

# Package ‘sara4r’

March 11, 2021

**Type** Package

**Title** An R-GUI for Spatial Analysis of Surface Runoff using the NRCS-CN Method

**Version** 0.0.8

**Depends** R (>= 3.4.0), RGtk2

**Imports** raster, sp, rgdal

**Maintainer** Rafael Hernandez-Guzman <rhernandez.g@gmail.com>

**Description** A Graphical user interface to calculate the rainfall-runoff relation using the Natural Resources Conservation Service - Curve Number method (NRCS-CN method) but include modifications by Hawkins et al., (2002) about the Initial Abstraction. This GUI follows the programming logic of a previously published software (Hernandez-Guzman et al., 2011)<doi:10.1016/j.envsoft.2011.07.006>. It is a raster-based GIS tool that outputs runoff estimates from Land use/land cover and hydrologic soil group maps. This package has already been published in Journal of Hydroinformatics (Hernandez-Guzman et al., 2021)<doi:10.2166/hydro.2020.087> but it is under constant development at the Institute about Natural Resources Research (INIRENA) from the Universidad Michoacana de San Nicolas de Hidalgo and represents a collaborative effort between the Hydro-Geomatic Lab (INIRENA) with the Environmental Management Lab (CIAD, A.C.).

**License** GPL (>= 3)

**Encoding** UTF-8

**LazyData** true

**URL** <http://hydro-geomatic-lab.com/>,  
<http://hydro-geomatic-lab.com/sara4r.html>

**VignetteBuilder** knitr

**Suggests** knitr, rmarkdown

**NeedsCompilation** no

**Author** Rafael Hernandez-Guzman [aut, cre]  
(<<https://orcid.org/0000-0002-2711-9015>>),  
Arturo Ruiz-Luna [aut] (<<https://orcid.org/0000-0001-6878-0929>>)

**Repository** CRAN

**Date/Publication** 2021-03-11 07:20:02 UTC

## R topics documented:

sara4r . . . . . 2

**Index** . . . . . 4

---

sara4r	<i>An R-GUI for Spatial Analysis of Surface Runoff using the NRCS-CN Method</i>
--------	---

---

### Description

a raster-based GIS tool that outputs runoff estimates from Land use/land cover and hydrologic soil group maps.

### Usage

sara4r()

### Details

Package:	sara4r
Type:	Package
Version:	0.0.8
Date:	2021-03-01
Depends:	R(>= 3.4.0),RGtk2
Imports:	raster,sp,rgdal
License:	GPL (>= 3)
LazyLoad:	yes

### Note

<http://hydro-geomatic-lab.com/sara4r.html>

### Author(s)

Rafael Hernandez Guzman, Arturo Ruiz Luna  
 Maintainer: Rafael Hernandez Guzman<[rhernandez.g@gmail.com](mailto:rhernandez.g@gmail.com)>

### References

[CN-Idris, Hernández-Guzmán et al., 2011 - CN-Idris: An Idrisi tool for generating curve number maps and estimating direct runoff. *Environmental Modelling & Software*, 26(12), 1764-1766](<https://doi.org/10.1016/j.envsoft.2011.09.001>)  
 [SARA, Hernández-Guzmán and Ruiz-Luna, 2013. SARA – An enhanced curve number-based tool for estimating direct runoff. *Journal of Hydroinformatics*, 15(3), 881-887](<https://doi.org/10.2166/hydro.2013.145>)

[SARA4R, Hernández-Guzmán et al., 2021. Sara4r – an R graphical user interface (GUI) to estimate watershed surface runoff applying the NRCS – curve number method. Journal of Hydroinformatics, 23(1), 76-87](<https://doi.org/10.2166/hydro.2020.087>)

**Examples**

```
sara4r()
```

# Index

sara4r, [2](#)