CATHERINE NELLIE TSIPOURA
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Education

Ph.D. Ecology and Evolution, Rutgers University 1999.
Dissertation: Ecophysiological and hormonal aspects of wintering and migration in shorebirds.
M. S. Zoology, Washington State University 1985.
Thesis: Individual variation in the song of the American Robin.
B. S. Biology, University of Athens. Athens, Greece 1982.
Undergraduate Thesis: Dimensional differentiation of copepods in different salinity conditions.

Professional Experience in current position

2004- present. **Senior Research Scientist and Director of Citizen Science, Research and Monitoring Department, New Jersey Audubon**.
Conducts research to provide science-based guidance and decision-support tools for avian conservation, policy, and land stewardship initiatives. Responsible for securing grants and working with government entities, higher education institutions, and non-profit organizations to identify needs and develop research projects that fill in gaps in knowledge and address environmental concerns.

Specific research portfolio and expertise

Offshore Wind Energy (2020- present). Working to address concerns about potential environmental impacts of offshore wind, including reviewing and summarizing currently available wildlife data; identifying specific data gaps and additional pre- and post-construction information needed to better inform siting of future offshore wind projects; staying abreast of new research and technology initiatives to advance best practices for wind development that avoid, minimize, and mitigate impacts to avian species; contributing to technical comments for submission to state, regional, and federal agencies/processes to advance and ensure responsible development of offshore wind projects.

Contaminants in wetland birds. (2004- present). PI or co-PI on several projects investigating contaminants in birds: Heavy metals and PCBs in tissues of birds using wetlands of the New Jersey Meadowlands and related potential impacts on their health and populations; heavy metals in horseshoe crab eggs and shorebirds in Delaware Bay and migration ecology and ecophysiology.

Climate Change and Resilience. (2014-present). Co-PI on several projects funded through DOI/NFWF Sandy resilience funds: a) beach restoration at Stone Harbor Point, NJ, to improve habitat suitability for beach-nesting birds and roosting shorebirds through and increase coastal resiliency for the Borough of Stone Harbor; b) continued monitoring of beach nesting birds at Stone Harbor for 8 years post- restoration to evaluate project effectiveness in providing improved habitat for birds; and c) vulnerability and resilience assessment of coastal Northeastern impoundments that included ranking of their ecological and societal value.
Additional resilience work through research on the distribution and abundance of Black Rail and other marsh birds in NJ.

Citizen/community science. (2004-present). Responsible for designing and implementing state-wide research and monitoring programs that involve volunteers over two decades. Co-PI on an NSF funded project engaging Community College students and citizen scientists in bird and vegetation surveys for

a study on forest health issues; a collaboration with Raritan Valley Community College and NSF Science Education for New Civic Engagements and Responsibilities (SENCER-ISE).

Grassland Bird Research. (2008-present). Co-PI on DoD funded research projects on military airfields, looking at grassland bird populations and productivity and avian response to grassland management in the Mid-Atlantic and Northeast.

Urban Bird Research. (2004 – present). PI or co-PI on many projects, including: avian distribution and ecological health (contaminant impacts) in the NJ Meadowlands (2004-2008 and 2017-2018); abundance and distribution of birds in Raritan Bay and the Arthur Kill (2009-2012); Harbor Heron (focal long-legged wader species in NY/NJ Harbor Estuary Program) monitoring and conservation (2008-2018); Great Egret monitoring and radio tracking (2015-2022) in the NY/NJ Harbor.

Bird collisions with manmade structures (2017- present). PI or co-PI on research to quantify the extent of bird-building collisions in Newark NJ and to develop ways to minimize the impacts.

Previous professional experience highlights

1995-2013 **Coadjutant/Lecturer, Division of Life Sciences, Faculty of Arts and Sciences, Rutgers University** and **Adjunct Professor, Department of Science and Engineering, Raritan Valley Community College**. Responsible for preparing materials, teaching, administering exams and assigning reports and papers, grading students and reporting grades to the University. Taught a variety of classes, including Anatomy and Physiology, General Biology, Ornithology, non-major Biology courses.

2003-04 **Post-doctoral Research Scientist, Rutgers University**.
Responsible for researching habitat and land use by threatened and endangered species at Department of Energy sites through extensive literature review of published and unpublished reports.

2001-03 **Research Associate - Natural Resources Defense Council.**
Research on ecological issues in the NY/NJ Harbor Bight; technical support for legal cases; report preparation.

1987-90 **Project Coordinator, National Audubon Society** Western Hemisphere Shorebird Reserve Network (WHSRN). Responsible for engaging partners in policy and reserve management; shorebird banding coordination in the Western Hemisphere; banding database management; and newsletter publication.

1982-85 and 1990-91
Teaching Assistant, Yale School of Forestry and Environmental Studies and Washington State University: Responsible for leading lab exercises or recitations in Animal Behavior, Wildlife Biology, Field Ecology, Introductory Biology, Ornithology, Mammalogy, and Animal Physiology.

Field Ecology and Environmental Consulting Experience

1996-98 Endangered and Non-Game Program, NJ DEP. Research on the importance of horseshoe crab eggs in the diet of shorebirds during spring migration through Delaware Bay (peer review - published study).

1996-98	Wildlife Conservation Society, NY. Population study of grassland birds at a NY City Parks airfield, Floyd Bennet Field.
1996	Wildlife Conservation Society, NY. Hoatzin program, Mataclara, Venezuela. Coordinated field personnel; led Hoatzin capture efforts and set up a captive maintenance program at the field site.
1990-91	Troy Ecological, Prudhoe Bay, Alaska. Field data collection of tundra breeding shorebird nesting distribution and reproductive success; nesting shorebird banding.
1987	Savannah River Ecology Laboratory, SC. Field data collection on the nesting behavior, foraging distance, and foraging habitat use by breeding Wood Storks.
1986	Caesar Kleberg Institute, at the Estacion de Biologia Los Tuxlas, UNAM, Veracruz, Mexico. Field study of the ecology and movements of nonbreeding Woodthrushes on forest edges, using radiotelemetry.

Professional Memberships and Awards

Serves on the NJDEP Commissioner's Science Advisory Board

President Elect, 2024, Waterbird Society; Board member 2011-2013; Committee Chair, Grants 2017-present; Committee co-chair, Communications and web development 2014-2021; member DEI and conservation committees.

Fellow, American Ornithological Society (AOS), 2023; Elective member, AOS, 2008.

Co-chair, Harbor Heron Conservation Committee, EPA Harbor Estuary Program EPA, 2009 – present

Serves/participates on several working groups and committees related to offshore wind energy (Regional Wildlife Science Collaborative; NJDEP outreach group; Duke Wildlife and Offshore Wind)

Recognized with the 2019 Women & Wildlife Leadership Award (NJ Conserve Wildlife)

Board member, Hudson Delaware Chapter of the Society for Environmental Toxicology and Chemistry, 2009-2012; Chapter President, 2011-2012

Publications

Burger, J., Feigin, S., Ng, K., Jeitner, C., Tsipoura, N., Niles, L. and Gochfeld, M., 2023. Some metals and metalloids in the blood of three species of shorebirds increase while foraging during two-week migratory stopover in Delaware Bay, New Jersey. Environmental research, 238: 117194.

Brzorad, J.N., Allen, M.C., Jennings, S., Condeso, E., Elbin, S., Kays, R., Lumpkin, D., Schweitzer, S., Tsipoura, N. and Maccarone, A.D. 2022. Seasonal patterns in daily flight distance and space use by great egrets (*Ardea alba*). *Waterbirds*, 44: 343-355.

Burger, J., Mizrahi, D., Jeitner, C., Tsipoura, N., Mobley, J. and Gochfeld, M., 2019. Metal and metalloid levels in blood of semipalmated sandpipers (*Calidris pusilla*) from Brazil,

Suriname, and Delaware Bay: Sentinels of exposure to themselves, their prey, and predators that eat them. *Environmental research*, 173: 77-86.

Burger, J., Tsipoura, N., Niles, L., Dey, A., Jeitner, C. and Gochfeld, M., 2019. Heavy Metals in Biota in Delaware Bay, NJ: Developing a Food Web Approach to Contaminants. *Toxics*, 7:34.

Burger, J. and Tsipoura, N., 2019. Resident status influences perceptions about beach resource valuation and restoration. *Urban Ecosystems*, 22: 785-793.

Burger, J., Mizrahi, D., Tsipoura, N., Jeitner, C. and Gochfeld, M., 2018. Mercury, lead, cadmium, cobalt, arsenic and selenium in the blood of semipalmated sandpipers (*Calidris pusilla*) from Suriname, South America: age-related differences in wintering site and comparisons with a stopover site in New Jersey, USA. *Toxics*, 6: 27.

Tsipoura, N., J. Burger, L. Niles, A. Dey, M. Gochfeld, M. Peck, D. Mizrahi. 2017. Metal levels in shorebird feathers and blood during migration through Delaware Bay. *Arch. Environ. Contam. Toxicol.* 72: 562-574.

Burger, J., Gochfeld, M., Niles, L., Tsipoura, N., Mizrahi, D., Dey, A., Jeitner, C. and Pittfield, T, 2017. Stakeholder contributions to assessment, monitoring, and conservation of threatened species: black skimmer and red knot as case studies. *Environmental monitoring and assessment*, 189:1-18.

Burger, J., Tsipoura, N., Simnor, A., Pittfield, T., Jeitner, C., Mizrahi, D., Niles, L. and Ferguson, L., 2017. Perceptions of Caucasian users about avian resources and beach restoration following hurricane Sandy. *Urban ecosystems*, 20: 363-373.

Tsipoura, N. and Kelly, J.F. 2015. Deepening Understanding of Forest Health in Central New Jersey through Student and Citizen Scientist Involvement. *Science Education and Civic Engagement* 7: 97-107.

Burger J, N. Tsipoura, L. J. Niles, M. Gochfeld, A. Dey, and D.Mizrahi. 2015. Mercury, Lead, Cadmium, Arsenic, Chromium and Selenium in Feathers of Shorebirds during Migrating through Delaware Bay, New Jersey: Comparing the 1990s and 2011/2012. *Toxics* 3: 63-74.

Burger, J., M. Gochfeld, L.Niles, A. Dey, C. Jeitner; T. Pittfield, and N.Tsipoura. 2014. Metals in tissues of migrant semipalmated sandpipers (*Calidris pusilla*) from Delaware Bay, New Jersey. *Environ Res,* 133: 362-370.

Burger, J. and N. Tsipoura. 2014. Metals in horseshoe crab eggs from Delaware Bay, USA: temporal patterns from 1993 to 2012. *Environ Monit Assess,* 186: 6947-6958.

Tsipoura, N., Mylecraine, K., Morgan, M. and Rivera, F., 2012. Development of avian indicators and measures for monitoring threats and effectiveness of conservation actions–Grassland Birds.

Johnson, B. J., K. Munafo, L. Shappell, N. Tsipoura, M. Robson, J. Ehrenfeld, and M. V. Sukhdeo. 2012. The roles of mosquito and bird communities on the prevalence of West Nile virus in urban wetland and residential habitats. *Urban Ecosystems*, 1-19.

Tsipoura, N., J. Burger, M. Newhouse, J., C. Jeitner, M. Gochfeld, and D. Mizrahi. 2011. Metal Levels and their Effects in Canada geese and mallards of the Hackensack Meadowlands, New Jersey. *Environ Res,* 111: 775-784.

Tsipoura, N., J. Burger, R. Feltes, J. Yacabucci, D. Mizrahi, C. Jeitner, and M. Gochfeld. 2008. Metal concentrations in three species of passerine birds breeding in the Hackensack Meadowlands of New Jersey. *Environ Res,* 107: 218-228.

Burger, J., Tsipoura, N., Gochfeld, M. and Greenberg, M.R., 2006. Ecological considerations for evaluating current risk and designing long-term stewardship on Department of Energy lands. In *Long-term management of contaminated sites* (Vol. 13, pp. 139-162). Emerald Group Publishing Limited.

Botton, M.L., Harrington, B.A., Tsipoura, N. and Mizrahi, D., 2003. Synchronies in migration: shorebirds, horseshoe crabs, and Delaware Bay. *The American Horseshoe Crab*. Harvard University Press, Cambridge, pp.5-32.

Summers, C., M. Dorfman, J. Henry, A. Spira-Cohen, and N. Tsipoura. 2002. Cape May to Montauk: A Coastal Protection Report Card. Natural Resources Defense Council, New York, NY.

Tsipoura, N. and J. Burger. 1999. Shorebird diet during spring migration stopover on Delaware Bay. *Condor*, 101: 635-644.

Tsipoura, N., Scanes, C.G. and Burger, J., 1999. Corticosterone and growth hormone levels in shorebirds during spring and fall migration stopover. *Journal of Experimental Zoology*, 284: 645-651.

Tsipoura, N. and Burger, J., 1999. Shorebirds and surf clams: An unusual interaction. *Waterbirds*, 22: 140-141.

Burger, J. and Tsipoura, N., 1998. Experimental oiling of sanderlings (Calidris alba): behavior and weight changes. *Environmental Toxicology and Chemistry,* 17: 1154-1158.

Moraitou-Apostolopoulou, M., Verriopoulos, G. and N. Tsipoura. 1989. Dimensional differentiation between five planktonic organisms living in two areas characterized by different salinity conditions. *Archiv fuer Hydrobiologie*, 105: 459-469.

Tsipoura, N. and Morton, E.S., 1988. Song-type distribution in a population of Kentucky Warblers. *The Wilson Bulletin*, 100: 9-16.

Selected Grants and contracts

USFWS/DoD – Coastal wetlands conservation grant. $74,000 (2023). Experimental manipulation of grass height for bird populations at JBMDL Lakehurst; Secretive Marsh Bird use of JBMDL-Fort Dix wetlands.

USFWS/DoD – Coastal wetlands conservation grant. $24,000 (2022). Experimental manipulation of grass height for bird populations at JBMDL Lakehurst.

USFWS/DoD – Coastal wetlands conservation grant. $88,000 (2021). Floristic survey at JBMDL Lakehurst; experimental manipulation of grass height for bird populations.

DOI National Park Service – Cooperative agreement 2017. $133,000. Evaluation of Dune and Beach Restoration for Resilience in the Mid-Atlantic Region (PI).

NFWF – Sandy Resilience Fund 2014. $1,279,992. Increasing Seven Mile Island's Beach Resiliency (NJ) (co-PI)

NFWF – Sandy Resilience Fund 2014. $469.996. Assessing Coastal Impoundment Vulnerability and Resilience in the Northeast (co-PI).

Toyota Together Green. $29,000. An Integrated Approach to Conservation: Engaging in Stewardship, Education, and Citizen Science at Urban Oases in New Jersey. 2013-2014 (co-PI).

NSF/SENCER. $50,000. Forest health in the Raritan/Piedmont Region. Collaboration with Raritan Valley Community College. 2013-2016.

Together Green, National Audubon Society. $38,000. Connecting humans and urban wetlands in the Raritan River. Collaboration with Raritan Valley Community College. 2012

Clear into the Future (Dupont). $52,000. Contaminant levels in shorebirds migrating through Delaware Bay. 2011- 2012

National Fish and Wildlife Foundation. $ 49,000. "Migrant shorebird surveys in NJ: a citizen science approach. 2010-2011.

Duke Farms, contract award. $35,000. Running a bioblitz on the Duke Farms property; monitoring and evaluating effects of grassland management on birds. 2010-2013

US Fish and Wildlife Service. $20,000. Developing and assessing methodology for conducting grassland bird surveys through volunteer effort. 2009-2010

New Jersey Meadowlands Commission, contract award. $ 30,000. Use of wetlands in the Meadowlands District by Harbor Herons; 2008-2009.

Environmental Protection Agency. $ 49,000. Effects of plant and avian biodiversity on the prevalence of West Nile Virus in urban wetlands. Subcontract on a project awarded to Rutgers University. 2008-2010.

New Jersey Meadowlands Commission, contract award. $ 250,000. Effects of contaminants on birds in the Meadowlands District. 2007.

New Jersey Meadowlands Commission, contract award. $ 175,000. Effects of contaminants on birds in the Meadowlands District. 2006.

New Jersey Department of Environmental Protection, Endangered and Nongame Species Program. Landowner Incentive Program (LIP). $ 100,000. Evaluation of success of management for grassland birds at LIP grasslands. 2006-2013

National Fish and Wildlife Foundation. $ 100,000. "Conservation of Grassland Dependent Species in Three New Jersey Counties Through Delivery of Federal Conservation Programs". 2005. NJAS and NJ ENSP joint grant.

New Jersey Department of Environmental Protection, Endangered and Nongame Species Program. $ 4,500.00. "Shorebird diet during migration through Delaware Bay". 1996-1998

New Jersey Seagrant. $ 5,000.00. "Use of stable isotope ratios to determine diet in migrating shorebirds". 1997

Frederick E. G. Valergakis Graduate Grant (Hellenic University Club of New York). $ 1,000.00. "Energetic constraints on Sanderling wintering distributions". 1994-1995

Anne B. and James H. Leathem Scholarship Fund. $ 2,500.00. "Energetic constraints on Sanderling wintering distributions". 1995-1996

Rutgers University Graduate Excellence Fellowship. $ 12,000.00 stipend annually. 1992-1995