

**Forest Management and Stump-to-Forest Gate Chain-of-Custody  
Certification Evaluation Report for the:**

**Commonwealth of Massachusetts  
Executive Office of Energy and Environmental Affairs**

**Conducted under auspices of the SCS Forest Conservation Program  
SCS is an FSC Accredited Certification Body**

**CERTIFICATION REGISTRATION NUMBER  
SCS-FM/COC-00047N (Expired 4/10/09)**

**Submitted to:**

**The Commonwealth of Massachusetts  
Boston, Massachusetts, USA**

**Date of Field Audit: 6-10 April 2009**

Date of Report: Draft July 19, 2009  
Finalized with Major CARs: August 4, 2009  
**Certified: Expired**

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## **Organization of the Report**

This report of the results of our evaluation is divided into two sections. Section A provides the public summary and background information that is required by the Forest Stewardship Council. This section is made available to the general public and is intended to provide an overview of the evaluation process, the management programs and policies applied to the forest, and the results of the evaluation. Section A will be posted on the SCS website ([www.scs-certified.com](http://www.scs-certified.com)) no less than 30 days after issue of the certificate. Section B contains more detailed results and information for the use of the Commonwealth of Massachusetts, Executive Office of Energy and Environmental Affairs.

## **FOREWORD**

Scientific Certification Systems, a certification body accredited by the Forest Stewardship Council (FSC), was retained by the Commonwealth of Massachusetts, Executive Office of Energy and Environmental Affairs to conduct a certification evaluation of its 550,000 acre forest estate managed by the principal agencies of the Executive Office of Energy and Environmental Affairs: the Department of Conservation and Recreation (DCR)- Bureau of Forestry (BOF); DCR- Division of Water Supply Protection (DWSP); and the Division of Fisheries and Wildlife (DFW). Under the FSC/SCS certification system, forest management operations meeting international standards of forest stewardship can be certified as “well managed”, thereby enabling use of the FSC endorsement and logo in the marketplace.

In April 2009, an interdisciplinary team of natural resource specialists was empanelled by SCS to conduct the evaluation. The team collected and analyzed written materials, conducted interviews and completed a 5-day field and office audit of the subject property as part of the certification evaluation. Upon completion of the fact-finding phase of the evaluation, the team determined conformance to the 56 FSC Criteria in order to determine whether award of certification was warranted.

As detailed below, certain pre-conditions (also known as Major Corrective Action Requests) were stipulated by the audit team. Major CARs must be addressed and cleared by SCS prior to issuing the certificate. In the event that a certificate is awarded, Scientific Certification Systems will post the public summary of the report on its web site ([www.scscertified.com](http://www.scscertified.com)).

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## SECTION A- PUBLIC SUMMARY AND BACKGROUND INFORMATION

### 1.0 GENERAL INFORMATION

#### Reduction in Assessment Scope

The principal agencies under this certificate are the Department of Conservation and Recreation (DCR)- Bureau of Forestry (BoF); DCR- Division of Water Supply Protection (DWSP); and the Division of Fisheries and Wildlife (DFW). In April 2004, the Executive Office of Energy and Environmental Affairs was awarded FSC-endorsed forest management certification (with Corrective Action Requests- CARs) for the lands managed by these agencies. CAR 2004.1 issued at award of certification required the State to complete management plans covering all properties within the scope of the certificate. At the time of the April 2009 recertification assessment, significant areas of DFW and BoF forests are not covered by an approved forest management plan (i.e., CAR 2004.1 was only partially completed). Pursuant to FSC protocol<sup>1</sup>, and as part of the re-certification assessment process, SCS narrowed the scope of State lands that are potentially eligible for FSC certification to only DWSP lands and those BoF and DFW districts/regions with finalized forest management plans.

As such, this report covers the following lands:

- All DWSP Properties (Sudbury, Ware, Wachusetts, and Quabbin)
- DFW properties in the Taconic Mountains (6,476 ac) and Berkshire Highlands (37,609 ac) Forest Management Zones (FMZs)
- BoF properties in the Northern, Central and Southern Berkshire Management Districts, and Western CT Valley District

Prior to the possible award of a certificate for this reduced area, the BoF and DFW must notify and consult with stakeholders about reducing the area for which they are seeking certification (Major CAR 2009.4). Properties removed from the scope can only be certified again following a focused certification assessment to ensure compliance.

Furthermore, the reduced scope of the assessment now triggers *FSC Policy 20-002, Partial Certification*, which requires SCS to assess whether severe non-conformances are occurring in the portions of the State's forestland outside of the scope of the certification assessment. See Section 1.3.2, below.

#### 1.1 FSC Data Request

Applicant entity	Commonwealth of Massachusetts
Contact person	Bob O'Connor
Address	Executive Office of Energy and Environmental Affairs, Suite 900, 100 Cambridge Street, Boston, MA 02114-2119
Telephone	617-626-1170

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<sup>1</sup> The appropriate protocol for this situation was confirmed in a discussion between SCS and the Acting Managing Director, Accreditation Services International (the accreditation unit of FSC) on May 15, 2009.

Fax	617-626-1351
E-mail	<a href="mailto:Robert.Oconnor@state.ma.us">Robert.Oconnor@state.ma.us</a>
Certificate Number	SCS-FM/COC-00047N
Certificate/Expiration Date	10 April 2009
Certificate Type	Multiple FMU
Location of certified forest area	
Latitude	42.2352 degrees
Longitude	-71.0275 degrees
Forest zone	Temperate
Total forest area in scope of certificate	(will update when Major CAR 2009.4 is addressed)
Total forest area in scope of certificate which is:	
privately managed <sup>2</sup>	0
state managed	(will update when Major CAR 2009.4 is addressed)
community managed <sup>3</sup>	ha or ac
Number of forest workers (including contractors) working in forest within scope of certificate	Approx. 100
Area of forest and non-forest land protected from commercial harvesting of timber and managed primarily for conservation objectives	50,000 acres of identified reserves
Area of forest classified as 'high conservation value forest'	DFW has identified 11 priority natural communities to delineate as HCVF (Atlantic White Cedar Swamp, Black Ash Swamp, Black Gum Swamp, Floodplain Forest, Spruce-Fir Boreal Swamp, Spruce-Tamarack Bog, Rich Mesic Forest, Yellow Oak Dry Calcareous Forest, Hickory-Hop Hornbeam Woodland, Scrub Oak Shrubland, and Maritime Oak-Holly Forest/Woodland). All polygons of Priority Habitat for rare species associated with closed-canopy forest have also been classified as HCVF by DFW. DFW considers any existing late-seral forest (average age of dominant trees > 150 years) to constitute HCVF due to the paucity of older forests on state wildlife lands. DCR: Division of Water Supply Protection determined that 100% of the water supply protection properties meet the criteria for HCVF.
Total area of production forest (i.e. forest from which timber may be harvested)	(will update when Major CAR 2009.4 is addressed)
Area of production forest classified as 'plantation' for the purpose of calculating the Annual Accreditation Fee (AAF)	0 ac

<sup>2</sup> The category of 'private management' includes state owned forests that are leased to private companies for management; e.g., through a concession system.

<sup>3</sup> A community managed forest management unit is one in which the management and use of the forest and tree resources is controlled by local communities.

Area of production forest regenerated primarily by replanting <sup>4</sup>	<5%
Area of production forest regenerated primarily by natural regeneration	>95%
List of main commercial timber and non-timber species included in scope of certificate (botanical name and common trade name)	pine, spruce, maple, oak, hemlock, birch, beech, poplar, and all other merchantable species
Approximate annual allowable cut (AAC) of commercial timber	37,000 MBF
Approximate annual commercial timber harvest	(will update when Major CAR 2009.4 is addressed); 5,500 MBF (five year average for state forest lands from 2001-2005); an additional estimated 14,000 MBF from Watershed lands
List of product categories included in scope of joint FM/COC certificate and therefore available for sale as FSC-certified products (include basic description of product - e.g. round wood, pulp wood, sawn timber, kiln-dried sawn timber, chips, resin, non-timber forest products, etc.)	Round wood, pulp wood, sawtimber, firewood

## Conversion Table English Units to Metric Units

### Length Conversion Factors

<b>To convert from</b>	<b>to</b>	<b>multiply by</b>
mile (US Statute)	kilometer (km)	1.609347
foot (ft)	meter (m)	0.3048
yard (yd)	meter (m)	0.9144

### Area Conversion Factors

<b>To convert from</b>	<b>to</b>	<b>multiply by</b>
square foot (sq ft)	square meter (sq m)	0.09290304
acre (ac)	hectare (ha)	0.4047

### Volume Conversion Factors

#### Volume

<b>To convert from</b>	<b>to</b>	<b>multiply by</b>
cubic foot (cu ft)	cubic meter (cu m)	0.02831685
gallon (gal)	liter	4.546

1 acre = 0.404686 hectares

1,000 acres = 404.686 hectares

1 board foot = 0.00348 cubic meters

1,000 board feet = 3.48 cubic meters

1 cubic foot = 0.028317 cubic meters

1,000 cubic feet = 28.317 cubic meters

Breast height = 1.4 meters, or 4 1/2 feet, above ground level

Although 1,000 board feet is theoretically equivalent to 2.36 cubic meters, this is true only when a board foot is actually a piece of wood with a volume 1/12 of cubic foot. The conversion given here, 3.48 cubic meters, is based on the cubic volume of a log 16 feet long and 15 inches in diameter inside bark at the small end.

## 1.2 Management Context

<sup>4</sup> The area is the *total* area being regenerated primarily by planting, *not* the area which is replanted annually. NB this area may be different to the area defined as a 'plantation' for the purpose of calculating the Annual Accreditation Fee (AAF) or for other purposes.



As a forest management enterprise located in the Northeast USA Region, management of the forest is subject to a host of local, state and federal regulations. The principal regulations of greatest relevance to public forest managers in the Commonwealth of Massachusetts are associated with the following statutes:

***Pertinent Regulations at the Federal Level:***

*Americans with Disabilities Act*  
*Archaeological and Historic Preservation Act*  
*Endangered Species Act*  
*Clean Water Act (Section 404 wetland protection)*  
*Clean Water Act: National Pollution Discharge Elimination System*  
*Clean Air Act*  
*Coastal Zone Management Program (State and Federal)*  
*Coastal Zone Act*  
*Comprehensive Environmental, Response, Compensation and Liability Act*  
*Federal Safe Drinking Water Act (Source Water Assessment Program)*  
*National Resource Protection Act*  
*National Environmental Protection Act*  
*National Historic Preservation Act*  
*National Wild and Scenic River Act*  
*Native American Grave Protection and Repatriation Act*  
*Occupational Safety and Health Act*  
*Resource Conservation and Recovery Act*  
*U.S. ratified treaties, including CITES and ILO*

***Pertinent Regulations at State and Local Level:***

*Massachusetts Environmental Policy Act*  
*Massachusetts Endangered Species Act*  
*Massachusetts Zoning Act and local zoning ordinances*  
*Massachusetts water supply law*  
*Massachusetts Clean Air Act*  
*Local water supply and aquifer protection bylaws*  
*Mass. Water Management Act*  
*Massachusetts Hazardous Waste Management Act*  
*Massachusetts Oil and Hazardous Material Release Prevention and Response Act*  
*Mass. Inter-Basin Transfer Act*  
*Mass. Areas of Critical Environmental Concern*  
*Massachusetts subdivision control law and local subdivision control*  
*Massachusetts open space tax classifications*  
*Massachusetts Conservation Restriction Laws*  
*Local Open Space and Recreation Plan*  
*Massachusetts Historical Commission regulations*  
*Historic District Bylaws*  
*Scenic Roads Act*  
*Massachusetts Wetlands Protection Act*

*Massachusetts Coastal and Inland Wetlands Restriction Acts*  
*Mass. Chapt. 91 Waterways Program and Great Ponds*  
*Massachusetts Clean Water Act*  
*Massachusetts Stormwater Management Policy*  
*Massachusetts General Law (M.G.L.) Chapter 48 (Fires, Fire Departments, and Fire Districts)*  
*Massachusetts General Law Chapter 30, Sections 61-62 (Environmental Impacts of Projects)*  
*Massachusetts water quality classification and standards*  
*Massachusetts Watershed Protection Act*

***Regulatory Context: State and Local Regulations:***

All forest management on state lands in the Commonwealth of Massachusetts is subject to a variety of Federal and State laws and regulations. Many of these regulations are focused on preventing damage to water and wetland resources, while others protect endangered species and cultural resources, or prevent accidental fire damage.

Given Massachusetts' water resources, the Clean Water Act, Coastal Zone Act and Source Water Assessment Program (required by the Federal Safe Drinking Water Act) have specific application to land management and forestry practices. Massachusetts' laws also provide specific regulation for forestry practices.

Massachusetts General Law (M.G.L.) Chapter 132 addresses forestry practices in the state, including establishing the duties of the director of the division of forests and parks; forestry practices; pest control; management of state forests; land acquisition, sale or exchange; state trails or paths; forest cutting practices, and other activities.

The Forest Cutting Practices Act (M.G.L. Chapter 132, Section 40-46) and 304 CMR 11.00 require filing of a Cutting Plan for any timber harvest that exceeds 50 cords or 25 thousand board feet, except when clearing for public utilities or highways, maintenance cutting in pastures, cutting for the non-commercial use of the landowner, clearing land for cultivation or pasture, or change of use cutting (e.g., clearing house lots or mining gravel). All of these exceptions remain subject to Chapter 131 and other environmental legislation. The act and regulations apply to harvesting on public or private lands, and address wetland protection, wildlife habitat and endangered species, and provide minimum environmental standards to which all regulated harvests must adhere. Chapter 132 also requires licensing of Foresters and Timber Harvesters who work in Massachusetts. If a Cutting Plan has been filed for a harvest, the harvest is exempt from the procedures required by Chapter 131 (via an agreement with DEP) and is instead subject to wetland and environmental review by the DCR Service Forester assigned to the region.

The Massachusetts Environmental Policy Act (MEPA) seeks to limit or prevent negative impacts on the environment through a review procedure that requires impact reports. Revisions to MEPA regulations, effective July 1, 1998 determined that MEPA review is not required for forest harvesting operations provided that a Chapter 132 Forest Cutting Plan has been filed, with a few exceptions. An Environmental Notification Form (ENF) and other

MEPA review may be required for any non-bridged crossing 1,000 or fewer feet upstream of a public surface drinking water supply for the purpose of forest harvesting activities (bridged crossings do not trigger this review). Forest cutting that occurs in an Area of Critical Environmental Concern (ACEC) without a Cutting Plan (e.g., because less than 25 thousand board feet or 50 cords are to be cut) may be subject to MEPA review if it alters an area in excess of 25 acres.

The Massachusetts Surface Water Quality Standards (314 CMR 4.00) provides additional protection for Outstanding Resource Waters, which are waters with exceptional social-economic, recreational, ecological and/or aesthetic values (such as public drinking water sources). This protection extended to 304 CMR 11.00 cutting practices regulations, for instance by requiring that stream crossings by logging equipment within 1,000 feet upstream of a public water supply must use a temporary bridge or undergo MEPA review.

The Massachusetts Endangered Species Act (M.G.L. Chapter 131A) prohibits the taking of any listed species, and DCR Service Foresters are required to compare a proposed harvesting area on a Cutting Plan to the atlas of listed species habitats provided by the Natural Heritage program, and to contact the program for protection guidelines.

Management activities require environmental permit compliance, soil and water conservation, rare species protection, public recreation opportunities and conservation of historical and cultural resources.

### **1.2.1 Environmental Context**

Approximately 62% of Massachusetts (3.1 million acres) is forested. A total of 84% of the forested area in Massachusetts (2.6 million acres) is classified as timberland, capable of growing timber. The majority of forestland in the state (76%) is privately owned by an estimated 212,600 individuals and enterprises. Massachusetts' natural resources and habitats include beaches, salt and fresh water marshes, vernal pools, mountains and highlands, and coastal plains. The public lands and diverse habitats support a great diversity of trees and plants, as well as animals, including birds, reptiles, mammals, and insects. A recent threat to the health of forests in Massachusetts was the discovery of the Asian Longhorned Beetle (ALB) in August 2008. Since the insect was first detected in the Commonwealth, the U.S. Department of Agriculture has led an ongoing eradication effort in partnership with the Massachusetts Department of Agricultural Resources (DAR), the Massachusetts Department of Conservation and Recreation (DCR), the City of Worcester, and the towns of Boylston, Holden, Shrewsbury, and West Boylston. Through this initiative, known as the Massachusetts Asian Longhorned Beetle Cooperative Eradication Program, state and federal officials removed 18,758 trees – including infested trees and host trees in danger of infestation – in the Worcester area. The beetle is thought to have been introduced to the United States in New York in 1996 via wood packing material shipped from Asia.

### **1.2.2 Socioeconomic Context**

Massachusetts has a population of 6.4 million people, most living in urban communities. The

urban areas of Massachusetts have an estimated 86.8 million trees forming an average urban tree cover of 25.3%. Forest based employment in Massachusetts is estimated to include about 24,000 people. The Department of Conservation and Recreation (DCR), Division of Water Supply Protection (DWSP), Office of Watershed Management (OWM), and the Massachusetts Water Resources Authority (MWRA) currently supply drinking water to 50 communities, 2.2 million people and 5,500 industrial users in the metropolitan Boston area.

There are several forest resource trends that impact forest resource management and planning in Massachusetts. In Massachusetts, privately owned forestlands greatly outnumber and surround public forests. Many privately owned parcels are being divided up and developed, which places additional stress on public lands and makes landscape-scale management increasingly difficult. Because of these challenges, the state has made commitments and taken actions to acquire additional conservation lands over the past five years. These investments include spending \$7 million for land acquisitions in the Quabbin and Wachusett watersheds in 2008 to protect public drinking water supplies. The current land acquisition program, a partnership of the Department of Conservation and Recreation (DCR) and Massachusetts Water Resources Authority (MWRA), calls for the protection of 4,000 acres identified as top priority by DCR. In addition, DFW has purchased over 21,000 acres to conserve habitat over the last 5 fiscal years (FY-2004 through FY-2008), including about 11,000 acres in fee and 10,000 acres of conservation easements. In FY-2009, DFW expects to protect up to 10,000 additional acres, including about 2,300 ac in fee, 3,400 ac in DFW conservation easements, and a 4,300 ac conservation easement with DCR in Fall River, MA.

The conditions of mixed ownerships also necessitate the public land management agencies to invest in boundary surveying and marking procedures to reduce the risk of trespass and encroachment. Since 2004, the public agencies responsible for forest management have been undertaking efforts for boundary surveys with a focus on priority areas. Additional funding is required to increase the rate at which boundary marking is occurring. Additional marking is also needed as new lands are acquired. Sportsmen and women have supported the work of the DFW and efforts to restore and manage natural resources, including hunting and fishing opportunities. Financial support is provided through a variety of state and federal programs, including sporting licenses and license fees.

Forest management on State lands in Massachusetts has become increasingly controversial over the last several years. The two most controversial aspects have been even-aged management (most commonly carried out through clearcut of conifer plantations) and harvesting within State Parks and other properties in the more populated areas of Massachusetts. As part of an effort to address these controversies, DCR recently initiated a visioning/goal setting process called *Forest Futures Visioning Process*.

The key goals identified for the process are:

- 1) *Review the public benefits and values of DCR's forestlands and examine their inter-relationships.*
- 2) *Develop recommendations to ensure forest stewardship on DCR lands in the context of the broader forested landscape is coordinated and implemented consistent with*

- public benefits and values and DCR's legal mandates*
- 3) *Review and identify conditions and criteria under which forest management practices should be prescribed or prohibited on DCR lands*
  - 4) *Develop strategies and processes for continuing to strengthen public dialogue and understanding of forest management principles and practices that support public benefit and values.*

The desired outcomes of the process include:

- 1) *To build a common framework for stewardship of DCR forest lands based on the public benefits and values involved and the productive sharing of information and varying points of view, and*
- 2) *To generate recommendations regarding forest stewardship that are informed by this common understanding, respect public values and are consistent with widely accepted science.*

(Source: DCR Forest Futures Visioning Process, Draft Outline February 4, 2009)

The Forest Futures Technical Steering Committee was formed with input and participation from stakeholders and the general public and is charged with formulating the recommendations. The full visioning process includes public forums and site visits, public opinion surveys, and meetings of an Advisory Group of Stakeholders as well as the Technical Steering Committee. The DCR is the sponsor and convener of the project with the Massachusetts Office of Dispute Resolution and Public Collaboration (MODR) serving as a neutral facilitator. The MODR facilitators serve as independent process managers and are accountable to the sponsor and all other participants for ensuring effective communication and implementation of the public participation process.

### **1.3 Forest Management Enterprise**

The principal agencies of the Executive Office of Energy and Environmental Affairs are the Department of Conservation and Recreation (DCR) Bureau of Forestry (BOF), DCR-Division of Water Supply Protection (DWSP) and the Division of Fisheries and Wildlife (DFW).

The Department of Conservation and Recreation (DCR) is responsible for the care and stewardship of State Forests, Parks, Reservations, Beaches and Recreational facilities across the Commonwealth. DCR manages the public's land and natural resources for many purposes and uses that are broadly outlined in legislation establishing the agency's responsibilities. The Department of Conservation and Recreation (DCR) – Bureau of Forestry (BOF) has responsibility for more than 290,000 acres of state forests, parks and other properties. A total of 7,903 acres managed by the BOF are excluded from the scope of this certificate. The excluded BOF sites that are outside of the scope of this certification assessment include a variety of land types deemed to be incompatible with certification and active forest management, including small, non-forested sites (e.g., dams, beaches, pools, fire towers, churches, boat ramps, etc) as well as lands that were removed in part due to public

concern, including Robinson State Park, Connecticut River Greenway State Park and the Walden Pond State Reservation.

The DCR-Division of Water Supply Protection (DWSP) is responsible for collection and safe storage of the source water, protection of reservoir water quality, and management of the watersheds. The DWSP has responsibility for four watersheds, the Quabbin Reservoir, Ware River, Wachusett Reservoir and Sudbury Reservoir, with a total certified land area of 100,898 acres (excluding water surface area).

The Division of Fisheries and Wildlife (DFW) has statutory responsibility for the conservation of Massachusetts' flora and fauna and is responsible for the stewardship and management of over 139,000 acres of state wildlife lands.

### **1.3.1 Land Use**

The history of land acquisition that has led to the current ownership of State forestland is such that much of this ownership is 60 to 80-year-old forest that resulted from planting programs and abandonment of agricultural lands in the early 1900s. Planted stands of red and white pine are common on DCR lands, as are stands of even-aged hardwoods, often mixed with softwoods. There are, however, pockets of older forest that survived the era of land clearing for agriculture and natural disturbances over the past 150 years.

Massachusetts' forest management is influenced by several land use and landscape trends. The public lands include areas of planted, non-native red pine and Norway spruce that have largely been unmanaged and have generally not been previously thinned. These stands are frequently overstocked (dense), mature, and highly susceptible to mortality from competition for sunlight, water, and nutrients. Some of these stands have suffered heavy damage from forest insects, diseases, and windthrow. Similarly, the majority of DCR's native forests are at least 80 years of age, mature and frequently overstocked. Another significant trend affecting land use is global climate change and the potential for profound impacts on the current species composition of Massachusetts' forests and the habitats they provide. Climate change may increase erratic and extreme weather patterns and increase the severity of threats from invasive species. There are potential climate change related benefits of forest-based carbon sequestration, the reduction of carbon dioxide and greenhouse gas emissions, increased use of renewable materials and energy and formalize policy actions.

Massachusetts's public forests are used for a variety of purposes and serve many public interests, including protection of the drinking water supply, recreation, hunting, tourism, timber and forestry operations and scenic beauty.

Additional information describing the forest ownership and scope of the certificate is included in Sections 1.3 and 1.32. Additional information about management activities is included in Section 1.4 and 1.41.

### **1.3.2 Partial Certification - Land Outside Scope of the Certification Assessment**

The Department of Conservation and Recreation (DCR) – Division of Water Supply Protection has included all of their watershed forestland within the scope of the certification assessment. The Bureau of Forestry (BOF) has responsibility for more than 290,476 acres of state forests, parks and other properties. A total of 154,028 have been excluded from the scope of the certificate. The excluded BOF lands are forests without approved management plans and a variety of land types deemed to be incompatible with certification and active forest management, including small, non-forested sites (e.g., dams, beaches, pools, fire towers, churches, boat ramps, etc) as well as lands that were removed in part due to public concern, including Robinson State Park, Connecticut River Greenway State Park and the Walden Pond State Reservation. The DCR Urban Properties (properties within the metropolitan Boston area) are also outside the scope of certification. The DFW manages a total 128,309 acres of forestland property. Properties without approved plans, covering 84,224 acres, are removed from the scope of this assessment.

In accordance with the SCS Partial Certification Policy, SCS must determine whether the activities in areas within the ownership but outside of the scope of the certification assessment result in failure to comply with the requirements of Criterion 1.6 (Long-term commitment to adhere to FSC). Any of the following “severe” non-conformances constitute failure to comply with Criterion 1.6 and would result in a serious failure by the applicant or certificate holder, relative to FSC Principle 1:

- a) Illegal harvesting activities.
- b) Planting genetically modified organisms (GMO) trees.
- c) Conversion of natural forests to plantation since 1994.
- d) A significant violation of worker or indigenous peoples rights

The SCS audit team verified during this assessment, and during previous assessments over the first term of the certificate, that “severe” non-conformances with Criterion 1.6 are not occurring on any lands managed by DFW or BoF. The fact that BoF and DFW have committed to expand certification (once management planning is complete) to cover most forested properties further demonstrates these agencies commitment to FSC and conformance with Partial Certification requirements.

#### **1.4 Management Plan**

In recent years, the agencies have made significant progress with management plan development and completion of a public review process to gather input to the planning process.

According to the DCR:

*“Prior to 2004, there were no comprehensive publicly reviewed Forest Resource Management Plan standards and no Forest Reserves on Massachusetts’ state lands. [At that time] no surveys for rare and uncommon species were conducted prior to harvesting. There were no Conservation Best Management Practices for rare species, no public notifications of*

*future harvests, no forest vegetative community maps linked to continuous forest inventory data, and no road, trail or recreation inventory and condition surveys guiding the management of DCR DSPR system lands. All of these improvements are a result of DCR's efforts since 2004 to implement better forest management practices."*

From 2004-2006, the Forest Forum, including diverse groups and interests, developed five broad goals for forest management. The goals include: conserve Massachusetts forests from development; sustain the economic viability of forests; strike a balance between working forests and forest reserves; protect forest health and educate the public about forest values and the human connection to forests. These goals have been incorporated into the Forest Resource Management Plans (FRMPs) that have been completed.

The DCR BoF has completed Forest Resource Management Plans (FRMPs) for the Northern Berkshire District, Central Berkshire District, Southern Berkshire District, and the Western Connecticut Valley, which is the current scope of BoF land in the certificate. Plans remain to be developed for the other four forestry districts, which are excluded from the scope of certification. The DCR has also completed the Berkshire Ecoregion Assessment and the Lower Worcester Plateau Ecoregion Assessment.

The DFW currently has publicly-reviewed Forest Management Zone (FMZ) plans developed for the Berkshire Highlands (covers 35 DFW properties representing 34,000 acres) and the Taconic Mountains and Marble Valley (23 DFW properties representing 6,654 acres), which is the current scope of DFW land in the certificate.. There are seven additional FMZ plans to be developed by December 2010, which are excluded from the scope of the certificate.

Management plans for all DWSP properties are covered in the *Quabbin Land Management Plan (2007)*, *Sudbury Reservoir Watershed Land Management Plan (2005)*, *Ware River Land Management Plan (2003)*, and *Wachusett Reservoir Land Management Plan (2001)*. Additional public access plans and subsequent plan updates are available for these watersheds.

#### **1.4.1 Management Objectives**

For DCR BOF managed lands, the Forest Resource Management Plans (FRMPs) are designed to guide the management of forest lands and associated natural resources in the DCR BOF's State Forests, Parks, and Reservations. Under the FRMPs, forest management is conducted as part of an integrated approach to establish long-term sustainable levels for all resources and uses. Landscapes and ecosystems are dynamic systems; accordingly, FRMPs are designed to be adaptable to new conditions and new information.

Many of the objectives of the FRMPs are intended to balance competing interests and values.

Objectives for the FRMPs include:

- Provide direction for the sustainable and integrated management of all natural and



- cultural resources by defining standards and guidelines;
- Determine the location and extent of forest lands to be set aside as Forest Reserves and Active Forest Management Areas;
- Restore and maintain native forests to have a greater vegetative diversity of size and age classes, improved wildlife habitat, and increase resilience to disturbances;
- Balance recreational use and aesthetics enjoyed by Massachusetts residents and visitors with sustainable forest management;
- Manage for multiple ecosystem services such as: water filtration, a steady flow of water to streams and rivers, air purification, and carbon sequestration over the long-term;
- Restore the ecological function of Massachusetts' forest while also meeting today's challenges of forest fragmentation from sprawl development, global climate change, and invasive species;
- Maintain the viability of rare species and their habitat, and provide for the health of native species and vigor of forests;
- Help supply locally produced "green" products and energy and support the sustainable viability of local forest economies; and
- Provide educational opportunities through "leading by example" about forest values and uses.

The hierarchy of forest management planning on DFW lands begins with DFW's statewide "Forest Management Guidelines for Wildlife Management Areas", followed by ecoregion assessments for forest resource issues and opportunities on public and private lands compiled by the Massachusetts Executive Office of Energy and Environmental Affairs. Next, individual FMZ plans provide an assessment of current forest conditions and identify a desired future condition that will achieve DFW's wildlife habitat goals on state wildlife lands. FMZ plans describe forest management and monitoring activities designed to achieve the desired future conditions and monitor the outcome of management activities. FMZ plans identify active and passive management sites on DFW lands. Active management sites provide young forest habitat, enhanced structural attributes (e.g., snags, den trees, and coarse woody debris) and a sustainable flow of wood products. Passive management sites include forest reserves that will conserve elements of biological diversity that are missing from harvested sites, provide biologically mature forest habitat, facilitate assessment of sustainable harvesting practices and provide aesthetic, recreation, and spiritual opportunities. FMZ plans are followed by property level plans (site plans) for one or more DFW Wildlife Management Areas (WMAs), then by Ch. 132 Forest Cutting Plans for actively managed stands within an individual WMA.

The overall goals of the DFW's Forest Management Zone (FMZ) plans include:

- Identify a desired future condition of forest resources that will conserve and enhance native biological diversity on DFW lands within the FMZ.
- Plan forest monitoring and management activities that will support the desired future condition over the next twenty years.

Specific objectives related to supporting these FMZ goals include:

- Evaluate impacts of land use history and natural disturbance process on forest habitat in FMZ.

- Summarize current forest resource conditions on DFW lands in the FMZ.
- Establish forest structure and composition goals that define a desired future condition for the FMZ to conserve and enhance biological diversity.
- Identify active and passive management sites on DFW lands that facilitate achieving forest structure and composition goals. Active management sites support sustainable harvesting operations that provide young forest habitat, while passive management sites include forest reserves that are closed to commercial harvesting to provide biologically mature forest habitat.
- Establish biological monitoring and silvicultural prescriptions for active management sites on DFW lands to achieve forest structure and composition goals. Active management sites support sustainable harvesting operations that provide young forest habitat, while passive management sites include forest reserves that are closed to commercial harvesting to provide biologically mature forest habitat.
- Establish biological monitoring and silvicultural prescriptions for active management sites on DFW lands to achieve forest structure and composition goals, and to facilitate comparisons of monitoring results from reserve lands.
- Establish biological monitoring and passive management prescriptions (e.g., invasive plant control, prescribed fire application, public recreation use) for forest reserve areas.
- Plan spatial and temporal applications of silvicultural prescriptions on active management sites.

The DWSP's Office of Watershed Management (OWM) is responsible for providing 230 million gallons of drinking water a day to the Massachusetts Water Resources Authority (MWRA) for distribution to 2.2 million people in 50 Commonwealth communities. The Quabbin Reservoir and the Wachusett Reservoir are the heart of this watershed system, along with water seasonally diverted from the Ware River. The Sudbury Reservoir system serves as an emergency reserve. The *Public Access Plans* for the watersheds describes the management policies that allow people to recreate while still protecting water quality. The *Land Management Plans* are a thorough description of the watershed's physical features, the natural resources, and the variety of techniques used by the agency to enhance water quality, including land protection and forest and wildlife management. The *Watershed Protection Plan* takes information from the *Public Access Plan* and *Land Management Plan* and integrates monitoring findings and other studies to create an action plan that is the basis for annual work plans and budgeting.

#### **1.4.2 Forest Composition**

*Forest Resources of Massachusetts* (2000) describes the forest vegetation types of Massachusetts as transitioning between the coniferous woodlands of New England and the mixed deciduous woodlands of the Mid-Atlantic States. White pine, hemlock, oak, red maple, and hickory occur throughout the Commonwealth, while beech, birch, sugar and red maple are concentrated in western Massachusetts. Pockets of red spruce and balsam fir are located on high elevations. Pitch pine and scrub oak grow on the dry, sandy soils of Plymouth County, Cape Cod, and the islands. The oak type is the most prevalent association occurring on state forestland – it covers 28% of the state forest acreage. In order of

importance, it is followed by northern hardwood (26%), white pine (17%), and hemlock (11%). The pitch pine/scrub oak and birch/maple types each account for 5% of the total acreage and spruce/fir and wooded wetlands account for 4% of the total acreage.

According to the *Technical Guide to Forest Wildlife Habitat Management in New England* (2007):

“Centuries of human use and natural processes have shaped forest habitats and their wildlife populations in New England. Conditions are never static. Forest and nonforest habitats for a shifting mosaic of New England fauna were once continuously provided by wind, fire, blowdowns, forest regrowth, and other disturbances. This is no longer the case: development of historically open habitats, fire control, and the decline of agriculture have transformed the landscape. Wildlife associated with forests and woodlots—fisher and pileated woodpecker, for example—have become common. Species associated with old fields, brushlands, and young forests—field sparrows, eastern towhees, and New England cottontails, among many others—have declined precipitously as their habitats have been developed or have reverted to forest. Today in much of the region, forests are mature and largely unmanaged, and most are privately owned.”

In response to these changes and the land use history in Massachusetts, ecological restoration of degraded habitats has become an essential task for supporting the conservation of rare species. There is also increased attention to addressing invasive, exotic species that can negatively impact habitat conditions and biodiversity.

### **1.4.3 Silvicultural Systems**

DFW’s management has emphasized regeneration cutting to meet landscape goals for young (early-successional) forest habitat, and reserve establishment to meet landscape goals for late-successional forest habitat. The majority of the regeneration operations are first-entry shelterwood cuts, typically applied in a group-wise pattern that mix establishment and removal cuttings in the same stand and thus encourage horizontal diversity. Under certain conditions (e.g., white pine and un-thinned softwood plantations subject to wind-throw), the creation of early seral habitat is accomplished using a clearcut with reserves approach, and for non-commercial aspen regeneration clearcuts with fewer reserves are established. Intermediate treatments are rarely undertaken due to staffing limitations, but are proposed in order to enhance structural diversity.

DCR – Historically, BOF management is characterized by the traditional application of guidelines found in various silvicultural handbooks published by the U.S. Forest Service. These guides embody a cookbook decision-tree format based on intensive pre-harvest inventory of both overstory and advance reproduction, quantification of relative density according to published stocking guides, and uniformly applied, stand-wide even-aged treatments. Single tree and group selection uneven age management systems are also used in the western districts primarily in the Northern Hardwood type. Treatments in the pitch pine - oak forest type with the objective of ecological restoration are used in the southeast area of

the state with some regularity. Recent management plan revisions call for about 70-80% of areas to be treated with long-rotation even-aged systems (mainly shelterwood with reserves); the remaining areas are treated with multi-aged systems. BOF has just begun an initiative to make their prescription process more comprehensive, less prescriptive relative to outdated guidelines, and more responsive to contemporary concepts of ecological forestry.

DWSP management is characterized by a silvicultural system that attempts to create a finely patterned mosaic of three-aged stands, with the youngest two age classes separated by about 30 years (the nominal cutting cycle). Such a structure is designed to be less vulnerable to localized catastrophic losses from severe hurricanes, accomplished by dispersing the vulnerable older cohorts within a generally younger and less vulnerable matrix. Depending on the size of the regenerated patches, such operations would be characterized as either group selection or group shelterwood cuttings. Since the recent revision of the Quabbin management plan and staff changes, silvicultural systems at Quabbin have become more diverse and utilize a wider range of opening sizes and retention levels than past mgt plans.

#### **1.4.4 Management Systems**

The DCR – BOF administers eight management forestry districts (Northern Berkshire, Central Berkshire, South Berkshire, Western Connecticut Valley, Eastern Connecticut Valley, Mid State, Northeast and Southeast). Each district is further divided into Reserves, Intensive Use Areas and Active Forest Management Areas. These designations are addressed in the Forest Resource Management Plans (FRMPs).

DWSP management includes responsibilities for four watersheds (Quabbin Reservoir, Ware River, Wachusett Reservoir, and Sudbury Reservoir).

The DFW has identified nine ecoregion-based Forest Management Zones (FMZs) that consider multiple DFW properties in a landscape context. Each FMZ overlaps portions of one or two of the five DFW administrative Wildlife Districts, (which are based on town boundaries). Each FMZ also overlaps one or more of the 15 DFW Wildlife Management Zones. Wildlife Management Zones were established using a combination of ecological and socioeconomic factors and are used primarily to manage regulated hunting seasons for white-tailed deer, wild turkey, black bear, and bobwhite quail. Accordingly, these boundaries follow prominent physical features, such as major highways and rivers, which provide obvious boundaries that hunters and environmental law enforcement can recognize.

#### **1.4.5 Monitoring System**

Water quality sampling and watershed monitoring make up an important part of the overall mission of the DWSP. These activities are carried out by Environmental Quality Section staff at Wachusett Reservoir in West Boylston and at Quabbin Reservoir in Belchertown. Annual Water Quality Reports are produced for both the Wachusett Reservoir and the Quabbin Reservoir & Ware River watersheds. These reports detail the results of sampling performed in the tributaries and the reservoirs for bacteria, nutrients, conductivity, temperature, turbidity, algae, hydrogen ion activity and giardia/cryptosporidium. In 2006 the DCR

initiated a moose survey utilizing hunters participating in the annual Quabbin controlled deer hunt. A variety of monitoring reports are available at the DCR website or are available upon request.

In addition to the comprehensive Forest Inventory that was completed from 2004-2007 across DFW lands, individual harvest sites are intensively monitored for plant species composition prior to and after harvest activities so that harvest goals for regeneration of particular tree species and structural habitat conditions can be assessed. DFW is also working with EEA and DCR on long term environmental monitoring on harvested lands and forest reserve lands.

Pre- and post-harvest monitoring activities provide data on occurrence and abundance of plant species in the forest overstory and understory, and emphasize location of both rare and invasive plant species. Vegetation monitoring is conducted by DFW Forestry Program staff and/or qualified ecologists hired as temporary vendors. Harvest site plant survey summaries are available at the DFW website.

The Forest Resource Management Plans developed by the DCR summarize the key inventory, monitoring, and evaluation requirements to include:

- Data on the condition or status of vegetation, cultural resources, rare species, invasive species, boundaries, roads, recreation and uses, etc. should continue to be collected over time;
- Upon completion and five years after completion, all forest management projects should be monitored or sampled for meeting FRMP and “green certification” requirements, effectiveness, and impacts;
- Interim monitoring reports will be completed at year 5 and 10 of the first 15-year implementation cycle and the FRMP will be adjusted if needed.
- Long-term ecological monitoring at the landscape, site and species level, should be continued to evaluate and compare Forest Reserves and areas under active management regimes, in cooperation with the University of Massachusetts and other partners.

#### **1.4.6 Estimate of Maximum Sustainable Yield**

The Annual Allowable Cut (AAC) for DCR BOF lands is estimated at 17,000 MBF; for DFW lands it is estimated at 8,400 MBF, and for DWSP lands it is 20,000 MBF. These estimates include sawtimber, pulpwood and other traditional forest product harvesting.

#### **1.4.7 Estimated, Current and Projected Production**

All of the public agencies are harvesting at levels that are well below their Annual Allowable Cut (AAC). In recent years, total harvest levels on DCR BOF lands have been less than 12% of the AAC. A recent directive to limit harvesting to districts with approved plans has caused this harvest level to decline further. . The harvest level on DFW lands is estimated to

be about 9% of the AAC, and the harvest level on DWSP is about 41% of the AAC.

#### 1.4.8 Chemical Pesticide Use

The use of chemical pesticides on public lands in Massachusetts follows applicable regulations and applicators are required to have the appropriate licenses/permits. State employees participate in the State Pesticide Application Certification program. Pesticide use on state-owned forestlands is uncommon. When pesticides are used in state lands forest management it is most commonly associated with the control of exotic, invasive species and the contract addresses guidance and safeguards. The following chemicals are used for invasive plant control:

DFW Lands	
Brand Name	Active Ingredient
Krenite	fosamine ammonium
Accord	glyphosate
Round-Up Pro	glyphosate
Razor	glyphosate
Glypro	glyphosate
Arsenal	imazapyr
Escort XP	metsulfuron methyl
Garlon 3A	triclopyr
Garlon 4A Ultra	triclopyr

DCR BoF Lands	
Brand Name	Active Ingredient
Razor	glyphosate
Garlon 4 & 3A Herbicide	triclopyr

## 2.0 GUIDELINES/STANDARDS EMPLOYED

As the applicant forest properties are located in Massachusetts, the certification evaluation that is the subject of this report was conducted against the duly-endorsed Northeast Region of USA (Connecticut, Maine, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont) Regional Forest Stewardship Standard Version NE Final v9.0, 2/10/05. The standard is available at the FSC-US web site ([www.fscus.org](http://www.fscus.org)) or is available, upon request, from Scientific Certification Systems ([www.scs-certified.com](http://www.scs-certified.com)).

## 3.0 THE CERTIFICATION ASSESSMENT PROCESS

### 3.1 Assessment Dates

The assessment was conducted between March 6 and May 1, 2009 with the field portion of the assessment occurring April 6-10, 2009.

## **Main Evaluation:**

### **3.2 Assessment Team**

#### **Mike Ferrucci, Co-Team Leader:**

Mike Ferrucci has 30 years of forest management experience. His expertise is in sustainable forest management planning; in certification of forests as sustainably managed; in the application of easements for large-scale working forests, and in the ecology, silviculture, and management of mixed species forests, with an emphasis on regeneration and management of native hardwood species. He has also developed expertise in the conservation of forest biodiversity at multiple spatial scales by founding The Conservation Forestry Network and through his work with the Northern Forest Protection Fund. He is a founding partner and President of Interforest, LLC and is also a Lecturer at the Yale School of Forestry and Environmental Studies.

Mike has conducted or participated in assessments of forest management operations throughout the United States, with field experience in Maine, New Hampshire, New York, Massachusetts, Connecticut, Rhode Island, New Jersey, Pennsylvania, Maryland, West Virginia, North Carolina, Kentucky, Tennessee, Florida, Georgia, Alabama, Mississippi, Missouri, Oklahoma, Minnesota, Michigan, Wisconsin, Montana, Arizona, California, Oregon, and Washington. Mike has been a member of the Society of American Foresters for over 30 years. He is currently Chair of the SFI Auditor's Forum and manages the forestry programs of NSF-ISR including SFI Standard 2005-2009, Tree Farm Certification, and Chain of Custody programs.

#### **Kathryn (Katie) Fernholz, Co-Team Leader:**

Kathryn has worked on development and forest management issues in a range of roles. With a consulting firm, Kathryn was a member of the environmental services department where her work included natural resource inventories, comprehensive planning, environmental impact assessments and the use of Geographic Information Systems (GIS). While working for the Community Forestry Resource Center, Kathryn developed and managed a group certification project for family forests and worked to increase local capacity to provide forest management and marketing services that are compatible with certification standards. Kathryn has been a leader within the forestry community in the Upper Midwest through her service as Chair of the Minnesota Society of American Foresters and her appointment to the Minnesota Forest Resources Council. Kathryn is a member of the Advisory Board for the Blandin Foundation's Vital Forests/Vital Communities Initiative, the Minnesota DNR's Stewardship Committee, and the Forests for the Future Committee. She is a member of the Board of Directors for the Minnesota Environmental Partnership, the Forest Guild, and the College of Food, Agricultural and Natural Resource Sciences Alumni Society. Kathryn has a B.S. in Forest Resources from the University of Minnesota, College of Natural Resources and also studied at the College of Saint Benedict in St. Joseph, MN and Sheldon Jackson College in Sitka, Alaska.

**Robert Seymour:**

Dr. Seymour is the Curtis Hutchins Professor of Silviculture, in the Department of Forest Ecosystem Science at the University of Maine, where he teaches courses in silviculture, the spruce-fir industrial ecosystem, and forest stand dynamics. His research interests include production silvicultural practices, forest canopy structure, and ecologically based silvicultural systems. He has 23 years of experience in research and management of forests in the Acadian region of northeastern North America, and has authored or coauthored over 40 refereed publications and four book chapters. Prior to assuming the Hutchins Professorship in 1987, he worked as the timber management program leader for the Cooperative Forestry Research Unit from 1981-1987. In 1995, along with Mac Hunter, he was named a Conservation Scholar by the Pew Foundation and was awarded a three-year grant to study and write about managing forest biodiversity in the Northeast. He has served on FSC certification evaluation teams for seven landowners in North America totaling over 6 million acres. He holds a B. S. in forestry from Ohio State University, and a Master of Forestry and Ph. D. from the Yale School of Forestry and Environmental Studies.

**JoAnn Hanowski:**

JoAnn M. Hanowski, a former senior research fellow at the University of Minnesota-Duluth's Natural Resources Research Institute is currently residing in Vermont. Her research in Minnesota involved researching the response of birds to various forest management practices in stream and seasonal pond buffers and the development of indicators of forest and water health and sustainability in Minnesota and across the Great Lakes. She was a member of the forest bird technical team for the original GEIS and participated on the wildlife technical team that wrote forest management guidelines for Minnesota. She was also a member of the riparian science technical committee that just completed the investigation on the effectiveness of Minnesota's current guidelines for forest management in riparian systems. She has published 60 peer reviewed journal articles and over 75 reports in her 20 year tenure with the University of Minnesota.

### **3.3 Assessment Process**

#### **3.3.1 Itinerary**

**Monday April 6: Opening Meeting @ John Augustus Hall in West Boylston****Participants:**

Jim DiMaio, DCR Chief Forester  
Herm Eck, DCR Forester III  
Steve Wood, DCR Forester II  
Kristopher Massini, DCR Forester II  
Conrad Ohman, DCR Forester II  
Chuck Perna, DCR Forester II  
Dave Richard, DCR Forester II  
Dan Clark, DCR, Director of Natural Resources  
Thom Kyker-Snowman, DCR-DWSP Environmental Analyst  
Brian Keegan, DCR-DWSP Forester II  
Jonathan McGrath, DFW- Apprentice Forester  
John Scanlon, DFW-Forestry Project Leader  
Derek Beard, DWSP-Forester I



Dennis Morin, DWSP-Forester II  
 Randy Stone, DWSP- Forester II  
 Steven Ward, DWSP-Forester  
 Bob O'Connor, EEA  
 William Hill, State Lands Manager  
 David Goodwin, Asst. State Lands Manager

Audit Team:  
 K.Fernholz  
 M.Ferrucci  
 J.Hanowski  
 R.Seymour

Agenda

8:30 am	Introductions and Review Agenda for Day 1
9:00-9:30	Overview of Audit Process
9:30 -11:00 am	Overview of BoF, DWSP, and DFW programs; questions from the audit team
11:15- 12:30	Review of CARs and pending issues from first-term of certificate
12:30- 1 p.m	Working Lunch
1 – 4:00 p.m	<p><u>Focused discussion on FSC Criteria and Indicators</u>            Breakout groups organized by agency and topics and to include 1 or 2 audit team members and relevant agency personnel.</p> <p>Group 1: Agency Approaches to Public Consultation, Dispute Resolution, and Social Impact Monitoring (Principle 4)            Katie Fernholz, Herm Eck, Dan Clark, Dave Goodwin, John Scanlon, Chuck Perna, Bob O'Connor, Kristopher Massini</p> <p>Group 2: Management Planning and Monitoring (Principle 7 and 8)            Mike Ferrucci, Thom Kyker-Snowman, Brian Keegan, Jim DiMaio, Jonathan McGrath</p> <p>Group 3: Ecological Issues: Identification/safeguard of rare flora and fauna, reserves, HCVP.            JoAnn Hanowski, Randy Stone, Derek Beard</p> <p>Group 4: Harvest regulation, Inventory, and Silvicultural Approaches            Bob Seymour, William Hill.</p>
4:00-4:30 p.m	Finalize itinerary for the week: start times, meeting locations, vehicles Day 1 Wrap-up
6:30- 8:00 p.m.	Public meeting: to be led by Katie Fernholz and Mike Ferrucci (State employees are not permitted to attend)

**Tuesday April 7:**

**Team A (Seymour, Hanowski) - SE District**

**Participants:**

JoAnn Hanowski, Bob Seymour, Jason Zimmer (DFW Southeast District Supervisor), Tim Simmons (DFW NHESP Ecological Restoration Program Coordinator), Benjamin Mazzei (DFW Upland Habitat Program Coordinator), Thom Kyker-Snowman

**DFW Sites**

Site Description	Notes from site visit
Frances Crane WMA, Grassland; Falmouth; Southeast - Southeast Coastal Plain & Islands, SE-FC- UP-1	Forest conversion of red pine hedgerows (5.8 ac) & old field white pine (16.3 ac) adjacent to existing grassland habitat for rare species; Old airport acquired and where many endangered, threatened or rare species have been documented. This area is being managed for grassland/open habitats with a combination of shearing, hedgerow removal and burning. There has been great success in reintroduction and propagation of rare plants. The current plan is to maintain this area in grassland habitat.
Frances Crane WMA South Falmouth Southeast Southeast Coastal Plain & Islands SE-FC-UP-1	Pitch pine/Oak Savannah: This was a recently harvested site where the majority of the overstory was removed. Select pitch pine and oak were retained and the goal is to return the site to a pitch pine/oak savannah habitat. The treatment also reduced the fire fuel loads, a concern for the safety of local residents. The current plan is to maintain this area in pitch pine/oak savannah habitat via periodic prescribed fire and/or mowing. Very little coarse woody debris was left on the site in order to facilitate future prescribed fire.. This site has been identified as an HCVF.

**BoF Sites**

**Participants:** JoAnn Hanowski, Bob Seymour, Thom Kyker-Snowman, Paul Gregory, Bill Hill, James Rassman

Site Description	Notes from site visit
Myles Standish State Forest. Fare Thee Well timber harvest:	This harvest was in a mixed red, white and pitch pine stand and the objective was for ecological restoration of pine/oak savannah habitat and fuels reduction. Most of the overstory was removed from the site and an adequate visual buffer was maintained next to a bike path. The site will be managed for endangered, threatened and rare species that require pine/oak savannah habitat especially several Lepidopterans. Very little CWD was left at the site and an adjacent parcel is mowed to facilitate ring-necked pheasant release and hunting.
2006 SE01-06 Southeast Myles Standish State Forest	Rocking Chair: Shelterwood establishment cut in white pine stand. Noticed residual tree damage mostly along skid trails. Vernal pond location was identified on photo and protection (buffer) had been established.
Review of ATV/OHV work at Myles Standish, Notes from Site Visit: General observations and discussions regarding illegal OHV-ATV use on the forest. We observed several areas where there has been illegal OHV-ATV use. In some recent harvests, attempts have been made to prohibit access by placing large logs and rocks at the entrances and by placing whole dead trees on skid trails. Little or no enforcement is conducted to deter this illegal use on the forest.	
2006 SE02-06 Southeast Freetown-Fall River State Forest	Painted Grouse: Oak salvage harvest site which is a portion of the approximately 1000 acres affected by oak die-off. Most of the oak was removed at the end of harvest because of the severity of the die-off. Pitch pine was left on the site. Because of deer browse, it was indicated that oak regeneration may take a longer period of time than normal and that the site may remain as "brush" for a long time. We observed several small firewood plots that were marked along forest roads. These were harvested by private individuals that applied for a permit. Permits were also available on some sites for private individuals to harvest slash or blowdown.

**Team B (Ferrucci)**

**9:00 a.m. at Bradley Palmer Office- Topsfield**  
**24 Asbury Street, Topsfield, MA**

**Participants:**

John Scanlon	Forestry Project Leader
Jonathan McGrath	Apprentice Forester, Central / Northeast / Southeast
Jim DiMaio	Chief Forester
Harris Penniman	Management Forester
Robert O'Connor	Director Land and Forest Policy (final site only)

**BOF Sites**

<b>Site Description</b>	<b>Notes from Site Visit</b>
2008 NEM-0708TP Northeast Bradley Palmer State Park Bike Trail Special	Stands 1 and 2 - Shelterwood - Regeneration Cut
2007 NEM-0506TP Northeast Willowdale State Forest Damon - Diamond	Stands 1 and 2 - Shelterwood - Regeneration Cut; While listed in the documentation as a "Shelterwood - Regeneration Cut" the described proposed harvest seems to be better described as an improvement thinning or a shelterwood preparatory harvest because it is designed to reduce the red maple component and promote white pine trees. These objectives are consistent with the soil-site conditions and with natural trends, and will help offset effects of fire exclusion. Observed beaver activity flooding internal access roads. The proposed management is a logical extension of the property donor's long-term forestry program.
2005 NEM-01-05TP Northeast Georgetown- Rowley State Forest Snorting Buck Lot	Shelterwood - Regeneration Cut; Completed light partial harvest intended to promote additional regeneration; very clean log landing (extra efforts based on citizen complaints).
2006 NEM-0106TP Northeast Marlboro State Forest Fawn coyote jogger	Shelterwood - Regeneration Cut (completed): Although listed as a "Shelterwood - Regeneration Cut" the harvest might better be described as a combination salvage harvest/ improvement thinning, with areas treated at the shelterwood establishment harvest level (heavier cutting to promote the establishment of young trees, primarily pine). The land is managed by the Town of Marlboro as a recreation site. The town's tree warden requested a harvest to remove unhealthy trees, with concerns stated for trees along the trails and property borders. Observed very good logging job, with residual trees protected from logging damage, BMPs for prevention of erosion and sedimentation in place, good utilization of cut trees, and remaining tops and slash cut low to speed decay and to improve appearance. The inspection team walked the site extensively without being hindered by logging slash. Site visit confirms the ability of DCR to implement a high-quality timber harvest in a highly visible, high-use recreation area.
(BOF) Fall 2008 Home Fuel Wood Program, Georgetown-Rowley State Forest: Light improvement thinnings roadside. Documentation is superb, harvest work is very good.	
(BOF) Boxford State Forest – pending sale postponed due to controversy: Proposed thinning of an overstocked red pine stand that is suffering reduced crown size (live crown ration estimated at 20 to 25%).	

The proposed harvest will help maintain this stand far longer than if left un-thinned (red pine plantations are particularly prone to growth stagnation and decline if left un-thinned too long). Red pine is near the edge of its range here, but careful management could protect this stand and maintain it on the land far longer than willful neglect.

(BOF) Boxford State Forest – pending sale postponed due to controversy: Proposed group selection with retention: Plan to cut least-vigorous trees in groups to start the growth of young pine and oak trees. Groups will have some live trees retained within them. About half of the stands involved will be left in untreated buffer areas including wetlands and vernal pools, consistent with BMPs and good practices.

**DFW Site**

Martin Burns Newbury Northeast Northeast Coastal Plain NE-MB-UP-1	Wildlife Management area managed for grassland-shrub land habitat with periodic maintenance mowing; confirmed the “Site Plan: Martin Burns WMA, Newbury”. Project NE-MB-UP-1 is a partially completed forest conversion to shrub land. Confirmed protections for wetlands including rare species. One section of road was wet and not properly drained (ineffective old culvert); this was repaired four days later.
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**Wednesday April 8:**

**Team A: - (Ferrucci, Fernholz)**

**Start Time: 8 a.m. John Augustus Hall**

Participants:

Brian Keevan	Forester, Wachusett/Sudbury Section DCR/DWSP
Dan Clark	Director, Natural Resources Section, DCR/DWSP
Herm Eck	Chief Forester, Quabbin/Ware River Section DCR/DWSP
Steve Wood	Forester, Ware River, DCR/DWSP
Derek Beard	Forester, Quabbin, DCR/DWSP
Steve Ward	Forester, Quabbin, DCR/DWSP

**DWSP Sites**

Watershed	Town	Forester	Lot #	Silvicultural prescription
Wachusett	Boylston	Keevan	5199a	Patch cuts to release advance white pine and hardwood regeneration with some intermediate stand treatments
Wachusett	Sterling	Buzzell	5207	Patch cuts to release advance regeneration and preparatory cut to establish regeneration
Wachusett	Princeton	Buzzell	5211	Patch cuts to release advance white pine and hardwood regeneration with some intermediate stand treatments
Ware River	Rutland	Eck	4333A	shelterwood OSR 10, 10 & 7 ac.
Ware River	Barre	Eck	4335	strip shelterwood final OSR
Ware River	Rutland	Eck	4332	clear cut 2.3 & 4 ac, SW-OSR 11 ac, SW 1st cut 21 ac.
Ware River	Hubbardston	Eck	4326	shelterwood 1st cut
Quabbin	Hardwick	Ward	1016	2nd entry 15 regen/enhance seeding past deer
Quabbin	Hardwick	Ward	1018	2nd,3rd entry 20a regen,20 Intermediate/thin
Quabbin	Petersham	Beard	3101A	shelterwood and small patches
Quabbin	Petersham	Beard	3097	patch cuts

**Team B: (Hanowski, Seymour)****Start Time: 8:30 a.m. at Reed Hatchery in Palmer or at Belchertown Office;**DFW Sites

Site Description	Notes from Site Visit
Reed Hatchery Palmer Valley Worcester Plateau CV-RH-5	2nd of 2-cut Shelterwood; Gates Road (near Fish Hatchery). Forester: Ann-Marie Kittredge (now retired). White pine stand, irregular shelterwood with reserves. Harvested twice, excellent pine regeneration, diverse structural retention. Buffer maintained around old fish-rearing ponds now serving as vernal pools. No planned harvest until young cohort reaches merchantable size in 40-50 years.

DWSP Sites

Site Description	Notes from Site Visit
Quabbin Ware Stone 1030	Group selection, visited in '07; Forester: Randy Stone. Irregular group shelterwood, mixed oak white pine stand. Goal to regenerate 33% of stand area, accomplished primarily by releasing advance regeneration established in previous cuttings. Substantial irregular structural retention in regenerated areas which are highly variable in size.
Quabbin Ware Stone 1032	Group selection, thinning, hurricane tipped pine: Forester: Randy Stone. Group shelterwood, 90-year-old white pine stand. Similar to Stop 2, except stand nearly pure pine. Groups more regular, some with less advance regeneration.
Quabbin Ware Stone 1029	Group, selection, Quabbin Park, along hiking trail: Forester: Randy Stone. Group shelterwood, oak-pine, in Quabbin Park. Mature mixed-hardwood stand, little advance regeneration owing to lack of deer hunting. Some retention in groups.
DWSP, Sale 3119	Forester: Dennis Morin. Patch clearcuts (1-2 acres) in rare, very high-site, enriched red oak/northern hardwood stand. Harvested patches seemed to target areas of largest trees; one patch retained all sugar maple sawlogs after a last-minute change to the prescription. Little/no advance regeneration, no evidence of any prior treatment. No retention in patches; no thinning in matrix.
Also noted in passing: Pine sawtimber stand with recently completed "game of logging" competition. Mature mixed pine-oak stand adjacent to maintained fields slated for type conversion to early successional habitat.	
DWSP, Sale 3128	Forester: Dennis Morin. Prescribed and marked 16-acre clearcut with pitch pine reserves in a generally well-stocked 50-year-old red pine restoration planting established after 1950s wildfire. Sale not harvested owing to rare beetle in gravel pit to be used as landing. Stand growing on esker, classic white pine site. Scattered old emergent white pine legacy trees all marked for harvest. First example of DWSP's planned creation of large early successional habitat blocks.
DWSP, Sale 3111	Forester: Dennis Morin. Patch clearcuts in oak-mixed hardwood stand, small pine and hemlock component. Scattered pine advance regeneration, some damaged. No retention in patches, no thinning in matrix. Long discussion of the need for retention, desirability and difficulty of trying to maintain oak. Good example of DWSP's new (since 2007 management plan) approach of larger, more geometric openings with no retention, as opposed to sales viewed during the morning. Coincidentally, this lot is adjacent to BOF property, which had freshly marked and painted boundaries.

BoF Sites:

WCV-04-06T Western Connecticut Valley	Stands 1 and 4 - Selection Cut, Stand 2 - Seed Tree Cut, Stand 3 - Commercial Thinning, Stand 5 - Clearcut for Wildlife Habitat Improvement; Nick Anzouni Forester, JoAnn Hanowski, Jim DiMaio, Bill Hill. This was a 65 acre harvest which
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Conway State Forest Totman Re-bid	removed mostly white pine, black birch, red maple and hemlock. Stream buffers were left intact with no harvesting. A small wildlife opening will remain on the site and will be maintained as an open area. This opening existed prior to the harvest adjacent to a small chestnut planting experiment. There has been a small amount of illegal ATV access along the trail that leads to the harvest site.
WCV-05-07 Western Connecticut Valley Conway State Forest Guinea Gulch re-bid	Stands 1 and 4 - Shelterwood - Regeneration Cut, Stands 2 and 3 - Commercial Thinning; Nick Anzouni Forester, JoAnn Hanowski, Jim DiMaio, Bill Hill. The harvest on this site was completed this past winter and was the first of three planned entries to the site. Tree species removed were primarily hemlock, red maple, and black birch. Due to mud season, the road and landing have not been restored as yet.
ECV-7-06-T Eastern Connecticut Valley Wendell State Forest WeSF Bear Mtn Rd. West II TS	Shelterwood - Regeneration Cut; David Richards forester, JoAnn Hanowski, Jim DiMaio, David Goodwin, Bill Hill. This 28 acre harvest site was in a white pine plantation. The goal of the harvest was to remove the overstory to approximately 50% by removing primarily the white pine and hemlock. A stream buffer was located on the site and examined.
ECV-2-08-T Eastern Connecticut Valley Wendell State Forest WeSF New Salem Rd / Orcutt Hill	David Richards forester, JoAnn Hanowski, Jim DiMaio, David Goodwin, Bill Hill. This was a 56 acre harvest that was marked for harvest. The goal of the harvest is to release and regenerate hemlock, white pine and oak. Landings, skid trails, stream crossings, wetland and stream buffers were all clearly marked.

**Thursday April 9:**

**Team A (Fernholz and Seymour)- Berkshires North and Central**

8:00 am- BoF Pittsfield Office

Site Description	Notes from Site Visit
2007 CBK-04-07-T Central Berkshire County October Mountain State Forest CBK - Meyers Lot	Stands 1, 2 and 3 - Selection Cut; Forester: Chris Massini. High-site enriched northern hardwood stand treated with a combined improvement cutting and white ash salvage. Pathogen killing ash evidently not identified. Treated with a variety of equipment; some logging damage along trails only. Part of large acquisition (a former tree farm) in 1996. Boundaries freshly marked in good order.
BOF: October Mountain SF	Forester: Chris Massini. Unscheduled roadside example of uniform shelterwood cut in residual strips from prior Norway spruce strip shelterwood in late 1980s. Some top breakage in residual spruce from recent ice storm.
BOF: October Mountain SF	Forester: Chris Massini. Unscheduled stop, roadside example of a shelterwood removal cut with Norway spruce reserves. Many reserves damaged by ice.
2002 4-Corners Area	Spruce plantation strip cut in the past, overstory removal in 2002. Untreated adjacent area also visited. Forester: Chris Massini. Four-corners Norway spruce plantation 2002 clearcuts, visited by the original audit team in August 2002. Adjacent unharvested stand has almost completely died. Seven-year-old regeneration dominated by hardwood species and Rubus with a noteworthy component of Norway spruce advance regeneration that will become a part of the new stand. Little difference in composition between harvested and untreated stand; untreated unit has large quantity of standing snags and down woody material.
2007 CBK-05-07-T Central Berkshire	Shelterwood - Regeneration Cut; Forester: Chris Massini (uniform shelterwood establishment cutting in Norway spruce plantation, treated previously with a checkerboard of very narrow strips).

County October Mountain State Forest CBK - Pump House Lot	
BOF: October Mountain SF, Cracked Rock Sale	Forester: Chris Massini Hardwood improvement cut with 1-acre patch clearcuts; little advance regeneration in openings, no structural retention.
BOF: October Mountain SF	Forester: Chris Massini. Unscheduled, across the road from stop 5. Norway spruce low thinning visited by team in 2002. Small root rot pocket but residual stand seems reasonably healthy.
2006 NBK-4-03T-A North Berkshire County Savoy Mountain State Forest Petitcler Lot-Addition Original Sale	Selection Cut: Forester: Dave Robb. Poor quality northern hardwood stand treated with improvement cutting; marked to a diameter structure, harvest consisted entirely of unacceptable growing stock. Sale accessed by 0.5 miles of old unimproved town road during winter 2005. Logging contractor apprehended and fined for stealing unmarked cherry sawlogs.
2007 NBK-02-07T North Berkshire County Savoy Mountain State Forest Bannis Road Pine	Clearcut Strip with Reserves; Forester: Dave Robb. White pine plantation treated ca. 1990 with strip cuttings, now growing birch and some overtopped pine. Complete overstory removal with essentially no structural retention. If advance regeneration was present, most did not survive the harvest, so the result is effectively a 27-acre clearcut. Voluminous large woody material left in the woods resulting from non-existent pine pulpwood or chip markets.
2006 NBK-2-06T North Berkshire County Savoy Mountain State Forest New State-Adams Road Spruce	Stands 1 - Shelterwood - Removal Cut, Stand 2 Cleared Strip, Stands 3 and 4 - Clearcuts for Wildlife Habitat Improvement, Stand 5 - Selection Cut; Forester: Dave Robb. 95 acre harvest (nearly one million board feet) of Norway spruce plantations, plus some northern hardwood and field restoration. Excessively large landing, extensive piles of spruce tops resulting from full-tree operations still on site after over two years since job completion. Logging contract preferred, but did not require, cut-to-length operations to avert this issue. All hardwoods >13" dbh prescribed (not marked) for retention, but prescription was largely not followed. Prescribed as an overstory removal; after two years, aspen suckers were overtopping natural softwood advance regeneration.
2008 Stafford Hill WMA	DFW coppice for aspen regeneration; Forester: Brian Hawthorne. Mature (40-50 year-old) aspen cut to secure coppice regeneration and to restore young hardwood forest conditions; patch retention in riparian area, scattered black cherry and wild apple retention throughout the unit. All material chipped; operator suffered financial loss, despite being a negative-stumpage project because aspen pulp market closed at the start of the operation and all pulp had to be chipped for landscape mulch. Operation just completed; regeneration not yet developed, though plenty of aspen coppice and cherry seedlings now present.

**Team B (Ferrucci and Hanowski) Berkshires South and Central**

Site Description	Notes from Site Visit
Central Berkshire County Chester - Blandford State Forest Beulah Land Road Lot	Beaver Pond Controversial Site; . Kris Massini Forester, Mike Ferrucci and JoAnn Hanowski, Auditors, Jim DiMaio, David Goodwin, Thom-Kyker Snowman, Joanne Nunes. The team visited this site because of the negative public comments regarding the management that occurred on the site, in particular the beaver pond issue. The team inspected the site and found that appropriate management plans and the paper trail for harvesting had been documented. A combination of beaver activity and a large rain storm last August (2008) led to the dam being washed out, draining the

	beaver pond and causing a large amount of water to be discharged downstream. The team found no evidence that the events that have occurred on the site are contrary to FSC standards.
2006 SBK5-06T South Berkshire County Beartown State Forest Four Corner Sale	Stands 1 and 2 - Clearcut, Stand 3 - Shelterwood - Removal Cut; Conrad Ohman Forester, Mike Ferucci and JoAnn Hanowski, Auditors, Jim DiMaio, David Goodwin, Thom-Kyker Snowman Joanne Nunes. The team visited three stands in this harvest unit. The first was a three acre Norway spruce stand that was clearcut with retained residuals. The second stand was a also a clearcut that had retained residuals. Stand three, the largest of the treatment areas removed white ash, black cherry, red maple, sugar maple, and red oak. The team inspected a stream crossing and witnessed some erosion (the skid trail will be fixed by the contractor).
Chester-Blandford State Forest, Beulah Road Red Pine Lot Sale	Kris Massini Forester, Mike Ferucci and JoAnn Hanowski, Auditors, Jim DiMaio, David Goodwin, Thom-Kyker Snowman, Joanne Nunes. This site was visited because we could not access selected sites because the ice storm and blowdown blocking the roads. The goal is to remove red pine and to leave oak and poplar in a shelterwood with 80ft2 retention. The long term goal is to grow oak.
Chester-Blandford State Forest, Missing Tally Sale	Kris Massini Forester, Mike Ferucci and JoAnn Hanowski, Auditors, Jim DiMaio, David Goodwin, Thom-Kyker Snowman, Joanne Nunes This 55 acre stand of mixed planted red pine, red oak and aspen was harvested in 2006. The prescription was to perform a shelterwood harvest, removing most of the red pine and aspen. The team noted that regeneration of desired species was occurring. A regeneration survey will be done in about 10 years.
Chester-Blandford State Forest, Beulah Land Old House Lot	Kris Massini Forester, Mike Ferucci and JoAnn Hanowski, Auditors, Jim DiMaio, David Goodwin, Thom-Kyker Snowman, Joanne Nunes This 40 acre sale is marked for harvest. The site is an old Norway spruce and red pine plantation on an old homestead site. A challenge on this site is to retain overstory trees due to strong prevailing winds. Protection of stream crossings and cultural resources were clearly marked. The sale is marked as a light thinning, mostly from below.
2007 SBK8-07T South Berkshire County Beartown State Forest Drum Beat	Stands 1 and 2 - Shelterwood - Regeneration Cut; Conrad Ohman Forester, Mike Ferucci and JoAnn Hanowski, Auditors, Jim DiMaio, David Goodwin, Thom-Kyker Snowman, Joanne Nunes. The objective of this harvest was a partial overstory harvest to remove undesirable species or individual trees. This was the first of three planned entries into the site with the goal of maintaining a mix of species on the site. Another goal was to remove diseased beech. A discussion occurred around the topic of how to effectively remove diseased beech from the stand. Beartown State Forest, Drum Beat road crossing. Conrad Ohman Forester, Mike Ferucci and JoAnn Hanowski, Auditors, Jim DiMaio, David Goodwin, Thom-Kyker Snowman, Joanne Nunes A bridge crossing over a stream that led to the timber harvest was examined. Some sedimentation in the stream was observed downstream from the crossing, but not an excessive amount.

### **Friday April 10:**

Team deliberation and synthesis

8 am- 4 pm

### **3.3.2 Evaluation of Management System**

The evaluation of the management systems included stakeholder consultation in advance of the field visits, subsequent visits to offices and field stations, a public meeting to receive additional public input, field visits to more than 35 recent or proposed harvesting sites, a review of documentation request from the agencies being assessed, and additional activities to review the management systems.



### **3.3.3 Selection of FMU's to Evaluate**

The agencies under EEA (BoF, DWSP and DFW) provided a forest management summary for all harvesting operations from 2004-2009 and the Forest Management Units (FMUs) and specific harvest sites to be evaluated were selected by the SCS audit team from these lists. The audit team selected sites using random and non-random methods. The randomly selected sites relied on stratification by region, silvicultural treatment, and used randomly generated numbers to prioritize sites to assess. Non-randomly selected sites were chosen in response to stakeholder comments, which were typically problematic sites (e.g., Beulah Land Road lot).

### **3.3.4 Sites Visited**

Section 3.3.1 provides the list of sites visited during the assessment.

### **3.3.5 Stakeholder Consultation**

Pursuant to SCS protocols, consultations with key stakeholders were an integral component of the evaluation process. Consultation took place prior to, concurrent with, and following the field evaluation. The following were distinct purposes to the consultations:

To solicit input from affected parties as to the strengths and weaknesses of management, relative to the standard, and the nature of the interaction between the company and the surrounding communities.

To solicit input on whether the forest management operation has consulted with stakeholders regarding identifying any high conservation value forests.

Principal stakeholder groups of relevance to this evaluation were identified based upon results from past assessments and audits, lists of stakeholders from the agencies, and additional stakeholder contacts from other sources (e.g., chair of the regional FSC working group). The following types of groups and individuals were determined to be principal stakeholders:

- EEA (BoF, DWSP, and DFW) employees, including headquarters and field
- contractors
- lease holders
- adjacent property owners
- Pertinent Tribal members and or representatives
- Members of the Northeast Region FSC Working Group/National Initiative
- FSC International
- Local and regionally-based environmental organizations and conservationists
- Local and regionally-based social interest organizations
- Forest industry groups and organizations
- Purchasers of logs harvested on agency forestlands

- Local, State and Federal regulatory agency personnel
- User groups, such as hikers, hunters, ATV users, and others
- Other relevant groups

Prior to, during, and following the site evaluation, a wide range of stakeholders from the regional area were consulted in regard to their relationship with the agencies under EEA (BoF, DWSP and DFW), and their views on the management of the forestlands. More than 150 people responded and provided input to the assessment. Stakeholders included FSC contact persons, government and non-government organizations involved in forest management, local citizens and groups, employees, contractors, and others. Stakeholders were contacted with a notification mailing soliciting comment, email communications, an online questionnaire and comment form and/or phone contact. Comments were received via meetings, personal interviews “face-to-face”, phone interviews (“Interview”), and through written responses. A public meeting was held the evening of April 6<sup>th</sup> at John Augustus Hall in West Boylston. The following list includes the names of stakeholders who provided comments and who also granted permission to be listed in the certification report. Additional comments were received from individuals not wishing to reveal their identities.

Name	Affiliation	Consultation
Bruce Anderson		Written
Nicholas Anzuoni	DCR Bureau of Forestry	Written
Ellen Arnold	Friends of Upton State Forest	Written
Glen Ayers		Written
Rex Baker		Public Meeting
Matt L. Barron	Westfield River Wild & Scenic AC	Written
Will Beemer	Timber Framers Guild	Interview
Peter Bernard	Bristol Co League of Sportsmen's Clubs	Written/Public Meeting
Phil Bibeau	Wood Product Manuf. Assoc.	Interview
Brad Blodget		Public Meeting
Kathie Breuninger		Written
Heather Clish	Appalachian Mountain Club	Written
David Christopher	Environment Massachusetts	Written
Russ Cohen		Written
Reed Coles		Written
Russ T. Davenport		Written
James Egan	Mass Wood Producers Assoc	Interview
Reginald Elwell		Written
Mike Erwin		Written
John Fabroski	Plymouth County League of Sportsmen	Written
John E. Fahy		Written/Interview
Joseph Favaloro	Massachusetts Water Resources Authority (MWRA) Advisory Board	Written
Nan Finkenaur		Written
Daniel Fortier		Written
David J. Gafney	Attorney at Law	Written

Mike Gildesgame		Public Meeting
Robert Gosselin		Written
David Goodwin	Acting State Lands Management Program Supervisor	Interview/Meeting
Rei Gould	Nipmuck Tribal Council	Interview
Judith Harper		Written
John Heffernan		Written
Shari Heller	Forest and Park Friends Network	Written
William Hull	Hull Forestlands L.P	Written
Claudia N. Hurley		Written/Interview/Public Meeting
Mike Hurley		Public Meeting
Karen Johnson		Public Meeting
Stephen H. Kaiser		Public Meeting
Michael Kellett	RESTORE: The North Woods	Written
Anne Marie Kittredge	Private consultant	Written
Jacob Kubel		Public Meeting
Amy Lane		Written
Joseph S. Larson	Massachusetts Fisheries and Wildlife Board; Massachusetts Natural Heritage and Endangered Species Advisory Committee	Written
Tom Lautzenheiser	Central/Western Regional Scientist Massachusetts Audubon Society Arcadia Wildlife Sanctuary	Public Meeting
Charles Lewis		Written
Patricia Lemon	Town of Warwick	Written
Mike Leonard	North Quabbin Forestry	Written
Bill Logue	Logue Group, DCR Forest Futures Visioning Process	Interview
Thomas Mahlstedt	DCR Archaeologist	No Response
Laura Marx	The Nature Conservancy	Written/Interview
Homer May		Written
James McCaffry	Sierra Club	Interview/Public Meeting/Written
Mike McCarthy		Written
Mike Moss	Mass. Sportsman's Council	Public Meeting
Dave Morin		Public Meeting
Mary Neville Wall	Exodus Acres	Written
Colin M.J. Novick	Greater Worcester Land Trust	Written
Karen Ober		Written
Alan C. Page	Green Diamond Systems	Written/Interview
Matthew Pearson		Written
Roger Plourde		Written

Paula Rees	MA Water Resources Research Center	Written
Heidi Ricci	Mass. Audubon	Written/Public Meeting
Mike Rohr		Public Meeting
Keith Ross	Land Vest	Written
Mike Ryan		Written/Public Meeting
Jeff Schaaf	Ware River Watershed Advisory Committee	Written/Public Meeting
Loring Schwarz	The Nature Conservancy	Written/Interview
Patricia Serrentino		Written
Margaret E. Sheehan	EcoLaw	Written
Janet Sinclair		Written
Margaret E Sheehan	EcoLaw	Written
Dave Small		Written
Joe Smith	Trust to Conserve Northeast Forestlands	Interview
Bruce Spencer		Written
Ben Urquhart		Written
Ray Weber		Written/Interview
Bill Westaway	Ware River Watershed Advisory Committee	Written/Public Meeting
Dick Williams		Public Meeting
Joan Wotkowicz		Written
Joe Zorzin		Written

### 3.3.5.1 Summary of Stakeholder Concerns and Perspectives and Responses from the Team Where Applicable

A summary of the comments, major perspectives and concerns expressed by the stakeholders that were consulted during the course of this evaluation include:

#### Economic Concerns

Comment/Concern	Response
<ul style="list-style-type: none"> <li>The combination of FSC certification on state lands and a strong forest cutting practices act on private lands is important in ensuring conservation and economic vitality in the state and to the further protection of more forest land.</li> </ul>	The assessment team agrees that voluntary programs (like certification) and regulatory approaches can work in concert to support responsible forest management.
<ul style="list-style-type: none"> <li>I believe that the amounts of harvesting are appropriate but the weighting of even-aged management (doing those cuts first) is not. Even-aged management should be carefully justified.</li> </ul>	See CAR 2009.13 addressing an analysis of the ecological impacts of clearcutting healthy mature forest stands. Also see CAR 2009.10 related to advance regeneration in even-aged management; CAR 2009.12 related to structural retention for even-aged

	management; CAR 2009.14 regarding the requirement to evaluate the ecological impacts of stand level removal of conifer plantings.
<ul style="list-style-type: none"> <li>The price tag for certification is a concern in these tight economic times.</li> </ul>	The direct cost of certification auditing is only a small fraction of the full range of investments that are made to improve forest management activities and resources, including boundary marking, road maintenance and management planning.
<ul style="list-style-type: none"> <li>The logging industry has too much influence on forest management.</li> </ul>	Per FSC policy, the certification assessment consultation process sought balanced input from economic, social and environmental interests.
<ul style="list-style-type: none"> <li>A healthy forest in a fragmented landscape like Massachusetts requires active management and utilization.</li> </ul>	Duly noted <sup>5</sup> . Audit team did not find any non-conformances related to this comment.
<ul style="list-style-type: none"> <li>Many Massachusetts businesses are opening up offices in New Hampshire because Mass. is not supporting the wood industry.</li> </ul>	Duly noted, but beyond the scope of the assessment.
<ul style="list-style-type: none"> <li>State needs to meet statutory obligations to prepare site level plans. State lacks resources to do site level planning.</li> </ul>	The team agrees that management plans are needed, but the FSC standard does not require separate plans for each individual property. The original certification assessment had requested site-level plans because at that time- BoF's approach included site-level plans. Site-level planning became an impractical and unrealistic planning approach for BoF, and BoF revised their planning to District Level plans. District-level plans that sufficiently incorporate site-level specific planning considerations is fully consistent with the FSC standards. See Major CAR 2009.2
<ul style="list-style-type: none"> <li>DCR needs to do a better job of public explanation - including addressing revenues,</li> </ul>	The State has embarked on a Forest Visioning process that SCS

<sup>5</sup> The term "duly noted" is used to acknowledge general stakeholder comments that do not directly relate to a specific indicator of the standard. The point of the reviewer has been considered and some elaboration of and/or replacements were made.

community benefits, where the wood is going, etc.	believes will lead to better public explanation. Additionally the team agrees that an assessment of regional social and economic impacts of management is needed if there are major deviations from FRMP's CAR 2009.1.
<ul style="list-style-type: none"> <li>Wood should be used locally and not be shipped to Canada.</li> </ul>	Wood is sold through a competitive bidding process and buyers change as markets change.
<ul style="list-style-type: none"> <li>The biomass industry is a huge threat to state forests.</li> </ul>	The agencies have developed coarse woody debris retention targets. There is a need to improve the guidelines and their implementation. See CAR 2009.15
<ul style="list-style-type: none"> <li>Clearcuts are a valid and useful wildlife enhancement practice critical to biodiversity.</li> </ul>	Agreed that clearcuts can enhance some wildlife habitats, though better analysis is needed to justify these treatments. See CAR 2009.13 addressing the ecological impacts of clearcutting
<ul style="list-style-type: none"> <li>Harvest levels for BoF and DFW are low given acres under ownership. Utilization standards are inconsistent at BoF</li> </ul>	Duly noted. See Minor CAR 2009.1 to address future economic impacts of management moratoria as well as Minor CAR 2009.9.
<ul style="list-style-type: none"> <li>The state should work on helping small landowners become FSC certified</li> </ul>	While outside of the scope of this assessment, it is noted that the DCR has initiated plans for a group certification program for small landowners.
<ul style="list-style-type: none"> <li>The Northern Berkshires have not been mapped for high concentrations of biodiversity so they are being targeted for transmission lines and wind turbines.</li> </ul>	Changes in land use, including alternative energy development, will be monitored.
<ul style="list-style-type: none"> <li>The state should do more to raise market awareness of their available FSC certified wood</li> </ul>	Duly noted, but point is beyond the scope of this assessment.
<ul style="list-style-type: none"> <li>The state should support the businesses of private consulting foresters rather than waste money on certification.</li> </ul>	Duly noted, but point is beyond the scope of the assessment.
<ul style="list-style-type: none"> <li>Forest access is not adequately maintained. Old fire road accesses are in disrepair and many old stream crossing bridges are dangerous.</li> </ul>	See CAR 2009.6 and the requirement to complete the road and trail inventory and assessment.
<ul style="list-style-type: none"> <li>DFW is far too understaffed to provide adequate management of its properties.</li> </ul>	See CAR 2009.9 related to resources needed to support forest

	management objectives.
<ul style="list-style-type: none"> <li>The state has provided insufficient information on the economic impacts of its forest management. It has declined requests for easy public access to bids and contracts. The economic values of the public lands for recreation and tourism should be given more weight.</li> </ul>	State is undertaking a Forest Visioning process aimed to help the DCR find appropriate balance of active management, recreation, tourism, and other values.
<ul style="list-style-type: none"> <li>Motorized recreation is causing serious negative impacts to resources and passive recreational users. ATVs are a major management hurdle for public and private lands and the service needs more resources to tackle this.</li> </ul>	Some damage was observed in the field and will continue to be monitored. The agencies have made progress on installing gates and with other mechanisms that control access. Efforts are also underway to strengthen off-highway vehicle (OHV) regulations. See REC 2009.6 regarding OHV regulations.
<ul style="list-style-type: none"> <li>The agencies should continue designation of forest reserves in ecological sensitive areas where no harvesting can take place, develop the remaining four Forest Resource Management Plans and site specific plans before timber harvesting resumes, update plans with findings from the Forest Vision process, and evaluate DCR's current capacity for sustainable forestry given current levels of funding and staff.</li> </ul>	Timber harvesting is not occurring in areas without management plan- additionally the scope of the certificate has been narrowed to exclude forests lacking plans; Major CAR 2009.3 addressing monitoring; and CAR 2009.9 addressing agency capacity

### Social Concerns

Comment/Concern	Response
<ul style="list-style-type: none"> <li>Extraction of timber from public lands near heavily populated urban and suburban communities is not appropriate.</li> </ul>	See Major CAR 2009.4 addressing the scope of the certificate
<ul style="list-style-type: none"> <li>Tribes are interested in more than just pre-contact (prehistoric) sites; also interested in sites all the way through to the present.</li> </ul>	See CAR 2009.7 regarding tribal consultation in management planning

<ul style="list-style-type: none"> <li>Public is having too much input, without proper knowledge of the issues, and the department is not allowed to defend its management policies. The forest management of public lands is now being put in the hands of the public and not being allowed to be performed by professionals. Now, more than ever, politics is now managing our forest and not true professionals.</li> </ul>	Forest Visioning process will help address this concern. Also, see Minor CAR 2009.1 addressing a social and economic impact of management moratoria.
<ul style="list-style-type: none"> <li>The agencies should provide tours with foresters in areas marked for harvest prior to harvest to permit input by those who attend.</li> </ul>	It is noted that DFW has offered public tours. See REC 2009.4 regarding the opportunities to evaluate the BOFs public input policy
<ul style="list-style-type: none"> <li>Parks and Forests in Essex County should be removed from certification.</li> </ul>	See Major CAR 2009.4 regarding defining the scope of the certificate
<ul style="list-style-type: none"> <li>DFW forestry practices have been extremely well thought out. They explain openly all questions about what they are doing and why. I was skeptical about forestry management practices until attending the DFW public information sessions.</li> </ul>	Duly noted. Audit team findings concur.
<ul style="list-style-type: none"> <li>I would like to see DCR adopt some of DFW's public dispute resolution policies and have asked them to use some of DFW's definitions of various types of management in their district-level management plans.</li> </ul>	See REC 2009.4 related to the opportunity to evaluate BOF's public input policy and CAR 2009.17 related to the need for greater silvicultural detail in BOF cutting plans.
<ul style="list-style-type: none"> <li>The Bradley Palmer State Park plan calls for a "shelterwood" but this language has been used for clearcuts and a clearcut is incompatible with preserving recreational and scenic values.</li> </ul>	See CAR 2009.12 regarding structural retention for even-aged regeneration cutting.
<ul style="list-style-type: none"> <li>Management plans should be up-to-date and ratified by the stewardship council in a timely manner.</li> </ul>	Duly noted
<ul style="list-style-type: none"> <li>The southeast part of the state and islands is at a much higher fire risk and could use more proactive fuel load reduction.</li> </ul>	See CAR 2009.9 addressing agency capacity to meet forest health and productivity objectives.
<ul style="list-style-type: none"> <li>Boundary maintenance is needed.</li> </ul>	See CAR 2009.5 addressing boundary marking and maintenance.
<ul style="list-style-type: none"> <li>Workers in the Heritage division of DFW are employed as "contract labor", and therefore given no health or vacation benefits. In the private sector, this practice is illegal in the</li> </ul>	Contract employees are individuals who are employed through contracts, as opposed to being appointed to authorized state



<p>Commonwealth. It should not be allowed among state workers, especially those who work in conditions that endanger their health (field workers are routinely exposed to lyme disease and other illnesses). In addition, these positions do not pay very well, which makes it difficult for "contract labor" to purchase their own health insurance, even via the state funded program, Commonwealth care.</p>	<p>positions as state employees. Contract employees have been used for decades- and this does not appear to be an illegal action by the State. Contract employees receive additional pay in lieu of benefits to be used toward purchasing health insurance, and annual work hours are limited to provide time for holidays and vacation. The approach is controversial because contract employees do not receive the same health care or vacation benefits as full-time state employees</p>
<ul style="list-style-type: none"> <li>• The 60 acre regeneration cut at Georgetown Rowley State Forest is appalling. Aesthetics and regeneration were not addressed in the logging plan.</li> </ul>	<p>Harvests at Georgetown were visited by the team. See CAR 2009.12 regarding structural retention for even-aged regeneration cutting and CAR 2009.10 addressing regeneration. Also see REC 2009.8.</p>
<ul style="list-style-type: none"> <li>• DFW does not allow motorized use and isn't working with rural communities that want recreation as a part of economic development.</li> </ul>	<p>The allowed uses on DFW lands were found to be consistent with management objectives and DFW demonstrated the use of effective dispute resolution mechanisms.</p>
<ul style="list-style-type: none"> <li>• It should be determined once and for all whether it is against MA General Laws to clearcut on Fish and Wildlife lands.</li> </ul>	<p>DFW has sought legal council on the interpretation of application law and determined that clear cutting is allowable so long as it is not pursued as a profitable venture and fits with agency mandates.</p>
<ul style="list-style-type: none"> <li>• FSC certification is not appropriate for publicly owned lands of the Commonwealth. Certification should be replaced with new and stronger state legislation that clearly defines where commercial timber extraction will be permitted and how it will be done and accompanied by strong enforcement mechanisms.</li> </ul>	<p>Duly noted. Development of new or modifications of existing Commonwealth legislation operates independent of the certification process.</p>
<ul style="list-style-type: none"> <li>• The FSC standards do not adequately protect social values.</li> </ul>	<p>FSC standards are developed with the aim of balancing environmental, economic, and social interests. The audit team is required to implement the approved FSC standard for the</p>

	region that exists at the time of the assessment.
<ul style="list-style-type: none"> <li>The planned DCR Forest Visioning Process provides an opportunity to clarify the agency's policies and operations regarding forest land management in a comprehensive and inclusive manner. DCR should take this opportunity to improve the public's understanding of how it carries out forest management, particularly how the agency's goals, policies and programs support the mandates of Article 97 and conform to existing forest laws.</li> </ul>	Duly noted. See CAR 2009.18 addressing BOF legal compliance.
<ul style="list-style-type: none"> <li>The Commissioner's decision to not issue new forestry contracts at this time is a wise decision that should be maintained until more clarity is brought to the system.</li> </ul>	The team recognizes the perceived benefits of the use of moratoria; however, the team also found that the moratoria have been implemented without due consideration of the full spectrum of social, environmental and economic impacts. Minor CAR 2009.1 regarding the requirement for a regional social and economic impact assessment of the management moratoria.
<ul style="list-style-type: none"> <li>There are serious gaps in the database needed for protecting historical and prehistorical archaeological sites.</li> </ul>	It is recognized that databases of known occurrences need to be continually updated, and in the absence of site specific information the agencies use a risk assessment approach.
<ul style="list-style-type: none"> <li>It is a violation of Principle 7 for timber harvest to have been conducted without plans or with plans that do not meet the criteria of this Principle.</li> </ul>	Timber harvesting has been suspended for areas without plans. SCS is reducing the scope of the State certificate to exclude areas without plans.
<ul style="list-style-type: none"> <li>A public summary of monitoring results is not available.</li> </ul>	See Major CAR 2009.3 addressing monitoring reporting.
<ul style="list-style-type: none"> <li>The FSC review process needs to be coordinated closely with the DCR Forest Vision process. More land should be placed in reserves, and properties with primarily parkland public values should be considered for deletion from the program or reserve-like treatment.</li> </ul>	The audit team is aware of the Visioning Process and will monitor its development. See Major CAR 2009.4 addressing the scope of the certificate and CAR 2009.19 related to defining the ecological goals of management in reserves.
<ul style="list-style-type: none"> <li>The social values of the public lands in terms</li> </ul>	See REC 2009.4 regarding the BOF

of scenic, recreation, tourism, natural history appreciation, cultural, and historic values should be given more weight. Public engagement has improved in the past few years but more needs to be done. Site specific planning with more public input needs to occur before management activities on the ground.	public input process.
<ul style="list-style-type: none"> <li>The agency only allows two days a year to discuss forest cutting plans. We want meetings on the weekend, when people can actually attend and we want them on the site where cutting is to occur.</li> </ul>	See REC 2009.4 regarding the opportunity to evaluate and improve the BOF public input process.
<ul style="list-style-type: none"> <li>Harvest bidding opportunities should be posted on the forestry website.</li> </ul>	Duly noted , but not a specific requirement of the FSC standard.
<ul style="list-style-type: none"> <li>There should be a concerted effort to reach out to Environmental Justice communities.</li> </ul>	See REC 2009.4 regarding the opportunity to evaluate and improve the BOF public input process.
<ul style="list-style-type: none"> <li>Third party oversight should be strengthened with robust and clear public input process during annual audits and 5 year review and clear response to all complaints.</li> </ul>	The audit team recognizes that this is feedback on the FSC assessment process and will continue to incorporate these recommendations into the audit process.
<ul style="list-style-type: none"> <li>Management planning resources in DCR remain below necessary levels.</li> </ul>	See CAR 2009.9 addressing resources to support forest management.
<ul style="list-style-type: none"> <li>Not all state lands are appropriate for FSC, certification and parks should be removed from the scope of the certificate.</li> </ul>	See Major CAR 2009.4 addressing the scope of the certificate

### Environmental Concerns

Comment/Concern	Response
<ul style="list-style-type: none"> <li>We recognize and value that the state has set aside nine forest reserves covering 50,000 acres of forest land for protection, with a commitment to set aside another 50,000 acres in smaller reserves protecting important habitat and watershed values. Without certification, it is unlikely these reserves would have been established.</li> </ul>	Duly noted. Reserves are evidence of conformance with Criterion 6.4.
<ul style="list-style-type: none"> <li>Invasive species are not being addressed by the state except in wetlands.</li> </ul>	The team observed that the public agencies are actively engaged in the control of invasive species. See REC 2009.5 recommending the completion of a terrestrial invasive

	plant management document.
<ul style="list-style-type: none"> <li>Logging at Boxford State Forest is a concern due to the Important Bird Area and the watershed habitat. It should be protected as a reserve.</li> </ul>	Boxford State Forest has been removed from the scope of the assessment. The team understands that small reserve areas are still being identified and process on this will be monitored.
<ul style="list-style-type: none"> <li>We face an escalating climate change situation, which will place all ecosystems at risk. The agencies don't know how to address this and therefore there is poor on the ground implementation. Current policies are archaic in the face of the climate change situation.</li> </ul>	Duly noted, but not specifically addressed in FSC standard.
<ul style="list-style-type: none"> <li>Mass should preserve public parks and forests for wilderness, wildlife, recreation, clean water, tourism, carbon sequestration and scenic beauty.</li> </ul>	Duly noted.
<ul style="list-style-type: none"> <li>Applaud MassWildlife and DCR on early successional habitat management and biodiversity benefits.</li> </ul>	Duly noted.
<ul style="list-style-type: none"> <li>Even-aged management is ecological inappropriate in Massachusetts' forests.</li> </ul>	See CAR 2009.12 addressing structural retention for even-aged regeneration cuttings. Even-aged management, with proper environmental assessments and adequate retention, is an accepted silvicultural practice in the FSC standard. See CAR 2009.14
<ul style="list-style-type: none"> <li>BoF needs to work harder to enforce illegal OHV use. There are reports of damage in Myles Standish State Forest Reserve, Upton State Forest, Douglas State Forest, and F. Gilbert Hills. Having designated OHV areas would help reduce unwanted impacts.</li> </ul>	See REC 2009.6 addressing OHV regulations and management of motorized recreation impacts
<ul style="list-style-type: none"> <li>There is a lack of surveys for vernal pools and the habitats they provide and inadequate protections.</li> </ul>	The team observed appropriate water quality practices and protective measures for streams, vernal pools and other resources. These practices will continue to be monitored and stakeholder concerns are helpful in identifying specific sites for auditing. See CAR 2009.16 addressing the protection of seeps and springs.
<ul style="list-style-type: none"> <li>State Forest clearcut to the edge of a beaver pond and the beaver pond has blown out.</li> </ul>	A red pine plantation had been planted adjacent to a wetland area

	that had a history of beaver activity. After the final harvest, which at the time included an appropriate buffer next to the wetland, a newly created beaver dam and associated activity removed the buffer. The audit team reviewed this site and found the management to be consistent with the FSC standard.
<ul style="list-style-type: none"> <li>Savoy State Forest clearcut over a stream. Violates wetland protections including required filter strips on slopes.</li> </ul>	The audit team reviewed sites at Savoy State Forest and other examples of stream and wetland protections. See CAR 2009.16 regarding the protection of seeps and springs and CAR 2009.8 regarding training programs for employees, including training in best management practices, rules and regulations.
<ul style="list-style-type: none"> <li>Clearcutting has led to blowdowns of unprotected trees nearby.</li> </ul>	The team observed areas of ice storm and wind damage within and outside of recently harvested sites, The team did not find these occurrences to be widespread or in excess.
<ul style="list-style-type: none"> <li>Norway spruce cutting should be reviewed at Savoy State Forest, Windsor State Forest, Peru WFM.</li> </ul>	The audit team reviewed Norway spruce cutting sites, including sites in Savoy State Forest. See CAR 2009.14 requiring an analysis of the ecological impacts of stand level removal of conifer plantings.
<ul style="list-style-type: none"> <li>There should be a tour of October Mountain - down County Road where clearcuts are visible. Proposals for cutting near wetlands, a reservoir and beaver ponds should be reviewed.</li> </ul>	The audit team reviewed sites down County Road at October Mountain and reviewed compliance with BMPs and other protections. Inconsistent practices were identified. See CARs 2009.8, 2009.13, 2009.14, 2009.16 and REC 2009.8.
<ul style="list-style-type: none"> <li>Need to protect the M&amp;M trail that runs through Pioneer Valley.</li> </ul>	Duly noted. The team observed areas where trails were protected. The team recognizes the need to protect aesthetics. See REC 2009.8
<ul style="list-style-type: none"> <li>Robinson State Park, slopes around Buckley Dunton Lake in October Mountain, and Boxwood State Forest should be removed</li> </ul>	See Major CAR 2009.4

from commercial harvesting.	
<ul style="list-style-type: none"> <li>Complaints about harvesting at Harold Parker State Park and Rutland State Park.</li> </ul>	No longer within the scope of the assessment.
<ul style="list-style-type: none"> <li>Chicopee Memorial State Park is overrun with invasive species and illegal OHV use.</li> </ul>	Duly noted. The team recognizes the urgency of responding to and addressing invasive species and the need to effectively manage motorized recreation. The team found the agencies to be taking appropriate actions related to these concerns. See REC 2009.5 and 2009.6.
<ul style="list-style-type: none"> <li>The mountains surrounding the Connecticut River have been nominated for protection: Mt. Tom, Skinner Mt, Sugarloaf reservation and Mt. Holyoke Range State Park.</li> </ul>	Duly noted.
<ul style="list-style-type: none"> <li>50 acre cut at October Mountain has insufficient regeneration and this practice is also visible at other state parks and forests.</li> </ul>	See CAR 2009.10 addressing regeneration assessments and protection.
<ul style="list-style-type: none"> <li>Forestry operations should not take place on lands where management plans have not been completed.</li> </ul>	Scope of the certificate is to be reduced to exclude lands without management plans.
<ul style="list-style-type: none"> <li>Plans needs to comply with MGL Ch. 21 S. 2F which requires that plans "ensure consistency between recreation, resource protection and sustainable forest management".</li> </ul>	Duly noted.
<ul style="list-style-type: none"> <li>Some sites may not have adequately protected water resources and cultural resources (graveyard).</li> </ul>	The team evaluated water resource and cultural resource protections. See CAR 2009.8 regarding the development of an employee training program that includes addressing best management practices, rules, regulations and all relevant aspects of the FSC standard.
<ul style="list-style-type: none"> <li>HCVF have been only partly identified, more work is needed.</li> </ul>	Duly noted. See CAR 2009.19 regarding ecological goals for reserves.
<ul style="list-style-type: none"> <li>FSC should provide the following benefits - designation of reserves and HCVFs, high forestry standards, site-specific plans and third-party oversight.</li> </ul>	Audit team agrees with this (except site-specific plans)- and found adequate conformance with reserves and HCVF.
<ul style="list-style-type: none"> <li>The Forest Vision review process should consider expanding the relative allocation of land to reserves and apply a tiered system of</li> </ul>	Duly noted. The Forest Visioning process will be reviewed in subsequent annual audits.

land stewardship to designate reserves, active management areas, intensive recreation use areas and areas of high scenic and passive parkland recreational value.	
<ul style="list-style-type: none"> <li>Choices for early successional habitat site have not been explained clearly and the adequacy of regeneration on some sites has not been demonstrated.</li> </ul>	See CAR 2009.13 addressing an analysis of the ecological impacts of clearcutting and CAR 2009.10 addressing regeneration
<ul style="list-style-type: none"> <li>Savoy, Windsor, Beartown, October Mountain and other state forests plan for clear cuts larger than five and ten acres and environmental justifications are insufficient.</li> </ul>	See CAR 2009.18 addressing BOF legal compliance.
<ul style="list-style-type: none"> <li>FSC has lead to progress, including: designation of 9 large forest reserves, some small reserve designations and additional commitments, updates to inventories and GIS data, boundary marking and management plan development for some lands.</li> </ul>	Duly noted.
<ul style="list-style-type: none"> <li>Reserves should have minimal input by humans but are going to be devastated by human effects in climate change.</li> </ul>	See CAR 2009.19 addressing ecological goals for reserves.

### 3.4 Total Time Spent on the Audit

The total time spent on the audit is estimated at 30 person days and included four audit team members with time spent preparing for the audit, participating in field assessments and report preparation. In addition, approximately 10 person days were spent outside of the audit consulting with stakeholders and investigating their concerns.

### 3.5 Process of Determining Conformance

FSC-accredited forest stewardship standards consist of a three-level hierarchy: Principles, then the Criteria that elaborate on each Principle, then the Indicators that elaborate on each Criterion. Consistent with SCS Forest Conservation Program evaluation protocols, the team collectively determines whether or not the subject forest management operation is in conformance with every applicable Indicator of the relevant forest stewardship standard. Each non-conformance must be evaluated to determine whether it constitutes a major or minor non-conformance at the level of the associated Criterion or sub-Criterion. Not all Indicators are equally important and, as such, there is no simple numerical formula to determine whether an operation is in non-conformance. The team must use their collective judgment to assess each Criterion and determine if the operation is in conformance. If the forest management operation is determined to be in non-conformance at the Criterion level, then at least one of the Indicators must be in major non-conformance.

Corrective action requests (CAR's) are issued for every instance of non-conformance. Major non-conformances trigger major CAR's and minor non-conformances trigger minor CAR's

### ***Interpretations of Major CAR's (Preconditions), Minor CARs and Recommendations***

*Major CARs/Preconditions:* Major non-conformances, either alone or in combination with non-conformances of other indicators, result (or are likely to result) in a fundamental failure to achieve the objectives of the relevant FSC Criterion given the uniqueness and fragility of each forest resource. These are corrective actions that must be resolved or closed out prior to award of the certificate. If major CAR's arise after an operation is certified, the timeframe for correcting these non-conformances is typically shorter than for minor CAR's. Certification is contingent on the certified operations response to the CAR within the stipulated time frame.

*Minor CARs:* These are corrective action requests in response to minor non-conformances, which are typically limited in scale or can be characterized as an unusual lapse in the system. Corrective actions must be closed out within a specified time period of award of the certificate.

*Recommendations:* These are suggestions that the audit team concludes would help the company move even further towards exemplary status. Action on the recommendations is voluntary and does not affect the maintenance of the certificate. Recommendations can be changed to CARs if performance with respect to the criterion triggering the recommendation falls into non-conformance.

## **4.0 RESULTS OF THE EVALUATION**

Table 4.1 below, contains the evaluation team's findings as to the strengths and weaknesses of the subject forest management operation relative to the FSC Principles of forest stewardship. The table also presents the corrective action request (CAR) numbers related to each principle.

**Table 4.1 Notable strengths and weaknesses of the forest management enterprise relative to the P&C**



Principle/Subject Area	Strengths Relative to the Standard	Weaknesses Relative to the Standard	CAR/REC #s
<b>P1: FSC Commitment and Legal Compliance</b>	<ul style="list-style-type: none"> <li>▪ The Commonwealth of Massachusetts is responsible for the management of a large number and wide range of lands, including watersheds, parks, forests, reserves, and other properties.</li> <li>▪ The agencies have allocated resources to address boundary identification and made significant progress.</li> <li>▪ The agencies are meeting their obligation to share public information as required by the Freedom of Information Act (FOIA).</li> </ul>	<ul style="list-style-type: none"> <li>▪ A publicly available complete listing of lands to be included in the scope of the certificate is needed to clarify lands to be excluded and explanation of the reasons for exclusion. Additionally, BoF and DFW must undertake consultation on the revised scope of the certificate.</li> <li>▪ It is necessary that the agencies continue to set targets for boundary marking and maintenance and secure the resources to meet these targets.</li> <li>▪ Uncertainty exists regarding whether specific cuts on BoF lands that were called something other than a clearcut were in fact clearcuts that did not meet requirements under Ch. 132.</li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>Major CAR 2009.4</b></li> <li>▪ <b>CAR 2009.5</b></li> <li>▪ <b>CAR 2009.18</b></li> <li>▪ <b>REC 2009.1</b></li> <li>▪ <b>REC 2009.7</b></li> </ul>
<b>P2: Tenure &amp; Use Rights &amp; Responsibilities</b>	<ul style="list-style-type: none"> <li>▪ Staff and Administrators participate in dispute resolution, including field visits to view sites with concerned parties. Legal counsel is employed as needed.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Opportunities could be provided or expanded for local level staff engagement in dispute resolution.</li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>REC 2009.2</b></li> </ul>
<b>P3: Indigenous Peoples' Rights</b>	<ul style="list-style-type: none"> <li>▪ Guidelines for cultural and historic resource identification and protection are in place.</li> </ul>	<ul style="list-style-type: none"> <li>▪ The management plan development process does not explicitly include affirmative efforts at consultation with affected tribes.</li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>CAR 2009.7</b></li> </ul>

<b>P4: Community Relations &amp; Workers' Rights</b>	<ul style="list-style-type: none"> <li>▪ First aid kits, hard hats and other safety equipment is maintained and available to staff. The logging contracts address OSHA and other safety requirements.</li> <li>▪ There is public concern about forest management practices on public lands, and the agencies have responded in a number of ways, including site visits, public meetings, and development of a public input policy for gathering feedback on proposed activities.</li> </ul>	<ul style="list-style-type: none"> <li>▪ The audit team concludes that the BoF did not adequately assess or monitor the potential negative socio-economic impacts of a <i>de facto</i> harvesting moratorium (which has now been lifted) covering lands with approved management plans.</li> <li>▪</li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>CAR 2009.1</b></li> <li>▪ <b>CAR 2009.8</b></li> <li>▪ <b>REC 2009.3</b></li> <li>▪ <b>REC 2009.4</b></li> </ul>
<b>P5: Benefits from the Forest</b>	<ul style="list-style-type: none"> <li>▪ A coarse woody debris standard has been developed.</li> <li>▪ Stands are well stocked in most areas. Quality crop trees are retained and protected with low levels of residual stand damage.</li> <li>▪ DFW does an excellent job with protecting advance regeneration.</li> <li>▪ A variety of timber and other service contracts are used in different scales to allow large and small businesses to bid competitively.</li> <li>▪ Forest resources are managed for a full range of uses and products, including diverse species.</li> </ul>	<ul style="list-style-type: none"> <li>▪ At BoF and DFW staff levels as well as budget and revenue capacities are not adequate to meet management objectives.</li> <li>▪ Guidelines do not exist for evaluating the conditions of the landing when sales are closed.</li> <li>▪ BoF and DWSP lack an analysis that fully addresses the ecological impacts of clearcutting healthy mature forest stands.</li> <li>▪ The coarse woody debris standard does not cover the full intent of the FSC standard.</li> <li>▪ There is a need to track the progress of the proposed OHV regulations.</li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>CAR 2009.9</b></li> <li>▪ <b>CAR 2009.11</b></li> <li>▪ <b>CAR 2009.13</b></li> <li>▪ <b>CAR 2009.15</b></li> <li>▪ <b>REC 2009.6</b></li> </ul>

<b>P6: Environmental Impact</b>	<ul style="list-style-type: none"> <li>▪ There is strong recognition that invasive plants are a significant management concern for the agencies and work has been done to document strategies for addressing them on some of the public properties.</li> <li>▪ Completed Conservation Management Plans for endangered, threatened or rare species are well done and contain detailed protection and management recommendations.</li> <li>▪ The agencies manage for extended rotations and have designed and implemented a model approach to designating large reserves.</li> <li>▪ DFW has an extensive program of forest habitat management, although this program is significantly underfunded.</li> </ul>	<ul style="list-style-type: none"> <li>▪ The road and trail inventory and assessment is incomplete.</li> <li>▪ Monitoring of regeneration, both before and after treatments, is not consistently or adequately occurring on BoF and DWSP properties.</li> <li>▪ The team observed retention levels in patch cuts and openings on BOF and DWSP properties to be insufficient and that there has been insufficient systematic analyses to determine green-tree retention levels in the larger cuts.</li> <li>▪ Prior to harvesting of conifer plantations (with often complete removal), BoF and DWSP have not completed an adequate environmental impact assessment to assess impacts on long-term ecological functions of the forest (6.1.e).</li> <li>▪ During the audit, BoF and DWSP sites were observed where a lack of protection for seeps and springs had resulted in damage to these resources during harvest operations</li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>CAR 2009.6</b></li> <li>▪ <b>CAR 2009.10</b></li> <li>▪ <b>CAR 2009.12</b></li> <li>▪ <b>CAR 2009.14</b></li> <li>▪ <b>CAR 2009.16</b></li> <li>▪ <b>REC 2009.5</b></li> </ul>
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<b>P7: Management Plan</b>	<ul style="list-style-type: none"> <li>▪ A number of plans have been completed and the completed plans address the key components of the FSC standard.</li> <li>▪ The BOF and DWSP have an excellent network of CFI plots, which are measured in a timely manner and used to benchmark management practices and harvest levels.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Management plans have not yet been completed for all state-managed lands.</li> <li>▪ BOF cutting plans do not provide detailed silvicultural prescriptions or information about ecological parameters.</li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>Major CAR 2009.2</b></li> <li>▪ <b>CAR 2009.17</b></li> </ul>
<b>P8: Monitoring &amp; Assessment</b>	<ul style="list-style-type: none"> <li>▪ DFW and DWSP monitoring reports are publically available at their websites.</li> <li>▪ DFW implements pre- and post- treatment plant inventories.</li> <li>▪ Completed DCR BOF management plans address monitoring needs and objectives.</li> </ul>	<ul style="list-style-type: none"> <li>▪ A public summary of monitoring activities is needed.</li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>Major CAR 2009.3</b></li> </ul>

<b>P9: Maintenance of High Conservation Value Forest</b>	<ul style="list-style-type: none"> <li>▪ A comprehensive assessment to determine the presence of attributes consistent with High Conservation Value Forests was conducted, and is publically available from in the white paper titled “Defining HCVFs on DCR and DFW lands in Massachusetts”</li> <li>▪ Large reserves have been designated that will protect intact forest habitat.</li> <li>▪ Guidance exists to address the process of identifying and protecting HCVF.</li> <li>▪ The HCVF process and outcomes are publically available and included a public input process.</li> <li>▪ The EEA Forest Reserves document provides guidance on what management activities are allowed in reserve areas.</li> <li>▪ District Management Plans have addressed and will address the use of silvicultural tools for ecological restoration.</li> <li>▪</li> </ul>	<ul style="list-style-type: none"> <li>▪ In Southeast District- where there is not yet an approved Management Plan, BoF lacks clear guidance related to what types of silvicultural activities are allowed and how they relate to ecological goals for reserve areas in the Southeast. (July 09 Update: Since the Southeast region is no longer being considered for certification- this non-conformance and related CAR are no longer applicable.</li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>CAR 2009.20</b></li> </ul>
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## 4.2 Preconditions

Preconditions are Major Corrective Action Requests (CARs) that are placed on a forest management operation during a full evaluation for possible certification when major non-conformities are detected. Certification cannot be awarded until Major CARs have been closed.

The following Major CARs were stipulated by the evaluation team as a result of its detailed assessment of the Commonwealth of Massachusetts' forest management operations on the lands covered by the scope of contracted evaluation.

<b>Non-conformity:</b> At the time of the assessment, not all districts for DFW and BoF had completed management plans. The need for completed plans was identified in past audits and a prior Minor CAR related to this gap was not fully addressed. The agencies have been developing management plans over the past several years, and plans have been completed for several districts and other state properties. While progress has been made, management plans have not yet been completed for all state-managed lands within the scope of certification.	
<b>Major CAR 2009.2<sup>6</sup></b>	Prior to award of certification, plans must be completed for all lands included within the scope of the certificate. Plans must be completed in a manner that is in compliance with Principle 7 of the Northeast Regional FSC Standard.
Reference	<i>Criteria 7.1; also Indicators 7.1.a.i, 7.2.b</i>
Status June 2009	As an alternative to this Major CAR, the State is willing to accept SCS narrowing the scope of lands that are eligible for FSC at this time to only those lands with final management plans. As such Major CAR 2009.2 has been struck. This procedural action was taken after consultation with Accreditation Services International, the accrediting arm of the FSC.

<b>Non-conformity:</b> The NE Regional FSC Standard requires that monitoring of operations be conducted and that summaries of monitoring results be made publically available (Criterion 8.5). This information is not currently available from the agencies. In addition, annual accomplishment reports for DCR have not been recently updated and data needs to be provided about work being accomplished and how it relates to the goals included in the management plans. Besides addressing the requirements for publicly available information, the agencies may also find benefit in sharing the results of monitoring between their managers and operations or as a component of employee training programs. The information can be formatted in a manner that supports intra- and inter-agency information sharing. See Indicator 8.1a for further guidance on monitoring procedures.	
<b>Major CAR 2009.3</b>	Prior to award of certification, all agencies must make publicly available a summary of the results of monitoring indicators, including those listed in Criterion 8.2.
Reference	<i>Criterion 8.5</i>

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<sup>6</sup> CARs are numbered sequentially and there is a single sequence of numbers spanning both major and minor CARs

<b>Non-conformity:</b> The Commonwealth of Massachusetts is responsible for the management of a large number and wide range of lands, including watersheds, parks, forests, reserves, and other properties. Prior to the recertification assessment BoF, DWSP, and DFW provided SCS with a list of lands that were to be included in the scope of the certificate. However, the BoF did not provide sufficient explanation of the reasons for excluding certain lands. Additionally, as described under Major CAR 2009.2- SCS has been forced to narrow the scope of the certificate.	
<b>Major CAR 2009.4</b>	BoF, DWSP, and DFW must make publicly available a complete listing of lands to be included in the scope of the certificate, lands to be excluded from the scope of certification, and an explanation of the reasons for exclusion. Public notification and stakeholder consultation about the change in the scope of the certificate must also be completed and documented.
<b>Deadline</b>	<i>Prior to award of certification</i>
<b>Reference</b>	<i>Indicator 1.6 b</i>

## 5.0 CERTIFICATION DECISION

### 5.1 Certification Recommendation

As determined by the full and proper execution of the SCS *Forest Conservation Program* evaluation protocols, the evaluation team recommends that the Commonwealth of Massachusetts not be awarded FSC-endorsed forest management certification as a “Well-Managed Forest” until the Major Corrective Action Requests, stipulated in Section of 4.2 of this Report, are duly closed. Upon confirmation of satisfactory response to the Major CARs, the evaluation team recommends award of FSC certification subject to the Minor CARs stipulated in Section 5.2, below. The Commonwealth of Massachusetts has been evaluated against all of the requirements of the Northeast Region of USA (Connecticut, Maine, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont) Regional Forest Stewardship Standard Version NE Final v9.0, 2/10/05 and over the forest area covered by the scope of the evaluation.

### 5.2 Minor Corrective Action Requests

**Non-conformity:** The audit team concludes that the State of Massachusetts did not adequately assess or monitor the potential negative socio-economic impacts of a *de facto* harvesting moratorium covering lands with approved management plans. As such, there are minor non-conformances with Indicators 4.4.a, 5.4.b, and 8.2.d. Since the field audit (when this issue was first raised by SCS), the State has clarified that there is no harvesting moratorium and management intends to proceed in accordance with the approved plans. As a result of this clarification- CAR 2009.1, originally stipulated as a Major CAR, is now written as a Minor CAR.

It is not clear why such a moratorium would be implemented on lands with completed plans that have

included public consultation; doing so suggests an inadequate consideration of and commitment to the planning and public input process. The moratorium on cutting on BOF lands may conflict with the objective of maintaining multiple economic and social benefits from the forest. The implementation of moratoria may disproportionately weigh aesthetic and recreation related issues without sufficient consideration of the diversity of forest management goals and social benefits, including the impacts to businesses, jobs and employers and communities from the complete cessation of commercial timber management.

<b>CAR 2009.1</b>	The agencies must establish a procedure for completing an appropriate social and economic impact assessment <b>prior to the State implementing harvesting moratoria (official or <i>de facto</i>) for regions with approved management plans.</b> The impact assessment must articulate and consider the impacts of management moratoria.
<b>Deadline</b>	Prior to Implementing a Moratorium or 2010 Annual Audit (whichever date is sooner)
<b>Reference</b>	<i>Indicators 4.4.a, 5.4.b</i>

**Non-conformity:** The funding and planning commitment necessary to mark property boundaries on BoF and DFW properties is not sufficient to assure the team that past non-conformances for inadequate boundary marking have been fully addressed. Past certification assessments have identified the need to mark and maintain property boundaries to prevent trespass, avoid conflicts with adjacent landowners, aid in the confirmation of tenure and use rights, and for other purposes. As boundary identification is an ongoing requirement that must be addressed on newly acquired lands, maintained on previously marked lines and completed in areas that have not yet been marked, it is necessary that BoF and DFW continue to set targets for boundary marking and maintenance and secure the resources to meet these targets.

<b>CAR 2009.5</b>	Commit the resources necessary to mark and maintain boundaries at a pace commensurate with the risks associated with inadequately marked boundaries; it is recommended that progress be made at a rate of at least 10% per year.
<b>Deadline</b>	<i>2010 Annual Audit</i>
<b>Reference</b>	<i>Indicator 1.5.a</i>

**Non-conformity:** BoF and DFW have made progress with a road and trail inventory and assessment process, however, it must be completed. The results of this process are to inform the identification and prioritization of road and trail maintenance work. Following the completion of the inventory and assessment, the agencies will need to set targets for accomplishing identified road and trail work.

<b>CAR 2009.6</b>	Complete the road and trail inventory and assessment.
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<b>Deadline</b>	<i>2010 Annual Audit</i>
<b>Reference</b>	<i>Indicator 6.5.b</i>

**Non-conformity:** The FSC standard requires that forest managers request the participation of tribal representatives in the identification of sites of current or traditional significance. While recognizing that tribal interests vary for different regions of Massachusetts and that some actions have already been taken, there is a need for explicit and consistent action by the agencies to ensure this consultation is occurring during the management planning process.

<b>CAR 2009.7</b>	The management plan development process must be revised to explicitly include affirmative efforts at consultation with affected tribes. The agencies must explain how tribes have been identified, how participation has been affirmatively invited (e.g., contact and engagement methods used) and what the outcomes have been.
<b>Deadline</b>	<i>2010 Annual Audit</i>
<b>Reference</b>	<i>Indicator 3.3.a</i>

**Non-Conformity:** There is no formal training for new BoF employees; therefore, they do not consistently know the applicable laws and regulations, agency policies, management plan objectives, and other operational details. Training in contemporary silvicultural systems and their ecological basis as founded in ecosystem dynamics is also lacking for BoF employees. Across all agencies more formal training would help ensure greater consistency in the implementation of best management practices and a shared understanding of applicable rules, regulations, and particularly terminology. For information about what could be included in the training, see Indicators 6.5.d and 7.1.c; and Criterion 7.3.

<b>CAR 2009.8</b>	Within one year, agencies must develop a formal training program for new employees and ensure that continuing education program for existing employees provides the necessary information to stay current with FSC requirements and contemporary silvicultural systems. The programs must address all relevant aspects of the FSC standard including applicable laws, guidelines, best management practices, rules, regulations, ecosystem dynamics and silviculture prescriptions.
<b>Deadline</b>	<i>2010 Annual Audit</i>
<b>Reference</b>	<i>Criterion 7.3 (Criterion has no Indicators); CAR also relates to Indicators 4.1.j, 6.5.d, 7.1.c</i>

**Non-conformity:** The team observed that staff levels as well as budget and revenue capacities are not adequate for BoF and DFW to sufficiently *fulfil management objectives, ensure economic viability and maintain and/or restore forest health and productivity* (Indicator 5.1.c). The DFW is observed to

have only three personnel and BOF funds for boundary maintenance and other necessary projects are not secure.	
<b>CAR 2009.9</b>	Resources for BoF and DFW must be identified to support forest management investments that address objectives for forest health and productivity. BoF and DFW must provide information about resources (e.g., funding, grants, staff, volunteers, etc) that have been secured and how they will be used. If existing sources of financial resources continue to be severely limited, the agencies must develop and provide to SCS a plan for how additional resources will be pursued and secured.
<b>Deadline</b>	<i>2010 Annual Audit</i>
<b>Reference</b>	<i>Indicator 5.1.c</i>

**Non-Conformity:** Forestry operations on BoF and DWSP properties are not consistently planned to protect pre-established natural regeneration of desired species (Indicator 6.3.a.2). The team observed inconsistent practice related to the pre-harvest evaluation and protection of advance regeneration in even-aged regeneration treatments on BoF and DWSP properties. There were several instances of designated shelterwood removal cuttings with little or no surviving regeneration after the harvest. Furthermore, monitoring of regeneration, both before and after treatments, is not consistently or adequately occurring.

<b>CAR 2009.10</b>	During even-aged regeneration cuts in stand types that depend on well established advance regeneration (most notably, oak species, sugar maple, white pine), BoF and DWSP must implement formal harvest planning measures to assess the adequacy of advance regeneration stocking before treatment, modifying the treatments as needed. Furthermore, unless the silvicultural objective is best accomplished by eliminating advance regeneration, logging systems and contracts must include specific, enforceable measures for protecting advance regeneration during harvest operations (prior designation of skid trails by the forester; use of appropriate equipment, etc).
<b>Deadline</b>	<i>2010 Annual Audit</i>
<b>Reference</b>	<i>Indicators 6. 3.a.2., 6.5.e., 8.2.b.1</i>

**Non-conformity:** The Adams Road sale did not adequately consider aesthetics and a large landing near Adams Road is covered with thick wood debris that is suppressing regeneration (Indicator 5.3.c). Plans were being made in 2008 to pile and perhaps burn this residual to encourage aspen regeneration that is dense in surrounding areas. The team revisited the site (in April 2009) and found that no action has been taken. It was also observed that guidelines do not exist for evaluating the conditions of the landing when sales are closed.

<b>CAR 2009.11</b>	Action must be taken to address landing conditions at the Adams Road Sale. An analysis must be completed by BOF to evaluate the problem of excess woody debris on log landings and training must be initiated, as needed, to ensure conformance with targets for landing conditions when sales are closed.
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<b>Deadline</b>	<i>2010 Annual Audit</i>
<b>Reference</b>	<i>Indicator 5.3.c</i>

**Non-Conformity:** The team observed retention levels in patch cuts and openings on BOF and DWSP properties to be insufficient and that no systematic analyses were implemented to determine green-tree retention levels in the larger cuts. In the absence of a full analysis, the State is unable to establish the appropriate retention level for maintaining ecological function and values at the stand and landscape level. Factors that, at present, have not been adequately considered include the range in variation of natural disturbances within each community type, the degree to which even-aged management is used, whether natural or artificial regeneration is employed, and the extent to which complete overstory removals are conducted.

<b>CAR 2009.12</b>	BOF and DWSP must develop and implement quantitative standards for structural retention for even-aged regeneration cuttings where the openings are larger than approximately two tree heights in width (the accepted standard at which environmental conditions within the center of such openings are unaffected by the surrounding stand). Standards must incorporate established guidelines for wildlife management and conservation of rare species, as well as the ecological requirements for regeneration of the desired tree species.
<b>Deadline</b>	<i>2010 Annual Audit</i>
<b>Reference</b>	<i>Indicator 6.3.a.8</i>

**Non-conformity:** The team observed several harvest sites where the management goal is to create early successional habitat by clearcutting<sup>7</sup> mature forests not experiencing widespread mortality. The rationale for this management practice is primarily to create habitat for declining populations of early-successional bird species. The team found that DWSP has not completed an adequate environmental assessment (per the requirements of 6.1) for this activity. In particular, the DWSP should address whether these treatments are consistent with the natural pattern and scale of disturbance that was present in these forests under historic disturbance regimes.

<b>CAR 2009.13</b>	DWSP shall conduct an analysis that fully addresses the ecological impacts of clearcutting healthy mature forest stands. The assessment must: <ul style="list-style-type: none"> <li>• include an analysis of the disturbance history of the landscape at the site and landscape level and consider the range of species potentially impacted among all representative seral stages;</li> <li>• include biodiversity experts; and</li> </ul>
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<sup>7</sup> Defined by statute as the removal of all trees in areas greater than 2 acres.

	<ul style="list-style-type: none"> <li>the results of this review must be incorporated into written guidelines to be used in making future silvicultural prescriptions for intact mature forest stands.</li> </ul>
<b>Deadline</b>	<i>2010 Annual Audit</i>
<b>Reference</b>	<i>Indicators 6.3.a.6 (also relates to include Indicators 5.1.e, 6.1.e, 6.3.a.7, and 8.2.c.1.)</i>

**Non-conformity:** Prior to harvesting of conifer plantations (with often complete removal), BoF and DWSP have not completed an adequate environmental impact assessment to assess impacts on long-term ecological functions of the forest (6.1.e). Since their initial certification in 2004, all agencies under this certificate have harvested some plantations of non-native (and in some cases, native white pine) conifer species. BoF has been the most aggressive with the least developed rationale for converting conifer plantations. DFW's conversion has been very limited and well-justified ecologically. Thus- this CAR does not apply to DFW. Justifications offered to the audit team differ by agency. For BoF the justification centers on two points: (1) that non-native species are intrinsically in conflict with biodiversity goals, and (2) aggressive regeneration harvesting of non-native stands presents an opportunity to create early successional habitat.

For DWSP the stated reasons for removing conifer plantations include: diversify forests, eliminate non-native species, and address failing stands. DWSP also makes the point that diverse native stands offer better resilience to disturbance, thus protecting watershed values.

This rationale does not take into consideration the fact that such plantations offer valuable habitats, viz. dense mature coniferous habitat used during migration and as winter habitat for animals. In addition, such habitats require at least 50 years to create, whereas early successional pioneer hardwoods require only a year or two. The precautionary principle would thus suggest that clearcutting such stands would be a last, not first, resort (as mentioned again, below, Norway spruce is non-invasive). The evaluation team found no evidence that the positive aspects of maintaining these plantations on the landscape have been considered, and thus BoF and DWSP have not presented a balanced environmental impact assessment – that addresses the pros and cons of their maintenance – prior to implementing a program for their rapid removal.

Secondly, forest management agencies are charged under FSC standards to maintain productive forests. Existing plantations offer some of the most productive stands on the entire ownership, as long as they are not in decline owing to forest health issues such as root rots. We note that the Adams Road (Savoy SF) plantations averaged over 200 square feet of basal area and did not appear to be suffering from forest health issues.

We further note that Norway spruce, while an exotic species, is demonstrably non-invasive and poses little threat to native plant communities.

<b>CAR 2009.14</b>	Effective immediately, BOF and DWSP shall halt all clearcutting in conifer plantations until an analysis that fully addresses the ecological impacts of stand level removal of conifer plantings on conifer dependent species and communities is
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	<p>completed. The assessment shall:</p> <ul style="list-style-type: none"> <li>• include biodiversity experts;</li> <li>• be peer-reviewed by an independent panel of scientists; and</li> <li>• be incorporated into written guidelines to be used in making future silvicultural prescriptions for such plantations, with special attention to native forest communities that contained or were dominated by a conifer component. In these stands, silvicultural strategies need to be developed to maintain or enhance the conifer component.</li> </ul> <p>Note: this CAR is meant to apply to all plantations (including white pine), not just those of non-native species. Incomplete (partial) overstory removal cuttings, designed to release well established conifer advance regeneration and which retain significant vertical structure, are exempt from this CAR.</p>
<b>Deadline</b>	<i>2010 Annual Audit</i>
<b>Reference</b>	<i>Indicator 6.1.e.</i>

**Non-conformity:** A coarse woody debris standard has been developed for leaving 200 cubic feet of material that is four inches in diameter or larger. The current standard does not cover the full intent of the FSC Indicators 5.3.c., 6.3.b.2, and 6.3.c.1. (i.e., woody biomass requirements for both wildlife habitat and nutrient cycling/soil productivity) and there is no specification for wood debris in larger diameter classes. The guideline is also not articulated in the plan or logging contract. It is not clear how compliance would be measured and how employees are trained to ensure the standard is addressed. This issue has elevated importance due to the planned bio-energy facilities.

<b>CAR 2009.15</b>	The existing woody debris retention guidelines must be expanded to fully cover the intent of 5.3.c., 6.3.b.2, and 6.3.c.1., (i.e., woody biomass requirements for both wildlife habitat and nutrient cycling/soil productivity). Furthermore, the agencies must implement the guidelines by ensuring that the coarse woody debris standard is measureable, is incorporated into contracts, and that training exists to support implementation.
<b>Deadline</b>	<i>2010 Annual Audit</i>
<b>Reference</b>	<i>Indicators 5.3.c, 6.3.c.1</i>

**Non-conformity:** During the audit, sites were observed where a lack of protection for seeps and springs had resulted in damage to these resources during harvest operations. On DFW sites seeps and springs were protected and contract had proper language- thus they are exempt from this CAR.

<b>CAR 2009.16</b>	Harvesting guidelines must be developed and implemented to protect seeps and springs.
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<b>Deadline</b>	<i>2010 Annual Audit</i>
<b>Reference</b>	<i>Indicator 6.5.c</i>

**Non-conformity:** Current BOF cutting plans do not provide detailed silvicultural prescriptions or information about ecological parameters. The BOF has developed a template Silviculture Narrative but it is inadequately detailed and lacks proper implementation.

<b>CAR 2009.17</b>	The BOF cutting plans must provide greater detail about silviculture treatments and the ecological conditions of the site (e.g., soil types, past harvest history, natural community types and successional trends).
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<b>Deadline</b>	<i>2010 Annual Audit</i>
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<b>Reference</b>	<i>Indicator 7.1.c.1</i>
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**Non-conformity:** Uncertainty exists regarding whether specific cuts on BoF lands that were called something other than a clearcut were in fact clearcuts that did not meet requirements under Ch. 132. Massachusetts Cutting Practices Regulation (304 CMR 11.05) states:

*"2. Clearcutting, coppice cuts, or any regeneration cut leaving less mature trees than those required for a seed tree cut (excepting the removal cut of shelterwood, seed tree or similar systems where, in the judgment of the Director's agent, the advance regeneration is of suitable size and stocking for release) shall meet the following standards:*

*a. The maximum size of the opening created shall be ten acres unless the source of the regeneration is seeding from surrounding stands, in which case the maximum size shall be five acres. Clearcuts larger than these limits shall require a specific reason to be given and approved in the forest cutting plan showing that environmental impact is less, or that environmental benefits would be enhanced, by a larger cut. In these cases, the forest cutting plan must also state the silvicultural justification for the larger area and list the provisions necessary to insure adequate regeneration and mitigation of environmental impacts.*

*b. Clearcuts separated by less than 100 feet of forest maintained at or above "BLevel" stocking shall be considered to be one clearcut."*

Completed and planned "restoration" harvests designed to remove conifer plantations have been labelled "shelterwood" harvests, yet the team observed harvests in which regeneration arose after the harvest, which is inconsistent with the professional definition of shelterwood overstory removal. Some harvests thus may not be in full compliance with the provisions of the law.

<b>CAR 2009.18</b>	<p><b>Phase 1:</b> Complete an analysis of the law (e.g., legal opinion) as it applies to BOF harvests and convey the findings to SCS.</p> <p><b>Phase 2:</b> Conduct an analysis of completed and planned clearcut and shelterwood overstory removal harvests exceeding 10 acres in which the majority of the trees have been removed (or are planned to be removed). The analysis must be completed by a</p>
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	third party and must confirm, for each harvest area: a.) The designations of the harvest in the cutting plan; b.) the pre-harvest stocking of advance regeneration, where known from records or where it can be measured if the harvest has not yet occurred; c.) the post-harvest stocking of regeneration; and d.) an opinion as to whether the provisions of the law, as guided by the results of the Phase 1 analysis, were followed.
<b>Deadline</b>	<i>2010 Annual Audit</i>
<b>Reference</b>	<i>Indicator 1.1.b</i>

**Non-conformity:** There is a lack of clear guidance related to what management activities are allowed in reserve areas in the Southeast, including when and why harvesting is allowed.

<b>CAR 2009.19</b>	BOF must clearly identify and define the ecological goal(s) that will be met through conducting harvests and other treatments in areas identified as reserves. The justification for these goals shall be provided when planning timber harvest in reserves.
<b>Deadline</b>	<i>2010 Annual Audit</i>
<b>Reference</b>	<i>Indicator 9.3a</i>

**Non-conformity:** The State has not organized and presented its monitoring information in a manner that shows the effectiveness of the measures employed to maintain or enhance the applicable HCV attributes. A minor CAR is issued (rather than a Major) because the State is undertaking monitoring of HCVF, but more work is needed in some instances to directly link monitoring to maintaining HCVF.

<b>CAR 2009.20</b>	All agencies under this certificate must present monitoring information in a manner that provides feedback on the effectiveness of measures employed to maintain or enhance HCVF.
<b>Deadline</b>	<i>2010 Annual Audit</i>
<b>Reference</b>	<i>Criterion 9.4 (Criterion 9.4 does not have any indicators)</i>

## Recommendations

Note that the evaluation team has concluded that the following opportunities for improvement do not, at present, constitute non-conformities with the cited Regional Indicators.

**Background/Justification:** The agencies are meeting their obligation to share public information as required by the Freedom of Information Act (FOIA); however, the number of requests may be placing a burden on staff that negatively impacts their ability to meet other work requirements, respond to

management needs, or provide other public services and benefits.	
<b>REC 2009.1</b>	An analysis could be conducted of the burden of the public information and Freedom of Information Act (FOIA) requests on staff time and the implications of the policy that accommodates charging fees for these types of requests.
<b>Reference</b>	<i>Indicator 1.1.c</i>

<b>Background/Justification:</b> Staff and Administrators participate in dispute resolution, including field visits to view sites with concerned parties. Legal counsel is employed as needed. There is some evidence to suggest that further opportunities exist to attempt to resolve disputes in their early stages through the engagement of local staff and informal communications.	
<b>REC 2009.2</b>	Opportunities could be provided or expanded for local level staff engagement in dispute resolution. The policies related to local staff engagement in dispute resolution could be clarified or modified to allow field personnel to respond to routine requests for information and take reasonable action to resolve disputes in their early stages.
<b>Reference</b>	<i>Indicator 2.3.a</i>

<b>Background/Justification:</b> The team did not have an opportunity to observe active harvest operations due to the timing of the field assessment (e.g., inoperable conditions). The team observed that first aid kits, hard hats and other safety equipment is maintained and available to staff. The logging contracts also address OSHA and other safety requirements. There is some evidence to suggest that safety measures could be enhanced with the development of a safety program that includes safety meetings and employee training.	
<b>REC 2009.3</b>	There is an opportunity to develop a safety program that addresses onsite meetings with contactors and employee safety.
<b>Reference</b>	<i>Indicator 4.2.a.</i>

<b>Background/Justification:</b> There is public concern about forest management practices on public lands, and the agencies have responded in a number of ways, including site visits, public meetings, and BOF's development of a public input policy for gathering feedback on proposed activities.	
<b>REC 2009.4</b>	The BOF has a relatively new public input policy that could be evaluated for effectiveness and improved as needed.
<b>Reference</b>	<i>Indicator 4.4.b, 8.2.d.2</i>



<b>Background/Justification:</b> There is strong recognition that invasive plants are a significant management concern for the agencies and work has been done to document strategies for addressing them on some of the public properties.	
<b>REC 2009.5</b>	Finalize the document Terrestrial Invasive Plant Management Plan for Properties Under Care and Control of the DCRF DWSP and complete similar analysis for the BOF and Watershed lands.
<b>Reference</b>	<i>Indicator 6.9.b</i>

<b>Background/Justification:</b> Motorized recreation, including illegal use of OHVs, can have significant negative impact on forest resources and forest values, including reduced opportunities for non-motorized recreation interests.	
<b>REC 2009.6</b>	There is a need to track the progress of the proposed OHV regulations, and if the increased enforcement and funding mechanisms do not develop, the agencies could consider developing an alternative strategy for managing motorized recreation and associated impacts.
<b>Reference</b>	<i>Indicator 5.4.a</i>

<b>Background/Justification:</b> The audit team observed examples of the Chapter 132 forms not being able to adequately characterize certain silvicultural prescriptions.	
<b>REC 2009.7</b>	There is an opportunity to revise or add information to the Chapter 132 forms to include a list of harvest treatments that distinguishes between the establishment cutting and removal cutting steps of a shelterwood method. The provided information could also include characterizations more in line with contemporary silvicultural practices and indications of retention (e.g, approximate basal area and species of reserve trees).
<b>Reference</b>	<i>Indicator 1.6.c</i>

<b>Background/Justification:</b> Stakeholders expressed concerns about the aesthetics and visual appearance of some agency treatments. The team observed that visual best management practices were not consistently considered or addressed in treatment design and implementation.	
<b>REC 2009.8</b>	There is an opportunity for the agencies to improve the consideration of aesthetics in treatment design and implementation.
<b>Reference</b>	<i>Indicator 4.4.a</i>

<b>Background/Justification:</b> The available management plans do not provide much details regarding “Description of silvicultural and/or other management system, based on the ecology of the forest in question and information gathered through resource inventories.” Instead forester knowledge is relied on to make the linkage between the very general descriptions of silvicultural systems and the details of application.	
<b>REC 2009.9</b>	There is an opportunity to enhance the description of silvicultural systems within the management plans and to base the information on forest ecology and resource inventory data.
<b>Reference</b>	<i>Indicator 7.1.c</i>

## 6.0 SURVEILLANCE EVALUATIONS

If certification is awarded, surveillance evaluations will take place at least annually to monitor the status of any open corrective action requests and review continued conformance. Public summaries of surveillance evaluations will be posted separately on the SCS website ([www.scs-certified.com](http://www.scs-certified.com)).

## 7.0 SUMMARY OF SCS COMPLAINT AND APPEAL INVESTIGATION PROCEDURES

The following is a summary of the SCS Complaint and Appeal Investigation Procedures, the full versions of the procedures are available from SCS upon request. The SCS Complaint and Appeal Investigation Procedures are designed for and available to any individual or organization that perceives a stake in the affairs of the SCS Forest Conservation Program and that/who has reason to question either the actions of SCS itself or the actions of a SCS certificate holder.

A **complaint** is a written expression of dissatisfaction, other than **appeal**, by any person or organization, to a certification body, relating to the activities of staff of the SCS Forest Conservation Program and/or representatives of a company or entity holding either a forest management (FM) or chain-of-custody (CoC) certificate issued by SCS and duly endorsed by FSC, where a response is expected (ISO/IEC 17011:2004 (E)). The SCS Complaint Investigation Procedure functions as a first-stage mechanism for resolving complaints and avoiding the need to involve FSC.

An “**appeal**” is a request by a certificate holder or a certification applicant for formal reconsideration of any adverse decision made by the certification body related to its desired certification status. A certificate holder or applicant may formally lodge an appeal with SCS against any adverse certification decision taken by SCS, within thirty (30) days after notification of the decision.

The written Complaint or Appeal must:

- Identify and provide contact information for the complainant or appellant
- Clearly identify the basis of the aggrieved action (date, place, nature of action) and which parties or individuals are associated with the action

- Explain how the action is alleged to violate an SCS or FSC requirement, being as specific as possible with respect to the applicable SCS or FSC requirement
- In the case of complaints against the actions of a certificate holder, rather than SCS itself, the complainant must also describe efforts taken to resolve the matter directly with the certificate holder
- Propose what actions would, in the opinion of the complainant or appellant, rectify the matter.

Written complaints and appeals should be submitted to:

Dr. Robert J. Hrubes  
Senior Vice-President  
Scientific Certification Systems  
2200 Powell Street, Suite 725  
Emeryville, California, USA94608  
Email: [rhrubes@scscertified.com](mailto:rhrubes@scscertified.com)

As detailed in the *SCS-FCP Certification Manual*, investigation of the complaint or appeal will be confidentially conducted in a timely manner. As appropriate, corrective and preventive action and resolution of any deficiencies found in products or services shall be taken and documented.

## SECTION B DETAILED RESULTS OF THE FULL EVALUATION

### 1.0 DETAILED EVALUATION OF CONFORMANCE

The findings and observations of the evaluation team are presented in this section, structured according to the 9 applicable FSC Principles. To follow are brief descriptions of each Principle, Criterion, and Indicator and the team's findings and judgments at the Criterion and Indicator level.

REQUIREMENT	CNC	COMMENT/CAR
<b>P1 Forest management shall respect all applicable laws of the country in which they occur, and international treaties and agreements to which the country is a signatory, and comply with all FSC Principles and Criteria.</b>		
<b>C1.1 Forest management shall respect all national and local laws and administrative requirements.</b>	C	
1.1.a. Forest management plans and operations comply with Federal, state, county, tribal, and municipal laws, rules, and regulations.	C	Stakeholders expressed concern about apparent potential legal violations, but no clear instances of violations were identifiable. In some cases legal interpretations are vague or conflicting. The agencies have sought legal opinions to ensure compliance.
1.1.b. Forestry operations meet or exceed the current state forest practice regulations, best management practices for forestry, and other protective measures for water quality that exist within the state(s) or other appropriate jurisdiction(s) in which the operations occur.	NC	<p>Uncertainty exists regarding the legality of large clearcuts (greater than 10 acres) and Massachusetts Cutting Practices Regulation (304 CMR 11.05). <b>CAR 2009.18:</b> Phase 1: Complete an analysis of the law (e.g., legal opinion) as it applies to BOF harvests and convey the findings to SCS. Phase 2: Conduct an analysis of completed and planned clearcut and shelterwood overstory removal harvests exceeding 10 acres in which the majority of the trees have been removed (or are planned to be removed). The analysis must be completed by a third party and must confirm, for each harvest area: a.) The designations of the harvest in the cutting plan; b.) the pre-harvest stocking of advance regeneration, where known from records or where it can be measured if the harvest has not yet occurred; c.) the post-harvest stocking of regeneration; and d.) an opinion as to whether the provisions of the law, as guided by the results of the Phase 1 analysis, were followed. To ensure greater consistency in the implementation of best management practices and a shared understanding of applicable rules and regulations a training program for new employees should be formalized and continuing education for existing employees developed. See CAR with Principle 4.</p> <p>For non-conformances related to BMP's see Criterion 6.5.</p>
1.1.c. Forest owners and managers share public	C	The agencies respond to public information requests

information, provide open records, and conduct procedures for public participation as required by law.		as required by law. However the volume of requests is resulting in a level of staff time being spent on them that is detracting from staff's ability to complete other tasks. <b>REC 2009.1:</b> An analysis could be conducted of the burden of the public information and Freedom of Information Act (FOIA) requests on staff time and the implications of the policy that accommodates charging fees for these types of requests.
<b>C1.2. All applicable and legally prescribed fees, royalties, taxes and other charges shall be paid.</b>	C	
1.2.a. Taxes on forestland, timber and other fees related to forest management, are paid in a timely manner and in accordance with federal, state, county, municipal and tribal laws.	C	No evidence of unpaid fees or taxes was found or presented by stakeholders and affected parties. State law requires 8% or 50% of stumpage received on BoF lands to be paid to the towns where the forest is located, depending on the date of acquisition of the forest.
<b>C1.3. In signatory countries, the provisions of all binding international agreements such as CITES, ILO Conventions, ITTA, and Convention on Biological Diversity, shall be respected.</b>	C	
1.3.a. Forest owners or managers comply with treaties, including those with American Indian tribes, and other international agreements ratified by the U.S. Senate. <i>(Note, see Appendix H for treaties which have been ratified and to which the US is a party as well as the following link:</i> <a href="http://fletcher.tufts.edu/multilaterals.html">http://fletcher.tufts.edu/multilaterals.html</a>	C	No evidence of treaty violations was found. The Migratory Bird Act is being addressed and Massachusetts has a strong endangered species protection program.
<b>C1.4. Conflicts between laws, regulations and the FSC Principles and Criteria shall be evaluated for the purposes of certification, on a case by case basis, by the certifiers and by the involved or affected parties.</b> <i>Applicability note to Criterion 1.4.: Verification of compliance with FSC Principles is required for the issuance of a certificate. When the certifier (i.e., the FSC-accredited certification body) and the forest owner or manager determine that compliance with applicable laws and the FSC Principles and Criteria cannot be simultaneously achieved, the matter is referred to the FSC Secretariat.</i>	C	No conflicts have been identified during the time period that the agencies have been certified and no conflicts were identified during the assessment.
<b>C1.5. Forest management areas should be protected from illegal harvesting, settlement and other unauthorized activities.</b>	C	The team did not feel a major CAR is needed for C 1.5 because of the significant progress that has been made in addressing 1.5.a. The team observed well maintained gates and access controls in place. The control of unauthorized activities has been clearly prioritized by the agencies and efforts have been and continue to be taken to address occurrences.
1.5.a. Forest owners or managers implement measures	NC	The agencies continue to make progress with

to prevent illegal and unauthorized activities in the forest. <i>For example:</i> <ul style="list-style-type: none"> <li>• <i>Boundary notices are posted.</i></li> <li>• <i>Gates are used.</i></li> <li>• <i>Periodic inspections are made.</i></li> <li>• <i>Suspected illegal or unauthorized activities are reported to the proper authorities.</i></li> </ul>		boundary markings, signs, gates and other access control measures. Gates, boulders and other barriers were observed to be in place during field visits. Signs are posted in watersheds to notify visitors of allowed uses. While progress has been made, further work remains to be done. <b>CAR 2009.5:</b> Commit the resources necessary to mark and maintain boundaries at a pace commensurate with the risks associated with inadequately marked boundaries; it is recommended that progress be made at a rate of at least 10% per year.
<b>C1.6. Forest managers shall demonstrate a long-term commitment to adhere to the FSC Principles and Criteria.</b> <i>Applicability note to Criterion 1.6.: Assessment of this criterion is guided by both FSC Policy and Guidelines: Partial Certification for Large Ownerships</i> <a href="http://www.fsc.org/en/whats_new/documents/Docs_cent/2,18">http://www.fsc.org/en/whats_new/documents/Docs_cent/2,18</a> ) and the FSC Guidelines for Certification Bodies FSC STD 20-001 (Version 2.1):	NC	See 1.6.b and Major CAR 2009.4
1.6.a. Forest owners or managers provide written statements of commitment to the FSC Principles and Criteria. The commitment is stated in the management plan [see 7.1], a document prepared for the certification process, or another official document.	C	The agencies have been FSC certified since 2004. DFW plans included FSC commitment. Statements are included on the agency websites.
1.6.b Forest owners or managers document the reasons for seeking partial certification.	NC	The lands to be included in the certificate and those to be excluded (and the reasons why) have not been fully articulated. Major CAR 2009.4: BoF, DWSP, and DFW must make publicly available a complete listing of lands to be included in the scope of the certificate, lands to be excluded from the scope of certification, and an explanation of the reasons for exclusion.
1.6.c Forest owners or managers document strategies and silvicultural treatments for several harvest entries that meet the FSC Principles and Criteria (see Principle 7).	C	More than three dozen management sites were visited to evaluate management activities. <b>REC 2009.7:</b> There is an opportunity to revise or add information to the Chapter 132 forms to include a list of harvest treatments that distinguishes between the establishment cutting and removal cutting steps of a shelterwood method. The provided information could also include characterizations more in line with contemporary silvicultural practices and indications of retention (e.g, approximate basal area and species of reserve trees).
<b>P2 Long-term tenure and use rights to the land and forest resources shall be clearly defined, documented and legally established.</b>		
<b>C2.1. Clear evidence of long-term forest use rights to the land (e.g., land title, customary rights, or lease agreements) shall be demonstrated.</b>	C	
2.1.a. Forest owners or managers make available	C	Information about allowed uses; regulations and

information on legal and customary rights associated with the forest. These rights include both those that are held by the party seeking certification and those held by other parties.		rights are posted at sites, online and made available by the land managers.
2.1.b. Land boundaries are identified on the ground by the forest owner or manager prior to commencement of management activities.	C	Boundaries were viewed in the field and found to be identified and marked before commencement of management activities.
<b>C2.2. Local communities with legal or customary tenure or use rights shall maintain control, to the extent necessary to protect their rights or resources, over forest operations unless they delegate control with free and informed consent to other agencies.</b>	C	
<p>2.2.a. The forest owner or manager allows - customary tenure and use rights of the forest to the extent that they are consistent with the conservation of the forest resource and the objectives as stated in the management plan (see examples below). Use rights that are not legally recognized or enforceable are subject to implied or expressed consent of the landowner.</p> <p><i>Note: In some states, traditional use in the Northeast includes free and open access to private forestland subject to the implied or expressed consent of the landowner.</i></p> <p><i>Examples of implied or express consent may include:</i></p> <ul style="list-style-type: none"> <li>• <i>traditional public access to hiking trails and canoe routes,</i></li> <li>• <i>gathering birch bark or brown ash for traditional crafts,</i></li> <li>• <i>harvesting medicinal plants,</i></li> <li>• <i>fishing and hunting on lands where public access has been a well-established tradition, and</i></li> <li>• <i>long-standing private access to landlocked parcels that lack a deeded right-of-way.</i></li> </ul>	C	A full range of recreational activities are allowed on the public lands. Quabbin has a policy that allows displaced property owners to have access for traditional uses and to visit cultural sites. Quabbin has regular gatherings with neighbors. Uses allowed on agency lands include horseback riding, snowmobiling, hunting, fishing, bike riding, boating and other activities. There are public access plans for each watershed. Non-commercial non-timber forest product gathering is allowed. There are maple syruping permitting processes available.
2.2.b. On ownerships where legal or customary use rights and traditional cultural areas/sites exist, forest owners or managers consult with concerned groups in the planning and implementation of forest management activities.	C	Land managers consult with a range of interest groups including adjacent land owners, state archeologist, community members and decision makers, advisory boards and councils, interest groups, citizens and historical society.
<p><b>C2.3. Appropriate mechanisms shall be employed to resolve disputes over tenure claims and use rights. The circumstances and status of any outstanding disputes will be explicitly considered in the certification evaluation. Disputes of substantial magnitude involving a significant number of interests will normally disqualify an operation from being certified.</b></p> <p><i>Applicability Note: Ownership of forestland in New</i></p>	C	

<i>England and New York follows existing state statute and well-established case law.</i>		
2.3.a. The forest owner or manager maintains relations with community stakeholders to identify disputes in their early stages. If disputes arise, the forest owner or manager initially attempts to resolve them through open communication, negotiation, and/or mediation. If negotiation fails, federal, state, local, and/or tribal laws are employed to resolve land tenure (see Glossary) claims.	C	The watersheds maintain advisory boards, DFW has advisory groups and the BOF's stewardship council provides a forum for public comment. Public tours have been held to address disputes. Staff and Administrators participate in dispute resolution, including field visits to view sites. Legal counsel is employed as needed. <b>REC 2009.2:</b> Opportunities could be provided or expanded for local level staff engagement in dispute resolution. The policies related to local staff engagement in dispute resolution could be clarified or modified to allow field personnel to respond to routine requests for information and take reasonable action to resolve disputes in their early stages.
2.3.b. The forest owner or manager provides information regarding unresolved and ongoing disputes over tenure and use rights to the FSC-accredited certification body.	C	The agencies openly discussed ongoing disputes and sites where conflicts over management have occurred were visited by the audit teams.
<b>P3 The legal and customary rights of indigenous peoples to own, use and manage their lands, territories, and resources shall be recognized and respected.</b> <i>Applicability Note: The terms "tribes", "tribal" or "American Indian groups" in indicators under Principle 3 include all indigenous people in the US, groups or individuals, who may be organized in recognized or unrecognized tribes, bands, nations, native corporations, or other native groups.</i>		
<b>C3.1. Indigenous peoples shall control forest management on their lands and territories unless they delegate control with free and informed consent to other agencies.</b>		
3.1.a. Forest management planning on tribal lands includes a process for input by tribal members in accordance with their laws and customs.		n/a
3.1.b. Forest management on tribal lands takes place only after securing the informed consent of tribes or individuals (such as allottees (see Glossary)) whose forest is being considered for management.		n/a
3.1.c. Managers of tribal forests utilize tribal experience, knowledge, practices, and insights in forest management planning and operations on tribal lands, when requested to do so by the tribal landowner.		n/a
<b>C3.2. Forest management shall not threaten or diminish, either directly or indirectly, the resources or tenure rights of indigenous peoples.</b>	C	
3.2.a. Forest owners or managers identify and contact American Indian groups that have current legal or customary-use rights to the management area, and invite their participation in jointly planning forestry operations that affect their resources.	C	There is no evidence of current legal or customary-use rights for American Indian groups in the management area.
3.2.b. Forest owners or managers incorporate safeguards in management planning to ensure that management	C	Management incorporates appropriate safeguards.



actions do not adversely affect tribal resources, either directly or indirectly. <i>For example:</i> <ul style="list-style-type: none"> <li>• <i>Forest operations protect spawning and rearing areas for migratory fish harvested by Native tribes and bands.</i></li> <li>• <i>Forest operations maintain populations of culturally important species, such as moose, that are harvested on nearby tribal lands.</i></li> <li>• <i>Forest operations protect other resources identified through consultations described in 3.2a.</i></li> </ul>		
<b>C3.3. Sites of special cultural, ecological, economic or religious significance to indigenous peoples shall be clearly identified in cooperation with such peoples, and recognized and protected by forest managers.</b>	C	
3.3.a. Forest owners or managers request the participation of tribal representatives in identification of sites of current or traditional significance within the forest proposed for certification.	NC	A documented, consistent process for requesting the participation of tribal representatives needs to be implemented. <b>CAR 2009.7:</b> The management plan development process must be revised to explicitly include affirmative efforts at consultation with affected tribes. The agencies must explain how tribes have been identified, how participation has been affirmatively invited (e.g., contact and engagement methods used) and what the outcomes have been.
3.3.b. Forest owners or managers and tribal representatives jointly develop measures to protect or enhance areas of special significance.	C	The state has cultural and historic resource identification strategies and protection measures in place.
3.3.c. Confidentiality of disclosures is maintained in keeping with applicable laws and the requirements of tribal representatives.	C	Records are protected and the database is not available publicly.
<b>C3.4. Indigenous peoples shall be compensated for the application of their traditional knowledge regarding the use of forest species or management systems in forest operations. This compensation shall be formally agreed upon with their free and informed consent before forest operations commence.</b>		
3.4.a. Forest owners or managers respect the confidentiality of tribal knowledge and assist in the protection of tribal intellectual property rights.		n/a
3.4.b. A written agreement is reached with individual American Indians and/or tribes prior to commercialization of their indigenous intellectual property, traditional knowledge, and/or forest resources. The individuals and/or tribes are compensated when such commercialization takes place.		n/a
<b>P4 Forest management operations shall maintain or enhance the long-term social and economic well-being of forest workers and local communities.</b>		

<b>C4.1. The communities within, or adjacent to, the forest management area should be given opportunities for employment, training, and other services.</b>		
<p>4.1.a. Forest work is packaged and offered in ways that create quality work opportunities for employees, contractors, and their workers.</p> <p>For example, quality work can include the following attributes:</p> <ul style="list-style-type: none"> <li>• a mixture of diverse tasks requiring varying skill levels,</li> <li>• opportunities for advancement,</li> <li>• a comprehensive package of benefits,</li> <li>• opportunities for employee and contractor participation in decision-making, and</li> <li>• incentive programs based on quality of work</li> </ul>	C	<p>Sales are available in a range of sizes and different services (e.g., road work, invasive species control) are included in contracts. Employees receive benefits and opportunities for advancement. Employees and contractors meet on site to make decisions about operations as needed to meet treatment objectives. Quabbin and other watersheds specifically put up small sales for diverse operators.</p>
4.1.b. Forest owners or managers negotiate with contractors with the goal of developing relationships that are long-term and stable.	C	Operator relationships are stable and there is some flexibility for negotiations.
4.1.c. Employment conditions (e.g., remuneration, benefits, safety equipment, training, and workman's compensation) are consistent for both local and non-local workers doing equivalent jobs..	C	Employment is competitive, fair and in keeping with applicable laws. No evidence of discrimination was identified.
4.1.d. Forest owners or managers utilize qualified local foresters, loggers, and contractors. Forest managers and their contractors give preference to qualified local workers.	C	Licensing requirements per Massachusetts regulations are in place and many of the loggers are local.
<p>4.1.e. Forest owners or managers procure goods and services locally.</p> <p>Note: In the northern part of the northeast region, locally means multi-state, multi-national, and multi-cultural.</p>	C	Efforts are made to procure goods and services locally
<p>4.1.f. Forest owners or managers of landholdings greater than 1,000 acres participate in local economic development and/or civic activities</p> <p><i>For example:</i></p> <p><i>Local economic development activities include regional economic development initiatives, planning sessions, and forest advisory committees.</i></p>	C	Many DFW and DWSP staff are active community members and maintain relationships with local decision makers.
<p>4.1.g. Forest owners or managers contribute to public education about forestry practices in conjunction with schools, community colleges, and/or other providers of training and education</p> <p><i>For example:</i></p> <ul style="list-style-type: none"> <li>• <i>Forests are offered as a training and/or educational resource</i></li> <li>• <i>Forest owners or managers make presentations about responsible forestry in local schools.</i></li> </ul>	C	The DCR is involved in a full range of educational activities as are DWSP and DFW. Forestry classes visit the Quabbin regularly, including Yale School of Forestry Graduate Students and University of Massachusetts forestry students. Forestry and wildlife classes from the UMass Dept. of Natural Resource Conservation visit DFW lands regularly. Logger training sessions for "The Game of Logging" are held on the Quabbin lands. Conservation camps are held with students.
4.1.h. Employee compensation and hiring practices meet or exceed the prevailing local norms for work requiring	C	Compensation and practices are competitive and licensing requirements are included.

equivalent education, skills, and experience.		
4.1.i. Forest owners or managers and their contractors comply with the letter and intent of applicable state and federal labor laws and regulations (see also 1.1.a).	C	Required postings, non-discrimination practices and full compliance were observed.
4.1.j. Forest owners or managers provide and/or support training opportunities for workers to improve their skills.	NC	No system of new employee training or continuing education training was documented. An improved understanding of laws and guidelines is needed and training to maintain forestry knowledge is also necessary. To ensure greater consistency in the implementation of best management practices and a shared understanding of applicable rules and regulations a training program for new employees should be formalized and continuing education for existing employees developed. Some foresters don't know or can't readily describe contemporary silvicultural systems and their ecological basis as founded in ecosystem dynamics. <b>CAR 2009.8:</b> Within one year, the agencies must develop a training program for new employees and formalize a continuing education program for existing employees. The programs must address all relevant aspects of the FSC standard including applicable laws, guidelines, best management practices, rules, regulations, ecosystem dynamics and silviculture prescriptions.
<b>C4.2. Forest management should meet or exceed all applicable laws and/or regulations covering health and safety of employees and their families.</b>	C	
4.2.a. The forest owner or manager and their contractors develop and implement safety programs and procedures. <i>For example, safety programs may include:</i> <ul style="list-style-type: none"> <li>• training sessions (such as Game of Logging and Certified Logging Professionals),</li> <li>• training sessions in proper handling, storage, and disposal of chemicals, application of chemicals with proper equipment according to label directions, and</li> <li>• safety meetings.</li> </ul>	C	Game of Logging and other logger training is encouraged, operator licensing is required. Safety considerations are included in the sale permit. <b>REC 2009.3:</b> There is opportunity to develop a safety program that addressed onsite meetings with contractors and employee safety.
4.2.b. The forest owner or manager and their contractors demonstrate an on-going commitment to the health and safety of employees and contractors.	C	Commitment demonstrated through first-aid kits being in trucks, hard hats and high visibility vests are worn during active logging jobs.
<b>C4.3 The rights of workers to organize and voluntarily negotiate with their employers shall be guaranteed as outlined in Conventions 87 and 98 of the International Labor Organization (ILO).</b> <i>Applicability Note: Compliance with this criterion can be accomplished with guidance from FSC Certification and ILO Conventions: FSC Policy Paper and Guidelines dated May 20, 2002 available at:</i>	C	

<a href="http://www.fsc.org/en/whats_new/documents/Docs_cent/2">http://www.fsc.org/en/whats_new/documents/Docs_cent/2</a>		
4.3.a. Forest owners or managers and their contractors have a process in place for dispute resolution.	C	Union process is in place
4.3.b. Forest workers are free to associate with other workers for the purpose of advocating for their own employment interests.	C	Employees are unionized
<b>C4.4. Management planning and operations shall incorporate the results of evaluations of social impact. Consultations shall be maintained with people and groups directly affected by management operations.</b>	C	The agencies maintain consultations and incorporate the results into planning.
4.4.a. Forest owner or manager considers community goals for forest and natural resource use and protection as articulated in municipal and regional plans.	C	Advisory groups include broad participation, including municipal and town representatives.
4.4.b. Forest owners or managers of large-scale operations provide opportunities for people and groups directly affected by management operations to provide input into management planning.	C	Advisory boards include various stakeholders and groups, e.g., the “Ware River Watershed Advisory Committee”. The DCR Visioning process is designed to be inclusive. <b>REC 2009.4:</b> The BoF has a relatively new public input policy that should be evaluated and improved as needed. Public comment is solicited for all Forest Management plans created by the State of Massachusetts.
4.4.c. People and groups potentially subject to direct adverse affects of management operations are apprised of the activity so they may provide comment or express concern. The manager maintains a file of comments and concerns of affected parties and any actions taken to mitigate these concerns.	C	Signs are posted at management sites and proposes sales are posted at the website and made available for public comments. Records of disputes and correspondence with stakeholders are maintained. Neighbors are notified of cutting activities. Comments and responses are documented and posted on line and/or included with plans.
4.4.d. Significant archeological sites and sites of cultural, historical, or community significance, as identified through consultation with state archeological offices, tribes, universities, and local experts, are designated as special management zones or otherwise protected during harvest operations.	C	Sites were observed to be protected in the field, including cellar holes, stone walls, and other resources. Flagging was in place to identify sites to be protected. An instance of trees falling down on a cemetery was reported and found to be the result of wind damage following the harvest operation.
<b>C4.5. Appropriate mechanisms shall be employed for resolving grievances and for providing fair compensation in the case of loss or damage affecting the legal or customary rights, property, resources, or livelihoods of local peoples. Measures shall be taken to avoid such loss or damage.</b> <i>Applicability Note: Provisions of Criterion 4.5. do not evoke protections or liabilities beyond those provided by U.S., state, and local laws</i>	C	
4.5.a. The forest owner or manager attempts to resolve grievances and mitigate damage resulting from forest management activities through open communication and negotiation prior to legal action.	C	The agencies have the capacity and policies in place to appropriately address grievances.
4.5.b Forest owners or managers and their contractors	C	Contracts require bonds and insurance coverage.

maintain liability insurance or post bonds that are adequate to cover potential liabilities.		
<b>P5 Forest management operations shall encourage the efficient use of the forest's multiple products and services to ensure economic viability and a wide range of environmental and social benefits.</b>		
<b>C5.1. Forest management should strive toward economic viability, while taking into account the full environmental, social, and operational costs of production, and ensuring the investments necessary to maintain the ecological productivity of the forest.</b>	C	
5.1.a. The forest owner or manager is financially able to support long-term (i.e., decades rather than quarter-years or years) forest management, e.g., planning, inventory, resource protection, post-harvest management activities.	C	DFW has limited capacity and BOF funds for boundaries and other projects are not secured. However, the agencies are well established in regulation and have decades long histories of land management.
5.1.b. Responses to short-term financial factors, such as fluctuations in the market, requirements for cash flow, and the need for sawmill equipment and log supplies, are limited to levels that enable long-term fulfillment of the management plan.	C	Responses to market changes are evident, but any changes are within the goals of the management. Salvage operations in response to the wind storm have not occurred.
5.1.c. Investment and reinvestment in forest management are sufficient to fulfill management objectives, ensure economic viability and maintain and/or restore forest health and productivity.	NC	Resources are insufficient to maintain key management objectives, including maintaining boundaries, developing plans, updating inventory and implementing practices. Forestry has made good use of the \$600,000 that has been allocated in the past for boundary marking and other activities. Under funding is threatening the ability of the agencies to meet specific elements of the FSC standard. Progress has been made where funding has been made available. <b>CAR 2009.9:</b> Resources must be identified to support forest management investments that address objectives for forest health and productivity. The agencies must provide information about resources (e.g., funding, grants, staff, volunteers, etc) that have been secured and how they will be used. If existing sources of financial resources continue to be severely limited, the agencies must develop and provide to SCS a plan for how additional resources will be pursued and secured.
5.1.d. Appropriate to the scale and intensity of management, the forest owner or manager reinvests in the local economy through ongoing capital investment. <i>For example,</i> <i>on small and large woodland ownerships (see Glossary):</i> <ul style="list-style-type: none"> <li>• <i>Property improvements, such as roads that facilitate the long-term management potential of a woodlot, are installed.</i></li> <li>• <i>Planting, timber stand improvement, or pre-commercial thinning to improve long-term productivity is conducted.</i></li> </ul>	C	New trucks have been purchased. GIS capacity and training have been established. The following is a list of a variety of projects-programs aimed at addressing DCR BOF access (road and trail) rehabilitation and maintenance programs. * Yearly, through forest resource management projects (timber sales) many roads and trails are rehabilitated and maintained to DCR safety and environmental standards as part of the required contractual work or via in-kind services in lieu of revenue.

<ul style="list-style-type: none"> <li>• <i>Sources of erosion and sedimentation, such as non-functioning or substandard water crossings or control structures, are repaired and/or upgraded.</i></li> <li>• <i>Exposed areas within streamside buffers, identified as a source of erosion and/or sedimentation, are promptly revegetated.</i></li> </ul> <p><i>on large woodland ownerships:</i></p> <ul style="list-style-type: none"> <li>• <i>Trucks and other equipment are purchased if necessary.</i></li> <li>• <i>Investment is made in other components of the management structure, such as office buildings and office equipment.</i></li> <li>• <i>Capital is invested in processing facilities to utilize forest products from the land base.</i></li> </ul>	<ul style="list-style-type: none"> <li>* Yearly, regional staff maintain some roads and trails</li> <li>* FY 2006, Savoy Mountain ORV-ATV damage rehabilitation</li> <li>* FY 2008, Catamount SF road rehabilitation</li> <li>* FY 2008 and 2009, Robinson SP and Hawley SF- BOF paid for engineering services for heavily damaged roads totaling approximately \$50,000 for site plans, wetlands and rare species permits and coordination with town Conservation Commissions.</li> <li>* FY 2008, 2009, and beyond DCR Engineers have approximately \$200,000 for forest road and trail rehabilitation and maintenance. 2-3 projects are selected each year for rehabilitation.</li> <li>* FY 2007, 2008, 2009, \$10,000,000 was invested in resurfacing the Greylock State Reservation main access roads. This is a substantive investment in our forest access system.</li> <li>* FY 2009, a Berkshire State Forest bridge was repaired by engineering that was not fit for use with Governor's accelerated bridge repair program. Potential funding sources:</li> <li>* DCR BOF forestry portion of the 2008 Environmental Bond Bill included funding for road and trail rehabilitation and maintenance. The cap over the next 5 years is \$10,000,000 for then entire forestry Capital Investment program. Each year the legislation-governor approves a spending allocation.</li> <li>* DCR has initiated a forest road and trail initiative in response to stakeholder desires to upgrade and maintain a high level of safe and environmentally sound access. Last year, DCR requested over \$2,000,000 of capital and operating funding for the initiative.</li> <li>* BOF submitted two Economic Stimulus projects \$2,000,000 each for forest roads and trail</li> <li>* DCR submitted a number of Economic Stimulus projects for upgrade of paved forest roads.</li> <li>* BOF continually seeks funding opportunities to further road and trail projects.</li> </ul>
<p>5.1.e. Management practices and silvicultural techniques lead to improvements in productivity and quality. (see Criterion 5.6. and 8.2.1)</p> <p><i>For Example</i></p> <ul style="list-style-type: none"> <li>• <i>Stands are well-stocked</i></li> <li>• <i>Advanced regeneration is protected</i></li> <li>• <i>Quality crop trees are retained and protected</i></li> <li>• <i>Regenerated stands are fully stocked</i></li> </ul>	<p>NC</p> <p>Stands are well stocked in most areas. Areas where advance regeneration not being protected were observed, especially on BOF lands and some watershed lands. DFW does an excellent job with protecting advance regeneration. Quality crop trees are retained and protected with low levels of residual stand damage. Regenerated stands are not consistently stocked with the desired species. <b>CAR 2009.13:</b> Agencies (excluding DFW) under this certificate shall</p>

		conduct an analysis that fully addresses the ecological impacts of clearcutting healthy mature forest stands. The assessment must: include an analysis of the disturbance history of the landscape at the site and landscape level and consider the range of species potentially impacted among all representative seral stages; be a combined effort of all agencies; include biodiversity experts; and be peer-reviewed by an independent panel of scientists. Further, the results of this review must be incorporated into written guidelines to be used in making future silvicultural prescriptions for intact mature forest stands.
<b>C5.2. Forest management and marketing operations should encourage the optimal use and local processing of the forest's diversity of products.</b>	C	
5.2.a. Preference is given to local, financially competitive, value-added processing and manufacturing facilities.	C	Timber sales are offered in a variety of types and sizes, from small homeowner-oriented firewood thinnings to large, commercial timber harvests.
5.2.b. New markets are explored and/or developed for an expanded diversity of forest products and logging by-products. <i>For example, by-products may include:</i> <ul style="list-style-type: none"> <li>• <i>low-grade logs,</i></li> <li>• <i>small-diameter stems from thinning operations, and</i></li> <li>• <i>biomass and fuelwood (see also 5.3 and 6.3.c).</i></li> </ul>	C	The Bureau of Forestry employs a "Marketing and Utilization" forester. During consultation with stakeholders some wood product companies were not aware of the available certified wood in Massachusetts. Marketing and Utilization staff could promote the availability of FSC-certified wood.
5.2.c. Some sales of forest products or contracts for services are scaled or structured to allow small businesses to bid competitively.	C	A variety of timber and other service contracts are used at different scales to allow large and small businesses to bid competitively. Timber sales are offered in a variety of types and sizes, from small homeowner-oriented firewood thinnings to large, commercial timber harvests.
<b>C5.3. Forest management should minimize waste associated with harvesting and on-site processing operations and avoid damage to other forest resources.</b>	C	
5.3.a. Felling, skidding/yarding, bucking, sorting, and handling are carried out in a way that optimizes log scale and grade.	C	Lump sum sales encourage optimized utilization.
5.3.b. Harvest is implemented in a way that protects the integrity of the residual stand. Provisions concerning acceptable levels of residual damage are included in operational contracts. <i>For example,</i> <ul style="list-style-type: none"> <li>• <i>Bumper trees are utilized and equipment is selected and used in a way that minimizes unintentional damage to crop trees.</i></li> </ul>	C	Two sales on BOF lands were observed to have residual damage that was concentrated along trails and the damaged trees were left standing to serve as bumper trees in future entries. Damage was not observed to any great degree off the trails and felling techniques appear to be appropriately protecting residual trees. Most of the completed harvests reviewed by the team had healthy, undamaged residual trees. Harvests are generally carefully planned and implemented, with significant controls to ensure protection of residual trees. Cut-to-length

		systems are employed in some instances; many sales use mechanized equipment which can minimize residual impacts. The team interprets advance regeneration to be different from the residual stand, and non-conformances with respect to advance regeneration were observed- see CAR 2009.10.
5.3.c. After adequate woody debris has been left on a site to provide nutrient capital and habitat (see 6.3.c), the remaining logs and large limbs are sold when markets exist. When markets do not exist, excess woody debris is distributed throughout the site, rather than being left on the landing.	NC	Utilization of cut trees is generally fairly good, with occasional important exceptions. Past audit members observed that at the Adams Road sale: “Aesthetics of this site leave something to be desired; two large areas of overstory removal are visible from the paved town road. A large landing near Adams Road is covered with thick wood debris that is suppressing regeneration. An effort is being made to pile and perhaps burn this residual to encourage aspen regeneration that is dense in surrounding areas.” The team revisited the site and found that no action had been taken. <b>CAR 2009.11:</b> Action must be taken to address landing conditions at the Adams Road Sale. An analysis must be completed by BOF to evaluate the problem of excess woody debris on log landings and training must be initiated, as needed, to ensure conformance with targets for landing conditions when sales are closed.
<b>C5.4. Forest management should strive to strengthen and diversify the local economy, avoiding dependence on a single forest product.</b>	C	See 5.4.b
5.4.a. Forest management diversifies forest uses and products, while maintaining forest composition, structures, and functions.	C	Forest resources are managed for a full range of uses and products, including diverse species. For some stakeholders, motorized recreation is viewed as limiting the opportunities for other forest uses. <b>REC 2009.6:</b> There is a need to track the progress of the proposed OHV regulations, and if the increased enforcement and funding mechanisms do not develop, the agencies could consider developing an alternative strategy for managing motorized recreation and associated impacts.
5.4.b. Management optimizes the multiple economic benefits derived from the forest while maintaining the social and ecological standards required for certification.	NC	The moratorium on cutting on BOF lands conflicts with maintaining multiple economic benefits from the forest. The cutting moratoriums are not balanced and do not consider the whole social spectrum. The decisions disproportionately weigh aesthetic and recreation issues without considering more diversified forest management goals and social benefit. Moratoriums should not be imposed on lands with completed plans that have included public consultation, as it is dismissive of the planning and public input process. <b>Major CAR 2009.1:</b> Prior to award of certification, the agencies must complete a regional social and economic impact assessment that



		<p>articulates and considers the impacts of management moratoria.</p> <p>June 2009 Update: Following the audit the BoF made it clear that there is no official moratorium for lands with approved plant, thus the CAR is downgraded to a Minor CAR 2009.1</p>
<b>C5.5. Forest management operations shall recognize, maintain, and, where appropriate, enhance the value of forest services and resources such as watersheds and fisheries.</b>	C	
5.5.a. Biological diversity is considered, protected, and enhanced during the course of forest management operations and as a distinct element of overall forest management.	C	<p>BoF, DFW, and DWSP take numerous steps (e.g. snag and green tree retention, rare plant surveys, conservation management plans for Endangered, Threatened and Rare species) to consider and maintain biodiversity.</p> <p>Some land managers are moving toward larger patch sizes with stated goals of encouraging early successional (e.g., young forest) habitats. It is not clear that these management practices are being implemented in a manner that fully considers the biological diversity impacts at the site or landscape levels. See CARs 2009.12 and 2009.13.</p>
5.5.b. The forest owner or manager places aquatic and riparian resources, including water quality, above forest product objectives within designated riparian zones of adequate dimensions to assure resource protection. (see Criterion 6.5.c)	C	<p>Water quality is given high priority among all land management agencies with exceptional attention given in the watershed operations and planning considerations.</p>
<p><b>C5.6. The rate of harvest of forest products shall not exceed levels that can be permanently sustained.</b></p> <p><i>Applicability Note: Reliance on technical approaches such as forest modeling to calculate sustainable harvest levels is dependent upon the size of the organization. On small woodland ownerships where calculation of sustainable harvest levels is impractical, harvest levels will be based on maintaining or attaining desired forest conditions, such as stocking, species composition, and age and /or development classes of stands, and wildlife habitat.</i></p>	C	
5.6.a. The sustainability of harvest levels is based on one or more of the following: clearly documented growth and regeneration data, site index models, site productivity, and desired future condition, as well as consideration of cyclical and natural disturbances. The required level of documentation to support the harvest calculation is appropriate to the scale and intensity of forest management and the uniqueness of the affected resources.	C	<p>All three agencies use area regulation for determining sustainable harvest levels. DWSP's target harvest is about 1% per year (100-year rotation, implemented in small patch cuttings within stands); recent activity approaches but has never exceeded this target. BOF lands allocate areas to either 105-year rotations, 150-year rotations (both using a shelterwood with reserves system), or in shade-tolerant types and riparian areas, a multi-aged (selection) system based on the 150-year rotation model. DFW also uses a mix of even and uneven-aged systems on long rotations; owing to staff</p>

		limitations, actual harvest has been <10% of the calculated maximum.
5.6.b. In response to monitoring and new information, the harvest calculation is periodically assessed and revised as necessary to incorporate the effects of changes in market conditions, forest disturbances (e.g., insect infestations, disease, weather damage), and desired forest	C	Monitoring is not being consistently done with regeneration. However it appears that regenerating the forest with trees is successful in the vast majority of cases, and regeneration treatments are currently not covering more than a very small portion of the forest. Thus there has been no need to revise the harvest calculation, which is clearly being implemented very conservatively.
5.6.c. Once the age-class (see Glossary) distribution commensurate with long-term sustainability is achieved, total harvest volume does not exceed sustainable levels as calculated in 5.6.a for any rolling ten-year average.		n/a
5.6.d. Prior to incorporating the allowable cut effect (see Glossary) into the harvest calculation, the landowner has demonstrated a commitment to investing in forestry practices used to calculate the allowable harvest in 5.6.a and 5.6.b. The landowner has demonstrated a commitment not only to implementing the practice but also to maintaining it throughout the period used in the harvest calculation. The auditing team makes final determination of the appropriate use of the allowable cut effect <i>Note: The audit team has the responsibility of assessing the adequacy of the procedure used by the landowner to calculate the harvest and to ascertain the appropriate use of the allowable cut effect. Any practices that contribute to the allowable cut effect must be implemented in accordance with the applicable criteria and indicators of Principles 6 and 10</i>		n/a
<b>P6 Forest management shall conserve biological diversity and its associated values, water resources, soils, and unique and fragile ecosystems and landscapes, and, by so doing, maintain the ecological functions and the integrity of the forest.</b> <i>Applicability Note: Small woodland owners that practice low intensity forestry may meet this requirement with brief, informal assessments. More extensive and detailed assessments (e.g., formal assessments by scientists) are expected by large landowners and/or those who practice more intensive forestry (see Glossary) management.</i>		
<b>C6.1. Assessments of environmental impacts shall be completed -- appropriate to the scale, intensity of forest management and the uniqueness of the affected resources -- and adequately integrated into management systems. Assessments shall include landscape level considerations as well as the impacts of on-site processing facilities. Environmental impacts shall be assessed prior to commencement of site-disturbing operations.</b>	C	
6.1.a. Using available science and local expertise, an assessment of current conditions is completed that includes: (1) ecological processes, such as disturbance	C	Forest cover maps available for Massachusetts provide general locations of primary forest cover (never tilled).

<p>regimes; (2) unique, vulnerable, rare, and threatened natural communities; (3) habitat for other species, as indicated by forest cover type and inventory data; (4) rare and imperiled species, including those that are state or federally listed (5) water resources; (6) soil resources; (see also 7.1.a and b) and (7) attributes of High Conservation Value Forests (see Principle 9).</p> <p><i>Note: Sources of up-to-date information on these conditions include natural heritage and wildlife programs; public agencies; regional, landscape, and watershed planning efforts; universities; and/or local conservationists. For public lands, consultation with broad-based stakeholder groups is appropriate</i></p>		<p>Division of Water Supply Protection keeps records of unique trees. Rare natural communities are protected by the Bureau of Forestry. All of these areas of assessment are addressed in the plan. Eco-regional assessments are being completed; have been completed for Western Massachusetts. The agencies should complete an assessment of disturbance regimes and baseline reference points and how they apply to the forest management. Scientific peer review may be included in this assessment. See related CARs 2009.13 and 2009.14</p>
<p>6.1.b. Using available science and local expertise, an assessment of historical ecosystem conditions and influences, including land management practices and other factors (such as insect, disease, or fire), is conducted as a necessary component of understanding current conditions, both of the property itself and its context within the landscape.</p>	C	<p>Primary forest maps are in plans but are not being fully utilized in management. In addition, there is an opportunity to incorporate disturbance regimes in a more quantitative fashion in management plans. See CAR 2009.13 and 2009.14</p>
<p>6.1.c. Forest owners or managers assess the adequacy of representation of forest types and natural communities in the landscape.</p>	C	<p>The process of identifying reserves considered adequacy of representation of forest types and natural communities. The Nature Conservancy, which provided GIS modeling assistance and general input on the reserve selection process, helped ensure proper reserve design methodologies were used.</p>
<p>6.1.d. Prior to the commencement of management activities, potential short-term environmental impacts and their cumulative effects are evaluated.</p>	C	<p>Proposed Timber Harvest Summaries are prepared and approved for each sale. These summaries evaluate the potential impacts on wetlands, ETR species, HCVF, and reserves. Cutting plans are sent to the conservation commission of each town where activity is proposed, allowing local commissions to comment.</p> <p>BoF and DWSP environmental assessments have not adequately addressed options to maintain the long-term ecological functions of the forest (see Indicator 6.1.e and CAR 2009.14).</p>
<p>6.1.e. Using assessments derived from the above information, options are developed and implemented to maintain and/or restore the long-term ecological functions of the forest (see also 7.1.c).</p>	NC	<p>Environmental assessments on BoF and DWSP lands do not adequately address long-term ecological functions of the forest. Prior to harvesting of conifer plantations (with often complete removal), BoF and DWSP have not completed an adequate environmental impact assessment to assess impacts on long-term ecological functions of the forest (6.1.e).</p> <p><b>CAR 2009.14:</b> Effective immediately, BOF and DWSP shall halt all clearcutting in conifer plantations until an analysis that fully addresses the ecological impacts of stand level removal of conifer plantings on conifer dependent species and communities is completed. The assessment shall:</p>

	<ul style="list-style-type: none"> <li>• include biodiversity experts;</li> <li>• be peer-reviewed by an independent panel of scientists; and</li> <li>• be incorporated into written guidelines to be used in making future silvicultural prescriptions for such plantations, with special attention to native forest communities that contained or were dominated by a conifer component. In these stands, silvicultural strategies need to be developed to maintain or enhance the conifer component.</li> </ul> <p>Note: this CAR is meant to apply to all plantations (including white pine), not just those of non-native species. Incomplete (partial) overstory removal cuttings, designed to release well established conifer advance regeneration and which retain significant vertical structure, are exempt from this CAR.</p> <p>Additionally, the team observed several harvest sites where the management goal is to create early successional habitat by clearcutting<sup>8</sup> healthy, well stocked, immature forests of well adapted, native species which depend on advance regeneration. The rationale for this management practice is primarily to create habitat for declining populations of early-successional bird species. The team found that DWSP has not completed an adequate environmental assessment (per the requirements of 6.1) for this activity. In particular, the DWSP should address whether these treatments are consistent with the natural pattern and scale of disturbance that was present in these forests under historic disturbance regimes.</p> <p><b>CAR 2009.13:</b> DWSP shall conduct an analysis that fully addresses the ecological impacts of clearcutting healthy mature forest stands. The assessment must:</p> <ul style="list-style-type: none"> <li>• include an analysis of the disturbance history of the landscape at the site and landscape level and consider the range of species potentially impacted among all representative seral stages;</li> <li>• include biodiversity experts; and</li> </ul> <p>the results of this review must be incorporated into written guidelines to be used in making future silvicultural prescriptions for intact mature forest</p>
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<sup>8</sup> Defined by statute as the removal of all trees in areas greater than 2 acres.

		stands.
<p><b>C 6.2. Safeguards shall exist which protect rare, threatened and endangered species and their habitats (e.g., nesting and feeding areas). Conservation zones and protection areas shall be established, appropriate to the scale and intensity of forest management and the uniqueness of the affected resources. Inappropriate hunting, fishing, trapping, and collecting shall be controlled.</b></p> <p><i>Applicability Note: This criterion applies only to management areas in which state or federally listed species or natural communities state-ranked as S1, S2, S3, or globally-ranked G1, G2, or G3 by state natural heritage programs are potentially present.</i></p>	C	<p>All Proposed Timber sales must pass through the Natural Heritage filter that identifies sites with endangered resources (ETR species and communities). Heritage has not yet provided all of their data to the forest management agencies. Heritage reviews all harvest as part of the cutting plan law, which does exempt small harvests (less than 25 mmbf and less than 50 cords) and exempts conversion for development.</p>
<p>6.2.a. If the assessment undertaken in 6.1 indicates the presence or assumed presence of a species or natural community that is considered rare, threatened, or endangered, and planned activities have the potential to negatively affect the species or community, then appropriate protection and/or management measures are implemented.</p> <p><i>Note: The landowner has the discretion to keep the specific location of rare populations or communities confidential.</i></p> <p><i>Note: Some rare natural communities may contain high conservation values requiring management under HVCF designation. Refer to Principle 9, attributes of High Conservation Value Forests, Parts A and B.</i></p>	C	<p>Completed Conservation Management Plans for ETR species are well done and contain detailed protection and management recommendations. The audit team observed that some field staff are applying these CMPs in the field. Some draft CMPs do not currently have management recommendations. An effort should be made to include these in the final drafts.</p>
<p>6.2.b. Conservation zones for existing sensitive, rare, threatened, and endangered species and other protected areas are arranged to enhance the viability of habitats, including their connectivity within the landscape..</p>	C	<p>Reserve areas have been selected in part to protect and connect habitat for ETR species. Rare natural communities are known to managers, but care is taken not to record them in a format/locations that unauthorized plant collectors could abuse.</p>
<p><b>C6.3. Ecological functions and values shall be maintained intact, enhanced, or restored, including:</b></p> <p><b>a) Forest regeneration and succession. b) Genetic, species, and ecosystem diversity. c) Natural cycles that affect the productivity of the forest ecosystem.</b></p> <p><i>Notes: Managers of large public forests are generally expected to (a) manage for longer rotations than would typically be expected on a certified private forest and (b) to designate portions of the forest for natural development towards late successional characteristics. Due to the scarcity of intact old-growth forests (see Glossary) in the Northeast, they are normally designated as High Conservation Value Forests (see Principle 9). Unentered old-growth stands (see Glossary) are given high priority as representative sample areas under Criterion 6.4 (see 6.4.b.)</i></p>	C	<p>The agencies manage for extended rotations and have designated reserve areas.</p>

<b>C6.3.a. Forest regeneration and succession</b>	C	
<p>6.3.a.1. The following information is used to make management decisions: landscape patterns (e.g., land use/land cover, non-forest uses, habitat and natural community types, adjacent forest stands, age-class distribution); species' requirements; and frequency, distribution, and intensity of natural disturbances.</p> <p><i>Note: This indicator may have limited applicability for managers of small and mid-sized forest ownerships because of their limited ability to coordinate their activities with other owners within the landscape, or to significantly maintain and/or improve landscape-scale vegetative patterns.</i></p>	C	<p>In general, all agencies' plans address these issues well. The Ecoregional planning process, coupled with strong, up-to-date forest inventory data, capture the present forest age-class structure relative to desired future conditions by various vegetation associations. One exception is an apparent failure of BOF to consider that mature Norway spruce plantations may offer some value as mature coniferous forest habitat (see CAR 2009.14). Ecoregional planning is the basis for plans by BOF and DWSP</p>
6.3.a.2. Silvicultural systems favor natural regeneration where appropriate, and forest operations are planned to protect pre-established natural regeneration of desirable species.	NC	<p>The team observed inconsistent practice related to the pre-harvest evaluation and protection of advance regeneration in even-aged regeneration treatments. On Watershed and BOF lands, there were many instances of designated shelterwood removal cuttings with little or no surviving regeneration after the harvest. Furthermore, monitoring of regeneration, both before and after treatments, is not consistently or adequately occurring. <b>CAR 2009.10:</b> During even-aged regeneration cuts in stand types that depend on well established advance regeneration (most notably, oak species, sugar maple, white pine), BoF and DWSP must implement formal harvest planning measures to assess the adequacy of advance regeneration stocking before treatment, modifying the treatments as needed. Furthermore, unless the silvicultural objective is best accomplished by eliminating advance regeneration, logging systems and contracts must include specific, enforceable measures for protecting advance regeneration during harvest operations (prior designation of skid trails by the forester; use of appropriate equipment, etc).</p>
6.3.a.3. Post-harvest reforestation, when required, is done in a timely and effective manner, and the species planted are appropriate to the natural ecosystem.		<p>n/a – planting is not used as a regeneration strategy at this time. Chestnut restoration planting is likely to occur in the near future.</p> <p>Discussions are underway regarding the possible use of Norway spruce and Chinese hemlock to replace Eastern hemlock because of the loss of Eastern hemlock from the Hemlock Woolly Adelgid.</p>
6.3.a.4. Management actions lead to a distribution of age classes, appropriate to the size of ownership, forest condition, management objectives, and local ecosystems.	C	<p>BoF plans describe desired future condition of forest structures (even or uneven-aged) and age classes (ages 0-14, 15-59, 60 to 89, and 90+) by district forest resource plan. Some areas are recommended for extended rotation management, and extensive reserves are designated. DWSP plans and harvests include significant work towards developing forests with three broad age classes (0-30, 30-60, 60+) at</p>

		small to modest spatial scales (patches generally less than an acre). Wildlife plans are focused on habitat maintenance or creation appropriate to the species' needs and landscape conditions. Across the three agencies the varied goals and mandates, and the thoughtful application of forest management, will result over time in an age-class distribution and structural variation consistent with exemplary habitat and forest management against this indicator.
6.3.a.5. Forest owners or managers maintain or restore a portion of the forest to the range and distribution of forest structures (including size and condition of trees) and species composition consistent with naturally occurring stand development patterns for the region.	C	Reserve areas. BoF extended rotation prescriptions. DWSP Quabbin plan calls for one-third of the forest to be in extended rotation management.
6.3.a.6 Species to regenerate are selected based on site capability and presence of advanced regeneration, after consideration of long-term timber/wildlife values and biological and economic risks.	NC	CAR 2009.13 and CAR 2009.14.
6.3.a.7. Natural diversity is maintained and/or restored at the landscape level.	C	At the Quabbin the new plan allows for openings at various scales, including up to 40 acres per year in large openings. There are concerns, as larger patch cuts create fragmentation but may not provide sufficiently large units to provide meaningful habitat for the suite of species requiring large blocks of young forest, and some target species are more dependent on open/brushy habitat than on rapidly regenerating sprout forests. See CAR 2009.13.
6.3.a.8. When even-aged management is employed, the retention of live trees and native vegetation within the harvest unit is based on an analysis of surrounding stand and landscape conditions. The level of retention increases with the size of the management unit, scale, the intensity of management within even-aged management units, and the total area of such units on the landscape. <i>Note: Retention of live trees and other native vegetation is maintained in accordance with scientifically credible analyses (see Glossary) appropriate to maintaining ecological functions and values at the stand and landscape level. Factors to consider include the range in variation of natural disturbances within each community type, the degree to which even-aged management is used, whether natural or artificial regeneration is employed, and the extent to which complete overstory removals are conducted.</i>	NC	The team observed retention levels in patch cuts and openings on BOF and DWSP properties to be insufficient and that no systematic analyses were implemented to determine green-tree retention levels in the larger cuts. <b>CAR 2009.12:</b> Develop and implement quantitative standards for structural retention for even-aged regeneration cuttings where the openings are larger than approximately two tree heights in width (the accepted standard at which environmental conditions within the center of such openings are unaffected by the surrounding stand). Standards must incorporate established guidelines for wildlife management and conservation of rare species, as well as the ecological requirements for regeneration of the desired tree species.
<b>C6.3.b. Genetic, species, and ecosystem diversity</b>	C	
6.3.b.1. The forest owner or manager selects trees for harvest, retention, and planting in a manner that maintains or enhances the productive capacity, genetic	C	Massachusetts forests are losing eastern hemlock, but more slowly than expected. Cold winters slow the spread of the Hemlock wooly adelgid. Forests are

diversity and quality, and species diversity of the residual stand.		collecting seed and protecting hemlock stands from harvest in different hardiness zones. See 5.1.e and related CAR 2009.13.
<p>6.3.b.2. A diversity of habitats for native species is protected, maintained, and/or enhanced.</p> <p><i>For example, habitat diversity may include:</i></p> <ul style="list-style-type: none"> <li>• <i>declining trees and snags (see Glossary),</i></li> <li>• <i>vertical and horizontal structural complexity,</i></li> <li>• <i>understory species diversity,</i></li> <li>• <i>well distributed large woody debris, and</i></li> <li>• <i>habitats and refugia for sedentary species and those with special habitat requirements.</i></li> </ul>	C	This is being quite well addressed at the landscape level by all agencies; management plans call for desired future forest structures with these habitat features well represented. Stand-level practice could be improved in some instances relative to retention and large woody debris. Landscape-scale planning and extended rotations. Reserves. Wildlife has an extensive program of forest habitat management, although this program is significantly underfunded.
6.3.b.3. Locally adapted seed of known provenance is used for artificial regeneration.		Not Applicable. Very little artificial regeneration is used; planting of improved Chestnut seed is expected soon.
<b>C6.3.c. Natural cycles that affect the productivity of the forest ecosystem</b>	C	
6.3.c.1. Coarse woody debris in the form of large fallen trees, large logs, and snags of various sizes is maintained in accordance with the scientifically credible analyses.	NC	<p>A coarse woody debris standard has been developed for leaving 200 cubic feet of material that is four inches in diameter or larger. The current standard does not cover the full intent of the FSC Indicators 5.3.c., 6.3.b.2, and 6.3.c.1. (i.e., woody biomass requirements for both wildlife habitat and nutrient cycling/soil productivity) and there is no specification for wood debris in larger diameter classes. The guideline is also not articulated in the plan or logging contract. It is not clear how compliance would be measured and how employees are trained to ensure the standard is addressed. This issue has elevated importance due to the planned bio-energy facilities.</p> <p><b>CAR 2009.15:</b> The existing woody debris retention guidelines must be expanded to fully cover the intent of 5.3.c., 6.3.b.2, and 6.3.c.1., (i.e., woody biomass requirements for both wildlife habitat and nutrient cycling/soil productivity). Furthermore, the agencies must implement the guidelines by ensuring that the coarse woody debris standard is measureable, is incorporated into contracts and that training exists to support implementation.</p>
<p>6.3.c.2. Post-harvest management activities maintain soil fertility, structures, and functions.</p> <p><i>For example:</i></p> <ul style="list-style-type: none"> <li>• <i>Slash is randomly distributed across the harvest area.</i></li> <li>• <i>Burning is used where it is appropriate to the natural disturbance regime.</i></li> </ul>	C	The treatment of slash and post-harvest site conditions were generally observed to be in compliance with the indicator, with the exception of the Adams Road Sale. See CAR 2009.11 with 5.3.c
6.3.c.3. Prescriptions for salvage harvests balance ecological and economic considerations. (see indicator	C	Salvage operations are not occurring. The response to the windstorm has not yet but could include salvage



5.6.b) <i>For example:</i> <ul style="list-style-type: none"> <li>•Coarse woody debris is maintained.</li> <li>•Den trees and snags are maintained.</li> <li>•Natural background levels of 'pest' populations are allowed before pest control actions are carried out.</li> </ul>		operations. Risks of fire, insect and disease need to be included in the evaluation. Salvage is intended to focus on stands with moderate to severe damage. Site visits included responding to tornado damage.
6.3.c.4. If soil quality degradation occurs, as indicated by declining fertility or forest health, forest owners or managers modify soil management techniques <i>For example:</i> <ul style="list-style-type: none"> <li>• Limbs and small branches are scattered throughout the site after harvest.</li> <li>• Stem-only harvesting is used on low-fertility sites.</li> <li>• Low- ground pressure equipment is used on soils that are sensitive to compaction.</li> </ul>		n/a
6.3.c.5. Roads are designed and constructed to minimize disruption of nutrient movement and hydrologic regimes.	C	BOF is close to completing the Forest and Trail Inventory and Condition survey in the next few months. BOF in cooperation and coordination with Bureau of Recreation, Regional Staff, and Engineering is committed to completing access management plans for all facilities beginning in the fall of 2009. Assessments will provide recommendations that will further the BOF and BOR initiative to rehabilitate and maintain road and trails as publicly safe and environmentally sound access to state facilities. Most of the roads are town roads and the agencies need to collaborate with other authorities to address road maintenance.
<b>C6.4. Representative samples of existing ecosystems within the landscape shall be protected in their natural state and recorded on maps, appropriate to the scale and intensity of operations and the uniqueness of the affected resources.</b>	C	.
6.4.a The size, arrangement and time scale of on-site representative sample areas are designated and justified using assessment methods and sources of up-to-date information described in 6.1.	C	DCR- BoF has reserved representative areas at two scales, large and small. The large reserve identification process has been completed and progress continues on the identification of small reserves during the writing of site-specific management plans. The identification of nine large reserves totaling 50,000 acres and distributed across all state lands was completed and celebrated with a well-publicized public announcement attended by state agencies, environmental groups, and the press, on September 21, 2006.  <u>DFW:</u> 15,570 acres (11.5%) of DFW lands are designated as forest reserve, including 8,270 ac of matrix reserves at three sites (Chalet WMA, Jug End

		<p>SR&amp;WMA [Mt. Washington], and Hiram Fox WMA [East Branch Westfield River]), and 7,300 ac of patch reserves based primarily on Natural Heritage rare species sites.</p> <p>The process of identifying reserves relied on up-to-date information as described in Criterion 6.1. The Nature Conservancy, which provided GIS modeling assistance and general input on the reserve selection process, has commended and endorsed this effort through press releases and an announcement on their website.</p>
<p>6.4.b. Where existing protected areas within the landscape are not of adequate size and configuration to serve as representative samples of commonly occurring forest types as defined above, owners or managers of mid-sized and large forests, whose properties are conducive to the establishment of such areas, designates ecologically viable areas to serve these purposes.</p> <p><i>Applicability notes to 6.4.b.: When evaluating the need for representative sample areas, the assessment should consider the relative rarity and degree of protection of similar areas at the state-wide scale, or at the biophysical region scale (as defined by state Natural Heritage programs) if Natural Heritage program or other assessments suggest that there is significant variation in community or ecosystem types between biophysical regions. Where existing protected areas adequately represent commonly occurring forest types in the landscape, these areas may suffice as the representative samples and no representative sample need be established on the forest</i></p> <p><i>The owner or manager of a small forest may not be expected to designate representative sample(s) of commonly occurring forest types, except where there is an exceptional opportunity to contribute to an under-represented protected areas system. For small forests or low-intensity managed forests, this criterion is satisfied by meeting the standards of Criteria 6.2.</i></p> <p><i>The size and configuration of the representative areas depend on the:</i></p> <ul style="list-style-type: none"> <li><i>(1) extent of representation of their forest types within the landscape</i></li> <li><i>(less protection calls for more representative samples);</i></li> <li><i>(2) ecological importance of setting aside stands and tracts to other conservation efforts (a minimum size and ecological value is needed to make representative samples useful); and</i></li> <li><i>(3) intensity of forest management within the forest</i></li> </ul>	C	<p>See 6.4.a. The State has clearly met this Indicator by designating a reserve system that is significant in size and that was developed using reserve design science.</p>

<i>and across the landscape (a less intensively managed forest or landscape calls for less area of representative samples, and a more intensively managed forest or landscape calls for more).</i>		
6.4.c. Unless exceptional circumstances can be documented, known areas of intact old-growth forests are designated as representative sample areas under purpose 3. (See Applicability Note under 6.4 above) and are reviewed for designation as High Conservation Value Forests (HCVF- see also Applicability note under 6.3). Known areas of unentered stands of old-growth are carefully reviewed, screened for uniqueness, and considered as potential representative sample areas prior to undertaking any active management within them (see Applicability Note under 6.4). Old growth stands not designated as either a HCVF or a representative sample area are, at a minimum, managed to maintain their old-growth structure, composition, and ecological functions under purpose 3.	C	The agencies have documented conformance to this indicator in the white paper “Defining HCVFs on DCR and DFW lands in Massachusetts”.
6.4.d. The size and extent of representative samples on public lands being considered for certification is determined through a transparent planning process that not only utilizes scientifically credible analyses and expertise but is also accessible and responsive to the public.	C	The reserve design process utilized scientifically credible analyses and was reviewed by the Stewardship Council before approval. SCS received a mix of stakeholder comments, some commending the State for this work and others criticizing them for designating too much or too little land as reserve. It is nearly impossible to please all constituents when establishing a reserve system, and as a result the State relied as much as possible on the science in establishing a defensible reserves system. Additionally a white paper “Defining HCVFs on DCR and DFW lands in Massachusetts” which relates to the small reserves underwent public comment.
6.4.e. The process and rationale used to determine the size and extent of representative samples are explicitly described in the public summary.	C	NHESP summarizes process and rationale for identifying and protecting representative samples, but suggests that “further inventory on state lands and reporting of natural communities would improve NHESP’s information about the occurrences of the different types, their condition, and their protection status”.
6.4.f. Managers of large, contiguous public forests (>50,000 acres) create and maintain representative protected areas within the forest area, sufficient in size to encompass the scale and pattern of expected natural disturbances while maintaining the full range of forest types and successional stages resulting from the natural disturbance regime.	NA	The State does not manage contiguous blocks of forest greater than 50,000 acres.
<b>C6.5. Written guidelines shall be prepared and implemented to control erosion; minimize forest damage during harvesting, road construction, and all other mechanical disturbances; and to protect water</b>	C	Massachusetts has Best Management Practices (BMPs) which provide guidelines for erosion and sedimentation control during harvesting and site preparation, as well as for forest roads.

<p><b>resources.</b></p> <p><i>Applicability Note: As a matter of policy, forest owner or manager uses current written regional or state guidelines that address concerns listed in 6.5. Sources for current guidelines are listed in Appendix B.</i></p>		<p>See Indicator 5.3.c for additional information. The team observed minor non-conformances for three of the Indicators. The non-conformances were related to issues where significant progress has been demonstrated by the State over the last five years. Furthermore some non-conformances occurred for isolated occurrences of inconsistent practice. Thus, the team concluded that there is overall conformance with Criterion 6.5.</p>
<p>6.5.a. The forest owner or manager minimizes the impacts of the road network, log landings, and skidding systems in a manner consistent with management objectives for hydrology and plant and animal habitat while simultaneously and safely serving the needs of transportation and hauling.</p>	C	<p>Site visits observed planned roads and minimized impacts due to well-planned harvests. Use of mechanized harvesting systems (including at times the lowest-impact cut-to-length system) helps minimize impacts. Hand-felling / cable-skidding systems are still common, particularly in the west, but operators have skills and experience to meet management objectives.</p>
<p>6.5.b. The environmental impacts of the road network and harvest system are minimized through design and planning, careful construction and harvest, and ongoing monitoring and management.</p>	NC	<p>Harvest sites that were visited had well-planned roads and minimized impacts due to effective harvest planning. Challenges exist with legacy roads and trails, and with unauthorized use by motorized vehicles. A multi-year CAR related to completing the road and inventory remained open at the recertification assessment. <b>CAR: 2009.6</b> is issued to request completion of this inventory by the 2010 audit.</p>
<p>6.5.c. The forest owner or manager develops (through management plans, policies, and harvesting guidelines) and implements a strategy for protecting river and stream corridors, steep slopes, fragile soils, wetlands, vernal pools, seeps and springs, lake and pond shorelines, other hydrologically sensitive areas, and minimizes damage from site-preparation.</p>	NC	<p>Superb protections are provided for most categories of wetlands and sensitive sites. Site visits observed a lack of protection for seeps and springs on BoF and DWSP properties. <b>CAR 2009.16:</b> Harvesting guidelines must be developed and implemented to protect seeps and springs.</p>
<p>6.5.d. The forest owner or manager develops and implements a strategy that meets or exceeds all applicable “best management practices” guidelines for soil and water protection.</p>	C	<p>The core strategy involves the use of trained qualified foresters to plan, layout, and oversee all harvests. Other specialists review planned harvests. These individuals have knowledge and experience with BMPs. See 4.1.j and related CAR 2009.8. BMP guidelines and protection strategies should be included in training activities.</p>
<p>6.5.e. The forest owner or manager develops and implements a strategy that controls and minimizes logging damage to regeneration and residual trees during harvest operations.</p>	NC	<p>Forestry operations on BoF and DWSP properties are not consistently planned to protect pre-established natural regeneration of desired species (Indicator 6.3.a.2). The team observed inconsistent practice related to the pre-harvest evaluation and protection of advance regeneration in even-aged regeneration treatments on BoF and DWSP properties. There were several instances of designated shelterwood removal cuttings with little or no surviving regeneration after the harvest. Furthermore, monitoring of regeneration,</p>

		both before and after treatments, is not consistently or adequately occurring. <b>CAR 2009.10:</b> During even-aged regeneration cuts in stand types that depend on well established advance regeneration (most notably, oak species, sugar maple, white pine), BoF and DWSP must implement formal harvest planning measures to assess the adequacy of advance regeneration stocking before treatment, modifying the treatments as needed. Furthermore, unless the silvicultural objective is best accomplished by eliminating advance regeneration, logging systems and contracts must include specific, enforceable measures for protecting advance regeneration during harvest operations (prior designation of skid trails by the forester; use of appropriate equipment, etc).
<b>C6.6. Management systems shall promote the development and adoption of environmentally friendly non-chemical methods of pest management and strive to avoid the use of chemical pesticides. World Health Organization Type 1A and 1B and chlorinated hydrocarbon pesticides; pesticides that are persistent, toxic or whose derivatives remain biologically active and accumulate in the food chain beyond their intended use; as well as any pesticides banned by international agreement, shall be prohibited. If chemicals are used, proper equipment and training shall be provided to minimize health and environmental risks.</b>	C	
6.6.a. Forest owners and managers demonstrate compliance with FSC Policy paper: “Chemical Pesticides in Certified Forests, Interpretation of the FSC Principles and Criteria, July 2002” available at <a href="http://www.fsc.org/en/whats_new/documents/Docs_cent/2">http://www.fsc.org/en/whats_new/documents/Docs_cent/2</a> .	C	The land managers demonstrated an awareness and understanding of the FSC policy and that a process is in place and used to check for compliance with the policy when selecting pesticides.
6.6.b. Forest owners or managers employ silvicultural systems, integrated pest management, and strategies for controlling vegetation that minimize negative environmental effects. Non-chemical techniques are preferred in the implementation of these strategies.  <i>For example, components of silvicultural systems, integrated pest management, and strategies to control vegetation may include:</i> <ul style="list-style-type: none"><li>• <i>creation and maintenance of habitat that discourages pest outbreaks</i></li><li>• <i>creation and maintenance of habitat that encourages natural predators</i></li><li>• <i>evaluation of pest populations and establishment of action thresholds</i></li><li>• <i>diversification of species composition (see</i></li></ul>	C	Forest chemical use is very minimal throughout the three agencies’ programs. The most important chemical uses currently involve the controlling invasive exotic plants. Mechanical treatments are used for invasive species when possible, particularly on DWSP lands. Beech bark disease and the consequential increase in the amount of poor quality or diseased beech root suckers may lead to an increased need for one specific chemical treatment approach. Foresters are exploring alternatives.

<p><i>Glossary) and structure</i></p> <ul style="list-style-type: none"> <li>• <i>use of low impact mechanical methods</i></li> <li>• <i>use of prescribed fire</i></li> </ul>		
6.6.c. Forest owners or managers develop written strategies for the control of pests as a component of the management plan (see Criterion 7.1).	C	A strategy for dealing with the Asian long-horned beetle outbreak is being implemented. Hemlock trees are not being salvaged, despite ongoing damage from the Hemlock Woolly Adelgid. Hemlock trees are being protected from harvest and are being released from competition during harvests so as to increase their vigor and chances to withstand the insect for longer periods.
6.6.d. If chemicals are applied, the most environmentally safe and efficacious chemicals are used. Chemicals are narrowly targeted, and minimize effects on non-target species.	C	Chemical treatments are managed and employed by trained applicators. Laws and regulations, and extensive training programs for applicators, ensure that these provisions exist.
6.6.e. Chemicals are used only where they pose no threat to supplies of domestic water, aquatic habitats, or Rare species or plant community types.	C	Chemicals are rarely used, and the water supply lands are even less likely than other lands to have chemical treatment.
6.6.f. If chemicals are used, a written prescription is prepared that describes the risks and benefits of their use and the precautions that workers will employ.	C	Required by all three agencies.
6.6.g. If chemicals are used, the effects are monitored and the results are used for adaptive management. Records are kept of pest occurrences, control measures, and incidences of worker exposure to chemicals.	C	Required by all three agencies.
<b>C6.7. Chemicals, containers, liquid and solid non-organic wastes including fuel and oil shall be disposed of in an environmentally appropriate manner at off-site locations.</b>	C	
6.7.a. In the event of a spill of hazardous material, forest owners or managers immediately contain the material, report the spill as required by applicable regulations, and engage qualified personnel to perform the appropriate removal and remediation.	C	Spill kits are required in contracts and additional kits have been ordered so that they can be carried in staff vehicles as well.
6.7.b. Broken and leaking equipment and parts are repaired or removed from the forest; discarded parts are taken to a designated disposal facility.	C	No instances of broken or leaking equipment were observed.
6.7.c. Equipment is not parked where fluids may leak into riparian management zones, sinkholes, or ground water supplies	C	No instances of parked equipment in inappropriate locations were observed.
6.7.d. Waste lubricants, anti-freeze, containers and related trash are stored in leak proof containers until they are transported to an approved off-site disposal facility.	C	This is standard practice in the state; no active harvests were taking place at the time of the audit.
<b>C6.8. Use of biological control agents shall be documented, minimized, monitored, and strictly controlled in accordance with national laws and internationally accepted scientific protocols. Use of genetically modified organisms shall be prohibited.</b> <i>Applicability Notes:</i>	C	

<p><i>This Criterion is guided by FSC guidelines on genetically modified organisms (<a href="http://www.fsc.org/en/whats_new/documents/Docs_cen_t/2">http://www.fsc.org/en/whats_new/documents/Docs_cen_t/2</a>).</i></p> <p><i>Genetically improved organisms (e.g., Mendelian crossed) are not considered to be genetically modified organisms (i.e., results of genetic engineering), and may be used.</i></p>		
6.8.a Exotic, non-invasive predators or biological control agents are used only as part of a pest management strategy when other pest control methods are ineffective, or can reasonably be expected to be ineffective. Such use is contingent upon peer-reviewed scientific evidence that the agents in question are non-invasive and are safe for indigenous species.	C	Woolly adelgid and purple loosestrife biological controls are being researched and used in compliance with scientific protocols.
<b>C6.9. The use of exotic species shall be carefully controlled and actively monitored to avoid adverse ecological impacts.</b>	C	
6.9.a. The use of exotic plant species (see Glossary) is contingent on peer-reviewed scientific evidence that any species in question is non-invasive and does not diminish biodiversity. If noninvasive exotic plant species are used, their provenance and the location of their use are documented, and their ecological effects are actively monitored.	C	The State does not plant exotic tree species. Efforts are underway to phase out the sale of exotic species from commercial nurseries.
6.9.b. Forest owners or managers develop and implement control measures for invasive exotic plants.	C	The agencies are all active in invasive species control. <b>REC 2009.5:</b> Finalize the document “Terrestrial Invasive Plan Management Plan for Properties Under Care and Control of the DCRF DWSP” and complete similar analysis for the BOF and Watershed lands.
<p><b>C6.10. Forest conversion to plantations or non-forest land uses shall not occur, except in circumstances where conversion:</b></p> <p><b>a) Entails a very limited portion of the forest management unit; and</b></p> <p><b>b) Does not occur on High Conservation Value Forest areas; and c) Will enable clear, substantial, additional, secure, long-term conservation benefits across the forest management unit.</b></p> <p><i>Note: The Working Group considers this criterion sufficiently explicit and measurable. Indicators are not required.</i></p>	C	At the Quabbin, management plans include creating new openings that will be maintained in non-forest conditions. Although DFW and DWSP have programs for creating non-forest openings- they are limited in area and done to restore native grassland and shrubland habitat that are under-represented on the landscape.
<b>P7 A management plan -- appropriate to the scale and intensity of the operations -- shall be written, implemented, and kept up to date. The long-term objectives of management, and the means of achieving them, shall be clearly stated.</b>		
<p><b>C7.1. The management plan and supporting documents shall provide:</b></p> <p><b>a) Management objectives. b) description of the forest resources to be managed, environmental limitations, land use and ownership status, socio-</b></p>	C	<p>Recently completed plans cover the required elements, including forest-related aspects of recreation.</p> <p>Note: Recreational planning for intensive recreation</p>

<p><b>economic conditions, and a profile of adjacent lands.</b></p> <p><b>c) Description of silvicultural and/or other management system, based on the ecology of the forest in question and information gathered through resource inventories. d) Rationale for rate of annual harvest and species selection. e) Provisions for monitoring of forest growth and dynamics. f) Environmental safeguards based on environmental assessments. g) Plans for the identification and protection of rare, threatened and endangered species.</b></p> <p><b>h) Maps describing the forest resource base including protected areas, planned management activities and land ownership.</b></p> <p><b>i) Description and justification of harvesting techniques and equipment to be used.</b></p> <p><i>Applicability Note: Small woodland owners that practice low intensity forestry may meet this requirement with less extensive and detailed planning documents. Large landowners and/or those who practice more intensive forestry (see Glossary) management are expected to meet the full breadth and scope of this Principle.</i></p> <p><i>Applicability Note: The management plan may consist of a variety of documents that, while not necessarily unified into a single planning document, nevertheless represents an integrated strategy for managing the forest.</i></p>		<p>facilities is often delayed, as it is the responsibility of other agencies. These plans are called “Natural Resources Plans” but these plans cover staffing, park operations, and facility developments, and thus these are really intensive recreation plans. All other aspects of natural resources are covered by the recently completed forestry plans. The agencies responsible for planning intensive recreation sites are not able to complete many plans (no approved plans in the past six years). As noted, forest-related aspects of recreation are covered in recent forestry plans. <b>As such the team determined that the delays in developing the intensive-recreation aspects of the “Natural Resources” plans are not a factor in the ability of Massachusetts to meet the FSC Requirements.</b></p> <p>Plans have not been completed for all of the lands within the original scope of the certificate. Due to the failure of the State to complete management plans for all of the regions- SCS will narrow the scope of the FSC certificate to just cover those regions where plans have been completed.</p>
<b>7.1.a. Management objectives</b>	C	
7.1.a.1. A written management plan is prepared that includes the landowner's short-term and long-term goals and objectives (ecological, social, and economic). The objectives are specific, achievable, and measurable.	C	Present in completed plans.
<b>7.1.b. Description of forest resources to be managed, environmental limitations, land use and ownership status, socioeconomic conditions, and profile of adjacent lands</b>	C	Present in completed plans.
7.1.b.1. The management plan describes the timber, fish and wildlife, harvested non-timber forest products, soils, and non-economic forest resources.	C	Present in completed plans.
7.1.b.2. The management plan includes descriptions of special management areas; sensitive, rare, threatened, and endangered species and their habitats; and other ecologically sensitive features in the forest.	C	Present in completed plans, with details (such as maps) often available in other places or plans.
7.1.b.3. The management plan identifies relevant cultural and socioeconomic issues (e.g., traditional and customary rights of use, access issues, recreational uses, and employment issues), conditions (e.g., composition of the workforce, stability of employment, and changes	C	Most elements are present in completed plans or other documents or studies. Some areas are not covered (e.g. ceremonial sites) because information is lacking or protected.



in forest ownership and tenure), and areas of special significance (e.g., ceremonial and archeological sites).		
7.1.b.4. The management plan incorporates landscape-level considerations within the ownership and among adjacent and nearby lands, including major water bodies, critical habitats, and riparian corridors.	C	Present in completed plans, with BoF and DFW having a two-tiered planning structure: Most landscape issues are covered by broad “Ecoregional assessments” and other aspects of this requirement are further detailed in the forest resource plans.
<b>7.1.c. Description of silvicultural and/or other management system, based on the ecology of the forest in question and information gathered through resource inventories.</b>	C	Some foresters interviewed during the audit could not readily describe contemporary silvicultural systems and their ecological basis. See CAR associated with 4.1.1 and 6.5.d. A Major CAR is not warranted because non-conformance is not widespread and the specific areas of concern are adequately addressed within the Minor CARs (2009.8 and 2009.13).
7.1.c.1. Silvicultural prescriptions have a primary objective of perpetuating a sustainable forest ecosystem based on ecological parameters such as soil types, past harvest history, natural community types, and successional trends.	NC	Some BOF and DWSP harvest plans do not provide detailed silvicultural prescriptions or information about ecological parameters. <b>CAR 2009.17:</b> The BOF cutting plans must provide greater detail about silviculture treatments and the ecological conditions of the site (e.g., soil types, past harvest history, natural community types and successional trends).
<b>7.1.d. Rationale for the rate of annual harvest and species selection</b>	C	Present in completed plans or related documents provided to the team.
7.1.d.1. The management plan includes data on growth, yield, stocking, and regeneration (see Criterion 5.6.a). The rate of annual harvest and species selection is based on levels described in 5.6.b.	C	The BOF and DWSP have an excellent network of CFI plots, which are measured in a timely manner and used to benchmark management practices and harvest levels. Regeneration monitoring could be improved; see CAR 2009.10. Present in completed plans or related documents provided to the team. Often this information is quite broad in scope, providing forest-wide standing volume, gross growth, mortality, and net-growth. Considering that harvests are far less than growth this level of detail is considered adequate.
<b>7.1.e. Provisions for monitoring forest growth and dynamics.</b>	C	Present in completed plans or related documents provided to the team.
7.1.e.1. The forest owner or manager describes in the management plan how they will comply with the requirements of Principle 8.	C	Monitoring needs and objectives are addressed in management plans that have been completed.
<b>7.1.f. Environmental safeguards based on environmental assessments.</b>	C	Present in completed plans, with details (such as maps) often available in other places or plans.
7.1.f.1. The forest owner or manager describes in the management plan how they will comply with the requirements of Criterion 6.1.	C	Present in completed plans, with details (such as maps) often available in other places or plans. Timber sales comply with permit requirements of the Massachusetts General Law (MGL) Chapter 132 (The Forest Cutting Practices Act), Chapter 131A (Massachusetts Endangered Species Act), and specific components of MGL Chapter 131, The Wetlands Protection Act which requires Forest Cutting Plan review by the Massachusetts Natural Heritage &

		Endangered Species Section staff for any forest harvest operation that coincides with Estimated or Priority habitat for rare species. (Refer to Section VII.5 of FMZ plans.)
<b>7.1.g. Plans for the identification and protection of rare, threatened, and endangered species.</b>	C	Present in completed plans, with details (such as maps) often available in other places or plans.
7.1.g.1. The forest owner or manager describes in the management plan how they will comply with the requirements of Criterion 6.2.	C	Present in completed plans, with details (such as maps) often available in other places or plans. All planned management activities are submitted to Natural Heritage Environmental Review for determination of appropriate mitigation for state-listed species (which include all federally-listed species) that is then reflected in management practices. Rare species habitat and priority natural plant communities in a combination of patch reserves and High Conservation Value Forest are conserved.
<b>7.1.h. Maps describing the forest resource base including protected areas, planned management activities, and land ownership.</b>	C	Present in completed plans, with details (such as maps of protected areas) often available in other places or plans.
7.1.h.1. The management plan includes maps of the forest's characteristics, such as: relevant landscape-level factors; property boundaries; roads; timber production areas; forest types; topography; soils; riparian zones; springs and seeps; wetlands; archaeological sites; cultural and customary use areas; locations of and habitats for sensitive, rare, threatened, and endangered species; representative samples of existing ecosystems, and designated High Conservation Value Forests	C	Present in completed plans, with some details often available in other places or plans. Recent BoF plans contain comprehensive forest-level maps.
<b>7.1.i. Description and justification of harvesting techniques and equipment to be used. (see also Criterion 6.5)</b> <i>Note: The Working Group considers this Sub-Criterion sufficiently explicit and measurable. Indicators are not required</i>	C	Descriptions could be more explicit within the plans and work done to improve the description of available harvesting techniques and equipment, and the criteria used to determine which system is to be used. See CAR 2009.10
<b>C7.2. The management plan shall be periodically revised to incorporate the results of monitoring or new scientific and technical information, as well as to respond to changing environmental, social and economic circumstances.</b>	C	Conformance with recent plans.
7.2.a. Relevant provisions of the management plan are modified in response to environmental and anthropogenic influences (e.g., road damage, depletion of timber and non-timber resources, air pollution, illegal harvests, insects and disease, etc.) as documented by monitoring.	C	Conformance with recent plans
7.2.b. The forest owner or manager reviews and revises the management plan every ten years at a minimum	NC	Conformance with recent plans, but plans have not been completed or updated for all properties. As a result SCS must narrow the scope of the lands eligible for FSC at this time.
<b>C7.3. Forest workers shall receive adequate training</b>	C	Foresters and other workers must meet licensing

<p><b>and supervision to ensure proper implementation of the management plans.</b></p> <p><i>Note: The Working Group considers this Sub-Criterion sufficiently explicit and measurable. Indicators are not required</i></p>		<p>requirements, and were observed to be well qualified and trained. See CAR 2009.8 for training program needs. The training program should include guidance on management plan implementation.</p>
<p><b>C7.4. While respecting the confidentiality of information, forest managers shall make publicly available a summary of the primary elements of the management plan, including those listed in Criterion 7.1.</b></p> <p><i>Applicability Note: Forest owners or managers of private forests may withhold proprietary information (e.g., timber volumes by size and age class, harvest levels, marketing strategies, and other financial information). (See also Criterion 8.5).</i></p> <p><i>Note: The Working Group considers this Criterion sufficiently explicit and measurable. Indicators are not required.</i></p>	C	<p>Complete management plans are available to the public via the agency websites. Printed copies have also been made available.</p>
<p><b>P8 Monitoring shall be conducted -- appropriate to the scale and intensity of forest management -- to assess the condition of the forest, yields of forest products, chain of custody, management activities and their social and environmental impacts.</b></p> <p><i>Applicability Note: On small and medium-sized forest ownerships, an informal, qualitative assessment could be appropriate. On large forests and intensively managed forests, formal, quantitative monitoring is probably required.</i></p>		
<p><b>C8.1. The frequency and intensity of monitoring should be determined by the scale and intensity of forest management operations, as well as, the relative complexity and fragility of the affected environment. Monitoring procedures should be consistent and replicable over time to allow comparison of results and assessment of change.</b></p>	C	
<p>8.1.a. Implementation of the management plan is periodically monitored to assess:</p> <ul style="list-style-type: none"> <li>• the degree to which management vision, goals, and objectives have been achieved,</li> <li>• deviations from the management plan</li> <li>• unexpected effects of management activities, and</li> <li>• social and environmental effects of management activities.</li> </ul>	C	<p>Annual accomplishment reports for DCR were last done in 2005 and data needs to be provided about work being accomplished and how it relates to the plans, where plans have been completed. Completed DCR BOF plans address monitoring needs and objectives, but monitoring has not yet been fully implemented. DFW and DWSP conduct monitoring and reports are available at their websites. DFW implements pre- and post- treatment plant inventories. See Major CAR 2009.3 related to Criterion 8.5.</p>
<p>8.1.b. Forest owners or managers develop a comprehensive monitoring plan that includes the rationale for and intensity of monitoring.</p>	C	<p>Given that all agencies use area control for harvest regulation, monitoring is foremost about tracking annual areas harvested by treatment type; this is done well by all agencies, as evidenced by an up-to-date list provided to the audit team of all sites harvested since the last major audit. Many other aspects of the management plan are also routinely monitored, some more formally than others. Agencies need to summarize these monitoring efforts periodically; see</p>

		Major CAR 2009.3.
<b>8.2. Forest management should include the research and data collection needed to monitor, at a minimum, the following indicators: a) yield of all forest products harvested, b) growth rates, regeneration, and condition of the forest, c) composition and observed changes in the flora and fauna, d) environmental and social impacts of harvesting and other operations, and e) cost, productivity, and efficiency of forest management.</b>	C	
<b>8.2.a. Yield of all forest products harvested.</b>	C	
8.2.a.1. The forest owner or manager maintains records of standing timber and timber harvest volumes by species, volume, and grade.	C	Inventories are up-to-date for all agencies, and include a level of detail that arguably exceeds those required for management decisions. Harvested volumes are also kept in great detail by all agencies.
8.2.a.2. The forest owner or manager maintains records of the yield of harvested non-timber forest products by species, volume, and grade as appropriate to the product.	C	Harvesting of NTFPs is not common; examples are typically handled via special permits for specific sites and are thus monitored carefully.
8.2.a.3. Significant unanticipated removal or loss (e.g., due to theft, poaching, fire, disease, or other disturbance) of forest products is monitored and recorded.	C	Two instances of this were noted, both on the BOF managed lands, and dealt with appropriately.
<b>8.2.b. Growth rates, regeneration, and condition of the forest</b>	C	
8.2.b.1. An inventory system is maintained to monitor (see Criterion 5.6.a): • timber growth, mortality, stocking, and regeneration, • stand composition and structure, • effects of disturbances to the resources (e.g., disease, wind, fire, damage by insects and/or mammals), and habitat conditions, regeneration, abundance, and level of harvest of harvested non-timber forest products.	C	DWSP and BOF have excellent CFI networks for standing timber volumes; DFW recently completed a detailed forest-wide inventory. Regeneration monitoring is inconsistently applied. BOF and DWSP need to implement more robust regeneration monitoring. Species composition in regeneration cuts was a concern for some sites observed on the Quabbin. See CAR 2009.10.
<b>8.2.c. Composition and observed changes in the flora and fauna</b>	C	
8.2.c.1. Forest owners or managers periodically monitor the forest for changes in major habitat elements and for changes in the occurrence of sensitive, rare, threatened, or endangered species.	C	Changes in major habitat elements and occurrence of sensitive, rare, threatened, or endangered species are periodically monitoring. Also see 6.3.a.7. 5.1.e and CAR 2009.13
<b>8.2.d. Environmental and social impacts of harvesting and other operations</b>	C	
8.2.d.1. The forest manager or owner assesses the environmental impacts of management activities; the condition of soil, water and timber resources; and effectiveness of management policies. A monitoring program is in place to monitor requirements of Criterion 6.5.	C	Assessments are occurring, but are not consistent across the agencies. See CAR 2009.10 regarding needs for regeneration monitoring.
8.2.d.2. A monitoring program is in place to assess social impacts of harvesting and other operations on creation or maintenance of local jobs and public responses to management activities.	C	Assessments are occurring and information is available to demonstrate compliance, but information is not consistent across the agencies and is not being kept up to date. See REC 2009.4

8.2.d.3. Management of sites of special significance (see indicators 3.2 and 3.3) is jointly monitored with tribal representatives to determine adequacy of the management prescriptions.	C	The state archaeologist is a participant in management plan development and the review of planned activities. Examples of tribal participation and collaboration were provided.
<b>8.2.e. Cost, productivity, and efficiency of forest management</b>	C	
8.2.e.1. Forest owners or managers monitor the cost and revenues of management in order to assess productivity and efficiency.	C	Revenue and financial performance information is available and the agencies actively pursue strategies to improve performance.
<b>C8.3. Documentation shall be provided by the forest manager to enable monitoring and certifying organizations to trace each forest product from its origin, a process known as the "chain of custody."</b> <i>Note: The Working Group considers this Criterion sufficiently explicit and measurable. Indicators are not required.</i>	C	The State is only selling standing timber. The State follows CoC procedures that ensure their correct FSC certificate code is passed along with the prospectus and or contract to the winning bidder. Wood harvested from lands outside of the scope of the certificate are not sold as certified.
<b>C8.4. The results of monitoring shall be incorporated into the implementation and revision of the management plan.</b>	C	Completed plans describe monitoring and how the results will be used to update plans and management activities.
8.4.a. Discrepancies between outcomes (i.e., yields, growth, ecological changes) and expectations (i.e., plans, projections, anticipated impacts) are appraised and taken into account in the subsequent management plan.	C	DWSP does this routinely, as evidenced in their current plans that have recently been extensively revised. BOF and DFW's plans are first-generation and have not been in existence long enough to be so evaluated.
<b>C8.5. While respecting the confidentiality of information, forest managers shall make publicly available a summary of the results of monitoring indicators, including those listed in Criterion 8.2.</b> <i>Applicability note to Criterion 8.5.: The forest owner or manager of a private forest may withhold proprietary information (e.g., timber volume by size and age class, marketing strategies, and other financial information, see Criterion 7.4.).</i>	NC	Public summaries of monitoring information are not available for all agencies. <b>Major CAR 2009.3:</b> Prior to award of certification, all agencies must make publicly available a summary of the results of monitoring indicators, including those listed in Criterion 8.2.
8.5.a. An up-to-date summary of monitoring information is maintained and available upon request, either free or at a nominal price.	NC	Public summaries of monitoring information are not available for all agencies. <b>See Major CAR 2009.3</b>
<b>P9 Management activities in high conservation value forests shall maintain or enhance the attributes which define such forests. Decisions regarding high conservation value forests shall always be considered in the context of a precautionary approach.</b> <i>Note: Appendix C includes an overview to the designation of HCVF under the Northeast Standards.</i>		
<b>C9.1. Assessment to determine the presence of the attributes consistent with High Conservation Value Forests will be completed, appropriate to scale and intensity of forest management.</b>	C	
9.1.a. Appropriate to scale and intensity of forest management, a comprehensive assessment to determine the presence of attributes consistent with High Conservation Value Forests is conducted.	C	A white paper ("Defining HCVFs on DCR and DFW lands in Massachusetts") has been completed and is publicly available at the website and in management plans.
9.1.b. As part of the assessments and consultations required in Criteria 3.3, 4.4, 6.1, 6.2, and 8.2, the forest	C	HCVF has been identified, mapped, protected, and evaluated.

owner or manager has identified, mapped, established protection measures, and evaluated the social impacts of management for the appropriate HCVF attributes.		
<b>C9.2. The consultative portion of the certification process must place emphasis on the identified conservation attributes, and options for the maintenance thereof.</b> <i>Note: FSC understands that Criterion 9.2 is an instruction to FSC-accredited certification bodies and that no indicators are required.</i>	C	Stakeholders confirmed that they were engaged in HCVF process and that public meetings were held. The HCVF process and outcomes are publically available via the white paper and information is included in the planning documents.
<b>C9.3. The management plan shall include and implement specific measures that ensure the maintenance and/or enhancement of the applicable conservation attributes consistent with the precautionary approach. These measures shall be specifically included in the publicly available management plan summary.</b> <i>Applicability Note: The applicability of the precautionary principle and the consequent flexibility of forest management vary with the size, configuration, and tenure of the HCVF;</i> a) <i>More flexibility is appropriate where HCV forest is less intact, larger in area, has a larger area-to-perimeter ratio, and its tenure is assured over the long term.</i> b) <i>Less flexibility is appropriate where HCV forest is more intact, covers a smaller area, has a smaller area-to-perimeter ratio, and future tenure is uncertain.</i>	C	Included in completed plans.
9.3.a. Areas designated as HCVFs are managed over the long term to assure that both the quality of their HCVF attributes and their area are not reduced.	NC	<p>The Quabbin has been designated HCVF for its watershed values. Management of the Quabbin is done in a manner that protects watershed values. Larger openings are being created with current management practices that have been evaluated to have little or no impact on water quality (the primary high conservation value). The openings are all in Zone 3 which is at a significant distance from the water reservoir.</p> <p>There is a lack of clear guidance related to what management activities are allowed in reserve areas in the Southeast District, including when and why harvesting is allowed. BoF must clearly identify and define the ecological goal(s) that will be met through conducting harvests and other treatments in areas identified as reserves. The justification for these goals shall be provided when planning timber harvest in reserves (CAR 2009.19)</p>
9.3.b. Where the high conservation value crosses ownership boundaries or where the maintenance of the	C	Private landowners are obligated by law to protect ETR species and communities. The agencies provided

conservation value(s) depends on the proximity of or connectivity with other HCVEs, forest owners or managers coordinate conservation efforts with owners and managers of other HCVEs in their landscape.		evidence of communications with adjacent landowners and interested parties. These interactions were confirmed via stakeholder contacts.
9.3.c. The precautionary approach (see Glossary) is adopted when the forest owner or manager has determined that potential management actions are capable of degrading the high conservation values identified.	C	The FRMP documents types of management activities allowed in HCVE areas, and generally follows a precautionary approach.
<b>C9.4. Annual monitoring shall be conducted to assess the effectiveness of the measures employed to maintain or enhance the applicable conservation attributes.</b> <i>Note: The Working Group considers this Criterion sufficiently explicit and measurable. Indicators are not required.</i>	C	Many key HCV's on State lands (e.g., old growth, reserves) are fully protected from harvesting. CFI and other monitoring efforts provide data on conditions of reserves and other areas of HCVE. DFW will add an annual review of all managed sites to verify that HCV's in all HCVE at managed sites were identified and conserved. The practices of DFW will be used to improve monitoring approaches across the agencies. DWSP monitors water quality, a key HCV of the DWSP lands. A minor CAR (2009.20) is issued to ensure that all agencies take steps to directly link their monitoring results to HCVE.
<b>P10 Plantations shall be planned and managed in accordance with Principles and Criteria 1 9, and Principle 10 and its Criteria. While plantations can provide an array of social and economic benefits, and can contribute to satisfying the world's needs for forest products, they should complement the management of, reduce pressures on, and promote the restoration and conservation of natural forests.</b> <i>Note: See glossary for Northeast definition of a plantation and see Criterion 6.10 regarding conversion of natural forest to plantations.</i>  PRINCIPLE 10 is Not Applicable as none of the planted areas of forest under assessment meet the FSC definition for "plantation"		

## 1.1 Controversial Issues

The assessment of the Commonwealth of Massachusetts included the review of several issues that were of concern to stakeholders. These issues included the aesthetic, ecological, and recreational impacts of clearcutting, the expansion of opening sizes for harvests on watershed lands, and compliance with legal statutes and regulations that apply to forest management in Massachusetts. These issues were effectively discussed and investigated in detail by the assessment team and are addressed in the findings and resulting corrective action requests.

## 2.0 TRACKING, TRACING AND IDENTIFICATION OF FOREST PRODUCTS

This section of the report addresses the procedures employed by the forest managers to track the flow of wood products from the point of harvest through to the point where custody is assumed by another entity (i.e., the wood products purchaser). The fundamental requirement that must be demonstrated by the forest management operation is that product from the certified forest area not be mixed with product from non-certified sources. This requirement is attained by compliance with the FSC Criteria for chain of custody. It is against these

Criteria that SCS evaluated the Commonwealth of Massachusetts for potential award of chain of custody certification.

The Commonwealth of Massachusetts has supplied to the SCS evaluation team a written description of its log handling and tracking procedures. Based upon a review of that document, interviews with the Commonwealth of Massachusetts personnel and field inspections, we conclude the following.

## **2.1 Evaluation of Risks of Mixing Certified and Un-Certified Product**

The overwhelming majority of timber sold by the agencies is sold as standing timber, with roadside sales being the one exception. Thus, the risk of contamination is extremely low. The team observed appropriate protocols in place to assure that there is not contamination of the certified supply.

## **2.2 Description of the Log Control System**

With respect to the lands managed by the Commonwealth of Massachusetts, the chain-of-custody focus is quite narrow, as the agencies sell almost exclusively standing timber. That is, the agencies do not have control of the flow of wood products from the public forests once the harvested trees have been removed from the state-owned landing site by the successful bidder.

The agencies' chain-of-custody obligations include:

- Effectively notifying all purchasers of State timber sales that maintaining the FSC-certified status of the procured products requires each and every holder/owner of the product, from severance at the stump onward, to hold valid FSC-endorsed chain-of-custody certificates
- Providing SCS and/or the FSC with detailed information regarding all sales of state owned timber: purchaser's name and contact information, species and volume sold, date of sale
- Notifying SCS and/or the FSC of any instances when a purchaser of a state timber sale does not hold a valid FSC-endorsed chain-of-custody certificate
- Maintaining records for at least 5 years

The assessment team observed information addressing the FSC certification chain of custody requirements within timber sale documents and contracts.

## **2.3 End Point of Chain of Custody**

For the Massachusetts public agencies, the end point of chain of custody is removal from the state-owned landing site.

## **2.4 Visual Identification at End Point of Chain of Custody**

Trees and stumps are painted for visual identification at the landing and during transportation. This FM/COC certification evaluation concludes that the chain-of-custody procedures meet the FSC Principles of Chain-of-Custody. Accordingly, award of CoC certification covering "stump to roadside" is warranted.