

Michigan Department of Natural Resources
Forest Certification Work Instruction

DRAFT FINAL

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Work Area Group: 2 – Forest Regeneration and Chemical Use

Work Instruction Title: 2.1 Reforestation

Purpose: To define forest regeneration requirements on State Forest Land.

Work Instruction:

1. Management Objective:

Forest regeneration will contribute to a distribution of successional stages, age classes, and community types at the appropriate scale and intensity. Silvicultural practices will encourage regeneration that is consistent with the management objective agreed upon at compartment review. Broad genetic and species diversity as well as the ecological impacts of planting must also be considered.

Reforestation of difficult to regenerate stands or endemic species will be a consideration when a stand is prescribed for harvest. Stand examiners shall make comments in the forest inventory (MiFI) system treatments database (Acceptable Regeneration comment field of the Treatments database) reflecting an acceptable species mix should the stand not regenerate to the management objective and this must be agreed to at compartment review. Stands that cannot be regenerated to the desired management objective or approved alternative will not have a regeneration harvest prescribed. When desirable advanced regeneration is present within a stand, comments should be included in MiFI that will lead to the inclusion of relevant timber sale contract specifications and the retention of this regeneration. Management guides and [FRD Reforestation policy](#) should be consulted in these regards as needed. Any regeneration work prescribed and approved will be documented on a Forest Treatment Proposal (FTP) Form [R4048](#) in accordance with the reforestation policy.

2. Indication of Regeneration Method:

Forest inventory codes will be used to determine if a stand will be artificially or naturally regenerated. The regeneration method for stands prescribed for regeneration harvests in MiFI is indicated by the cover type management objective for the treatment. If a stand is being regenerated artificially, appropriate initial treatments and corresponding 'next steps' should be coded into the Treatments database. Stands being naturally regenerated will have appropriate "Monitoring" treatments or next steps created in the Treatments database.

3. Exotics:

The [FRD Reforestation policy](#) addresses the planting of exotic (non-native) species. While the practice is discouraged and minimized, it is not prohibited. The same policy also outlines the documentation required for completion of the Forest Treatment Proposal Completion Report ([R4048-1](#)), which is required for all plantings, whether exotic, improved or from another source. All of the plantings must be summarized annually using the Planting Summary ([R4046e](#)). The Forest Health Specialist in conjunction with the Nursery Manager (tree improvement specialist) and Timber Management Specialist (TMS) are responsible to insure all stock meets policy and legal guidelines. These individuals shall also monitor or participate in any testing or application of improved planting stock. The planting of genetically modified species (GMO) is prohibited.

4. Timing and Adequacy of Regeneration:

Unless delayed for site-specific environmental or forest health considerations, stands prescribed for a regeneration harvest will be regenerated within two growing seasons from the date of the timber cutting report if it is regenerating artificially and within five years if regenerating naturally. Site-specific environmental considerations include needs for sequencing multiple site preparation actions (various combinations of roller-chopping, prescribed burning, herbicide applications, and trenching). Site-specific forest health considerations include regeneration issues related to exotic insects and diseases (e.g. EAB, BBD, Oak Wilt). A timber cutting report (TCR) is the document that concludes a Timber Sale Contract.

Whenever a timber cutting report is generated, the contract administrator will update MiFI, closing the treatments associated with the sale, updating the stand inventory and creating 'Next Step' treatments per the approved treatment plan. The reforestation clock for regenerating the stands contained within the sale will begin when contract is completed. The Unit Manager will be responsible for the preparation and updating of regeneration lists. Those stands requiring TMS assistance for regeneration will be forwarded to the TMS as needed, but at least annually. The TMS will be required to provide any available regeneration information, such as shape files, regeneration counts, and FTP Completion Reports ([R4048-1](#)) before regeneration lists and the inventory database can be updated.

The TMS will be responsible for completing artificial regeneration within two growing seasons of when the timber sale cutting report was completed or for documenting reasons for non-compliance. This regeneration must be the same type or species mix as agreed to at compartment review. If conditions after harvest are such that regeneration to the approved management objective cannot be obtained, the TMS must seek a change in management objective by going through the post review (change) process (as currently outlined in DNR Policy and Procedure 32.22.15).

Minimum stocking levels for stands prescribed for natural regeneration will follow the Minimum Acceptable Regeneration & Height Table in the Regeneration Survey Manual. Minimum stocking levels for stands prescribed for artificial regeneration (planting, direct seeding and broadcast seeding) will follow the FRD Reforestation Policy or Silvicultural Guidelines, whichever is more stringent.

5. Regeneration Monitoring:

District Forest Supervisors are responsible for overseeing and ensuring that regeneration surveys are completed and documented, and for coordinating any necessary corrective actions. Unit Managers are responsible for all reforestation activities on the Unit, however, the TMS shares in the responsibility for those stands forwarded to them. Unit Managers will be responsible for tracking stands and initiating follow up action in consultation with the TMS.

All stands that are prescribed for a regeneration harvest will be progressively sampled. At a minimum, each stand will be checked for adequate regeneration in a manner consistent with MiFI Stand inventory procedures (i.e. remote calls, edge calls, and walk through examination are options), using the procedure outlined in the [Forest Regeneration Survey Manual](#).

Naturally regenerating stands will primarily be checked by stand examiners during the next regularly scheduled compartment inventory to determine if regeneration has been successful. Regeneration checks for stands that were originally prescribed for a regeneration harvest under the Operations Inventory (OI) system will be scheduled using the regeneration time clock spreadsheet, unless the Unit has re-coded those checks as Monitoring Treatments in MiFI. The time clock spreadsheet will be maintained until the stands have successfully regenerated AND compartments have been converted to MiFI. Stands prescribed under the MIFI system must have a Regeneration Check scheduled as a 'Next Step' treatment after closing the sale, or completing the last cultural treatment step. A Next Step Monitoring Treatment should be coded that specifies artificial or natural methods and whether the regeneration check would occur at the next inventory cycle or sooner, as well as coding the appropriate Proposed Start Date so that the area is monitored in the appropriate year.

Stands of special concern will be scheduled for an out-of-entry-year survey if more than 6 years will elapse between timber sale completion and the next compartment inventory. Stands of special concern may include

oak, jack pine, and red pine prescribed for natural regeneration, or other locally defined stand types. In most cases, out-of-entry-year surveys for special concern stands should be scheduled at TCR date + 4 years. However, natural regeneration in stands may be approved earlier than next inventory year or the calculated out-of-entry-year survey date provided that minimum standards specified in the Regeneration Survey Manual are met. If natural regeneration is determined to be inadequate, the stand will be referred to the TMS for further examination.

Artificially regenerating stands will be checked and treated within two years after the TCR is prepared and in accordance to the [Forest Regeneration Survey Manual](#). The District TMS will be responsible for conducting or coordinating artificial regeneration surveys using DNR personnel, contractors or students, and will provide program expertise to help prescribe options for corrective actions and ensure consistency. The TMS will provide information to the Unit Manager on status and results of surveys.

Survey results must be recorded in the MiFI comments and coding updates. Stands that are found inadequately stocked may be rescheduled for a follow-up natural regeneration survey if the TMS and examiner think in-growth is likely. If in-growth is not likely, the stand may be prescribed for cultural treatments to improve the success of natural regeneration, or may be artificially regenerated according to the management objective of the stand as previously described. Once the decision is made to switch to artificial regeneration, the forest MiFI Treatments database will be updated with the first step in the new treatment plan and coding will be updated with the new appropriate cover type objective, acceptable regeneration and all appropriate 'Next Step' treatments to reflect artificial regeneration. The reforestation clock is updated to reflect a two year artificial regeneration deadline. The TMS assumes responsibility for regenerating the stand once the decision to regenerate artificially has been made.

Scope: (All State Forest Land and Affected Divisions): State Forest Land Other: _____
 DNR – FRD DNR – Wildlife DNR – Fish DNR – Law DNR – PRD

Responsibility and Role: (Staff who will implement or supervise this instruction)

Job Title/Division	Role
District Supervisor / FRD	Oversee the regeneration survey process.
Unit Manager / FRD	Supervise pre-harvest inventory, determination of stand management objective, monitor regeneration, and maintenance of related records.
Stand Examiners / FRD and/or WD	Conduct pre-harvest inventory, make preliminary stand prescriptions, perform initial natural regeneration assessment, and maintain records.
Timber Management Specialist / FRD	Supervise & implement artificial regeneration activities, supervise formal artificial regeneration surveys, and provide related records to Unit Managers.
Sale Contract Administrator / FRD	Protect advance natural regeneration and start the regeneration clock.
Nursery Manager (tree improvement specialist) / FRD	Ensure that planting stock conforms to policies and legal guidelines.
Forest Health Specialist / FRD	Recommend regeneration practices that minimize forest health impacts.

Training/Skills: (Those required to accomplish work instruction)

Item	Brief Description of Skill or Course	Exists / New
MiFI Operation	Update of forest inventory records	<input checked="" type="checkbox"/> E <input type="checkbox"/> N
Regeneration survey training	Contents of Forest Regeneration Manual	<input type="checkbox"/> E <input checked="" type="checkbox"/> N
Knowledge of work instruction	All managers and supervisors with responsibility to implement this work instruction.	<input type="checkbox"/> E <input checked="" type="checkbox"/> N
Reforestation Data Base	Use of local reforestation database	<input type="checkbox"/> E <input checked="" type="checkbox"/> N
		<input type="checkbox"/> E <input type="checkbox"/> N

