

# LANDIS-II Output Max Species Age v4 Extension User Guide

Robert M. Scheller, North Carolina State University  
James B. Domingo

Last Revised: June 17, 2024

# Table of Contents

<b>1</b>	<b>INTRODUCTION .....</b>	<b>2</b>
1.1	Maximum Age Among All Cohorts.....	2
1.2	Maximum Age for Individual Species .....	2
1.3	Major Versions .....	2
1.3.1	<i>Version 4.0 (August 2024)</i> .....	2
1.3.2	<i>Version 3.0 (August 2018)</i> .....	2
1.3.3	<i>Version 2.1 (June 2017)</i> .....	2
1.3.4	<i>Version 2.0 (June 2012)</i> .....	2
1.3.5	<i>Version 1.1</i> .....	3
1.4	Minor Versions (this Major Version).....	3
1.5	Acknowledgements.....	3
<b>2</b>	<b>INPUT FILE .....</b>	<b>4</b>
2.1	LandisData .....	4
2.2	Timestep .....	4
2.3	MapNames .....	4
2.4	Species .....	4
<b>3</b>	<b>EXAMPLE FILE.....</b>	<b>5</b>

# 1 Introduction

This document describes the **Output Max Species Age** extension for the LANDIS-II model. For information about the model and its core concepts, see the *LANDIS-II Conceptual Model Description*.

This extension produces output maps of the maximum cohort age at each active site on the landscape. There are two types of these max-age maps:

- Maps with the maximum age for all the cohorts at each site.
- Maps with the maximum age for all the cohorts of a particular species at each site.

## 1.1 Maximum Age Among All Cohorts

During each extension time step, the extension always generate this type of output map.

## 1.2 Maximum Age for Individual Species

During each extension time step, the extension generates this type of output map for species selected by the user.

## 1.3 Major Versions

### 1.3.1 Version 4.0 (August 2024)

Updated to be compatible with Core v8.0.

### 1.3.2 Version 3.0 (August 2018)

The extension was modified so that the extension is compatible with Core v7.

### 1.3.3 Version 2.1 (June 2017)

Added compatibility with the Metadata library. The Metadata Library outputs metadata for all model outputs, allowing compatibility with visualization tools.

### 1.3.4 Version 2.0 (June 2012)

The extension was modified so that the extension is compatible with Core v6.0.

### 1.3.5 Version 1.1

The extension was modified so that the extension is compatible with version 5.1 of the LANDIS-II model.

## 1.4 Minor Versions (this Major Version)

## 1.5 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*.

### 2.1 LandisData

This parameter's value must be "Output Max Species Age".

### 2.2 Timestep

This parameter is the extension's timestep. Value: integer > 0. Units: years.

### 2.3 MapNames

This file parameter is the template for the names of the age output maps. The parameter value must include the two variables "species" and "timestep" to ensure that the maps have unique names (see section 3.1.8.1 *Variables* in the *LANDIS-II Model User Guide*).

### 2.4 Species

This parameter is a list of one or more species for which the extension will create age output maps (see section 2.2 *Max Age for Individual Species*). The first species name must follow the parameter name on the same line. Each additional species name must be on a separate line.

For convenience, the user can use the special name "all" to indicate that the extension should provide maps for each species defined in the species input file (see chapter 5 in the *LANDIS-II Model User Guide*). If this special name is used, it must be the only name in the list.

### 3 Example File

```
LandisData  "Output Max Species Age"

Timestep    10

MapNames    output/{species}-{timestep}.img

Species     pinubank
            acersacc
            tiliamer
```