ONR-DLF-1 / Plantation Management on State Forests

New York State Department of Environmental Conservation

DEC Program Policy

Issuing Authority: Christopher Amato, Asst. Commissioner for Natural Resources	Title: Plantation Management on State Forests
Date Issued: 3/21/11	Latest Date Revised: N/A

I. Summary: This Policy provides guidance and procedures for managing plantations on State Forests, including Reforestation, Multiple Use, and Unique Areas.

II. Policy: It is the policy of the DEC Division of Lands and Forests (Division) to manage plantations on State Forests, including Reforestation, Multiple Use, and Unique Areas, in a manner that fosters their conversion to natural forest succession. It is also the Division's policy that the replacement of plantations with natural forest succession will be achieved primarily through thinning, conversion cuttings, or allowing natural succession. NOTE: *This policy does not apply to naturally regenerated stands, stands with less than one hundred (100) individual stems planted per acre within any five-year period of time, or stands less than one (1) acre in size.*

III. Purpose: The purpose of this policy is to promote conversion of plantations to naturally regenerated forest stands wherever feasible and consistent with ecological and biodiversity goals.[1] This policy supports the Division's goal to sustainably manage New York's State Forests and to maintain forest certification under the most current and applicable standards set forth by the Sustainable Forestry Initiative® (SFI®) and Forest Stewardship Council® (FSC®).

IV. Background: The State Reforestation Law of 1929 and the Hewitt Amendment of 1931 authorized the Conservation Department to acquire land, by gift or by purchase, for reforestation areas. These areas, consisting of not less than 500 acres of contiguous land, were to be "forever devoted to reforestation and the establishment and maintenance thereon of forests for watershed protection, the production of timber and other forest products and for recreation and kindred purposes." These Reforestation Areas became the nucleus of our present day State Forest system. Soil erosion and nutrient depletion were serious problems on the newly acquired lands because they had been, in many cases, cleared for farming. To solve these problems, a massive tree planting campaign began. The labor used to establish these plantations was provided by the Civilian Conservation Corps (CCC). The CCC planted millions of trees on hundreds of thousands of acres of reforestation areas in the 1930's and 40's. Department work crews and crews from correction camps planted trees in the 1950's, 60's and 70's on reforestation and multiple use areas.

In areas where there has been extensive loss of native conifers, conifer plantations on State Forests provide a type of habitat not commonly found on the landscape. Maintaining conifer and mixed conifer/hardwood stands is an important component of ecosystem management. Conifer stands, whether natural or planted, satisfy a variety of wildlife needs. Some species derive most or all of their year-round requirements from conifer stands, while an even greater array of species incorporate conifers as an essential or highly desirable component of their habitat on a year-round or seasonal basis. Conifers provide thermal cover in the winter and escape cover year-round. The limited amount of early-stage growth of native conifers in some areas, particularly of hemlock, limits the abundance of some wildlife species. Management programs which provide for the creation and maintenance of several stages of conifer growth (both natural and planted) are essential to the needs of many wildlife species and desirable to the maintenance of wildlife species richness[2]. In most cases however, most if not all of these needs are more effectively met by natural forest stands than by plantations.

Unless they are initially planted or regenerated on lands with a sufficient amount of stored seed, plantations generally have less vertical and species diversity than natural stands, and thus provide fewer ecological niches and less biodiversity than natural, more diverse forests. As a further result, such plantations are less resistant to forest insect and disease threats than stands with more diverse forest composition. For these reasons, converting existing plantations to natural forest when they reach maturity is generally preferred over perpetuating plantations.

V. Responsibility:

The responsibility for interpretation and update of this document and the overall management of plantations on State Forests shall reside with the Office of Natural Resources Division of Lands and Forests - Bureau of State Land Management, or its successor.

VI. Definitions:

Clearcut - A regeneration or harvest method that removes essentially all trees in a stand – *note* depending on management objectives, a clearcut may or may not have reserve trees left to attain goals other than regeneration (Helms, 1998).

Coppice – To cut the main stem (particularly of broadleaved species) at the base or to injure the roots to stimulate the production of new shoots for regeneration (Helms, 1998).

Intermediate treatment – Any treatment or tending designed to enhance growth, quality, vigor, and composition of the stand after establishment or regeneration and prior to final harvest (Helms, 1998).

Overstory Removal - The cutting of trees constituting an upper canopy layer to release trees or other vegetation in an understory (Helms, 1998).

Plantation - A stand in which 50% or more of the basal area is composed of similar species, aged and sized trees planted by humans in a uniform manner.

Regeneration cut(ting) – In even-aged silvicultural systems, any removal of trees intended to assist regeneration already present or to make regeneration possible (ex. clearcut, overstory removal) (Helms, 1998).

Viewshed – The landscape that can be directly seen from a viewpoint or along a

transportation corridor (Helms, 1998).

VII. Procedure:

1. All plantations will be tended to promote the health and vigor of the planted trees and to encourage natural regeneration of either the plantation species or surrounding native forest species. Exceptions will be considered when ecological and biodiversity goals will be served.

2. Harvest access and technique during intermediate treatments should be designed to minimize residual stand damage in canopy and sub-canopy trees and minimize ground disturbance and soil compaction in the general harvest area. The upper threshold of acceptable damage to the residual stand will be established by the sale administrator and added as a contract term in the Notice of Sale, and shall not exceed 10%.

3. During intermediate treatment and regeneration cuttings efforts should be made to protect existing, desirable, advanced regeneration and retention elements where possible by employing harvesting techniques such as directional felling or utilizing mechanical harvesting equipment and appropriate sale layout to minimize impacts and, when possible, by harvesting during winter months when snow levels are sufficient to provide protection from felled trees and harvesting equipment.

4. When conducting overstory removals, the following standards apply:
   - 4.1. Overstory removals should only be conducted when there is adequate desirable advanced regeneration.
     - 4.1.1. Adequate desirable advanced regeneration should be demonstrated by citing appropriate scientific sources and conducting the necessary regeneration inventory prior to harvest. Sources and inventory outcomes should be documented in the stand prescription and should match the desirable future conditions for the stand.
   - 4.2. When advanced regeneration is less than five feet tall and/or less than 2" DBH, individual stems are generally resilient to post harvest wind throw and snow and ice damage (wind and weather damage) and should progress sufficiently in a natural state. No additional treatment is required at this time.
     - 4.2.1. When advanced regeneration is in this size class public perception and aesthetics must be considered. Therefore, in stands greater than five (5) contiguous acres notification must be submitted consistent with Procedure 5.4.
   - 4.3. When advanced regeneration is between 2" and 6" DBH and/or greater than five feet tall, attempts should be made to minimize impact from management activities that might damage tree crowns or stem. Additionally, past management activities have shown this size class to be susceptible to wind and weather damage within the first few years after the harvest. Should 50% or more of the advanced regeneration succumb to wind and weather damage within 5 years of the over-story removal it is recommended to treat:
     - 4.3.1. Affected hardwoods by cutting damaged stems at the base to promote coppice.
     - 4.3.2. Affected softwoods by cutting the damaged stem and replacing with planted stock (artificial regeneration) appropriate for the site and if the desire is to maintain a softwood component within the stand. Follow recommendations in ONR-DLF-3, Clearcutting on State Forests for establishing artificial regeneration.

4.4. When advanced regeneration is over 6" DBH and larger than 30 feet tall, attempts should be made to minimize impact from management activities that might damage tree crowns or stem. Individual stems at this size should be resilient to post harvest wind and weather damage and should progress sufficiently in a natural state. No additional treatment is required at this time.

4.5. There have been rare instances when conducting an overstory removal in a plantation may negatively impact the advanced regeneration in the understory due to unavoidable circumstances (examples may include size and density of understory, species type, harvest technique, stand topography, etc.). Under these circumstances foresters have been successful regenerating the stand through coppice after removing the understory during the overstory removal. If the forester determines the best course of action is to remove the susceptible regeneration during the overstory removal, the forester should treat the stand as if (s)he were conducting a clearcut in accordance with ONR-DLF-3, Clearcutting on State Forests.

5. Clearcuts should be conducted in accordance with the policies and procedures set forth in ONR-DLF-3, Clearcutting on State Forests and only when the DEC Regional Forester determines the plantation meets one or more of the following:
    - The goals, objectives and actions as outlined in the Strategic Plan for State Forest Management and/or the Unit Management Plan will be met by applying the clearcut as the best silvicultural option determined by the forester administering the treatment and the plantation is ready to be regenerated, **or**,
    - More than 75% of the plantation species basal area (BA) exhibits declining health and vigor, caused by one or more biotic or abiotic factors, **or**,
    - More than 75% of the plantation species BA is susceptible to excessive wind and weather damage or insect and disease damage within the next five years **or**,
    - More than 75% of the plantation species BA exhibits excessive wind and weather damage or insect and disease damage **or**,
    - A combination of decline, susceptibility and damage affects more than 75% of the plantation species BA (ex. 25% showing signs of decline, 25% susceptible to wind throw, and 30% with broken tops)

6. When conducting an overstory removal or clearcut greater than five (5) contiguous acres in size, a visual assessment must be completed and included with the stand prescription that describes how the forester plans to mitigate potential viewshed impacts. Mitigation practices may include, but are not limited to, buffers along public roads, retention (see ONR-DLR-2, Retention on State Forests), timing of harvest, irregularly shaped harvest areas, signage, public notice and/or other methods.

7. The DEC Regional Forester will have final approval authority for the management, prescription and treatment of plantations less than twenty (20) contiguous acres in size on State Forests within his or her Region, and may consult with other DEC staff when necessary. As provided in ONR-DLF-3, Clearcutting on State Forests, proposed clearcuts twenty (20) contiguous acres in size and greater must receive Central Office approval before proceeding with sale layout and timber marking.

8. The Chief of the Bureau of State Land Management may modify this policy or approve exceptions on a case-by-case basis, at any time, if such modifications or exceptions provide equal or greater tree and stand protection or address site specific, unique circumstances (control of invasive species, spread of insects and disease, hazardous conditions or other forest health or public safety issues). Depending on site conditions, plantation management prescriptions may need to be more restrictive or more flexible. Requests for exceptions must be in writing and must be approved by the Regional Forester before being submitted to the Bureau Chief. A detail of and justification for modifications must be documented in the stand prescription, Unit Management Plan (UMP), Temporary Revocable Permit (TRP), Request for Conceptual Approval form, or Notice of Sale and should be kept on file in the Regional office.

9. If modifications are required after the operation begins, documentation showing detailed justification should be kept on file in the UMP, TRP or Sale folder kept at the regional DEC office.

VIII. Related References:

1. Strategic Plan for State Forest Management
2. Management Rules for Establishment of Special Management Zones on State Forests
3. Policy # ONR-DLF-2, Retention on State Forests
4. Policy # ONR-DLF-3, Clearcutting on State Forests
5. http://www.natureserve.org/explorer/
6. http://www.nyis.info/Resources/IS_Risk_Assessment.aspx

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[1] Draft Principle 10 (Plantations) of the FSC-US Forest Management Standard 2010 - 2014

[2]Chambers, Robert E. 1983. Integrating Timber and Wildlife Management Handbook. State University of New York College of Environmental Science and Forestry, New York State Department of Environmental Conservation

[3,4,5,6 ,7]The Dictionary of Forestry, Helms, John A., Editor, The Society of American Foresters, 1998