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Curriculum Vitae

Peter Turchin

Department of Ecology and Evolutionary Biology
 University of Connecticut, Storrs, CT 06269-3043
 tel: 860-486-3603; fax: 860-486-6364
 e-mail: Peter.Turchin@UConn.edu
 Web site: <http://cliodynamics.info/>

Education:

1985	Ph.D.	Duke University	Zoology (minor: mathematics)
1980	B.A.	New York University	Biology (cum laude)
1975–7		Moscow State University	Biology

Professional Positions:

The Evolution Institute

2010– Vice-President and Founding Member of the Board of Directors

Department of Ecology and Evolutionary Biology, University of Connecticut

2002– Professor
 1997–02 Associate Professor
 1994–97 Assistant Professor

Santa Fe Institute

2007–8 Visiting Professor

Southern Forest Experiment Station, Forest Service Research

1990–94 Supervisory Ecologist
 1988–90 Ecologist

Department of Zoology, University of Washington

1988 Lecturer
 1985–88 Postdoctoral Research Associate

Department of Zoology, Duke University

1983–85 Teaching Assistant

Professional Activities:

Symposia, workshops, and working groups organized

2012 Historical Database of Sociocultural Evolution: Design and Coding. November 2012; Storrs, CT.

2012 Towards a Formal Theory for the Evolution of Human Social Complexity. An investigative workshop at the NIMBios. February 6–8, 2012; Knoxville, TN (*with Laura Fortunato and Sergey Gavrilets*)

2011 An Evolutionary Approach to the Twin Problems of Failed States and Nation-Building. A Working Conference Organized by the Evolution Institute. December 3–5, 2011; Palo Alto, CA

2006 Measuring and modeling cycles of state formation, decline and upward sweeps since the bronze age. San Diego (*with C. Chase-Dunn*).

2004 Analyzing Complex Macrosystems as Dynamic Networks. A workshop at the Santa Fe Institute (*with D. White and C. Chase-Dunn*).

2004 Studying Political Centralization Cycles as a Dynamic Process. Organized an invited panel at the Third International Conference on Hierarchy and Power in the History of Civilizations, Moscow, Russia.

2000–7 Working group on Landscape Ecology of Reintroduced Ungulate Populations (an NSF-funded joint project of the universities of Connecticut, Wisconsin, Alberta, and Guelph)

1998 Nonlinear time-series analysis. Workshops at Leiden University, Netherlands; and University of Marseilles, France.

1997 Building empirically-based theory for spatial ecology: tales from the front lines. Invited Symposium at Ecological Society of America Annual Meeting, Albuquerque, NM.

1995–98 Working Group on Complex Population Dynamics (*with W. Murdoch*). NCEAS, Santa Barbara, CA.

Service

2012– Editor-in-Chief, *SESHAT: Historical Database of Sociocultural Evolution*
 2011– Editor-in-Chief, *Social Evolution Forum*
 2010– Editor-in-Chief, *Clodynamics: The Journal of Theoretical and Mathematical History*
 2004 Sino-US Collaboration Project *Ecological Complexity and Ecosystem Services*
 2000 NSF Site Visit Team for the National Center for Ecological Analysis and Synthesis
 1999–02 Editorial Board, *Researches in Population Ecology*
 1998–00 Associate Editor, *Ecology Letters*.
 1995–97 Scientific Advisory Board, National Center for Ecological Analysis and Synthesis; Santa Barbara, CA
 1993–97 NSF Ecological Studies Panel
 1992 NSF Special Projects Panel

Honors or distinctions

2010 Main guest speaker for IDER symposium on *Modeling reality: the use of mathematical models to describe and predict social dynamics*. Ben Gurion University of the Negev, Israel
 2004 *ISI Highly Cited* identified Turchin as a top cited author in the field of Ecology/Environment
 2003 UConn Alumni Association's Award: Faculty Excellence in Research
 2000–01 Fulbright Scholarship
 2000 Chancellor's Research Excellence Award (University of Connecticut)
 1999 Invited Lecturer at Oikos Seminar on Costs and Gains of Recent Progress in Ecology
 1997 Elected Chair of the Theoretical Ecology Section of the Ecological Society of America
 1995 Invited Guest Speaker at the Society of Population Ecology Meeting; Mie, Japan

Postdoctoral Associates:

2011–13 Pieter Francois
 2004–05 Juan Manuel Morales
 2003–05 Mosheh Wolf
 1999–03 Kim Cuddington (currently at Miami University of Ohio)
 1995–98 Rich Wilkens (currently at Dowling College)
 1993–95 Jim Cronin (currently at University of Louisiana)
 1989–90 Andy Taylor (currently at University of Hawaii)

Ph.D. students graduated:

Jay Bancroft (2000)
 Eric Schauber (2000)
 Kristian Omland (2001)
 Juan Manuel Morales (2004)

Research grants

2011–15 ESRC Ritual, Community, and Conflict (Project Director: H. Whitehouse)
 2005–08 NSF Global state formation: modeling the rise, fall and upward sweeps of large polities in world history and the global future (with C. Chase-Dunn and E. Anderson)
 2005–07 NSF Supplement to the 2000–5 NSF-IRCEB grant
 2000–05 NSF-IRCEB Building a mechanistic basis for landscape ecology of ungulate populations (with J. Fryxell, M. Turner, M. Boyce, and E. Merrill)
 1997–99 NSF Dispersal as a mechanistic basis for landscape ecology: the role of scale and heterogeneity.
 1997–2000 NSF Direct and indirect effects on community resilience in oak forests.
 1996–98 NCEAS Working group on complex population dynamics.

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| 1995–98 | NSF | Testing reaction-diffusion theory: spatial dynamics in a bark beetle–predator system. |
| 1994–96 | UConn RF | Investigating small mammal cycles with empirically-based models. |
| 1992–95 | USDA | Evaluation of the area-wide efficacy of direct control tactics for southern pine beetle. |
| 1992–94 | USDA-FS | Effects of thinning on southern pine beetle risk to old-growth pine stands. |
| 1991–92 | USDA-FS | Effects of mixed pine – hardwood management on pine mortality due to bark beetles: a landscape approach. |
| 1989–91 | USDA | Empirical and quantitative analysis of intraforest dispersal in the southern pine beetle. |
| 1986–88 | NSF | Influence of host patch size on herbivore population dynamics. |

Publications

Books

- Turchin P, Nefedov SA. 2009. *Secular Cycles*. Princeton University Press, Princeton, NJ.
- Turchin P. 2005. *War and Peace and War: Life Cycles of Imperial Nations*. Pi Press. (A Serbian-language translation was published in November 2006). Published as a paperback under the title *War and Peace and War: The Rise and Fall of Empires* by Plume in February 2007.
- Turchin P. 2003. *Historical Dynamics: Why States Rise and Fall*. Princeton University Press, Princeton, NJ. (Russian translation published in 2007)
- Turchin P. 2003. *Complex Population Dynamics: a Theoretical/Empirical Synthesis*. Princeton University Press, Princeton, NJ.
- Turchin P. 1998. *Quantitative Analysis of Movement: Measuring and Modeling Population Redistribution in Animals and Plants*. Sinauer Associates, Sunderland, MA.

Articles in Nature, Science, or PNAS

- Turchin P. 2010. 2020: Political Instability May Play a Role. *Nature* 463: 608. (an invited letter)
- Turchin P, Scheidel W. 2009. Coin Hoards Speak of Population Declines in Ancient Rome. *PNAS* 106: 17276-17279.
- Turchin P. 2008. Arise 'cliodynamics'. *Nature* 454:34-35.
- Turchin, P. 2008. Building nations after conflict (a book review). *Nature* 453:986-987.
- Burtsev M, Turchin P. 2006. Evolution of cooperative strategies from first principles. *Nature* 440: 1041-4.
- Turchin P. 2003. Evolution in population dynamics. *Nature* 424: 257-258.
- Ellner SP, McCauley E, Kendall BE, Briggs CJ, Hosseini PR, Wood SN, Janssen A, Sabelis MW, Turchin P, Nisbet RM, Murdoch WW. 2001. Habitat structure and population persistence in an experimental community. *Nature* 412: 538-543.
- Turchin P, Oksanen L, Ekerholm P, Oksanen T, Henttonen H. 2000. Are lemmings prey or predators? *Nature* 405: 562-565.
- Turchin P, Taylor AD, Reeve JD. 1999. Dynamical role of predators in population cycles of a forest insect: an experimental test. *Science* 285: 1068-1071.
- Hanski I, Turchin P, Korpimäki E, Henttonen H. 1993. Population oscillations of boreal rodents: regulation by mustelid predators leads to chaos. *Nature* 364: 232-235.
- Turchin P. 1990. Rarity of density dependence or population regulation with lags? *Nature* 344: 660-663.

Articles in other peer-reviewed journals

- Turchin, Peter, Harvey Whitehouse, Pieter François, Edward Slingerland, and Mark Collard. 2012. A Historical Database of Sociocultural Evolution. *Cliodynamics* 3: 271–293.
- Turchin, P. 2012. Dynamics of Political Instability in the United States, 1780–2009. *Journal of Peace Research* 4: 577-591.
- Turchin, P. 2012. Religion and Empire in the Axial Age. *Religion, Brain & Behavior* 2: 256-260.
- Turchin, P. 2011. Social Tipping Points and Trend Reversals: A Historical Approach. *Vestnik Moskovskogo Universiteta, Series XXVII Globalistika i Geopolitika, Number 1-2*: 92-104.
- Turchin, P. 2011. Strange Parallels: Patterns in Eurasian Social Evolution. *Journal of World Systems Research* 17(2): 538-552.
- Turchin P. 2011. Toward Cliodynamics – an Analytical, Predictive Science of History. *Cliodynamics* 2: 167-186.
- Turchin, P. 2011. Warfare and the Evolution of Social Complexity: a Multilevel Selection Approach. *Structure and Dynamics* Vol. 4, Iss. 3, Article 2:1-37.
- Gavrilets S, Anderson D, Turchin P. 2010. Cycling in the Complexity of Early Societies. *Cliodynamics* 1: 58-80.
- Turchin P, Peiros I, Gell-Mann M. 2010. Analyzing Genetic Connections between Languages by Matching Consonant Classes. *Journal of Language Relationship* 3:117-126.
- Turchin P, Gavrilets S. 2009. Evolution of Complex Hierarchical Societies. *Social Evolution and History* 8(2): 167-198.
- Turchin, P. 2009. A Theory for Formation of Large Empires. *Journal of Global History* 4:191-207.
- Wolf M, Frair J, Merrill E, Turchin P. 2009. The attraction of the known: the importance of spatial familiarity in habitat selection in wapiti *Cervus elaphus*. *Ecography* 32: 401-410.

- Turchin, P. 2009. Long-term population cycles in human societies. Pages 1-17 in R. S. Ostfeld and W. H. Schlesinger, editors. *The Year in Ecology and Conservation Biology, 2009*. Ann. N. Y. Acad. Sci. 1162.
- Turchin, P. 2008. Theories and models in empirical investigation of historical dynamics (in Russian). *Istoriya i sovremennost* 2008(2): 10-33.
- Turchin P, Adams JM, Hall TD. 2006. East-West Orientation of Historical Empires and Modern States. *Journal of World-Systems Research* 12:219-229.
- Turchin P, Korotayev A. 2006. Population Dynamics and Internal Warfare: a Reconsideration. *Social Evolution and History* 5(2): 121-158.
- Ellner SP, Turchin P. 2005. When can noise induce chaos and why does it matter: a critique. *Oikos* 111: 620-631.
- Turchin P. 2005. Dynamical Feedbacks between Population Growth and Sociopolitical Instability in Agrarian States. *Structure and Dynamics* 1(1): Article 3.
- Turchin P. 2005. A Primer on Statistical Analysis of Dynamical Systems in Historical Social Sciences (with a Particular Emphasis on Secular Cycles). *Structure and Dynamics* 1(1): Article 4.
- Turchin P. 2005. Response to Oscillations in Population Sizes – From Ecology to History. *Structure and Dynamics* 1(1): Article 11.
- Kendall BE, Ellner SP, McCauley E, Wood SN, Briggs CJ, Murdoch WW, Turchin P. 2005. Population cycles in pine looper moth (*Bupalus piniarius*): dynamical tests of mechanistic hypotheses. *Ecological Monographs* 75: 259-276.
- Nazaretyan AP, Borodkin, LI, Malkov, SYu, Chernavskiy DS, Turchin PV, Lyuri DI, Armand, AD, Krichevets AN, Ionov IN, Kazankov AA, Borinsaya SA, Litvinenko VA, Karavayev VA. 2004. Vozmozhny li matematicheskie modeli v istorii? (Are mathematical models in history possible?) *Obschestvennyye nauki i sovremennost'* 2004(3): 111-122.
- Turchin P, Wood SN, Ellner SP, Kendall BE, Murdoch WW, Fischlin A, Casas J, McCauley E, Briggs CJ. 2003. Dynamical effects of plant quality and parasitism on population cycles of larch budmoth. *Ecology* 84: 1207-1214.
- Boyce MS, Mao JS, Merrill EH, Fortin D, Turner MG, Fryxell J, Turchin P. 2003. Scale and heterogeneity in habitat selection by elk in Yellowstone National Park. *Ecoscience* 10:321-332.
- Bancroft JS, Turchin P. 2003. An experimental test of fragmentation and loss of habitat with *Oryzaephilus surinamensis*. *Ecology* 84: 1756-1767.
- Turchin, P. 2003. Secular waves in historical demography (in Russian). *Priroda* 6: 3-12.
- Turchin P, Hall TD. 2003. Spatial synchrony among and within world-systems: insights from theoretical ecology. *Journal of World Systems Research* 9: 37-64.
- Turchin P. 2002. Are there general laws in population ecology? (In Russian) *Zhurnal Obshchey Biologii* 63: 3-14. (This is a reworked Russian translation of the *Oikos* 94:17 article.)
- Schauber EM, Kelly D, Turchin P, Simon C, Lee WG, Allen RB, Payton IJ, Wilson PR, Cowan PE, Brockie RE. 2002. Synchronous and asynchronous masting by 18 New Zealand plant species: the role of temperature cues and implications for climate change. *Ecology* 83: 1214-1225.
- Turchin P, Batzli GO. 2001. Availability of food and the population dynamics of arvicoline rodents. *Ecology* 82: 1521-1534.
- Hanski I, Henttonen H, Korpimaki E, Oksanen L, Turchin P. 2001. Small rodent dynamics and predation. *Ecology* 82: 1505-1520.
- Turchin P. 2001. Does population ecology have general laws? *Oikos* 94: 17-26.
- Turchin P, Hanski I. 2001. Contrasting alternative hypotheses about rodent cycles by translating them into parameterized models. *Ecology Letters* 4: 267-276.
- Berryman AA, Turchin P. 2001. Identifying the density-dependent structure underlying ecological time series. *Oikos* 92: 265-270.
- McCauley E, Kendall BE, Janssen A, Wood S, Murdoch WW, Hosseini P, Briggs C, Ellner SE, Nisbet RN, Sabelis MW, Turchin P. 2000. Inferring colonization processes from population dynamics in spatially structured predator-prey systems. *Ecology* 81: 3350-3361 .
- Turchin P, Ellner SP. 2000. Living on the edge of chaos: population dynamics of Fennoscandian voles. *Ecology* 81: 3099-3116.
- Grover JP, McKee D, Young S, Godfray HCJ, Turchin P. 2000. Periodic dynamics in *Daphnia* populations: biological interactions and external forcing. *Ecology* 81: 2781-2798.

- Cronin JT, Reeve JD, Wilkens R, Turchin P. 2000. The pattern and range of dispersal of a checkered-beetle predator relative to its bark-beetle prey. *Oikos* 90: 127-138.
- Turchin P, Davidson J, Hayes JL. 1999. Effects of thinning on development of southern pine beetle infestations in old-growth stands. *Southern Journal of Applied Forestry* 23: 193-196.
- Kendall BE, Briggs CJ, Murdoch WW, Turchin P, Ellner SP, McCauley E, Nisbet RM, Wood SN. 1999. Why do populations cycle? A synthesis of statistical and mechanistic modeling approaches. *Ecology* 80: 1789-1805.
- Turchin P, Berryman AA. 1999. Detecting cycles and delayed density dependence: a comment on Hunter and Price (1998). *Ecological Entomology* 25: 1-3.
- Cronin JT, Turchin P, Hayes JL, Steiner CA. 1999. Area-wide efficacy of a localized forest pest management practice. *Environmental Entomology* 28: 496-504.
- Turchin P. 1999. Population regulation: a synthetic view. *Oikos* 84: 153-159.
- Reeve JD, Rhodes DJ, Turchin P. 1998. Scramble competition in southern pine beetle, *Dendroctonus frontalis*. *Ecological Entomology* 23: 433-443.
- Turchin P, Hanski I. 1997. An empirically-based model for the latitudinal gradient in vole population dynamics. *American Naturalist* 149: 842-874.
- Turchin P, Ostfeld RS. 1997. Effects of density and season on the population rate of change in the meadow vole. *Oikos* 78: 355-361.
- Berryman A, Turchin P. 1997. Detection of delayed density dependence: comment. *Ecology* 78: 318-320.
- Turchin P. 1996. Nonlinear time-series modeling of vole population fluctuations. *Researches in Population Ecology* 38: 121-132.
- Turchin P. 1996. Fractal analyses of animal movement: a critique. *Ecology* 77: 2086-2090.
- Turchin P, Odendaal FJ. 1996. Measuring the effective sampling area of a pheromone trap for monitoring population density of southern pine beetle (Coleoptera: Scolytidae). *Environmental Entomology* 25: 582-588.
- Turchin P. 1995. Chaos in microtine populations. *Proceedings of the Royal Society of London B* 262: 357-361.
- Ellner S, Turchin P. 1995. Chaos in a noisy world: new methods and evidence from time series analysis. *American Naturalist* 145: 343-375.
- Turchin P. 1993. Chaos and stability in rodent population dynamics: evidence from nonlinear time-series analysis. *Oikos* 68: 167-171.
- Hastings A, Hom CL, Ellner S, Turchin P, Godfray HCJ. 1993. Chaos in ecology: is mother nature a strange attractor? *Annual Review of Ecology and Systematics* 24: 1-33.
- Turchin P. 1993. The logistic equation revisited. *TREE* 8: 68.
- Turchin P, Thoeny W. 1993. Quantifying dispersal of southern pine beetles with mark-recapture experiments and a diffusion model. *Ecological Applications* 3: 187-198.
- Schowalter TD, Turchin P. 1993. Southern pine beetle infestation development: interaction between pine and hardwood basal areas. *Forest Science* 39: 201-210.
- Turchin P, Taylor AD. 1992. Complex dynamics in ecological time-series. *Ecology* 73: 289-305.
- Odendaal FJ, Turchin P, Hoy G, Wickens P, Wells J, Schroeder G. 1992. *Bullia digitalis* (Gastropoda) actively pursues moving prey by swash-riding. *Journal of Zoology London* 228: 103-113.
- Turchin P. 1991. Translating foraging movements in heterogeneous environments into the spatial distribution of foragers. *Ecology* 72: 1253-1266.
- Turchin P. 1991. Reconstructing endogenous dynamics of a laboratory *Drosophila* population. *Journal of Animal Ecology* 60: 1091-1098.
- Turchin P, Odendaal FJ, Rausher MD. 1991. Quantifying insect movement in the field. *Environ Entomol* 20: 955-963.
- Turchin P, Lorio PL, Taylor AD, Billings RF. 1991. Why do populations of southern pine beetles (Coleoptera: Scolytidae) fluctuate? *Environmental Entomology* 20: 401-409.
- Turchin P. 1989. Population consequences of aggregative movement. *Journal of Animal Ecology* 58: 75-100.
- Turchin P. 1989. Beyond simple diffusion: models of not-so-simple movement in animals and cells. *Comments on Theoretical Biology* 1: 65-83.
- Odendaal FJ, Turchin P, Stermitz FR. 1989. Resource distribution, harassment by males and spatial patterns of female *Euphydryas anicia* (Nymphalidae). *Oecologia* 78:283-288.

- Turchin P, Kareiva P. 1989. Aggregation in *Aphis varians*: an effective strategy for reducing predation risk. *Ecology* 70: 1008-1016.
- Odendaal FJ, Turchin P, Stermitz PR. 1988. An incidental-effect hypothesis explaining aggregation of males in a population of *Euphydryas anicia*. *American Naturalist* 132: 735-749.
- Turchin P. 1988. The effect of host-plant density on the numbers of Mexican bean beetles, *Epilachna varivestis*. *American Midland Naturalist* 119: 15-20.
- Turchin P. 1987. The role of aggregation in the response of Mexican bean beetles to host-plant density. *Oecologia* 71: 577-582.
- Turchin P. 1986. Modelling the effect of host patch size on Mexican bean beetle emigration. *Ecology* 67: 124-132.

Book Chapters

- Turchin PV. 2010. Cycles Nested within Cycles: Complex Dynamics of Political Instability (in Russian). PP 46-53 in Pantin VI, Lapkin VV (eds). *Cycles of Political Development: The Forecasting Potential* (IMEMO RAN, Moscow, Russian Federation).
- Turchin PV. 2010. Processes Influencing Medium-Term Dynamics of Political Instability in the USA (2010–2020). (In Russian) *Economic Strategies* 5(79): 10-21.
- Turchin P. 2008. Modeling periodic waves of integration in the Afro-Eurasian world-system. Pp. 163-191 in George Modelski, Tessaleno Devezas, William R. Thompson (eds). *Globalization as Evolutionary Process: Modeling Global Change*. Routledge, NY.
- Turchin PV. 2007. General empirical patterns in dynamics, cliodynamics, and demographic-structural theory. Pp. 248-251 in Turchin PV, Grinin LE, Malkov SYu, Korotayev AV (editors). 2007. *History and Mathematics: Conceptual Landscape and Research Directions* (in Russian). URSS, Moscow
- Turchin PV. 2007. Perspective of mathematical history. Pp. 8-18 in Turchin PV, Grinin LE, Malkov SYu, Korotayev AV (editors). 2007. *History and Mathematics: Conceptual Landscape and Research Directions* (in Russian). URSS, Moscow
- Redman CL, Crumley CL, Hassan FA, Hole F, Morais J, Riedel F, Scarborough VL, Tainter JA, Turchin P, Yasuda Y. 2007. Group report: Millennial perspectives on the dynamic interactions of climate, people, and resources. Pp 115-150 in Costanza R, Graumlich LJ, Steffen W (eds). *Sustainability or Collapse? An Integrated History and Future of People on Earth*. MIT Press, Cambridge.
- Hall TD, Turchin P. 2007. Lessons from population ecology for world-systems analyses of long-distance synchrony. Pp. 74-90 in Hornborg A, Crumley C (eds). *The World System and the Earth System: Global socioenvironmental change and sustainability since the Neolithic*. Left Coast Press, Walnut Creek, CA.
- Chase-Dunn C, Hall TD, Turchin P. 2007. World-systems in the biogeosphere: urbanization, state formation and climate change since the Iron Age Pp. 132-148 in Hornborg A, Crumley C (eds). *The World System and the Earth System: Global socioenvironmental change and sustainability since the Neolithic*. Left Coast Press, Walnut Creek, CA.
- Turchin P, Korotayev A, Grinin L. 2006. Why do we need models of historical dynamics. Pp. 4-8 in: Turchin P, Grinin, L, Korotayev, A, de Munck VC (editors) *History and Mathematics: Historical Dynamics and Development of Complex Societies*. URSS, Moscow.
- Turchin P. 2006. Scientific prediction in historical sociology: Ibn Khaldun meets Al Saud. Pp. 9-38 in: Turchin P, Grinin, L, Korotayev, A, de Munck VC (editors) *History and Mathematics: Historical Dynamics and Development of Complex Societies*. URSS, Moscow.
- Turchin P, Briggs CJ, Ellner SP, Fischlin A, Kendall BE, McCauley E, Murdoch WW, Wood SN. 2002. Population Cycles of the Larch Budmoth in Switzerland. Pages 130-141 in: Berryman A (ed). *Population Cycles: the case for Trophic Interactions*. Oxford University Press, New York.
- Reeve, JD, Turchin P. 2002. Evidence for predator-prey cycles in a bark beetle. Pages 92-108 in: Berryman A (ed). *Population Cycles: the case for Trophic Interactions*. Oxford University Press, New York.
- Tanhuanpää M, Ruohamäki, K, Turchin P, Ayres MP, Bylund H, Kaitaniemi P, Tammaru T, Haukioja E. 2002. Population cycles of the autumnal moth in Fennoscandia. Pages 130-141 in: Berryman A (ed). *Population Cycles: the case for Trophic Interactions*. Oxford University Press, New York.
- Turchin P, Ellner S. 2000. Modeling time-series data. Pp 33-48 in Perry JN, Smith RH, Woivod IP, Morse D (eds). *Chaos in Real Data*. Kluwer Academic Publishers.

- Huffaker C, Berryman A, Turchin P. 1999. Dynamics and regulation of insect populations. Pp 269-312 in Huffaker CB, Gutierrez AP (eds). *Ecological Entomology*. 2nd edition. Wiley and Sons, New York.
- Turchin P, Omland KS. 1999. Quantitative analysis of insect movement. Pp 463-502 in Huffaker CB, Gutierrez AP (eds). *Ecological Entomology*. 2nd edition. Wiley and Sons, New York.
- Turchin P, Simmons G. 1997. Movements of animals in congregations: an Eulerian analysis of bark beetle swarming. Pp 113-125 in: Parrish JK, Hamner WM, eds. *Animal Groups in Three Dimensions*. Cambridge University Press.
- Parrish JK, Turchin P. 1997. Individual decisions, traffic rules, and emergent pattern: a Lagrangian analysis. Pp 126-142 in: Parrish JK, Hamner WM, eds. *Animal Groups in Three Dimensions*. Cambridge University Press.
- Turchin P. 1997. Quantitative analysis of animal movements in congregations. Pp 107-112 in: Parrish JK, Hamner WM, eds. *Animal Groups in Three Dimensions*. Cambridge University Press.
- Turchin P, Reeve JD, Cronin JT, Wilkens RT. 1997. Spatial pattern formation in ecological systems: bridging theoretical and empirical approaches. Pp 195-210 in: Bascompte J, Solé RV (eds). *Modelling Spatiotemporal Dynamics in Ecology*. Landes Bioscience, Austin, TX.
- Turchin P. 1995. Population regulation: old arguments and a new synthesis. Pp 19-40 in: Cappuccino N, Price PW (eds). *Population Dynamics: New Approaches and Synthesis*. Academic Press, New York.
- Turchin P, Millstein JA. 1993. EcoDyn/RSM: Response Surface Modeling of Nonlinear Ecological Dynamics. I. Theoretical Background. Applied Biomathematics, Setauket, NY.
- Reeve JD, Turchin P. 1993. A mechanistic approach to understanding and predicting southern pine beetle dynamics. In: Liebhold AM (ed). *Proceedings – spatial analysis and forest pest management*. USDA-Forest Service Gen Tech Report.
- Turchin P. 1991. Nonlinear modeling of time-series data: limit cycles and chaos in forest insects, voles, and epidemics. Pp 39-62 in Logan JA, Hain F(eds). *Chaos and Insect Ecology*. Virginia Exp Station Information Series 91-3. Blacksburg, VA.
- Turchin P. 1988. Models for aggregating populations. Pp 101-127 in Hallam TG, Gross LJ, Levin SA, eds. *Mathematical Ecology*. World Scientific, Singapore.

Edited Books

- Turchin PV, Grinin LE, Malkov SYu, Korotayev AV (editors). 2007. *History and Mathematics: Conceptual Landscape and Research Directions* (in Russian). URSS, Moscow
- Turchin P, Grinin, L, Korotayev, A, de Munck VC (editors). 2006. *History and Mathematics: Historical Dynamics and Development of Complex Societies*. URSS, Moscow.