ONR-DLF-3 / Clearcutting on State Forests

New York State Department of Environmental Conservation

DEC Program Policy

Issuing Authority: Christopher Amato, Asst. Commissioner for Natural Resources	**Title: Clearcutting on State Forests**
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I. Summary: This Policy provides the procedures for clearcutting or conducting other regeneration cuttings 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 ensure all even-age regeneration methods on State Forests, including clearcutting, are undertaken in a sustainable and ecologically responsible manner with appropriate levels of agency oversight and public notice and in accordance with the Standards and Procedures of this policy.

III. Purpose: The purpose of this policy is to ensure that clearcutting and other regeneration cuts undertaken by the Division as a forest management tool are done in a manner that (i) promotes long-term sustainability of the forest and the temporary establishment of early successional forest habitat, (ii) maintains the presence of shade intolerant species, and (iii) enhances biological diversity. This policy also describes the procedures to minimize negative visual impacts to the surrounding landscape from clearcutting and other regeneration cuts. In addition, this policy establishes procedures to keep all levels of the Division and the public informed of and educated concerning management decisions when conducting clearcutting and other regeneration cuts. This policy supports the Division's goal to sustainably manage New York's State Forests and to maintain green certification under the most current and applicable standards set forth by the Sustainable Forestry Initiative (SFI) and Forest Stewardship Council (FSC).

IV. Background: Even-age silviculture, including clearcutting, is intended to generate many of the biological attributes consistent with natural events such as fire, violent weather, or the spread of insect or disease. However, clearcutting is a controversial forest management practice (Harlow, 1997). Controversy regarding clearcutting on public lands in the eastern United States began on National Forests in the mountains of West Virginia and North Carolina during the 1960's (Borrelli, 1972). Large cuts of 400 acres or more, some located on steep slopes and adjacent to highways, evoked instant criticism. The absence of merchantable trees after cutting, the presence of logging slash, and soil disturbance made clearcuts seem uglier than areas harvested by other cutting methods (Lang, 1975). Indeed, over the years, clearcutting's unsightly appearance caused a general lack of public acceptance (Marquis, 1972), and subsequent studies documenting

adverse impacts to water quality and biodiversity from poorly managed clearcuts further worsened the public's opinion of the practice.

Today we better understand how clearcuts, as with all silvicultural options, when applied correctly, may create a positive change to a dynamic forest. When planned and managed properly, clearcutting and other regeneration cuttings may provide environmental, social and economic benefits, including but not limited to establishing even-aged forest regeneration of shade intolerant species, establishing temporary early successional forest habitat, and satisfying local and regional forest product needs. When applied judiciously in forests where habitat would be improved by large forest openings and at times when visual impacts are minimized and conditions are dry and stable, regeneration cuts, including clearcuts, can have multiple benefits to wildlife, species composition and other ecological functions. Proper sale layout and design can minimize, if not eliminate any erosion potential through the use of best management practices. Additionally, long term forest health may be improved when clearcuts and other regeneration cuts occur in forest stands at risk.

This policy, in conjunction with the *DEC Division of Lands and Forests Management Rules for Establishment of Special Management Zones on State Forests* which imposes best management practices and other restrictions to protect riparian areas and water quality, will ensure that clearcuts and other regeneration cuttings are conducted in an ecologically sensitive and sustainable manner.

V. Responsibility:

The responsibility for interpretation and update of this policy and the overall management of 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).

Early Successional Forest Habitat - Very young forest characterized by a dense growth of shrubs and saplings.

Even-aged – 1. Composed of a single age class in which the range of tree ages is usually ±20 percent of rotation, as in *even-aged stand* or *even-aged regeneration*. 2. Intended to result in vegetation that is composed of a single age class in which the range of tree ages is usually ±20 percent of rotation, as in *even-aged silviculture* or *even-aged regeneration harvest*.

Overstory Removal - The cutting of trees constituting an upper canopy layer to release adequate desirable advanced regeneration in the understory (Helms, 1998).

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, seed tree, shelterwood, and overstory removal). (Helms, 1998).

Rotation – In even-aged silvicultural systems, the period between regeneration establishment and final cutting.

Seed Tree Method (*an even-aged silvicultural regeneration method*) – The cutting of

all trees except for a small number of widely dispersed trees retained for seed production and to produce a new age class in fully exposed microenvironment – *note* seed trees are usually removed after regeneration is established.

Shelterwood Method (*an even-aged silvicultural regeneration method*) – The cutting of most trees, leaving those needed to produce sufficient shade to produce a new age class in a moderated microenvironment – *note* the sequence of treatments can include three types of cuttings: (a) an optional preparatory cut to enhance conditions for seed production, (b) an establishment cut to prepare the seed bed and to create a new age class, and (c) a removal cut to release established regeneration from competition with the overwood; cutting may be done uniformly throughout the stand (uniform shelterwood), in groups or patches (group shelterwood), or in strips (strip shelterwood); in a strip shelterwood, regeneration cuttings may progress against the prevailing wind.

Silviculture – The art and science of controlling the establishment, growth, composition, health, and quality of forests and woodlands to meet the diverse needs and values of the landowner and society on a sustainable basis.

Stand (*as applied to silviculture*) - A contiguous group of trees sufficiently uniform in age-class distribution, composition, and structure, and growing on a site of sufficiently uniform quality, to be a distinguishable unit.

Treatment Area – A defined area where a specific and uniform modification of vegetation occurs as a discrete operation.

Viewshed – The landscape that can be directly seen from a viewpoint or along a transportation corridor. (Helms, 1998).

VII. Applicability:

1. This policy applies only to proposed regeneration cuts that meet criteria 1.1 through 1.4 below, or criteria 1.5 below:
   - 1.1. Contiguous treatment area is greater than two acres in size;
   - 1.2. Width of contiguous treatment area is greater than 200 feet;
   - 1.3. Contiguous treatment area either does not have adequate, desirable advanced regeneration or 75% or more of the adequate, desirable advanced regeneration is less than five feet tall.
   - 1.4. Average post-harvest basal area of trees greater than 5” diameter at breast height (DBH) throughout the entire treatment area is less than 30 square feet (including dispersed individual recruitment and reserve trees as defined in program policy ONR-DLF-2/Retention on State Forests, but not including patches or groups of recruitment or reserve trees).
   - 1.5. Proposed treatment area meets criteria 1.3 and 1.4 and adjoins a previously treated area in which more than 75% of the regeneration is less than five feet tall and the basal area is less than 30 square feet and the combined proposed treatment area and previously treated area meet criteria 1.1 and 1.2.

2. Special management zones and protection buffers along permanent and intermittent streams and wetlands and travel corridors (including but not limited to designated recreation trails, public forest access roads (PFARs), and municipal highways) within and bisecting the treatment area will not be considered part of the treatment acreage.

VIII. Standards:

1. Regeneration cuts subject to this policy should be conducted only when the DEC Regional Forester determines the stand 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 treatment as the best silvicultural option as determined by the forester administering the treatment and is ready to be regenerated or the existing regeneration is ready to be released;
   - More than 75% of the stands basal area (BA) exhibits declining health and vigor, caused by one or more biotic or abiotic factors;
   - More than 75% of the stand BA is susceptible to excessive wind and weather damage or insect and disease damage within the next five years;
   - More than 75% of the stand BA exhibits excessive wind and weather damage or insect and disease damage;
   - A combination of decline, susceptibility and damage affects more than 75% of the stand BA (ex. 25% showing signs of decline, 25% susceptible to wind throw, and 30% with broken tops);
   - Evidence of decline, susceptibility, or damage must be documented in the stand prescription with justification of why alternatives (ex. do nothing, thinning, herbicide, or other alternative option) are not appropriate. NOTE: While the fiber (economic) value of declining or storm damaged timber is an important factor when considering the management option to regenerate the area, fiber value should be weighed equally with environmental, habitat, aesthetic, and various other values before a final management decision to regenerate the area is approved.

2. **Visual Assessments:** When conducting a regeneration cut subject to this policy and 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, use of retention; timing of harvest, irregularly shaped treatment areas, signage, public notice and/or other methods.

3. During silvicultural treatments, 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 likely to be sufficient to provide protection from felled trees and harvesting equipment.

4. **Artificial regeneration:** Although it is the policy of the Division to manage State Forests in a way to gradually move towards a more natural stand progression (preferring natural regeneration of desirable species from surrounding stands or within the stand through repeated intermediate treatments), the Division recognizes that conditions may require artificial regeneration after a clearcut. Under these circumstances, justification as to why artificial regeneration is preferred over natural regeneration must be documented in the stand prescription including species planted, seedling count, spacing, and nursery where

seedlings will be obtained. (Examples of justification for artificial regeneration include but are not limited to the presence of undesirable vegetation in surrounding stands, the lack of a seed source for desirable species, evidence of repeated intermediate treatments that have not resulted in adequate desirable regeneration, failed regeneration from deer browse, or other unique conditions.)

4.1. When artificially regenerating a stand, foresters should consider establishing a mixture of species over a mono-type. Species types should be documented in the stand prescription and should demonstrate the justification for the decision made.

4.2. Artificial regeneration using approved non-native species (species not native to North America prior to European settlement) may be considered only if it is determined the non-native species does not have invasive properties (outcompetes native species in a natural state), has a New York invasive risk assessment of medium, low or none, is more suited for the site due to soil and other properties, is resistant to wildlife impacts, can outcompete undesirable vegetation, is most appropriate to reach desired ecological goals, and is available. Justification for the use of non-native species must be clearly defined within the stand prescription including the nursery where the seedlings will be procured. Following is a list of approved non-native species:

- Norway Spruce (*Picea abies*)
- Scotch Pine (*Pinus sylvestris*)
- Japanese larch (*Larix kaempferi*)
- European larch (*Larix deciduas*)
- Hybrid larch (*Larix x europlepis* Henry)

5. **Regeneration Assessments:** When conducting a regeneration cut subject to this policy, regeneration assessments will be conducted within one (1) year of harvest completion, three (3), and five (5) years after the harvest or until the forester determines adequate natural or artificial regeneration has been securely established. Documentation should be retained showing evidence of the success including inventory data and reference to appropriate silvicultural guides and the stand regeneration assessment data in the State Forest Inventory Database (SFID) should be updated.

5.1. If at any point following the harvest, the forester determines the desired regeneration is either unsuccessful and/or different from the original intended species but the outcome does not pose a negative impact on ecology, habitat, soils, water quality, aesthetics, or any combination of these or other forest values, the forester may consider the newly established stand a success. A memo indicating the successful change in stand development should be placed in the sale file and the stand regeneration assessment data in SFID should be updated.

5.2. If during the five (5) year regeneration assessment, the forester determines the desired regeneration is delayed, but the situation does not pose a negative impact on ecology, habitat, soils, water quality, aesthetics, or any combination of these or other forest values, the forester may defer making a decision about how to treat the stand. A memo indicating the decision is being deferred should be placed in the sale file and a regeneration assessment should be conducted in no more than two years.

5.3. If at any point within the five years following the harvest, the forester determines that the desired regeneration (either natural or artificial) is being outcompeted by undesirable vegetation (interfering vegetation) or is otherwise unsuccessful and has

the potential of negatively impacting the ecology, habitat, soils, water quality, aesthetics, or any combination of these or other forest values, appropriate action with a treatment schedule to establish/encourage adequate desirable regeneration must be conducted and documented. Treatment may include, but is not limited to: mechanical site preparation to encourage natural regeneration (manual removal of interfering vegetation and/or other accepted site prep technique), use of prescribed fire, herbicide (to remove interfering vegetation) and/or artificial regeneration of native species.

IX. Procedure:

1. Prior to any timber marking, the Regional Forester must notify, by memo (either hard copy or by e-mail), the Regional Director and Chief of the Bureau of State Land Management when proposing a regeneration cut subject to this policy and between five (5) and nineteen (19) contiguous acres in size. The memo should include at minimum the treatment area size in acres, State Forest where the treatment is proposed and reason for conducting the treatment. A copy of the memo should be kept on file at the regional DEC office.

2. A Request for Conceptual Approval must be submitted by the Regional Forester and approved by the Chief of the Bureau of State Land Management on all proposed regeneration cuts subject to this policy and twenty (20) contiguous acres and larger (regardless of whether the treatment is carried out through a local or revenue sale) before regional staff may begin sale layout and timber marking.
   2.1. Because of the potentially lengthy gap between conceptual approval and commencement of harvesting, the Regional Forester must notify, by memo (either hard copy or by e-mail), the Regional Director and the Chief of the Bureau of State Land Management at least one week prior to commencement of harvesting on regeneration cuts subject to this policy and twenty (20) contiguous acres or larger. The memo should include at minimum the treatment area size in acres, State Forest where the treatment is occurring and reason for conducting the treatment. A copy of the memo should be kept on file at the regional DEC office.

3. When proposing a regeneration cut subject to this policy and forty (40) contiguous acres or larger has received approval from the Chief of the Bureau of State Land Management, the Regional Forester must conduct project specific State Environmental Quality Review (SEQR).

4. The DEC Regional Forester will have final approval in the management, prescription and treatment subject to this policy and 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. Proposed treatments twenty (20) contiguous acres in size and greater must receive approval from the Chief of the Bureau of State Land Management before proceeding with sale layout and timber marking.

5. 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, stand 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 Chief of the Bureau of State Land Management. 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.

6. 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.

X. Related References:

Table 1. Regeneration cut (meeting criteria 1.1, 1.2, 1.3 and 1.4 of this Policy) Size and Level of Oversight

Treatment Area (Acres)	Regional Forester Approval of Stand Prescription	Visual Assessment	Central Office Request for Conceptual Approval	SEQR	Regional Director and Central Office Memo
2 - 4	•				
5 -19	•	•			•
20 - 39	•	•	•		•*
40 +	•	•	•	•	•*

*The notification memo to Regional Director and Central Office must be sent prior to commencement of harvesting on treatments 20 acres or larger.

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

Borrelli, P. (1972). Clearcutting and Associated use of the Forest - - Nationalizing Our National Forests. *A Perspective on Clearcutting in a Changing World* (pp. 35-43). Syracuse, NY: Society of American Foresters.

Boyer, W. (1990). Longleaf Pine. In R. B. Burns, *Silvics of North America Vol. I Conifers* (pp. 405-412). Washington, DC: USDA Forest Service Agricultural Handbook 654.
Chambers, R. E. (1983). *Integrating Timber and Wildlife Management Handbook.* Syracuse: State University of New York College of Environmental Science and Forestry.

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Lang, L. (1975). Aesthic Consideration. Chapter 1. In S. o.--. Agriculture, *Clearcutting in Pennsylvania* (pp. 1-8). University Park, PA: The Pennsylvania University.

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