

## Forest Management on DCR Lands

The following provides background about the Department of Conservation and Recreation's (DCR) forestry practices and responds to recent criticism of forest cutting on DCR lands:

- What are the greatest threats to the forests of the state and what is DCR doing about them?
  - Conversion of forests due to development and invasive species and climate change impacts are the three greatest threats to our forests. Nearly 2/3 of the harvesting that occurred in MA was due to land clearing for development (from 1985-98 approximately 98,000 acres of forests were lost to residential and commercial development). Development not only permanently destroys forest but it also “fragments” the habitat value of the remaining forests. For example, an extensive inventory by the USDA Forest Service found that nearly 75% of the hundreds of forest inventory plots were within ¼ mile of development. Invasive species continue to spread to even the most remote forests, at times reducing native species and in the case of invasive pests, threatening entire species of trees (for example the Asian Long Horn Beetle). Climate change is putting all our forests under increasing stress with some entire forest ecosystems expected to go through drastic species composition changes (such as spruce and northern hardwood forests). Forests will be further stressed by seasonal temperature and precipitation changes.
  - DCR has been actively purchasing land for conservation for many decades. For example, last year DCR purchased over 3,800 acres of land, mostly forests. Since 2002, DCR, the Department of Fish and Game (DFG), the Executive Office of Energy and Environmental Affairs (EEA), municipalities and land trusts have protected nearly 200,000 acres, mostly forest, from development (nearly 4% of the state).
  - DCR has worked with the Department of Agricultural Resources (DAR) and a team of non-profits to find ways to remove invasive species threats from our forests.
  - DCR Forest Resource Management Plans take the latest research on climate change mitigation and adaptation into account. Nearly all of the recent criticism of DCR forest cutting centers on the removal of non-native Norway Spruce and Red Pine plantations (grown from nursery seedlings planted every 8 feet or so around the 1930's) to allow for native regrowth of mixed northern hardwood, spruce, pine forests. These young, native forests offer an important wildlife habitat that is increasingly rare in Massachusetts and will add diversity to the forest – an important component in emerging climate adaptation research.
- Why cut trees on DCR lands?
  - Provide a greater diversity of native wildlife habitats. Due to land clearing prior to DCR's acquisition of the land in the early 1900's, most DCR forests are about 80 years old and the addition of some areas of younger, older and multi-aged forest would help greatly to increase biodiversity. Statewide the percentage of “sapling-seedling” cover has gone from 40% in 1950 to just 4% in 1998 – these young forests are important habitat for

a long list of wildlife species. For example, over 50% of vertebrate wildlife species use young forests to meet part of their annual habitat needs and 20% of these species use young forests to meet most of their annual habitat needs;

- Restore “plantations” where non-native species were planted every 8 feet or so around the 1930’s (often by the Civilian Conservation Corps Program) to natural forests. The state owns about 8,000 acres of these plantations of which 7,300 are managed by DCR. DCR has, by far, the largest collection of these non-native forest plantations in the state. Trees in plantations all came from the same nurseries and have nearly identical genetic makeup. After seedlings grow and the forest canopy “closes”, growth slows dramatically without thinning. As few of these forests were thinned, these dense, stagnant forests became susceptible to wind, ice and disease damage. Most of the controversy on DCR forests involved the removal of the most damaged and diseased of these plantations in clear cuts. In the future, thinning and shelterwood cuts (where a shelter of overstory trees remains for 10-20 years while the new forest is established) will be used except where disease or storm damage requires larger salvage harvests. Clear cuts will only be recommended where disease and damage limit other options and only after a public tour of the site. Artificially planted, non-native forests have been a challenge for other land managers – more than 2,000 acres of such plantations were removed from the Quabbin, Ware and Wachusett watersheds in the 1980’s and Harvard University is currently recommending the removal of its plantations to allow the growth of new forests of native species at its forest in the central part of the state;
- Improve the quality and growth of the forest – for example state lands have higher volumes of trees per acre and better quality of trees than private forests due to more consistent forest management. This past DCR management has already significantly increased the stored carbon on DCR lands when compared to private forests. Continuing good management will help continue this trend;
- Provide “in kind” services from forest cutting such as payments to local towns, removal of invasive species, removal of hazardous trees, repair of hundreds of miles of woods roads and trails, installation of gates and vehicle barriers, and supply of wood products to local economies (each dollar paid to DCR can potentially be multiplied by 20 or more times as trees are harvested to make products like flooring for local firms). Locally produced forest products create significant numbers of jobs in rural communities (although not on a statewide measure) and reduce the carbon footprint greatly vs. importing products from afar. For example, wood imported from Quebec (where much of our wood products are produced) uses four times more diesel fuel as part of its carbon foot print when compared to MA produced forest products;
- Is the type and amount of forest cutting on DCR lands appropriate?
  - Recently approved Forest Resource Management Plans for the DCR forests in the Berkshires recommend cutting at similar levels to those carried out at Quabbin Reservoir lands over the past 40+ years. Quabbin is often used as a model for forest management in the Northeast. From 1960 to 2000 the volume of the standing forest at Quabbin increased

by a factor of four. During this time, the quality of the trees increased, wildlife habitat diversity increased and carbon storage quadrupled. Also during this time, foresters oversaw 1,000 sustainable cutting operations which brought 130 million board feet of wood to our local economies, employing over 100 persons directly and several hundred more in the manufacture of Quabbin wood products.

- Comparisons of the numbers of acres where harvesting occurred on DCR lands show that harvesting in the 2000's was greater than the 1990's (when DCR foresters completed an extensive forest inventory of the 280,000 forest and did little management). However, harvesting in the 2000's is less than the 1980's.
- Current forest harvesting occurs under much greater scrutiny than in the 1980's including:
  - Forest Resource Management Plans give clear guidance standards and limits for all harvesting to minimize impacts and assure that cutting does not exceed growth (last year DCR cut only 10-20% of the forests' growth);
  - Forest Reserves (where no commercial forestry will occur) have been dedicated on 22-29% of DCR lands where plans have been completed in the Berkshires and Western Connecticut Valley;
  - Each proposed harvest is posted on DCR's web site for public review;
  - Rare species conservation management practices have been completed for ten rare species by Natural Heritage and Endangered Species Program staff with review and consultation by the public;
  - Harvest sites are surveyed for rare species and natural communities by qualified biologists;
  - Harvesting on forests without Forest Resource Management Plans is only done under very limited circumstances such as to address immediate public safety concerns;
- Why does DCR do "clear cutting" and what is "even aged management"?
  - There are basically two types of forest harvests – thinning and regeneration cuts. Thinnings remove about ½ of the trees evenly throughout the forest focusing on removing the diseased and suppressed trees so that the remaining trees will grow faster and remain healthy. Regeneration cuts remove trees in groups to create openings for light to reach the forest floor, stimulating a variety of new seedlings to become the next forest.
  - Regeneration cuts can be "uneven aged" or "even aged". Uneven aged forestry creates small openings encouraging tree species that need little light such as sugar maple and beech. Even aged forestry brings more light to the forest by removing more than half of the trees evenly throughout the forest (shelterwood) or in patches where nearly all the

- DCR has the highest percentage of its state lands “green certified” by the Forest Stewardship Council (FSC) when compared to the 9 other states that have some lands certified and the many other states that tried and failed to achieve certification.
- FSC Certification has the highest standards of any “green certification” system. EEA sought this certification as a way to have experts with peer-reviewed criteria audit the forestry programs. The implementation of these recommendations has resulted in a better land management program;
- FSC Certification cost EEA \$130,000 for 5 annual audits by a team of experts that visited dozens of harvest sites;
- EEA funded projects related to implementing recommendations of the expert team that totaled over \$2 million over the past 5 years and included projects required to achieve good forest management such as forest inventories, forest mapping, eco-regional forest assessments, forest resource management plans, boundary marking, forest road and trail inventory and repair, rare species inventories and best practices, etc.
- FSC Certification for DCR forests has been supported by the major environmental organizations in MA.

What are laws govern management of DCR forests?

- There are at least 5 laws that govern DCR forest management. They include:
  - two state forest and forest cutting laws from the 1930’s and 1940’s that require DCR to reforest areas and provide a continuing and increasing supply of forest products for public consumption;
  - a 1958 law pertaining to parks and reservations that would balance forest management with preserving these areas in their natural state;
  - two laws passed in 2003 that require management plans be done that are consistent between “recreation, resource protection and sustainable forestry” and sets DCR’s duties to “perform forest management practices, reforestation, development of forest or wooded areas under the control of DCR”.