

List of Publications*

August 29, 2020

Axel G. Rossberg

Monographs

1. ROSSBERG, A. G. (2013). *Food Webs and Biodiversity: Foundations, Models, Data*. Wiley. ISBN 9-780470973-55-4, winner of PROSE award 2013 in Biological Sciences category.

Refereed Journal Articles

2. ROSSBERG, A. G., GAEDKE, U., AND KRATINA, P. (2019). Dome patterns in pelagic size spectra reveal strong trophic cascades. *Nat Commun*, 10(1), 1–11.
3. ROSSBERG, A. G., BARABÁS, G., POSSINGHAM, H. P., PASCUAL, M., MARQUET, P. A., HUI, C., EVANS, M. R., AND MESZÉNA, G. (2019). Let's Train More Theoretical Ecologists – Here Is Why. *Trends in Ecology & Evolution*, 34(9), 759–762.
4. ROSSBERG, A. G. AND BARABÁS, G. (2019). How carefully executed network theory informs invasion ecology. *Trends in Ecology & Evolution*, 34(5), 385–386.
5. O'SULLIVAN, J. D., KNELL, R. J., AND ROSSBERG, A. G. (2019). Metacommunity-scale biodiversity regulation and the self-organised emergence of macroecological patterns. *Ecol. Lett.*, 22(9), 1428–1438.
6. SPENCE, M. A., BLANCHARD, J. L., ROSSBERG, A. G., HEATH, M. R., HEYMANS, J. J., MACKINSON, S., SERPETTI, N., SPEIRS, D. C., THORPE, R. B., AND BLACKWELL, P. G. (2018). A general framework for combining ecosystem models. *Fish Fish.*, 19(6), 1031–1042.
7. TAM, J. C., LINK, J. S., ROSSBERG, A. G., ROGERS, S. I., LEVIN, P. S., ROCHET, M.-J., BUNDY, A., BELGRANO, A., LIBRALATO, S., TOMCZAK, M., VAN DE WOLFSHAAR, K., PRANOVI, F., GOROKHOVA, E., LARGE, S. I., NIQUIL, N., GREENSTREET, S. P. R., DRUON, J.-N., LESUTIENE, J., JOHANSEN, M., PRECIADO, I., PATRICIO, J., PALIALEXIS, A., TETT, P., JOHANSEN, G. O., HOULE, J., AND RINDORF, A. (2017). Towards ecosystem-based management: Identifying operational food-web indicators for marine ecosystems. *ICES J Mar Sci*, 74(7), 2040–2052.
8. SANTINI, L., BELMAKER, J., COSTELLO, M. J., PEREIRA, H. M., ROSSBERG, A. G., SCHIPPER, A. M., CEAUȘU, S., DORNELAS, M., HILBERS,

*The PDF file of this document contains hyperlinks to preprints. See <http://axel.rossberg.net/paper/Publications.pdf> for updates.

- J. P., HORTAL, J., HUIJBREGTS, M. A. J., NAVARRO, L. M., SCHIFFERS, K. H., VISCONTI, P., AND RONDININI, C. (2017). Assessing the suitability of diversity metrics to detect biodiversity change. *Biological Conservation*, 213, 341–350.
9. ROSSBERG, A. G., UUSITALO, L., BERG, T., ZAIKO, A., CHENUIL, A., UYARRA, M. C., BORJA, A., AND LYNAM, C. P. (2017). Quantitative criteria for choosing targets and indicators for sustainable use of ecosystems. *Ecological Indicators*, 72, 215–224.
 10. BROSZEIT, S., BEAUMONT, N. J., UYARRA, M. C., HEISKANEN, A.-S., FROST, M., SOMERFIELD, P. J., ROSSBERG, A. G., TEIXEIRA, H., AND AUSTEN, M. C. (2017). What can indicators of good environmental status tell us about ecosystem services?: Reducing efforts and increasing cost-effectiveness by reapplying biodiversity indicator data. *Ecological Indicators*, 81, 409–442.
 11. SCHIPPER, A. M., BELMAKER, J., DE MIRANDA, M. D., NAVARRO, L. M., BÖHNING-GAESE, K., COSTELLO, M. J., DORNELAS, M., FOPEN, R., HORTAL, J., HUIJBREGTS, M. A. J., MARTÍN-LÓPEZ, B., PETTORELLI, N., QUEIROZ, C., ROSSBERG, A. G., SANTINI, L., SCHIFFERS, K., STEINMANN, Z. J. N., VISCONTI, P., RONDININI, C., AND PEREIRA, H. M. (2016). Contrasting changes in the abundance and diversity of North American bird assemblages from 1971 to 2010. *Glob Change Biol*, pp. 3948–3959.
 12. LYNAM, C. P., UUSITALO, L., PATRÍCIO, J., PIRODDI, C., QUEIRÓS, A. M., TEIXEIRA, H., ROSSBERG, A. G., SAGARMINAGA, Y., HYDER, K., NIQUIL, N., MÖLLMANN, C., WILSON, C., CHUST, G., GALPARSORO, I., FORSTER, R., VERÍSSIMO, H., TEDESCO, L., REVILLA, M., AND NEVILLE, S. (2016). Uses of Innovative Modeling Tools within the Implementation of the Marine Strategy Framework Directive. *Front. Mar. Sci*, p. 182.
 13. HEISKANEN, A.-S., BERG, T., UUSITALO, L., TEIXEIRA, H., BRUHN, A., KRAUSE-JENSEN, D., LYNAM, C. P., ROSSBERG, A. G., KORPINEN, S., UYARRA, M. C., AND BORJA, A. (2016). Biodiversity in marine ecosystems—European developments toward robust assessments. *Front. Mar. Sci*, p. 184.
 14. FARCAS, A. AND ROSSBERG, A. G. (2016). Maximum sustainable yield from interacting fish stocks in an uncertain world: Two policy choices and underlying trade-offs. *ICES J. Mar. Sci.*, 73(10), 2499–2508.
 15. PIRODDI, C., TEIXEIRA, H., LYNAM, C. P., SMITH, C., ALVAREZ, M. C., MAZIK, K., ANDONEGI, E., CHURILOVA, T., TEDESCO, L., CHIFFLET, M., CHUST, G., GALPARSORO, I., GARCIA, A. C., KÄMÄRI, M., KRYVENKO, O., LASSALLE, G., NEVILLE, S., NIQUIL, N., PA-

- PADOPOULOU, N., ROSSBERG, A. G., SUSLIN, V., AND UYARRA, M. C. (2015). Using ecological models to assess ecosystem status in support of the European Marine Strategy Framework Directive. *Ecological Indicators*, *58*, 175–191.
16. JAMES, A., PLANK, M. J., ROSSBERG, A. G., BEECHAM, J., EMMERSON, M., AND PITCHFORD, J. W. (2015). Constructing random matrices to represent real ecosystems. *The American Naturalist*, *185*(5), 680–692.
 17. HYDER, K., ROSSBERG, A. G., ALLEN, J. I., AUSTEN, M. C., BARCIELA, R. M., BANNISTER, H. J., BLACKWELL, P. G., BLANCHARD, J. L., BURROWS, M. T., DEFRIEZ, E., DORRINGTON, T., EDWARDS, K. P., GARCIA-CARRERAS, B., HEATH, M. R., HEMBURY, D. J., HEYMANS, J. J., HOLT, J., HOULE, J. E., JENNINGS, S., MACKINSON, S., MALCOLM, S. J., MCPIKE, R., MEE, L., MILLS, D. K., MONTGOMERY, C., PEARSON, D., PINNEGAR, J. K., POLLICINO, M., POPOVA, E. E., RAE, L., ROGERS, S. I., SPEIRS, D., SPENCE, M. A., THORPE, R., TURNER, R. K., VAN DER MOLEN, J., YOOL, A., AND PATERSON, D. M. (2015). Making modelling count - increasing the contribution of shelf-seas community and ecosystem models to policy development and management. *Marine Policy*, *61*, 291–302.
 18. FUNG, T., FARNSWORTH, K. D., REID, D. G., AND ROSSBERG, A. G. (2015). Impact of biodiversity loss on production in complex marine food webs mitigated by prey-release. *Nature Communications*, *6*, 6657.
 19. BORRELLI, J. J., ALLESINA, S., AMARASEKARE, P., ARDITI, R., CHASE, I., DAMUTH, J., HOLT, R. D., LOGOFET, D. O., NOVAK, M., ROHR, R. P., ROSSBERG, A. G., SPENCER, M., TRAN, J. K., AND GINZBURG, L. R. (2015). Selection on stability across ecological scales. *Trends in Ecology & Evolution*, *30*(7), 417–425.
 20. ROSSBERG, A. G., ROGERS, T., AND MCKANE, A. J. (2014). Current noise-removal methods can create false signals in ecogenomic data. *Proceedings of the Royal Society B: Biological Sciences*, *281*(1783), 20140191.
 21. NAGELKERKE, L. A. J. AND ROSSBERG, A. G. (2014). Trophic niche-space imaging, using resource and consumer traits. *Theoretical Ecology*, *7*(4), 423–434. Doi:10.1007/s12080-014-0229-5.
 22. VAN LEEUWEN, E., BRÄNNSTRÖM, Å., JANSEN, V. A. A., DIECKMANN, U., AND ROSSBERG, A. G. (2013). A generalized functional response for predators that switch between multiple prey species. *Journal of Theoretical Biology*, *328*, 89–98. doi:10.1016/j.jtbi.2013.02.003.
 23. SHEPHARD, S., FUNG, T., ROSSBERG, A. G., FARNSWORTH, K. D., REID, D. G., GREENSTREET, S. P. R., AND WARNES, S. (2013). Modelling recovery of Celtic Sea demersal fish community size-structure. *Fisheries*

Research, 140, 91–95.

24. ROSSBERG, A. G., ROGERS, T., AND MCKANE, A. J. (2013). Are there species smaller than 1 mm? *Proceedings of the Royal Society B*, 280, 20131248.
25. ROSSBERG, A. G., HOULE, J. E., AND HYDER, K. (2013). Stock-recruitment relations controlled by feeding interactions alone. *Canadian Journal of Fisheries and Aquatic Sciences*, 70(10), 1447–1455.
26. ROMBOUTS, I., BEAUGRAND, G., FIZZALA, X., GAILL, F., GREEN-STREET, S. P. R., LAMARE, S., LE LOC'H, F., MCQUATTERS-GOLLOP, A., MIALET, B., NIQUIL, N., RENAUD, F., ROSSBERG, A. G., AND FÉRAL, J. P. (2013). Food web indicators under the marine strategy framework directive: From complexity to simplicity? *Ecological Indicators*, 29, 246–254.
27. FUNG, T., FARNSWORTH, K. D., SHEPHARD, S., REID, D. G., AND ROSSBERG, A. G. (2013). Why the size structure of marine communities can require decades to recover from fishing. *Marine Ecology Progress Series*, 484, 155–171. doi:10.3354/meps10305.
28. SHEPHARD, S., FUNG, T., HOULE, J. E., FARNSWORTH, K. D., REID, D. G., AND ROSSBERG, A. G. (2012). Size-selective fishing drives species composition in the Celtic Sea. *ICES Journal of Marine Science*, 69(2), 223–234.
29. ROSSBERG, A. G. (2012). A complete analytic theory for structure and dynamics of populations and communities spanning wide ranges in body size. *Advances in Ecological Research*, 46, 429–522.
30. ROGERS, T., MCKANE, A. J., AND ROSSBERG, A. G. (2012). Spontaneous genetic clustering in populations of competing organisms. *Phys. Biol.*, 9, 066002. Chosen as one of Physical Biology's highlights of 2012.
31. ROGERS, T., MCKANE, A. J., AND ROSSBERG, A. G. (2012). Demographic noise can lead to the spontaneous formation of species. *Europhysics Letters*, 97(4), 40008. "Editor's Choice".
32. NAISBIT, R. E., ROHR, R. P., ROSSBERG, A. G., KEHRLI, P., AND BERSIER, L.-F. (2012). Phylogeny versus body size as determinants of food-web structure. *Proceedings of the Royal Society B*, 279(1741), 3291–3297.
33. MULDER, C., BOIT, A., MORI, S., VONK, J. A., DYER, S. D., FAGGIANO, L., GEISEN, S., GONZÁLEZ, A. L., KASPARI, M., LAVOREL, S., MARQUET, P. A., ROSSBERG, A. G., STERNER, R. W., VOIGT, W., AND WALL, D. H. (2012). Distributional (in)congruence of biodiversity–ecosystem functioning. *Advances in Ecological Research*, 46, 1–88.

34. HOULE, J. E., FARNSWORTH, K. D., ROSSBERG, A. G., AND REID, D. G. (2012). Assessing the sensitivity and specificity of fish community indicators to management action. *Canadian Journal of Fisheries and Aquatic Sciences*, *69*(6), 1065–1079.
35. GREENSTREET, S. P. R., ROSSBERG, A. G., FOX, C. J., LE QUESNE, W. J. F., BLASDALE, T., BOULCOTT, P., MITCHELL, I., MILLAR, C., AND MOFFAT, C. F. (2012). Demersal fish biodiversity: species-level indicators and trends-based targets for the Marine Strategy Framework Directive. *ICES Journal of Marine Science*, *69*(10), 1789–1801.
36. FUNG, T., FARNSWORTH, K. D., REID, D. G., AND ROSSBERG, A. G. (2012). Recent data suggest no further recovery in North Sea Large Fish Indicator. *ICES Journal of Marine Science*, *69*(2), 235–239.
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38. ROSSBERG, A. G., FARNSWORTH, K. D., SATOH, K., AND PINNEGAR, J. K. (2011). Universal power-law diet partitioning by marine fish and squid with surprising stability-diversity implications. *Proceeding of the Royal Society B*, *278*(1712), 1617–1625.
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41. ROSSBERG, A. G., BRÄNNSTRÖM, Å., AND DIECKMANN, U. (2010). How trophic interaction strength depends on traits — A conceptual framework for representing multidimensional trophic niche spaces. *Theoretical Ecology*, *3*(1), 13–24.
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- cyanobacteria. *Limnology*, 9, 185–194.
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 47. ROSSBERG, A. G. (2008). Part-whole relations between food webs and the validity of local food-web descriptions. *Ecological Complexity*, 5(2), 121–131.
 48. ROSSBERG, A. G. (2008). Laplace transforms of probability distributions and their inversions are easy on logarithmic scales. *J. Appl. Prob.*, 45(2), 531–541.
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65. ÉBER, N., NÉMETH, S., ROSSBERG, A. G., KRAMER, L., AND BUKA, Á. (2002). Magnetic field effect on the thresholds of a sequence of transitions in the electroconvection of a homeotropic nematic liquid crystal. *Physical Review E*, *66*, 036213.
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Editorials, Reports, Conference Papers, Book Chapters

77. VISCONTI, P., ELIAS, V. V., I., S. P., FISCHER, M., ALI-ZADE V., BÁLDI, A., BRUCET, S., BUKVAREVA, E. N., BYRNE, K., CAPLAT, P., FEEST, A., GUERRA, C., GOZLAN, R., JELIĆ, D., KIKVIDZE, Z., LAVRILLIER, A., X., L. R., LIPKA, O. N., PETRÍK, P., SCHATZ, B., SMELYANSKY, I. E., VIARD, F., YA., A., BELLARD, C., BOCH, S., BÖHM, M., DAHLBERG, A., DOBROLYUBOVA, K. O., EKROOS, J., FAITH, D. P., FELDMAN, A., GALIL, B., CRIADO, M. G., GELTMAN, D. V., GUISAN, A., JOOSTEN, H., KARIMOV, B., KOROTENKO, V. A., KOTTA, J., KREUZBERG, E., KRYLENKO, M. V., KUROKHTIN, A., KUZNETSOVA, D., L., L. B., MEIRI, S., T.YU., M., MOLAU, U., MORATO, T., NAKHUT-

- SRISHVILI, G., NIKITINA, O. I., NIETO, A., NOVITSKY, R., NURKSE, K., A., P. R., RAAB, K., RAAB, K., ROLL, U., ROSSBERG, A. G., SELIMOV, R., SHUKUROV, E., SIRIN, A. A., SMITH, H. G., SNETHLAGE, M., SNETHLAGE, M., LEROY, B., SOLOVEV, B. A., SVETASHEVA, T., TANNEBERGER, F., THULLIER, W., TUNIEV, B. S., F., V. D. P., VANDVIK, V., VENN, S., VERSHININ, V., WINTER, M., ZADEREEV, E. S., AND ZAZANASHVILI, N. (2018). Status, trends and future dynamics of biodiversity and ecosystems underpinning nature's contributions to people. In *The IPBES Regional Assessment Report on Biodiversity and Ecosystem Services for Europe and Central Asia*, pp. 187–384.
78. ROSSBERG, A. G. (2018). On the mathematics of sustainability. *Nat. Sustain.*, 1(11), 615.
79. OOSTERBROEK, BRAM, KEUNE, HANS, MARTÍN-LÓPEZ, BERTA, CHURCH, ANDREW, BAŞAK DESSANE, ESRA, BERRY, PAM, CHENU, CLAIRE, CHRISTIE, MIKE, GERINO, MAGALI, OTEROS-ROZAS, ELISA, PAILLARD, SANDRINE, ROSSBERG, AXEL G., SCHRÖTER, MATTHIAS, VAN OUDENHOVEN, ALEXANDER P. E., ALOE KARABULUT, ARMAĞAN, AVCIOĞLU ÇOKÇALIŞKAN, BAŞAK, BILGIN, ADEM, BREEZE, TOM, BUKVAREVA, ELENA, DUEZ, PIERRE, FAITH, DANIEL P., GEIJZENDORFFER, ILSE, GOSAL, ARJAN, JAMILA HAIDER, L., KRETSCH, CONOR, LOZANO, JORGE, MEIRE, PATRICK, MENA SAUTEREL, JASMIN, MEYER, MARKUS, MOLEÓN, MARCOS, MORALES-REYES, ZEBENSUI, POTTS, SIMON G., POVILAITYTE-PETRI, VITALIJA, RUIZ ALMEIDA, ADRIANA, SÁNCHEZ-ZAPATA, JOSÉ A., SIEVERS-GLOTZBACH, STEFANIE, SIWICKA, EWA, SOROKIN, ALEXEY, SOUSA PINTO, ISABEL, STANGE, ERIK, SZYMONCZK, PAWEL, VUGDELIC, MARIJA, ROUNSEVELL, M., FISCHER, M., TORRE MARIN RANDO, A., AND MADER, A. (2018). Nature's contributions to people and quality of life. In *The IPBES Regional Assessment Report on Biodiversity and Ecosystem Services for Europe and Central Asia*, pp. 57–185.
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