List of Publications*

November 22, 2018

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. 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 and Fisheries*.

3. 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.

4. 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.

5. 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.

6. Schipper, A. M., Belmaker, J., de Miranda, M. D., Navarro, L. M., Böhning-Gaese, K., Costello, M. J., Dornelas, M., Foppen, 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,

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

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.

7. Santini, L., Belmaker, J., Costello, M. J., Pereira, H. M., Rossberg, A. G., Schipper, A. M., Ceauşu, S., Dornelas, M., Hilbers, J. P., Hortal, J., Huijbregts, M. A. J., Navarro, L. M., Schiffers, K. H., Visconti, P., and Rondinini, C. (2016). Assessing the suitability of diversity metrics to detect biodiversity change. *Biological Conservation*.

8. 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.

9. 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.

10. 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., Papadopoulou, 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.

11. 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.

12. 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.

13. 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.

14. 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.

15. 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.

16. 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.

17. 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.

18. 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.

19. 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.

20. 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.

21. Rombouts, I., Beaugrand, G., Fizzala, X., Gaill, F., Greenstreet, 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.

22. 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.

23. 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.

24. 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.

25. 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.

26. 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".

27. 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.

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31. 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.

32. Fink, P., Reichwaldt, E. S., Harrod, C., and Rossberg, A. G. (2012). Determining trophic niche width: An experimental test of the stable isotope approach. *Oikos*, *121*(12), 1985–1994. Doi:10.1111/j.1600-0706.2012.20185.x.

33. 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.

34. Rossberg, A. G. and Farnsworth, K. D. (2011). Simplification of structured population dynamics in complex ecological communities. *Theoretical Ecology*, *4*(4), 449–465.

35. Brännström, Å., Carlsson, L., and Rossberg, A. G. (2011). Rigorous conditions for food-web intervality in high-dimensional trophic niche spaces. *Journal of Mathematical Biology*, *63*(3), 575–592.

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37. Rossberg, A. G., Brännström, Å., and Dieckmann, U. (2010). Food-web structure in low- and high-dimensional trophic niche spaces. *Journal of the Royal Society Interface*, *7*, 1735–1743.

38. Mulder, C., Den Hollander, H. A., Vonk, J. A., Rossberg, A. G., Jagers op Akkerhuis, G. A. J. M., and Yeates, G. W. (2009). Soil resource supply influences faunal size–specific distributions in natural food webs. *Naturwissenschaften*, *96*(7), 813–826.

39. Serizawa, H., Amemiya, T., Rossberg, A. G., and Itoh, K. (2008). Computer simulations of seasonal outbreak and diurnal vertical migration of cyanobacteria. *Limnology*, *9*, 185–194.

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41. Rossberg, A. G., Ishii, R., Amemiya, T., and Itoh, K. (2008). The top-down mechanism for body-mass–abundance scaling. *Ecology*, *89*(2), 567–580.

42. Rossberg, A. G. (2008). Part-whole relations between food webs and the validity of local food-web descriptions. *Ecological Complexity*, *5*(2), 121–131.

43. Rossberg, A. G. (2008). Laplace transforms of probability distributions and their inversions are easy on logarithmic scales. *J. Appl. Prob.*, *45*(2), 531–541.

44. Kumar, P., Hiremath, U. S., Yelamaggad, C. V., Rossberg, A. G., and Krishnamurthy, K. S. (2008). Electroconvection in a homeotropic bent-rod nematic liquid crystal beyond the dielectric inversion frequency. *J. Phys. Chem. B*, *112*(32), 9753–9760.

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sion frequency. *J. Phys. Chem. B*, *112*(31), 9270–9274.

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48. Rossberg, A. G., Yanagi, K., Amemiya, T., and Itoh, K. (2006). Estimating trophic link density from quantitative but incomplete diet data. *Journal of Theoretical Biology*, *243*(2), 261–272.

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Editorials, Reports, Conference Papers, Book Chapters

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73. Rossberg, A. G., Caskenette, A., and Bersier, L.-F. (2017). Structural instability of food webs and food-web models and their implications for management. In J. C. Moore, P. C. de Ruiter, K. S. McCann, and W. V. (eds.), *Adaptive Food Webs: Stability and Transitions of Real and Model Ecosystems*, chap. 22, pp. 373–383. Cambridge University Press, Cambridge.

74. Rossberg, A. G., Uusitalo, L., Berg, T., Zaiko, A., Borja, A., and Lynam, C. (2015). Choosing indicators and their target ranges to assess sustainable use of marine ecosystems. In *Choosing indicators and their target ranges to assess sustainable use of marine ecosystems*, vol. Milestone Report 13 of *DEVOTES Project*, pp. 4–30.

75. ICES (2015). Report of the Workshop on Guidance for the Review of MSFD Decision Descriptor 4 – Foodwebs II (WKGMSFDD4-II). *ICES Document CM 2015\ACOM:49*, Copenhagen.

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terizations of complex systems. `http://arxiv.org/abs/physics/0308018`.

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Patents

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Theses

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99. Rossberg, A. G. (1994). *Onset of Double Diffusive Convection in Hele-Shaw Geometry*. Master's thesis, The University of Texas at Austin.