LANDIS-II Leaf Biomass Harvest v3.0 Extension User Guide

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1 Introduction

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

The Leaf 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 Leaf Biomass Harvest supports partial thinning of cohorts; other changes are listed below. Consult the user guide for Base Harvest for further information.

Note: The Leaf Biomass Harvest Extension is *only compatible* with succession extensions that use the same cohort type, in this case cohorts with species, age, and aboveground **wood and leaf biomass** data. Currently, only the Century Succession extension meets this criterion. Therefore, Leaf Biomass Harvest is *not compatible* with either the Age-only or Biomass succession extensions.

1.1 Acknowledgements

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

1.2 Major Versions

1.2.1 Version 3.0

The extension was restructured to remain compatible with the Base Harvest extension.

1.2.2 Version 2.1

The Metadata library was integrated; therefore xml files are automatically generated for maps and log files.

1.2.3 Version 2.0

The Leaf Biomass Harvest extension is compatible with LANDIS-II v6.0.

1.3 Minor Versions

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 `"Leaf 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 BiomassMaps

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