Southern Megaregion – What are the numbers and the trends?

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June 10, 2015
Southern Megaregion

This is a Maine Forest Service (MFS) regional and area of interest, and includes:

- Capital Area FIA Unit, comprising the counties of Kennebec, Knox, Lincoln, and Waldo
- Casco Bay FIA Unit, comprising the counties of Androscoggin, Cumberland, Sagadahoc, and York
Previous presentation was May, 2012 and was heavily based on FIA and MFS data that was then current to 2010. So here I am again, 3 years later, with new data that is now current to 2013.
Topics of interest and the 3-Year Trends

- Land use
- Land use conversion
- Major forest types
- Stand size class
- All live stocking class
- Distance to nearest road
- Species Distribution

- Trees per acre
- Sawtimber volume
- Merchantable volume
- Species/product mix of harvest,
- Harvest intensity
- Net Growth/Removals
Southern Megaregion - Land Use category, acres, and percentage

- **Timberland**: 2,290,500; 71.6%
- **Non-Census Water**: 24,547; 0.8%
- **Nonforest**: 861,474; 26.9%
- **Reserve Forestland**: 19,305; 0.6%
- **Other Forestland**: 1,339; 0.0%
Average annual forestland conversion to other uses, as reported by landowners for two periods, by megaregion (MFS data sources)

<table>
<thead>
<tr>
<th>Region</th>
<th>1991 - 2002</th>
<th>2002 - 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eastern</td>
<td>779</td>
<td>2,004</td>
</tr>
<tr>
<td>Northern</td>
<td>610</td>
<td>732</td>
</tr>
<tr>
<td>Southern</td>
<td>1,677</td>
<td>2,079</td>
</tr>
<tr>
<td>Western</td>
<td>607</td>
<td>657</td>
</tr>
</tbody>
</table>
Southern Megaregion - Major forest types, acres, and percentage

- All Oak: 467,748; 21%
- Sugar Maple/ Beech/ Yellow Birch: 936,058; 41%
- Spruce/Fir: 145,069; 6%
- Elm/Ash & Other HWD: 144,871; 6%
- All Pine: 422,742; 19%
- Aspen/ White Birch: 167,700; 7%
- Non Stocked: 6,312; 0%
Southern Megaregion - Stand size class, acres, and percentage

- Seedling/Sapling, 249,141, 11%
- Non Stocked, 6,312, 0%
- Poletimber, 837,986, 37%
- Sawtimber, 1,197,062, 52%
Southern Megaregion - All live stocking class, acres, and percentage

- Fully Stocked: 1,216,080; 53%
- Moderately Stocked: 765,885; 33%
- Poorly Stocked: 171,484; 8%
- Over Stocked: 129,827; 6%
- Non Stocked: 7,224; 0%
Southern Megaregion - Road Distance class, acres, and percentage

1 < and ≤ 5 miles; 19,627 ; 1%
1/2 < and ≤ 1 mile; 131,286 ; 6%
1001 ≤ and ≤ 1/2 mile; 655,775 ; 29%
301 ≤ and ≤ 1000 feet; 830,437 ; 36%
≤ 300 feet; 653,375 ; 28%
Southern Megaregion - Species distribution of merchantable live trees, 5.0"+ DBH

- Pines: 16%
- Red Oaks: 10%
- Soft Maple: 24%
- Hemlock: 12%
- Spruce & Balsam Fir: 12%
- Hard Maple: 2%
- Other Softwoods: 2%
- Yellow Birch: 2%
- Ash: 4%
- Beech: 5%
- Other Comm. Hardwoods: 7%
- Noncommercial Hardwoods: 0%
Southern Megaregion - average trees per acre, by major species group, and dbh range

<table>
<thead>
<tr>
<th></th>
<th>Saplings 1.0 - 4.9 DBH</th>
<th>Poletimber 5.0 - 10.9 DBH</th>
<th>Sawtimber 11.0+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Softwood</td>
<td>270</td>
<td>51</td>
<td>36</td>
</tr>
<tr>
<td>Hardwood</td>
<td>425</td>
<td>96</td>
<td>22</td>
</tr>
</tbody>
</table>
Sawtimber volumes (MBF) in tree grades 1, 2, and 3, by species group, by FIA Unit

- Pines
- Sp/Fir
- Hem.
- Oth SFT
- Red Oaks
- Yellow Birch
- Hard Maple
- Soft Maple
- Beech
- Ash
- Aspen
- Oth Comm...

Capital vs. Casco Bay
Top 5 species, merchantable volume per timberland acre, by FIA Unit

75% of the total live volume of 23.9 cords is in these 5 SPP

85% of the total live volume of 27.2 cords is in these 5 SPP

<table>
<thead>
<tr>
<th>Species group</th>
<th>Capital</th>
<th>Casco Bay</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sp/Fir</td>
<td>2.70</td>
<td>1.13</td>
</tr>
<tr>
<td>Hem.</td>
<td>2.81</td>
<td>3.89</td>
</tr>
<tr>
<td>Red Oaks</td>
<td>2.67</td>
<td>4.11</td>
</tr>
<tr>
<td>Soft Maple</td>
<td>4.23</td>
<td>4.87</td>
</tr>
<tr>
<td>Pines</td>
<td>5.55</td>
<td>8.39</td>
</tr>
</tbody>
</table>
Cord volume contribution by species group to the total sawlog and pulpwood harvest for six 3-Year periods

<table>
<thead>
<tr>
<th>Period</th>
<th>Misc SFT</th>
<th>Intolerant Hwd</th>
<th>Spruce-Fir</th>
<th>Hemlock</th>
<th>Northern Hwd</th>
<th>White &amp; Red Pine</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999 - 2001</td>
<td>3,550</td>
<td>57,505</td>
<td>76,559</td>
<td>94,374</td>
<td>205,187</td>
<td>316,316</td>
</tr>
<tr>
<td>2002 - 2004</td>
<td>3,789</td>
<td>34,600</td>
<td>41,531</td>
<td>69,092</td>
<td>169,011</td>
<td>316,498</td>
</tr>
<tr>
<td>2005 - 2007</td>
<td>8,518</td>
<td>21,442</td>
<td>43,155</td>
<td>63,220</td>
<td>140,293</td>
<td>274,955</td>
</tr>
<tr>
<td>2008 - 2010</td>
<td>9,333</td>
<td>20,649</td>
<td>35,449</td>
<td>65,724</td>
<td>101,893</td>
<td>279,081</td>
</tr>
<tr>
<td>2011 - 2013</td>
<td>19,398</td>
<td>31,275</td>
<td>42,772</td>
<td>78,607</td>
<td>160,632</td>
<td>299,095</td>
</tr>
</tbody>
</table>
## Distribution of harvest volume by major species and product groupings, 2011 - 2013 average

<table>
<thead>
<tr>
<th></th>
<th>Southern</th>
<th>Eastern</th>
<th>Northern</th>
<th>Western</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firewood</td>
<td>2%</td>
<td>1%</td>
<td>2%</td>
<td>3%</td>
</tr>
<tr>
<td>Biomass</td>
<td>31%</td>
<td>19%</td>
<td>10%</td>
<td>16%</td>
</tr>
<tr>
<td>HWD Pulp</td>
<td>16%</td>
<td>33%</td>
<td>38%</td>
<td>33%</td>
</tr>
<tr>
<td>HWD Saw</td>
<td>4%</td>
<td>3%</td>
<td>9%</td>
<td>5%</td>
</tr>
<tr>
<td>SFT Pulp</td>
<td>26%</td>
<td>27%</td>
<td>15%</td>
<td>20%</td>
</tr>
<tr>
<td>SFT Saw</td>
<td>20%</td>
<td>17%</td>
<td>25%</td>
<td>23%</td>
</tr>
</tbody>
</table>
Harvest Intensity (2010 – 2012)

Southern Megaregion
- 2.2% of timberland acres were annually harvested, up from 1.9% in 2009
- 40.3 green tons per harvested acre, a 1.6 GT increase since 2009
- 23% Sawtimber (NC)
- 43% Pulpwood (+4%)
- 34% Biomass (-4%)

Statewide
- 2.6% of timberland acres were annually harvested, no change since 2009
- 32.1 green tons per harvested acre (0.5 GT decrease since 2009)
- 25% Sawtimber (-2%)
- 56% Pulpwood (+5%)
- 19% Biomass (-3%)
Roundwood harvest intensity (1982 – 2013)

- Premises are that all acres have an equal chance of being harvested and harvest volume should be an equal removal from each acre.

- Are harvest volume proportions by megaregion proportional to harvest acres?

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Share of State's Timberland</td>
<td>Share of State's Harvest</td>
<td>Differential</td>
</tr>
<tr>
<td>Northern</td>
<td>49.0%</td>
<td>49.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Eastern</td>
<td>24.1%</td>
<td>24.7%</td>
<td>0.6%</td>
</tr>
<tr>
<td>Southern</td>
<td>14.0%</td>
<td>11.4%</td>
<td>-2.6%</td>
</tr>
<tr>
<td>Western</td>
<td>12.9%</td>
<td>14.8%</td>
<td>1.9%</td>
</tr>
</tbody>
</table>
Southern Megaregion, all species, net growth to removals percentage for 1995, 2006, 2010, and 2013 Inventory Years

<table>
<thead>
<tr>
<th>Year</th>
<th>Sawtimber</th>
<th>Growing Stock</th>
<th>All Live</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>120%</td>
<td>146%</td>
<td>166%</td>
</tr>
<tr>
<td>2006</td>
<td>195%</td>
<td>175%</td>
<td>242%</td>
</tr>
<tr>
<td>2010</td>
<td>254%</td>
<td>249%</td>
<td>212%</td>
</tr>
<tr>
<td>2013</td>
<td>258%</td>
<td>227%</td>
<td></td>
</tr>
</tbody>
</table>
Southern megaregion and the rest of state, all live and all species net growth to removals (%) for 2006, 2010, and 2013 Inventory Years

<table>
<thead>
<tr>
<th>Year</th>
<th>Southern Megaregion</th>
<th>Rest of State</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>166%</td>
<td>79%</td>
</tr>
<tr>
<td>2010</td>
<td>242%</td>
<td>87%</td>
</tr>
<tr>
<td>2013</td>
<td>212%</td>
<td>115%</td>
</tr>
</tbody>
</table>
Questions

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