

7 Public Involvement: Public Review and Comments

Public input is an integral part of the development, refinement, and final release of the Quabbin Reservoir Watershed System: Land Management Plan 2007-2017. The Division worked closely with the Quabbin Watershed Advisory Committee (QWAC) in all stages of plan development; QWAC unanimously voted to approve the plan. The general public has been given several opportunities to read through the plan and provide comments. An initial public meeting was held in May 2005 to provide information and to solicit input on the planning process. Copies of the draft plan were distributed to watershed libraries and the document was also available online for two months. A well-advertised public meeting was held July 12th, 2007 at the Quabbin Visitor's Center to present the draft plan. Public comments were submitted during the public hearing as well as in writing through the U.S. mail and a dedicated e-mail address.

The Division received many thoughtful and helpful comments from a variety of individuals and organizations. Every comment was read and carefully considered. These comments were very useful and improved the quality of the plan. Because so many comments were received, it would be tedious to specifically address each one in this summary. Certain themes or topics, however, appeared regularly in the comments. These topics are presented below in a form that incorporates the questions or comments of several different reviewers; the Division's responses follow in italics.

1. There was concern from several reviewers about the growing moose population in Massachusetts and its impact on the current and future forests of Quabbin. Several reviewers thought existing moose populations were causing damage to the Quabbin forest and were likely to have significant impacts in the future. Some recommended developing a plan to deal with moose, including options to control populations.

Moose populations, both locally and statewide, have been a topic of internal discussion for several years. The Division recognizes the potential impacts a large, unregulated herbivore with essentially no natural predators can have on a forested landscape. As a result, the Division has taken many steps to gather information on local populations and to participate in moose related activities including:

- a. Funding moose related research.*
- b. Testifying to legislators about the potential impact of moose on water supply protection forests (moose in Massachusetts are currently protected and cannot be harvested).*
- c. Conducting several different surveys to estimate moose populations (specifically section 5.4.4.5.3 in the land management plan).*

In addition, the Division continues its ongoing efforts to monitor regeneration across the watershed. The most recent regeneration surveys indicate that regeneration is responding well. There is anecdotal evidence to suggest that localized browsing by moose can be heavy. While the Division is concerned about browsing (from deer and moose), browsing pressure is not yet great enough to stop DCR from conducting regeneration cuts. The Division also recognizes that if moose management is not addressed in the near future, the population could reach a point where it will reduce regeneration to an unacceptable level. If regeneration fell below this level, the Division would reevaluate its forest management approach.

The Division will continue to monitor moose populations using a variety of survey techniques. In addition, our efforts to monitor regeneration will continue. Finally, the Division will strongly support any legislation that allows moose to be managed as a game species. If and when moose become an unprotected species that can be harvested, the Division will begin to evaluate how and when a moose management plan might be applied to Quabbin.

- 2. A couple of reviewers expressed concerns about existing and potential threats to the forest, including Hemlock Woolly Adelgid. They questioned whether the Division’s proposed forest management strategy was enough to respond to these threats.**

In addition to the threat of the Hemlock Woolly Adelgid, this watershed forest is threatened by a wide variety of other exotic and native insect pests, invasive plant species, new and long-standing diseases, extreme weather events, and changes in climate, all of which are acknowledged in the plan. As described in the current and previous land management plans, it is the Division’s belief that the best possible preparation for these threats is to develop and/or maintain forest diversity – in species composition, age classes, and structure. This is the primary objective of the forest management strategy described in the plan. While altering these landscape level threats is beyond the realm of possibilities for Quabbin’s managers, pre-conditioning the forest to be more resistant to them and more resilient following their arrival is a fundamental obligation of watershed forest management and one taken very seriously by the Division.

- 3. Several reviewers voiced their concerns about the Division’s approach to forest management, including the allowance of larger patch cuts (up to 2 acres in Zone 3 with a small percentage of cuts > 2 acres). Further, questions were raised about maintaining tree species diversity, the aesthetics of larger patch cuts, and what some felt was a “cookie cutter” style of forest management.**

The new Quabbin land management plan does provide foresters a wider range of silvicultural options by allowing larger (up to 2 acre) patch cuts than were allowed in the previous plan (which allowed openings up to 1 acre for most of the cutting). Although larger patch cuts are allowed, this plan emphasizes the importance of diversity. Therefore, a wide range of silvicultural treatments will be applied across the landscape, dictated by site and stand conditions, the zone in which the cutting takes place, and what landscape features are present.

Tree species diversity is an important component of a watershed protection forest. To some extent, the forests at Quabbin in the future will be influenced by ecological changes (weather, disease, insects, etc.). The Division’s goal has always been to develop and maintain a diversity of long-lived tree species that are well suited to each site. Furthermore, the Division has stated its intent to develop species diversity in the regeneration of the parts of the forest that were previously under heavy browsing pressure by deer, and that this diversity should mimic the diversity that exists in areas that have been continuously hunted. To accomplish this goal, the Division implements a wide range of silvicultural techniques across the forest, with a range of results from those that meet objectives to situations that require further silvicultural adjustments. Some areas that had regenerated during moderate to high deer levels are dominated by species that are not preferred browse, including white pine and black birch. In addition, the Division has committed to increase post-harvest monitoring of forestry lots. This monitoring will allow the Division to more thoroughly track regeneration progress over time and provide more complete information on species diversity.

It is important to understand that the condition of all forests, either recently harvested or unmanaged, is constantly changing. While newly regenerated forests often have a “messy” or sparse look, this appearance changes rapidly. Within a few years, these patches are filled with regenerating trees, brambles, and forbs. In addition, the Division will often leave groups of trees in place in larger cuts, either because they contain exceptional trees that foresters want to save or to provide ecological benefits. These small reserves often add to the aesthetic appeal of a patch cut.

- 4. How do you decide where you are going to cut and what type of silvicultural treatment to prescribe?**

Where the Division cuts is determined primarily by stand conditions. Priority is given to stands that lack species and/or structural diversity (e.g. plantations), are at risk of not surviving another 10 years (usually due to insect and disease problems), contain non-native species, or have a declining overstory and delayed regeneration. These stands lack structural and species diversity and do not provide the best watershed cover. Consideration is also given to stands that have advance regeneration or stands that are dominated by low vigor or poor quality trees and can be improved through silvicultural treatments.

The amount of acreage in the managed Quabbin forest that meets one or more of the above conditions is far greater than what the Division has set as a goal (to regenerate about 400 acres annually for the next decade). Therefore, the Division utilizes a system that prioritizes stands to be treated and insures that harvesting will be interspersed throughout the watershed. This system divides the watershed into units that are easily located on the ground. Ten percent of these units will be inventoried every year to help prioritize which stands need treatment the most. Some of the inventory information can be obtained from recent aerial photographs, but information is also obtained from the forester's knowledge of the area. Based on this inventory, 10% of that particular unit (1% of the managed forest area) will be regenerated. After 10 years the entire managed forest will have been inventoried, and if the management objectives remain the same, the process will start over.

Another restriction that could impact the harvest location is the 25% limitation within subwatersheds (Section 5.2.3.2). This restriction stipulates that not more than 25% of any subwatershed will be harvested within a 10 year period. While these guidelines will dictate where and when harvesting takes place during regular operations, a large natural disturbance could alter these management plans.

The silvicultural prescription is also based on stand conditions and the self imposed limits of the Quabbin zoning system. Older stands are generally better candidates for a regeneration type harvest, while younger stands are more suited for an intermediate type harvest. Intermediate cuttings are a combination of thinning and timber stand improvement work.

There are a number of silvicultural techniques to choose from in each zone ranging from single tree selection to full overstory removals greater than 10 acres, depending on which zone the proposed cutting overlaps (5.2.3.3.2). In the larger openings, reserve trees can be retained to provide residual structure and aesthetic appeal. In stands where advance regeneration is lacking but desired, shelterwood and seed tree techniques may be used to regenerate the openings.

Ultimately, the type of regeneration harvest that is applied will depend on overstory and understory type, amount of advance regeneration, soil type, desired species composition for regeneration, as well as concerns about water quality, wildlife, cultural resources, and aesthetics.

5. What types of logging equipment are used at Quabbin? How do you decide what type of equipment is allowed in each forestry lot, and are certain types of equipment excluded?

While many types of logging equipment can be used at Quabbin, some timber sales do have site-specific equipment restrictions to reduce negative impacts. For example, forestry lots that involve a corduroyed wetland crossing may be restricted to a forwarder transport system because the forwarder is less likely to disturb the wetland crossing. Similarly, lots that are limited to small landing sites or lots that can not accommodate straight skid roads are sometimes restricted to forwarders only. Some equipment restrictions are also imposed by the State Archeologist to protect cultural resources or are the result of guidelines in the Forest Cutting Practices Act for harvesting in filter strips. In areas with moist or mesic soils, restrictions may be imposed to exclude heavy equipment or equipment with small tires in order to prevent rutting in the soft soils.

While matching equipment to site conditions can help reduce negative impacts to the site, sometimes utilizing a skilled, conscientious equipment operator can have the most dramatic impact. For example, on sites with advance regeneration, using a cable skidder with a skilled operator who can directionally fell trees and pull the cable through the regeneration may often do less damage than a more mechanized operation. However if the operator cannot or will not directionally fell trees or pull cable through the regeneration, then the more mechanized operation may have less impact.

6. Invasive plants were mentioned by different reviewers as being a potential problem throughout the Quabbin. Specifically, they were concerned about invasive plants in relation to disturbance from forest management, and wanted to know how the Division approached invasive species and their control.

Invasive plants (and animals) are a nationwide problem and are pervasive throughout Quabbin and Massachusetts. It is important to recognize that invasive plants would be here with or without forest management. However, logging activities can accelerate the spread of invasive plants by altering site conditions that favor invasives, mechanically spreading invasive plants or seeds, or disturbing the area around existing populations of invasives and encouraging their spread. The Division is acutely aware of the potential impact of invasives on forest regeneration and management. In order to address these concerns, the Division will develop and formalize an invasive species management plan over the next year. This plan will clearly state what types of control methods will be utilized, prioritize how and where invasive populations will be tackled, and address the issue of forest management and its role in invasive species issues.