LANDIS-II Foundation Mission Statement

The LANDIS-II Foundation is a non-member Oregon public charity provides oversight, training, and technical support for the LANDIS-II computer modeling system used in scientific and educational research.

Purpose

The specific mission of the LANDIS-II Foundation is to maintain and support the LANDIS-II computer model (details of the model are below). The Landis-II Foundation's activities consist of programming, software design, fixing 'bugs' when necessary, facilitating communication (primarily via the internet) among model developers and users, and training model users. To accommodate scientific advances while maintaining the model's stability and integrity, the LANDIS-II Foundation sets standards for programming and makes critical decisions about program design and behavior with input from users and developers.

The LANDIS-II Foundation accomplishes these goals by obtaining funding through grants (*e.g.*, NSF) and charging nominal fees for training. The Foundation hires independent contractors to implement those educational and programming services that the Board cannot directly provide. Revenue is spent exclusively on training and educational costs, on fees for independent contractors hired to implement programming objectives, and on ordinary expenses associated with running a nonprofit corporation (*e.g.*, registration fees, attorney fees). The Foundation has no employees and its directors and officers are not compensated.

The LANDIS-II Foundation Board of Directors is composed of a broad-cross section of volunteer scientists intimately familiar with the mechanics and scientific uses of the LANDIS-II model. The LANDIS-II Foundation is applying for 501(c)(3) status from the IRS (as of April 2013).

The Model

The Landis-II model has been developed since the early 1990s by scientists at many institutions, including the University of Wisconsin, U.S. Forest Service, and Portland State University. The model has been extensively used for scientific ecological research across the world. The Landis-II model is not owned by any person or entity; it is free, open-source, and any scientist or ecological researcher interested in using the model may use the model.

The LANDIS-II model models multiple disturbances (fire, wind, harvesting, insects) and forest succession across large (10^4 - 10^7 ha) landscapes. The LANDIS-II model utilizes a cellular automaton approach, whereby the landscape is composed of many spatially interactive cells. Each cell is assigned to an ecoregion with homogeneous soil and climate. Trees are represented within LANDIS-II as species and age cohorts. Disturbances interact through their collective effects on forest succession, and through their influence on other system properties, *e.g.*, fine and coarse fuel accumulation.

Each ecological process is represented as an individual dynamic linkable library (dlls) that can be added, modified, or replaced as needed. The model allows new components to be added at-will. Users may select a time step that best fits the temporal scale of succession and disturbance within the modeled ecosystem.