Stanford



Terry L Root

Senior Fellow at the Woods Institute for the Environment, Emerita

Curriculum Vitae available Online

Bio

BIO

Terry L. Root primarily works on how wild animals and plants are changing with climate change, with a current focus on the possible mass extinction of species with warming. She actively works at making scientific information accessible to decision makers and the public. For example, she was a Lead Author for the Third (2001) and Fourth (2007) Assessment Reports of the Intergovernmental Panel for Climate Change and a Review Editor for the Fifth (2014) Assessment Report. In 2007 the IPCC was co-awarded the Nobel Peace Prize with Vice President Al Gore. In addition to other honors, Root was awarded the Spirit of Defenders Award for Science by the Defenders of Wildlife in 2010; in 1999 she was chosen as an Aldo Leopold Leadership Fellow; in 1992 as a Pew Scholar in Conservation and the Environment; and in 1990 as a Presidential Young Investigator Award from the National Science Foundation. She served on the National Audubon Society Board of Directors from 2010 to 2016, and as Assistant Secretary from 2016 to present. Root is also Science Adviser to the American Wind and Wildlife Institute, Boreal Birds Foundation, Point Blue, to name a few.

ACADEMIC APPOINTMENTS

- Emeritus Faculty, Acad Council, Woods Institute
- Senior Fellow, Emerita, Stanford Woods Institute for the Environment

HONORS AND AWARDS

- Assistant Secretary, National Audubon Society (2016-2019)
- Fellow, California Academy of Science (2010 to Present)
- Spirit of Defenders Award for Science, Defenders of Wildlife (2010)
- Review Editor, 5th Assessment Report, Working Group II, Intergovernmental Panel for Climate Change (2009-2014)
- Lead Author, Nobel Peace Prize Co-Awarded to the Intergovernmental Panel for Climate Change (2007)
- Banksia International Award, Banksia Environmental Foundation. Co-Awardee with Stephen H. Schneider (2006)
- Lead Author, 4th Assessment Report, Working Group II, Intergovernmental Panel for Climate Change (2003-2007)
- Conservation Achievement Award, National Wildlife Federation. Co-Awardee with Stephen H. Schneider (2002)
- Aldo Leopold Leadership Awardee, Ecological Society of America (1999)
- Elected Member, International Ornithological Committee (1999)
- Lead Author, 3rd Assessment Report, Working Group II, Intergovernmental Panel for Climate Change (1998-2001)
- Outstanding Teaching Award, Students of the School of Natural Resources and Environment (1997/1998)
- Fellow, American Ornithologists' Union (1995)
- Elected Council Member, American Ornithologists' Union (1993)

- Pew Scholar, Conservation and the Environment Program of the Pew Charitable Trust (1992)
- Presidential Young Investigator Award, National Science Foundation (1990)
- Elective Member, American Ornithologists' Union (1989)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Science Advisor, American Wind and Wildlife Institute (2014 - present)
- Undergraduate Advisory Panel Member, Stanford University (2012 - 2015)
- Science Advisory Committee Member, Climate Communication (2011 - present)
- Science Advisory Committee Member, Great Lakes Integrated Sciences and Assessments Center (2011 - 2016)
- Board Member, National Audubon Society (2010 - present)
- Science Advisory Board Member, National Audubon Society (2010 - present)
- Science Advisory Committee Member, Defenders of Wildlife (2010 - present)
- Board Member, Defenders of Wildlife (2010 - 2014)
- Science Advisory Board Member, Alliance for Climate Education (2009 - present)
- Science Panel Member, International Boreal Conservation Campaign (2009 - present)
- Climate Change Scenarios Committee Member, National Research Council (2009 - 2010)
- Advisory Board Member, Wind Research Initiative (2008 - 2015)
- Science Advisory Board Member, Tropical Ecology Assessment and Monitoring Network for Conservation International (2007 - 2013)
- Jury Member, The Heinz Awards (2006 - 2007)
- Board on Atmospheric Science and Climate Member, National Academy of Sciences (2004 - 2004)
- Pierce's Disease in Vineyards of California Member, National Research Council (2003 - 2004)
- Science Advisory Board Member, Point Blue (PRBO) Conservation Science (2002 - present)
- Executive Board Member, Point Blue (PRBO) Conservation Science (2002 - 2012)
- Global Climate Change and Wildlife Technical Review Committee Member, The Wildlife Society (2002 - 2005)
- Van Tyne Library Committee Chair, Wilson Ornithology Society (1999 - 2008)
- Board of Editors Member, Ecology and Ecological Monographs (1997 - 1999)
- Evaluate Indicators for Monitoring Aquatic and Terrestrial Environments Member, National Research Council (1997 - 1999)
- Conservation Resolutions Committee Member, Cooper Ornithological Society (1995 - 2003)
- Board of Directors Member, Center for Conservation Biology (1994 - 2005)
- Elected Council Member, American Ornithologists' Union (1993 - 1996)
- Board of Editors Member, Ecological Applications (1992 - 1995)
- Science Advisory Board Member, The Nature Conservancy, Michigan Chapter (1991 - 2001)
- Science and Faculty Advisor, Endangered Species UPDATE (1989 - 2001)
- Conservation Committee Member and Chair, American Ornithologists' Union (1988 - 1995)
- Membership Committee Member, American Ornithologists' Union (1988 - 1990)

PROFESSIONAL EDUCATION

- PhD, Princeton University , Biology (1987)
- MA, University of Colorado, Boulder , Biology (1982)
- BS, University of New Mexico , Mathematics and Statistics (1975)

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Impacts of climate change on wild plants and animals including extinction

Publications

PUBLICATIONS

- **An assessment of the efficiency of protection status through determinations of biodiversity hotspots based on endemic bird species, Taiwan** *JOURNAL FOR NATURE CONSERVATION*
  Ko, C., Murphy, S. C., Root, T. L., Lee, P.
  2014; 22 (6): 570-576
- **Thinking globally and siting locally - renewable energy and biodiversity in a rapidly warming world** *CLIMATIC CHANGE*
  Allison, T. D., Root, T. L., Frumhoff, P. C.
  2014; 126 (1-2): 1-6
- **AWARENESS OF BOTH TYPE 1 AND 2 ERRORS IN CLIMATE SCIENCE AND ASSESSMENT** *BULLETIN OF THE AMERICAN METEOROLOGICAL SOCIETY*
  Anderegg, W. R., Callaway, E. S., Boykoff, M. T., Yohe, G., Root, T. L.
  2014; 95 (9): 1445-1451
- **Warrior for Climate Science and Awareness: Stephen Schneider** *SIMULATION & GAMING*
  Chadwick, S., Armel, C., Root, T., Crookall, D.
  2013; 44 (2-3): 189–94
- **Managed Relocation: Integrating the Scientific, Regulatory, and Ethical Challenges** *BIOSCIENCE*
  Schwartz, M. W., Hellmann, J. J., McLachlan, J. M., Sax, D. F., Borevitz, J. O., Brennan, J., Camacho, A. E., Ceballos, G., Clark, J. R., Doremus, H., Early, R., Etterson, J. R., Fielder, et al
  2012; 62 (8): 732-743
- **Global Change Projections for Taiwan Island Birds: Linking Current and Future Distributions** *NATURE CONSERVATION-BULGARIA*
  Ko, C., Root, T. L., Lin, S., Schneider, S. H., Lee, P.
  2012: 21-40
- **CORRESPONDENCE: Difficult but not impossible** *NATURE CLIMATE CHANGE*
  Hoegh-Guldberg, O., Hegerl, G., Root, T., Zwiers, F., Stott, P., Pierce, D., Allen, M.
  2011; 1 (2): 72
- **Movement distances enhance validity of predictive models** *ECOLOGICAL MODELLING*
  Ko, C., Root, T. L., Lee, P.
  2011; 222 (4): 947-954
- **Bridging the gap: linking climate-impacts research with adaptation planning and management** *CLIMATIC CHANGE*
  Mastrandrea, M. D., Heller, N. E., Root, T. L., Schneider, S. H.
  2010; 100 (1): 87-101
- **Sound the stressor: how Hoatzins (Opisthocomus hoazin) react to ecotourist conversation** *BIODIVERSITY AND CONSERVATION*
  Karp, D. S., Root, T. L.
  2009; 18 (14): 3733-3742
- **Multidimensional evaluation of managed relocation** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  Richardson, D. M., Hellmann, J. J., McLachlan, J. S., Sax, D. F., Schwartz, M. W., Gonzalez, P., Brennan, E. J., Camacho, A., Root, T. L., Sala, O. E., Schneider, S. H., Ashe, D. M., Clark, et al
  2009; 106 (24): 9721-9724
- **Attributing physical and biological impacts to anthropogenic climate change** *NATURE*

Rosenzweig, C., Karoly, D., Vicarelli, M., Neofotis, P., Wu, Q., Casassa, G., Menzel, A., Root, T. L., Estrella, N., Seguin, B., Tryjanowski, P., Liu, C., Rawlins, et al
2008; 453 (7193): 353-U20

- **Natural range expansion of Barred Owls? A critique of Monahan and Hijmans (2007)** *AUK*
  Livezey, K. B., Root, T. L., Gremel, S. A., Johnson, C.
  2008; 125 (1): 230–32
- **Changes in spring arrival of Nearctic-Neotropical migrants attributed to multiscalar climate** *GLOBAL CHANGE BIOLOGY*
  MacMynowski, D. P., Root, T. L., Ballard, G., Geupel, G. R.
  2007; 13 (11): 2239-2251
- **Climate and the complexity of migratory phenology: sexes, migratory distance, and arrival distributions** *INTERNATIONAL JOURNAL OF BIOMETEOROLOGY*
  MacMynowski, D. P., Root, T. L.
  2007; 51 (5): 361-373
- **Conservation and climate change: The challenges ahead** *CONSERVATION BIOLOGY*
  Root, T. L., Schneider, S. H.
  2006; 20 (3): 706-708
- **Human-modified temperatures induce species changes: Joint attribution** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  Root, T. L., MacMynowski, D. P., Mastrandrea, M. D., Schneider, S. H.
  2005; 102 (21): 7465-7469
- **Amphibian breeding and climate change: Reply to Corn** *CONSERVATION BIOLOGY*
  Blaustein, A. R., Root, T. L., Kiesecker, J. M., Belden, L. K., Olson, D. H., Green, D. M.
  2003; 17 (2): 626-627
- **Fingerprints of global warming on wild animals and plants** *NATURE*
  Root, T. L., Price, J. T., Hall, K. R., Schneider, S. H., Rosenzweig, C., Pounds, J. A.
  2003; 421 (6918): 57-60
- **Amphibian phenology and climate change** *CONSERVATION BIOLOGY*
  Blaustein, A. R., Root, T. L., Kiesecker, J. M., Belden, L. K., Olson, D. H., Green, D. M.
  2002; 16 (6): 1454-1455
- **Ecological implications of climate change will include surprises** *BIODIVERSITY AND CONSERVATION*
  Schneider, S. H., Root, T. L.
  1996; 5 (9): 1109–19
- **ECOLOGY AND CLIMATE - RESEARCH STRATEGIES AND IMPLICATIONS** *SCIENCE*
  ROOT, T. L., SCHNEIDER, S. H.
  1995; 269 (5222): 334–41
- **ON REAUTHORIZATION OF THE ENDANGERED SPECIES ACT** *CONSERVATION BIOLOGY*
  MURPHY, D., WILCOVE, D., NOSS, R., HARTE, J., SAFINA, C., LUBCHENCO, J., ROOT, T., SHER, KAUFMAN, L., BEAN, M., PIMM, S.
  1994; 8 (1): 1–3