LANDIS-II Biomass Harvest v2.0 Extension User Guide

Robert M. Scheller[1]

James B. Domingo[2]

[1]Portland State University

[2]Green Code LLC

Last Revised: October 12, 2011

Table of Contents

1 Introduction

This document describes the Biomass Harvesting extension for the LANDIS-II model. Users should read the LANDIS-II Model User's Guide prior to reading this document.

The Biomass Harvest Extension for LANDIS-II is derived from the Base Harvest extension and therefore generally behaves the same as Base Harvest. The largest change is that Biomass Harvest supports partial thinning of cohorts; other changes are listed below. Consult the user guide for Base Harvest for further information.

1.1 What's New in Version 2.0

Biomass Harvest version 2.0 is compatible with LANDIS-II version 6.0.

1.2 What's New in Version 1.3.1

The log files were changed to be more explicit about the biomass removed units, both in the output maps and the event log file. Output maps units are now **kg ha^{-1}**. Event log units are now **Mg biomass** removed and **Mg ha^{-1}** biomass removed per damaged site.

1.3 What's New in Version 1.3

Version 1.3 incorporated the numerous fixes that were applied to the Base Harvest version 1.3.

1.4 Acknowledgements

Funding for the development of LANDIS-II has been provided by the Northern Research Station (Rhinelander, Wisconsin) of the U.S. Forest Service.

2   Input Files

The inputs for this extension are identical to those listed in the Base Harvest User Guide with the exceptions listed below. The text file must comply with the general format requirements described in section 3.1 Text Input Files in the LANDIS-II Model User Guide.

2.1 LandisData

This parameter's value must be `"Biomass Harvest"`.

2.2 PreventEstablishment

The user can use the PreventEstablishment keyword after the SiteSelection choice to indicate that no new cohorts can establish after this prescription has been applied to a site.

Example:

```
Prescription SmallDevelopments
    StandRanking     Random
    MinimumTimeSinceLastHarvest 0
    SiteSelection    PartialStandSpread   1 1
    PreventEstablishment
```

2.3 Species List for Cohort Removal

When `SpeciesList` is specified for the `CohortsRemoved` parameter in a prescription, the user may specify a percentage after any individual age or range of ages. The percentage indicates what proportion of a cohort(s) will be removed. For example:

```
CohortsRemoved SpeciesList

acersacc 1-40 (50%) 50(65%) 65-70 71-107 (15%)
109
```

The default percentage is 100%. If no parenthetical biomass removal values are given, the Biomass Harvest extension will behave identically to the Base Harvest extension.

2.4 Biomass Maps

The new `BiomassMaps` parameter comes after the `PrescriptionMaps` parameter.

The parameter specifies the template for the names of output maps of biomass removed from harvested sites. Like the `PrescriptionMaps` parameter, the `BiomassMaps` parameter requires that the timestep variable be used in its value:

```
BiomassMaps harvest/biomass-removed-{timestep}.img
```

This parameter is optional. If it is not present, then no output maps are created.