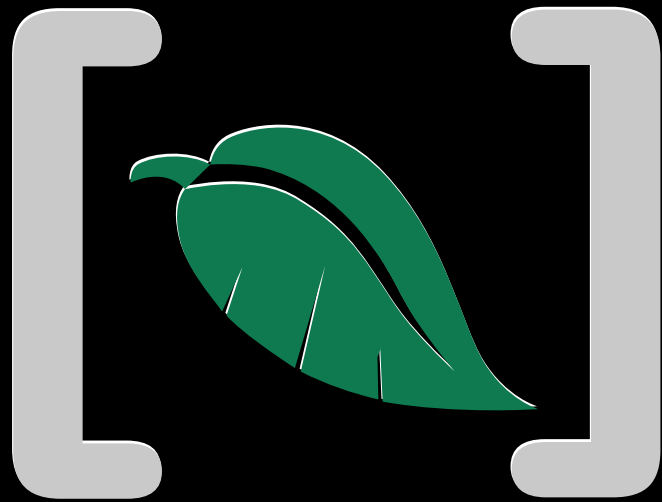


The era of big ecology



COMPADRE

Plant Matrix Database



@DRobcito

@compadreDB

“To say that humanity has been slow to explore the home planet is an understatement”

E.O. Wilson





Nutrient Network

DATLife



WIKIPÉDIA
L'encyclopédie libre



Encyclopedia of Life

NCBI Resources

GenBank



The Plant List



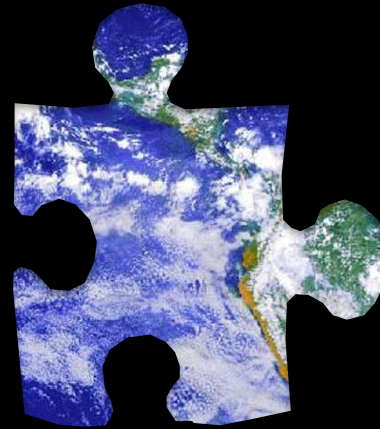
ispersal Diaspore Database

USDA Agricultural Research Service
National Agricultural Library



THE ERA OF BIG DATA, BIG SCIENCE IS HERE!

Big plant demography

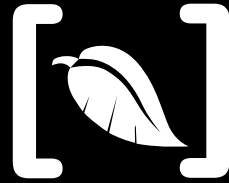


Rob Salguero-Gómez, Owen R. Jones, C. Ruth Archer, Yvonne M. Buckley, Judy Chacastaldo, Hal Caswell, Alexander Scheuerlein, Dalia A. Conde, Annette Baudisch, Erik Brinks, Hendrik de Buhr, Claudia Farack, France Gottschalk, Alexander Hartmann, Anne Henning, Gabriel Hoppe, Gesa Römer, Jens Runge, Tara Ruoff, Julia Wille, Stefan Zeh, Dirk Vieregg, Res Altwegg, Fernando Colchero, Ming Dong, David Hodgson, Hans de Kroon, Jean-Dominique Lebreton, C. Jessica E. Metcalf, Maile Neel, Ingrid Parker, Takenori Takada, Teresa Valverde, Luis Antonio Vélez-Espino, Glenda M. Wardle, Miguel Franco, Jonathan Silvertown & James W. Vaupel



MAX PLANCK INSTITUTE
FOR DEMOGRAPHIC
RESEARCH

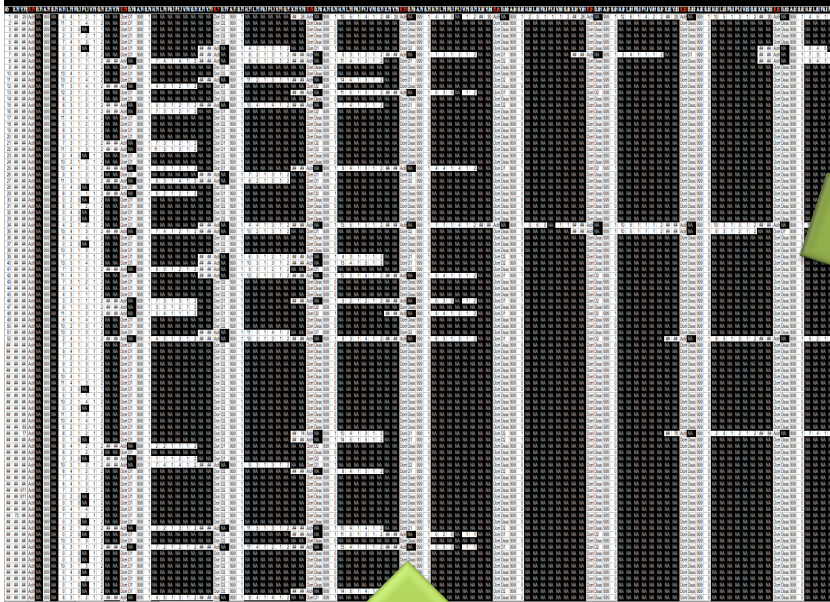
Big plant demography



COMPADRE
Plant Matrix Database

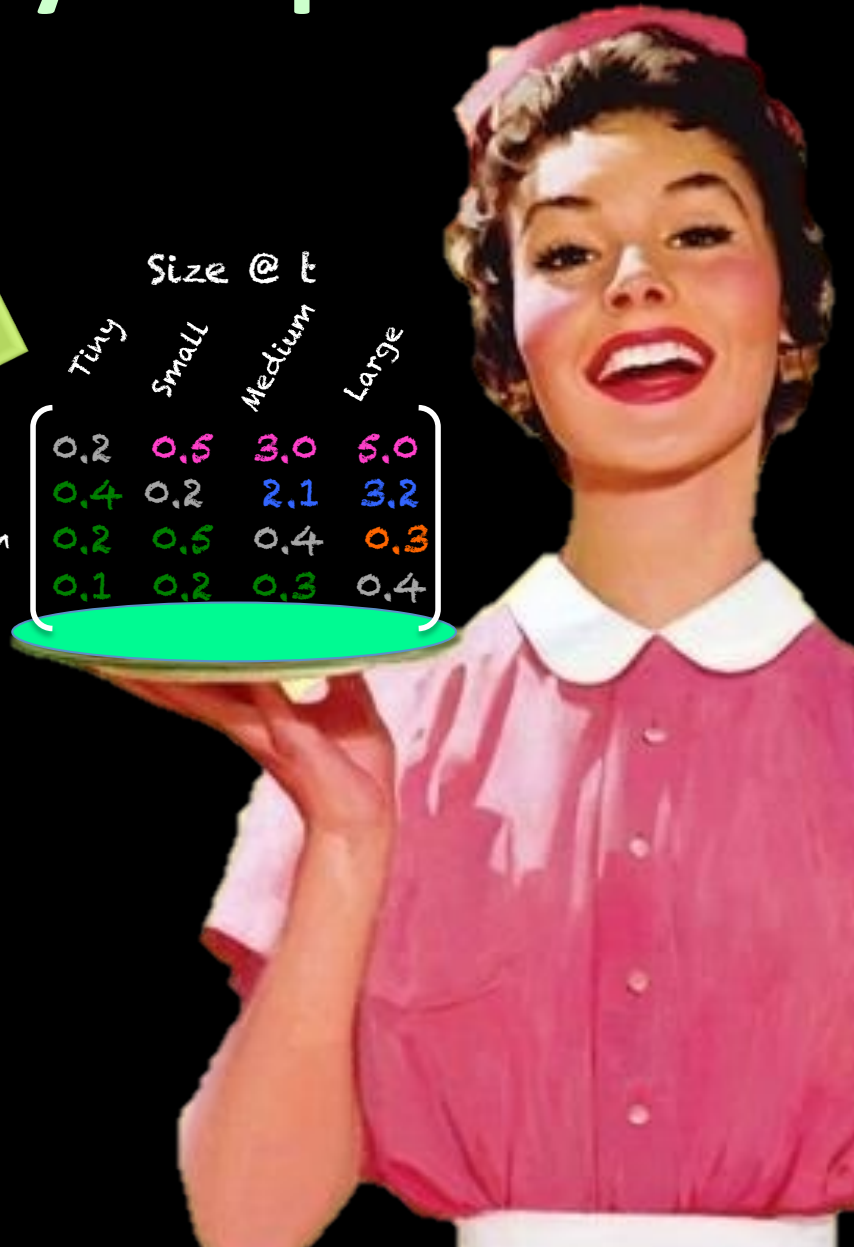


From the field to your plate!



Size @ t+1

	Size @ t			
	Tiny	Small	Medium	Large
Tiny	0.2	0.5	3.0	5.0
Small	0.4	0.2	2.1	3.2
Medium	0.2	0.5	0.4	0.3
Large	0.1	0.2	0.3	0.4



From the field to your plate!

0.000763	0	0	0	0	3771.08	11008.7	0	0	0	0
0.000365	0	0	0	0	0	0	0	0	0	0
0	0.154	0	0	0	0	0	0	0	0	0
0	0	0.192	0	0	0	0	0	0	0	0
0	0	0	0.2	0.378	0	0	0	0	0	0
0	0	0	0	0.0625	0.85185	0	0	0	0.158	0
0	0	0	0	0	0.06173	0.90476	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0.08682	0	0	0	0	0.818
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	0	0	0	0	0	0	0	0

0.41267	0	0	0	0	0.172	1.56367	0	0	0	0
0.06233	0	0	0	0	0	0.02967	0.10333	0	0	0
0	0.75	0.73134	0.0719	0	0	0	0	0	0.025	0
0	0	0.13433	0.64706	0.16095	0.07353	0.07353	0.375	0	0	0
0	0	0	0.11765	0.29524	0.26471	0.26471	0.25	0	0	0
0	0	0	0.02614	0.27619	0.58824	0.58824	0.1	0	0	0
0	0	0	0.0597	0.08497	0.2	0.05882	0.15	0	0	0

0.5012	0	1.5785	10.5628	53.0209	0	0	0	0	0	0
0.00602	0.28457	0.09894	0.14025	0.57219	0	0	0	0	0	0
0	0.28989	0.37786	0.25222	0.07047	0	0	0	0	0	0
0	0	0.34529	0.38164	0.19522	0	0	0	0	0	0

0	0	0.76	2.825	8.25	10.375	18	31	37	45	73.75
0.15	0.4	0.3	0.05	0.08	0.03	0.07	0.1	0.12	0.1	0
0.1	0.4	0.38	0.24	0.27	0.13	0.14	0.07	0.12	0.1	0
0.03	0	0.16	0.39	0.12	0.16	0.14	0.27	0.08	0	0.13
0.01	0	0.03	0.05	0.23	0.22	0	0.27	0.29	0	0
0	0	0	0.13	0.04	0.16	0.29	0.2	0.06	0.16	0
0	0	0	0	0.04	0.16	0.14	0.07	0.06	0.16	0.25
0	0	0	0	0.02	0.04	0	0.07	0	0.08	0
0	0	0	0	0.04	0.03	0.14	0	0.29	0.5	0
0	0	0	0	0	0.03	0	0	0	0.16	0.13
0	0	0	0	0	0.03	0	0.07	0	0	0.13

0.000365	0	0	0	0	3771.08	11008.7	0	0	0	0
0.000365	0	0	0	0	0	0	0	0	0	0
0	0.154	0	0	0	0	0	0	0	0	0
0	0	0.192	0	0	0	0	0	0	0	0
0	0	0	0.2	0.375	0	0	0	1	0	0
0	0	0	0	0.0625	0.85185	0	0	0	0.125	0
0	0	0	0	0	0.06173	0.90476	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0.58824	0	0	0	0	0
0	0	0	0	0	0.06648	0	0	0	0.875	0
0	0	0	0	0	0	0.09524	0	0	0	0

0.458	0	0.408	0	0	0	0	0	0	0	0
0.068	0	0	0	0	0	0	0	0	0	0
0	0.12	0.288	0.027	0	0	0	0	0	0	0
0	0	0	0.837	0	0	0	0	0	0	0

0	0	1.15	11.75	51.35	94.65	206.433	391.95	750.033	1408.05	1824.17	2541.3
1.5E-06	0	0	0	0	0	0	0	0	0	0	0
0	0.1013	0.23225	0.07935	0.03753	0.01772	0.00695	0	0	0.00275	0	0
0	0.023	0.27802	0.1528	0.04763	0.03027	0.02015	0.01433	0.01063	0.00397	0	0
0	0.03447	0.24747	0.24405	0.19605	0.06925	0.05827	0.01427	0.01075	0.00278	0.00877	0
0	0.023	0.07803	0.3631	0.3049	0.26197	0.09962	0.04942	0.02735	0.00397	0	0
0	0.0115	0.10163	0.05357	0.29283	0.36017	0.25692	0.10657	0.06757	0.0123	0.03355	0
0	0	0	0.01119	0.1027	0.20298	0.34755	0.36379	0.11603	0.04432	0.01282	0
0	0	0	0	0	0.02635	0.18	0.40277	0.37372	0.09485	0.05283	0.01667
0	0	0	0	0	0	0.01185	0.04795	0.37118	0.45548	0.18002	0.00833
0	0	0	0	0	0	0	0.01133	0	0.37158	0.50325	0.06546
0	0	0	0	0	0	0	0	0.01916	0	0.00828	0.21008
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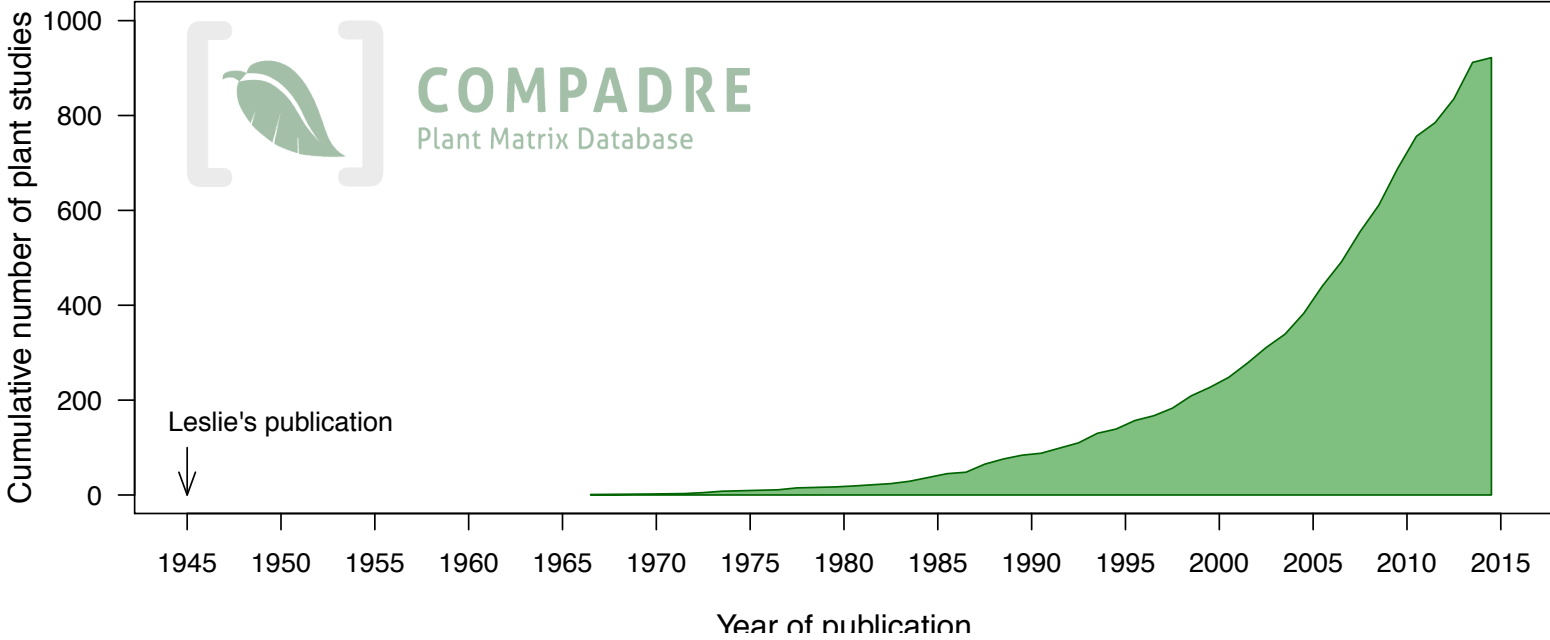
0	0.15	0.07	0.12	0.29	0.13	0	0	0	0	0
0.15	0.29	0.01	0.02	0.01	0.01	0	0	0	0	0
0.22	0.12	0.2	0.14	0.07	0.07	0	0	0	0	0
0.3	0.06	0.33	0.29	0.05	0	0	0	0	0	0
0.37	0.12	0.19	0.43	0.89	0.27	0	0	0	0	0
0	0	0	0.01	0.12	0.5	0	0	0	0	0

0	0	0	0	0	0.887	1.099	1.17	1.164	1.294	1.03	1.133	1.12	0.887	0.967	0.967	0.861	0.815	0.622	0.269	
0.989	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0.979	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0.968	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0.987	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0.964	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0.975	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0.963	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0.978	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0.993	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0.972	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0.944	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0.991	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0.836	0	0	0	0	0	0	0	0
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0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.466	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.288	0	0	0

0	0	0	0	0	6.3536	0	0	0	0	0
0.29845	0.51783	0.17843	0.11875	0	0	0	0	0	0	0
0.10215	0.11535	0.38813	0.32978	0	0	0	0	0	0	0
0.06685	0.0994	0.2881	0.4911	0	0	0	0	0	0	0

0.75162	0.32333	1.98073	0	0	0	0	0	0	0	0
0.27273	0.70667	0.70732	0	0	0	0	0	0	0	0
0	0.16667	0.02439	0	0	0	0	0	0	0	0

0.2	0.5	3.0	5.0
0.4	0.2	2.1	3.2
0.2	0.5	0.4	0.3
0.1	0.2	0.3	0.4



From the field to your plate!



Fieldwork,
Analyses
Publication



Digitalization
Standardization
Error-check
Complementation



Big analyses
Teaching
Outreach

What is in COMPADRE?

COMPADRE 3.0: >600 species, *ca.* 6000 matrices

Architecture

GrowthType

Taxonomy

SpeciesAuthor
SpeciesAccepted
Authority
TaxonomicStatus
TPLVersion
InfraspeciesAccepted
GenusAccepted
Genus
Family
Order
Class
DicotMonoc
AngioGymno
Phylum
Kingdom

Location

MatrixPopulation
LatDeg
LatMin
LatSec
LatNS
LonDeg
LonMin
LonSec
LonWE
Altitude
Country
Continent
Ecoregion

Matrices

A
U
F
C

Matrix Class Information

MatrixClassAuthor
MatrixClassOrganized
MatrixClassNumber

Source of Information

Authors
Journal
YearPublication
DOI/ISBN
AdditionalSource

Matrix Details

StudiedSex
MatrixComposite
Captivity
MatrixStartYear
MatrixStartSeason
MatrixStartMonth
MatrixEndYear
MatrixEndSeason
MatrixEndMonth
MatrixSplit
Observation
MatrixDimension
SurvivalIssue

Study Details

StudyDuration
StudyStart
StudyEnd
AnnualPeriodicity
NumberPopulations
MatrixCriteriaSize
MatrixCriteriaOntogeny
MatrixCriteriaAge

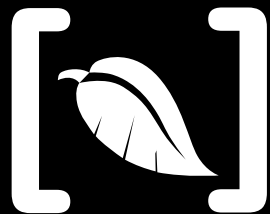
metadata

mat

matrixClass

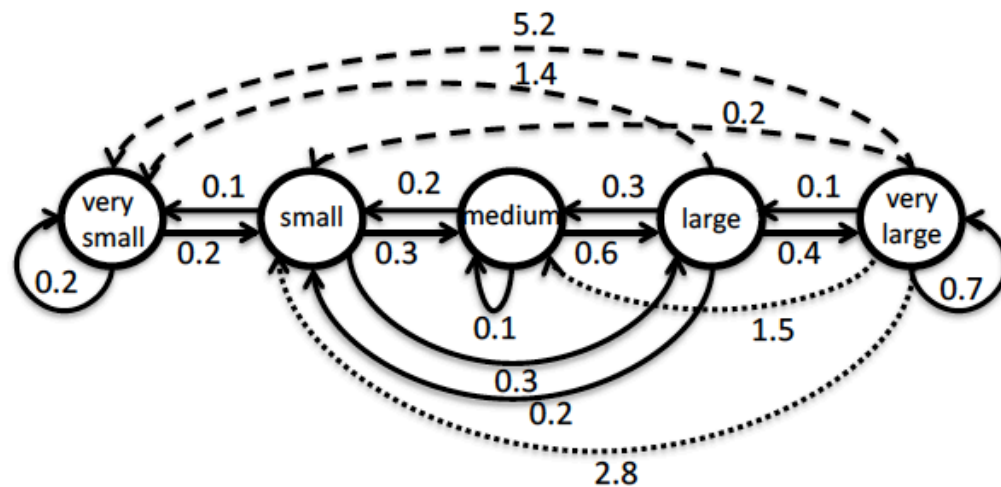
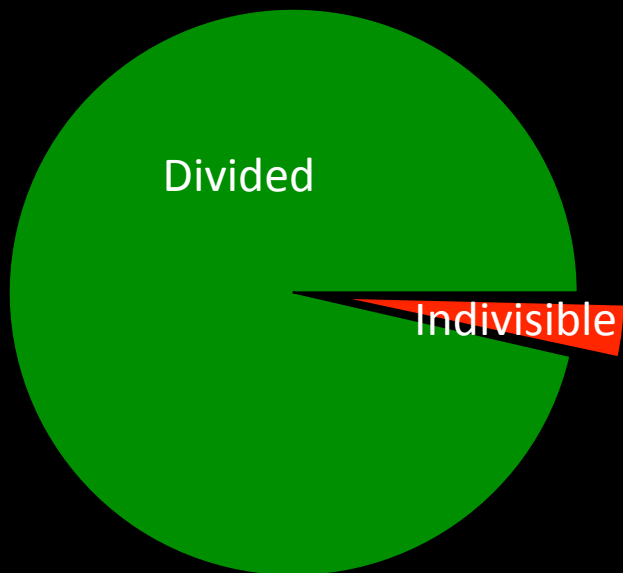


COMPADRE
Plant Matrix Database



COMPADRE

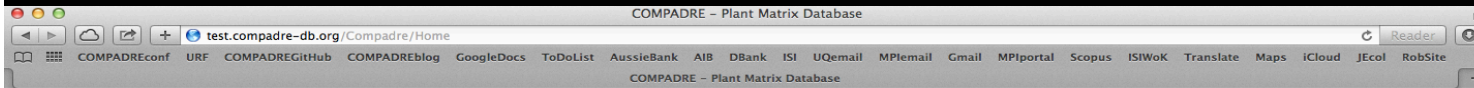
Plant Matrix Database




$$\begin{matrix} & \mathbf{A} & & \mathbf{U} & & \mathbf{F} & & \mathbf{C} \\ \begin{pmatrix} 0.2 & 0.1 & 0 & 1.4 & 5.2 \\ 0.2 & 0 & 0.2 & 0.2 & 3.0 \\ 0 & 0.3 & 0.1 & 0.3 & 1.5 \\ 0 & 0.3 & 0.6 & 0 & 0.1 \\ 0 & 0 & 0 & 0.4 & 0.7 \end{pmatrix} & = & \begin{pmatrix} 0.2 & 0.1 & 0 & 0 & 0 \\ 0.2 & 0 & 0.2 & 0.2 & 0 \\ 0 & 0.3 & 0.1 & 0.3 & 0 \\ 0 & 0.3 & 0.6 & 0 & 0.1 \\ 0 & 0 & 0 & 0.4 & 0.7 \end{pmatrix} & + & \begin{pmatrix} 0 & 0 & 0 & 1.4 & 5.2 \\ 0 & 0 & 0 & 0 & 0.2 \\ 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 \end{pmatrix} & + & \begin{pmatrix} 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 2.8 \\ 0 & 0 & 0 & 0 & 1.5 \\ 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 \end{pmatrix}
 \end{matrix}$$

COMPADRE: the online portal

www.compadre-db.org






Home Data News About Us Help

Welcome to the COMPADRE Plant Matrix Database

COMPADRE contains demographic information on hundreds of plant species. Learn about the database [here](#).


The data in COMPADRE are in the form of matrix population models and our goal is to make these publicly available to facilitate their use for research and teaching purposes.

COMPADRE is an open-access database. We only request users to login prior to accessing data.





[Legal Notice](#)



Home Data News About Us Help

Why login?

COMPADRE is an open-access resource (with the exception of data under embargo). However, in order to accommodate user demands and to further support the database, we need to quantify its usage. Registering takes 30 seconds.

Register	Login
First Name <input type="text"/>	Email <input type="text"/>
Last Name <input type="text"/>	Password <input type="password"/>
Research Status Undergraduate	LOG IN
Institution <input type="text"/>	Forgot your password?
Country Afghanistan	
Email <input type="text"/>	
Password <input type="password"/>	

WE ARE GOING ON-LINE VERY SOON!

Journal of Ecology

The COMPADRE Plant Matrix Database an Open Online Repository for Plant Demography

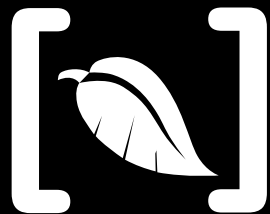
A manuscript in consideration for *Journal of Ecology*

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}, Alexander Scheuerlein¹, Dalia A. Conde^{4,5,10}, Annette Baudisch⁶, Erik Brinks¹, Hendrik de Buhr¹, Claudia Farack¹, France Gottschalk¹, Alexander Hartmann¹, Anne Henning¹, Gabriel Hoppe¹, R mer¹, Jens Runge¹, Tara Ruoff¹¹, Julia Wille¹, Stefan Zeh¹, Dirk Viering¹, Altwegg¹², Fernando Colchero^{4,13}, Ming Dong¹⁴, David Hodgson¹⁵, Hans Cornelissen¹⁶, Kroon¹⁶, Jean-Dominique Lebreton¹⁷, C. Jessica E. Metcalfe^{18,19}, Maile Neill²⁰, Parker²⁰, Takenori Takada²¹, Teresa Valverde²², Luis Antonio V lez-Estrella²³, Glenda M. Wardle²⁴, Miguel Franco²⁵ & James W. Vaupel^{1,4,26}

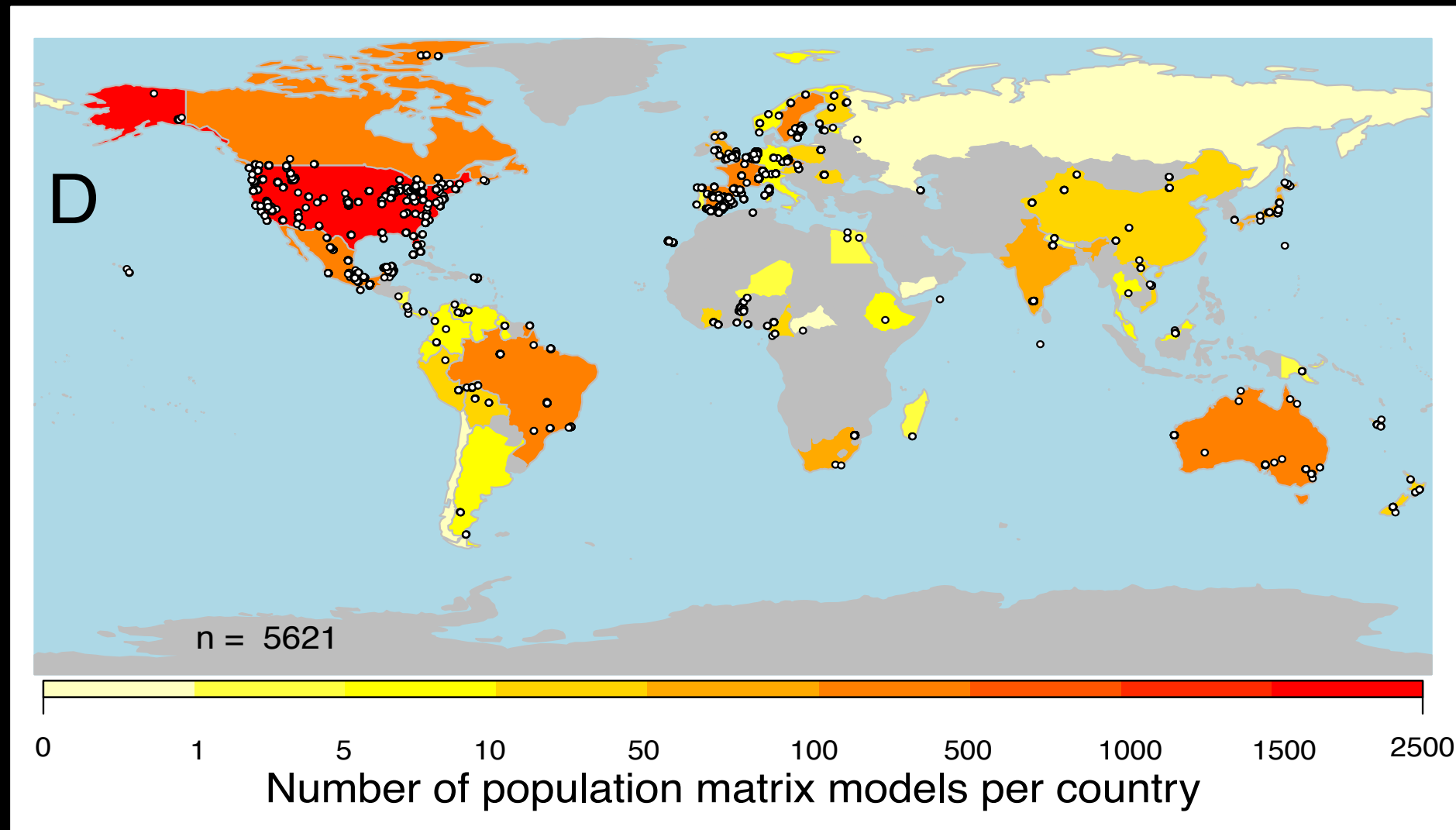
www.compadre-db.org

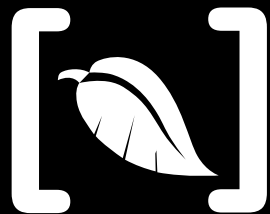


COMPADRE
Plant Matrix Database



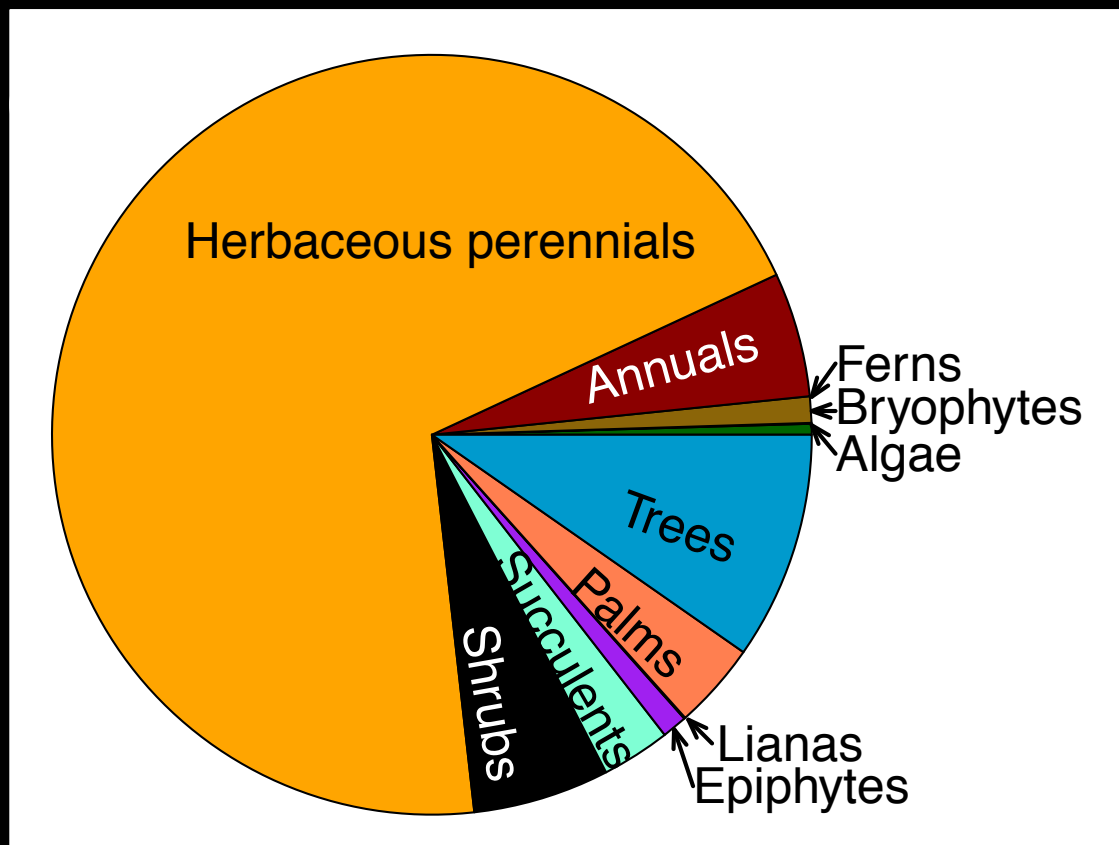
COMPADRE
Plant Matrix Database

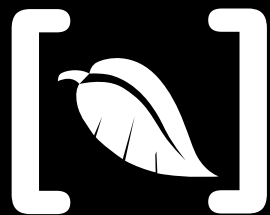




COMPADRE

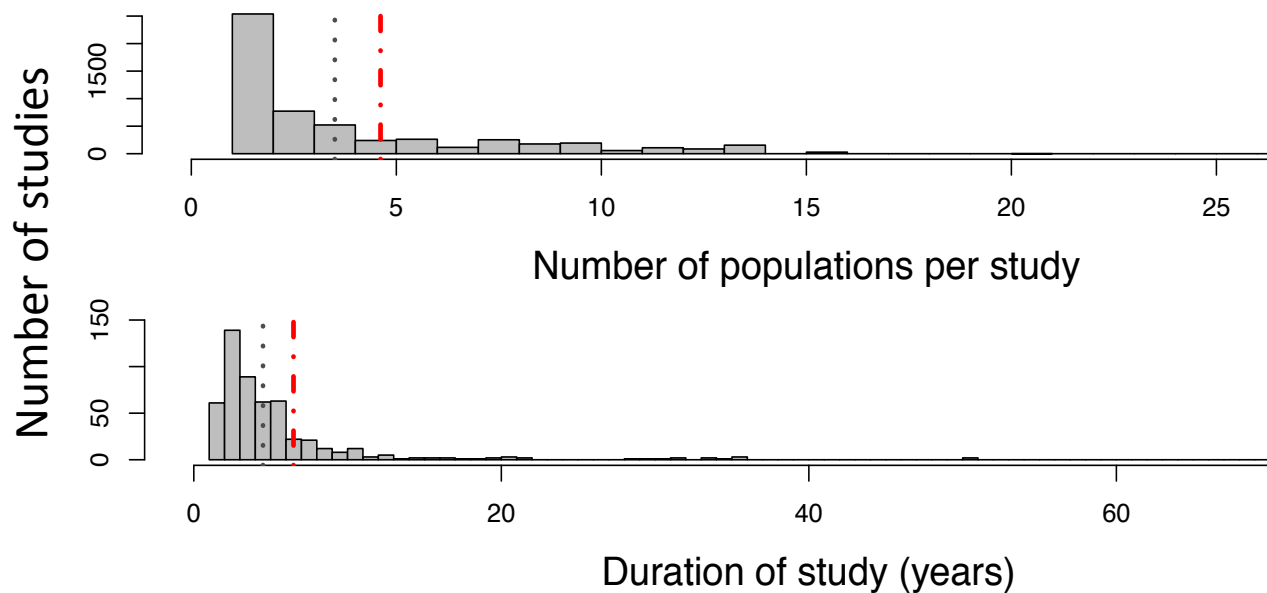
Plant Matrix Database





COMPADRE
Plant Matrix Database

BIGGER, LONGER, BETTER... STRONGER



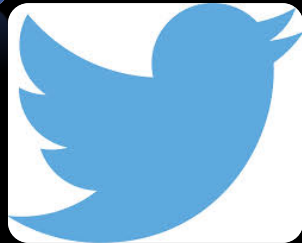
COMPADRE extensions



<http://compadredb.wordpress.com>



www.facebook.com/groups/compadrecomadre



@compadreDB



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

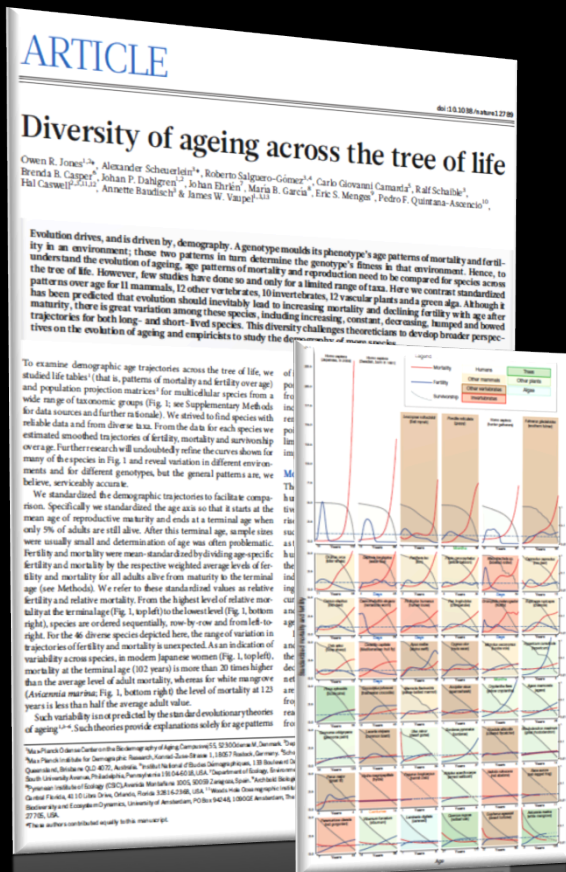
Upcoming COMPADRE workshops:
Mexico City: Sept 22-26
Stanford: Nov 10-11
Proposal for ESA 2015



COMPADRE-R
Salguero-Gómez *et al.* in prep



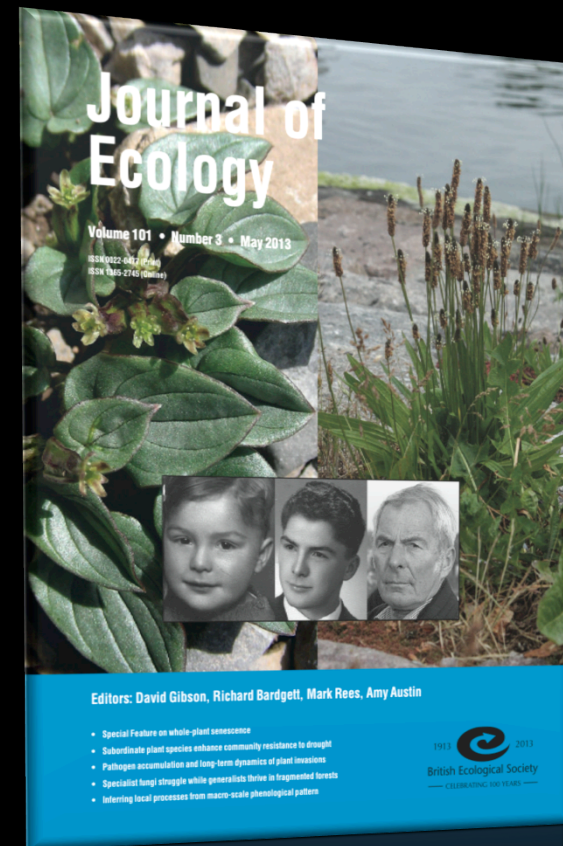
RESEARCH POTENTIAL



Jones et al. Nature 2014

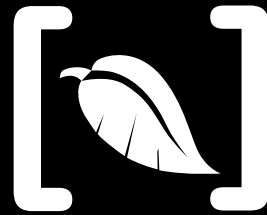


Adler et al. PNAS 2013



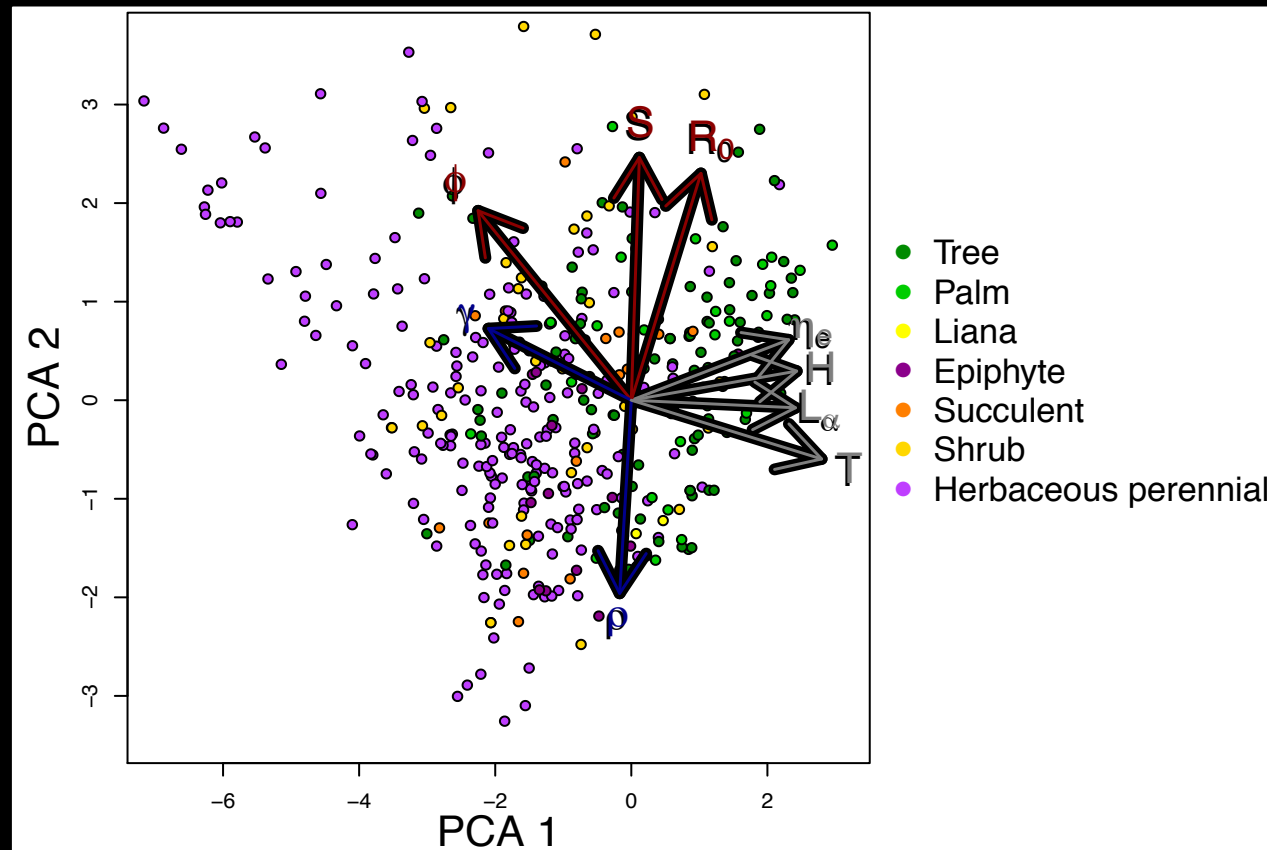
Salguero-Gómez et al. J Ecol 2013

25 peer-review publications... and >20 on-going projects



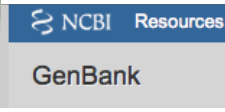
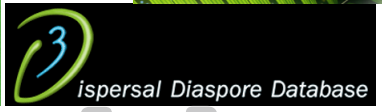
COMPADRE
Plant Matrix Database

RESEARCH POTENTIAL



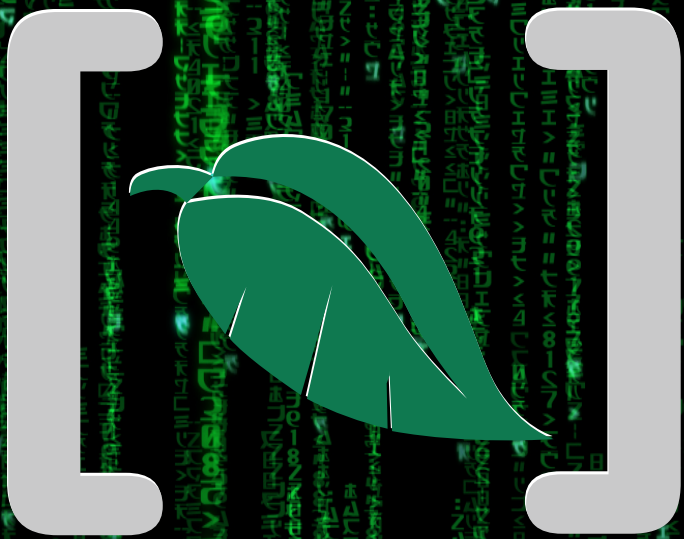
What are the main axes of variation in plant life history strategies?

Salguero-Gómez *et al.* in prep.



COMPADRE
Plant Matrix Database





COMPADRE

Plant Matrix Database

993 plant studies



COMADRE

Animal Matrix Database

1,287 animal studies