LANDIS-II Leaf Biomass Output v2.0 Extension User Guide

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Last Revised: February 8, 2011

Table of Contents

1 Introduction

This document describes the **Leaf Leaf Biomass** Output extension for the LANDIS-II model. Readers should read the *LANDIS-II Model User Guide* prior to reading this document.

The output module described herein is fairly simple and produces three types of map:

- the aboveground live biomass (g m^{-2}) for individual species,
- the total aboveground live biomass for all species.

1.1 What's New in Version 2.0

Biomass Output is compatible with LANDIS v6.0. Because maps are no longer limited to integers up to 65,000, maps are output with the same units as the inputs. Assuming that the Biomass Succession extension (or similar) is operating at **g m^{-2}**, then the outputs are also **g m^{-2}**.

1.2 What's new in version 1.1

The differences between this version and the previous version (1.0) include:

- Cleared up confusing naming convention for total aboveground biomass maps. Previously, the names for total biomass maps were generated by substituting "`all`" for the "`{species}`" variable in the map-name template (see section 2.6). Now, the "`{species}`" variable is replaced with "`TotalBiomass`".
- Also, the total biomass maps are now produced even if individual species are not indicated.

1.3 Acknowledgements

Funding for the development of LANDIS-II has been provided by the North Central Research Station (Rhinelander, Wisconsin) of the U.S. Forest Service. Valuable contributions to the development of the model and extensions were made by Brian R. Sturtevant, Eric J. Gustafson, and David J. Mladenoff.

2 Input File

The input parameters for this extension are specified in one input file. This text file must comply with the general format requirements described in section 3.1 Text Input Files in the *LANDIS-II Model User Guide*.

By default, a combined total of aboveground biomass for all species will be output.

2.1 LandisData

The first parameter is the title of the input file:

```
LandisData  "Output Leaf Biomass"
```

2.2 Timestep

The second parameter is the time step in years. For example:

```
Timestep    15
```

2.3 MakeMaps

This parameter determines whether maps will be produced. The parameter must be: yes, no, Y, or N.

```
MakeMaps    yes
```

2.4 MakeTable

This parameter determines whether a table of species mean aboveground biomass (g m^{-2}) by ecoregion will be produced. The parameter must be: yes, no, Y, or N.

```
MakeTable   yes
```

2.5 Species List

First is an optional species list of the desired species from which to create maps. There is a List parameter, Species, followed by a list of one to many species. Alternatively, the keyword **all** can be used to indicate biomass should be output for every species. If **all** is indicated, do not list any species. For example:

```
Species     pinubank
            pinuresi
            pinustro
            poputrem
            piceglau
```

2.6 Aboveground Live Biomass Map Names

The next parameter, MapNames, describes where output maps are placed and their format. The first portion lists the directory where the maps should be placed, relative the location of the scenario text file (e.g., `agemaps/`). The second portion includes two variables for creating file names. `{species}` will be replaced with the species name. `{timestep}` will be replaced with the output time step. Other characters can be inserted as desired. A meaningful file extension (e.g., `.gis`) should also be included. For example:

```
MapNames  output/biomass/bio-{species}-{timestep}.img
```