SIBIC 2024
X Iberian Congress
of Ichthyology

Making sense of the R fishbase package in a macroecological trophic fish perspective

Ignasi Arranz, Universidad Rey Juan Carlos

Fishes for Future
19th Vic

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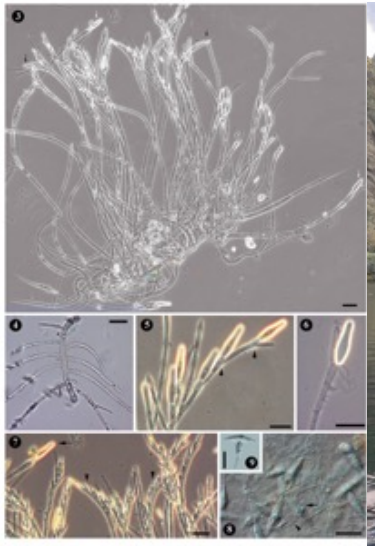
Programa Atracción

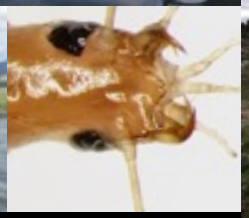
FRESCO

Lake George Reflection
Georgia O'Keeffe

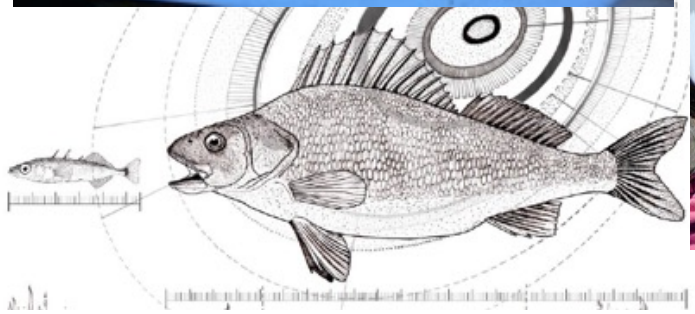

UAB
Universitat Autònoma de Barcelona
Technician era
Universitat de Girona
IGB
Leibniz-Institute of Freshwater Ecology and Inland Fisheries
國立臺灣大學
National Taiwan University
Predoctoral era
UNIVERSITAT DE VIC
UNIVERSITAT CENTRAL DE CATALUNYA
AARHUS UNIVERSITY
Concordia
UNIVERSITÉ
UNIVERSITY
UNIVERSITAT DE VIC
UNIVERSITAT CENTRAL DE CATALUNYA
Postdoctoral era
UNIVERSITÉ TOULOUSE III PAUL SABATIER
Université de Toulouse
Universidad Rey Juan Carlos




Ignasi Arranz




FotCiencia Ignasi Arranz



Why this course?

RESEARCH HIGHLIGHT

Four key challenges in the open-data revolution

Roberto Salguero-Gómez[1,2] | John Jackson[3] | Samuel J. L. Gascoigne[1]

VIEWPOINT

Reproducibility in ecology and evolution: Minimum standards for data and code

Gareth B. Jenkins[1] | Andrew P. Beckerman[2] | Céline Bellard[3] | Ana Benítez-López[4] | Aaron M. Ellison[5,6] | Christopher G. Foote[7] | Andrew L. Hufton[7] | Marcus A. Lashley[8] | Christopher J. Lortie[9] | Zhaoxue Ma[10] | Allen J. Moore[11] | Shawn R. Narum[12] | Johan Nilsson[13] | Bridget O'Boyle[1] | Diogo B. Provete[14,15] | Orly Razgour[16] | Loren Rieseberg[17] | Cynthia Riginos[18] | Luca Santini[19] | Benjamin Sibbett[1] | Pedro R. Peres-Neto[20]

Trends in Ecology & Evolution

CellPress REVIEWS

Forum

Ecological Data Should Not Be So Hard to Find and Reuse

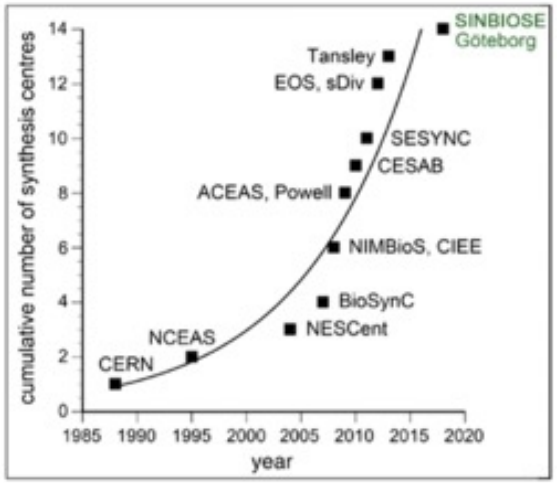
Timothée Poisot, Anne Bruneau, Andrew Gonzalez, Dominique Gravel, and Pedro Peres-Neto

Review

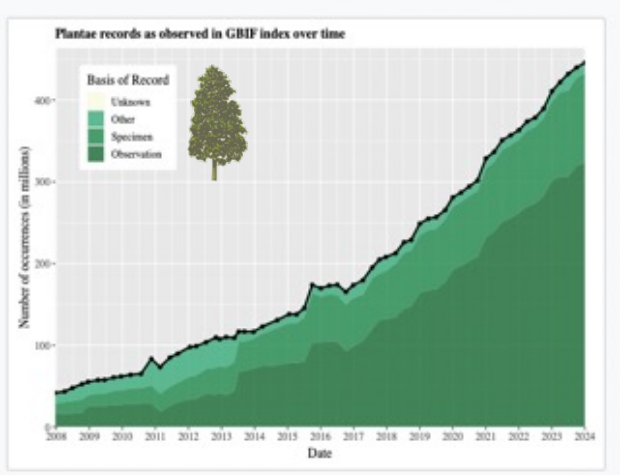
Special Issue: Long-term ecological research

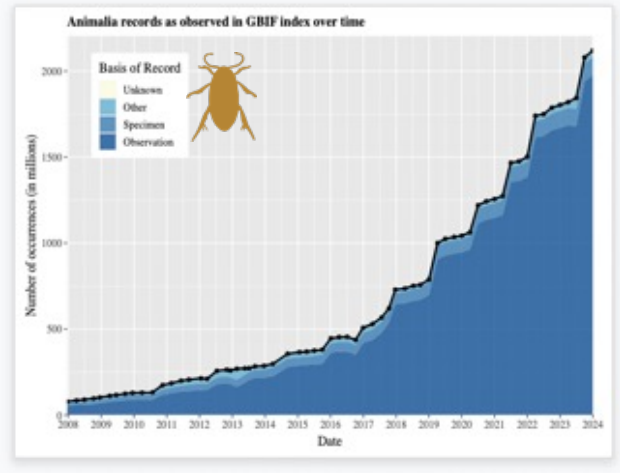
Long-term datasets in biodiversity research and monitoring: assessing change in ecological communities through time

Anne E. Magurran[1], Stephen R. Baillie[2], Stephen T. Buckland[3], Jan McP. Dick[4], David A. Elston[5], E. Marian Scott[6], Rognvald I. Smith[4], Paul J. Somerfield[7] and Allan D. Watt[8]



Ref: Nicolas Mouquet





Ref: GBIF

Why a macroecological trophic fish perspective?

Global patterns of fish trophic ecology are scarce

Fish suitable subject group sensitive to human footprint

Answer broad questions in ecology, evolution, and biogeography

https://www.julbo.com/es_es/news/highline-entrevista-con-antoine-mesnage


FishBase

Journal of FISH BIOLOGY
Published for the Fisheries Society of the British Isles

Journal of Fish Biology (2012) **81**, 2030–2039
doi:10.1111/j.1095-8649.2012.03464.x, available online at wileyonlinelibrary.com

rfishbase: exploring, manipulating and visualizing FishBase data from R

C. BOETTIGER*†, D. T. LANG‡ AND P. C. WAINWRIGHT*

*Center for Population Biology, University of California, Davis, CA 95616, U.S.A. and
‡Department of Statistics, University of California, Davis, CA 95616, U.S.A.

This article introduces a package that provides interactive and programmatic access to the FishBase repository. This package allows interaction with data on over 30 000 fish species in the rich statistical computing environment, R. This direct, scriptable interface to FishBase data enables better discovery and integration essential for large-scale comparative analyses. This article provides several examples to illustrate how the package works, and how it can be integrated into phylogenetics packages such as ape and geiger.

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Journal of Fish Biology © 2012 The Fisheries Society of the British Isles

Key words: data access; programmatic; tutorial; XML.

Package ‘rfishbase’

June 3, 2023

Title R Interface to 'FishBase'

Description A programmatic interface to 'FishBase', re-written based on an accompanying 'RESTful' API. Access tables describing over 30,000 species of fish, their biology, ecology, morphology, and more. This package also supports experimental access to 'SeaLifeBase' data, which contains nearly 200,000 species records for all types of aquatic life not covered by 'FishBase.'

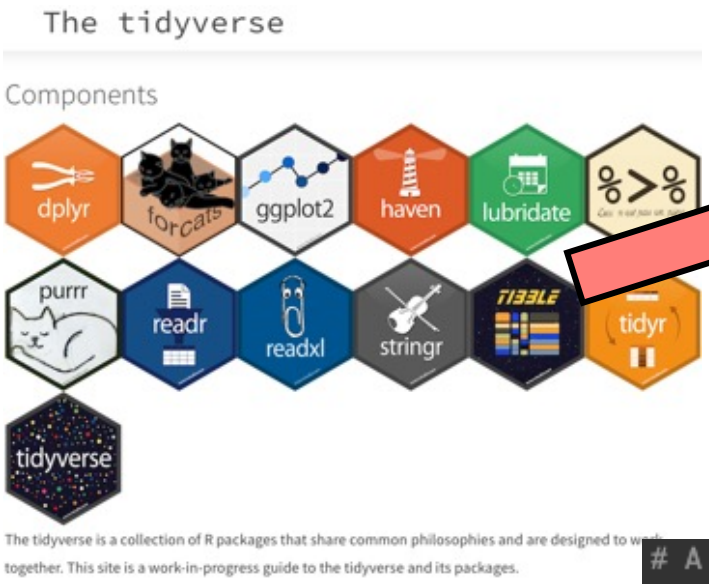
Version 4.1.2

Encoding UTF-8

License CC0

R topics documented:

library(tidyverse)



- Compact format (three digits; only show the first 10 rows…)
- Convenient to see the type of the data

```
# A tibble: 10 × 10
      V1     V2     V3     V4     V5     V6     V7     V8     V9    V10
   <dbl>  <dbl>  <dbl>  <dbl>  <dbl>  <dbl>  <dbl>  <dbl>  <dbl>  <dbl>
 1 21.3    0.908  5.59  13.4    2.84  25.8    8.28   2.05  0.537  14.7
 2  2.26  37.5    3.74   6.53  11.9   29.5    5.72   6.38 11.4     1.75
 3 23.6   11.9    0.400  4.69   1.28   7.64   3.84   4.09  4.34    2.22
 4  9.96   2.45  23.2   11.6    3.75  37.5    0.913  8.39 24.1     3.59
 5 15.6    0.634  4.98  13.5    1.35   9.98   2.07   4.50 11.8    11.9
 6 11.7    3.73   5.51  18.8    9.46   6.75   2.48   7.61 14.9     3.58
 7  5.39   9.84   6.38   0.284  3.15   5.16   7.86   3.84  0.282   2.76
 8  9.07   7.09   3.52   3.15   0.317  5.10   4.44  10.4   6.17   44.9
 9  2.79   7.25  16.7   17.8    3.74  16.0    3.94   8.26  9.20   17.4
10  0.163  7.24  33.4   19.0    2.44   5.15 12.7    10.6   5.68    2.49
```

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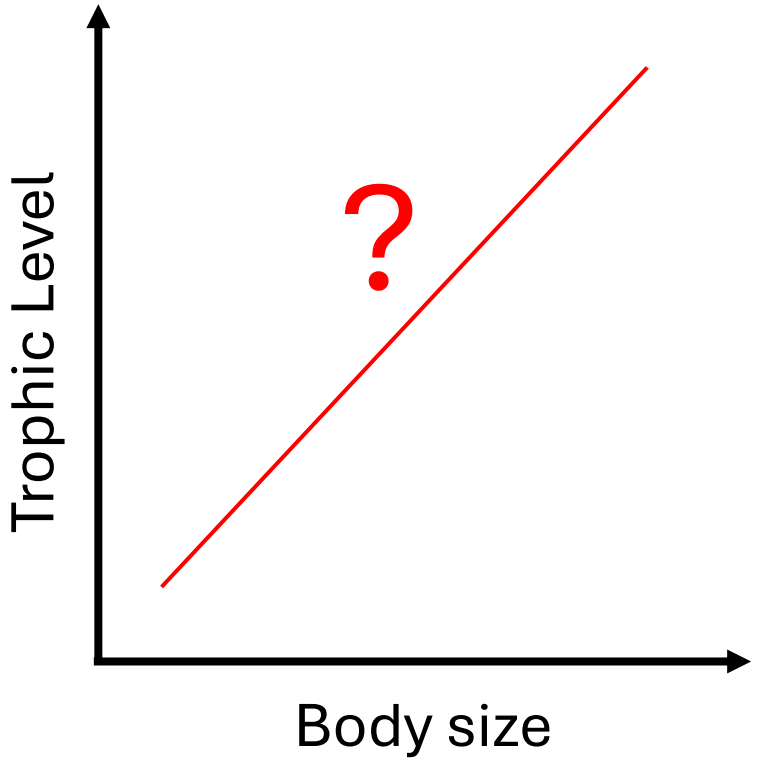
Get started!

Programa Atracción

Case study 1

Reveal trophic level vs maximum body size in fish species

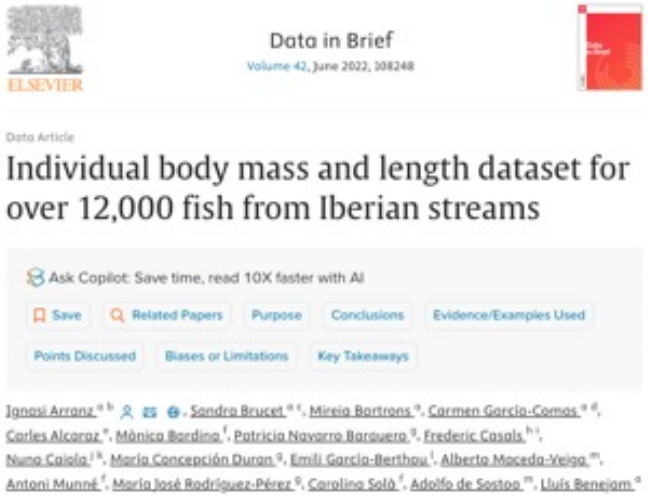


Case study 2

Estimate individual weight from length–weight relationships

$$WEIGHT = aLENGTH^b$$

$$log10(WEIGHT) = log10(LENGTH)b + a$$



ELSEVIER

Data in Brief

Volume 42, June 2022, 108248

Data Article

Individual body mass and length dataset for over 12,000 fish from Iberian streams

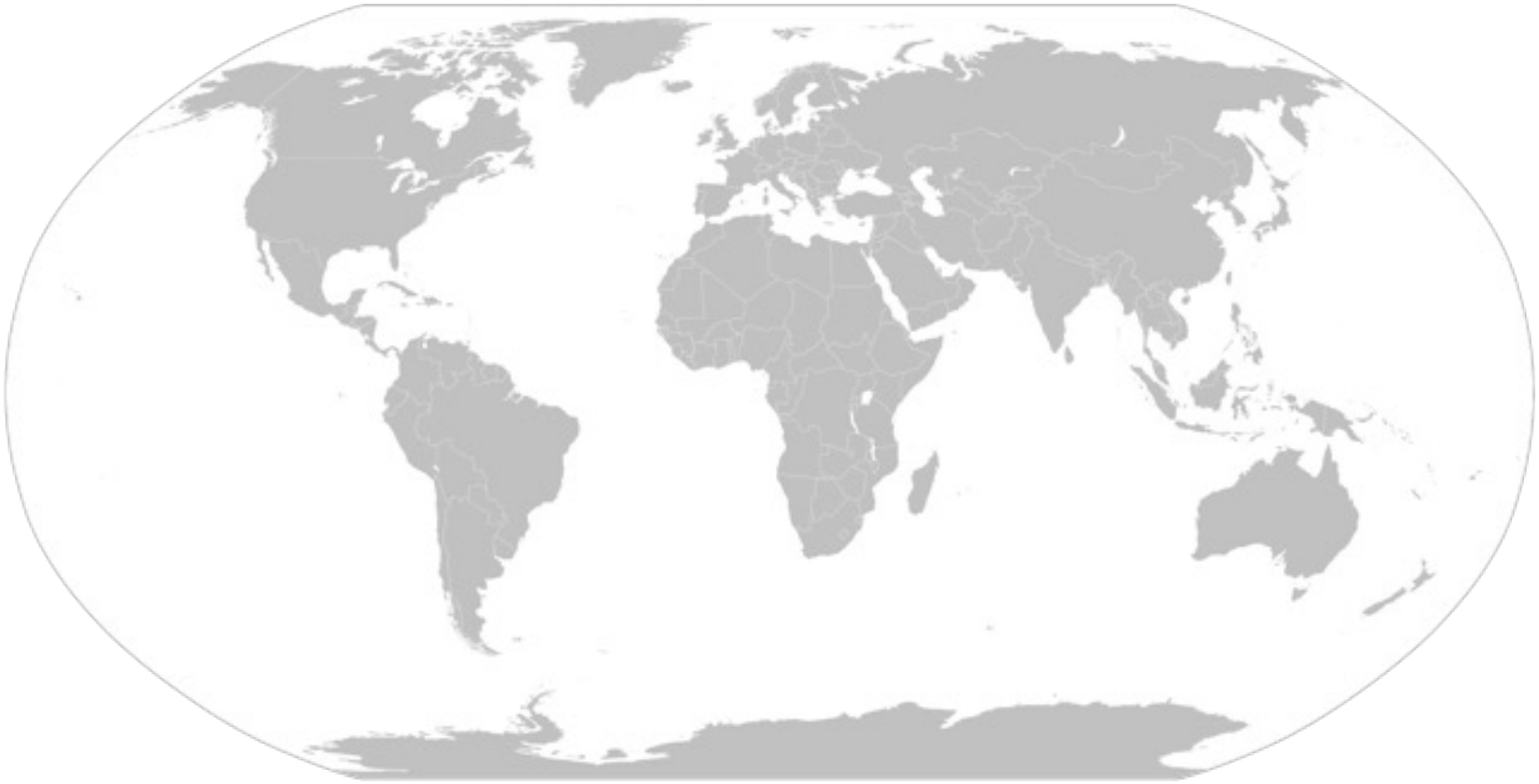
Ask Copilot: Save time, read 10X faster with AI

Save | Related Papers | Purpose | Conclusions | Evidence/Examples Used | Points Discussed | Biases or Limitations | Key Takeaways

Ignasi Arranz, Sandra Brucet, Mireia Bartrons, Carmen García-Comas, Carles Alcaraz, Mònica Bardina, Patricia Navarro Barquero, Frederic Casals, Nuno Caiola, María Concepción Duran, Emili García-Berthou, Alberto Maceda-Veiga, Antoni Munné, María José Rodríguez-Pérez, Carolina Solà, Adolfo de Sostoa, Lluís Benejam

Case study 3

Create a trophic index at a global scale based on the feeding roles



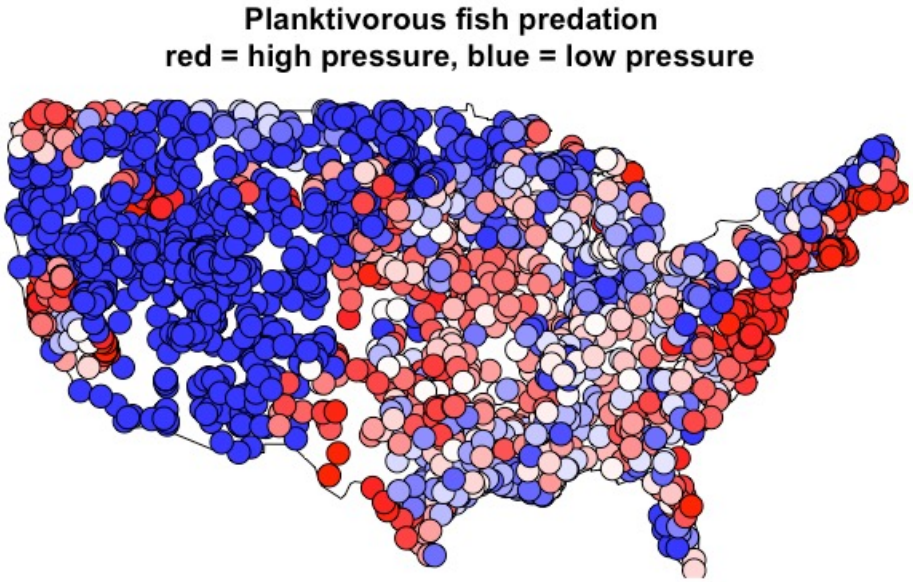
Fisheries Magazine

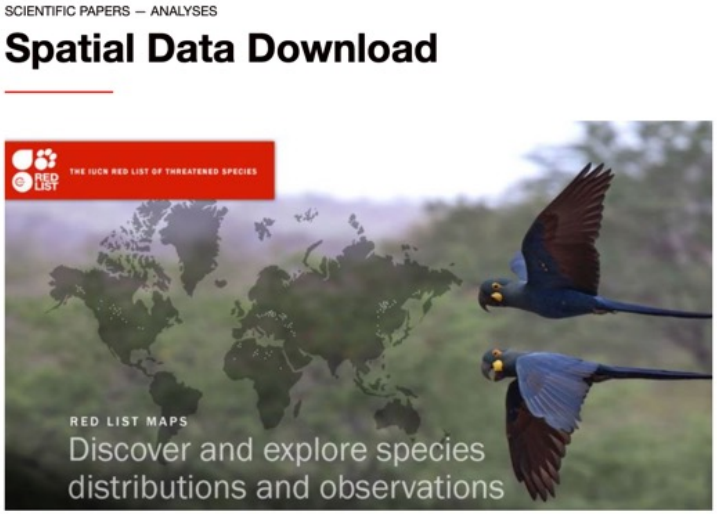
Feature: Fisheries Research | Full Access

Fish Traits: A Database of Ecological and Life-history Traits of Freshwater Fishes of the United States

Emmanual A. Frimpong ✉, Paul L. Angermeier

First published: 26 February 2011 | https://doi.org/10.1577/1548-8446-34.10.487 | Citations: 195





García-Astillero et al. 2024 (in preparation)