

# Package ‘vortexRdata’

February 4, 2019

**Type** Package

**Title** Example Data for R Package 'vortexR'

**Version** 1.0.5

**Author** Carlo Pacioni [aut, cre],  
Florian W. Mayer [aut]

**Maintainer** Carlo Pacioni <C.Pacioni@Murdoch.edu.au>

**Description** Contains selected data from two publications,  
Campbell 'et' 'al'. (2016) <DOI:10.1080/14486563.2015.1028486>  
and 'Pacioni' 'et' 'al'. (2017) <DOI:10.1071/PC17002>.  
The data is provided both as raw outputs from the population viability  
analysis software 'Vortex' and packaged as R objects.  
The R package 'vortexR' uses the raw data provided here to illustrate its  
functionality of parsing raw 'Vortex' output into R objects.

**URL** <https://github.com/carlopacioni/vortexRdata/>

**BugReports** <https://github.com/carlopacioni/vortexR/issues>

**Depends** R (>= 3.1.0)

**License** GPL-3

**Encoding** UTF-8

**LazyData** true

**RoxygenNote** 6.1.1

**NeedsCompilation** no

**Repository** CRAN

**Date/Publication** 2019-02-04 11:00:03 UTC

## R topics documented:

campbell . . . . .	2
pac.clas . . . . .	2
pac.clas.lookup . . . . .	3
pac.clas.Nadults . . . . .	3

pac.clas.Ne . . . . .	4
pac.clas.pairw . . . . .	4
pac.lhs . . . . .	5
pac.run.lhs . . . . .	5
pac.yr . . . . .	6
pacioni . . . . .	6
sta.evy5 . . . . .	7
sta.evy5.b11 . . . . .	7
sta.main . . . . .	8
vortexRdata . . . . .	9

## Index 10

---

campbell	<i>Raw Vortex outputs from Campbell et al (2016)</i>
----------	--

---

### Description

A folder with Vortex outputs from Campbell et al (2016).

### Format

Several .dat and .stdat files.

### Source

Campbell et al. (2016). Assessing the economic benefits of starling detection and control to Western Australia. *Australasian Journal of Environmental Management*, 23, 81-99 [DOI:10.1080/14486563.2015.1028486](https://doi.org/10.1080/14486563.2015.1028486)

### Examples

```
campbell_dir <- system.file("extdata", "campbell", package="vortexRdata")
cat("campbell example files:\n"); dir(campbell_dir)
```

---

pac.clas	<i>Collated results from Vortex scenarios - Pacioni et al. (2017)</i>
----------	---

---

### Description

Subset (only 3 runs) of data from Pacioni et al. (2017) used to conduct a sensitivity analysis on demographic parameters. Vortex outputs, from the project named 'Pacioni\_et\_al' and (Single-Factor) sensitivity test scenario 'ST\_Classic' (.stdat files), were collated with `collate_dat`.

### Format

a data.frame of 2904 observations of 68 variables.

**Source**

Pacioni, C., Williams, M., Lacy RC, Spencer, P.B.S. and Wayne, A.F. (2017) Predators and genetic fitness: key threatening factors for the conservation of bettong species. Pacific Conservation Biology. DOI:10.1071/PC17002

**Examples**

```
data("pac.clas")
head(pac.clas)
```

---

pac.clas.lookup	<i>Look-up table</i>
-----------------	----------------------

---

**Description**

Data from Pacioni et al. (2017) - sensitivity test scenario 'ST\_Classic' - were used to generate a look-up table sizes using lookup\_table.

**Format**

A data.frame with 24 observations of 8 variables.

**Source**

Pacioni, C., Williams, M., Lacy RC, Spencer, P.B.S. and Wayne, A.F. (2017) Predators and genetic fitness: key threatening factors for the conservation of bettong species. Pacific Conservation Biology. DOI:10.1071/PC17002

**Examples**

```
data("pac.clas.lookup")
head(pac.clas.lookup)
```

---

pac.clas.Nadults	<i>Harmonic mean of adults and population sizes</i>
------------------	---

---

**Description**

Data from Pacioni et al. (2017) - sensitivity test scenario 'ST\_Classic' - were used to calculate the harmonic mean of adults and population sizes using Nadults.

**Format**

A data.frame with 24 observations of 4 variables.

**Source**

Pacioni, C., Williams, M., Lacy RC, Spencer, P.B.S. and Wayne, A.F. (2017) Predators and genetic fitness: key threatening factors for the conservation of bettong species. Pacific Conservation Biology. DOI:10.1071/PC17002

**Examples**

```
data("pac.clas.Nadults")
head(pac.clas.Nadults)
```

---

pac.clas.Ne	<i>Effective population size</i>
-------------	----------------------------------

---

**Description**

Data from Pacioni et al. (2017) - sensitivity test scenario 'ST\_Classic' - were used to calculate the effective population size sizes using Ne.

**Format**

A data.frame with 24 observations of 2 variables.

**Source**

Pacioni, C., Williams, M., Lacy RC, Spencer, P.B.S. and Wayne, A.F. (2017) Predators and genetic fitness: key threatening factors for the conservation of bettong species. Pacific Conservation Biology. DOI:10.1071/PC17002

**Examples**

```
data("pac.clas.Ne")
head(pac.clas.Ne)
```

---

pac.clas.pairw	<i>Results of pairwise comparisons of simulation scenarios</i>
----------------	--

---

**Description**

Results of pairwise comparisons of simulation scenarios included in the sensitivity test scenario 'ST\_Classic' using pairwise.

**Format**

A named list of 12 elements. See documentation for details.

**Source**

Pacioni, C., Williams, M., Lacy RC, Spencer, P.B.S. and Wayne, A.F. (2017) Predators and genetic fitness: key threatening factors for the conservation of bettong species. Pacific Conservation Biology. DOI:10.1071/PC17002

**Examples**

```
data("pac.clas.pairw")
head(pac.clas.pairw)
```

---

pac.lhs

*Collated results from Vortex scenarios - Pacioni et al. (2017)*

---

**Description**

Data from Pacioni et al. (2017) used to conduct a sensitivity analysis on demographic parameters. Vortex outputs, from the project named 'Pacioni\_et\_al' and (Latin Hypercube Sampling) sensitivity test scenario 'ST\_LHS' (.stdat files), were collated with collate\_dat.

**Format**

A data.frame of 6171 observations of 68 variables.

**Source**

Pacioni, C., Williams, M., Lacy RC, Spencer, P.B.S. and Wayne, A.F. (2017) Predators and genetic fitness: key threatening factors for the conservation of bettong species. Pacific Conservation Biology. DOI:10.1071/PC17002

**Examples**

```
data("pac.lhs")
head(pac.lhs)
```

---

pac.run.lhs

*Collated results from Vortex scenarios - Pacioni et al. (2017)*

---

**Description**

Data from Pacioni et al. (2017) used to conduct a sensitivity analysis on demographic parameters. Vortex outputs, from the project named 'Pacioni\_et\_al' and (Latin Hypercube Sampling) sensitivity test scenario 'ST\_LHS' (.run files), were collated with collate\_run.

**Format**

A named list of two data.frames: run (153 obs, 7 var), lrun (153 obs, 8 var).

**Source**

Pacioni, C., Williams, M., Lacy RC, Spencer, P.B.S. and Wayne, A.F. (2017) Predators and genetic fitness: key threatening factors for the conservation of bettong species. Pacific Conservation Biology. DOI:10.1071/PC17002

**Examples**

```
data("pac.run.lhs")
head(pac.run.lhs)
```

---

pac.yr	<i>Collated results from Vortex scenarios - Pacioni et al. (2017)</i>
--------	---

---

**Description**

Data from Pacioni et al. (2017) used to conduct a sensitivity analysis on demographic parameters. Vortex outputs, from the project named 'Pacioni\_et\_al' and (Single-Factor) sensitivity test scenario 'ST\_Classic' (.yr files), were collated with collate\_yr.

**Format**

A named list of two elements: all (8712 obs, 26 var), means (2904 obs, 25 var).

**Source**

Pacioni, C., Williams, M., Lacy RC, Spencer, P.B.S. and Wayne, A.F. (2017) Predators and genetic fitness: key threatening factors for the conservation of bettong species. Pacific Conservation Biology. DOI:10.1071/PC17002

**Examples**

```
data("pac.yr")
head(pac.yr)
```

---

pacioni	<i>Raw Vortex outputs from Pacioni et al. (2017)</i>
---------	--

---

**Description**

A folder with Vortex outputs from Pacioni et al. (2017) used to run examples and Vortex project file. NOTE: these simulations are shorter than those presented in the paper (only 3 runs for 120 'Vortex-years').

**Format**

One .xml file and several .run and .stdat files.

**Source**

Pacioni, C., Williams, M., Lacy RC, Spencer, P.B.S. and Wayne, A.F. (2017) Predators and genetic fitness: key threatening factors for the conservation of bettong species. Pacific Conservation Biology. DOI:10.1071/PC17002

**Examples**

```
pacioni_dir <- system.file("extdata", "pacioni", package="vortexRdata")
cat("pacioni example files:\n"); dir(pacioni_dir)
```

---

sta.evy5

*Collated results from Vortex scenarios - Campbell et al (2016)*

---

**Description**

A dataset with the results from Vortex scenarios used in Campbell et al (2016) to simulate major application of control measures in every 5 year cycle. Vortex outputs, from the project named 'Starlingv3PopBased' and the sensitivity test scenario 'MReductEvy5' (.stdat files), were collated with collate\_dat.

**Format**

a data.frame with 1020 observations of 47 variables.

**Source**

Campbell et al. (2016). Assessing the economic benefits of starling detection and control to Western Australia. Australasian Journal of Environmental Management, 23, 81-99 DOI:10.1080/14486563.2015.1028486

**Examples**

```
data("sta.evy5")
head(sta.evy5)
```

---

sta.evy5.b11

*Collated results from Vortex scenarios - Campbell et al (2016)*

---

**Description**

A dataset with the results from Vortex scenarios used in Campbell et al (2016) to simulate major application of control measures in every 5 year cycle, maintaining 2011 levels of investment. Vortex outputs, from the project named 'Starlingv3PopBased' and the sensitivity test scenario 'MReduction\_B11\_09Evy5' (.stdat files), were collated with collate\_dat.

**Format**

a `data.frame` with 1020 observations of 47 variables.

**Source**

Campbell et al. (2016). Assessing the economic benefits of starling detection and control to Western Australia. *Australasian Journal of Environmental Management*, 23, 81-99 DOI:[10.1080/14486563.2015.1028486](https://doi.org/10.1080/14486563.2015.1028486)

**Examples**

```
data("sta.evy5.b11")
head(sta.evy5.b11)
```

---

sta.main

*Collated results from Vortex scenarios - Campbell et al (2016)*

---

**Description**

A dataset with the results from the main Vortex scenarios used in Campbell et al (2016). Vortex outputs, from the project named 'Starlingv3PopBased' (.dat files), were collated with `collate_dat`.

**Format**

a `data.frame` with 1632 observations of 44 variables.

**Source**

Campbell et al. (2016). Assessing the economic benefits of starling detection and control to Western Australia. *Australasian Journal of Environmental Management*, 23, 81-99 DOI:[10.1080/14486563.2015.1028486](https://doi.org/10.1080/14486563.2015.1028486)

**Examples**

```
data("sta.main")
head(sta.main)
```



---

vortexRdata

*vortexRdata: Example data for vortexR*

---

## Description

vortexRdata provides real-world example data for vortexR in both raw (Vortex output) and binary (R objects) form.

## Details

vortexR uses the raw data provided here to illustrate its capability to parse raw Vortex output files into one R object.

vortexR facilitates Post Vortex Simulation Analysis (PVSA) by offering tools to collate multiple Vortex (v10) output files into one R object, generate plots and conduct basic analysis (e.g. pairwise comparisons of scenarios) and more advanced statistics such as fitting of a Generalised Linear Model (GLM) to investigate the main and the interaction effects of the variables of interest.

vortexR has a number of functions that are useful during the development of a Vortex project and for its analysis after completion.

vortexR facilitates the creation of plots and computation of basic statistics to inspect the effect of changes carried out in the Vortex project. Once the Vortex project development is completed, the same framework used in vortexR during the development of the project can be refined and extended to include more advanced statistical analyses or can be easily included in Markdown documents for the creation of reports (by converting them into pdf) or published as web-pages.

The use of vortexR ensures reproducibility and standardises analytical approaches in population viability analysis.

## Source

Campbell et al. (2016). Assessing the economic benefits of starling detection and control to Western Australia. *Australasian Journal of Environmental Management*, 23, 81-99 DOI:10.1080/14486563.2015.1028486

Pacioni, C., Williams, M., Lacy RC, Spencer, P.B.S. and Wayne, A.F. (2017) Predators and genetic fitness: key threatening factors for the conservation of bettong species. *Pacific Conservation Biology*. DOI:10.1071/PC17002

# Index

`campbell`, [2](#)

`pac.clas`, [2](#)

`pac.clas.lookup`, [3](#)

`pac.clas.Nadults`, [3](#)

`pac.clas.Ne`, [4](#)

`pac.clas.pairw`, [4](#)

`pac.lhs`, [5](#)

`pac.run.lhs`, [5](#)

`pac.yr`, [6](#)

`pacioni`, [6](#)

`sta.evy5`, [7](#)

`sta.evy5.b11`, [7](#)

`sta.main`, [8](#)

`vortexRdata`, [9](#)

`vortexRdata-package (vortexRdata)`, [9](#)