

Campbell, V., Murphy, G. and Romanuk, T. N. 2011. Experimental design and the outcome and interpretation of diversity-stability relations. – *Oikos* 120: 399–408.

## Appendix 1

Reference	Experiment realism	Ecosystem type	Latitude	Unit size (m <sup>2</sup> )	Unit size (ml)	Richness type	Species richness range	Diversity assembly method	Experiment length (days)	Trophic level	Response variable	Response level	Metric	r	p
Biondini, M. 2007. Plant diversity, production, stability, and susceptibility to invasion in restored northern tall grass prairies (United States). – Restor. Ecol. 15: 77–87.	Field	Terrestrial	40–60N	>4–16	NA	Functional	9–16 sp.	Indirect	730	Single-trophic	Biomass	Community	Coefficient of variation	-0.557	0.001
Boyer, K. E. et al. 2009. Biodiversity effects on productivity and stability of marine macroalgal communities: the role of environmental context. – Oikos 118: 1062–1072.	Field	Aquatic	20–40N	NA	>500	Species	1–8 sp.	Indirect	20	Multi-trophic	Biomass	Community	Coefficient of variation	-0.986	0.0138
Caldeira, M. C. et al. 2005. Species richness, temporal variability and resistance of biomass production in a Mediterranean grassland. – Oikos 110: 115–123.	Field	Terrestrial	20–40N	>1–4	NA	Species	9–16 sp.	Direct	1095	Single-trophic	Biomass	Community	Coefficient of variation	-0.373	0.006
Caldeira, M. C. et al. 2005. Species richness, temporal variability and resistance of biomass production in a Mediterranean grassland. – Oikos 110: 115–123.	Field	Terrestrial	20–40N	>1–4	NA	Species	9–16 sp.	Direct	1095	Single-trophic	Biomass	Population	Mean population variability	0.431	<0.001
DeClerck, F. A. J. et al. 2006. Species richness and stand stability in conifer forests of the Sierra Nevada. – Ecology 87: 2787–2799.	Field	Terrestrial	20–40N	>16	NA	Species	1–8 sp.	None	23360	Single-trophic	Productivity	Community	Coefficient of variation	0.265	0.084
Dodd, M. E. et al. 1994. Stability in the plant communities of the Park Grass Experiment: the relationship between species richness, soil pH and biomass variability. – Phil. Trans. Of the Royal Society of London 346: 185–193.	Field	Terrestrial	40–60N	>16	NA	Species	>16 sp.	Indirect	4015	Single-trophic	Biomass	Community	Coefficient of variation	-0.060	0.8016
Gonzalez, A. and Descamps-Julien, B. 2004. Population and community variability in randomly fluctuating environments. – Oikos 106: 105–116.	Lab	Aquatic	NA	NA	0–250	Species	1–8 sp.	Direct	64	Multi-trophic	Biomass	Community	Coefficient of variation	0.155	0.09

Gonzalez, A. and Descamps-Julien, B. 2004. Population and community variability in randomly fluctuating environments. – <i>Oikos</i> 106: 105–116.	Lab	Aquatic	NA	NA	0–250	Species	1–8 sp.	Direct	64	Multi-trophic	Biomass	Community	Coefficient of variation	0.132	0.15
Gonzalez, A. and Descamps-Julien, B. 2004. Population and community variability in randomly fluctuating environments. – <i>Oikos</i> 106: 105–116.	Lab	Aquatic	NA	NA	0–250	Species	1–8 sp.	Direct	64	Multi-trophic	Biomass	Community	Coefficient of variation	0.297	<0.001
Hector, A. et al. 2010. Diversity and stability: A multisite test of the insurance hypothesis using experimental grassland communities. – <i>Ecology</i> , in press.	Field	Terrestrial	40–60N	>4–16	NA	Species	>16 sp.	Direct	1095	Single-trophic	Biomass	Community	Coefficient of variation	0.267	0.0395
Hector, A. et al. 2010. Diversity and stability: A multisite test of the insurance hypothesis using experimental grassland communities. – <i>Ecology</i> , in press.	Field	Terrestrial	20–40N	>4–16	NA	Species	>16 sp.	Direct	1095	Single-trophic	Biomass	Community	Coefficient of variation	–0.311	0.0198
Hector, A. et al. 2010. Diversity and stability: A multisite test of the insurance hypothesis using experimental grassland communities. – <i>Ecology</i> , in press.	Field	Terrestrial	40–60N	>4–16	NA	Species	>16 sp.	Direct	1095	Single-trophic	Biomass	Community	Coefficient of variation	–0.299	0.0162
Hector, A. et al. 2010. Diversity and stability: A multisite test of the insurance hypothesis using experimental grassland communities. – <i>Ecology</i> , in press.	Field	Terrestrial	20–40N	>4–16	NA	Species	>16 sp.	Direct	1095	Single-trophic	Biomass	Community	Coefficient of variation	–0.648	0.0000002
Hector, A. et al. 2010. Diversity and stability: A multisite test of the insurance hypothesis using experimental grassland communities. – <i>Ecology</i> , in press.	Field	Terrestrial	40–60N	>4–16	NA	Species	>16 sp.	Direct	1095	Single-trophic	Biomass	Community	Coefficient of variation	–0.064	0.5974
Hector, A. et al. 2010. Diversity and stability: A multisite test of the insurance hypothesis using experimental grassland communities. – <i>Ecology</i> , in press.	Field	Terrestrial	60–80N	>4–16	NA	Species	>16 sp.	Direct	1095	Single-trophic	Biomass	Community	Coefficient of variation	–0.053	0.4765
Hector, A. et al. 2010. Diversity and stability: A multisite test of the insurance hypothesis using experimental grassland communities. – <i>Ecology</i> , in press.	Field	Terrestrial	40–60N	>4–16	NA	Species	>16 sp.	Direct	1095	Single-trophic	Biomass	Community	Coefficient of variation	–0.112	0.4215

Hector, A. et al. 2010. Diversity and stability: A multisite test of the insurance hypothesis using experimental grassland communities. – Ecology, in press.

Hector, A. et al. 2010. Diversity and stability: A multisite test of the insurance hypothesis using experimental grassland communities. – Ecology, in press.

Hector, A. et al. 2010. Diversity and stability: A multisite test of the insurance hypothesis using experimental grassland communities. – Ecology, in press.

Hector, A. et al. 2010. Diversity and stability: A multisite test of the insurance hypothesis using experimental grassland communities. – Ecology, in press.

Hector, A. et al. 2010. Diversity and stability: A multisite test of the insurance hypothesis using experimental grassland communities. – Ecology, in press.

Hector, A. et al. 2010. Diversity and stability: A multisite test of the insurance hypothesis using experimental grassland communities. – Ecology, in press.

Hector, A. et al. 2010. Diversity and stability: A multisite test of the insurance hypothesis using experimental grassland communities. – Ecology, in press.

Hector, A. et al. 2010. Diversity and stability: A multisite test of the insurance hypothesis using experimental grassland communities. – Ecology, in press.

Hector, A. et al. 2010. Diversity and stability: A multisite test of the insurance hypothesis using experimental grassland communities. – Ecology, in press.

Hector, A. et al. 2010. Diversity and stability: A multisite test of the insurance hypothesis using experimental grassland communities. – Ecology, in press.

Field	Terrestrial	40–60N	>4–16	NA	Species	>16 sp.	Direct	1095	Single-trophic	Biomass	Community	Coefficient of variation	-0.127	0.2682
Field	Terrestrial	40–60N	>4–16	NA	Species	>16 sp.	Direct	1095	Single-trophic	Biomass	Population	Replicate population variability	0.499	0
Field	Terrestrial	20–40N	>4–16	NA	Species	>16 sp.	Direct	1095	Single-trophic	Biomass	Population	Replicate population variability	0.350	0.00002
Field	Terrestrial	40–60N	>4–16	NA	Species	>16 sp.	Direct	1095	Single-trophic	Biomass	Population	Replicate population variability	0.264	0.000007
Field	Terrestrial	20–40N	>4–16	NA	Species	>16 sp.	Direct	1095	Single-trophic	Biomass	Population	Replicate population variability	0.231	0.0001
Field	Terrestrial	40–60N	>4–16	NA	Species	>16 sp.	Direct	1095	Single-trophic	Biomass	Population	Replicate population variability	0.138	0.0439
Field	Terrestrial	60–80N	>4–16	NA	Species	>16 sp.	Direct	1095	Single-trophic	Biomass	Population	Replicate population variability	0.293	0.0002
Field	Terrestrial	40–60N	>4–16	NA	Species	>16 sp.	Direct	1095	Single-trophic	Biomass	Population	Replicate population variability	0.241	0.0009
Field	Terrestrial	40–60N	>4–16	NA	Species	>16 sp.	Direct	1095	Single-trophic	Biomass	Population	Replicate population variability	0.305	0.0000004

Isbell, F. I. et al. 2009. Biodiversity, productivity and the temporal stability of productivity: patterns and processes. – <i>Ecol. Lett.</i> 12: 443–451.	Field	Terrestrial	20–40N	0–1	NA	Species	1–8 sp.	Direct	2555	Single-trophic	Biomass	Community	Coefficient of variation	–0.351	0.002
Ji, S. et al. 2009. Plant coverage is more important than species richness in enhancing aboveground biomass in a premature grassland, northern China. – <i>Agric. Ecosyst. Environ.</i> 129: 491–496.	Field	Terrestrial	40–60N	>1–4	NA	Species	9–16 sp.	Direct	730	Single-trophic	Biomass	Community	Coefficient of variation	–0.574	<0.01
Ji, S. et al. 2009. Plant coverage is more important than species richness in enhancing aboveground biomass in a premature grassland, northern China. – <i>Agric. Ecosyst. Environ.</i> 129: 491–496.	Field	Terrestrial	40–60N	>1–4	NA	Species	9–16 sp.	Direct	730	Single-trophic	Biomass	Community	Coefficient of variation	–0.574	<0.01
Jiang, L. et al. 2009. Predation alters relationships between biodiversity and temporal stability. – <i>Am. Nat.</i> 173: 389–399.	Lab	Aquatic	NA	NA	0–250	Species	1–8 sp.	Direct	23	Single-trophic	Biomass	Population	Standard deviation ( $\log_{10}$ biomass)	0.616	0.0136
Jiang, L. et al. 2009. Predation alters relationships between biodiversity and temporal stability. – <i>Am. Nat.</i> 173: 389–399.	Lab	Aquatic	NA	NA	0–250	Species	1–8 sp.	Direct	23	Single-trophic	Biomass	Population	Standard deviation ( $\log_{10}$ biomass)	0.624	0.0098
Jiang, L. et al. 2009. Predation alters relationships between biodiversity and temporal stability. – <i>Am. Nat.</i> 173: 389–399.	Lab	Aquatic	NA	NA	0–250	Species	1–8 sp.	Direct	23	Single-trophic	Biomass	Population	Standard deviation ( $\log_{10}$ biomass)	–0.755	0.0018
Jiang, L. et al. 2009. Predation alters relationships between biodiversity and temporal stability. – <i>Am. Nat.</i> 173: 389–399.	Lab	Aquatic	NA	NA	0–250	Species	1–8 sp.	Direct	23	Multi-trophic	Biomass	Population	Standard deviation ( $\log_{10}$ biomass)	0.787	0.0001
Jiang, L. et al. 2009. Predation alters relationships between biodiversity and temporal stability. – <i>Am. Nat.</i> 173: 389–399.	Lab	Aquatic	NA	NA	0–250	Species	1–8 sp.	Direct	23	Multi-trophic	Biomass	Community	Coefficient of variation	–0.500	0.0173
McGrady-Steed, J. and Morin, P. J. 2000. Biodiversity, density compensation, and the dynamics of populations and functional groups. – <i>Ecology</i> 81: 361–373.	Lab	Aquatic	NA	NA	0–250	Species	>16 sp.	Direct	42	Multi-trophic	Abundance	Population	Replicate population variability	–0.044	0.3583
McNaughton, S. J. 1985. Ecology of a grazing ecosystem: The Serengeti. – <i>Ecol. Monogr.</i> 55: 260–294.	Field	Terrestrial	0–20S	NA	NA	Species	9–16 sp.	None	1825	Single-trophic	Biomass	Community	Coefficient of variation	–0.499	0.025

Moullot, D. et al. 2005. Richness, structure and functioning in metazoan parasite communities. – <i>Oikos</i> 109: 447–460.	Field	Aquatic	20–40S	NA	NA	Species	9–16 sp.	None	NA	Multi-trophic	Biomass	Community	Coefficient of variation	–0.843	<0.0001
Petchey, O. L. 2000. Prey diversity, prey composition, and predator population dynamics in experimental microcosms. – <i>J. Anim. Ecol.</i> 69: 874–882.	Lab	Aquatic	NA	NA	0–250	Functional	1–8 sp.	Direct	20	Multi-trophic	Abundance	Population	Mean population variability	–0.800	0.03
Petchey, O. L. et al. 2002. Species richness, environmental fluctuations, and temporal change in total community biomass. – <i>Oikos</i> 99: 231–240.	Lab	Aquatic	NA	NA	0–250	Species	1–8 sp.	Direct	42	Multi-trophic	Biomass	Community	Coefficient of variation	0.197	<0.08
Petchey, O. L. et al. 2002. Species richness, environmental fluctuations, and temporal change in total community biomass. – <i>Oikos</i> 99: 231–240.	Lab	Aquatic	NA	NA	0–250	Species	1–8 sp.	Direct	42	Multi-trophic	Biomass	Community	Coefficient of variation	0.470	<0.08
Petchey, O. L. et al. 2002. Species richness, environmental fluctuations, and temporal change in total community biomass. – <i>Oikos</i> 99: 231–240.	Lab	Aquatic	NA	NA	0–250	Species	1–8 sp.	Direct	42	Multi-trophic	Biomass	Community	Coefficient of variation	0.000	1
Petchey, O. L. et al. 2002. Species richness, environmental fluctuations, and temporal change in total community biomass. – <i>Oikos</i> 99: 231–240.	Lab	Aquatic	NA	NA	0–250	Species	1–8 sp.	Direct	42	Multi-trophic	Biomass	Community	Coefficient of variation	0.220	<0.25
Pfisterer, A. B. et al. 2004. Rapid decay of diversity-productivity relationships after invasion of experimental plant communities. – <i>Basic Appl. Ecol.</i> 5: 5–14.	Field	Terrestrial	40–60N	>1–4	NA	Species	>16 sp.	Direct	2190	Single-trophic	Biomass	Community	Coefficient of variation	–0.254	<0.05
Polley, H. W. et al. 2007. Dominant species constrain effects of species diversity on temporal variability in biomass production of tallgrass species. – <i>Oikos</i> 116: 2044–2052.	Field	Terrestrial	20–40N	0–1	NA	Species	>16 sp.	Direct	1460	Single-trophic	Biomass	Community	Coefficient of variation	0.387	0.03
Rodriguez, M. A and Hawkins, B. A. 2000. Diversity, function and stability in parasitoid communities. – <i>Ecol. Lett.</i> 3: 35–40.	Field	Terrestrial	40–60N	NA	NA	Species	1–8 sp.	None	1825	Multi-trophic	Abundance	Community	Coefficient of variation	0.146	0.442

Romanuk, T. N. and Kolasa, J. 2002. Environmental variability alters the relationship between richness and variability of community abundances in aquatic rock pool microcosms. – <i>Ecoscience</i> 9: 55–62.	Field	Aquatic	0–20N	NA	>250–500	Species	9–16 sp.	None	2920	Multi-trophic	Abundance	Population	Mean population variability	-0.041	0.863
Romanuk, T. N. and Kolasa, J. 2002. Environmental variability alters the relationship between richness and variability of community abundances in aquatic rock pool microcosms. – <i>Ecoscience</i> 9: 55–62.	Field	Aquatic	0–20N	NA	>250–500	Species	9–16 sp.	None	2920	Multi-trophic	Abundance	Population	Mean population variability	-0.114	0.631
Romanuk, T. N. and Kolasa, J. 2002. Environmental variability alters the relationship between richness and variability of community abundances in aquatic rock pool microcosms. – <i>Ecoscience</i> 9: 55–62.	Field	Aquatic	0–20N	NA	>250–500	Species	9–16 sp.	None	2920	Multi-trophic	Abundance	Community	Coefficient of variation	-0.428	0.002
Romanuk, T. N. and Kolasa, J. 2002. Environmental variability alters the relationship between richness and variability of community abundances in aquatic rock pool microcosms. – <i>Ecoscience</i> 9: 55–62.	Field	Aquatic	0–20N	NA	>250–500	Species	9–16 sp.	None	2920	Multi-trophic	Abundance	Community	Coefficient of variation	-0.455	<0.05
Romanuk, T. N. and Kolasa, J. 2004. Population variability is lower in diverse rock pools when the obscuring effects of local processes are removed. – <i>Ecoscience</i> 11: 455–462.	Field	Aquatic	0–20N	NA	>250–500	Species	9–16 sp.	None	2920	Multi-trophic	Abundance	Community	Coefficient of variation	-0.311	0.169
Romanuk, T. N. and Kolasa, J. 2004. Population variability is lower in diverse rock pools when the obscuring effects of local processes are removed. – <i>Ecoscience</i> 11: 455–462.	Field	Aquatic	0–20N	NA	>250–500	Species	9–16 sp.	None	2920	Multi-trophic	Abundance	Population	Mean population variability	0.406	0.032
Romanuk, T. N. and Kolasa, J. 2004. Population variability is lower in diverse rock pools when the obscuring effects of local processes are removed. – <i>Ecoscience</i> 11: 455–462.	Field	Aquatic	0–20N	NA	>250–500	Species	9–16 sp.	None	2920	Multi-trophic	Abundance	Population	Replicate population variability	-0.019	0.715

Romanuk, T.N., Beisner, B.E., Martinez, N.D. and Kolasa, J. 2006. Non-omnivorous generality promotes population stability. – <i>Biol. Lett.</i> 2: 374–377.	Field	Aquatic	0–20N	NA	>250– 500	Species	9–16 sp.	None	2920	Multi- trophic	Abundance	Population	Mean population variability	-0.807	0.004
Romanuk, T. N. et al. 2006. Nutrient enrichment weakens the stabilizing effect of species richness. – <i>Oikos</i> 114: 291–302.	Lab	Aquatic	0–20N	NA	>250– 500	Species	9–16 sp.	Direct	36	Multi- trophic	Abundance	Population	Replicate population variability	0.522	<0.001
Romanuk, T. N. et al. 2006. Nutrient enrichment weakens the stabilizing effect of species richness. – <i>Oikos</i> 114: 291–302.	Lab	Aquatic	0–20N	NA	>250– 500	Species	9–16 sp.	Direct	36	Multi- trophic	Abundance	Population	Replicate population variability	0.496	0.006
Romanuk, T. N. et al. 2006. Nutrient enrichment weakens the stabilizing effect of species richness. – <i>Oikos</i> 114: 291–302.	Lab	Aquatic	0–20N	NA	>250– 500	Species	9–16 sp.	Direct	36	Multi- trophic	Abundance	Population	Replicate population variability	-0.442	0.056
Romanuk, T. N. et al. 2006. Nutrient enrichment weakens the stabilizing effect of species richness. – <i>Oikos</i> 114: 291–302.	Lab	Aquatic	0–20N	NA	>250– 500	Species	9–16 sp.	Direct	36	Multi- trophic	Abundance	Population	Replicate population variability	-0.156	0.579
Romanuk, T. N. et al. 2006. Nutrient enrichment weakens the stabilizing effect of species richness. – <i>Oikos</i> 114: 291–302.	Lab	Aquatic	0–20N	NA	>250– 500	Species	9–16 sp.	Direct	36	Multi- trophic	Abundance	Community	Coefficient of variation	-0.272	0.039
Romanuk, T. N. et al. 2006. Nutrient enrichment weakens the stabilizing effect of species richness. – <i>Oikos</i> 114: 291–302.	Lab	Aquatic	0–20N	NA	>250– 500	Species	9–16 sp.	Direct	36	Multi- trophic	Abundance	Community	Coefficient of variation	-0.592	0.02
Romanuk, T. N. et al. 2006. Nutrient enrichment weakens the stabilizing effect of species richness. – <i>Oikos</i> 114: 291–302.	Lab	Aquatic	0–20N	NA	>250– 500	Species	9–16 sp.	Direct	36	Multi- trophic	Abundance	Community	Coefficient of variation	-0.044	0.875
Romanuk, T. N. et al. 2006. Nutrient enrichment weakens the stabilizing effect of species richness. – <i>Oikos</i> 114: 291–302.	Lab	Aquatic	0–20N	NA	>250– 500	Species	9–16 sp.	Direct	36	Multi- trophic	Abundance	Community	Coefficient of variation	-0.422	0.117
Romanuk, T. N. et al. 2009. Ecological realism and mechanisms by which diversity begets stability. – <i>Oikos</i> 118: 819–828.	Lab	Aquatic	0–20N	NA	>250– 500	Species	9–16 sp.	Direct	56	Multi- trophic	Abundance	Population	Mean population variability	-0.633	0.0009
Romanuk, T. N. et al. 2009. Ecological realism and mechanisms by which diversity begets stability. – <i>Oikos</i> 118: 819–828.	Field	Aquatic	0–20N	NA	>500	Species	9–16 sp.	Direct	56	Multi- trophic	Abundance	Population	Mean population variability	-0.424	0.0247

Romanuk, T. N. et al. 2009. Ecological realism and mechanisms by which diversity begets stability. – <i>Oikos</i> 118: 819–828.	Field	Aquatic	0–20N	NA	>500	Species	9–16 sp.	None	56	Multi-trophic	Abundance	Population	Mean population variability	-0.182	0.3354
Romanuk, T. N. et al. 2009. Ecological realism and mechanisms by which diversity begets stability. – <i>Oikos</i> 118: 819–828.	Lab	Aquatic	0–20N	NA	>250–500	Species	9–16 sp.	Direct	56	Multi-trophic	Abundance	Community	Coefficient of variation	-0.574	0.0034
Romanuk, T. N. et al. 2009. Ecological realism and mechanisms by which diversity begets stability. – <i>Oikos</i> 118: 819–828.	Field	Aquatic	0–20N	NA	>500	Species	9–16 sp.	Direct	56	Multi-trophic	Abundance	Community	Coefficient of variation	-0.398	0.0359
Romanuk, T. N. et al. 2009. Ecological realism and mechanisms by which diversity begets stability. – <i>Oikos</i> 118: 819–828.	Field	Aquatic	0–20N	NA	>500	Species	9–16 sp.	None	56	Multi-trophic	Abundance	Community	Coefficient of variation	-0.235	0.6961
Romanuk, T. N. et al. 2010. Maintenance of positive diversity-stability relations along a gradient of environmental stress. – <i>Plos One</i> , in press.	Lab	Aquatic	40–60N	NA	0–250	Functional	1–8 sp.	Direct	84	Multi-trophic	Abundance	Population	Mean population variability	-0.700	>0.001
Romanuk, T. N. et al. 2010. Maintenance of positive diversity-stability relations along a gradient of environmental stress. – <i>Plos One</i> , in press.	Lab	Aquatic	40–60N	NA	>250–500	Functional	1–8 sp.	Direct	84	Multi-trophic	Abundance	Community	Coefficient of variation	-0.470	0.014
Steiner, C. F. 2005. Temporal stability of pond zooplankton assemblages. – <i>Freshw. Biol.</i> 50: 105–112.	Field	Aquatic	40–60N	NA	>500	Species	>16 sp.	None	123	Single-trophic	Biomass	Community	Coefficient of variation	-0.628	0.005
Steiner, C. F. et al. 2005a. The influence of consumer diversity and indirect facilitation on trophic level biomass and stability. <i>Oikos</i> 110: 556–566.	Lab	Aquatic	40–60N	NA	>500	Species	1–8 sp.	Direct	104	Multi-trophic	Biomass	Community	Coefficient of variation	-0.503	0.017
Steiner, C. F. et al. 2005b. Temporal stability of aquatic food webs: partitioning the effects of species diversity, species composition and enrichment. – <i>Ecol. Lett.</i> 8: 819–828.	Lab	Aquatic	NA	NA	0–250	Species	9–16 sp.	Direct	22	Multi-trophic	Biomass	Community	Coefficient of variation	-0.374	0.008
Steiner, C. F. et al. 2005b. Temporal stability of aquatic food webs: partitioning the effects of species diversity, species composition and enrichment. – <i>Ecol. Lett.</i> 8: 819–828.	Lab	Aquatic	NA	NA	0–250	Species	9–16 sp.	Direct	22	Multi-trophic	Biomass	Population	Mean population variability	-0.210	0.04

Tilman, D. 1996. Biodiversity: population versus ecosystem stability. – <i>Ecology</i> 77: 350–363.	Field	Terrestrial	40–60N	>4–16	NA	Species	>16 sp.	Indirect	3650	Single-trophic	Biomass	Population	Replicate population variability	0.150	<0.01
Tilman, D. 1996. Biodiversity: population versus ecosystem stability. – <i>Ecology</i> 77: 350–363.	Field	Terrestrial	40–60N	>4–16	NA	Species	>16 sp.	Indirect	3650	Single-trophic	Biomass	Population	Replicate population variability	0.150	<0.01
Tilman, D. 1996. Biodiversity: population versus ecosystem stability. – <i>Ecology</i> 77: 350–363.	Field	Terrestrial	40–60N	>4–16	NA	Species	>16 sp.	Indirect	3650	Single-trophic	Biomass	Community	Coefficient of variation	–0.390	<0.001
Tilman, D. 1996. Biodiversity: population versus ecosystem stability. – <i>Ecology</i> 77: 350–363.	Field	Terrestrial	40–60N	>4–16	NA	Species	>16 sp.	Indirect	3650	Single-trophic	Biomass	Community	Coefficient of variation	–0.320	<0.05
Tilman, D. 1996. Biodiversity: population versus ecosystem stability. – <i>Ecology</i> 77: 350–363.	Field	Terrestrial	40–60N	>4–16	NA	Species	>16 sp.	Indirect	3650	Single-trophic	Biomass	Community	Coefficient of variation	–0.090	>0.05
Tilman, D. 1996. Biodiversity: population versus ecosystem stability. – <i>Ecology</i> 77: 350–363.	Field	Terrestrial	40–60N	>4–16	NA	Species	>16 sp.	Indirect	3650	Single-trophic	Biomass	Community	Coefficient of variation	–0.530	<0.0001
Tilman, D. 1996. Biodiversity: population versus ecosystem stability. – <i>Ecology</i> 77: 350–363.	Field	Terrestrial	40–60N	>4–16	NA	Species	>16 sp.	Indirect	3650	Single-trophic	Biomass	Community	Coefficient of variation	–0.390	<0.001
Tilman, D. 1996. Biodiversity: population versus ecosystem stability. – <i>Ecology</i> 77: 350–363.	Field	Terrestrial	40–60N	>4–16	NA	Species	>16 sp.	Indirect	3650	Single-trophic	Biomass	Community	Coefficient of variation	–0.180	>0.05
Tilman, D. 1996. Biodiversity: population versus ecosystem stability. – <i>Ecology</i> 77: 350–363.	Field	Terrestrial	40–60N	>4–16	NA	Species	>16 sp.	Indirect	3650	Single-trophic	Biomass	Community	Coefficient of variation	–0.220	>0.05
Tilman, D. 1996. Biodiversity: population versus ecosystem stability. – <i>Ecology</i> 77: 350–363.	Field	Terrestrial	40–60N	>4–16	NA	Species	>16 sp.	Indirect	3650	Single-trophic	Biomass	Community	Coefficient of variation	–0.430	<0.001
Tilman, D. 1996. Biodiversity: population versus ecosystem stability. – <i>Ecology</i> 77: 350–363.	Field	Terrestrial	40–60N	>4–16	NA	Species	>16 sp.	Direct	3650	Single-trophic	Biomass	Community	Coefficient of variation	–0.296	<0.0001
Tilman, D. et al. 2006. Biodiversity and ecosystem stability in a decade-long grassland experiment. – <i>Nature</i> 441: 629–632.	Field	Terrestrial	40–60N	>4–16	NA	Species	9–16 sp.	Direct	1825	Single-trophic	Biomass	Population	Replicate population variability	0.296	<0.0001
Tilman, D. et al. 2006. Diversity, ecosystem function, and stability of parasitoid-host interactions across a tropical habitat gradient. – <i>Ecology</i> 87: 3047–3057.	Field	Terrestrial	0–20S	>4–16	NA	Species	NA	None	486	Multi-trophic	Abundance	Community	Coefficient of variation	0.687	0

Valone, T. J. and Hoffman, C. D. 2003. A mechanistic examination of diversity-stability relationships in annual plant communities. – <i>Oikos</i> 103: 519–527.	Field	Terrestrial	20–40N	0–1	NA	Species	>16 sp.	Indirect	4015	Single-trophic	Abundance	Community	Coefficient of variation	-0.220	0.28
Valone, T. J. and Hoffman, C. D. 2003. A mechanistic examination of diversity-stability relationships in annual plant communities. – <i>Oikos</i> 103: 519–527.	Field	Terrestrial	20–40N	0–1	NA	Species	>16 sp.	Indirect	4015	Single-trophic	Abundance	Community	Coefficient of variation	-0.170	0.4
Valone, T. J. and Schutzenhofer, M. R. 2007. Reduced rodent biodiversity destabilizes plant populations. – <i>Ecology</i> 88: 26–31.	Field	Terrestrial	20–40N	>16	NA	Functional	1–8 sp.	Indirect	5840	Single-trophic	Abundance	Population	Mean population variability	-0.703	<0.005
Valone, T. J. and Schutzenhofer, M. R. 2007. Reduced rodent biodiversity destabilizes plant populations. – <i>Ecology</i> 88: 26–31.	Field	Terrestrial	20–40N	>16	NA	Functional	1–8 sp.	Indirect	5840	Single-trophic	Abundance	Population	Mean population variability	-0.532	<0.05
van Ruijven, J. and Berendse, F. 2007. Contrasting effects of diversity on the temporal stability of plant populations. – <i>Oikos</i> 116: 1323–1330.	Field	Terrestrial	40–60N	0–1	NA	Species	1–8 sp.	Direct	2190	Single-trophic	Biomass	Community	Coefficient of variation	-0.422	<0.00001
van Ruijven, J. and Berendse, F. 2007. Contrasting effects of diversity on the temporal stability of plant populations. – <i>Oikos</i> 116: 1323–1330.	Field	Terrestrial	40–60N	0–1	NA	Species	1–8 sp.	Direct	2190	Single-trophic	Biomass	Community	Coefficient of variation	-0.195	0.05
van Ruijven, J. and Berendse, F. 2007. Contrasting effects of diversity on the temporal stability of plant populations. – <i>Oikos</i> 116: 1323–1330.	Field	Terrestrial	40–60N	0–1	NA	Species	1–8 sp.	Direct	2190	Single-trophic	Biomass	Population	Standard deviation (log <sub>10</sub> biomass)	-0.254	<0.01
Vogt, R. J. et al. 2006. Species richness-variability relationships in multi-trophic aquatic microcosms. – <i>Oikos</i> 113: 55–66.	Lab	Aquatic	0–20N	NA	>250–500	Species	9–16 sp.	Direct	153	Multi-trophic	Abundance	Population	Mean population variability	-0.875	<0.001
Vogt, R. J. et al. 2006. Species richness-variability relationships in multi-trophic aquatic microcosms. – <i>Oikos</i> 113: 55–66.	Lab	Aquatic	0–20N	NA	>250–500	Species	9–16 sp.	Direct	153	Multi-trophic	Abundance	Community	Coefficient of variation	-0.921	<0.001

Lab	Aquatic	20–40N	NA	0–250	Species	1–8sp.	Direct	77	Multi- trophic	Biomass	Community	Coefficient of variation	-0.239	0.003
-----	---------	--------	----	-------	---------	--------	--------	----	-------------------	---------	-----------	-----------------------------	--------	-------

## Reference

- Biondini, M. 2007. Plant diversity, production, stability, and susceptibility to invasion in restored northern tall grass prairies (United States). – *Restor. Ecol.* 15: 77–87.
- Boyer, K. E. et al. 2009. Biodiversity effects on productivity and stability of marine macroalgal communities: the role of environmental context. – *Oikos* 118: 1062–1072.
- Caldeira, M. C. et al. 2005. Species richness, temporal variability and resistance of biomass production in a Mediterranean grassland. – *Oikos* 110: 115–123.
- DeClerck, F. A. J. et al. 2006. Species richness and stand stability in conifer forests of the Sierra Nevada. – *Ecology* 87: 2787–2799.
- Dodd, M. E. et al. 1994. Stability in the plant communities of the Park Grass Experiment: the relationship between species richness, soil pH and biomass variability. – *Phil. Trans. Of the Royal Society of London* 346: 185–193.
- Gonzalez, A. and Descamps-Julien, B. 2004. Population and community variability in randomly fluctuating environments. – *Oikos* 106: 105–116.
- Hector, A. et al. 2010. Diversity and stability: A multisite test of the insurance hypothesis using experimental grassland communities. – *Ecology*, in press.
- Isbell, F. I. et al. 2009. Biodiversity, productivity and the temporal stability of productivity: patterns and processes. – *Ecol. Lett.* 12: 443–451.
- Ji, S. et al. 2009. Plant coverage is more important than species richness in enhancing aboveground biomass in a premature grassland, northern China. – *Agric. Ecosyst. Environ.* 129: 491–496.
- Jiang, L. et al. 2009. Predation alters relationships between biodiversity and temporal stability. – *Am. Nat.* 173: 389–399.
- McGrady-Steed, J. and Morin, P. J. 2000. Biodiversity, density compensation, and the dynamics of populations and functional groups. – *Ecology* 81: 361–373.
- McNaughton, S. J. 1985. Ecology of a grazing ecosystem: The Serengeti. – *Ecol. Monogr.* 55: 260–294.
- Mouillot, D. et al. 2005. Richness, structure and functioning in metazoan parasite communities. – *Oikos* 109: 447–460.
- Petchey, O. L. 2000. Prey diversity, prey composition, and predator population dynamics in experimental microcosms. – *J. Anim. Ecol.* 69: 874–882.
- Petchey, O. L. et al. 2002. Species richness, environmental fluctuations, and temporal change in total community biomass. – *Oikos* 99: 231–240.
- Pfisterer, A. B. et al. 2004. Rapid decay of diversity-productivity relationships after invasion of experimental plant communities. – *Basic Appl. Ecol.* 5: 5–14.
- Polley, H. W. et al. 2007. Dominant species constrain effects of species diversity on temporal variability in biomass production of tallgrass species. – *Oikos* 116: 2044–2052.
- Rodriguez, M. A and Hawkins, B. A. 2000. Diversity, function and stability in parasitoid communities. – *Ecol. Lett.* 3: 35–40.
- Romanuk, T. N. and Kolasa, J. 2002. Environmental variability alters the relationship between richness and variability of community abundances in aquatic rock pool microcosms. – *Ecoscience* 9: 55–62.
- Romanuk, T. N. and Kolasa, J. 2004. Population variability is lower in diverse rock pools when the obscuring effects of local processes are removed. – *Ecoscience* 11: 455–462.
- Romanuk, T.N., Beisner, B.E., Martinez, N.D. and Kolasa, J. 2006. Non-omnivorous generality promotes population stability. – *Biol. Lett.* 2: 374–377.
- Romanuk, T. N. et al. 2006. Nutrient enrichment weakens the stabilizing effect of species richness. – *Oikos* 114: 291–302.
- Romanuk, T. N. et al. 2009. Ecological realism and mechanisms by which diversity begets stability. – *Oikos* 118: 819–828.
- Romanuk, T. N. et al. 2010. Maintenance of positive diversity-stability relations along a gradient of environmental stress. – *Plos One*, in press.
- Steiner, C. F. 2005. Temporal stability of pond zooplankton assemblages. – *Freshw. Biol.* 50: 105–112.
- Steiner, C. F. et al. 2005a. The influence of consumer diversity and indirect facilitation on trophic level biomass and stability. *Oikos* 110: 556–566.
- Steiner, C. F. et al. 2005b. Temporal stability of aquatic food webs: partitioning the effects of species diversity, species composition and enrichment. – *Ecol. Lett.* 8: 819–828.
- Tilman, D. 1996. Biodiversity: population versus ecosystem stability. – *Ecology* 77: 350–363.
- Tilman, D. et al. 2006. Biodiversity and ecosystem stability in a decade-long grassland experiment. – *Nature* 441: 629–632.
- Tylianakis, J. M. et al. 2006. Diversity, ecosystem function, and stability of parasitoid-host interactions across a tropical habitat gradient. – *Ecology* 87: 3047–3057.
- Valone, T. J. and Hoffman, C. D. 2003. A mechanistic examination of diversity-stability relationships in annual plant communities. – *Oikos* 103: 519–527.
- Valone, T. J. and Schutzenhofer, M. R. 2007. Reduced rodent biodiversity destabilizes plant populations. – *Ecology* 88: 26–31.
- van Ruijven, J. and Berendse, F. 2007. Contrasting effects of diversity on the temporal stability of plant populations. – *Oikos* 116: 1323–1330.
- Vogt, R. J. et al. 2006. Species richness-variability relationships in multi-trophic aquatic microcosms. – *Oikos* 113: 55–66.
- Zhang, Q.G. and Zhang, D.Y. 2006. Resource availability and biodiversity effects on the productivity, temporal variability and resistance of experimental algal communities. – *Oikos* 114: 385–396.