.9</td>
<td>1.7</td>
</tr>
<tr>
<td>Canada</td>
<td>27.2</td>
<td>3.1</td>
</tr>
<tr>
<td>Malaysia</td>
<td>68.9</td>
<td>7.8</td>
</tr>
<tr>
<td>Other Asia</td>
<td>100.0</td>
<td>11.5</td>
</tr>
<tr>
<td>Other Destinations</td>
<td>14.6</td>
<td>1.7</td>
</tr>
<tr>
<td>Not identified/Others</td>
<td>13.5</td>
<td>1.5</td>
</tr>
</tbody>
</table>

### Top 5 U.S. hardwood log export species, 2003-2016.

<table>
<thead>
<tr>
<th>Species</th>
<th>Value (million $)</th>
<th>% of Total Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red oak</td>
<td>717.9</td>
<td>78.4</td>
</tr>
<tr>
<td>Walnut</td>
<td>105.1</td>
<td>11.8</td>
</tr>
<tr>
<td>Maple</td>
<td>111.1</td>
<td>12.4</td>
</tr>
<tr>
<td>Ash</td>
<td>14.9</td>
<td>1.7</td>
</tr>
<tr>
<td>Yellow-poplar</td>
<td>27.2</td>
<td>3.1</td>
</tr>
</tbody>
</table>

### Figure 3

Top 8 U.S. hardwood log export species*

1. Red oak
2. Walnut
3. Maple
4. Ash
5. Yellow-poplar
6. Birch
7. Cherry
8. Not identified/Others

* Values shown for individual species likely are slightly lower than the actual values because 14% of total exports were not identified by species in the export statistics.

It is also possible that strong demand for white oak has contributed to the increased interest in ash, as ash and white oak are both open-grained species that offer a similar look when used in cabinets and furniture.

### 2017 Gwynne Conservation Area Schedule of Events

#### Tuesday - Sept 19th

<table>
<thead>
<tr>
<th>Time</th>
<th>Cabin</th>
<th>Wildlife &amp; Aquatics</th>
<th>Forages and Grazing</th>
<th>Woodland</th>
<th>Woodland Demo Area</th>
</tr>
</thead>
</table>
| 10:30  | Prairie Restoration Plots
Speaker: Mike Retterer | Managing Aquatic Vegetation
Speaker: Perry Omdorff | Warm season bunch grasses
Speaker: Christine Gelley | Low-Impact Logging
Speaker: Lee Beers | Forestry Students                                |
| 11:00  | Common Ohio Woodland Fungi
Speaker: Curtis Young | Creating and enhancing pollinator habitat
Speaker: Denise Ellsworth | Managing Native Warm Season Grasses for Grazing,
Haying and Wildlife,
Speaker: Bob Hendershott | Fall Mushroom Hunting
Speaker: Erika Lyon | Chainsaw maintenance, sharpening and safety demonstration |
| 11:30  | Outdoor Photography
Speaker: Erika Lyon | The Exclusion Solution: How to Build a Deer
Exclusion Fence,
Speaker: Lenny Farlee | | | Chainsaw cutting techniques demonstration |
| 12:00  | Attracting and utilizing pollinators on your farm
Speaker: Amanda Bennett | Deer Food Plots
Speaker: Tim McDermott | Winter stock piled forages
Speaker: Dave Libben | | |
| 12:30  | New Herbicides for the Management of Aquatic Plants in Ponds
Speaker: Eugene Braig | Attracting Hummingbirds to Your Backyard
Speaker: Marne Titchenell | Warm season annuals
Speaker: Mike Estadt | When is it time to harvest your trees?
Speakers: Dave Apsley and Bob Mulligan | Trees and Taxes
Speaker: Lenny Farlee |
| 1:00   | | | | | |
| 2:00   | | | | | |

#### Wednesday - Sept 20th

<table>
<thead>
<tr>
<th>Time</th>
<th>Cabin</th>
<th>Wildlife &amp; Aquatics</th>
<th>Forages and Grazing</th>
<th>Woodland</th>
<th>Woodland Demo Area</th>
</tr>
</thead>
</table>
| 10:00  | Electroshocking demonstration
Speaker: Nick Radabaugh | | Versatility of warm-season annual grasses
Speaker: Christine Gelley | | | Forestry Students                                |
| 10:30  | Prairie Restoration Plots
Speaker: Mike Retterer | Hydroponics
Speaker: Brian Kleinke | Fall Mushroom Hunting
Speaker: Erika Lyon | | Chainsaw maintenance, sharpening and safety demonstration |
| 11:00  | Attracting Bluebirds and Purple Martins to Your Farm,
Speaker: Marne Titchenell | Aquaponics
Speaker: Matt Smith | | | |
| 11:30  | Electroshocking demonstration
Speaker: Nick Radabaugh | Recreational Fisheries Basics for Farm Ponds
Speaker: Eugene Braig | | | Chainsaw cutting techniques demonstration |
| 12:00  | Worm Composting
Speaker: Carri Jagger | | | | |
| 12:30  | Electroshocking demonstration
Speaker: Nick Radabaugh | Basics of Pond Aeration
Speaker: Perry Omdorff | To renovate or not to renovate the pasture?
Speaker: Clif Little | | Chainsaw cutting techniques demonstration |
| 1:00   | | | | | |
| 1:30   | | | | | |
| 2:00   | New Herbicides for the Management of Aquatic Plants in Ponds
Speaker: Eugene Braig | Attracting Hummingbirds to Your Backyard
Speaker: Marne Titchenell | Warm season grasses?
Speaker: Carri Jagger | Conservation Tree Planting
Speaker: Lenny Farlee | Own woodlands? Overview of Ohio's Property Tax Programs for woodlands,
Speaker: Cotton Randall |
| 2:30   | | | | | |
| 3:00   | | | | | |

#### Thursday - Sept 21st

<table>
<thead>
<tr>
<th>Time</th>
<th>Cabin</th>
<th>Wildlife &amp; Aquatics</th>
<th>Forages and Grazing</th>
<th>Woodland</th>
<th>Woodland Demo Area</th>
</tr>
</thead>
</table>
| 10:30  | Prairie Restoration Plots
Speaker: Mike Retterer | Establishment of Wildlife Food Plots
Speaker: Mark Landefeld | Year-round grazing
Speaker: Tim McDermott | | | Forestry Students                                |
| 11:00  | How to Build the Best Bat Houses
Speaker: Marne Titchenell | Putting Pollinator Habitat to Work
Speaker: Colleen Sharkey | | | Chainsaw maintenance, sharpening and safety demonstration |
| 11:30  | | | | | |
| 12:00  | | | | | |
| 12:30  | | | | | |

Attracting Bluebirds and Purple Martins to Your Farm,
Speaker: Marne Titchenell

Electroshocking demonstration
Speaker: Nick Radabaugh

Winter stock piled forages
Speaker: Dave Libben

Warm season annuals
Speaker: Mike Estadt

Legume options
Speakers: Dan Lima and Clifton Martin

When is it time to harvest your trees?
Speakers: Dave Apsley and Bob Mulligan

Trees and Taxes
Speaker: Lenny Farlee

To renovate or not to renovate the pasture?
Speaker: Clif Little

Is it a pine? Conifer ID
Speaker: Clifton Martin

Conservation Tree Planting
Speaker: Lenny Farlee

Own woodlands? Overview of Ohio's Property Tax Programs for woodlands,
Speaker: Cotton Randall

Prairie Restoration Plots
Speaker: Mike Retterer

Electroshocking demonstration
Speaker: Nick Radabaugh

Deer Food Plots
Speaker: Tim McDermott

Attracting Hummingbirds to Your Backyard
Speaker: Carri Jagger

Warm season grasses?
Speaker: Carri Jagger

Warm season bunch grasses
Speaker: Christine Gelley

Managing Native Warm Season Grasses for Grazing,
Haying and Wildlife,
Speaker: Bob Hendershott

Managing Native Warm Season Grasses for Grazing,
Haying and Wildlife,
Speaker: Bob Hendershott

Managing Native Warm Season Grasses for Grazing,
Haying and Wildlife,
Speaker: Bob Hendershott
Spicebush - *Lindera benzoin*

*Amy Stone, Extension Educator, Lucas County*

There are two reasons we have included this article in the newsletter. The first is to be sure everyone knows about spicebush. If this is a new shrub to you – maybe you have the perfect spot or spots that are ideal for this plant. The intention of this article is to introduce you to the shrub and see if anyone is seeing any wilting and/or dieback in existing plants. Several Extension professionals have had reports of wilting and/or dieback and we want to see how widespread (if at all) this phenomenon is. If you have noticed these before, please let us know. The information that we are seeking is included at the end of this article. Enjoy the read and hopefully healthy spicebush too!

Spicebush is a deciduous shrub hardy from zone 4 to 9. Its height can range from 6 – 12 feet, with a similar spread, usually between 6 – 15 feet wide. This shrub prefers permanently moist to wet soils and thrives in full shade to part shade. You can observe this plant growing in the understory of many Ohio woodlands in moist to wet sites. With that said, once established, spicebush can adapt to sites on the drier side with more sun. In these scenarios spicebush may grow denser and produce more flowers and fruit. Because of this, spicebush can be incorporated into rain gardens in addition to its favorite spots in the landscape and woodlot.

Pruning is typically not needed, unless you are trying to maintain the shrub within a smaller site. This shrub is one of the first to bloom in the spring. Its twigs, branches and leaves emit a spicy fragrance when scratched or crushed. If plants have reached an unmanageable look and have outgrown their space, they can be cut back to rejuvenate or revitalize.

Spicebush flowers are yellow and appear in late winter to early spring. These blooms result in bright red fruits in late summer to early autumn on female shrubs. They are highly preferred by wildlife and serve as the larval host for the Spicebush Swallowtail (*Papilio troilus*), the Promethea silkmoth (*Callosamia promethea*) and the Eastern Tiger Swallowtail (*Papilio glaucus*).

Many of the references indicate that spicebush has no serious insect or disease problems. This is great news when considering incorporating new plants into the landscape. As with any additions, diversity is always key. We urge you to avoid monocultures, or a planting of all the same plant. While many of our favorite plants can be exciting and something that we may love – it won’t provide the same feeling if a pest wipes it out all at once. We don’t have to go too far back in our memory to feel that. Does emerald ash borer rekindle some sad and depressing memories of what a single pest can do to single genus? Lessons learned I hope – avoid monocultures!

Back to the pest problems. While no one lists any serious problems, we have recently had a couple phone calls from different parts of the state describing what sounds like the same situation. While some texts state that occasional tip dieback on spicebush is common, these phone calls describe a more concentrated wilting and dieback. The sites appear to fit the needs of the plants, and spicebush had been present for quite some time. Callers described some of the plants wilting, not as vigorous and having some dieback. While we don’t want to cause alarm, we do want to see what everyone is seeing.
There are two reasons we have included this article in the newsletter. The first is to be sure everyone knows about spicebush. We are aware that this shrub is not as well known as some of the other plants we have been promoting. Spicebush is often overlooked, but it has many benefits. They are highly preferred by wildlife and serve as the larval host for the Spicebush Swallowtail (Callosamia promethea) and the Eastern Tiger Swallowtail (Papilio glaucus). Many of the references indicate that spicebush has no serious insect or disease problems. This is great news when considering incorporating new plants into the landscape. As with any additions, diversity is always key. We urge you to avoid monocultures, or a planting of all the same plant. While many of our favorite plants can be exciting and something to strive for, it is wise to keep things varied. While we don’t want to cause alarm, we do want to see what everyone is seeing across the state. If you could be so kind to look at existing stands of spicebush and let us know what you are seeing, we would appreciate all input. Email messages and photos are encouraged. Included in your feet on the ground and eyes on the shrub report, we would like to know the age of the plants (if you know that), overall health, and a description of the site—soil conditions, exposure to sun or shade, and moisture levels, city and county location, and your name. We thank you in advanced and will be sharing any feedback that we receive.

Reports can be made by emailing stone.91@osu.edu or calling 419-578-6783. Please leave a message if there is no one available.

---

**Shrub Highlights**

**Common Name:** Spicebush

**Scientific Name:** Lindera benzoin

**Height:** 6 to 12 feet

**Plant Family:** Deciduous shrub

**Hardiness Zone:** North America

**Leaf and Flower:**
- Leaves: Ansel Oommen, Bugwood.org
- Flowers: Kathy Smith, OSU Extension

**Fruit:**
- Spicebush images:

---

**Calendar of Events**

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>September 15</td>
<td>Fascinating Woodland Fungi</td>
<td>OSU Mansfield</td>
</tr>
<tr>
<td>September 19-21</td>
<td>Farm Science Review</td>
<td>London, OH</td>
</tr>
<tr>
<td>October 14</td>
<td>Capturing Nature’s Wonders</td>
<td>OSU Mansfield</td>
</tr>
<tr>
<td>October 18</td>
<td>Forest Health: Invasive Species</td>
<td>Medina County</td>
</tr>
</tbody>
</table>

---

Ohio Woodlands, Water, and Wildlife Newsletter

The Ohio Woodlands, Water, and Wildlife Newsletter is published in part with funding from the Renewable Resource Extension Act (RREA).

---

**Ohio Woodland Stewards Program**

**School of Environment & Natural Resources**, 210 Kottman Hall
2021 Coffey Road
Columbus, OH 43210