

git.io/v02Yk



COMADRE COMPADRE

Animal Matrix Database

Plant Matrix Database

www.compadre-db.org

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comadrededb.wordpress.com

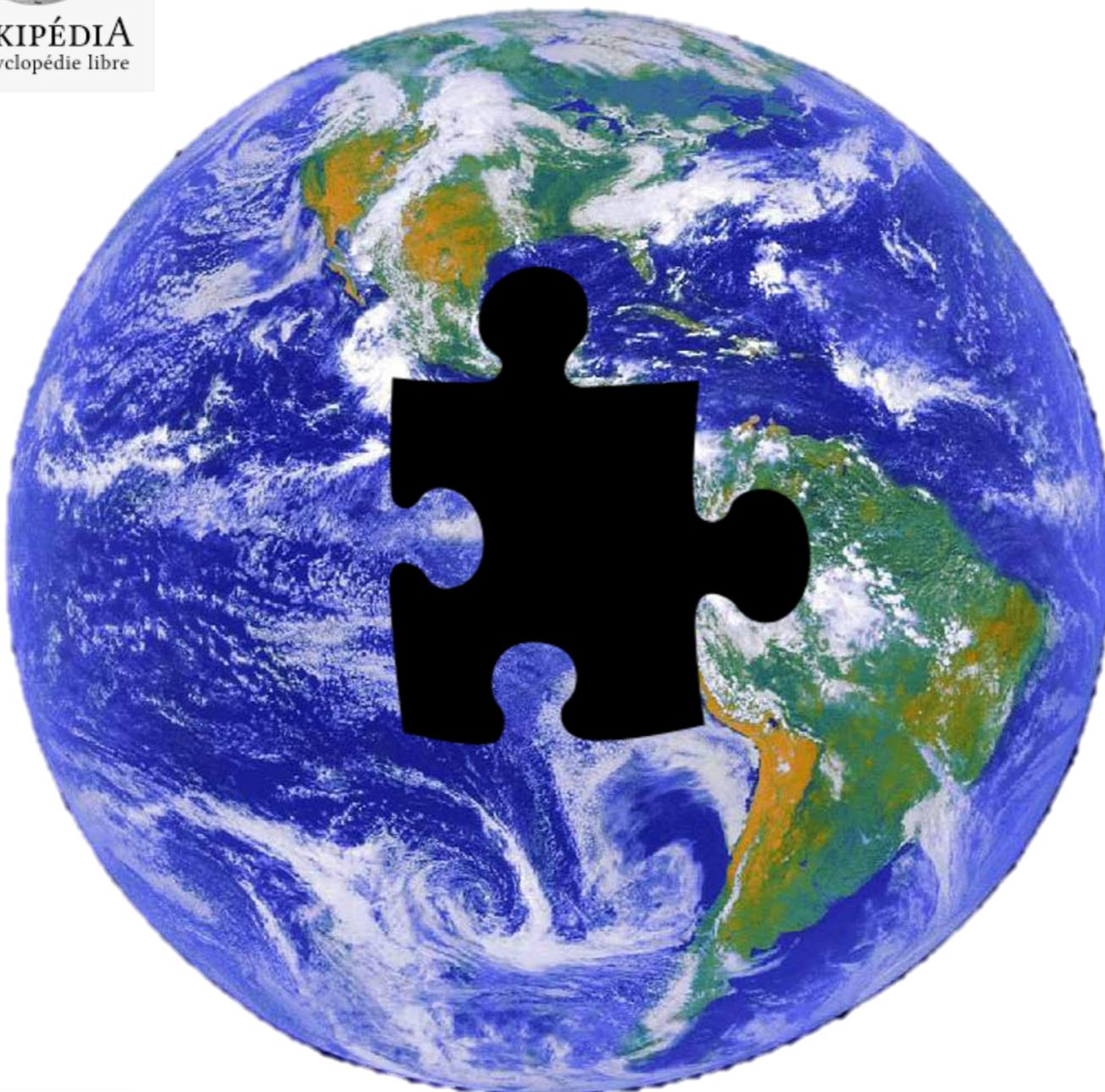
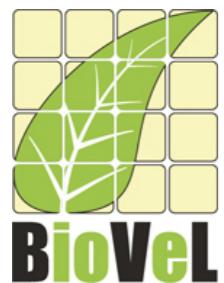
The COMPADRE/COMADRE team



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FÜR DEMOGRAFISCHE
FORSCHUNG

MAX PLANCK INSTITUTE
FOR DEMOGRAPHIC
RESEARCH





The Plant List

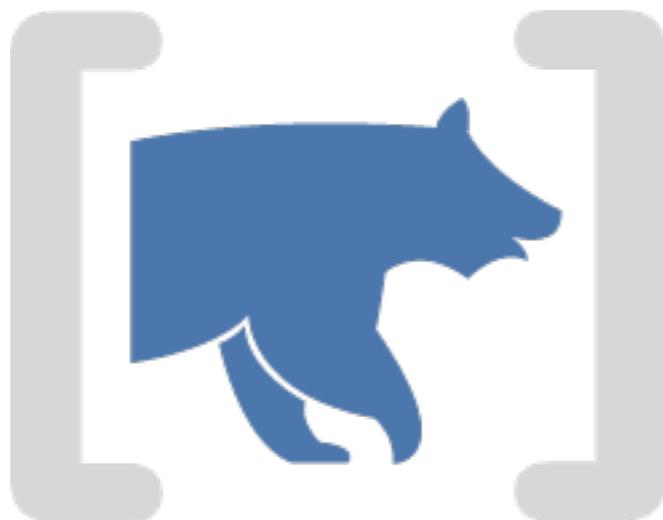


Nutrient Network

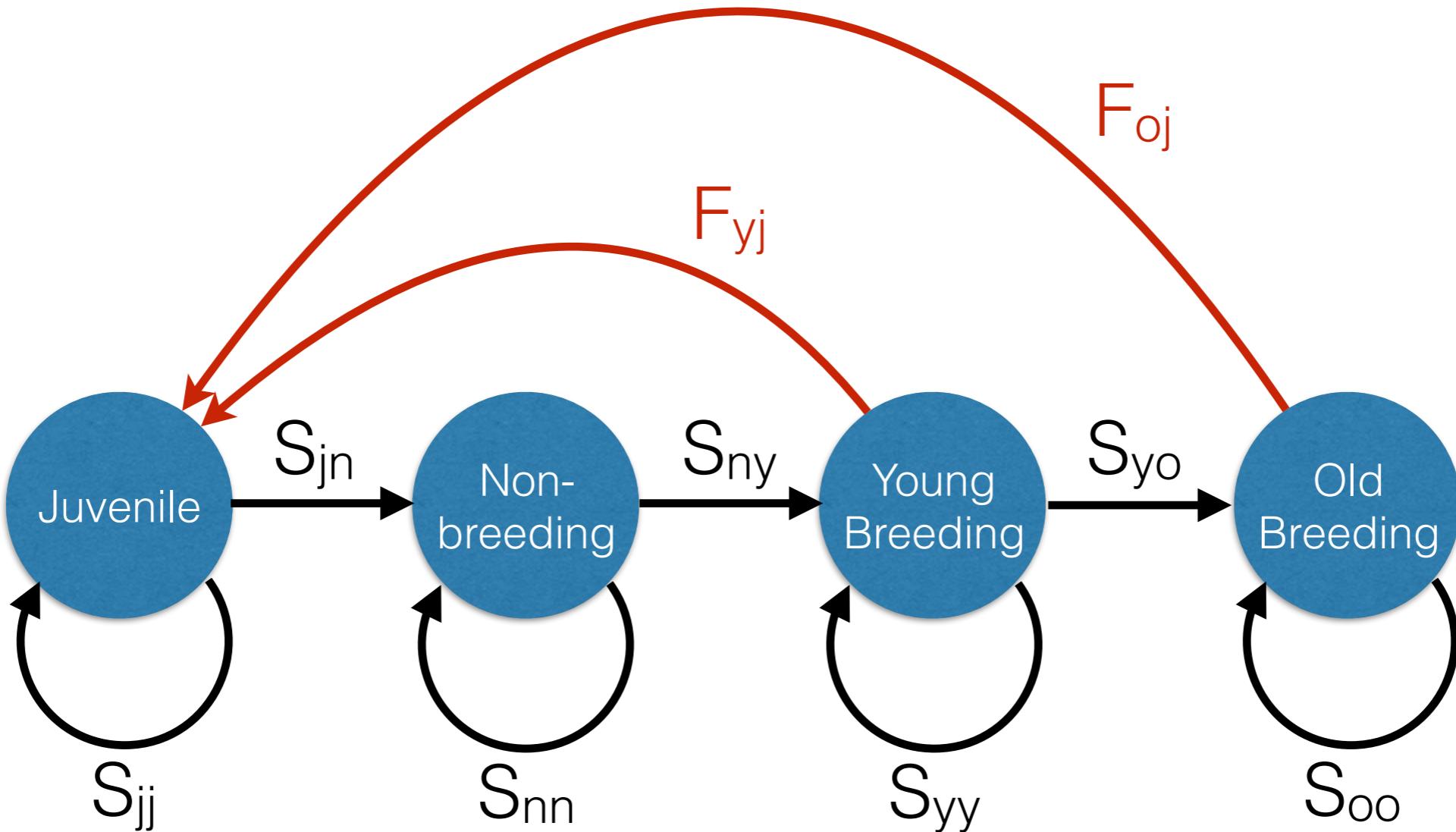




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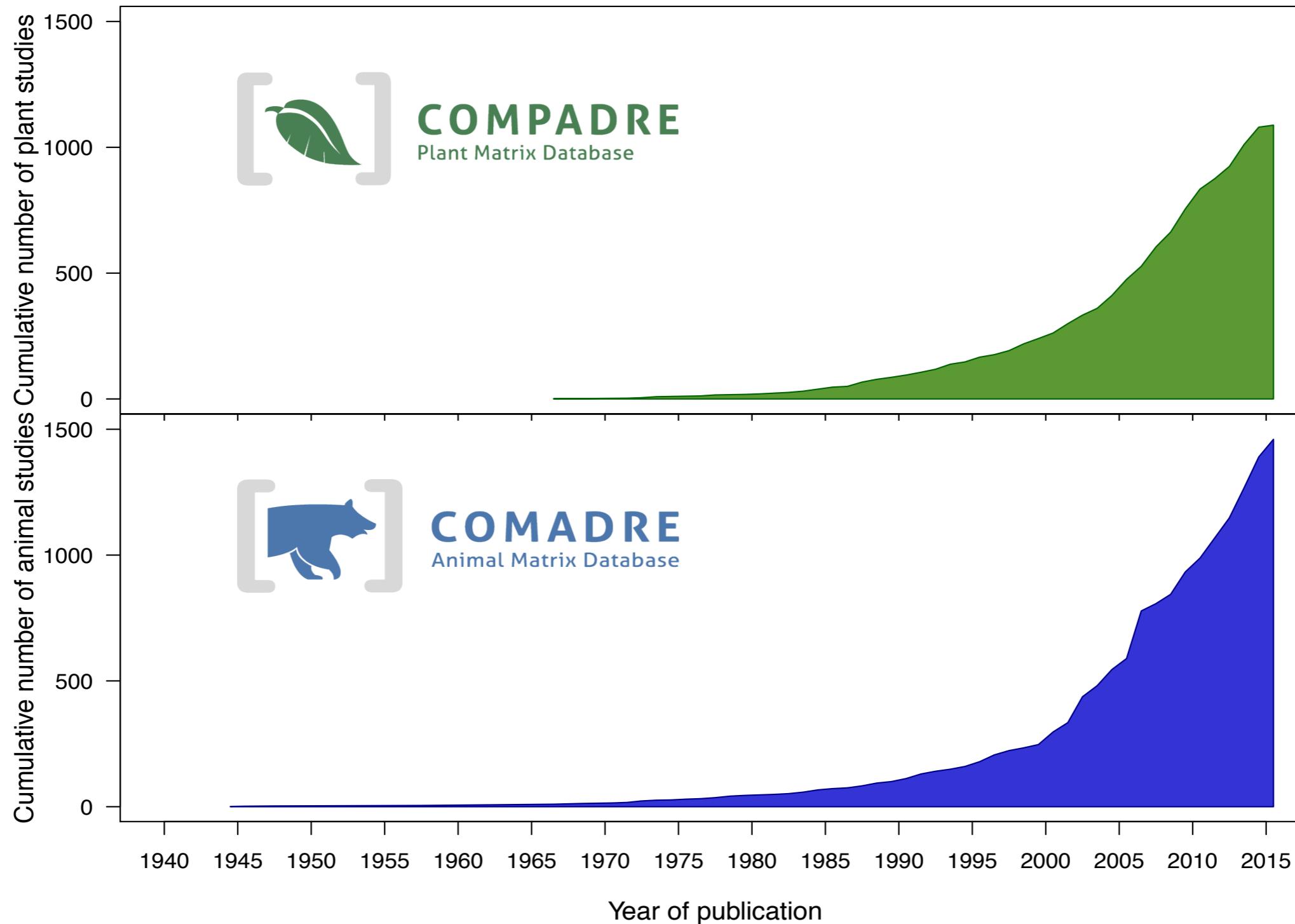


COMADRE
Animal Matrix Database



$$A = \begin{bmatrix} 0.5 & 0 & 2.9 & 1.6 \\ 0.3 & 0.4 & 0 & 0 \\ 0 & 0.6 & 0.5 & 0 \\ 0 & 0 & 0.2 & 0.3 \end{bmatrix}$$

Population biology research



Fieldwork
Analysis
Publication



Digitisation
Standardisation
Error check



Analysis
Teaching
Outreach



COMADRE: a global database of animal demography

A manuscript in consideration for *Journal of Animal Ecology*

Roberto Salguero-Gómez^{1,2,*}, Owen R. Jones^{3,4,§}, C. Ruth Archer^{1,5}, Christoph Bein¹, Hendrik de Buhr¹, Claudia Farack¹, Frânce Gottschalk¹, Alexander Hartmann¹, Anne Henning¹, Gabriel Hoppe¹, Gesa Römer¹, Tara Ruoff⁶, Veronika Sommer¹, Julia Wille¹, Jakob Voigt¹, Stefan Zeh¹, Dirk Vieregg¹, Yvonne M. Buckley^{2,7}, Judy Che-Castaldo⁸, David Hodgson⁹, Alexander Scheuerlein¹, Hal Caswell^{10,11}, & James W. Vaupel^{1,3,12}



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Animal Matrix Database

100 YEARS Journal of Ecology

Journal of Ecology doi: 10.1111/1365-2745.12334

FORUM

The COMPADRE Plant Matrix Database: an open online repository for plant demography

Roberto Salguero-Gómez^{1,2,3*}, Owen R. Jones^{4,5}, C. Ruth Archer⁶, Yvonne M. Buckley^{2,3}, Judy Che-Castaldo⁷, Hal Caswell^{8,9}, David Hodgson¹⁰, Alexander Scheuerlein¹, Dalia A. Conde^{1,5,11}, Erik Brinks¹, Hendrik de Buhr¹, Claudia Farack¹, Frânce Gottschalk¹, Alexander Hartmann¹, Anne Henning¹, Gabriel Hoppe¹, Gesa Römer¹, Jens Runge¹, Tara Ruoff¹², Julia Wille¹, Stefan Zeh¹, Raziel Davison⁶, Dirk Vieregg¹, Annette Baudisch⁶, Res Altweig¹³, Fernando Colchero^{4,14}, Ming Dong¹⁵, Hans de Kroon¹⁶, Jean-Dominique Lebreton¹⁷, Charlotte J. E. Metcalf^{18,19}, Maile M. Neel¹², Ingrid M. Parker²⁰, Takenori Takada²¹, Teresa Valverde²², Luis A. Vélez-Espino²³, Glenda M. Wardle²⁴, Miguel Franco²⁵ and James W. Vaupel^{1,4,26†}

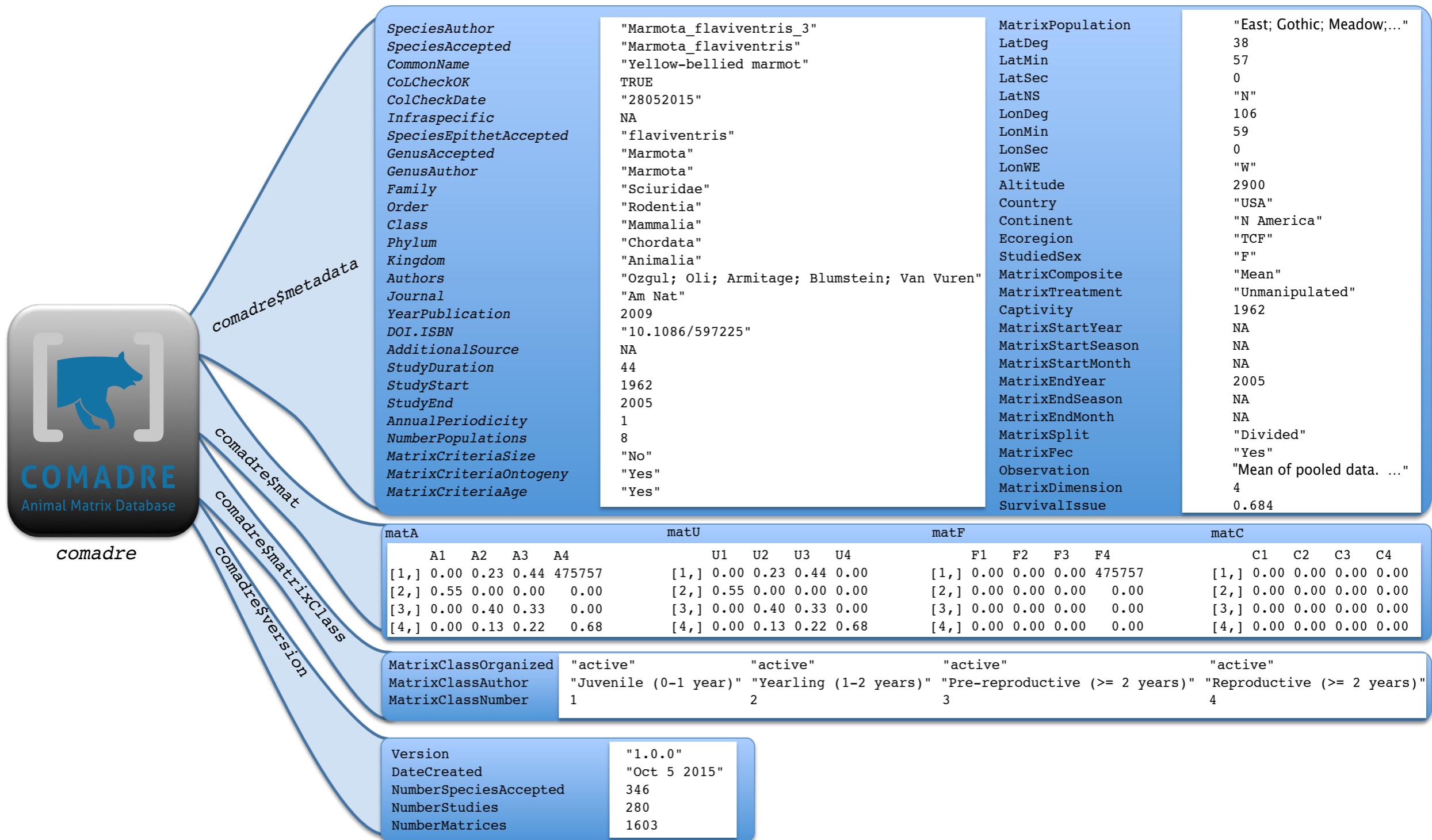


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Plant Matrix Database

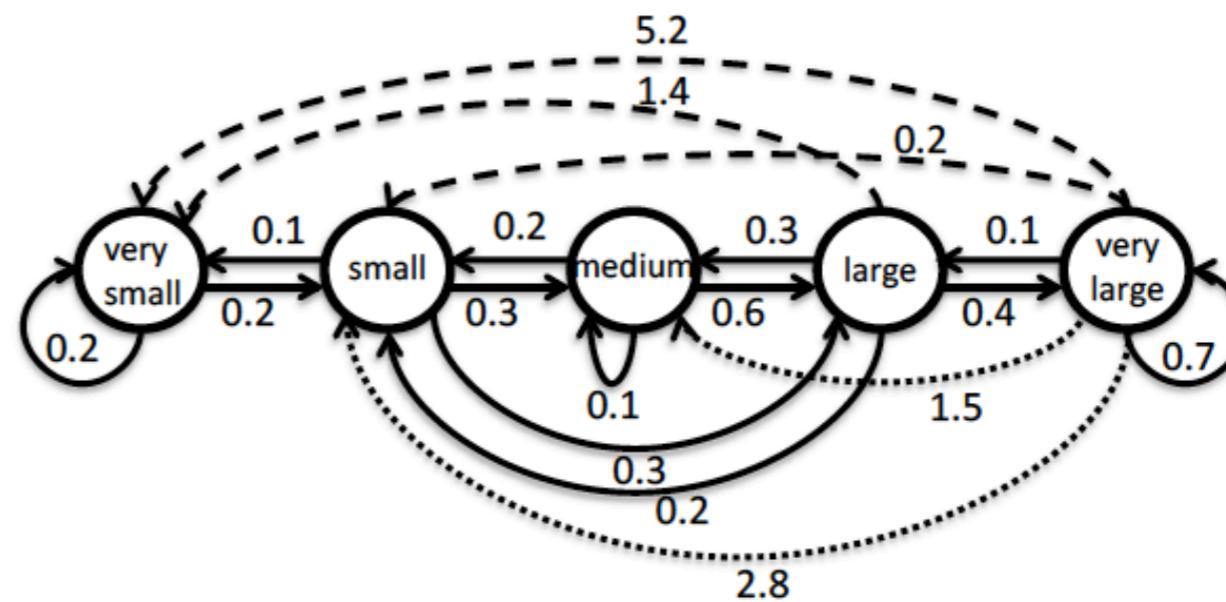
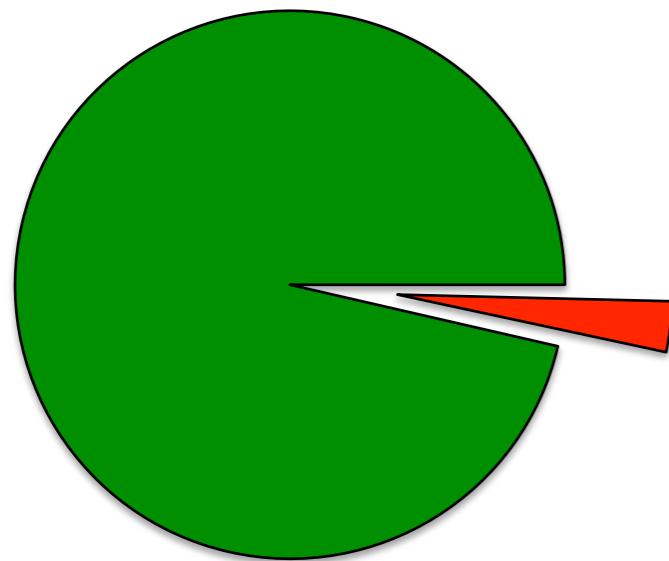
The data

COMPADRE: 637 species, 6242 matrices

COMADRE: 345 species, 1625 matrices



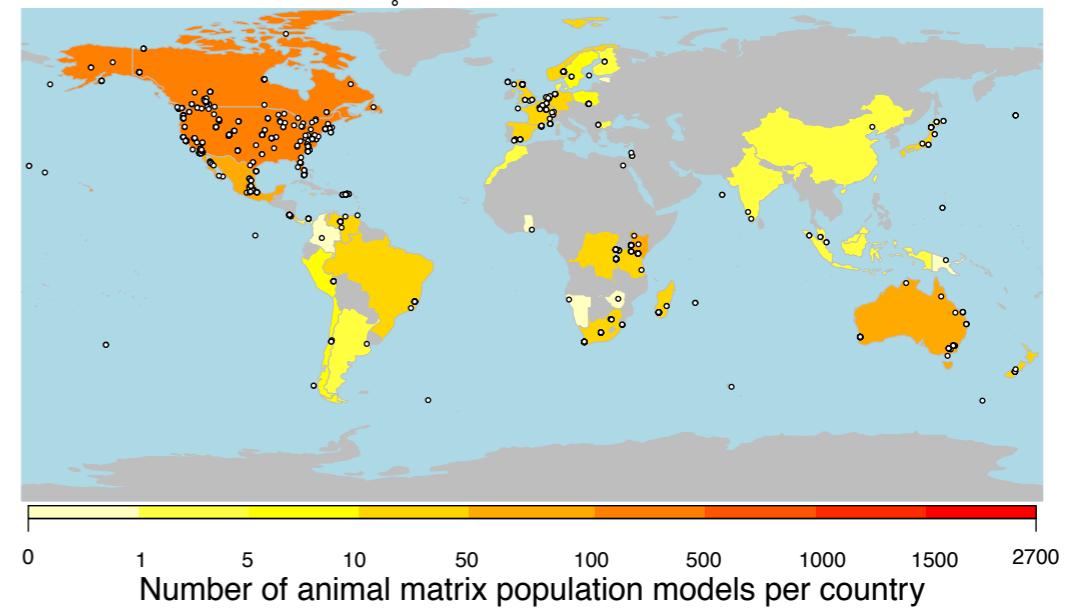
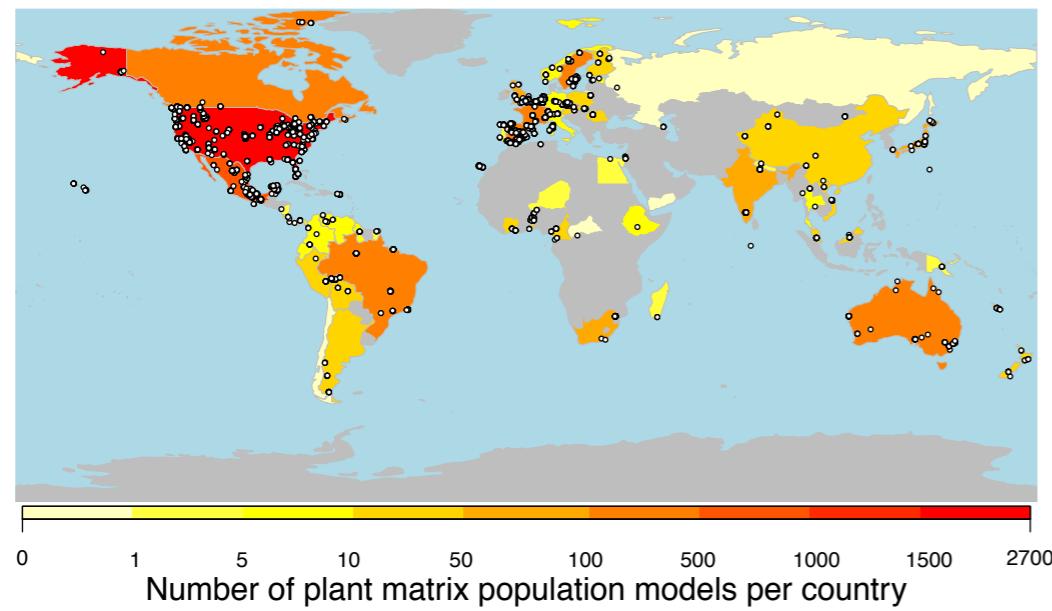
Divide and conquer!



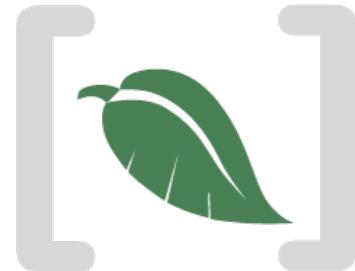
$$\begin{matrix}
 \mathbf{A} & \mathbf{U} & \mathbf{F} & \mathbf{C}
 \end{matrix}
 =
 \begin{bmatrix}
 0.2 & 0.1 & 0 & 1.4 & 5.2 \\
 0.2 & 0 & 0.2 & 0.2 & 3.0 \\
 0 & 0.3 & 0.1 & 0.3 & 1.5 \\
 0 & 0.3 & 0.6 & 0 & 0.1 \\
 0 & 0 & 0 & 0.4 & 0.7
 \end{bmatrix}
 =
 \begin{bmatrix}
 0.2 & 0.1 & 0 & 0 & 0 \\
 0.2 & 0 & 0.2 & 0.2 & 0 \\
 0 & 0.3 & 0.1 & 0.3 & 0 \\
 0 & 0.3 & 0.6 & 0 & 0.1 \\
 0 & 0 & 0 & 0.4 & 0.7
 \end{bmatrix}
 +
 \begin{bmatrix}
 0 & 0 & 0 & 1.4 & 5.2 \\
 0 & 0 & 0 & 0 & 0.2 \\
 0 & 0 & 0 & 0 & 0 \\
 0 & 0 & 0 & 0 & 0 \\
 0 & 0 & 0 & 0 & 0
 \end{bmatrix}
 +
 \begin{bmatrix}
 0 & 0 & 0 & 0 & 0 \\
 0 & 0 & 0 & 0 & 0 \\
 0 & 0 & 0 & 0 & 0 \\
 0 & 0 & 0 & 0 & 0 \\
 0 & 0 & 0 & 0 & 0
 \end{bmatrix}$$

survival sexual clonal
reprod. reprod.

Geographic coverage

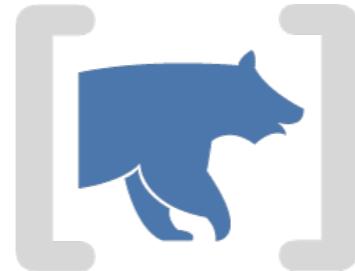
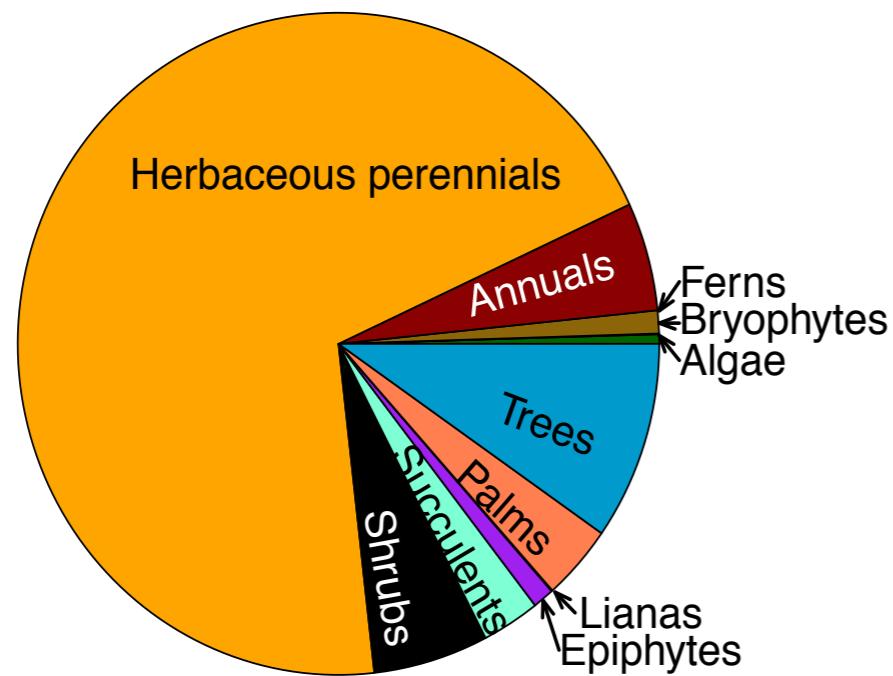


Taxonomic coverage



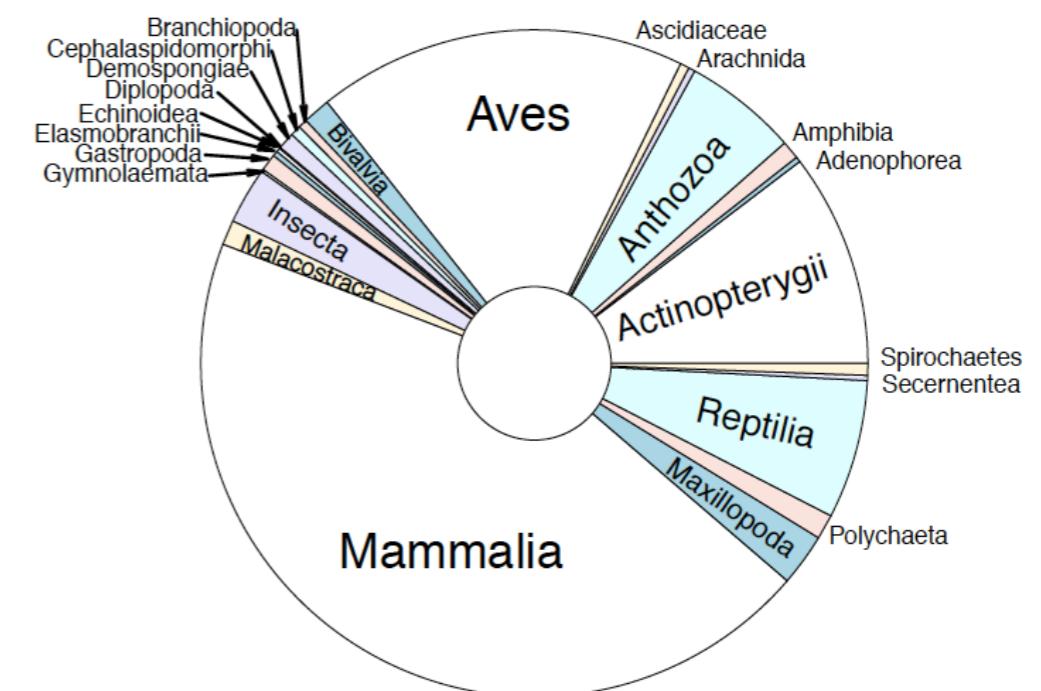
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Plant Matrix Database



COMADRE

Animal Matrix Database



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Plant Matrix Database

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 **COMADRE**
Animal Matrix Database

Welcome to the COMPADRE Plant Matrix Database and COMADRE Animal Matrix Database site! COMPADRE and COMADRE contain matrix population models of hundreds of plant and animal species.

COMPADRE Intro Rough cut



A video thumbnail titled "COMPADRE Intro Rough cut". It shows a woman with glasses and a red jacket standing in front of a display case containing a large animal skull. She is holding a small book or card with a green plant illustration. The background is a museum or laboratory setting with various equipment and displays.

Both COMPADRE and COMADRE are open-access database. Although login is not required, we suggest that users [register](#) to obtain

www.compadre-db.org



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Plant Matrix Database

Home Data News About Us Help



COMADRE
Animal Matrix Database

Access the data here



COMPADRE
Plant Matrix Database



COMADRE
Animal Matrix Database

What's in store?

COMPADRE and COMADRE contain thousands of plant and animal species with tens of thousands of matrix population models and ancillary information. These databases are under continuous development, and more data are released periodically. We maintain a list of species/studies “in store” that we have not yet released for **COMPADRE** and **COMADRE**. If you know of some species/study not included herein, please contact us with the source [here](#).

How are the data collected and error-checked

Social media



<http://compadredb.wordpress.com>



<http://www.facebook.com/groups/compadrecomadre>



@compadredb
@comadredb



<https://github.com/jonesor/compadreDB>



Research potential



Jones et al. 2014 Nature



Adler et al. 2013 PNAS



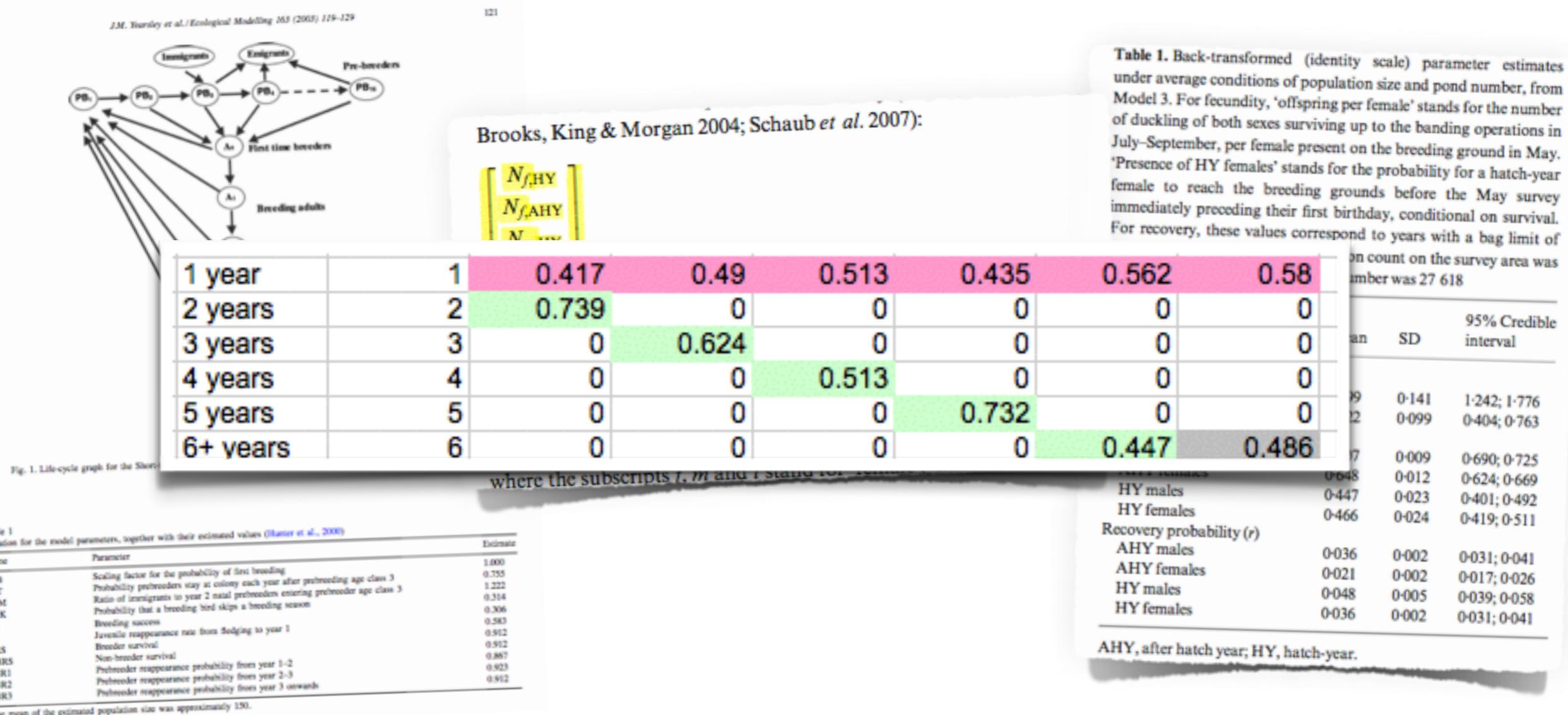
Salguero-Gomez et al. 2013 J Ecol

36 peer-reviewed papers - >20 ongoing projects

Database structure

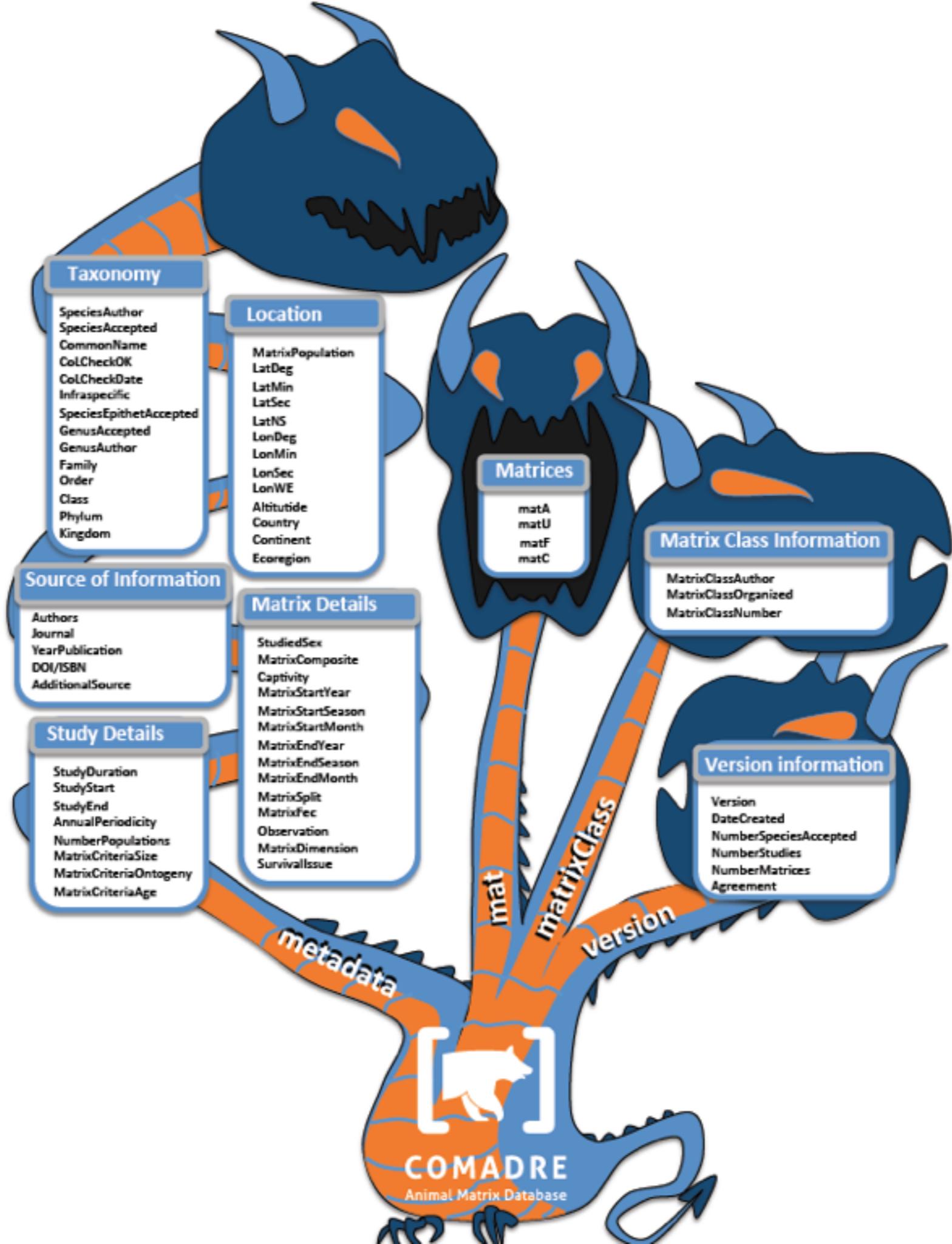
The data

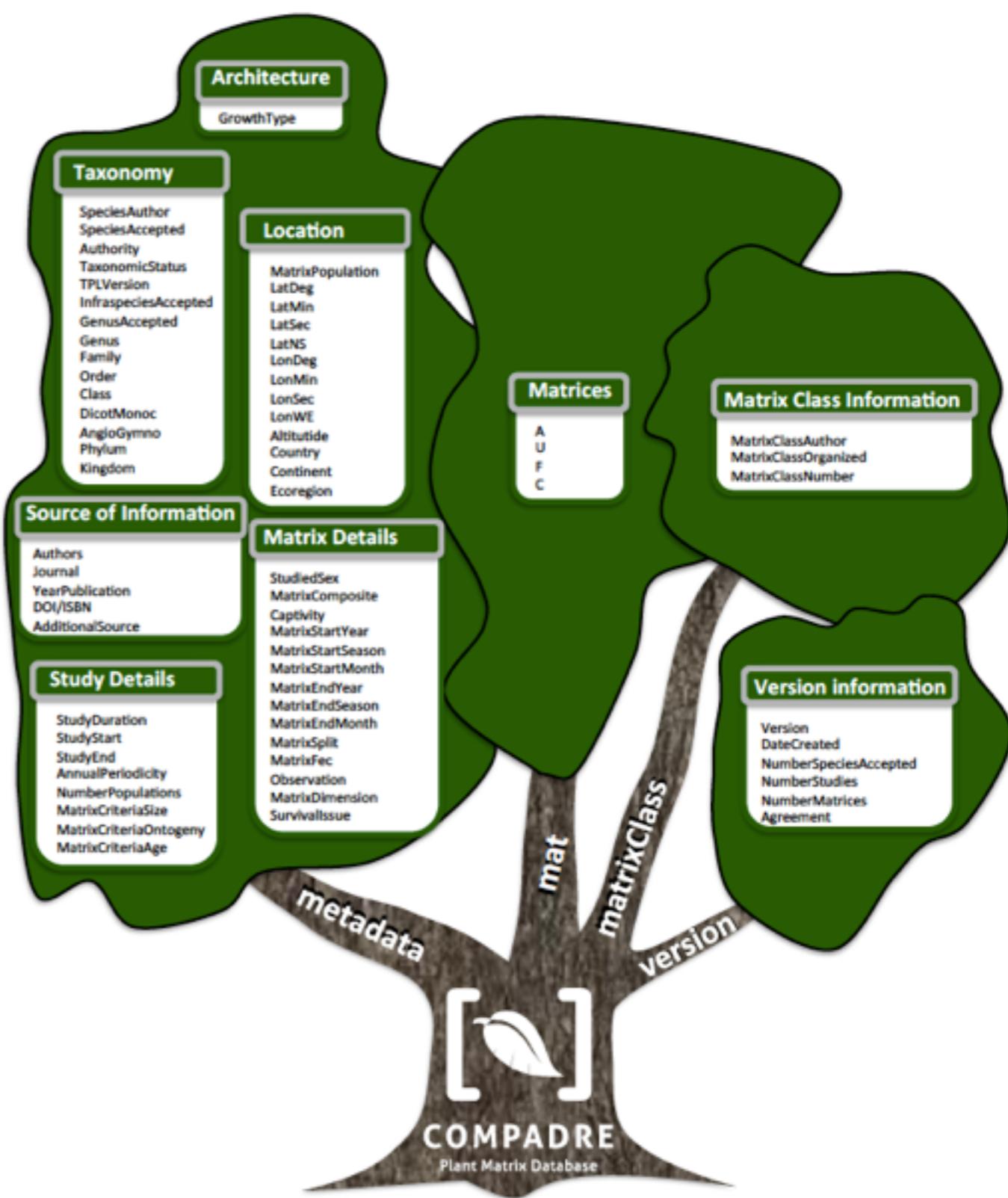
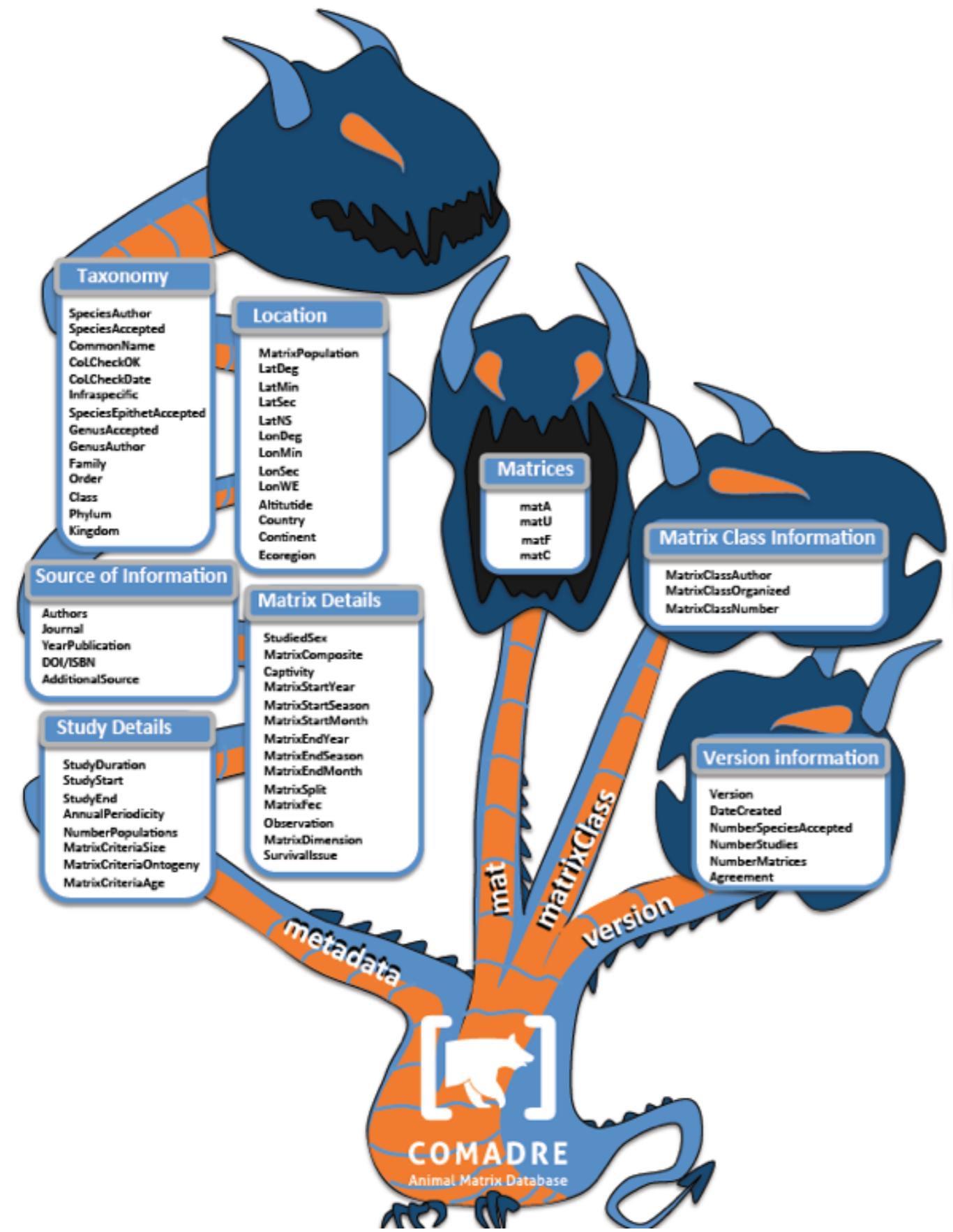
Although matrices are standard mathematical objects...



... their presentation is highly variable.

| | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | AA | AB | AC | AD | AE | AF | AG | AH | AI | AJ | AK | AL | AM | AN | WP | WR | | | | |
|----|----------------|--------------|-----------------------------|-------------------------|-------|-----------|------------------------|-------|--------|------------------|----------|-----------|------------|----------|----|----|-----|-----|-------------------------|-------------------------|-------------------------|-----------|-------------------------|-------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|----------|------------|----------|------|
| | Authors | Journal | YearP ubliscat | Corresponding author | Email | Contacted | Contest and mail | Reply | DONBAN | AdditionalSource | Database | Ecosystem | GrowthForm | LifeForm | Ma | NA | Y | Z | PurposeCo operativeD | PurposeCo operativeD | PurposeCo operativeD | PurposePV | PurposeCo operativeD | PurposeCo operativeD | PurposeMe | PurposeMe | PurposeMe | PurposeMe | PurposeMe | PurposeMe | StudyDura | StudyStart | StudyEnd | AnnualPerf | NumberPo | Writ |
| 1 | SpeciesAuthor | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | Acar_insectoid | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | Acar_insectoid | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | Acar_insectoid | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | Acar_insectoid | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | Acar_insectoid | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | Acar_insectoid | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | Acar_insectoid | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | Acar_insectoid | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | Acar_insectoid | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | Acar_insectoid | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | Acar_insectoid | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | Acar_insectoid | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 | Acar_insectoid | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 18 | Acar_insectoid | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 19 | Acar_insectoid | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20 | Acar_insectoid | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 21 | Acar_insectoid | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 22 | Acar_insectoid | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 23 | Acar_insectoid | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 24 | Acar_insectoid | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 25 | Acar_insectoid | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 26 | Acar_insectoid | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 27 | Acar_insectoid | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 28 | Acar_insectoid | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 29 | Acar_insectoid | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 30 | Acar_insectoid | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 31 | Acar_insectoid | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 32 | Acar_insectoid | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 33 | Acar_insectoid | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 34 | Acar_insectoid | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 35 | Acar_insectoid | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 36 | Acar_insectoid | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 37 | Acar_insectoid | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 38 | Acar_insectoid | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 39 | Acar_insectoid | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 40 | Acar_insectoid | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 41 | Acar_insectoid | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 42 | Biotef | 5.29.201 NDY | Achmatherum calamagrostis A | Individual | Ulmus | W | 1990 | NA | NA | Dipsacus 42 | 13 | 0 | 48 | 20 | 0 | E | 888 | ESP | Europe | Divided | Yes | This psp | active | Seeding | 1 | 0 | 0 | 27.755 | 52.4398 | NA | 0 | 0 | | | | |
| 43 | Biotef | 5.29.201 NDY | Achmatherum calamagrostis A | Mean | Ulmus | W | 1990 | NA | NA | Dipsacus 42 | 13 | 0 | 48 | 20 | 0 | E | 888 | ESP | Europe | Divided | Yes | This psp | active | Juvenile | 2 | 0.64 | 0.8 | 0 | 0 | 0 | 0 | 0 | | | | |
| 44 | Biotef | 5.29.201 NDY | Achmatherum calamagrostis A | Mean | Ulmus | W | 1990 | NA | NA | Dipsacus 42 | 13 | 0 | 48 | 20 | 0 | E | 888 | ESP | Europe | Divided | Yes | This psp | active | Adult | 3 | 0.667 | 0.723 | 0.123 | 0.06 | 0 | 0 | 0 | | | | |
| 45 | Biotef | 5.29.201 NDY | Achmatherum calamagrostis A | Mean | Ulmus | W | 1990 | NA | NA | Dipsacus 42 | 13 | 0 | 48 | 20 | 0 | E | 888 | ESP | Europe | Divided | Yes | This psp | active | Adult | 4 | 0.667 | 0.723 | 0.123 | 0.06 | 0 | 0 | 0 | | | | |
| 46 | Biotef | 5.29.201 NDY | Achmatherum calamagrostis A | Mean | Ulmus | W | 1990 | NA | NA | Dipsacus 42 | 13 | 0 | 48 | 20 | 0 | E | 888 | ESP | Europe | Divided | Yes | This psp | active | Adult | 5 | 0.667 | 0.723 | 0.123 | 0.06 | 0 | 0 | 0 | | | | |
| 47 | Biotef | 5.29.201 NDY | Achmatherum calamagrostis A | Mean | Ulmus | W | 19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |







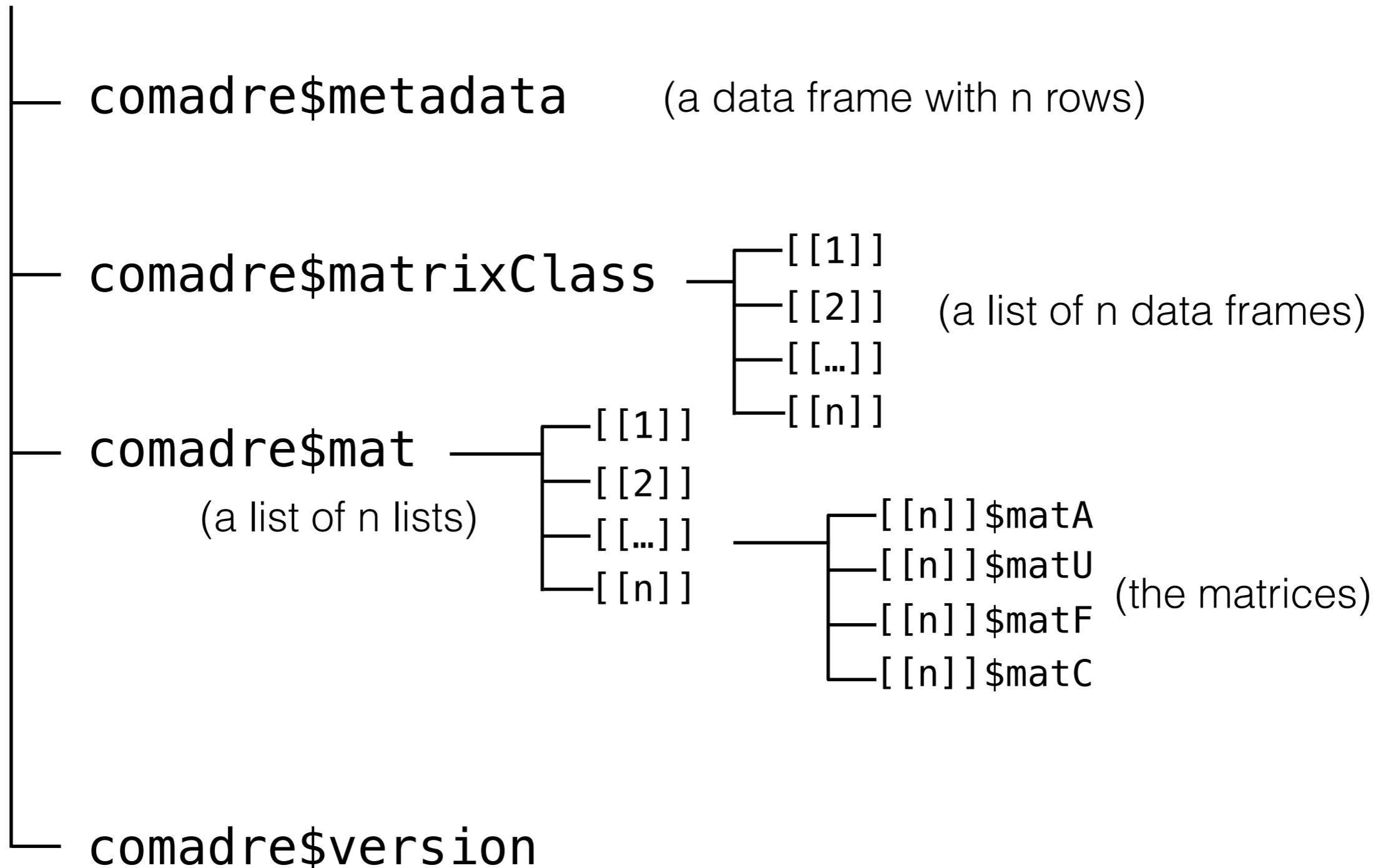
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COMADRE_v.1.0.0.RData

COMPADRE_10_2_2015_version_3.2.1.RData

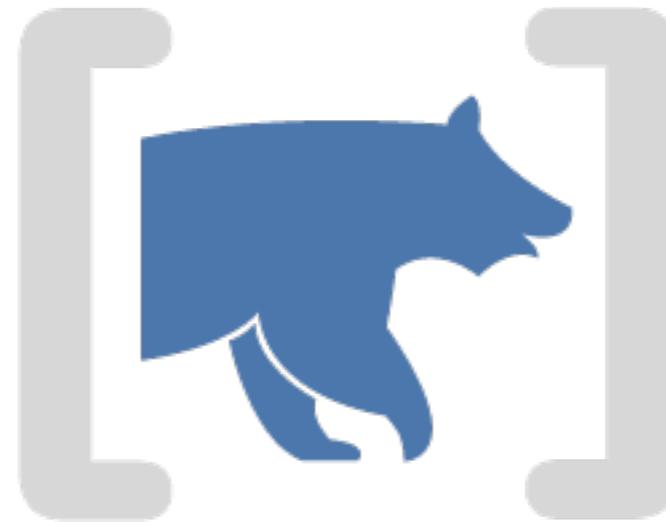
Data structure

comadre





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IDEM 186

Comparative Approaches in Ecology and Evolution

Course Coordinator: Rob Salguero-Gómez**Start:** April 25, 2016**End:** April 29, 2016**Location:** Max Planck Institute for Demographic Research (MPIDR), Rostock, Germany.**Instructors:**

- Rob Salguero-Gómez (University of Queensland, Australia)
- Scott Chamberlain (UC Berkeley, USA)
- Bruce Kendall (University of California, Santa Barbara, USA)
- Kevin Healy (Trinity College Dublin, Ireland)
- Owen Jones (Southern Denmark University, Denmark)
- Jean-François Lemaitre (CNRS, Lyon)
- Jitka Klimešová (Institute of Botany, Academy of Sciences of the Czech Republic)

<http://goo.gl/du0ldg>