

SIMON A. LEVIN

E = Available as PDF

EI = Electronic Link Provided

LIST OF PUBLICATIONS

2016

554. **E** Hein, A., et al. (including S.A. Levin). 2015. Physical limits on bacterial navigation in dynamic environments. *Physical Review Letters*. *Submitted*.
553. **E** Fenichel, E. et al. (including S.A. Levin). Climate change, the great reallocator of wealth: Measuring sustainability in the face of a changing climate. *Nature Climate Change* 6: 237-244.
552. **E** Hartnett A.T., et al. (including S.A. Levin). Role of heterogeneous preference and local nonlinearity in consensus decision-making. *Physical Review Letters* 116: 038701.
551. **E** Pacheco, J.M., Santos, F.C., and S. Levin. Evolutionary dynamics of collective index insurance. *Special issue of Journal of Mathematical Biology to celebrate the 60th Birthday of Mats Gyllenberg*. *Submitted*.
550. **E** Schlüter, M., Tavoni, A., and S.A. Levin. 2016. Robustness of norm-driven cooperation in the commons. *Proceedings B. Proceedings of the Royal Society, Biological Sciences* 283(1822): 20152431.
549. **E** Rikkert, M. GM Olde et al. (including S.A. Levin). Slowing down the recovery as generic risk marker for acute severity in chronic diseases. *Critical Care Medicine* 44(3): 601-06.
548. **E** Reeves, M., **Levin, S.**, and D. Ueda. 2016. The biology of corporate survival. *Harvard Business Review (January-February)*: 47-55.

2015

547. **E** Messier, C., Puettmann, K., Chazdon, R., Andersson, K.P., Angers, V.A., Brotons, L., Filotas, E. Tittler, R., Parrott, L., and **S.A. Levin**. 2015. From management to stewardship: Viewing forests as complex adaptive systems in an uncertain world. *Conservation Letters* 8(5): 368-377.
546. **E** Sheffer, E. et al. (including S.A. Levin). 2015. Biome-scale nitrogen fixation strategies selected by climatic constraints on nitrogen cycle. *Nature Plants*: DOI: 10.1038/NPLANTS.2015.182.
545. **E** Levin, S.A. and A.W. Lo. 2015. Opinion: A new approach to financial regulation. *PNAS* 112(41): 12543-12544.
544. **E** Bonachela, J.A. et al. (including S.A. Levin). 2015. The role of phytoplankton diversity in the emergent oceanic stoichiometry. *Journal of Plankton Research*: DOI: 10.1093/plankt/fbv087. *Selected for the front cover of the magazine*.
543. **E** Berdahl, A. et al. (including S. A. Levin). 2015. On the evolutionary interplay between dispersal and local adaptation in heterogeneous environments. *Evolution* 69(6): 1390-1405.
542. **E** Levin, S.A. Foreword: A personal perspective on landscape ecology in the United States. 2015. *History of Landscape Ecology in the United States*, ed. Barrett G.W. and T.L. Barrett, v-viii. New York: Springer.
541. **E** Castillo-Chavez, C. et al. (including S.A. Levin). 2015. Beyond Ebola: Lessons for mitigating pandemics. *The Lancet* 3 (July 2015): e-354-355.
540. **E** Carter, N. et al. (including S. A. Levin). 2015. Modeling tiger population and territory dynamics using an agent-based approach. *Ecological Modelling* 312: 347-362.

- 539. E** Farrior C. et al. (including S.A. Levin). 2015. Decreased water limitation under elevated CO₂ amplifies potential for forest carbon sinks. *PNAS* 112(23): 7213-7218.
- 538. E** Morin, B.R. et al. (including S.A. Levin). 2015. The social benefits of private infectious disease-risk mitigation. *Theoretical Ecology*: DOI: 10.1007/s12080-015-0262-z.
- 537. E** Van Boeckel, T.P. et al. (including S.A. Levin). 2015. Global trends in microbial use in food animals. *PNAS* 112(18): 5649-5654.
- 536. E** Villa Martin, P. et al. (including S.A. Levin). 2015. Eluding catastrophic shifts. *PNAS*: 112(15): E1828–E1836.
- 535. E** Hannam, P.M. et al. (including S.A. Levin). 2015. Incomplete cooperation and co-benefits: Deepening climate cooperation with a proliferation of small agreements. *Social Science Research Network (January 1, 2015)*. Available at SSRN: <http://ssrn.com/abstract=2575251>. *Climatic Change. Accepted*.
- 534. E** Messier, C. et al. (including S.A. Levin). 2015. From management to stewardship: Viewing forests as complex adaptive systems in an uncertain world. *Conservation Letters*: DOI: 10.1111/conl.12156.
- 533. E** Levin, S.A. and I.D. Couzin, eds. 2015. *Journal of Statistical Physics: Special Issue: Collective Behavior* 158(3). Preface by Levin and Couzin.
- 532. E** Chisholm, R.A. et al. (including S.A. Levin). 2015. The potential for alternative stable states in nutrient-enriched invaded grasslands. *Theoretical Ecology*: DOI: 10.1007-s12080-015-0258-8.
- 531. E** Levin, A. 2015. Foreword: What mathematics can do for sustainability. *Bulletin of Mathematical Biology: Special Issue on Sustainability* 77: 251-253.
- 530. E** Bonachela, J.A. et al. (including S.A. Levin). 2015. Termite mounds can increase the robustness of dryland ecosystems to climatic change. *Science* 347(6222): 651-655.
- 529. E** Tarnita, C. et al. (including S.A. Levin). 2015. Fitness tradeoffs between spores and nonaggregating cells can explain the coexistence of diverse genotypes in cellular slime molds. *PNAS*: 112(9): 2776-2781.

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- 528. E** Tanner, C.J. et al. (including S.A. Levin). 2014. Urban ecology: Advancing science and society. *Frontiers in Ecology and the Environment* 12(10): 574-581.
- 527. E** Levin, S.A. 2014. Ecological protection and economic growth. *The Scientific Ravi* 23: 167. Available from: <http://www.gcu.edu.pk/SRavi.htm>
- 526. E** Levin, S.A. 2014. Some mathematical challenges in the theory of infectious diseases. In *Challenges of Mathematical Education: An American and Iranian Discussion: Conference Proceedings from the Mathematics Education Program (University of California, Irvine, January 27-29, 2014)*, ed. D. Saari, 71-72. Washington D.C.: The Mathematical Association of America.
- 525. E** Torney, C. et al. (including S.A. Levin). Social information use and the evolution of unresponsiveness in collective systems. *Journal of the Royal Society Interface* 12(103): 201409.
- 524. E** Perrings, C. et al. (including S.A. Levin). 2014. Merging economics and epidemiology to improve the prediction and management of infectious disease. *Journal of EcoHealth* 11(4): 464-75.
- 523. E** Frank, A.B. et al. (including S.A. Levin). 2014. Dealing with femtorisks in international relations. *PNAS* 111(49): 17356-17362.
- 522. E** De Froment, A.J., Rubenstein, D.I., and S.A. Levin. 2014. An extra dimension to decision-making in animals: The three-way trade-off between speed, effort per-unit-time and accuracy. *PLoS Computational Biology* 10(12): e1003937.

- 521. E** Lomas, W. et al. (including S.A. Levin). 2014. Impact of ocean phytoplankton diversity on phosphate uptake. *PNAS* 111(49): 17540-17545.
- 520. E** Troell, M. et al. (including S.A. Levin). 2014. Does aquaculture add resilience to the global food system? *PNAS* 11(37): 13257-13263.
- 519. E** Herlands, W. et al. (including S.A. Levin). 2014. A machine learning approach to musically meaningful homogeneous style classification. *Proceedings of the Twenty-Eighth Conference on Artificial Intelligence held July 27-31, 2014, Québec City, Canada*: 276-282.
- 518. E** Tavoni, A. and S.A. Levin. 2014. Managing the climate commons at the nexus of ecology, behavior and economics. *Nature Climate Change*: DOI: 10.1038/NClimate2375.
- 517. E** Morin, B.R. et al. (including S.A. Levin). 2014. Disease risk mitigation: The equivalence of two selective mixing strategies on aggregate contact patterns and resulting epidemic spread. *Journal of Theoretical Biology* 363: 262-270.
- 516. E** Levin, S.A. 2014. Public goods in relation to competition, cooperation, and spite. *PNAS* 111 (suppl. 3): 10838-10845.
- 515. E** Van Boeckel, T.P. et al. (including S.A. Levin). 2014. Global antibiotic consumption 2000-2010: An analysis of national pharmaceutical sales data. *Lancet Infectious Diseases*: DOI: 10.1016/S1473-3099(14)70780-7.
- 514. E** Berdahl, A., et al. (including S.A. Levin). 2014. A collective navigation hypothesis for homeward migration in anadromous salmonids. *Fish and Fisheries*: DOI: 10.1111/faf.12084.
- 513. E** Lei, J., Levin, S.A., and Nie, Q. 2014. Mathematical model of adult stem cell regeneration with cross-talk between genetic and epigenetic regulations. *PNAS*: DOI/10.1073/pnas.1324267111.
- 512. Ea-b** Vasconcelos, V.T. et al. (including S.A. Levin). 2014. Climate policies under wealth inequality. *PNAS*: DOI/10.1073/pnas.1323479111. a=article; b=supplementary information
- 511. E** Schertzer, E., Staver, A.C., and S.A. Levin. 2014. Implications of the spatial dynamics of fire spread for the bistability of savanna and forest. *Journal of Mathematical Biology* 70: 329-341. DOI: 10.1007/s00285-014-0757-z. (Published online 2014; published in print 2015)
- 510. E** Bonachela, J.A. and S.A. Levin. 2014. Evolutionary comparison between viral lysis rate and latent period. *Journal of Theoretical Biology* 345(21): 32-42.
- 509. E** Salvador, L. et al. (including S.A. Levin). 2014. Mechanistic analysis of the search behavior of *Caenorhabditis elegans*. *Journal of the Royal Society Interface* 11(92): 20131092.
- 508. E** Arrow, K., Ehrlich, P., and S.A. Levin. 2014. Some perspectives on linked ecosystems and socio-economic systems. In *Environment and Development Economics: Essays in Honor of Sir Partha Dasgupta*, ed. S. Barrett et al., 95-116. Springer-Verlag.
- 507. E** Klein, E.Y. et al. (including S.A. Levin). 2014. Cross-reactive immune responses as primary drivers of malaria chronicity. *Infection and Immunity* 82(1): 140.
- 506. E** Walker, J.G., Klein, E.Y., and S.A. Levin. 2014. Disease at the wildlife-livestock interface: Acaricide use on domestic cattle does not prevent transmission of a tick-borne pathogen with multiple hosts. *Veterinary Parasitology* 199(3-4): 206-214.
- 505. E** Thompson, S., Levin, S., and I. Rodríguez-Iturbe. 2014. Rainfall temperatures changes have confounding impacts on *Phytophthora cinnamomi* occurrence risk in the south western USA under climate change scenarios. *Global Change Biology* 20: 1299-1312.

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- 504. E** Levin, S.A. Dedication and foreword. 2013. *Special Issue Mathematical Biosciences (in honor of Professor Luigi M. Ricciardi)*. BIOCAMP 2012: Mathematical Modeling and Computational Topics in Biosciences, Vietri sul Mare (Italy), June 4-9, 2012.
- 503. E** Standburg-Peshkin, A. et al. (including S.A. Levin). 2013. Visual sensory networks and effective information transfer in animal groups. *Current Biology* 23(17): R709-R711.
- 502. E** Giuggioli, L. et al. (including S.A. Levin). 2013. Stigmergy, collective actions, and animal social spacing. *PNAS* 110(42): 16904-16909.
- 501. E** Pinsky, M.L. et al. (including S.A. Levin). 2013. Marine taxa track local climate velocities. *Science* 341(6151): 1239-1243.
- 500. E** Levin, S.A. 2013. Resolution of respect: Dick Root 1936-2013. *Bulletin of the ESA* (July): 210-215.
- 499. E** Levin, S.A. 2013. Preface to Special Issue in Honor of Carlos Castillo-Chavez. *Mathematical Biosciences and Engineering* 10 (5-6): xxv-xxvii.
- 498. E** Levin, S.A. 2013. Foreword. *Dispersal, Individual Movement and Spatial Ecology: A Mathematical Perspective*, ed. M.A. Lewis et al., v-vii. *Lecture Notes in Mathematics 2071*. Berlin; Heidelberg: Springer-Verlag.
- 497. E** Lade, S.J., Tavoni, A., Levin, S.A., and M. Schlüter. 2013. Regime shifts in a social-ecological system. *Theoretical Ecology (Special Issue on Regime Shifts and Tipping Points)* 6: 359-372.
- 496. E** Case, M.F., Halpern, C.B., and S.A. Levin. 2013. Contributions of gopher mound and casting disturbances to plant community structure in a Cascade Range meadow complex. *Botany* 91: 555-561.
- 495. E** Farrior, C.E. et al. (including S.A. Levin). 2013. Resource limitation in a competitive context determines complex plant responses to experimental resource additions. *Ecology* 94(11): 2505-2517.
- 494. E** Bonachela, J.A., Allison, S.D., Martiny, A.C., and S.A. Levin. 2013. A model for variable phytoplankton stoichiometry based on cell protein regulation. *BioGeoSciences* 10: 3241-3279.
- 493. Ea-b** Fischer, I. et al. (including S.A. Levin). 2013. Fusing enacted and expected mimicry generates a winning strategy that promotes the evolution of cooperation. *PNAS* 110(25): 10229-10233. a=article; b=supplementary information
- 492. E** Levin, S.A. et al. 2013. Social-economic systems as complex adaptive systems: Modeling and policy implications. *Environment and Development Economics* 18(2): 111-132.
- 491. E** Martiny, A. et al. (including S.A. Levin). 2013. Strong latitudinal patterns in the elemental ratios of marine plankton and organic matter. *Nature Geoscience* 6: 279-283.
- 490. E** Levin, S.A. 2013. Comment on “Voluntary Pledges and Green Growth in the Post-Copenhagen Economy” by Thomas Sterner and “World Economic Crises: Commodity Prices and Environmental Scarcity as Missing Links” by Ramón López. In *Development Challenges in a Postcrisis World*, ed. C. Sepúlveda, A. Harrison, and J.Y. Lin, 195-199. ABDCE Conference on Development Economics – Global 2011, Stockholm, Sweden (May 31-June 2, 2010). Washington, D.C.: World Bank.
- 489. E** Levin, S.A. 2013. Mathematics of sustainability. *AMS Notices* 60(4): 392-393.
- 488. E** Torney, C.J., Levin, S.A., and Couzin, I.D. 2013. Decision accuracy and the role of spatial interaction in opinion dynamics. *Journal of Statistical Physics* 151(1-2): 203-217.
- 487. E** Badiou, P. et al. (including S.A. Levin). 2013. *International Boreal Conservation Science Panel: Conserving the World’s Last Great Forest Is Possible: Here’s How*. (Science/Policy Briefing, International Boreal Conservation Science Panel and Associates, November 2011).

- 486. E** Kinzig, A.P. et al. (including S.A. Levin). 2013. Social norms and global environmental challenges: The complex interaction of behaviors, values, and policy. *BioScience* 63(3): 164-175.
- 485a-b. E** Nadell, C.D. et al. (including S.A. Levin). 2013. Cutting through the complexity of cell collectives. *Proceedings of the Royal Society B* 280(1755). DOI:10.1098/rspb.2012.2770. With supplement (485b).
- 484a-b. E** Fariori, C.E., R. Dybzinski, S. Levin, and S. Pacala. Competition for water and light in closed-canopy forests: A tractable model carbon of allocation with implications for carbon sinks. *American Naturalist* 181(3): 314-330. Appendices = 484b.
- 483. E** *Encyclopedia of Biodiversity*. 2013. Preface to the 2nd edition.
- 482. (E)/EI** Levin, S.A. 2012. Ecological resilience and robustness. *Encyclopedia Britannica*. Available from: <http://www.britannica.com/EBchecked/topic/1919092/ecological-resilience>.
- 481. E** Thompson, S., Levin, S., and Rodriguez-Iturbe, I. 2013. Linking plant disease risk and precipitation drivers: A dynamical systems framework. *The American Naturalist* 181(1): 1-38. Available from: <http://www.jstor.org/stable/10.1086/668572>.
- 480. E** Levin S.A. 2013. Cooperation and sustainability. In *Practicing Sustainability*, ed. G. Madhavan et al., 39-43. New York; Heidelberg; Dordrecht; London: Springer. *Copy of proof, but not published one.*

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- 479.** Frank, A. et al. (including S.A. Levin). 2012. Security in the age of systemic risk: Strategies, tactics, and options for dealing with femtorisks and beyond. IIASA Interim Report (IR-12-010). IIASA.
- 478. E** Scheffer, M. et al. (including S.A. Levin). 2012. Anticipating critical transitions. *Science* 338: 334-348.
- 477. E** Jiang, X. et al. (including S.A. Levin). 2012. Functional biogeography of ocean microbes revealed through non-negative matrix factorization. *PLoS One* 7(9): e43866.
- 476. E** Dixit, A.K., Levin, S.A., and Rubenstein, D.I. 2012. Reciprocal insurance among Kenyan pastoralists. *Theoretical Ecology*: DOI: 10.1007/s12080-012-0169-x.
- 475. E** Akcay, E. et al. (including S.A. Levin). 2012. Evolution of cooperation and skew under imperfect information. *PNAS* 109(37): 14936-14941.
- 474. E** Reeves, M., Haanaes, K., Love, C., and Levin, S.A. 2012. Sustainability as adaptability. *Journal of Corporate Finance* 24(2): 14-22.
- 473. E** Levin, S.A., Bonachela, J., and C.D. Nadell. 2012. Mathematical and computational challenges in the study of complex adaptive microbial systems. *The Social Biology of Microbial Communities*. NAS Press.
- 472a-b. E** Levin, S.A. 2012. Epilogue: The challenge of sustainability: Lessons from an evolutionary perspective. In *Sustainability Science: The Emerging Paradigm and the Urban Environment*, ed. M. Weinstein and R.E. Taylor, 168-174. New York: Springer. *** 473a = Entire book. 473b = Levin Epilogue. ***
- 471. E** Klein, E. et al (including S.A. Levin). 2012. Superinfection and the evolution of resistance to antimalarial drugs. *Proceedings of the Royal Society B: Biological Sciences* 279(1743): 3834-42.
- 470. E** Levin, S.A., Arrow, K.J., and Keohane, R.O. 2012. An uncommon woman for the Commons (Elinor Ostrom retrospective). *PNAS* 109(33): 13135-13136.
- 469. E** Shaw, A.K. and Levin, S.A. 2012. The evolution of intermittent breeding. *Journal of Mathematical Biology* 66(4-5): 685-703.
- 468. E** Staver, A.C. and Levin, S.A. 2012. Integrating theoretical climate and fire effects on savanna and forest systems. *The American Naturalist* 180(2) 180(2): 211-224.

467. **E** Levine, H., Schaefer, P. and Levin, S. 2012. Tribute to Lawrence E. Payne. *Notices of the AMS* 59(5): 653-54.
466. **E** Bonachela, J.A., Muñoz, M.A., and S.A. Levin. 2012. Patchiness and demographic noise in three ecological examples. *Journal of Statistical Physics* 148: 723-739.
465. **Eel** Levin, S.A. 2012. The trouble of discounting tomorrow. *Solutions* 3(4) (August 2012). Available at: <http://www.thesolutionsjournal.com/node/1144>.
464. **E** Chisholm, R.A. and S.A. Levin. 2012. Linking dispersal and immigration in multidimensional environments. *Bulletin of Mathematical Biology* 74(8): 1754-1763.
463. **E** Klein, E. et al. (including S.A. Levin). 2012. Relationship between treatment-seeking behavior and artemisinin drug quality in Ghana. *Malaria* 11: 110.
462. **E** Ziv, G. et al. (including S.A. Levin). 2012. Trading-off fish diversity, food security, and hydropower in the Mekong River Basin. *PNAS* 109 (15): 5609-5614.
461. **E** Tavoni, A., Schlueter, M., and S.A. Levin. 2012. The survival of the conformist: Social pressure and renewable resource management. *Journal of Theoretical Biology* 299: 152-161.
460. **E** Levin, S.A. 2012. Preface: Towards the marriage of theory and data. *Interface Focus* 2(1): DOI: rsfs.2012.0006.
459. **E** Leonard, NE et al. (including S.A. Levin). 2012. Decision versus compromise for animal groups in motion. *PNAS* 109(1): 227-232.

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458. **E** Shaw, A.K. and S.A. Levin. 2011. To breed or not to breed: A model of partial migration. *Oikos* 120: 1871-1879. Erratum.
- 457a-b. **E** Couzin, ID et al (including S.A. Levin). 2011. Uninformed individuals promote democratic consensus in animal groups. *Science* 334: 1578-1580.
*** 459a = Paper. 459b = Supplementary Information. ***
456. **E** Archibald, S., Staver, A.C., and S.A. Levin. 2011. The evolution of human-driven fire regimes in Africa. *PNAS* 109(3): 847-852.
- 455a-b. **E** Staver, A.C., Archibald, S., and S.A. Levin. 2011. The global extent and determinants of savanna and forest as alternative biome states. *Science* 334: 230-232. **a = paper; b = supporting online material.**
- 454a. **E** Bonachela, J.A., Raghbi, M., and S.A. Levin. 2011. Dynamic model of flexible phytoplankton nutrient uptake. *PNAS*: DOI:10.1073/pnas.1118012108. **454b = Errata.**
- 453a-b. **E** Fortuna, M.A., Bonachela, J.A., and S.A. Levin. 2011. Evolution of a modular software network. *PNAS*: DOI/10.1073/pnas.1115960108.
*** 455a = Paper. 455b = Supplementary Information. ***
452. **E** Espenshade, T.J., Olgiati, AS, and S.A. Levin. 2011. On nonstable and stable population momentum. *Demography* 48(4): 1581-1599.
451. **E** Ballantyne, F. IV, O.M.E. Schofield, and S.A. Levin. 2011. The emergence of regularity and variability in marine ecosystems: the combined role of physics, chemistry and biology. *Scientia Marina* 75(4): 719-731.
450. **E** Staver, A.C., S. Archibald, and S. Levin. 2011. Tree cover in sub-Saharan Africa: Rainfall and fire constrain forest and savanna as alternative stable states. *Ecology* 92(5): 1063-1072.

449. E Levin, S.A. 2011. Evolution at the ecosystem level: On the evolution of ecosystem patterns (Margalef Prize in Ecology Lecture 2010). *Contributions to Science* 7 (1): 11-16.
448. E Levin, S.A. 2011. *Building bridges between ecology and economics*. In *Bringing Ecologists and Economists Together: The Askö Meetings and Papers*, ed. T. Söderqvist, A. Sundbaum, C. Folk, and K-G. Mäler, 31-34. Dordrecht, Heidelberg, London, New York: Springer. Book webpage: www.springer.com/978-90-481-9475-9.
447. E Bonachela, J.A. *et al* (including S.A. Levin). 2011. Universality in bacterial colonies. *Journal of Statistical Physics* 144(2): 303-315.
446. E Mari, L. *et al* (including S.A. Levin). 2011. Hydrologic controls and anthropogenic drivers of the zebra mussel invasion of the Mississippi-Missouri river basin. *Water Resources Research* 47: W03523.
445. E Stock, C.A. *et al* (including S.A. Levin). 2011. On the use of IPCC-class models to assess the impact of climate on living marine resources. *Progress in Oceanography* 88: 1-27.
444. E Muneeppeerakul, R. *et al* (including S.A. Levin). 2011. Evolution of dispersal in explicitly spatial metacommunities. *Journal of Theoretical Biology* 269: 256-265.

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443. E Nara, P.L. *et al* (including S.A. Levin). 2010. How can vaccines against influenza and other viral diseases be made more effective? *PLoS Biology* 8(12): e1000571.
442. E Torney, C.J., S.A. Levin, and I.D. Couzin. Specialization and evolutionary branching within migratory populations. *PNAS* 107(47): 20394-9.
441. E Levin, S.A. 2010. Complex adaptive systems and the challenge of sustainability. In *Toward a Science of Sustainability: Report from the NSF Toward a Science of Sustainability Conference, Warrenton, VA, November 29-December 9, 2009*, ed. S.A. Levin and W.C. Clark, 83-36. Princeton, NJ: Princeton University Printing and Mailing Services.
440. E Anderies, J.M. *et al* (including S.A. Levin). 2010. Working group II: Human-environment systems (HES) as complex adaptive systems. In *Toward a Science of Sustainability*, ed. S.A. Levin and W.C. Clark, 19-28. *Report from the NSF Toward a Science of Sustainability Conference, Warrenton, VA, November 29-December 9, 2009*. Princeton, NJ: Princeton University Printing and Mailing Services.
439. E Levin, S.A. and W.C. Clark. 2010. Executive Summary: Toward a science of sustainability. In *Toward a Science of Sustainability: Report from the NSF Toward a Science of Sustainability Conference, Warrenton, VA, November 29-December 9, 2009*, ed. S.A. Levin and W.C. Clark, 7-10. Princeton, NJ: Princeton University Printing and Mailing Services.
438. E Levin, S.A. and W.C. Clark, eds. 2010. *Toward a Science of Sustainability: Report from the NSF Toward a Science of Sustainability Conference, Warrenton, VA, November 29-December 9, 2009*. Princeton, NJ: Princeton University Printing and Mailing Services.
*** (Full report)***
437. E Levin, S.A. 2010. The evolution of ecology. *Chronicle of Higher Education* (August 13): B9-B11.
436. E Sagarin, R. *et al* (including S.A. Levin). 2010. Decentralize, adapt, and cooperate. *Nature* 465: 292-293.
435. E Levin, S.A. 2010. Prologue. In *Modeling Paradigms and Analysis of Disease Transmission Models*, ed. A.B. Gumel and S. Lenhart, xiii-xiv. *DIMACS Series in Discrete Mathematics and Theoretical Computer Science* 75. Providence, RI: American Mathematical Society.
434. E Komarova, N.L. and S.A. Levin. 2010. Eavesdropping and language dynamics. *Journal of Theoretical Biology* 264(1): 104-118.
433. E Gleick, P.H. *et al* (including S.A. Levin). 2010. Climate change and the integrity of science. *Science* 328: 689-670.

432. **E** Raghieb, M., S.A. Levin, and I.G. Kevrekidis. 2010. Multiscale analysis of collective motion and decision-making in swarms: An advection-diffusion equation with memory approach. *Journal of Theoretical Biology* 264(3): 893-213.
431. **E** Bartumeus, F., L. Giuggiolli, M. Louzao, V. Bretagnolle, D. Oro, and S.A. Levin. 2010. Fishery discards impact on seabird movement patterns at regional scales. *Current Biology* 20: 1-6: doi:10.1016/j.cub.2009.11.073.
430. **E** Levin, S.A. 2010. Crossing scales, crossing disciplines: Collective motion and collective action in the Global Commons. A special issue of *Philosophical Transactions of the Royal Society B* (Royal Society's 350th Anniversary) 365(1537): 13-17.

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429. **E** Levin, S.A. 2009. Preface. *Princeton Guide to Ecology*, pp. vii-viii in S.A. Levin, ed. *Princeton Guide to Ecology*. Princeton University Press, Princeton, New Jersey.
428. Levin, S.A., ed. 2009. *Princeton Guide to Ecology*. Princeton University Press, Princeton, NJ.
427. **E** Levin, S.A. 2009. Games, groups, norms, and societies, pp. 143-153 in S.A. Levin, ed. *Games, Groups, and the Global Good*. Springer, Berlin; London.
426. **E** Levin, S.A. 2009. Preface. *Games, Groups, and the Global Good*, pp. v-vi in S.A. Levin, ed. *Games, Groups, and the Global Good*. Springer, Berlin; London.
425. Levin, S.A., ed. 2009. *Games, Groups, and the Global Good*. Springer, Berlin; London.
424. **E/EI** Johnson, D. and S. Levin. 2009. The tragedy of cognition: Psychological biases and environmental inaction. *Current Science* 97(11). Available from: <http://www.ias.ac.in/currsci/>.
423. **E** Walker, B., S.A. Levin *et al.* 2009. Looming global-scale failures and missing institutions. *Science* 235: 1345-1346.
422. **E** Menge, D.N.L. and S.A. Levin. 2009. Facultative versus obligate nitrogen fixation strategies and their ecosystem consequences. *The American Naturalist* 4(174): 466-477.
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