

# Package: sara4r (via r-universe)

August 21, 2024

**Type** Package

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

**Version** 0.1.0

**Depends** R (>= 4.3.0), tcltk, tcltk2

**Imports** terra

**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

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

**VignetteBuilder** knitr

**Suggests** knitr, rmarkdown

**RoxygenNote** 7.2.3

**NeedsCompilation** no

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**Repository** CRAN

**Date/Publication** 2023-10-26 20:10:02 UTC

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## 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:  | 0.0.9                      |
| Date:     | 2022-01-31                 |
| Depends:  | R(>= 4.1.2), tcltk, tcltk2 |
| Imports:  | raster,sp,rgdal            |
| License:  | GPL (>= 3)                 |
| LazyLoad: | yes                        |

## Note

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

## Author(s)

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 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**

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sara4r()
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