LBMR

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Overview

A fast and large landscape biomass succession model modified from LANDIS-II.

Download the module

```
library(SpaDES)
moduleName <- "LBMR"
spadesModulesDirectory <- tempdir() # where the module will be downloaded
downloadModule(moduleName, path = spadesModulesDirectory)
```

Usage

Module parameters

Name	Default	Description
growthInitialTime	0	initial time for the growth event to occur.
.plotInitialTime	0	describes the simulation time at which the first plot event should occur.
.saveInitialTime	0	describes the simulation time at which the first save event should occur.
spinupMortalityfraction	0.001	defines the mortality loss fraction in spin up-stage simulation.
successionTimestep	10	defines the simulation time step.
cellSize	NA	defines the cell size.
seedingAlgorithm	"wardDispersal"	chooses which seeding algorithm will be used among "noDispersal", "universalDispersal", and "wardDispersal".
useCache	TRUE	use caching for the spinup simulation?
useParallel	TRUE	determines whether the parallel computation will be used in the simulation.

Usage example

```
library(SpaDES.core)
library(SpaDES.tools)
library(magrittr)
```

```
inputDir <- file.path(dirname(tempdir()), "LBMR", "inputs") %>% checkPath(create = TRUE)
outputDir <- file.path(dirname(tempdir()), "LBMR", "outputs")
times <- list(start = 0, end = 3)
parameters <- list(
  .globals = list(verbose = FALSE),
  LBMR = list(.plotInitialTime = 0,
              successionTimestep = 2,
              seedingAlgorithm = "wardDispersal")
  #.progress = list(type = "text", interval = 1), # for a progress bar
  ## If there are further modules, each can have its own set of parameters:
  #module1 = list(param1 = value1, param2 = value2),
  #module2 = list(param1 = value1, param2 = value2)
)
modules <- list("LBMR")
objects <- list()

setPaths(cachePath = file.path(outputDir, "cache"),
         modulePath = "~/m",
         inputPath = inputDir,
         outputPath = outputDir)
paths <- getPaths()

mySim <- simInit(times = times, params = parameters, modules = modules, objects = objects, paths = paths

dev()
mySimOut <- spades(mySim, debug = TRUE)
```

Events

Events are scheduled as follows:

- Module initiation and spin-up
- Account for fire disturbance if present
- Seed dispersal
- Mortality and growth
- Reclassification of age cohorts
- SummaryRegen
- SummaryBGM
- Plot
- Save

Links to other modules

Intended to be used with the LandWeb suite of modules.