

DCR Bureau of Forestry

Current Forestry Vision & Implementation

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DCR's Current Forestry Vision and Implementation

This presentation was prepared by DCR in response to a request by the Forest Futures Visioning Process Technical Steering Committee. It is intended to provide baseline information about Massachusetts state forestlands, describe DCR's current forestry management plans and policies, and to project a vision of how DCR forest lands will look in 100 years via implementation of the plans.



DCR's Current Forestry Vision and Implementation

- Within DCR managed forests, 10-15% of trees are legacy and retention trees – now 200+ years old – other trees range up to 150 years old
- Across the DCR and DFG forests, approx. 10-15% of the forest is diverse, dense young forests that help stabilize the many species that depend on this habitat
- DCR forests significantly are increasingly complex and resilient – harvest rates follow historic disturbance rates of $\frac{1}{2}$ - 2% per year (developing resiliency in the early 21st century – following DCR Watershed and DFG models - was important as climatic forest stress and disturbances increased)



DCR's Current Forestry Vision and Implementation

- Harvests thin the forests to help growth, resilience, and carbon sequestration and create new growth in openings from ½ - 2 acre (uneven aged mgt), regeneration in stages (2 aged stands) and patches of diverse young forests (even aged) – a mix that is diverse at the stand and landscape scale
- Annual harvests average 25% of net forest growth (excluding reserves) – 75% net growth has greatly increased forest volume, now highly valued for carbon sequestration



DCR's Current Forestry Vision and Implementation

- Uneven aged regeneration cuts in the northern hardwood forests in the early 21st century helped maintain a component of this type – regeneration in 2100 is mostly a mix of central hardwoods
- Forest reserves set aside in the early 21st century average 200+ years old and offer unique habitat and inspiration, represent the range of ecosystems and serve as a laboratory to guide forest management
- Reserves total 250,000 acres (100,000 original, 75,000 new acquisitions and 75,000 non profit and private CR's)
- Land conservation adds 150,000 acres to system (ave. 3,000/year 2000-2050) with 75,000 adjacent and added to large reserves



DCR's Current Forestry Vision and Implementation

- Regular monitoring occurs throughout the system and forestry adjusts to new information, especially as the forest adapts to a changing climate
- Forest products from DCR harvests are largely processed locally – leading the way for this trend on private forests
- High quality products help sequester carbon



DCR's Current Forestry Vision and Implementation

- Guidance from DFW's For Mgt Guidelines:
 - Vertebrate wildlife species in New England benefit when primarily forested landscapes contain a mix of forest size classes, generally 5-15% seedling (or early-seral forest), 30-40% sapling-pole, 40-50% sawtimber, and <10% large sawtimber (DeGraaf et al. 1992:17).

Ideal Watershed Cover: Multi-layered Protection Forest

- Vigorous and diverse
- *Actively reproducing*
- Accumulating biomass, assimilating nutrients
- Regulating temperature and decomposition
- Deliberately patterned
- *Resistant* and *resilient*





DCR's Forestry Vision and Implementation

- DCR forests help meet the vision outlined by the 2000 Forest Vision panel in describing the future MA forests:

“There is a better overall balance of forest ages, structures and conditions, with more older forest and more younger forest, thereby providing a greater diversity of habitats and supporting more biodiversity.”



DCR's Current Forestry Vision and Implementation

- Areas where the TSC's advice would be especially helpful:
 - Balancing all the values
 - Managing for complexity and resilience
 - Management of plantations
 - Balancing reserves and various management approaches (uneven age, even age, 105 yr and 150 yr rotations and retention, legacy trees and coarse woody debris)



Forest Resource Management Planning and Implementation

- Planning
 - Ecoregional Assessments - Help guide the development of land management plans for individual state-owned properties; Precursors to Forest Resource Management Plans
 - Characterize current conditions,
 - Identify broad issues
 - Generate and offer a list of goals and recommendations
 - Two completed
 - Berkshire Ecoregions
 - Lower Worcester Plateau



Forest Resource Management Planning and Implementation

- There are four approved science based, peer reviewed, plans that incorporated stakeholder input
 - Central Berkshires (January 2007)
 - *Southern Berkshires (November 2008)
 - *Northern Berkshires (November 2008)
 - *Western CT Valley (November 2008)

*No new harvesting projects since the plans were approved



General Management Regimes

- Northern Berkshires Management District
 - **Forest Reserves** 11,899 acres 29%
 - Dominated by natural processes, set aside from active forestry
 - **150 year rotation** 14,384 acres 35%
 - Areas adjacent to Reserves and recreational areas
 - Very Large Trees, high structural diversity, uneven age management in Northern Hardwoods
 - **105 year rotation** 14,384 acres 35%
 - Large Trees maintained, establish early successional habitat, and young forest
 - Conifer, mixed conifer/hardwood, other hardwoods
 - **Intensive Recreational Use** 438 acres 1%
 - Manage for Public Safety and Aesthetics



Treatment and Non-Treatment

- Northern Berkshires Management District
 - Total Acres 40,953 acres
 - Not Treated
 - Forest Reserves 11,899 acres (29%)
 - Intensive Use Recreation 438 acres (1%)
 - Annual Treatments
 - Uneven Age Management 32 acres
 - Shelterwood Establishment Regeneration 57 acres
 - Removal of Overstory with Reserves 57 acres
 - Thinning* 304 acres
 - TOTAL ANNUAL TREATMENTS 450 acres (1%)

*Based on all stands within active management areas that are overstocked.



Planned Harvest compared to Annual Growth

- Annual Forest Net Growth (MA CFI) Compared to Harvest Ceiling
 - Northern Berkshires
 - 5,718 MBF*
 - 1,364 MBF Maximum Harvest per FRMP
 - 25 % of annual net growth
 - Central Berkshires
 - 6,876 MBF
 - 2,757 MBF Maximum Harvest per FRMP
 - 40% of annual net growth
 - Southern Berkshires
 - 7,685 MBF
 - 1,946 MBF Maximum Harvest per FRMP
 - 25% of annual net growth
 - Western CT Valley
 - 5,630 MBF
 - 1,375 MBF Maximum Harvest per FRMP
 - 24% of annual net growth

* MBF = Thousand Board Feet

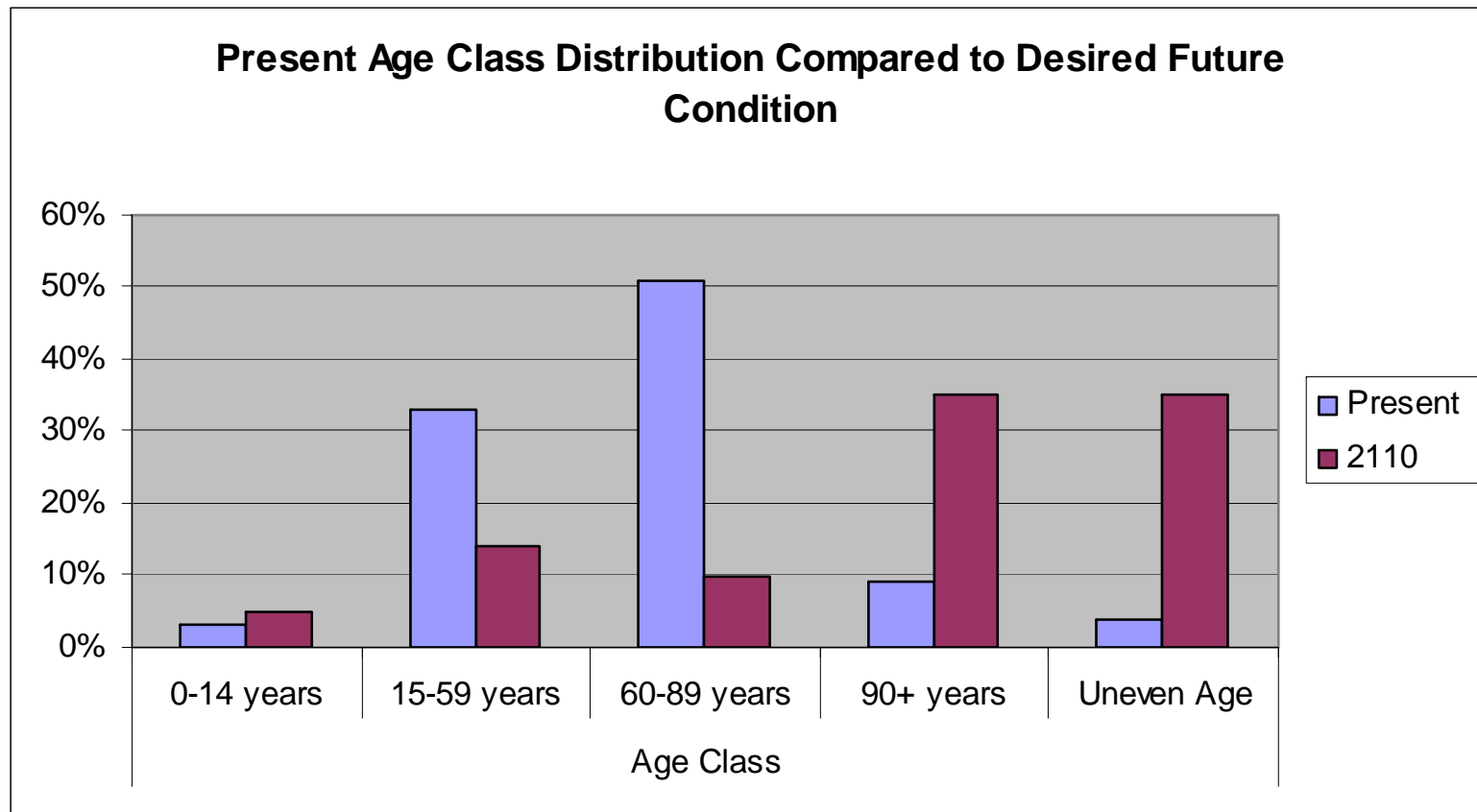
Present Conditions and Vision Results 2110

□ Northern Berkshires

	Age Class				
	0-14 years	15-59 years	60-89 years	90+ years	Uneven Age
Present	3%	33%	51%	9%	4%
2110	5%	14%	10%	35%	35%

Present Conditions and Vision Results 2110

□ Northern Berkshires





Economic Benefits

- Northern Berkshires Management District
 - Estimated annual *maximum* revenue \$265,000

- 1998 – 2008 All Districts
 - ≈ \$1 million of goods, services and improvements returned to DCR property through timber sale contracts



Implementation

- **Current Policy**

- <http://www.mass.gov/dcr/stewardship/forestry/docs/Final%20Public%20Notification%20Policy.pdf>

- Stands are selected from a pool of possible silvicultural possibilities
 - GIS Analysis
- Timber Harvest Proposal Summary - Posted on Website twice per year
 - Identifies initial ideas and issues
- Initial Public Comment Received
- Public Meetings twice per year in conjunction with proposed projects
- Site visits for public viewing
- Data Collection including Review by Natural Heritage
- Silvicultural Prescription
 - Reviewed and approved by Program Supervisor
- Forest Cutting Plan
 - Reviewed and approved by Program Supervisor



Implementation

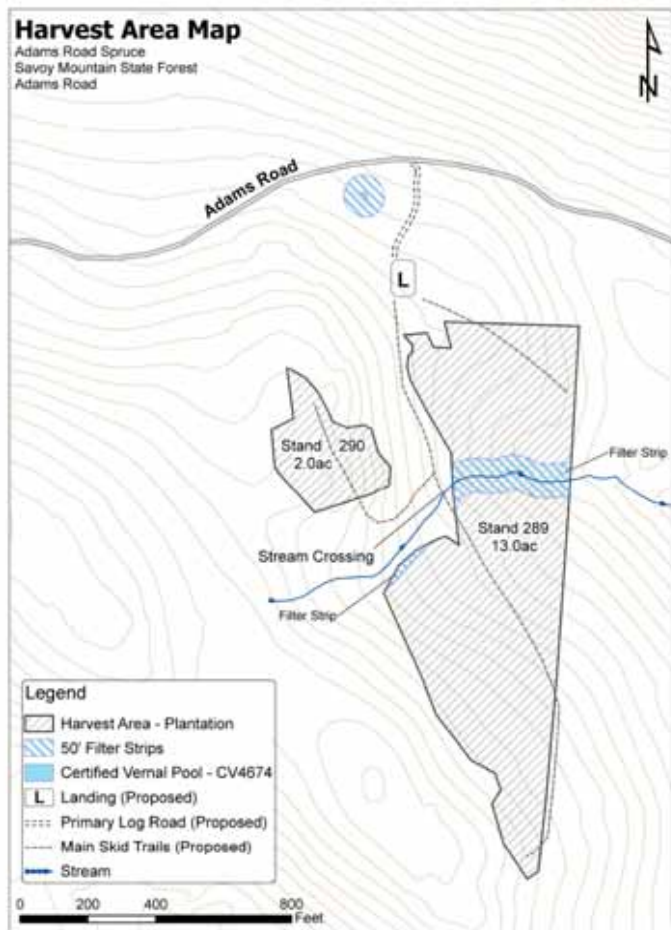
- New Policies
 - Public site visits to all proposed projects
 - High standards for silvicultural prescriptions (see *Silviculture Narrative Model*)
 - “stand exam” data collected and reported; basis of prescription
 - Understory vegetation surveys
 - All projects receive on the ground Natural Heritage Review
 - High standards for harvesting
 - New contract specifications
 - Harvesting equipment fits silviculture
 - Oversight and Documentation premium
 - Regular Inspections and Inspection Reports

Silvicultural Prescription Components

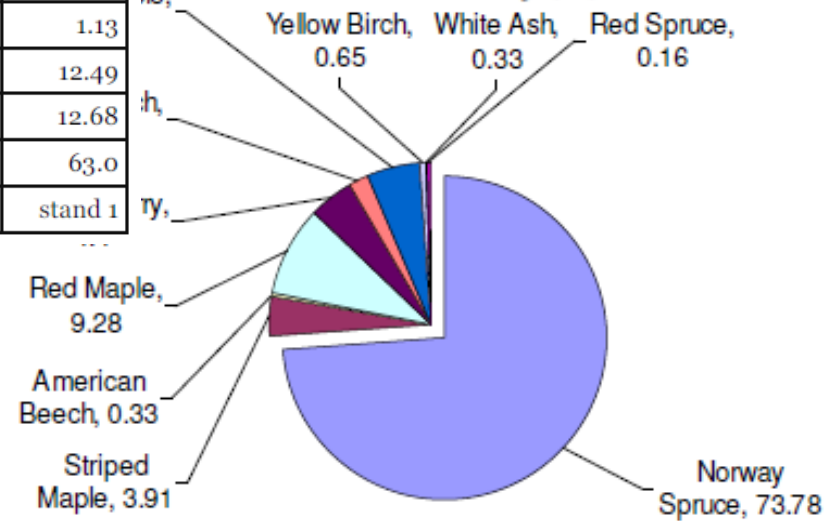
Stand Variable List

Variable	Value
Average dbh (in)	11.91
Average Merchantable dbh (in)	14.24
Basal area (sq.ft/ac)	174.0
Basal area of AGS (sq.ft/ac)	99.0
Basal area of UGS (sq.ft/ac)	75.0
Canopy closure (% closure)	63
Board-foot volume (bd.ft/ac)	22860.39
Net cord volume (cords/ac)	48.3
Net tons (tons/ac)	96.7
q factor	1.13
Quadratic mean dbh (in)	12.49
Average Merchantable dbh (in)	12.68
Relative density (%)	63.0
Stand ID	stand 1

APPENDIX C – Harvest Area Map



Understory Species Composition
Relative Density (%)





Timber Sales

- Sale preparation is per the Prescription
- Trees to harvest are designated/marked for cutting
- Logging System must fit the Silviculture
 - Primary skid trails designated and made “contractual”
- Timber value is appraised
- Minimum acceptable bid established
- Advertised to Public
- Sale awarded to highest qualified bidder
 - Licensed harvester
 - Deposits and bonds are submitted



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