

Package ‘FREQ’

October 12, 2022

Type Package

Title FREQ: Estimate population size from capture frequencies

Version 1.0

Date 2013-04-22

Author Annegret Grimm & Klaus Henle

Maintainer Annegret Grimm <annegret.grimm@ufz.de>

Description Real capture frequencies will be fitted to various distributions which provide the basis of estimating population sizes, their standard error, and symmetric as well as asymmetric confidence intervals.

License GPL-2

NeedsCompilation no

Repository CRAN

Date/Publication 2013-09-10 17:29:29

R topics documented:

FREQ-package	1
freq	2

Index	4
--------------	----------

FREQ-package	<i>FREQ: Estimating population size and related parameters from capture frequencies</i>
--------------	---

Description

Real capture frequencies will be fitted to various distributions which provide the basis for estimating population sizes, their standard error, and symmetric as well as asymmetric confidence intervals.

Details

Package: `FREQ`
 Type: `Package`
 Version: `1.0`
 Date: `2013-04-22`
 License: `GPL`

This package uses input data from capture frequencies. There are no limitations on the number of capture occasions.

Author(s)

Annegret Grimm & Klaus Henle

Maintainer: Annegret Grimm, <annegret.grimm@ufz.de>

References

Grimm, A. (submitted to PLOS One) Reliability of different mark-recapture methods for population size estimation tested with field data from populations of known size.

Henle, K. (1990) Population ecology and life history of the arboreal gecko *Gehyra variegata* in arid Australia. *Herpetological Monographs*, 4, 30-60.

Seber, GAF. (1982) The estimation of animal abundance and related parameters. Second edition. Griffin, London.

freq	<i>capture frequencies</i>
------	----------------------------

Description

Real capture frequencies will be fitted to a geometric, a truncated geometric, a Poisson, and a negative binomial distribution. These distributions provide the basis for estimating population sizes, their standard error, and symmetric as well as asymmetric confidence intervals. Moreover, expected values for these four distributions will be calculated allowing comparisons between real and expected capture frequencies.

Usage

```
freq(fi)
```

Arguments

<code>fi</code>	a vector of capture frequencies with length of all (successive) sampling periods; start the vector using <code>c()</code>
-----------------	---

Value

All measured and expected values:

All measured and expected values of actual and possible distributions

All estimated values:

All estimated values including number of individuals captured, distribution parameters, population size and respective standard error, symmetric and asymmetric 95 percent confidence interval

Warning

unused argument -> fi must be a vector starting c(a,b,c,..)

Author(s)

Annegret Grimm & Klaus Henle <annegret.grimm@ufz.de>

References

Grimm, A. (submitted to PLOS One) Reliability of different mark-recapture methods for population size estimation tested with field data from populations of known size.

Henle, K. (1990) Population ecology and life history of the arboreal gecko *Gehyra variegata* in arid Australia. Herpetological Monographs, 4, 30-60.

Seber, GAF. (1982) The estimation of animal abundance and related parameters. Second edition. Griffin, London.

Examples

```
# In your field population, 53 individuals were captured once, 19 were captured twice,  
# 4 were captured three times, 1 was captured four times  
# and no individual was captured five or six times.  
# As there were six capture occasions, the fifth and sixth capture occasion is set to 0.  
# call your capture frequencies as follows:  
freq(c(53,19,4,1,0,0))
```

Index

- * **(truncated) geometric distribution**
 - FREQ-package, 1
 - * **Geometric distribution**
 - freq, 2
 - * **Negative binomial distribution**
 - freq, 2
 - * **Poisson distribution**
 - freq, 2
 - FREQ-package, 1
 - * **Population size estimation using capture frequencies**
 - freq, 2
 - * **capture frequencies**
 - FREQ-package, 1
 - * **negative binomial distribution**
 - FREQ-package, 1
 - * **population size**
 - FREQ-package, 1
- FREQ (FREQ-package), 1
freq, 2
FREQ-package, 1