# Package ‘SpaDES’

**Type** Package  
**Title** Develop and Run Spatially Explicit Discrete Event Simulation Models  
**Description** Metapackage for implementing a variety of event-based models, with a focus on spatially explicit models. These include raster-based, event-based, and agent-based models. The core simulation components (provided by 'SpaDES.core') are built upon a discrete event simulation (DES; see Matloff (2011) ch 7.8.3 <https://nostarch.com/artofr.htm>) framework that facilitates modularity, and easily enables the user to include additional functionality by running user-built simulation modules (see also 'SpaDES.tools'). Included are numerous tools to visualize rasters and other maps (via 'quickPlot'), and caching methods for reproducible simulations (via 'reproducible'). Tools for running simulation experiments are provided by 'SpaDES.experiment'. Additional functionality is provided by the 'SpaDES.addins' and 'SpaDES.shiny' packages.

**URL**  
https://spades.predictiveecology.org,  
https://github.com/PredictiveEcology/SpaDES

**Date** 2021-06-10  
**Version** 2.0.7  
**Depends** R (>= 3.6)  
**Imports** methods, quickPlot, reproducible (>= 1.2.1.9007), SpaDES.core (>= 1.0.4), SpaDES.tools, utils  
**Suggests** covr, knitr, rmarkdown, testthat, SpaDES.addins, spelling  
**Encoding** UTF-8  
**Language** en-CA  
**License** GPL-3  
**VignetteBuilder** knitr, rmarkdown  
**BugReports** https://github.com/PredictiveEcology/SpaDES/issues  
**ByteCompile** yes  
**Collate** 'spades-package.R' 'zzz.R'
Metapackage for implementing a variety of event-based models, with a focus on spatially explicit models. These include raster-based, event-based, and agent-based models. The core simulation components (provided by \texttt{SpaDES.core}) are built upon a discrete event simulation (DES; see Matloff (2011) ch 7.8.3 \url{https://nostarch.com/artofr.htm}) framework that facilitates modularity, and easily enables the user to include additional functionality by running user-built simulation modules (see also \texttt{SpaDES.tools}). Included are numerous tools to visualize rasters and other maps (via \texttt{quickPlot}), and caching methods for reproducible simulations (via \texttt{reproducible}). Additional functionality is provided by the suggested \texttt{SpaDES.addins} and \texttt{SpaDES.shiny} packages (see below).

Bug reports:

- \texttt{quickPlot} package: \url{https://github.com/PredictiveEcology/quickPlot/issues}
- \texttt{reproducible} package: \url{https://github.com/PredictiveEcology/reproducible/issues}
- \texttt{SpaDES.addins} package: \url{https://github.com/PredictiveEcology/SpaDES.addins/issues}
- \texttt{SpaDES.core} package: \url{https://github.com/PredictiveEcology/SpaDES.core/issues}
- \texttt{SpaDES.shiny} package: \url{https://github.com/PredictiveEcology/SpaDES.shiny/issues}
- \texttt{SpaDES.tools} package: \url{https://github.com/PredictiveEcology/SpaDES.tools/issues}
Module repository: https://github.com/PredictiveEcology/SpaDES-modules
Wiki: https://github.com/PredictiveEcology/SpaDES/wiki

The SpaDES.core package
The core discrete event simulation framework. See SpaDES.core{SpaDES.core-package}, and the vignettes therein (browseVignettes()).

The SpaDES.tools package
Additional utilities for developing ecological simulation models. See SpaDES.tools{SpaDES.tools-package}.

The SpaDES.addins package
A set of RStudio addins to assist with SpaDES module development.

The SpaDES.shiny package
Utilities for developing and running shiny-based app interfaces to SpaDES simulations.

The quickPlot package
The core SpaDES plotting engine, build upon speed and modularity.

The reproducible package
Provides several aspects of reproducible simulations, including simulation caching.

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See Also

Useful links:

- [https://spades.predictiveecology.org](https://spades.predictiveecology.org)
- [https://github.com/PredictiveEcology/SpaDES](https://github.com/PredictiveEcology/SpaDES)
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