

Technical Appendix

Technical Requirements for Entering Forest Harvesting BMPs into CAST and the Chesapeake Bay Watershed Model

Presented to the WTWG December 5th, 2024

Background: In accordance with the *Protocol for the Development, Review, and Approval of Loading and Effectiveness Estimates for Nutrient and Sediment Controls in the Chesapeake Bay Watershed Model* (WQGIT, 2022) each new or modified BMP must have a technical appendix developed with CBPO staff and approved by the Watershed Technical Workgroup (WTWG).

The purpose of this technical appendix is to describe how the Forestry Workgroup's recommendations for crediting Forest Harvesting Practices will be integrated into the Chesapeake Bay Program's modeling tools including NEIEN, CAST and the Watershed Model.

Q1. How are Forest Harvesting Practices defined in the Chesapeake Bay Watershed Model?

A1. Forest Harvesting Practices are a suite of actions that minimize the environmental impacts of road building, log removal, site preparation and forest management. These practices help reduce suspended sediments and associated nutrients that can result from forest harvesting operations. These actions are described in the USDA-NRCS National Handbook of Conservation Practices and include, but are not limited to, Forest Trails and Landings (655) and Forest Slash Treatment (384).

Q2. What are the qualifying criteria for crediting Forest Harvesting Practices?

A2. For more details on specifications and key qualifying conditions for this BMP, consult the criteria standards under the USDA-NRCS National Handbook of Conservation Practices and associated [Field Office and Technical Guides](#) for each state.

Q3. How much nitrogen, phosphorus and sediment reduction credit are associated with the practices?

A3. Pollutant removal credit is based upon the BMP reductions originally developed through [Simpson and Weammert \(2009\)](#). In 2024, based on a re-evaluation of the literature and expert consultation, the Timber Harvest Task Force and the Forestry Workgroup approved increasing TN removal efficiencies to 60% from the original 50% efficiency recommended by Simpson and Weammert ([Cinalli et al. 2024](#)).

Table 1. Pollutant Removal Efficiencies for Forest Harvesting Practices

Practice Name	TP Removal (%)	TN Removal (%)	TSS Removal (%)
Forest Harvesting Practices	60	60	60

Q4. What do jurisdictions need to report to NEIEN in order to receive reductions for Forest Harvesting Practices?

A4. For Forest Harvesting Practices credit, jurisdictions will need to report the following to NEIEN:

- *BMP Name:* Forest Harvesting Practices, Forest Trails and Landings, Forest Slash Treatment
- *Measurement Names:* Acres(Acres)
- *Geographic Location:* Qualifying NEIEN geographies including: Latitude/Longitude; *or* County; *or* County (CBWS Only); *or* Hydrologic Unit Code (HUC12, HUC10, HUC8, HUC6, HUC4, State (CBWS Only)
- *Date of Implementation:* Date implemented
- *(Optional) Land Uses:* Harvested Forest

Q5. Are the practices cumulative or annual BMPs?

A5. Forest Harvesting Practices will be treated as a cumulative practice in Phase 7 (note they were an annual practice in Phase 6). This means that jurisdictions should submit all parameters to NEIEN only in the year the practice is implemented.

Q6. What is the credit duration for Forest Harvesting practices?

A6. Forest Harvesting Practices will have a credit duration of three years to align with the three-year loading rate for the harvested forest land use in Phase 7 of the model. Forest Harvesting Practices are designed to mitigate water quality impacts both during and following forest harvest operations so the credit should apply for the entire period of time over which the model is accounting for the water quality impacts of the harvest.

Q7: Can the credit duration for Forest Harvesting practices get further extended if practices are verified?

A7: No. Inspection and maintenance dates do not apply for this BMP and the credit duration can't be extended beyond three years. This is consistent with the loading rate as an average of the harvest effect over three years for the harvested forest land use.

Q8: Do states still need to report acres harvested prior to progress reporting every year?

A7: If possible, states should report the total acres harvested in each year to the CBPO progress team by the agreed to deadline each year for progress. At the time this document was written, that date is November 1. However, reporting land use is optional

and if data is not supplied the default used will be 1.1% of true forest. Data reported should include the following fields:

- Year
- GeographyName (any CAST geography, e.g. FIPS, land river segment, HUC, etc. if the area is only the CBWS portion then append "(CBWSOnly)" to the geography)
- LoadSource (harvested forest)
- Unit (acres)
- Amount (if the land area has no harvested forest zero should be reported otherwise the default of 1.1% will be assigned)