



CHAPTER 9

Literature Cited

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**A**

Able, K. W., K. E. Coleman, T. M. Grothues, and J. M. Morson. 2014. Temporal Variation in Winter Flounder Recruitment at the Southern Margin of Their Range: Is the Decline Due to Increasing Temperatures? *ICES Journal of Marine Science* **71**:2186-2197.

Adams, M. J., D. A. W. Miller, E. Muths, P. S. Corn, and E. H. C. Grant. 2013. Trends in Amphibian Occupancy in the United States. *PLoS ONE* **8**:e64347.

Adams, W. E., L. W. Kallemeyn, and D. W. Willis. 2006. Lake Sturgeon Population Characteristics in Rainy Lake, Minnesota and Ontario. *Journal of Applied Ichthyology* **22**:97-102.

Adaptation Subcommittee to the Governor's Steering Committee on Climate Change. 2010. The impacts of climate change on Connecticut agriculture, infrastructure, natural resources and public health. Available from <http://www.ct.gov/deep/lib/deep/climatechange/impactsofclimatechange.pdf> (accessed May 2015) In Staudinger et al. 2015.

Adler, R. W., J. C. Landman, and D. M. Cameron. 1993. *The Clean Water Act 20 Years Later*. Island Press, Washington, D.C.

AFWA (Association of Fish and Wildlife Agencies). Unpublished. National Synthesis of State Wildlife Action Plans. A report by Terwilliger Consulting Inc., jointly funded by the Association of Fish & Wildlife Agencies, U.S. Fish & Wildlife Service, U.S. Department of Defense, U.S. Geological Survey, National Fish & Wildlife Foundation and Doris Duke Charitable Trust. Washington, D.C.

AFWA (Association of Fish and Wildlife Agencies). 2009. Association of Fish and Wildlife Agencies-Voluntary Guidance for States to Incorporate Climate Change into State Wildlife Action Plans & Other Management Plans. Washington, D.C. Available from http://www.fishwildlife.org/files/AFWA-Voluntary-Guidance-Incorporating-Climate-Change_SWAP.pdf.

AFWA (Association of Fish and Wildlife Agencies). 2011. State Wildlife Action Plans: Shaping National Fish & Wildlife Conservation. A report jointly funded by the Association of Fish & Wildlife Agencies, U.S. Fish & Wildlife Service, U.S. Department of Defense, U.S. Geological Survey, National Fish & Wildlife Foundation and Doris Duke Charitable Trust. Washington, D.C. Available from <http://www.denix.osd.mil/nr/upload/07-338-State-Wildlife-Action-Plans-Shaping-National-Fish-Wildlife-Conservation-Final-Report-April-2011-2.pdf>.

AFWA (Association of Fish and Wildlife Agencies). 2011b. Survey of State Wildlife Action Plan strengths and weaknesses. Association of Fish and Wildlife Agencies, Washington, D.C.

AFWA (Association of Fish and Wildlife Agencies). 2012. Best Practices for State Wildlife Action Plans-Voluntary Guidance to States for Revision and Implementation. Teaming With Wildlife Committee, State Wildlife Action Plan (SWAP) Best Practices Working Group. Association of Fish and Wildlife Agencies, Washington, D.C. Available from <http://www.fishwildlife.org/files/SWAPBestPractices.pdf>.

Ahlering, M. A., D. H. Johnson, and J. Faaborg. 2009. Factors Associated with Arrival Densities of Grasshopper Sparrow (*Ammodramus savannarum*) and Baird's Sparrow (*A. bairdii*) in the Upper Great Plains. *The Auk* **126**:799-808.



Albani, M., P. R. Moorcroft, A. M. Ellison, D. A. Orwig, and D. R. Foster. 2010. Predicting the impact of hemlock woolly adelgid on carbon dynamics of eastern United States forests. *Canadian Journal of Forest Research* **40**:119-183.

Alexander, L. V., et al. 2006. Global observed changes in daily climate extremes of temperature and precipitation. *Journal of Geophysical Research* **111**:D05109.

Alder, J. R., and S. W. Hostetler. 2013. USGS National Climate Change Viewer. Available from http://www.usgs.gov/climate_landuse/clu_rd/nccv.asp (accessed May 2015) in Staudinger et al. (2015).

Altman, B., and R. Sallabanks. 2012. Olive-sided Flycatcher (*Contopus cooperi*). In A. Poole, editor. *The Birds of North America Online*, Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu.bnaproxy.birds.cornell.edu/bna/species/502>
DOI:10.2173/bna.502

American Bird Conservancy. 2013. Recommendations for the Golden-winged Warbler (*Vermivora chrysoptera*) focal areas in Honduras, Nicaragua, and Costa Rica. Results from 2013 Rapid Assessment. The Plains, Virginia.

Amoros, C., and G. Bornette. 2002. Connectivity and biocomplexity in waterbodies of riverine floodplains. *Freshwater Biology* **47**:761-776.

Anderson, D. M., P. M. Glibert, and J. M. Burkholder. 2002. Harmful Algal Blooms and Eutrophication: Nutrient Sources, Composition, and Consequences. *Estuaries* **25**:704-726.

Anderson, M. G., and C. E. Ferree. 2010. Conserving the stage: climate change and the geophysical underpinning of species diversity. *PLoS One* **5**:e11554. Available from <http://dx.plos.org/10.1371/journal.pone.0011554>.

Anderson, M. G., and A. Olivero Sheldon. 2011. Conservation Status of Fish, Wildlife, and Natural Habitats in the Northeast Landscape: Implementation of the Northeast Monitoring Framework. The Nature Conservancy, Eastern Conservation Science. Boston, Massachusetts. Available from http://www.rcngrants.org/sites/default/files/final_reports/Conservation-Status-of-Fish-Wildlife-and-Natural-Habitats.pdf.

Anderson, M. G., M. Clark, and A. Olivero Sheldon. 2011. Resilient Sites for Species Conservation in the Northeast and Mid-Atlantic Region. The Nature Conservancy, Eastern Conservation Science. Boston, Massachusetts. Available from http://static.rcngrants.org/sites/default/files/final_reports/Resilient-Sites-for-Species-Conservation%281%29.pdf.

Anderson, M. G., M. Clark, and A. Olivero Sheldon. 2012. Resilient Sites for Terrestrial Conservation in the Northeast and Mid-Atlantic Region. The Nature Conservancy, Eastern Conservation Science. Boston, Massachusetts. Available from <https://www.conservationgateway.org/ConservationByGeography/NorthAmerica/UnitedStates/edc/reportsdata/terrestrial/resilience/ne/Pages/default.aspx>.



Anderson, M. G., M. Clark, C. E. Ferree, A. Jospe, and A. Olivero Sheldon. 2013a. Condition of the Northeast Terrestrial and Aquatic Habitats: a geospatial analysis and tool set. The Nature Conservancy, Eastern Conservation Science, Eastern Regional Office. Boston, Massachusetts. Available from <http://easterndivision.s3.amazonaws.com/Geospatial/ConditionoftheNortheastTerrestrialandAquaticHabitats.pdf>.

Anderson, M. G., M. Clark, C. E. Ferree, A. Jospe, A. Olivero Sheldon and K. J. Weaver. 2013b. Northeast Habitat Guides: A companion to the terrestrial and aquatic habitat maps. The Nature Conservancy, Eastern Conservation Science, Eastern Regional Office. Boston, Massachusetts. Available from http://rcngrants.org/sites/default/files/final_reports/RCN%202011-5%2C6%20final%20product%20NortheastHabitatGuides.pdf.

Anderson, M. G., et al. 2013c. Assessing Freshwater Ecosystems for their Resilience to Climate Change. The Nature Conservancy, Eastern North America Division. Available from https://www.conservationgateway.org/ConservationByGeography/NorthAmerica/UnitedStates/edc/Documents/FW%20resilience_report_11_2013_distribute.docx (accessed June 2015).

Anderson, R. S. 1971. Butterflies of the serpentine barrens of Pennsylvania. *Entomological News* **81**:5-12.

Andresen, J., S. Hilberg, and K. Kunkel. 2012. Historical climate and climate trends in the Midwestern USA. U.S. National Climate Assessment Midwest Technical Input Report:1-18.

Anthes, R. A., R. W. Corell, G. Holland, J. W. Hurrell, M. C. MacCracken, and K. E. Trenberth. 2006. Hurricanes and global warming-Potential linkages and consequences. *Bulletin of the American Meteorological Society* **87**:623-628.

Anttila, K., C. S. Couturier, Ø. Øverli, A. Johnsen, G. Marthinsen, G. E. Nilsson, and A. P. Farrell. 2014. Atlantic salmon show capability for cardiac acclimation to warm temperatures. *Nature Communications* **5**. Article number: 4252 DOI:10.1038/ncomms5252.

Archambault, J. M., W. G. Cope, and T. J. Kwak. 2014. Survival and behaviour of juvenile unionid mussels exposed to thermal stress and dewatering in the presence of a sediment temperature gradient. *Freshwater Biology* **59**:601-613.

Argent, D. G., J. R. Stauffer, R. F. Carline, C. P. Ferreri, and A. L. Shiels. 1998. Fishes: review of the status in Pennsylvania. Pages 177-202 In J. Hassinger, R. Hill, G. Storm, and R. Yahner, editors. *Inventory and Monitoring of Biotic Resources in Pennsylvania*, Proceedings of the first conference of the Pennsylvania Biological Survey. Harrisburg, Pennsylvania.

Argent, D. G., and W. G. Kimmel. 2013. Potential impacts of climate change on brook trout (*Salvelinus fontinalis*) populations in streams draining the Laurel Hill in Pennsylvania. *Journal of Freshwater Ecology* **28**:489-502.

Arndt, R., S. Lima, and J. O'Keefe. 2012. Winter activity of red bats and other Vespertilionid bats of western Indiana. *Bat Research News* **53**:64.



Arnett E. B., W. K. Brown, W. P. Erickson, J. K. Fiedler, B. L. Hamilton, T. H. Henry, A. Jain, G. D. Johnson, J. Kerns, R. R. Koford, C. P. Nicholson, T. J. O'Connell, M. D. Piorkowski, and R. D. Tankersley, Jr. 2008. Patterns of bat fatalities at wind energy facilities in North America. *Journal of Wildlife Management* **71**: 61–78.

Arnett, E. B., M. Huso, M. R. Schirmacher, and J. P. Hayes. 2011. Altering turbine speed reduces bat mortality at wind-energy facilities. *Frontiers in Ecology and the Environment* **9**:209–214.

Askins, R. A. 1994. Open corridors in a heavily forested landscape: impact on shrubland and forest-interior birds. *Wildlife Society Bulletin* **22**:339-347.

ASMFC (Atlantic States Marine Fisheries Commission). 1999. Amendment 1 to the interstate fishery management plan for shad and river herring. Atlantic States Marine Fisheries Commission, Fishery Management Report No. 35. Washington, D.C.

ASMFC (Atlantic States Marine Fisheries Commission). 2010. Amendment 3 to the Interstate Fisheries Management Plan for Shad and River Herring (American shad Management). Atlantic States Marine Fisheries Commission Shad and River Herring Plan Development Team, Washington, D.C.

Assel, R. A. 2005. Classification of Annual Great Lakes Ice Cycles: Winters of 1973-2002. *Journal of Climate* **18**:4895-4905.

Atlantic Coast Joint Venture. 2007. Bird conservation plan for the Lower Great Lakes/St. Lawrence Plain bird conservation region (BCR 13). Available from http://www.acjv.org/BCR_13/BCR13_Final_Plan_July07.pdf.

Austin, J. A., and S. M. Colman. 2007. Lake Superior summer water temperatures are increasing more rapidly than regional air temperatures: A positive ice-albedo feedback. *Geophysical Research Letters*: **34**:L06604.

Auteri, G., J. O'Keefe, B. Walters, and A. Kurta. 2012. Climate and reproduction of big brown bats over an 11-year period in Indiana. *Bat Research News* **53**:64.

B

Badeck, F. W., A. Bondeau, K. Böttcher, D. Doktor, W. Lucht, J. Schaber, and S. Sitch. 2004. Responses of spring phenology to climate change. *New Phytologist* **162**:295-309.

Bai, X., et al. 2015. A record-breaking low ice cover over the Great Lakes during winter 2011/2012: combined effects of a strong positive NAO and La Niña. *Climate Dynamics* **44**:1187-1213.

Bajema, R. A., T. L. DeVault, P. E. Scott, and S. L. Lima. 2001. Reclaimed coal mine grasslands and their significance for Henslow's Sparrows in the American Midwest. *The Auk* **118**:422-431.

Baker, R. J., and E. P. Hill. 2003. Beaver (*Castor canadensis*). In G. A. Feldhamer, B. C. Thompson, and J. A. Chapman, editors. *Wild Mammals of North America*. The Johns Hopkins University Press, Baltimore, Maryland.



- Bakermans, M. H., A. C. Vitz, A. D. Rodewald, and C. G. Rengifo. 2009. Migratory songbird use of shade coffee in the Venezuelan Andes with implications for conservation of Cerulean Warbler. *Biological Conservation* **142**:2476–2483.
- Bakermans, M. H., J. L. Larkin, B. W. Smith, T. M. Fearer, and B. C. Jones. 2011. Golden-winged Warbler Habitat Best Management Practices for Forestlands in Maryland and Pennsylvania. American Bird Conservancy. The Plains, Virginia.
- Bales, E. K., O. J. Loudon, A. H. Loudon, R. N. Harris, G. Lipps, E. Chapman, et al. 2015. Pathogenic Chytrid Fungus *Batrachochytrium dendrobatidis*, but Not *B. salamandrivorans*, Detected on Eastern Hellbenders. PLoS ONE DOI:10.1371/journal.pone.0116405.
- Barnett, T. P., J. C. Adam, and D. P. Lettenmaier. 2005. Potential impacts of a warming climate on water availability in snow-dominated regions. *Nature* **438**:303-309.
- Bartholow, J. M. 2005. Recent water temperature trends in the Lower Klamath River, California. *North American Journal of Fisheries Management* **25**:152-162.
- Bartolai, A. M., L. He, A. E. Hurst, L. Mortsch, R. Paehlke, and D. Scavia. 2015. Climate change as a driver of change in the Great Lakes St. Lawrence River basin. *Journal of Great Lakes Research* **41**:45-58.
- Bayly, N., and A. M. Gonzalez. 2015. Migratory Connectivity and Elevational Distribution of the Canada Warbler (*Cardellina Canadensis*) in Columbia. Results Winter 2014-2015. SELVA and University of Saskatchewan. (www.SELVA.ORG.CO)
- BCFREP (British Columbia Forest & Range Evaluation Program). 2015. Forest & Range Evaluation Program. Available from <https://www.for.gov.bc.ca/hfp/frep/about/index.htm>.
- Beever, E. A., J. O’Leary, C. Mengelt, J. West, S. Julius, N. Green, D. Magness, L. Petes, B. Stein, A. B. Nicotra, J. J. Hellmann, A. L. Robertson, M. D. Staudinger, A. A. Rosenberg, E. Babij, J. Brennan, G. W. Schuurman, and G. E Hofmann. 2015. Improving conservation outcomes with a new paradigm for understanding species’ fundamental and realized adaptive capacity. *Conservation Letters* DOI:10.1111/conl.12190.
- Bellard, C., C. Bertelsmeier, P. Leadley, W. Thuiller, and F. Courchamp. 2012. Impacts of climate change on the future of biodiversity. *Ecology Letters* **15**:365–377.
- Berkes, F., J. Colding, and C. Folke. 2000. Rediscovery of Traditional Ecological Knowledge As Adaptive Management. *Ecological Applications* **10**:1251–1262.
- Berlanga, H., J. A. Kennedy, T. D. Rich, M. C. Arizmendi, C. J. Beardmore, P. J. Blancher, G. S. Butcher, A. R. Couturier, A. A. Dayer, D. W. Demarest, W. E. Easton, M. Gustafson, E. Iñigo-Elias, E. A. Krebs, A. O. Panjabi, V. Rodriguez Contreras, K. V. Rosenberg, J. M. Ruth, E. Santana Castellón, R. Ma. Vidal, and T. Will. 2010. Saving Our Shared Birds: Partners in Flight Tri-National Vision for Landbird Conservation. Cornell Lab of Ornithology: Ithaca, New York. www.savingoursharedbirds.org. Available from http://www.savingoursharedbirds.org/final_reports_pdfs/PIF2010_English_Final.pdf



- Bishop, P. 2006. A Short Review of Pennsylvania Water Law. Bureau of Regulatory Counsel, Pennsylvania Department of Environmental Protection, Harrisburg, Pennsylvania. Available from https://www.portal.state.pa.us/portal/server.pt/document/440039/water_law_review_022806_pdf (accessed August 2015).
- Bissel, J. K., J. Balczon, and E. C. Masteller. 1989. A survey of the macrophytes of Lake Pleasant, Erie County. *Journal of Pennsylvania Academy of Sciences* **63**:3-6.
- Blehert, D. S., A. C. Hicks, M. Behr, C. U. Meteyer, B. M. Belowski-Zier, E. L. Buckles, J. T. H. Coleman, S. R. Darling, A. Gargas, R. Niver, J. C. Okoniewski, R. J. Rudd, W. B. Stone. 2009. Bat White-Nose Syndrome: An Emerging Fungal Pathogen? *Science* **323**:227.
- Blomberg, E. J., B. C. Tefft, E. G. Endrulat, and S. R. McWilliams. 2009. Predicting landscape-scale habitat distribution for ruffed grouse *Bonasa umbellus* using presence-only data. *Wildlife Biology* **15**:380-394.
- Bonhommeau, S., E. Chassot, B. Planque, E. Rivot, A. H. Knap, and O. Le Pape. 2008. Impact of Climate on Eel Populations of the Northern Hemisphere. *Marine Ecology Progress Series* **373**:71-80.
- Bonta, M. 2003. Seven Names for the Bellbird: Conservation Geography in Honduras. Texas A&M Press, College Station, Texas.
- Both C., M. Van Asch, R. G. Bijlsma, A. B. van der Burg, and M. E. Visser. 2009. Climate change and unequal phenological changes across four trophic levels: constraints or adaptations? *Journal of Animal Ecology* **78**:73–83.
- Boucek, R. E., and J. S. Rehage. 2014. Climate extremes drive changes in functional community structure. *Global Change Biology* **20**:1821-1831.
- Boulet, M., and D. R. Norris. 2006. Patterns of Migratory Connectivity in Two Nearctic-Neotropical Songbirds: New Insights from Intrinsic Markers. *Ornithological Monographs No. 61*, The American Ornithologists' Union, Washington, D.C.
- Bradley, N. L., A. C. Leopold, J. Ross, and W. Huffaker. 1999. Phenological changes reflect climate change in Wisconsin. *Proceedings of the National Academy of Sciences* **96**:9701-9704.
- Bradley, R. S., F. T. Keimig, and H. F. Diaz. 2004. Projected temperature changes along the American cordillera and the planned GCOS network. *Geophysical Research Letters* **31**:L16201.
- Bradley, R. S., M. Vuille, H. F. Diaz, and W. Vergara. 2006. Threats to water supplies in the tropical Andes. *Science* **312**:7551756.
- Braun, E. L. 1950. *Deciduous Forests of Eastern North America*. Reprinted 2001. The Blackburn Press. Caldwell, New Jersey.
- Brandt, L., et al. 2014. Central Hardwoods ecosystem vulnerability assessment and synthesis: a report from the Central Hardwoods Climate Change Response Framework project. U.S. Department of Agriculture, Forest Service, Northern Research Station. Newtown Square, Pennsylvania.



- Brannon, M. P. 2002. Epigeal movement of the smoky shrew *Sorex fumeus* following precipitation in ridgetop and streamside habitats. *Acta Theriologica* **47**:363-368.
- Brazik, D. C., and R. A. Bullis. 1995. The Effect of Temperature on the Relationship Between a Ciliated Protozoan (*Trichodina Cottidarum*) and the Longhorn Sculpin (*Myoxocephalus Octodecemspinus*). *Biological Bulletin* **189**:239.
- Briggler, J. T., and J. W. Prather. 2006. Seasonal Use and Selection of Caves by Plethodontid Salamanders in a Karst Area of Arkansas. *The American Midland Naturalist* **155**:136-148.
- Brittingham, M. C., and C. A. DeLong. 1998. Management Practices for Enhancing Wildlife Habitat. College of Agricultural Sciences, Cooperative Extension. The Pennsylvania State University, University Park, Pennsylvania Available from <http://extension.psu.edu/publications/uh107>.
- Brooks, H. E., G. W. Carbin, and P. T. Marsh. 2014. Increased variability of tornado occurrence in the United States. *Science* **346**:349-352.
- Brooks, R. P., E. D. Bellis, and D. E. Arnold. 1987. Wildlife and plant communities of selected wetlands: Pocono region of Pennsylvania. U.S. Department of the Interior, Fish and Wildlife Service. Washington, D.C.
- Brooks, R. P., D. H. Wardrop, D. H., and J. A. Bishop. 2004. Assessing wetland condition on a watershed basis in the Mid-Atlantic Region using synoptic land-cover maps. *Environmental Monitoring and Assessment* **94**:9-22.
- Brose, P. H., D. C. Dey, and T. A. Waldrop. 2014. The Fire-Oak Literature of Eastern North America: Synthesis and Guidelines. General Technical Report, NRS-135. U.S. Forest Service Northern Research Station. Newtown Square, Pennsylvania.
- Brown, Charles R. 1997. Purple Martin (*Progne subis*), *The Birds of North America Online*. A. Poole, editor. Ithaca: Cornell Laboratory of Ornithology. Available from <http://bna.birds.cornell.edu/bna/species/287>.
- Brown, S., C. Hickey, B. Harrington, and R. Gill, eds. 2001. *The U.S. Shorebird Conservation Plan*, 2nd ed. Manomet Center for Conservation Sciences. Manomet, Massachusetts.
- Brown, L. J., and R. E. Jung. 2005. An introduction to Mid-Atlantic Seasonal Pools. EPA/903/B-05/001. U.S. Environmental Protection Agency, Mid-Atlantic Integrated Assessment. Ft. Meade, Maryland.
- Brown, V. L., and P. Rohani. 2012. The consequences of climate change at an avian influenza ‘hotspot’. *Biology Letters* **8**:1036-1039.
- Bryan, A., A. Karmalkar, E. Coffel, L. Ning, R. Horton, E. Demaria, F. Fan, R. S. Bradley, R. Palmer. 2015a. Chapter 1. Climate Change in the Northeast and Midwest States in Staudinger, M. D., T. L. Morelli, and A. M. Bryan. 2015. Integrating Climate Change into Northeast and Midwest State Wildlife Action Plans. DOI Northeast Climate Science Center Report, Amherst, Massachusetts. Available from <http://necsc.umass.edu/projects/integrating-climate-change-state-wildlife-action-plans> (accessed June 2015).



- Bryan, A. M., A. L. Steiner, and D. J. Posselt. 2015b. Regional modeling of surface-atmosphere interactions and their impact on Great Lakes hydroclimate. *Journal of Geophysical Research: Atmospheres* **120**:1044-1064.
- Budy, P., and C. Luecke. 2014. Understanding how lake populations of arctic char are structured and function with special consideration of the potential effects of climate change: a multi-faceted approach. *Oecologia* **176**:81-94.
- Bunn, S. E., and A. H. Arthington. 2002. Basic Principles and Ecological Consequences of Altered Flow Regimes for Aquatic Biodiversity. *Environmental Management* **30**:492-507.
- Bunnell, F., D. Fraser, and A. Harcombe. 2009. Increasing effectiveness of conservation decisions: a system and its application. *Natural Areas Journal* **29**:79-90.
- Burge, C. A., C. M. Eakin, C. S. Friedman, B. Froelich, P. K. Hershberger, E. E. Hofmann, L. E. Petes, K. C. Prager, E. Weil, B. L. Willis, S. E. Ford, and C. D. Harvell. 2014. Climate Change Influences on Marine Infectious Diseases: Implications for Management and Society. *Annual Review of Marine Science* **6**:249-277.
- Busch W., S. Larry, and C. Castiglione. 1998. Evaluating Stream Habitat for Diadromous Fish in Atlantic Coast Watersheds: A Preliminary Assessment. *Issues of Concern for Atlantic Marine Fish Habitat* Nov. 1998 Issue No. 27. Atlantic States Marine Fisheries Commission. U.S. Fish and Wildlife Service, Lower Great Lakes Fishery Resources Office. *Habitat Hotline Atlantic* **27**:1-3.
- Buskirk, J. V. 2012. Changes in the Annual Cycle of North American Raptors Associated with Recent Shifts in Migration Timing. *The Auk* **129**:691-698.
- Butfiloski, J. and T. Swaynham. 2005. Eastern spotted skunk fact sheet. South Carolina State Documents Depository. Available from <http://www.statelibrary.sc.gov/sc-state-documents-depository> (accessed July 2015).
- Butler, B. J. 2008. Family forest owners of the United States, 2006: General Technical Report NRS-27. U.S. Department of Agriculture, Forest Service, Northern Research Station, Newtown Square, Pennsylvania. http://www.nrs.fs.fed.us/pubs/gtr/gtr_nrs27.pdf
- Butler, C. J. 2003. The disproportionate effect of global warming on the arrival dates of short-distance migratory birds in North America. *Ibis* **145**:484-495.
- Butler, P. R., C. W. Swanston, M. K. Janowiak, L. R. Parker, M. J. St. Pierre, and L. A. Brandt. 2012. Adaptation strategies and approaches. In C. W. Swanston and M. K. Janowiak, editors. *Forest Adaptation Resources: Climate change tools and approaches for land managers*. General Technical Report NRS-87. U.S. Department of Agriculture, Forest Service, Northern Research Station, Newtown Square, Pennsylvania.
- Butler, P., et al. 2015. Central Appalachians forest ecosystem vulnerability assessment and synthesis: a report from the Central Appalachians Climate Change Response Framework. General Technical Report NRS-146. U.S. Department of Agriculture, Forest Service, Northern Research Station, Newtown Square, Pennsylvania. Available from <http://www.nrs.fs.fed.us/pubs/47885> (accessed May 2015).



Byers, E., and S. Norris. 2011. Climate change vulnerability assessment of Species of Concern in West Virginia. West Virginia Division of Natural Resources, Elkins, West Virginia.

C

Caldeira, K., and M. E. Wickett. 2003. Oceanography: anthropogenic carbon and ocean pH. *Nature* **425**:365-365.

Cameron, S. A., J. D. Lozier, J. P. Strange, J. B. Koch, N. Cordes, L. F. Solter, and T. L. Griswold. 2010. Patterns of widespread decline in North American bumble bees. *Proceedings of the National Academy of Sciences of the United States of America* **108**:662-667.

Campbell, J. L., S. V. Ollinger, G. N. Flerchinger, H. Wicklein, K. Hayhoe, and A. S. Bailey. 2011. Past and projected future changes in snowpack and soil frost at the Hubbard Brook Experimental Forest, New Hampshire, USA. *Hydrological Processes* **24**:2465-2480.

Canadell, J. G., C. Le Quéré, M. R. Raupach, C. B. Field, E. T. Buitenhuis, P. Ciais, T. J. Conway, N. P. Gillett, R. Houghton, and G. Marland. 2007. Contributions to accelerating atmospheric CO₂ growth from economic activity, carbon intensity, and efficiency of natural sinks. *Proceedings of the National Academy of Sciences* **104**:18866-18870.

Cannell, M., and R. Smith. 1986. Climatic warming, spring budburst and forest damage on trees. *Journal of Applied Ecology* **23**:177-191.

Carlisle, D. M., D. M. Wolock, and M. R. Meador. 2010. Alteration of stream flow magnitudes and potential ecological consequences: a multiregional assessment. *Frontiers in Ecology and the Environment* DOI:10.1890/100053.

Caro, T. 2010. *Conservation By Proxy: Indicator, Umbrella, Keystone, Flagship, and Other Surrogate Species*. Island Press, Washington, D.C.

Carroll, C. 2007. Interacting effects of climate change, landscape conversion, and harvest on carnivore populations at the range margin: marten and lynx in the northern Appalachians. *Conservation Biology* **21**:1092-1104.

Carter, M., B. Hunter, D. Pashley, and K. Rosenberg. 2000. Setting conservation priorities for landbirds in the United States: the Partners In Flight approach. *The Auk* **117**:541-548.

Chadwick, D. 2007. *State Wildlife Action Plans: A resource for State Wildlife Agencies and State Transportation Agencies to Work Together to Prevent Wildlife From Becoming Endangered*. University of California: Road Ecology Center. Davis, California. Available from <https://escholarship.org/uc/item/4n54j51p>

Chapman, D. W. 1988. Critical Review of Variables Used to Define Effects of Fines in Redds of Large Salmonids. *Transactions of the American Fisheries Society* **117**: 1-21.

Cheatwood, J. L., E. R. Jacobson, P. G. May, T. M. Farrell, B. L. Homer, D. A. Samuelson, and J. W. Kimbrough. 2003. An Outbreak of Fungal Dermatitis and Stomatitis in a Free-Ranging Population of Pigmy Rattlesnakes (*Sistrurus miliarius barbouri*) in Florida. *Journal of Wildlife Diseases* **39**:329-337.



Chen, W., et al. 2013. Monitoring habitat condition changes during winter and pre-calving migration for Bathurst Caribou in northern Canada. *Biodiversity* **14**:36-44.

Chen, L.-Y., A. Heath, and R. Neves. 2001. Comparison of oxygen consumption in freshwater mussels (Unionidae) from different habitats during declining dissolved oxygen concentration. *Hydrobiologia* **450**:209-214.

Cheng, E., K. E. Hodges, J. Melo-Ferreira, P. C. Alves, and L. S. Mills. 2014. Conservation implications of the evolutionary history and genetic diversity hotspots of the snowshoe hare. *Molecular Ecology* **23**:2929-2942.

Chisholm, I. M., W. A. Huber, T.A. Wesche. 1987. Winter stream conditions and use of habitat by brook trout in high-elevation Wyoming streams. *Transactions of the American Fisheries Society* **116**:176-184.

Christensen, J. H., et al. 2013. Climate Phenomena and their Relevance for Future Regional Climate Change. Pages 1217-1308 In T. F. Stocker, D. Qin, G. K. Plattner, M. Tignor, S. K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex, and P. M. Midgley, editors. *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press, Cambridge, United Kingdom and New York, New York.

Clark, R. W., M. N. Marchand, B. J. Clifford, R. Stechert, and S. Stephens. 2011. Decline of an isolated timber rattlesnake (*Crotalus horridus*) population: Interactions between climate change, disease, and loss of genetic diversity. *Biological Conservation* **144**:886-891.

Cline, T., J. F. Kitchell, V. Bennington, G. A. McKinley, E. K. Moody, and B. C. Weidel. 2014. Climate impacts on landlocked sea lamprey: Implications for host-parasite interactions and invasive species management. *Ecosphere* **5**:art68.

CMP (Conservation Measures Partnership). 2013. The open standards for the practice of conservation. CMP. Version 3.0. April 2013. Washington, D.C. Available from <http://cmp-openstandards.org/wp-content/uploads/2014/03/CMP-OS-V3-0-Final.pdf> (accessed May 2015).

Cochran, P. A., M. A. Ross, T. S. Walker, and T. Biederman. 2012. Early spawning by the American brook lamprey (*Lethenteron appendix*) in southeastern Minnesota. *The Canadian Field-Naturalist* **126**:204-209.

Coffel, E., and R. Horton. 2015. Climate change and the impact of extreme temperatures on aviation. *Weather, Society, and Climate* **7**:94-102.

Cohen, S. J., et al. 2012. Downscaling and visioning of mountain snow packs and other climate change implications in North Vancouver, British Columbia. *Mitigation and Adaptation Strategies for Global Change* **17**:25-49.

Cohen, J. B., L. M. Houghton, and J. D. Fraser. 2009. Nesting density and reproductive success of piping plovers in response to storm- and human-created habitat changes. *Wildlife Monographs* **173**:1-24.

Colle, B. A., K. Rojowsky, and F. Buonaito. 2010. New York City Storm Surges: Climatology and an Analysis of the Wind and Cyclone Evolution. *Journal of Applied Meteorology and Climatology* **49**:85-100.



Collier, M., R. Webb, and J. Schmidt. 1996. Dams and rivers: Primer on the downstream effects of dams. U.S. Geological Survey Circular 1126. U.S. Geological Survey, Reston, Virginia.

Collins, M. J. 2009. Evidence for changing flood risk in New England since the late 20th century. *Journal of the American Water Resources Association* **45**:279-290.

Collins, M., et al. 2013. Long-term Climate Change: Projections, Commitments and Irreversibility. Pages 1029-1136 In T. F. Stocker, D. Qin, G. K. Plattner, M. Tignor, S. K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex, and P. M. Midgley, editors. *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press, Cambridge, United Kingdom, and New York, New York.

Colt, T., R. Fritsky, M. Giazzon, C. Lutz, D. Mummert, S. Wolbert and D. Brauning. 2015. Regional Wildlife Diversity Program project annual job report. Pennsylvania Game Commission. Harrisburg, Pennsylvania.

Comer, P., D. Faber-Langendoen, R. Evans, S. Gawler, C. Josse, G. Kittel, S. Menard, M. Pyne, M. Reid, K. Schulz, K. Snow, and J. Teague. 2003. *Ecological Systems of the United States: A Working Classification of U.S. Terrestrial Systems*. NatureServe, Arlington, Virginia.

Comte, L., L. Buisson, M. Daufresne, and G. Grenouillet. 2013. Climate-induced changes in the distribution of freshwater fish: observed and predicted trends. *Freshwater Biology* **58**:625-639.

Compact Council (Great Lakes-St. Lawrence River Basin Water Resources Council). 2005. Great Lakes-St. Lawrence River Basin Water Resources Compact. Available from <http://www.glscompactcouncil.org/Docs/Agreements/Great%20Lakes-St%20Lawrence%20River%20Basin%20Water%20Resources%20Compact.pdf> (accessed May 2015).

Cook, J., D. Nuccitelli, S. A. Green, M. Richardson, B. Winkler, R. Painting, R. Way, P. Jacobs, and A. Skuce. 2013. Quantifying the consensus on anthropogenic global warming in the scientific literature. *Environmental Research Letters* **8**:02024 DOI: [10.1088/1748-9326/8/2/024024](https://doi.org/10.1088/1748-9326/8/2/024024)

Cooley, S. R., and S. C. Doney. 2009. Anticipating ocean acidification's economic consequences for commercial fisheries. *Environmental Research Letters* **4**:024007.

Conway, C. J. 1999. Canada Warbler (*Wilsonia canadensis*). In *The Birds of North America*, No. 421. A. Poole and F. Gill, editors. The Birds of North America, Inc., Philadelphia, Pennsylvania.

Cowardin, L. M., D. S. Gilmer, and C. W. Shaiffer. 1985. Mallard recruitment in the agricultural environment of North Dakota. *Wildlife Monographs* **92**:3-37.

Cox, W. A., F. R. Thompson, and J. Faaborg. 2012. Species and Temporal Factors Affect Predator-Specific Rates of Nest Predation for Forest Songbirds in the Midwest. *The Auk* **129**:147-155.

Crecco, V. A., and T. F. Savoy. 1984. Effects of fluctuations in hydrographic conditions on year-class strength of American Shad (*Alosa sapidissima*) in the Connecticut River. *Canadian Journal of Fisheries and Aquatic Sciences* **41**:1216–1223.



- Crisfield, E. 2013. The Northeast Lexicon: Terminology Conventions and Data Framework for State Wildlife Action Plans in the Northeast Region. A report submitted to the Northeast Fish and Wildlife Diversity Technical Committee. Terwilliger Consulting, Inc., Locustville, Virginia.
- Crosbie, B., and P. Chow-Fraser. 1999. Percentage land use in the watershed determines the water and sediment quality of 22 marshes in the Great Lakes basin. *Canadian Journal of Fisheries and Aquatic Sciences* **56**:1781-1791.
- Cross, M. S., et al. 2012. The Adaptation for Conservation Targets (ACT) Framework: A Tool for Incorporating Climate Change into Natural Resource Management. *Environmental Management* **50**:341-351.
- Cryan, P. M., C. U. Meteyer, D. S. Blehert, J. M. Lorch, D. M. Reeder, G. G. Turner, J. Webb, M. Behr, M. Verant, R. E. Russell, K. T. Castle. 2013. Electrolyte depletion in white-nose syndrome bats. *Journal of Wildlife Diseases* **49**:398-402.
- Cullen, E., E. Yerger, S. Stoleson, and T. Nuttle. 2013. Climate Change Impacts on Pennsylvania Forest Songbirds against the Backdrop of Gas Development and Historical Deer Browsing. Final report to the Pennsylvania Department of Conservation and Natural Resources, Wild Resource Conservation Program, Report #WRCP-010376. Harrisburg, Pennsylvania.
- Culver, D. C., M. L. Niemiller, K. S. Zigler, M. C. Christman. 2014. Review of Studies of the Subterranean Faunal Studies of the Appalachians and a Review of Models of Subterranean Species Richness. A report to the Appalachian Landscape Conservation Cooperative, Shepherdstown, West Virginia. Available from <http://applcc.org/research/cave-and-karst-classification-and-mapping/review-of-studies-of-the-subterranean-faunal-studies-of-the-appalachians-and-a-review-of-models-of-subterranean-species-richness/view>.
- Cunjak, R. A. 1996. Winter habitat of selected stream fishes and potential impacts from land-use activity. *Canadian Journal of Fisheries and Aquatic Sciences* **53**(Supplement 1):267-282.
- Curtin, C. G., D. A. Kelt, T. C. Frey, and J. H. Brown. 2000. On the role of small mammals in mediating climatically driven vegetation change. *Ecology Letters* **3**:309-317.
- Cushman, S. A. 2006. Effects of habitat loss and fragmentation on amphibians: A review and prospectus. *Biological Conservation* **128**:231-240.
- D**
- Dahl, T. E. 2006. Status and trends of wetlands in the conterminous United States 1998 to 2004. U.S. Department of the Interior; Fish and Wildlife Service. Washington, D.C.
- Dai, K., A. Bergot, C. Liang, W. Xiang, Z. Huang. 2015. Environmental issues associated with wind energy a review. *Renewable Energy* **75**:911-921.
- Daniel, W. M., D. M. Infante, R. M. Hughes, Y-P. Tsang, P. C. Esselman, D. Wieferich, K. Herreman, A. R. Cooper, L. Wang, and W. W. Taylor. 2014. Characterizing coal and mineral mines as regional source of stress to stream fish assemblages. *Ecological Indicators* **50**:50-61.



- Daszak, P., D. E. Scott, A. M. Kilpatrick, C. Faggioni, J. W. Gibbons, and D. Porter. 2005. Amphibian population declines at Savannah River Site are linked to climate, not Chytridiomycosis. *Ecology* **86**:3232-3237.
- Davis, A. F., et al. 1991. A Natural Areas Inventory of Monroe County, Pennsylvania. The Nature Conservancy. Middletown, Pennsylvania.
- Davis, M. D. 1993. Old growth in the East: a survey. Cenozic Society, Inc., Richmond, Vermont.
- Davies, J. T., and F. Cooke. 1983. Annual nesting productivity in snow geese: prairie droughts and arctic springs. *Wildlife Management* **47**:291-296.
- Dawson, T. P., S. T. Jackson, J. I. House, I. C. Prentice, G. M. Mace. 2011. Beyond predictions: biodiversity conservation in a changing climate. *Science* **332**:53-58.
- Dedieu, J. P., A. Lessard-Fontaine, G. Ravazzani, E. Cremonese, G. Shalpykova, and M. Beniston. 2014. Shifting mountain snow patterns in a changing climate from remote sensing retrieval. *Science of The Total Environment* **493**:1267-1279.
- Del Genio, A. D., M. S. Yao, and J. Jonas. 2007. Will moist convection be stronger in a warmer climate? *Geophysical Research Letters* **34**:L16703.
- Delaware River Basin Fish & Wildlife Management Cooperative. 2011. Delaware River Sustainable Fishing Plan for American Shad. Prepared for the Atlantic States Marine Fisheries Commission Shad and River Herring Management Board. Available from <http://www.asmfc.org/files/Shad%20SFMPs/deRBCoopShadSFMP.pdf> (accessed June 2015).
- DeGraaf, R. M., and J. H. Rappole. 1995. Neotropical Migratory Birds: Natural History, Distribution, and Population Change. Comstock Publishing Associates, Cornell University Press, Ithaca, New York and London.
- DeLuca, W., R. Holberton, P. D. Hunt, and B. C. Eliason. 2013. Blackpoll Warbler (*Setophaga striata*). In A. Poole, editor. The Birds of North America Online. Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu.bnaproxy.birds.cornell.edu/bna/species/431> DOI:10.2173/bna.431.
- DeLuca, W. V., and K. McGarigal. 2014. Designing Sustainable Landscapes Project: Species based assessment of the influence of climate and land use change on Landscape Capability. Available from http://jamba.provost.ads.umass.edu/web/lcc/DSL_documentation_species.pdf (accessed May 2015) In Staudinger et al. 2015a.
- DePhilip, M., and T. Moberg. 2010. Ecosystem flow recommendations for the Susquehanna River basin. The Nature Conservancy. Harrisburg, Pennsylvania.
- DePhilip, M., and T. Moberg. 2013a. Ecosystem flow recommendations for the Delaware River basin. The Nature Conservancy, Harrisburg, Pennsylvania.



DePhilip, M., and T. Moberg. 2013b. Ecosystem flow recommendations for the Upper Ohio River basin in western Pennsylvania. The Nature Conservancy, Harrisburg, Pennsylvania.

Dennhardt, A. J., A. E. Duerr, D. Brandes, and T. E. Katzner. 2015. Modeling autumn migration of a rare soaring raptor identifies new movement corridors in central Appalachia. *Ecological Modelling* **303**:19-29.

Derksen, C. and R. Brown. 2012. Spring snow cover extent reductions in the 2008-2012 period exceeding climate model projections. *Geophysical Research Letters* **39**:L19504.

DeSante, D. F., D. R. Kaschube, and J. F. Saracco. 2015. Vital Rates of North American Landbirds. www.VitalRatesOfNorthAmericanLandbirds.org: The Institute for Bird Populations. Point Reyes Station, California.

Dessecker, D. R., Norman, G. W., and S. J. Williamson. 2007. Ruffed grouse conservation plan. Ruffed Grouse Society, Coraopolis, Pennsylvania.

Dettmers, R. 2006. A blueprint for the design and delivery of bird conservation in the North Atlantic forest. Available from http://www.acjv.org/documents/BCR_14_%20Blueprint.pdf.

DeWalle, D. R., B. R. Swistock, T. E. Johnson, and K. J. McGuire. 2000. Potential effects of climate change and urbanization on mean annual streamflow in the United States. *Water Resources Research* **36**:2655-2664.

Diabat, M., R. Haggerty, and S. M. Wondzell. 2013. Diurnal timing of warmer air under climate change affects magnitude, timing and duration of stream temperature change. *Hydrological Processes*. **27**:2367-2378.

Diaz, H. F., and R. S. Bradley. 1997. Temperature variations during the last century at high elevation sites. In: *Climatic Change at High Elevation Sites*, Springer:21-47.

Diaz, H. F., R. S. Bradley, and L. Ning. 2014. Climatic changes in mountain regions of the American Cordillera and the tropics: historical changes and future outlook. *Arctic, Antarctic, and Alpine Research*. **46**:735-743.

Dietze, M. C., and P. R. Moorcroft. 2011. Tree mortality in the eastern and central United States: patterns and drivers. *Global Change Biology* **17**:3312-3326.

Dionne, M., C. Maurice, J. Gauthier, and F. Shaffer. 2008. Impact of Hurricane Wilma on migrating birds: the case of the Chimney Swift. *The Wilson Journal of Ornithology* **120**:784-792.

Dobiesz, N. E., and N. P. Lester. 2009. Changes in mid-summer water temperature and clarity across the Great Lakes between 1968 and 2002. *Journal of Great Lakes Research* **35**:371-384.

Domingues, C. M., J. A. Church, N. J. White, P. J. Gleckler, S. E. Wijffels, P. M. Barker, and J. R. Dunn. 2008. Improved estimates of upper-ocean warming and multi-decadal sea-level rise. *Nature* **453**:1090-1093.



Donat, M. G., et al. 2013. Updated analyses of temperature and precipitation extreme indices since the beginning of the twentieth century: The HadEX2 dataset. *Journal of Geophysical Research: Atmospheres* **118**:2098-2118.

Doran, G. T. 1981. There's a S.M.A.R.T. way to write management's goals and objectives. *Management Review* **70**:35-36.

Douglas, E. M., R. M. Vogel, and C. N. Kroll. 2000. Trends in floods and low flows in the United States: impact of spatial correlation. *Journal of Hydrology* **240**:90-105.

Drohan, P. J., M. Brittingham, J. Bishop, and K. Yoder. 2012. Early trends in landcover change and forest fragmentation due to shale-gas development in Pennsylvania: a potential outcome for the Northcentral Appalachians. *Environmental Management* **49**:1061-1075.

Drumm, R. L., A. Cartwright, and B. Ford. 1994. Effects of rainfall and temperature on weight gain in the big brown bat, *Eptesicus fuscus*. *Proceedings of the Indiana Academy of Sciences* **103**:93-98.

Dubois, N., A. Caldas, J. Boshoven, and A. Delach. 2011. Integrating Climate Change Vulnerability Assessments into Adaptation Planning: A Case Study Using the NatureServe Climate Change Vulnerability Index to Inform Conservation Planning for Species in Florida [Final Report]. Defenders of Wildlife, Washington D.C. Available from http://www.defenders.org/sites/default/files/publications/integrating_climate_change_vulnerability_in_to_adaption_planning.pdf

DuBowy, P. J. 1996. Effects of Water Levels and Weather on Wintering Herons and Egrets. *The Southwestern Naturalist* **41**:341-347.

Dukes, J. S., and H. A. Mooney. 1999. Does global change increase the success of biological invaders? *Trends in Ecology and Evolution* **14**:135-139.

Dukes, J. S. et al. 2009. Responses of insect pests, pathogens, and invasive plant species to climate change in the forests of northeastern North America: What can we predict? *Canadian Journal of Forest Research* **39**:231-248.

Dunscomb, J. K., J. S. Evans, J. M. Strager, M. P. Strager, J. M. Kiesecker. 2014. Assessing future energy development across the Appalachian Landscape Conservation Cooperative. Appalachian Landscape Conservation Cooperative Grant #2012-02. The Nature Conservancy, Charlottesville, Virginia. Available from http://applcc.org/conservation-design/gis-planning/gis-tools-resources/assessing-future-energy-development-1/assessing-future-energy-development-across-the-appalachian-lcc/at_download/file. (accessed May 2015).

E

EBTJV (Eastern Brook Trout Joint Venture). 2006. Eastern brook trout: status and threats. Prepared by Trout Unlimited for the Eastern Brook Trout Joint Venture. Arlington, Virginia. Available from http://easternbrooktrout.org/reports/eastern-brook-trout-status-and-threats/at_download/file (accessed May 2015).



EBTJV (Eastern Brook Trout Joint Venture). 2008. Conserving the Eastern Brook Trout: Action Strategies. Available from http://www.fws.gov/northeast/fisheries/pdf/EBTJV_Conservation_Strategy_July08.pdf (accessed May 2015).

Edwards, P., and R. Cunjak. 2007. Influence of water temperature and streambed stability on the abundance and distribution of slimy sculpin (*Cottus cognatus*). *Environmental Biology of Fishes* **80**:9-22.

Ehlman, S. M., J. J. Cox, and P. H. Crowley. 2013. Evaporative water loss, spatial distributions, and survival in white-nose-syndrome-affected little brown myotis: a model. *Journal of Mammalogy* **94**:572-583.

Ehrlich, P. R., and A. H. Ehrlich. 1981. *Extinction: The Causes and Consequences of the Disappearance of Species*. Random House, New York, New York.

Ehrlich, P. R., and E. O. Wilson. 1991. Biodiversity studies: Science and Policy. *Science* **253**:758-762.

Ellison, A. M., M. S. Bank, B. D. Clinton, E. A. Colburn, K. Elliott, C. R. Ford, D. R. Foster, B. D. Kloeppel, J. D. Knoepp, G. M. Lovett, J. Mohan, D. A Orwig, N. L. Rodenhouse, W. V. Sobczak, K. A. Stinson, J. K. Stone, C. M. Swan, J. Thompson, B. von Holle, J. R. Webster. 2005. Loss of foundation species: consequences for the structure and dynamics of forested ecosystems. *Frontiers in Ecology and the Environment* **3**:479-486.

Emanuel, K. 2005. Increasing destructiveness of tropical cyclones over the past 30 years. *Nature* **436**:686-688.

Emanuel, K., R. Sundararajan, and J. Williams. 2008. Hurricanes and Global Warming: Results from Downscaling IPCC AR4 Simulations. *Bulletin of the American Meteorological Society* **89**:347-367.

Entrekin, S., M. White, B. Johnson, and E. Hagenbuch. 2011. Rapid Expansion of Natural Gas Development Poses a Threat to Surface Waters. *Frontiers in Ecology and the Environment* **9**:503–511.
Ernst, C. H. and E. M. Ernst. 2003. *Snakes of the United States and Canada*. Smithsonian, Washington, D.C.

Evans J. S., and Kiesecker J. M. 2014 Shale Gas, Wind and Water: Assessing the Potential Cumulative Impacts of Energy Development on Ecosystem Services within the Marcellus Play. PLoS ONE DOI: 10.1371/journal.pone.0089210.

Evans, M. A. 2014. Linking landscapes, aquatic productivity, and fisheries: an example in Lake Erie. In 144th Annual Meeting of the American Fisheries Society, Quebec City, Quebec.

Evans, M., E. Gow, R. R. Roth, M. S. Johnson, and T. J. Underwood. 2011. Wood Thrush (*Hylocichla mustelina*). In *The Birds of North America Online*. A. Poole, editor. Cornell Laboratory of Ornithology, Available from <http://bna.birds.cornell.edu/bna/species/246>.

Ewers, R. M., and R. K. Didham. 2006. Confounding factors in the detection of species responses to habitat fragmentation. *Biological Reviews* **81**:117-142.

**F**

Faaborg, J., M. Brittingham, T. Donovan, and J. Blake. 1995. Habitat fragmentation in the temperate zone. Ecology and management of neotropical migratory birds. Oxford University Press, New York, New York.

Faaborg, J., R. T. Holmes, A. D. Anders, K. L. Bildstein, K. M. Dugger, S. A. Gauthreaux Jr., P. Heglund, K. A. Hobson, A. E. Jahn, D. H. Johnson, S. C. Latta, D. J. Levey, P. P. Marra, C. L. Merkord, E. Nol, S. I. Rothstein, T. W. Sherry, T. S. Sillett, Frank R. Thompson III, and N. Warnock. 2010. Conserving migratory land birds in the New World: Do we know enough? *Ecological Applications* **20**:398-418.

Faber-Langendoen, D., J. Nichols, L. Master, K. Snow, A. Tomaino, R. Bittman, G. Hammerson, B. Heidel, L. Ramsay, A. Teucher, and B. Young. 2012. NatureServe Conservation Status Assessments: Methodology for Assigning Ranks. NatureServe, Arlington, Virginia.

Fahrig, L. 2003. Effects of habitat fragmentation on biodiversity. *Annual Review of Ecology, Evolution, and Systematics* **34**:487-515.

Fausch, K. D., C. E. Torgerson, C. V. Baxter, and H. W. Li. 2002. Landscapes to Riverscapes: Bridging the gap Between Research and Conservation of Stream fishes. *BioScience* **52**:483-498.

Feaga, J. B. 2010. Wetland Hydrology and Soils as Components of Virginia Bog Turtle (*Glyptemys Muhlenbergii*) Habitat. Virginia Polytechnic Institute and State University Doctoral Dissertation:7-92. <http://hdl.handle.net/10919/30113>

Feely, R. A., C. L. Sabine, K. Lee, W. Berelson, J. Kleypas, V. J. Fabry, and F. J. Millero. 2004. Impact of anthropogenic CO₂ on the CaCO₃ system in the oceans. *Science* **305**:362-366.

Fenster, M. S., C. B. Knisley, and C. T. Reed. 2006. Habitat Preference and the Effects of Beach Nourishment on the Federally Threatened Northeastern Beach Tiger Beetle, *Cicindela dorsalis dorsalis*: Western Shore, Chesapeake Bay, Virginia. *Journal of Coastal Research* **22**:1133-1144.

Ferree, C. E., and M. G. Anderson. 2011. A Terrestrial Habitat Map for the Northeastern United States: Methods and Approach. The Nature Conservancy, Eastern Conservation Science, Eastern Regional Office. Boston, Massachusetts.

Fike, J. 1999. Terrestrial and palustrine plant communities of Pennsylvania. Pennsylvania Natural Diversity Inventory. Pennsylvania Department of Conservation and Recreation. Bureau of Forestry. Harrisburg, Pennsylvania.

Findlay, C. S., and J. Houlahan. 1997. Anthropogenic Correlates of Species Richness in Southeastern Ontario Wetlands. *Conservation Biology* **11**:1000-1009.

Firth, P., and S. G. Fisher. 1991. Global climate change and freshwater ecosystems. Springer-Verlag, New York, New York.

Fischer, E. M., and R. Knutti. 2015. Anthropogenic contribution to global occurrence of heavy-precipitation and high-temperature extremes. *Nature Climate Change*: DOI: 10.1038/nclimate2617.



- Fisher, A. 2000. Preliminary findings from the Mid-Atlantic regional assessment. *Climate Research* **14**: 261-269.
- Flaxman, M., and J. C. Vargas-Moreno. 2011. Considering Climate Change in State Wildlife Action Planning: A Spatial Resilience Planning Approach. Research Report FWC 2011. Department of Urban Studies and Planning, Massachusetts Institute of Technology, Cambridge, Massachusetts. Available from <http://www.myfwc.com/media/1770248/ConsideringClimateChange-WildlifeActionPlan.pdf>
- Forcey, G. M., W. E. Thogmartin, G. M. Linz, and P. C. McKann. 2014. Land use and climate affect Black Tern, Northern Harrier, and Marsh Wren abundance in the Prairie Pothole Region of the United States. *The Condor* **116**:226-241.
- Forman, R. T. T., et al. 2003. *Road Ecology: Science and Solutions*. R. T. T. Forman, editor. Island Press, Washington, D.C.
- Fox, A. D., M. Desholm, J. Kahlert, T. K. Christensen, and I. K. Petersen. 2006. Information needs to support environmental impact assessment of the effects of European marine offshore wind farms on birds. *Ibis* **148**:129-144.
- Francis, C. D., C. P. Ortega, and A. Cruz. 2009. Noise pollution changes avian communities and species interactions. *Current Biology* **19**:1415-1419.
- Fraser, K. C., B. J. M. Stutchbery, C. Silverio, P. M. Kramer, J. Burrow, D. Newstead, N. Mickle, B. F. Cousens, J. C. Lee, D. M. Morrison, T. Shaheen, P. Mammenga, K. Applegate, and J. Tautin. 2012. Continent-wide tracking to determine migratory connectivity and tropical habitat associations of a declining aerial insectivore. *Proceedings of the Royal Society of London B*. **279**:4901-4906.
- Fraser, K.C., B. J. M. Stutchbury, C. Silverio, P. Kramer, J. Barrow, D. Newstead, N. Mickle, T. Shaheen, P. Mammenga, K. Applegate, E. Bridge and J. Tautin. 2013. Consistent range-wide pattern in fall migration strategy of Purple Martin (*Progne subis*), despite different migration routes at the Gulf of Mexico. Invited paper for special Auk issue on geolocator tracking. *The Auk* **130**:1-6.
- Frick, W. F., D. S. Reynolds, and T. H. Kunz. 2010. Influence of climate and reproductive timing on demography of little brown myotis *Myotis lucifugus*. *Journal of Animal Ecology* **79**:128-136.
- Friedland, K. D., D. G. Reddin, J. R. McMenemy, and K. F. Drinkwater. 2003. Multidecadal trends in North American Atlantic salmon (*Salmo salar*) stocks and climate trends relevant to juvenile survival. *Canadian Journal of Fisheries and Aquatic Sciences* **60**:563-583.
- Frumhoff, P. C., J. J. McCarthy, J. M. Melillo, S. C. Moser, and D. J. Wuebbles. 2007. *Confronting climate change in the U.S. Northeast: Science, Impacts, and Solutions*. Synthesis report of the Northeast Climate Impacts Assessment (NECIA). Union of Concerned Scientists (UCS), Cambridge, Massachusetts.
- Fry, J., G. Xian, S. Jin, J. Dewitz, C. Homer, L. Yang, C. Barnes, N. Herold, and J. Wickham. 2011. Completion of the 2006 National Landcover Database for the Conterminous United States. *Photogrammetric Engineering and Remote Sensing* **77**:858-864.



Fuller, S., and A. Tur. 2012. Conservation Strategy for the New England Cottontail (*Sylvilagus transitionalis*). Available from <http://www.newenglandcottontail.org/> (accessed May 2015) in Staudinger et al. (2015a).

Furedi, M., B. Leppo, M. Kowalski, T. Davis, and B. Eichelberger. 2011. Identifying species in Pennsylvania potentially vulnerable to climate change. Pennsylvania Natural Heritage Program, Western Pennsylvania Conservancy, Pittsburgh, Pennsylvania.

Furedi, M. 2013. An examination of the effects of climate change on species in Pennsylvania. Pennsylvania Natural Heritage Program. Western Pennsylvania Conservancy, Pittsburgh, Pennsylvania.

G

Galbraith, H. S., D. E. Spooner, and C. C. Vaughn. 2010. Synergistic effects of regional climate patterns and local water management on freshwater mussel communities. *Biological Conservation* **143**:1175-1183.

Galbraith, H., D. W. DesRochers, S. Brown, and J. M. Reed. 2014. Predicting vulnerabilities of North American shorebirds to climate change. *PLoS ONE* **9**:e108899.

Game, E. T., P. Kareiva, and H. P. Possingham. 2012. Six common mistakes in conservation priority setting. *Conservation Biology* **27**:480-485.

Gargas, A., M. T. Trest, M. Christensen, T. J. Volk, and D. S. Blehert. 2009. *Geomyces destructans* sp. nov. associated with bat white-nose syndrome. *Mycotaxon* **108**:147-154.

Garroway, C. J. Bowman, T. J. Cascaden, G. L. Holloway, C. G. Mahan, J. R. Malcolm, M. A. Steele, G. Turner, and P. J. Wilson. 2010. Climate change induced hybridization in flying squirrels. *Global Change Biology* **16**:113-121.

Gaston, K. J., J. Bennie, T. W. Davies, and J. Hopkins. 2013. The ecological impacts of nighttime light pollution: a mechanistic appraisal. **88**:912-927.

Gawler, S. C. 2008. Northeastern Terrestrial Wildlife Habitat Classification. Report to the Virginia Department of Game and Inland Fisheries on behalf of the Northeast Association of Fish and Wildlife Agencies and the National Fish and Wildlife Foundation. NatureServe, Boston, Massachusetts..

Gawler, S. C., M. G. Anderson, A. P. Olivero, and M. Clark. 2008. The Northeast Terrestrial Wildlife Habitat Classification, The Northeast Habitat Classification and Mapping Project Final Report: a report to the Virginia Department of Game and Inland Fisheries on behalf of the Northeast Association of Fish and Wildlife Agencies and the National Fish and Wildlife Foundation. NatureServe, Boston, Massachusetts.

Gay, J. 1892. The shad streams of Pennsylvania. Pages 151-186 In Report of the State Commissioners of Fisheries for the years 1889-90-91. Harrisburg, Pennsylvania.

Gensini, V. A., and T. L. Mote. 2015. Downscaled estimates of late 21st century severe weather from CCSM3. *Climatic Change* **129**:307-321.



- George, T. L., A. C. Fowler, R. L. Knight, and L. C. McEwen. 1992. Impacts of a Severe Drought on Grassland Birds in Western North Dakota. *Ecological Applications* **2**:275-284.
- Gerstell, R. 1998. American shad in the Susquehanna River basin. The Pennsylvania State University Press, University Park, Pennsylvania.
- Glick P., B. A. Stein, and N. Edelson, editors. 2011. Scanning the conservation horizon: a guide to climate change vulnerability assessment. National Wildlife Federation, Washington, D.C. Available from www.nwf.org/vulnerabilityguide (accessed May 2015) In Staudinger et al. (2015a).
- Goode, J. R., J. M. Buffington, D. Tonina, D. Isaak, R. F. Thurow, S. Wenger, D. Nagel, C. Luce, D. Tetzlaff, and C. Soulsby. 2013. Potential effects of climate change on streambed scour and risks to salmonid survival in snow-dominated mountain basins. *Hydrological Processes* **27**:750-765.
- Gorsky, D., J. Zydlewski, and D. Basley. 2012. Characterizing Seasonal Habitat Use and Diel Vertical Activity of Lake Whitefish in Clear Lake, Maine, as Determined with Acoustic Telemetry. *Transactions of the American Fisheries Society* **141**:761-771.
- Graf, W. L. 1993. Landscapes, commodities, and ecosystems: The relationship between policy and science for American rivers. Pages 11-42 In *Sustaining our Water Resources*. National Academy Press. Washington, D.C.
- Great Lakes Lake Sturgeon Web Site. 2004. Proceedings of the 2004 Great Lakes Sturgeon Coordination Meeting. Available from <http://www.fws.gov/midwest/sturgeon/documents/GLCoordMtg04/health.htm> (accessed April 2015).
- Greenberg, R., P. Bichier, A. C. Angon, and R. Reitsma. 1997. Bird populations in shade and sun coffee plantations in central Guatemala. *Conservation Biology* **11**:448-459.
- Greenberg, R., P. Bichier, and J. Sterling. 1997. Bird populations in rustic and planted shade coffee plantations of eastern Chiapas, Mexico. *Biotropica* **29**:501-514.
- Greenberg, R., P. Bichier, and A. C. Angon. 2000. The conservation value for birds of cacao plantations with diverse planted shade in Tabasco, Mexico. *Animal Conservation* **3**:105-112.
- Griffith, G. E., J. M. Omernik, and A. J. Woods. 1999. Ecoregions, watersheds, basins, and HUCs: How state and federal agencies frame water quality. *Journal of Soil and Water Conservation* **54**:666-677.
- Groffman, P. M., et al. 2012. Long-Term Integrated Studies Show Complex and Surprising Effects of Climate Change in the Northern Hardwood Forest. *BioScience* **62**:1056-1066.
- Groisman, P. Y., R. W. Knight, D. R. Easterling, T. R. Karl, G. C. Hegerl, and V. N. Razuvaev. 2005. Trends in intense precipitation in the climate record. *Journal of Climate* **18**:1326-1350.
- Groisman, P. Y., R. W. Knight, and O. G. Zolina. 2013. Recent Trends in Regional and Global Intense Precipitation Patterns. *Climate Vulnerability: Understanding and Addressing Threats to Essential Resources*. Academic Press:25-55.



Groner M.L., and R.A. Relyea. 2010. *Batrachochytrium dendrobatidis* is present in northwest Pennsylvania, USA, with high prevalence in *Notophthalmus viridescens*. *Herpetological Review* **41**:462-465.

Gronewold, A. D., V. Fortin, B. Lofgren, A. Clites, C. A. Stow, and F. Quinn. 2013. Coasts, water levels, and climate change: A Great Lakes perspective. *Climatic Change* **120**:697-711.

Gross, D. A., and P. E. Lowther. 2011. Yellow-bellied Flycatcher (*Empidonax flaviventris*), No. 566. In A. Poole, editor. *The Birds of North America*. The Birds of North America, Inc., Cornell Laboratory of Ornithology, Ithaca, NY. Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/566>.

Groves, C. R. 2003. *Drafting a conservation blueprint: a practitioner's guide to planning for biodiversity*. Island Press, Washington, D.C.

Gu, L., P. J. Hanson, W. Mac Post, D. P. Kaiser, B. Yang, R. Nemani, S. G. Pallardy, and T. Meyers. 2008. The 2007 Eastern US spring freeze: Increased cold damage in a warming world? *BioScience* **58**:253-262.

Guilbert, J., A. K. Betts, D. M. Rizzo, B. Beckage, and A. Bomblies. 2015. Characterization of increased persistence and intensity of precipitation in the northeastern United States. *Geophysical Research Letters* **42**:1888-1893.

Gurnell, A. M. 1998. The hydrogeomorphological effects of beaver dam-building activity. *Progress in Physical Geography* **22**:167-189.

H

Hamed, M. K. 2014. Impacts of climate change, human land use, and mercury contamination on Southern Appalachian Plethodontid salamanders. Ph.D. Dissertation, University of Tennessee. Knoxville, Tennessee. Available from http://trace.tennessee.edu/utk_graddiss/2825.

Hammond, J. S., R. L. Keeney, and H. Raiffa. 1999. *Smart choices: A practical guide to making better decisions*. Harvard Business Review Press, Cambridge, Massachusetts.

Handler, S., et al. 2014a. Minnesota forest ecosystem vulnerability assessment and synthesis: a report from the Northwoods Climate Change Response Framework. U.S. Department of Agriculture, Forest Service, Northern Research Station, Newtown Square, Pennsylvania.

Handler, S., et al. 2014b. Michigan forest ecosystem vulnerability assessment and synthesis: a report from the Northwoods Climate Change Response Framework. U.S. Department of Agriculture, Forest Service, Northern Research Station, Newtown Square, Pennsylvania.

Harding, J. S., E. F. Benfield, P. V. Bolstad, G. S. Helfman, E. B. D. Jones III. 1998. Stream Biodiversity: The ghost of land use past. *Proceedings of the National Academy of Sciences of the United States of America*. **95**:14843-14847.

Harman, W., R. Starr, M. Carter, K. Tweedy, M. Clemmons, K. Suggs, C. Miller. 2012. *A Function-Based Framework for Stream Assessment and Restoration Projects*. EPA 843-K-12-006. U.S. Environmental Protection Agency, Office of Wetlands, Oceans, and Watersheds, Washington, D.C.



- Harper, M. P., and B. L. Peckarsky. 2006. Emergence cues of a mayfly in a high-altitude stream ecosystem: potential response to climate change. *Ecological Applications* **16**:612-621.
- Hart, J. A. 2001. Bat hibernacula management plan for the Commonwealth of Pennsylvania – Draft. Pennsylvania Game Commission, Harrisburg, Pennsylvania.
- Hastie, L. C., P. J. Cosgrove, N. Ellis, and M. J. Gaywood. 2003. The Threat of Climate Change to Freshwater Pearl Mussel Populations. *AMBIO: A Journal of the Human Environment* **32**:40-46.
- Hawkins, E., and R. Sutton. 2009. The potential to narrow uncertainty in regional climate predictions. *Bulletin of the American Meteorological Society* **90**:1095-1107.
- Hayhoe, K., C. P. Wake, T. G. Huntington, L. Luo, M. D. Schwartz, J. Sheffield, E. Wood, B. Anderson, J. Bradbury, and A. DeGaetano. 2007. Past and future changes in climate and hydrological indicators in the US Northeast. *Climate Dynamics* **28**:381-407.
- Hayhoe, K., C. Wake, B. Anderson, X.Z. Liang, E. Maurer, J. Zhu, J. Bradbury, A. DeGaetano, A. M. Stoner, and D. Wuebbles. 2008. Regional climate change projections for the Northeast USA. *Mitigation and Adaptation Strategies for Global Change* **13**:425-436.
- Heath, J. A., K. Steenhof, and M. A. Foster. 2012. Shorter migration distances associated with higher winter temperatures suggest a mechanism for advancing nesting phenology of American kestrels *Falco sparverius*. *Journal of Avian Biology* **43**:376-384.
- Hedger, R. D., L. E. Sundt-Hansen, T. Forseth, O. Ugedal, O. H. Diserud, Å. S. Kvambekk, and A. G. Finstad. 2013. Predicting climate change effects on subarctic–Arctic populations of Atlantic salmon (*Salmo salar*). *Canadian Journal of Fisheries and Aquatic Sciences* **70**:159-168.
- Heinz Center 2002. Dam Removal Research Status and Prospects. Proceedings of the Heinz Center’s Dam Removal Research Workshop. October 23-24, 2002. Washington, D.C.
- Heinz Center. 2008. Strategies for managing the effects of climate change on wildlife and ecosystems. Available from http://www.heinzctr.org/publications/PDF/Strategies_for_managing_effects_of_climate_change_on_wildlife.pdf (accessed May 2015) In Staudinger et al. (2015c).
- Heinz Center. 2009. Measuring the Results of Wildlife Conservation Activities. The Heinz Center, Washington, D.C.
- Heller, N. E., and E. S. Zavaleta. 2009. Biodiversity management in the face of climate change: a review of 22 years of recommendations. *Biological Conservation* **142**:14-32.
- Hemond, H. F., and J. Benoit. 1986. Cumulative Impacts on Water Quality Functions of Wetlands. *Environmental Management* **12**:639-653.
- Hendricks, M. L., and R. A. St. Pierre. 2002. Alosid management and restoration plan for the Susquehanna River Basin. Susquehanna River Anadromous Fish Restoration Cooperative. Harrisburg, Pennsylvania.



Hendricks, M. L. 2004. American Shad Hatchery Operations. Pennsylvania Fish and Boat Commission. Benner Spring Fish Research Station. State College, Pennsylvania. Available from http://fishandboat.com/pafish/shad/reports_technical/2004/hatchery.htm (accessed July 2015).

Hendricks, M. L., and J. D. Tryniewski. 2011. Life History, Conservation and Management Strategies for the American Shad (*Alosa sapidissima*) of the Susquehanna River. Species Account for Amendment to PGC-PFBC (2005), revised 2008. Pennsylvania Fish and Boat Commission, Harrisburg, Pennsylvania. Available from http://fishandboat.com/promo/grants/swg/nongame_plan/pa_wap_amend_3_species.pdf

Herb, W. R., L. B. Johnson, P. C. Jacobson, and H. G. Stefan. 2014. Projecting cold-water fish habitat in lakes of the glacial lakes region under changing land use and climate regimes. *Canadian Journal of Fisheries and Aquatic Sciences* **71**:1334-1348.

Herstoff, E., and M. C. Urban. 2014. Will pre-adaptation buffer the impacts of climate change on novel species interactions? *Ecography* **37**:111-119.

Hobbie, J. E., S. R. Carpenter, N. B. Grimm, J. R. Gosz, and T. R. Seastedt. 2003. The US Long Term Ecological Research Program. *BioScience* **53**:21-32.

Hodgkins, G. A., R. W. Dudley, and T. G. Huntington. 2005. Summer low flows in New England during the 20th Century. *Journal of the American Water Resources Association* **41**:403- 411.

Hodgkins, G. A., and R. W. Dudley. 2006. Changes in the timing of winter-spring streamflows in eastern North America, 1913-2002. *Geophysical Research Letters* **33**:L06402.

Holland, G. J., and P. J. Webster. 2007. Heightened tropical cyclone activity in the North Atlantic: natural variability or climate trend? *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences* **365**:2695-2716.

Holling, C. S. 1978. *Adaptive Environmental Assessment and Management*. Wiley, London. Reprinted by Blackburn Press in 2005.

Hollingsworth-Segedy, L. 2013. Final report for Provision of Fish Passage and Stream Habitat Restoration on Skinner Creek, Liberty Township and State Game Lands 61, McKean County. Final report from American Rivers to the Pennsylvania Fish and Boat Commission, Bellefonte, Pennsylvania.

Homer, C. G., J. A. Dewitz, L. Yang, S. Jin, P. Danielson, G. Xian, J. Coulston, N. D. Herold, J. D. Wickham, and K. Megown. 2015. Completion of the 2011 National Land Cover Database for the conterminous United States-Representing a decade of land cover change information. *Photogrammetric Engineering and Remote Sensing* **81**:345-354.

Horton, R., C. Little, V. Gornitz, D. Bader, and M. Oppenheimer. 2015. New York City Panel on Climate Change 2015 Report Chapter 2: Sea Level Rise and Coastal Storms. *Annals of the New York Academy of Sciences* **1336**:36-44.



Horton, R., G. Yohe, W. Easterling, R. Kates, M. Ruth, E. Sussman, A. Whelchel, D. Wolfe, and F. Lipschultz. 2014. Ch. 16: Northeast. Pages 371-395 In J. M. Melillo, T. C. Richmond, and G. W. Yohe, editors. *Climate Change Impacts in the United States: The Third National Climate Assessment*. U.S. Global Change Research Program. U.S. Government Printing Office, Washington, D.C.

Hostetler, J. A., T. S. Sillett, and P. P. Marra. 2015. Full-annual-cycle population models for migratory birds. *The Auk* **132**:433-449.

Houser, D. F. 2007. *Fish Management for Pennsylvania Impoundments*. Division of Habitat Management, Pennsylvania Fish and Boat Commission. Bellefonte, Pennsylvania.
http://fishandboat.com/water/habitat/lake_fish_hab.pdf

Hoving, C. L., Y. M. Lee, P. J. Badra, and B. J. Klatt. 2013. Changing climate, changing wildlife: a vulnerability assessment of 400 Species of Greatest Conservation Need and game species in Michigan. Wildlife Division Report #3564. Michigan Department of Natural Resources, Lansing, Michigan.

Howard, R. J., and J. S. Larson. 1985. A stream habitat classification system for beaver. *The Journal of Wildlife Management* **49**:19-25.

Hufkens, K., M. A. Friedl, T. F. Keenan, O. Sonnentag, A. Bailey, J. O'Keefe, and A. D. Richardson. 2012. Ecological impacts of a widespread frost event following early spring leaf-out. *Global Change Biology* **18**:2365-2377.

Hulse, A. C., C. J. McCoy, and E. J. Censky. 2001. *Amphibians and Reptiles of Pennsylvania and the Northeast*. Cornell University Press, Ithaca, New York.

Humphries, P., and D. S. Baldwin. 2003. Drought and aquatic ecosystems: An introduction. *Freshwater Biology* **48**:1141-1146.

Humphries, P., A. J. King, and J. D. Koehn. 1999. Fish, flows and flood plains: links between freshwater fishes and their environment in the Murray-Darling River system, Australia. *Environmental Biology of Fishes* **56**:129-151.

Hunt, P. 2007. Summary of 2007 revision of New Hampshire's list of threatened and endangered species. Report to New Hampshire Fish and Game, Nongame and Endangered Species Program. New Hampshire Audubon, Concord, New Hampshire. Available from (http://www.wildlife.state.nh.us/Wildlife/Nongame/Nongame_PDFs/Species_of_special_concern_0309.pdf)

I

Inouye, D. W. 2008. Effects of climate change on phenology, frost damage, and floral abundance of montane wildflowers. *Ecology* **89**:353-362.

IPCC (Intergovernmental Panel on Climate Change). 2007. *Climate Change: Synthesis Report-2007*. Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Core Writing Team, R. K. Pachauri, and A. Reisinger, editors. IPCC, Geneva, Switzerland.



IPCC (Intergovernmental Panel on Climate Change). 2007a. Climate change 2007: impacts, adaptation, and vulnerability. in M. L. Parry, O. F. Canziani, J. P. Palutikof, P. J. van der Linden, and C. E. Hanson, editors. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge, United Kingdom.

IPCC (Intergovernmental Panel on Climate Change). 2013: Climate change 2013: the physical science basis. in T. F. Stocker, D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex, and P.M. Midgley, editors. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge, United Kingdom.

IPCC (Intergovernmental Panel on Climate Change). 2014a. Change 2014: Synthesis Report. in Core Writing Team, R. K. Pachauri, and L. A. Meyer, editors. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. IPCC, Geneva, Switzerland.

IPCC (Intergovernmental Panel on Climate Change). 2014b. Climate change 2014: impacts, adaptation, and vulnerability. Part A: Global and sectoral aspects. In C. B. Field, V. R. Barros, D. J. Dokken, K. J. Mach, M. D. Mastrandrea, T. E. Bilir, M. Chatterjee, K. L. Ebi, Y. O. Estrada, R. C. Genova, B. Girma, E. S. Kissel, A. N. Levy, S. MacCracken, P. R. Mastrandrea, and L. L. White, editors. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge, United Kingdom.

Irwin, B. J., L. G. Rudstam, J. R. Jackson, A. J. VanDeValk, J. L. Forney, and D. G. Fitzgerald. 2009. Depensatory mortality, density-dependent growth, and delayed compensation: disentangling the interplay of mortality, growth, and density during early life stages of yellow perch. *Transactions of the American Fisheries Society* **138**:99-110.

IUCN (International Union for the Conservation of Nature). 2012. IUCN Red List Categories and Criteria: Version 3.1. Second edition. Gland, Switzerland and Cambridge, United Kingdom.

Iverson, L., A. Prasad, and S. Matthews. 2008a. Modeling potential climate change impacts on the trees of the northeastern United States. *Mitigation and Adaptation Strategies for Global Change* **13**:487-516.

Iverson, L. R., A. M. Prasad, S. N. Matthews, and M. Peters. 2008b. Estimating potential habitat for 134 eastern US trees species under six climate scenarios. *Forest Ecology and Management* **254**:390-406.

Isaak, D. J., S. Wollrab, D. Horan, and G. Chandler. 2011. Climate change effects on stream and river temperatures across the northwest U.S. from 1980-2009 and implications for salmonid fishes. *Climatic Change* **113**:499-524.

J Jackson, J. R., A. J. VanDeValk, J. L. Forney, B. F. Lantry, T. E. Brooking, and L. G. Rudstam. 2008. Long-term trends in burbot abundance in Oneida Lake, New York: life at the southern edge of the range in an era of climate change. *American Fisheries Society Symposium* **59**:131-152.

Jackson, S. D. 2003. Ecological Considerations in the Design of River and Stream Crossings. Ed. C.L. Irwin, P. Garrett, and K.P. McDermott. Proceedings of the International Conference on Ecology and Transportation. North Carolina State University, Center for Transportation and the Environment, Raleigh, North Carolina.



- Janowiak, M. K., L. M. Nagel, and C. R. Webster. 2010. Do We Need to Measure Small Trees When We Analyze Stand Structure? *Northern Journal of Applied Forestry* **27**:34-37.
- Janowiak, M. K., C. W. Swanston, L. M. Nagel, B. J. Palik, M. J. Twery, J. B. Bradford, C. R. Webster, L. R. Parker, A. T. Hille, and S. M. Johnson. 2011. Silvicultural decision making in an uncertain climate future: a workshop-based exploration of considerations, strategies, and approaches. General Technical Report NRS-81. U.S. Department of Agriculture, Forest Service, Northern Research Station, Newtown Square, Pennsylvania.
- Janowiak, M. K., et al. 2014a. Forest ecosystem vulnerability assessment and synthesis for northern Wisconsin and western Upper Michigan: a report from the Northwoods Climate Change Response Framework. U.S. Department of Agriculture, Forest Service, Northern Research Station, Newtown Square, Pennsylvania.
- Janowiak, M. K., C. W. Swanston, L. M. Nagel, L. A. Brandt, P. R. Butler, S. D. Handler, P. D. Shannon, L. R. Iverson, S. N. Matthews, A. M. Prasad, and M. P. Peters. 2014b. A practical approach for translating climate change adaptation principles into forest management actions. *Journal of Forestry* **112**:424-433.
- Jessup, D. A., and J. C. Seely. 1981. Zygomycete Fungus Infection in Two Captive Snakes: Gopher Snake (*Pituophis melanoleucos*); Copperhead (*Agkistrondon contortrix*). *Journal of Zoo Animal Medicine*. **12**:54-59.
- Jin, S., L. Yang, P. Danielson, C. Homer, J. Fry, and G. Xian. 2013. A comprehensive change detection method for updating the National Land Cover Database to circa 2011. *Remote Sensing of Environment*, **132**:159-175.
- Johnson, J. B., J. W. Edwards, and W. M. Ford. 2011. Nocturnal Activity Patterns of Northern Myotis (*Myotis septentrionalis*) during the Maternity Season in West Virginia (USA). *Acta Chiropterologica* **13**:391-397.
- Johnson, K. A. 2003. Abiotic Factors Influencing the Breeding, Movement, and Foraging of the Eastern Spadefoot (*Scaphiopus holbrookii*) in West Virginia. Marshall University Theses, Dissertations and Capstones. Paper 675. Available from <http://mds.marshall.edu/etd/675/>.
- Johnson, N., T. Gagnolet, R. Ralls, E. Zimmerman, B. Eichelberger, C. Tracey, G. Kreitler, S. Orndorff, J. Tomlinson, S. Bearer, and S. Sargent. 2010. Pennsylvania energy impacts assessment Report 1: Marcellus shale natural gas and wind. The Nature Conservancy, Pennsylvania Chapter, Harrisburg, Pennsylvania. Available from http://www.nature.org/media/pa/pa_energy_assessment_report.pdf (accessed March 2015).
- Johnson, N., T. Gagnolet, R. Ralls, and J. Stevens. 2011. Natural Gas Pipelines: Excerpt from Report 2 of the Pennsylvania Impacts Assessment. The Nature Conservancy, Harrisburg, Pennsylvania.
- Jones, M. L., B. J. Shuter, Y. Zhao, and J. D. Stockwell. 2006. Forecasting effects of climate change on Great Lakes fisheries: models that link habitat supply to population dynamics can help. *Canadian Journal of Fisheries and Aquatic Sciences* **63**:457-468.



- Jones, M. T., and P. R. Sievert. 2009. Effects of stochastic flood disturbance on adult wood turtles, *Glyptemys insculpta*, in Massachusetts. *The Canadian Field-Naturalist* **123**:313-322.
- Jones, R., C. Travers, C. Rodgers, B. Lazar, B., E. English, J. Lipton, J. Vogel, K. Strzepek, and J. Martinich. 2013. Climate Change Impacts on Freshwater Recreational Fishing in the United States. Mitigation and Adaptation Strategies for Global Change **18**:731-758.
- Johnson, J. B., P. B. Wood, and J. W. Edwards. 2006. Are external mine entrance characteristics related to bat use? *Wildlife Society Bulletin* **34**:1368-1375.
- Joseph, L. N., R. F. Maloney, and H. P. Possingham. 2009. Optimal allocation of resources among threatened species: a project prioritization protocol. *Conservation Biology* **23**:328-338.
- Joughin, I., B. E. Smith, and B. Medley. 2014. Marine ice sheet collapse potentially under way for the Thwaites Glacier Basin, West Antarctica. *Science* **344**:735-738.
- Joyce, L. A., et al. 2008. Preliminary review of adaptation options for climate-sensitive ecosystems and resources. A report by the U.S. Climate Change Science Program and the Subcommittee on Global Change Research. U.S. Environmental Protection Agency, Pages 3-1 to 3-127. Washington, D.C.
- Joyce, L. A., and M. K. Janowiak. 2011. Climate Change Assessments. U.S. Department of Agriculture, Forest Service, Climate Change Resource Center. Available from www.fs.usda.gov/ccrc/topics/assessments/introduction-to-assessments (accessed May 2015).
- K**
- Kane, H. H., C. H. Fletcher, L. N. Frazer, T. R. Anderson, M. M. Barbee, and H. H. Kane. 2015. Modeling sea-level rise vulnerability of coastal environments using ranked management concerns. *Climatic Change* DOI:10.1007/s10584-015-1377-3.
- Kapnick, S. B., and T. L. Delworth. 2013. Controls of global snow under a changed climate. *Journal of Climate* **26**:5537-5562.
- Karl, T. R., et al. 2012. U.S. temperature and drought: Recent anomalies and trends. *Eos, Transactions American Geophysical Union* **93**:473-474.
- Karr, J. R., and E. W. Chu. 1999. Restoring life in running waters: better biological monitoring. Island Press, Washington, D.C.
- Keating, R., E. H. Yerger, and T. Nuttle. 2013. Impacts of climate change on commonly encountered forest Lepidoptera of Pennsylvania. A report submitted to the Pennsylvania Department of Conservation and Natural Resources Wild Resources Conservation Program (WRCP-010383), Harrisburg, Pennsylvania.
- Kelly, J. P., and T. E. Condeso. 2014. Rainfall Effects on Heron and Egret Nest Abundance in the San Francisco Bay Area. *Wetlands* **34**:893-903.
- Kendon, E. J., N. M. Roberts, H. J. Fowler, M. J. Roberts, S. C. Chan, and C. A. Senior. 2014. Heavier summer downpours with climate change revealed by weather forecast resolution model. *Nature Climate Change* **4**:570-576.



Kenney, L. P., and M. R. Burne. 2000. A field guide to the animals of vernal pools. Massachusetts Division of Fisheries & Wildlife, Natural Heritage & Endangered Species Program. Westborough, Massachusetts and the Vernal Pool Association, Reading Memorial High School, Reading, Massachusetts.

Kerr, L. A., W. J. Connelly, E. J. Martino, A. C. Peer, R. J. Woodland, and D. H. Secor. 2009. Climate Change in the U.S. Atlantic Affecting Recreational Fisheries. *Reviews in Fisheries Science* **17**:267-289.

Kharin, V. V., F. Zwiers, X. Zhang, and M. Wehner. 2013. Changes in temperature and precipitation extremes in the CMIP5 ensemble. *Climatic Change* **119**:345-357.

King, R. S., and M. W. Baker. 2010. Considerations for analyzing ecological community thresholds in response to anthropogenic environmental gradients. *Journal of the North American Benthological Society*. **29**:998-1008.

Klein, D. R., et al. 2005. Management and conservation of wildlife in a changing Arctic environment. Pages 597-648 in C. Symon, L. Arris, and B. Heal, editors. *Arctic climate impact assessment*. Cambridge University Press, Cambridge, United Kingdom.

Klett, A. T., T. L. Shaffer, and D. H. Johnson. 1988. Duck nest success in the Prairie Pothole Region. *Journal of Wildlife Management* **52**:431-440.

Klopper, S. D. 2011. Establishing a Regional Initiative for Biomass Energy Development for Early-Succession SGCN in the Northeast. Final Report for RCN Grant 2007-07. Available from <http://rcngrants.org/content/establishing-regional-initiative-biomass-energy-development-early-succession-sgcn-northeast> (accessed May 2015).

Klopper, S. D. 2012. Identifying Relationships between Invasive Species and SGCN in the Northeast. Submitted to the Regional Conservation Needs Grants Program of the Northeast Association of Fish and Wildlife Agencies. Conservation Management Institute. Final Report for RCN Grant 2012-03. Available from http://rcngrants.org/sites/default/files/final_reports/Final%20Report.pdf. (accessed May 2015).

Knights, B. 2003. A review of the possible impacts of long-term oceanic and climate changes and fishing mortality on recruitment of anguillid eels of the Northern Hemisphere. *Science of The Total Environment* **310**:237-244.

Knowlton, F. F., and E. M. Gese. 1995. Coyote population processes revisited. Pages 1-6 in D. Rollins, C. Richardson, T. Blankenship, K. Canon, and S. Henke, editors. *Coyotes in the Southwest: a Compendium of Our Knowledge*. Texas Parks and Wildlife Department, Austin, Texas.

Knutson, T. R., J. L. McBride, J. Chan, K. Emanuel, G. Holland, C. Landsea, I. Held, J. P. Kossin, A. K. Srivastava, and M. Sugi. 2010. Tropical cyclones and climate change. *Nature Geoscience* **3**:157-163.

Knutti, R., and J. Sedláček. 2013. Robustness and uncertainties in the new CMIP5 climate model projections. *Nature Climate Change* **3**:369-373.

Koblmüller, S., R. K. Wayne, and J. A. Leonard. 2012. Impact of Quaternary climatic changes and interspecific competition on the demographic history of a highly mobile generalist carnivore, the coyote. *Biology Letters* **8**:644-647.



Koen, E. L., J. Bowman, J. L. Lalor, and P. J. Wilson. 2014. Continental-scale assessment of the hybrid zone between bobcat and Canada lynx. *Biological Conservation* **178**:107-115.

Kondolf, G. M. 1997. Hungry Water: Effects of Dams and Gravel Mining on River Channels. *Environmental Management* **21**:533-551.

Körner, C., and D. Basler. 2010. Phenology under Global Warming. *Science* **327**:1461-1462.

Krapu, G., A. Klett, and D. Jorde. 1983. The effect of variable spring water conditions on mallard reproduction. *The Auk* **100**:689-698.

Krosby, M., J. Tewksbury, N. M. Haddad, and J. Hoekstra. 2010. Ecological connectivity for a changing climate. *Conservation Biology* **24**:1686-1689.

Kubisiak, J. F. 1985. Ruffed grouse habitat relationships in aspen and oak forests of central Wisconsin USA. Technical Bulletin 151. Wisconsin Department of Natural Resources, Madison, Wisconsin.

Kunkel, K. E. 2013. Regional climate trends and scenarios for the U.S. National Climate Assessment. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Environmental Satellite, Data, and Information Service. Washington, D.C.

Kuvlesky Jr., W. P., L. A. Brennan, M. L. Morrison, K. K. Boydston, B. M. Ballard, F. C. Bryant. 2007. Wind energy development and wildlife conservation: challenges and opportunities. *Journal of Wildlife Management* **71**:2487-2498.

L

Lahnsteiner, F., M. Kletzl, and T. Weismann. 2012. The effect of temperature on embryonic and yolk-sac larval development in the burbot *Lota lota*. *Journal of Fish Biology* **81**:977-986.

Landis, D. A., A. K. Fiedler, C. A. Hamm, D. L. Cuthrell, E. H. Schools, D. R. Pearsall, M. E. Herbert, and P. J. Doran. 2012. Insect conservation in Michigan prairie fen: addressing the challenge of global change. *Journal of Insect Conservation* **16**:131-142.

Larkin, P.A. 1996. Concepts and issues in marine ecosystem management. *Reviews in Fish Biology and Fisheries* **6**:139–164.

Latham, R. E. 1993. The serpentine barrens of temperate eastern North America: critical issues in the management of rare species and communities. *Bartonia* **57**(supplement):61-74.

Latta, S. C., and M. E. Baltz. 1997. Population limitation in Neotropical Migratory Birds: Comments on Rappole and McDonald (1994). *The Auk* **114**:754-762.

Lawler, J. J., S. L. Shafer, and A. R. Blaustein. 2010. Projected climate impacts for the amphibians of the western hemisphere. *Conservation Biology* **24**:38-50.

Lellis, W.A., St. John White, B, J.C. Cole, C. S. Johnson, J.L. Devers, E. van Snik Gray, H.S. Galbraith. 2013. Newly Documented Host Fishes for the Eastern Elliptio Mussel *Elliptio complanata*. *Journal of Fish and Wildlife Management* **4**:75-85.



- Lenat, D. R., and J. K. Crawford. 1994. Effects of land use on water quality and aquatic biota of three North Carolina Piedmont streams. *Hydrobiologia* **294**:185-199.
- Leopardi, S., D. Blake, and S. J. Puechmaille. 2015. White-nose syndrome fungus introduced from Europe to North America. *Current Biology* **25**:R217-R219.
- Leppo, B., D. Lieb, M. Walsh, N. Welte, and P. Woods. 2015. Invertebrate Assessment for the 2015 Pennsylvania Wildlife Action Plan Revision. A final report State and Tribal Wildlife Grant (F14AF00255) to the Pennsylvania Fish and Boat Commission. Harrisburg, Pennsylvania.
- Leppo, B., E. Zimmerman, S. Ray, G. Podniesinski, and M. Furedi. 2009. Pennsylvania Statewide Seasonal Pool Ecosystem Classification: Description, mapping, and classification of seasonal pools, their associated plant and animal communities, and the surrounding landscape. Pennsylvania Natural Heritage Program, Western Pennsylvania Conservancy, Pittsburgh, Pennsylvania.
- Leppold, A. J., and R. S. Mulvihill. 2011. The boreal landbird component of migrant bird communities in eastern North America. Pages 73-84 In J. V. Wells, editor. *Boreal birds of North America: a hemispheric view of their conservation links and significance*. Studies in Avian Biology (no. 41). University of California Press, Berkeley, California.
- Lesmeister, D. B., M. E. Gompper, and J. J. Millspaugh. 2008. Summer resting and den site selection by eastern spotted skunks (*Spilogale putorius*) in Arkansas. *Journal of Mammalogy* **89**:1512-1520.
- Lesmeister, D. B., R. S. Crowhurst, J. J. Millspaugh, and M. E. Gompper. 2013. Landscape ecology of eastern spotted skunks in habitat restored for Red-cockaded Woodpeckers. *Restoration Ecology* **21**:267-275.
- Leuenberger, W., S. Bearer, J. Duchamp, S. Johnson, B. Leppo, P. McElhenny, and J. Larkin. In press for 2016. A comparison of Lepidoptera communities inhabiting restored and late successional pitch pine scrub oak barrens in Pennsylvania. *Natural Areas Journal*.
- Lins, H. F., and J. R. Slack. 1999. Seasonal and regional characteristics of US streamflow trends in the United States from 1940 to 1999. *Physical Geography* **26**:489-501.
- Linzey, D. W. 1998. *The Mammals of Virginia*. McDonald & Woodward Publishing Company, Blacksburg, Virginia.
- Lorch, J. M., et al. 2011. Experimental infection of bats with *Geomyces destructans* causes white-nose syndrome. *Nature* **480**:376-379.
- Loss, S. R., T. Will, and P. Marra. 2013. Estimates of bird collisions at wind facilities in the contiguous United States. *Biological Conservation* **168**:201-209.
- Louis A. Somma, Ann Foster, and Pam Fuller. 2015. *Trachemys scripta elegans*. USGS Nonindigenous Aquatic Species Database, Gainesville, FL. Revision Date: 10/28/2009. Available from <http://nas.er.usgs.gov/queries/FactSheet.aspx?SpeciesID=1261> (accessed May 2015).
- Lovalo, M. 2014. Feral Swine in Pennsylvania. Posted 07/07/14. Penn State Extension. Available from <http://extension.psu.edu/natural-resources/forests/news/2014/feral-swine-in-pennsylvania> (accessed May 2015).



Lowe, W. H. 2012. Climate change is linked to long-term decline in a stream salamander. *Biological Conservation* **145**:48-53.

Lurgi, M., B. C. López, and J. M. Montoya. 2012. Novel communities from climate change. *Philosophical Transactions of the Royal Society B: Biological Sciences* **367**:2913–22.

Lutz, K. J. 2007. Habitat Improvement for Trout Streams. Pennsylvania Fish and Boat Commission, Bellefonte, Pennsylvania. Available from http://fishandboat.com/water/streams/habitat_improve_trout.pdf (accessed June 2015).

Lynch, A. J., W. W. Taylor, and K. D. Smith. 2010. The influence of changing climate on the ecology and management of selected Laurentian Great Lakes fisheries. *Journal of Fish Biology* **77**:1764-1782.

Lyons, J., and J. S. Stewart. 2014. Predicted Effects of Future Climate Warming on Thermal Habitat Suitability for Lake Sturgeon (*Acipenser Fulvescens*, Rafinesque, 1817) in Rivers in Wisconsin, USA. *Journal of Applied Ichthyology* **30**:1508-1513.

M

MacCleery, D. W. 1992. American forest – A history of resiliency and recovery. USDA Forest Service FS-540. Revised 1993. Available from <http://www.fs.fed.us/research/docs/rpa/1993/amforest.pdf> (accessed May 2015).

Madsen, T., and E. Figdor. 2007. When it rains, it pours: global warming and rising frequency of extreme precipitation in the United States. Environment America Research and Policy Center, Boston, Massachusetts.

Mahanama, S., B. Livneh, R. Koster, D. Lettenmaier, and R. Reichle. 2012. Soil moisture, snow, and seasonal streamflow forecasts in the United States. *Journal of Hydrometeorology* **13**:189-203.

Malcolm, J. R., A. Markham, R. P. Neilson, and M. Garaci. 2002. Estimated migration rates under scenarios of global climate change. *Journal of Biogeography* **29**:835-849.

Maloney, E. D., et al. 2014. North American Climate in CMIP5 Experiments: Part III: Assessment of Twenty-First-Century Projections. *Journal of Climate* **27**:2230-2270.

Manjerovic, M., P. Wood, and J. Edwards. 2009. Mast and Weather Influences on Population Trends of a Species of Concern: the Allegheny Woodrat. *The American Midland Naturalist: An International Journal of Ecology, Evolution and Environment* **162**:52-61.

Majumdar, S. K., R. P. Brooks, F. J. Brenner, and R. W. Tiner, Jr. 1989. Wetlands Ecology and Conservation: Emphasis in Pennsylvania. Pennsylvania Academy of Science, Easton, Pennsylvania.

Manley, P. N., B. Van Horne, J. K. Roth, W. J. Zielinski, M. M. McKenzie, T. J. Weller, F. W. Weckerly, C. Vojta. 2006. Multiple species inventory and monitoring technical guide. General Technical Report WO-73. U.S. Department of Agriculture, Forest Service, Washington Office, Washington, D.C.

Mann, M. E., and K. A. Emanuel. 2006. Atlantic hurricane trends linked to climate change. *Eos, Transactions American Geophysical Union* **87**:233-241.



Manomet (Manomet Center for Conservation Science) and MADWF (Massachusetts Division of Fisheries and Wildlife). 2010. Climate change and Massachusetts fish and wildlife: Volume 2 habitat and species vulnerability. Massachusetts Division of Fisheries and Wildlife, Westborough, Massachusetts.

Manomet (Manomet Center for Conservation Science) and NWF (National Wildlife Federation). 2012. The Vulnerabilities of Fish and Wildlife Habitats in the Northeast to Climate Change. A Report to the Northeastern Association of Fish and Wildlife Agencies and the North Atlantic Landscape Conservation Cooperative. Manomet, Massachusetts. Available from <http://rcngrants.org/content/assessing-likely-impacts-climate-change-northeastern-fish-and-wildlife-habitats-and-species>

Manomet (Manomet Center for Conservation Science) and NWF (National Wildlife Federation). 2013. The vulnerabilities of fish and wildlife habitats in the Northeast to climate change. Manomet Center for Conservation Sciences, Plymouth, Massachusetts. Marra P. P., D. R. Norris, S. M. Haig, M. S. Webster, and J. A. Royle. 2006 Migratory connectivity. In Connectivity Conservation. Pages 157–183 In K. R. Crooks and M. Sanjayan, editors. Cambridge University Press, New York, New York.

Marra, P. P., C. M. Francis, R. S. Mulvihill, and F. R. Moore. 2008. The influence of climate on the timing and rate of spring bird migration. *Oecologia* **142**:307-315.

Marshall, E., and T. Randhir. 2008. Effect of climate change on watershed system: a regional analysis. *Climatic Change*. **89**:263-280.

Martin, E. H. and C. D. Apse. 2011. Northeast Aquatic Connectivity: An Assessment of Dams on Northeastern Rivers. The Nature Conservancy, Eastern Freshwater Program. Brunswick, Maine. Available from http://rcngrants.org/sites/default/files/final_reports/NEAquaticConnectivity_Report.pdf

Martínez-Meyer, E., A. T. Peterson, and W. W. Hargrove. 2004. Ecological niches as stable distributional constraints on mammal species, with implications for Pleistocene extinctions and climate change projections for biodiversity. *Global Ecology and Biogeography* **13**:305-314.

Master, T. L., R. S. Mulvihill, R. C. Leberman, J. Sanchez, and E. Carman. 2005. A Preliminary Study of Riparian Songbirds in Costa Rica, with Emphasis on Wintering Louisiana Waterthrushes. Pages 528 - 532 In Bird Conservation Implementation and Integration in the Americas: Proceedings of the Third International Partners in Flight Conference, March 20 - 24, 2002, C. J. Ralph and T. D. Rich, editors, USDA Forest Service General Technical Report. PSW-GTR-191. Asilomar, California.

Master, L. L., D. Faber-Langendoen, R. Bittman, G. A. Hammerson, B. Heidel, L. Ramsay, K. Snow, A. Teucher, and A. Tomaino. 2012. NatureServe Conservation Status Assessments: Factors for Evaluating Species and Ecosystem Risk. NatureServe, Arlington, Virginia.

Matthews, S. N., L. R. Iverson, A. M. Prasad, and M. P. Peters. 2007. A Climate Change Atlas for Bird Species of the Eastern United States [database]. Northern Research Station, U.S. Department of Agriculture, Forest Service, Delaware, Ohio. Available from <http://www.nrs.fs.fed.us/atlas/birds> in Staudinger et al. (2015a).

Matthews, S. N., L. R. Iverson, A. M. Prasad, and M. P. Peters. 2011. Potential habitat changes of 147 North American bird species to redistribution of vegetation and climate following predicted climate change. *Ecography* **260**:1460-1472.



- Mattice, J. A., D. W. Brauning, and D. R. Diefenbach. 2005. Abundance of Grassland Sparrows on reclaimed surface mines in western Pennsylvania. General Technical Report PSW-GTR-191. US Department of Agriculture Forest Service.
http://www.r5.fs.fed.us/psw/publications/documents/psw_gtr191/Asilomar/pdfs/504-510.pdf. (accessed June 2015).
- Maupin, M. A., J. F. Kenny, S. S. Hutson, J. K. Lovelace, N. L. Barber, and K. S. Linsey. 2014. Estimated use of water in the United States in 2010: U.S. Geological Survey Circular 1405. Available from <http://dx.doi.org/10.3133/cir1405>. (accessed May 2015).
- Matteson, S., K. Kreitinger, G. Bartelt, G. Butcher, D. Sample, and T. Will. 2009. Partners in Flight Bird Conservation Plan for the Boreal Hardwood Transition (Bird Conservation Region 12 — U.S. Portion). Version 1.0. Partners in Flight. Available from www.partnersinflight.org.
- Mattsson, B. J., T. L. Master, R. S. Mulvihill and W. D. Robinson. 2009. Louisiana Waterthrush (*Parkesia motacilla*). In A. Poole, editor. The Birds of North America Online. Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online:
<http://bna.birds.cornell.edu.bnaproxy.birds.cornell.edu/bna/species/151>. DOI:10.2173/bna.151 .
- McAllister, C. T., S. R. Goldberg, H. J. Holshuh, and S. E. Trauth. 1993. Disseminated Mycotic Dermatitis in a Wild-Caught Timber Rattlesnake, *Crotalus horridus* (Serpentes: Viperidae), from Arkansas. Texas Journal of Science **45**:279-281.
- McBride, M. P., K. B. Wojick, T. A. Georoff, J. Kimbro, M. M. Garner, X. W. Wang, A. L. Childress, J. F. X. Wellehan, Jr. 2015. *Ophidiomyces Ophidiicola* Dermatitis in Eight Free-Ranging Timber Rattlesnakes (*Crotalus horridus*) From Massachusetts. Journal of Zoo and Wildlife Medicine **46**:86-94.
- McCabe, G. J., and D. M. Wolock. 2002. A step increase in streamflow in the conterminous United States. Geophysical Research Letters **29**:2185.
- McCabe, G. J. and D. M. Wolock. 2011. Independent effects of temperature and precipitation on modeled runoff in the conterminous United States. Water Resources Research **47**:W11522.
- McCarthy, B. C., J. M. Bauman, and C. H. Keiffer. 2008. Mine land reclamation strategies for the restoration of American chestnut. Ecological Restoration **26**:292-294.
- McCaskill, G. L., W. H. McWilliams, C. A. Alerich, B. J. Butler, S. J. Crocker, G. M. Domke, D. Griffith, C. M. Kurtz, S. Lehman, T. W. Lister, R. S. Morin, W. K. Moser, P. Roth, R. Riemann, J. A. Westfall. 2013. Pennsylvania's Forests, 2009. Resource Bulletin. NRS-82. U.S. Department of Agriculture, Forest Service, Northern Research Station. Newton Square, Pennsylvania. Available from <http://www.nrs.fs.fed.us/pubs/43993>
- McCaskill, G. L. 2014. Forests of Pennsylvania, 2013. Resource Update FS-21. U.S. Department of Agriculture, Forest Service, Northern Research Station. Newtown Square, Pennsylvania. Available from <http://www.treesearch.fs.fed.us/pubs/47150>
- McCay, T. S., M. J. Komoraoski, and W. M. Ford. 1999. Use of an Upland Pine Forest by the Star-Nosed Mole, *Condylura Cristata*. The Journal of Elisha Mitchell Scientific Society **115**:316-318.



McClure, C. J. W., B. W. Rolek, K. McDonald, and G. E. Hill. 2012. Climate Change and the Decline of a Once Common Bird. *Ecology and Evolution* **2**:370-378.

McCormick, M. J. and G. L. Fahnenstiel. 1999. Recent climatic trends in nearshore water temperatures in the St. Lawrence Great Lakes. *Limnology and Oceanography* **44**:530-540.

McDill, M. E. 2009. Forests and Wildlife. Chapter 7 In Shortle, J., D. Abler, S. Blumsack, R. Crane, Z. Kaufman, M. McDill, R. Najjar, R. Ready, T. Wagener, and D. Wardrop. 2009. Pennsylvania Climate Impact Assessment. Report to the Pennsylvania Department of Environmental Protection, Environment and Natural Resources Institute, The Pennsylvania State University, University Park, Pennsylvania.

McDonnell, M. J. and S. T. A. Pickett. 1990. Ecosystem structure and function along urban-rural gradients: an unexploited opportunity for ecology. *Ecology* **71**:1232-1237.

McGuire, B. and S. Rupp. 2013. Perennial Herbaceous Biomass Production and harvest in the Prairie Pothole Region of the Northern Great Plains: Best Management Guidelines to Achieve Sustainability of Wildlife Resources. National Wildlife Federation, Washington, D.C.

McKinnon, E. A., K. C. Fraser, and B. J. M. Stutchbury. 2013. New Discoveries in Landbird Migration using Geolocators, and a Flight Plan for the Future. *The Auk* **130**:211-222.

McPherson, J. 2013. Conservation Assessment of Calcareous Ecosystems in Pennsylvania. Wild Resources Conservation Program, WRCP Grant #10391. Pennsylvania Natural Heritage Program, Western Pennsylvania Conservancy, Pittsburgh Pennsylvania.

McWilliams, W. H., C. A. Alerich, D. A. Devlin, A. J. Lister, T. W. Lister, S. L. Sterner, and J. A. Westfall. 2004. Annual inventory report for Pennsylvania's forests: results from the first three years. Resource Bulletin NE-159. U.S. Forest Service Northern Research Station. Newtown Square, Pennsylvania.

McWilliams, G. M., and D. W. Brauning. 2000. *The Birds of Pennsylvania*. Cornell University Press, Ithaca, New York.

Meehan, W. E. 1895. Fish, Fishing and Fisheries of Pennsylvania. Pages 257-450 In Report of the State Commissioners of Fisheries for the years 1892-93-94. Pennsylvania Fish Commission, Harrisburg, Pennsylvania.

Meehl, G. A. and C. Tebaldi. 2004. More intense, more frequent, and longer lasting heat waves in the 21st century. *Science* **305**:994-997.

Melles, S. J., M. J. Fortin, K. Lindsay, and D. Badzinski. 2011. Expanding northward: influence of climate change, forest connectivity, and population processes on a threatened species' range shift. *Global Change Biology* **17**:17-31.

Melillo, J. M., T. C. Richmond, and G. W. Yohe, editors. 2014. *Climate Change Impacts in the United States: The Third National Climate Assessment*. U.S. Global Change Research Program, Washington, D.C.



- Menzel, J. M., M. A. Menzel, J. C. Kilgo, W. M. Ford, J. W. Edwards, G. F. McCracken. 2005. Effect of habitat and foraging height on bat activity in the coastal plain of South Carolina. *Journal of Wildlife Management* **69**:235-245.
- Mercaldo-Allen, R., C. Kuropat, and E. M. Caldarone. 2006. A model to estimate growth in young-of-the-year tautog, *Tautoga onitis*, based on RNA/DNA ratio and seawater temperature. *Journal of Experimental Marine Biology and Ecology* **329**:187-195.
- Merritt, J. F. 1987. *Guide to the mammals of Pennsylvania*. University of Pittsburgh Press, Pittsburgh, Pennsylvania.
- Meteyer, C. U., E. L. Buckles, D. S. Blehert, A. C. Hicks, D. E. Green, V. Shearn-Bochsler, N. J. Thomas, A. Gargas, M. J. Behr. 2009. Histopathologic criteria to confirm white-nose syndrome in bats. *Journal of Veterinary Diagnostic Investigation* **21**:411-414.
- Milanovich, J., S. E. Trauth, D. A. Saugey, and R. R. Jordan. 2006. Fecundity, Reproductive Ecology, and Influence of Precipitation on Clutch Size in the Western Slimy Salamander (*Plethodon albagula*). *Herpetologica* **62**:292-301.
- Michalack, A. M., et al. 2013. Record-setting algal bloom in Lake Erie caused by agricultural and meteorological trends consistent with expected future conditions. *Proceedings of the National Academy of Sciences* **110**:6448-6452.
- Millar, C. I., N. L. Stephenson, and S. L. Stephens. 2007. Climate change and forests of the future: managing in the face of uncertainty. *Ecological Applications* **17**:2145-2151.
- Millar, C. S., and G. Blouin-Demers. 2012. Habitat suitability modelling for species at risk is sensitive to algorithm and scale: A case study of Blanding's turtle, *Emydoidea blandingii*, in Ontario, Canada. *Journal for Nature Conservation* **20**:18-29.
- Millennium Ecosystem Assessment. 2005. *Ecosystems and Human Well-Being: Wetlands and Water Synthesis*. World Resources Institute, Washington, D.C.
- Mills, D. M. 2009. Climate change, extreme weather events, and U.S. impacts: What can we say? *Journal of Occupational and Environmental Medicine* **51**:26-32.
- Mills, L. S., M. Zimova, J. Oyler, S. Running, J. T. Abatzoglou, and P. M. Lukacs. 2013a. Camouflage mismatch in seasonal coat color due to decreased snow duration. *Proceedings of the National Academy of Sciences* **110**:7360-7365.
- Mills, K. E., A. J. Pershing, T. F. Sheehan, and D. Mountain. 2013b. Climate and Ecosystem Linkages Explain Widespread Declines in North American Atlantic Salmon Populations. *Global Change Biology* **19**:3046-3061.
- Millsap, B. A., J. A. Gore, D. E. Runde, and S. I. Cerulean. 1990. Setting priorities for the conservation of fish and wildlife species in Florida. *Wildlife Monographs* **111**:1-57.
- Milly, P. C. D., K. A. Dunne, and A. V. Vecchia. 2005. Global patterns of trends in streamflow and water availability in a changing climate. *Nature* **438**:347-350.
- Milly, P. C. D., J. Betancourt, M. Falkenmark M, R. M. Hirsch, Z. W. Kundzewicz, D. P. Lettenmaier, and R. J. Stouffer. 2008. Stationarity is dead: whither water management? *Science* **319**:573–574.



- Min, S. K., X. Zhang, F. W. Zwiers, and G. C. Hegerl. 2011. Human contribution to more-intense precipitation extremes. *Nature* **470**:378-381.
- Minnis, A. M. and D. L. Lindner. 2013. Phylogenetic evaluation of *Geomyces* and allies reveals no close relatives of *Pseudogymnoascus destructans*, comb. nov., in bat hibernacula of eastern North America, *Fungal Biology* **117**:638-649.
- Mitsch, W. J., and J. G. Gosselink. 2000. The value of wetlands: importance of scale and landscape setting. *Ecological Economics* **35**:25-33.
- Mohr, C. E. 1942. Bat tagging in Pennsylvania turnpike tunnels. *Journal of Mammalogy* **23**:375-379.
- Mohseni, O., T. R. Erickson, and H. G. Stefan. 1999. Sensitivity of stream temperatures in the United States to air temperatures projected under a global warming scenario. *Water Resources Research* **35**:3723-3733.
- Moon, J. B., and D. H. Wardrop. 2013. Linking Landscapes to Wetland Condition: A Case Study of Eight Headwater Complexes in Pennsylvania. Pages 61-108 in R. P. Brooks and D. H. Wardrop, editors. *Mid-Atlantic Freshwater Wetlands: Advances in Wetlands Science, Management, Policy, and Practice*. Springer, New York, New York.
- Moore, M. V., M. L. Pace, J. R. Mather, P. S. Murdoch, R. W. Howarth, C. L. Folt, C. Y. Chen, H. F. Hemond, P. A. Flebbe, and C. T. Driscoll. 1997. Potential effects of climate change in freshwater ecosystems of the New England/Mid-Atlantic Region. *Hydrological Processes* **11**:925-947
- Moosman, P. R., H. H. Thomas, and J. P. Veilleux. 2012. Diet of the widespread insectivorous bats *Eptesicus fuscus* and *Myotis lucifugus* relative to climate and richness of bat communities. *Journal of Mammalogy* **93**:491-496.
- Morelli, T. L., A. B. Smith, C. R. Kastely, I. Mastroserio, C. Moritz, and S. R. Beissinger. 2012. Anthropogenic refugia ameliorate the severe climate-related decline of a montane mammal along its trailing edge. *Proceedings of the Royal Society B-Biological Sciences* **279**:4279-4286.
- Morelli, T. L., S. Yeh, N. Smith, C. I. Millar. 2012b. Climate project screening tool: an aid for climate change adaptation. General Technical Report PSW-RP-263. U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station, Portland, Oregon.
- Morelli, T. L., W. DeLuca, C. Ellison, S. Jane, S. Matthews. 2015. Chapter 3: Biological Responses to Climate Impacts with a Focus on Northeast and Midwest Regional Species of Greatest Conservation Need (RSGCN) In Staudinger et al. (2015a).
- Morrison, M. L., B. G. Marcot, and R. W. Mannan. 1992. *Wildlife-Habitat Relationships: Concepts and Applications*. University of Wisconsin Press, Madison, Wisconsin.
- Moss, R. H, et al. 2010. The next generation of scenarios for climate change research assessment. *Nature* **463**:747-756.
- Mountain, D. G. 2002. Potential consequences of climate change for the fish resources in the Mid-Atlantic Region. *American Fisheries Society Symposium* **32**:185-194.



Murphy, M. T., and F. Moore. 2003. Avian population trends within the evolving agricultural landscape of eastern and central United States. *The Auk* **120**:20-34.

Murray, D. L., E. W. Cox, W. B. Ballard, H. A. Whitlaw, M. S. Lenarz, T. W. Custer, T. Barnett, and T. K. Fuller. 2006. Pathogens, nutritional deficiency, and climate influences on a declining moose population. *Wildlife Monographs* **166**:1-30.

Music, B., A. Frigon, B. Lofgren, R. Turcotte, and J.F. Cyr. 2015. Present and future Laurentian Great Lakes hydroclimatic conditions as simulated by regional climate models with an emphasis on Lake Michigan-Huron. *Climatic Change* **130**:603-618.

Myers, W. and J. Bishop. 1999. Stratified land use/land cover for Pennsylvania. Pennsylvania GAP Analysis program. Environmental Resource Research Institute. The Pennsylvania State University, University Park, Pennsylvania.

Myers, W., J. Bishop, R. Brooks, T. O'Connell, D. Argent, G. Storm, J. Stauffer, and R. Carline. 2000. Pennsylvania Gap Analysis Project: Leading Landscapes for Collaborative Conservation. U.S. Geological Survey, Biological Resources Division, Gap Analysis Program. School of Forest Resources & Cooperative Fish and Wildlife Research Unit and Environmental Resources Research Institute. The Pennsylvania State University, University Park, Pennsylvania.

N

NAAT (National Advisory Acceptance Team). 2014. National Advisory Team (NAAT) Review Reference for the Members. July 15, 2004.

Nagle, R. D., C. L. Lutz, and A. L. Pyle. 2004. Overwintering in the nest by hatchling mMap Turtles (*Graptemys Geographica*). *Canadian Journal of Zoology* **82**:1211-1218.

NABCI (North American Bird Conservation Initiative, U.S. Committee). 2014. The State of the Birds 2014 Report. U.S. Department of Interior, Washington, D.C.

NADP (National Atmospheric Deposition Program) /National Trends Network. 2007. Available from <http://nadp.sws.uiuc.edu/> In USEPA 2008 (accessed 2007).

Naidoo, R., A. Balmford, P. J. Ferraro, S. Polasky, T. H. Ricketts, and M. Rouget. 2006. Integrating economic costs into conservation planning. *Trends in Ecology & Evolution* **21**:681–687.

NALCC (North Atlantic Landscape Conservation Cooperative). Projects web page. Available from <http://northatlanticlcc.org/projects> (accessed March 2015).

NALCC (North Atlantic Landscape Conservation Cooperative) Project 2011-07. Marine Bird Mapping and Assessment: Mapping the Distribution, Abundance, and Risk Assessment of Marine Birds in the Northwest Atlantic Ocean. Available from <http://northatlanticlcc.org/projects/mapping-the-distribution-abundance-and-risk-assessment-of-marine-birds-in-the-northwest-atlantic-ocean> (accessed April 2015).

NALCC (North Atlantic Landscape Conservation Cooperative) Project 2013-02. Collaboratively Restoring Aquatic Connectivity while Increasing Resiliency for Culverts and Road Stream Crossings to Future Floods. Available from



<http://northatlanticlcc.org/projects/aquatic-connectivity/statement-of-work-umass-aquatic-connectivity> (accessed April 2015).

NALCC (North Atlantic Landscape Conservation Cooperative) Project 2014-06. Collaboratively Restoring Aquatic Connectivity while Increasing Resiliency for Culverts and Road Stream Crossings to Future Floods. Available from <http://kyoto.zentraal.com/projects/aquatic-connectivity/restoring-aquatic-connectivity-and-increasing-flood-resilience-hurricane-sandy-mitigation-proposal/index.html> (accessed April 2015).

National Audubon Society. 2014. The Christmas Bird Count Historical Results [Online]. Available from <http://www.christmasbirdcount.org>. (accessed December 2013).

National Audubon Society. 2014b. Audubon's Birds and Climate Change Report: A Primer for Practitioners. Contributors: G. Langham, J. Schuetz, C. Soykan, C. Wilsey, T. Auer, G. LeBaron, C. Sanchez, T. Distler. Version 1.2. National Audubon Society, New York, New York.

Nations, J. D. 2006. The Maya Tropical Forest: People, Parks, and Ancient Cities. University of Texas Press, Austin, Texas.

NatureServe. 2013. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available from <http://www.natureserve.org/explorer>. (accessed May 2013).

Naujokaitis-Lewis, I. R., J. M. R. Curtis, L. Tischendorf, D. Badzinski, and K. Lindsay. 2013. Uncertainties in coupled species distribution-metapopulation dynamics models for risk assessments under climate change. *Diversity and Distributions* **19**:541–554.

NCDC (National Climatic Data Center). 2015. Climate at Glance. [online]. Available from <http://ncdc.noaa.gov/cag/> (accessed May 2015).

Nebel, S., A. Mills, J. D. McCracken, and P. D. Taylor. 2010. Declines of aerial insectivores in North America follow a geographic gradient. *Avian Conservation and Ecology* **5**:00391–050201.

Neves, R. J. 2004. Propagation of endangered freshwater mussels in North America. *Journal of Conchology Special Publication* **3**:69–80.

NEPARC (Northeast Partners in Amphibian and Reptile Conservation). 2010. Northeast amphibian and reptile Species of Regional Responsibility and Conservation Concern. Northeast Partners in Amphibian and Reptile Conservation Publication 2010-1. Available from http://www.northeastparc.org/products/pdfs/NEPARC_NEspeciesofresponsibility.pdf

Nerbonne, B. A., and B. Vondracek. 2001. Effects of Local Land Use on Physical Habitat, Benthic Macroinvertebrates, and Fish in the Whitewater River, Minnesota, USA. *Environmental Management* **28**:87–99.

Newman, G., A. Wiggins, A. Crall, E. Graham, S. Newman, and K. Crowston. 2012. The future of citizen science: emerging technologies and shifting paradigms. *Frontiers in Ecology and the Environment* **10**:298–304.



NFWPCAP (National Fish, Wildlife, Plants, Climate Adaptation Partnership). 2012. National Fish, Wildlife and Plants Climate Adaptation Strategy. Association of Fish and Wildlife Agencies, Council on Environmental Quality, Great Lakes Indian Fish and Wildlife Commission, National Oceanic and Atmospheric Administration, and U.S. Fish and Wildlife Service. Washington, D.C.

<http://www.wildlifeadaptationstrategy.gov/strategy.php>

NH (New Hampshire) Fish and Game Department. 2013. Ecosystems and wildlife climate change adaptation plan. Concord, New Hampshire.

Nichols, J. D., and B. K. Williams. 2006. Monitoring for conservation. *Trends in Ecology and Evolution* **21**:668-673.

Nilo, P., P. Dumont, and R. Fortin. 1997. Climatic and hydrological determinants of year-class strength of St. Lawrence River lake sturgeon (*Acipenser fulvescens*). *Canadian Journal of Fisheries and Aquatic Sciences* **54**:774-780.

Ning, L., E. E. Riddle, and R. S. Bradley. 2015. Projected Changes in Climate Extremes over the Northeastern United States. *Journal of Climate* **28**:3289-3310.

Nislow, K. H. and J. D. Armstrong. 2012. Towards a life-history-based management framework for the effects of flow on juvenile salmonids in streams and rivers. *Fisheries Management and Ecology* **19**:451-463.

Nixon, S. W., R. W. Fulweiler, B. A. Buckley, S. L. Granger, B. L. Nowicki, and K. M. Henry. 2009. The impact of changing climate on phenology, productivity, and benthic-pelagic coupling in Narragansett Bay. *Estuarine, Coastal and Shelf Science* **82**:1-18.

Noss, R. F., LaRoe, E. T., and J. M. Scott. 1995. Endangered ecosystems of the United States: a preliminary assessment of loss and degradation. National Biological Service Biological Report 28. U.S. Department of the Interior. National Biological Service. Washington, D.C.

Notaro, M., K. Holman, A. Zarrin, E. Fluck, S. Vavrus, and V. Bennington. 2013. Influence of the Laurentian Great Lakes on Regional Climate. *Journal of Climate* **26**:789-804.

Notaro, M., D. Lorenz, C. Hoving, and M. Schummer. 2014. Twenty-First-Century Projections of Snowfall and Winter Severity across Central-Eastern North America. *Journal of Climate* **27**:6526-6550.

Notaro, M., V. Bennington, and S. Vavrus. 2015. Dynamically Downscaled Projections of Lake-Effect Snow in the Great Lakes Basin. *Journal of Climate* **28**:1661-1684.

NREL (National Renewable Energy Laboratory) and AWS Truewind. 2010. Pennsylvania potential wind capacity. U.S. Department of Energy, Energy Efficiency & Renewable Energy. Available from http://apps2.eere.energy.gov/wind/windexchange/wind_resource_maps.asp?stateab=pa (accessed March 2015).

NWF (National Wildlife Federation) and Manomet Center for Conservation Sciences. 2014. The vulnerabilities of northeastern fish and wildlife habitats to sea level rise: A report to the Northeastern Association of Fish and Wildlife Agencies and the North Atlantic Landscape Conservation Cooperative. Manomet, Plymouth, Massachusetts.



NFWPCAP (National Fish, Wildlife and Plants Climate Adaptation Partnership). 2012. National Fish, Wildlife and Plants Climate Adaptation Strategy. Association of Fish and Wildlife Agencies, Council on Environmental Quality, Great Lakes Indian Fish and Wildlife Commission, National Oceanic and Atmospheric Administration, and U.S. Fish and Wildlife Service. Washington, D.C. Available from <http://www.wildlifeadaptationstrategy.gov/strategy.php> (accessed April 2015) In Staudinger et al. (2015c).

NWI (National Wetlands Inventory). 2008. National Wetlands Inventory. U.S. Fish and Wildlife Service. website. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. Available from <http://www.fws.gov/wetlands/>.

NWS (National Weather Service). 2006. Drought public fact sheet. Available from <http://www.nws.noaa.gov/om/brochures/climate/Drought.pdf> (reported in Ross et al. 2013).

Nye, J. A., J. S. Link, J. A. Hare, and W. J. Overholtz. 2009. Changing spatial distribution of fish stocks in relation to climate and population size on the Northeast United States continental shelf. *Marine Ecology-Progress Series* **393**:111-129.

O

O'Brien, K., S. Eriksen, A. Schjolden, and L. Nygaard. 2004. What's in a word? Conflicting interpretations of vulnerability in climate change research. Center for International Climate and Environmental Research (CICERO) Working Paper 2004:04, Oslo, Norway.

O'Connell, B. M., E. B. LaPoint, J. A. Turner, et al. 2014. The Forest Inventory and Analysis database: Database description and user guide version 6.0 for Phase 2. U.S. Department of Agriculture, Forest Service. Washington, D.C. Available from <http://www.fia.fs.fed.us/library/database-documentation/>

O'Donoghue, M., S. Boutin, C. J. Krebs, and E. J. Hofer. 1997. Numerical responses of coyotes and lynx to the snowshoe hare cycle. *Oikos* **80**:150-167.

O'Malley, R. 2012. DOI Climate Science Center-Regional Science to Address Management Priorities. U.S. Geological Fact Sheet 2012-3048. Reston, Virginia.

O'Neil, J. M., T. W. Davis, M. A. Burford, C. J. Gobler. 2011. The Rise of Harmful Cyanobacteria Blooms: The Potential Roles of Eutrophication and Climate Change. *Harmful Algae* **14**:313-314.

O'Shea, T. J., L. E. Ellison, and T. R. Stanley. 2011. Adult survival and population growth rate in Colorado big brown bats (*Eptesicus fuscus*). *Journal of Mammalogy* **92**:433-443.

Ogden, A., and J. Innes. 2008. Climate change adaptation and regional forest planning in southern Yukon, Canada. *Mitigation and Adaptation Strategies for Global Change* **13**:833-861.

Oehler, J. D., D. F. Covell, S. Capel, and B. Long. 2006. Managing Grasslands, Shrublands and Young Forest Habitats for Wildlife – A Guide for the Northeast. The Northeast Upland Habitat and Technical Committee and Massachusetts Division of Fisheries and Wildlife. Westboro, Massachusetts. Available from <http://www.ct.gov/deep/cwp/view.asp?a=2723&q=325732>



- Olivero, A. P., and M. G. Anderson. 2008. Northeast Aquatic Habitat Classification System. The Nature Conservancy. Eastern Regional Office, Boston, Massachusetts.
- Olivero-Sheldon, A., A. Jospe, and M. G. Anderson. 2014. Northeast Lake and Pond Classification System. The Nature Conservancy, Eastern Conservation Science, Eastern Regional Office, Boston, Massachusetts.
- Olson D. H., D. M. Aanensen, K. L. Ronnenberg, C. I. Powell, S. F. Walker, J. Bielby, T. W. J. Garner, G. Weaver, The Bd Mapping Group, M. C. Fisher. 2013. Mapping the Global Emergence of *Batrachochytrium dendrobatidis*, the Amphibian Chytrid Fungus. PLoS ONE DOI: 10.1371/journal.pone.0056802.
- Omernik, J. 1976. The influence of land use on stream nutrient levels. Ecological Research Series Report EPA-600/3-76-014. U.S. Environmental Protection Agency, Corvallis, Oregon.
- Orndorff, S., and T. Coleman. 2008. Management Guidelines for Barrens Communities in Pennsylvania. The Nature Conservancy, Harrisburg, Pennsylvania.
- Osborn, R. G., K. F. Higgins, R. E. Usgaard, C. D. Dieter, and R. D. Neiger. 2000. Bird mortality associated with wind turbines at the Buffalo Ridge wind resource area, Minnesota. The American Midland Naturalist **143**:41-52.
- Oviatt, C. A. 2004. The changing ecology of temperate coastal waters during a warming trend. Estuaries **27**:895-904.
- P**
- Pabian, S. E., and M. C. Brittingham. 2007. Terrestrial liming benefits birds in an acidified forest in the Northeast. Ecological Applications **17**:2184-2194.
- PABS (Pennsylvania Biological Survey). 2015. Pennsylvania Biological Survey Website-Background Information. Available from <http://www.pabiologicalsurvey.org/> (accessed March 2015).
- PABS (Pennsylvania Biological Survey). 2015b. Pennsylvania Biological Survey Website-Committee. Available from <http://www.pabiologicalsurvey.org/pabs-technical--standing/> (accessed August 2015).
- Pachauri, R. K., et al. 2014. Climate Change 2014 Synthesis Report. Summary for Policymakers. Available from http://www.climate-service-center.de/imperia/md/video/csc/syr_ar5_spmcorr1.pdf in Shortle et al. (2015).
- Pacifici, M., et al. 2015. Assessing species vulnerability to climate change. Nature Climate Change **5**:215–225.
- PADCNR (Pennsylvania Department of Conservation and Natural Resources) 2003. State Forest Resource Management Plan, Final Draft. Bureau of Forestry, PADCNR. Harrisburg, Pennsylvania. Available from http://www.dcnr.state.pa.us/cs/groups/public/documents/document/dcnr_20027785.pdf. (accessed July 2015).
- PADCNR (Pennsylvania Department of Conservation and Natural Resources) 2010a. Pennsylvania Forest Strategies. Bureau of Forestry, PADCNR. Harrisburg, Pennsylvania. Available from



http://www.dcnr.state.pa.us/cs/groups/public/documents/document/dcnr_007996.pdf (accessed July 2015).

PADCNR (Pennsylvania Department of Conservation and Natural Resources) 2010b. Pennsylvania Statewide Forest Resource Assessment. Bureau of Forestry, PADCNR. Harrisburg, Pennsylvania. Available from http://www.dcnr.state.pa.us/cs/groups/public/documents/document/dcnr_007864.pdf (accessed May 2015, July 2015).

PADCNR (Pennsylvania Department of Conservation and Natural Resources) 2014. Eastern Hemlock Conservation Plan. M. Faulkenberry, E. Shultzabarger, D. A. Eggen, and H. Liu, editors. Bureau of Forestry, Pennsylvania Department of Conservation and Natural Resources, Harrisburg, Pennsylvania.

PADCNR (Pennsylvania Department of Conservation and Natural Resources) 2015a. Emerald Ash Borer. Available from <http://www.dcnr.state.pa.us/forestry/insectsdisease/eab/> (accessed February 2015).

PADCNR (Pennsylvania Department of Conservation and Natural Resources) 2015b. Asian Longhorned Beetle. Available from <http://www.dcnr.state.pa.us/forestry/insectsdisease/alb/> (accessed February 2015).

PADCNR (Pennsylvania Department of Conservation and Natural Resources) 2015c. Gypsy Moth. Available from <http://www.dcnr.state.pa.us/forestry/insectsdisease/gypsymoth/> (accessed February 2015).

PADCNR (Pennsylvania Department of Conservation and Natural Resources) 2015d. Hemlock Woolly Adelgid. Available from <http://www.dcnr.state.pa.us/forestry/insectsdisease/hwa/> (accessed May 2015).

PADCNR (Pennsylvania Department of Conservation and Natural Resources) 2015e. Places to ride. Available from <http://www.dcnr.state.pa.us/forestry/recreation/atv/atvplacestoride/> (accessed September 2015).

PADCNR (Pennsylvania Department of Conservation and Natural Resources) 2015f. Horseback Riding. Available from <http://www.dcnr.state.pa.us/stateparks/recreation/horsebackriding/> (accessed September 2015).

PADEP (Pennsylvania Department of Environmental Protection). 2009. Pennsylvania Final Climate Change Action Plan. Pennsylvania Department of Environmental Protection. Harrisburg, Pennsylvania. Available from <http://www.eLibrary.dep.state.pa.us/dsweb/Get/Document-77736/ALL%20OF%20VOLUME%201%20AND%202.pdf> (accessed May 2015).

PADEP (Pennsylvania Department of Environmental Protection). 2012. Erosion and sedimentation pollution control manual. Technical Guidance Number 363-2134-008. Harrisburg, Pennsylvania. Available from <http://www.eLibrary.dep.state.pa.us/dsweb/Get/Document-88925/363-2134-008.pdf>. (accessed July 2015).

PADEP (Pennsylvania Department of Environmental Protection). 2013a. Office of Surface Mining Reclamation & Abandoned Mine Land Inventory System (E-AMLIS). Available from http://files.dep.state.pa.us/Mining/Abandoned%20Mine%20Reclamation/AbandonedMinePortalFiles/ACcomplishments/eAMLIS_Compiled_2013-12-31.pdf (accessed May 2015).



PADEP (Pennsylvania Department of Environmental Protection) 2013b. PA's Mining Legacy and AML, Abandoned Mine Land Problems. Available from <http://files.dep.state.pa.us/Mining/Abandoned%20Mine%20Reclamation/AbandonedMinePortalFiles/AMLProgramInformation/AbandonedMineLandProblems.pdf> (accessed 05/05/15).

Pennsylvania Department of Environmental Protection [PA DEP]. 2013c. Marcellus shale fact sheet. Pennsylvania Department of Environmental Protection, Harrisburg, PA. Available from <http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-97683/0100-FS-DEP4217.pdf> (accessed April 2015).

PADEP (Pennsylvania Department of Environmental Protection). 2014a. 2014 Pennsylvania Integrated Water Quality Monitoring and Assessment Report. Clean Water Act Section 305(b) and 303(d) List. Harrisburg, Pennsylvania. Available from http://www.portal.state.pa.us/portal/server.pt/community/water_quality_standards/10556/integrated_water_quality_report_-_2014/1702856 (accessed May 2015).

PADEP (Pennsylvania Department of Environmental Protection). 2014b. Pennsylvania Climate Adaptation Planning Report: Risks and Practical Recommendations. Report 2700-RE-DEP4303 1/2011. Rev. 12/2014. Office of Energy and Technology Deployment, Pennsylvania Department of Environmental Protection (DEP), Harrisburg, Pennsylvania. Available from <http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-103584/2700-RE-DEP4303%20Combined.pdf> (accessed April 2015).

PADEP (Pennsylvania Department of Environmental Protection). 2015a. Wind Power, Pennsylvania Department of Environmental Protection, Office of Pollution Prevention & Energy Assistance, Harrisburg, Pennsylvania. Available from http://www.portal.state.pa.us/portal/server.pt/community/pa_energy/10407 (accessed March 2015).

PADEP (Pennsylvania Department of Environmental Protection). 2015b. Integrated List Non-Attaining. Office of Water Management, Water Quality Assessment and Standards Division. Publication Date: April 2015. Available from Pennsylvania Spatial Data Access, The Pennsylvania Geospatial Data Clearinghouse. http://www.pasda.psu.edu/uci/MetadataDisplay.aspx?entry=PASDA&file=IntegratedListNonAttaining2015_04.xml&dataset=888 (accessed April 2015).

PADEP (Pennsylvania Department of Environmental Protection) 2015c. PA's Mining Legacy and AML. Available from http://www.portal.state.pa.us/portal/server.pt/community/aml_program_information/21360/pa%E2%80%99s_mining_legacy/1463284 (accessed May 2015).

PADEP (Pennsylvania Department of Environmental Protection) 2015d. Division of Dam Safety. Harrisburg, Pennsylvania.

Palone, R. S., and A. H. Todd (editors). 1997 (revised June 1998). Chesapeake Bay riparian handbook: a guide for establishing and maintaining riparian forest buffers. USDA Forest Service. NA-TP-02-97. Radnor, Pennsylvania.



- PALTA (Pennsylvania Land Trust Association). 2015. PA Land Trust Accomplishments of the last decade. Available from <http://conserveland.org/articles/171>.
- Pandolfo, T. J., W. G. Cope, C. Arellano, R. B. Bringolf, M. C. Barnhart, and E. Hammer. 2010. Upper thermal tolerances of early life stages of freshwater mussels. *Journal of the North American Benthological Society* **29**:959-969.
- Panjabi, A. O., P. J. Blancher, R. Dettmers, and K. V. Rosenberg. Version 2012. Partners in Flight Technical Series No. 3. Rocky Mountain Bird Observatory. Available from <http://www.rmbo.org/pubs/downloads/Handbook2012.pdf>
- Paprocki, N., J. A. Heath, and S. J. Novak. 2014. Regional Distribution Shifts Help Explain Local Changes in Wintering Raptor Abundance: Implications for Interpreting Population Trends. *PLoS ONE* **9**:e86814.
- Paradis, A., J. Elkinton, K. Hayhoe, J. Buonaccorsi. 2008. Role of winter temperature and climate change on the survival and future range expansion of the hemlock woolly adelgid (*Adelges tsugae*) in eastern North America. *Mitigation and Adaptation Strategies for Global Change* **13**:541-554.
- Parr, D. and G. Wang. 2014. Hydrological changes in the U.S. Northeast using the Connecticut River Basin as a case study: Part 1. Modeling and analysis of the past. *Global and Planetary Change* **122**:208-222.
- Parry, M. L., O. F. Canziani, and J. P. Palutikof. 2007. Climate change 2007: Impacts, adaptation and vulnerability. Technical Summary. Pages 23-78. in Intergovernmental Panel on Climate Change. Cambridge, United Kingdom. Available from <http://www.ipcc.ch/ipccreports/ar4-wg2.htm> (accessed May 2015) in Staudinger et al. (2015a).
- Patrick, P. H., E. Chen, J. Parks, J. Powell, J. S. Poulton, and C.-L. Fietsch. 2013. Effects of Fixed and Fluctuating Temperature on Hatch of Round Whitefish and Lake Whitefish Eggs. *North American Journal of Fisheries Management* **33**:1091-1099.
- Pauli, J. N., B. E. Bedrosian, and N. Osterberg. 2006. Effects of Blowdown on Small Mammal Populations. *The American Midland Naturalist* **156**:151-162.
- Pecenka, J. R., and J. G. Lundgren. 2015. Non-target effects of clothianidin on monarch butterflies. *The Science of Nature* **102**:19 DOI 10.1007/s00114-015-1270-y.
- Peckarsky, B. L., B. W. Taylor, A. R. McIntosh, M. A. McPeck, and D. A. Lytle. 2001. Variation in mayfly size at metamorphosis as a developmental response to risk of predation. *Ecology* **82**:740-757.
- Peers, M. J. L., D. H. Thornton, and D. L. Murray. 2013. Evidence for large-scale effects of competition: niche displacement in Canada lynx and bobcat. *Proceedings of the Royal Society B* **280**:20132495.
- Penney, C. M., G. W. Nash, and A. K. Gamperl. 2014. Cardiorespiratory responses of seawater-acclimated adult Arctic char (*Salvelinus alpinus*) and Atlantic salmon (*Salmo salar*) to an acute temperature increase. *Canadian Journal of Fisheries and Aquatic Sciences* **71**:1096-1105.
- Pennsylvania Code 2013. Title 25, Chapter 102. Erosion and Sediment Control. Available from http://www.pacode.com/secure/data/025/chapter102/025_0102.pdf (accessed September 2015).



Pennsylvania Lake Management Society. 2004. Pennsylvania Lake Management Handbook. Lansdale, Pennsylvania. Available from http://www.palakes.org/images/stories/docs/lake_handbook.pdf

Pennsylvania State Data Center. 2011. Decennial Housing Unit Percent Change. Institute of State and Regional Affairs, The Pennsylvania State University, Harrisburg, Pennsylvania. Available from http://pasdc.hbg.psu.edu/sdc/pasdc_files/census2010/032011_release/Map_County_Total-HousingUnits-PerChange_2000to2010.pdf.

Pennsylvania State Data Center. 2011. Decennial Population Percent Change. Available from http://pasdc.hbg.psu.edu/sdc/pasdc_files/census2010/032011_release/Map_County_Total-Pop-PerChange_2000to2010.pdf (accessed July 2015).

Pepin, N., et al. 2015. Elevation-dependent warming in mountain regions of the world. *Nature Climate Change* **5**:424-430.

Pepin, N. C., and J. Lundquist. 2008. Temperature trends at high elevations: patterns across the globe. *Geophysical Research Letters* **35**:L14701.

Penteriani, V., M. Mathiaut, G. Boisson, and C. D. Marti. 2002. Immediate Species Responses to Catastrophic Natural Disturbances: Windthrow Effects on Density, Productivity, Nesting Stand Choice, and Fidelity in Northern Goshawks (*Accipiter gentilis*). *The Auk* **119**:1132-1137.

Pepin, N., and J. Lundquist. 2008. Temperature trends at high elevations: patterns across the globe. *Geophysical Research Letters*. **35**:L14701.

Pepin, N., et al. 2015. Elevation-dependent warming in mountain regions of the world. *Nature Climate Change* **5**:424-430.

Perkins, S. E., L. V. Alexander, and J. R. Nairn. 2012. Increasing frequency, intensity and duration of observed global heatwaves and warm spells. *Geophysical Research Letters* **39**:L20714.

Perrotti, L., M. McBride, K. Wojick, J. Kimbro, M. Murray, T. French, M. Marchand, D. Blodgett, J. Dickson. 2012. Assessment and Evaluation of Prevalence of Fungal Dermatitis in New England Timber Rattlesnake Populations. RCN Grant Program Grant # 2012-03. Available from <http://rcngrants.org/content/assessment-and-evaluation-prevalence-fungal-dermatitis-new-england-timber-rattlesnake> (accessed May 2015).

Peterson, D. L., C. I. Millar, L. A. Joyce, M. J. Furniss, J. E. Halofsky, R. P. Neilson, and T. L. Morelli. 2011. Responding to climate change on National Forests: a guidebook for developing adaptation options. Pacific Northwest-General Technical Report 855. U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station, Portland, Oregon.

Peterson, T. C., et al. 2013. Monitoring and Understanding Changes in Heat Waves, Cold Waves, Floods, and Droughts in the United States: State of Knowledge. *Bulletin of the American Meteorological Society*. **94**:821-834.

Peterson, A. G., and J. T. Abatzoglou. 2014. Observed changes in false springs over the contiguous United States. *Geophysical Research Letters* **41**:2156-2162.



Petty, J. T., D. Thorne, B. Huntsman, and P. Mazik. 2014. The temperature–productivity squeeze: constraints on brook trout growth along an Appalachian river continuum. *Hydrobiologia* **727**:151-166.

PFBC (Pennsylvania Fish and Boat Commission). State Wildlife Grants Annual Summaries. Available from <http://fishandboat.com/promo/grants/swg/00swg.htm> (accessed March 2015).

PFBC (Pennsylvania Fish and Boat Commission). Technical Assistance Program, Habitat Enhancement and Restoration for Streams & Lakes. PFBC 900-TAP. Division of Habitat Management, Pennsylvania Fish and Boat Commission, Bellefonte, Pennsylvania. Available from http://fishandboat.com/water/habitat/coophab_tap_pfbc900tap.pdf (accessed September 2015).

PFBC (Pennsylvania Fish and Boat Commission). 2011a. Species Action Plan: Bog Turtle (*Glyptemys muhlenbergii*). PFBC-Natural Diversity Section. Bellefonte, Pennsylvania. Available from <http://fishandboat.com/water/amprep/species-plan-bog-turtle.pdf>

PFBC (Pennsylvania Fish and Boat Commission). 2011b. Species Action Plan: Timber Rattlesnake (*Crotalus horridus*). PFBC-Natural Diversity Section. Bellefonte, Pennsylvania. Available from <http://fishandboat.com/water/amprep/species-plan-timber-rattlesnake.pdf>

PFBC (Pennsylvania Fish and Boat Commission). 2014a. Anglers urged to help prevent spread of aquatic Invasive Species in Erie County. Press release 08/11/14. Available from <http://www.fishandboat.com/newsreleases/2014press/ais-erie.htm> (accessed April 2015).

PFBC (Pennsylvania Fish and Boat Commission). 2014b. Unpublished information on acid precipitation and fish management. Division of Fish Management. Bellefonte, Pennsylvania.

PFBC (Pennsylvania Fish and Boat Commission). 2015a. Asian Carp. Available from <http://www.fishandboat.com/ais/stop-asian-carp.htm> (accessed May 2015).

PFBC (Pennsylvania Fish and Boat Commission). 2015b. Crayfish problem. Available from <http://www.fishandboat.com/ais/crayfish-problem.htm> (accessed May 2015).

PFBC (Pennsylvania Fish and Boat Commission). 2015c. Commonwealth Inland Waters-seasons, sizes and creel limits. Available <http://fishandboat.com/fishpub/summary/inland.html> (accessed August 2015).

PGC (Pennsylvania Game Commission). Hunter Access Program. Available from <http://www.portal.state.pa.us/portal/server.pt?open=514&objID=620379&mode=2> (accessed June 2015).

PGC (Pennsylvania Game Commission). Private Landowner Assistance Program. Available from <http://www.portal.state.pa.us/portal/server.pt?open=514&objID=620396&mode=2> (accessed March 2015).

PGC (Pennsylvania Game Commission). 2011. Wildlife Diversity Program. Pennsylvania Game Commission. Bureau of Wildlife Management. Harrisburg, PA 17110-9797



PGC (Pennsylvania Game Commission). 2013. Pennsylvania Game Commission wind energy voluntary cooperative agreement, amendment I. Pennsylvania Game Commission, Bureau of Wildlife Habitat Management, Harrisburg, Pennsylvania. Available from http://www.portal.state.pa.us/portal/server.pt/document/1378273/amended_cooperative_agreement_and_exhibits_-_2013_pdf (accessed May 2015).

PGC (Pennsylvania Game Commission). 2013b. Moving Forward from the Wildlife Diversity Forum. Available from <http://www.portal.state.pa.us/portal/server.pt?open=514&objID=1131495&mode=2> (accessed June 2015).

PGC (Pennsylvania Game Commission). 2015. Wildlife-Related Diseases. Available from <http://www.portal.state.pa.us/portal/server.pt?open=514&objID=1715706&mode=2> (accessed May 2015).

PGC-PFBC (Pennsylvania Game Commission-Pennsylvania Fish and Boat Commission). 2005. Pennsylvania Wildlife Action Plan (formerly Comprehensive Wildlife Conservation Wildlife Conservation Strategy (L. Williams, Ed.). Pennsylvania Game Commission and Pennsylvania Fish and Boat Commission, revised 2008, Harrisburg, Pennsylvania.

PGC-PFBC (Pennsylvania Game Commission-Pennsylvania Fish and Boat Commission). 2010. A Minor Amendment to the Pennsylvania Wildlife Action Plan: Climate Change-An Emerging Issue in Fish and Wildlife Management. Amendment #2 to the Pennsylvania Wildlife Action Plan (formerly Comprehensive Wildlife Conservation Wildlife Conservation Strategy (L. Williams, Ed.). Pennsylvania Game Commission and Pennsylvania Fish and Boat Commission, revised 2008, Harrisburg, Pennsylvania. Available from: http://fishandboat.com/promo/grants/swg/nongame_plan/pa_wap_amend_2.pdf

Phelan, B. A., R. Goldberg, A. J. Bejda, J. Pereira, S. Hagan, P. Clark, A. L. Studholme, A. Calabrese, and K. W. Able. 2000. Estuarine and habitat-related differences in growth rates of young-of-the-year winter flounder (*Pseudopleuronectes americanus*) and tautog (*Tautoga onitis*) in three Northeastern US estuaries. *Journal of Experimental Marine Biology and Ecology* **247**:1-28.

Pierce, D. W., and D. R. Cayan. 2013. The uneven response of different snow measures to human-induced climate warming. *Journal of Climate* **26**:4148-4167.

Piou, C., and E. Prévost. 2013. Contrasting effects of climate change in continental vs. oceanic environments on population persistence and microevolution of Atlantic salmon. *Global Change Biology* **19**:711-723.

PISC (Pennsylvania Invasive Species Council). 2009. Invaders in the commonwealth: Pennsylvania Invasive Species Management Plan. Pennsylvania Department of Agriculture, Harrisburg, Pennsylvania. Available from http://www.invasivespeciescouncil.com/Documents/FINAL%20Plan_low_res.pdf (accessed May 2015).

Platt, R. B. 1951. An ecological study of the mid-Appalachian shale barrens and of the plants endemic to them. *Ecological Monographs* **21**:269–300.

Pleasants, J. M., and K. S. Oberhauser. 2012. Milkweed loss in agricultural fields because of herbicide use: effect on the monarch butterfly population. *Insect Conservation and Diversity* DOI:10.1111/j.1752-4598.2012.00196.x.



PNHP (Pennsylvania Natural Heritage Program). 2015. Pennsylvania Natural Diversity Inventory (PNDI) Environmental Review Tool. Pennsylvania Natural Heritage Program, Harrisburg, Pennsylvania. Available from http://www.gis.dcnr.state.pa.us/hgis-er/PNDI_Introduction.aspx (accessed August 2015).

Poff, N. L., and J. V. Ward. 1989. Implications of streamflow variability and predictability for lotic community structure: a regional analysis of streamflow patterns. *Canadian Journal of Fisheries and Aquatic Sciences* **46**:1805-1818.

Poff, N. L., and J. D. Allan. 1995. Functional organization of stream fish assemblages in relation to hydrological variability. *Ecology* **76**:606-627.

Poff, N. L., J. D. Allan, M. B. Bain, J. R. Karr, K. L. Prestegard, B. D. Richter, R. E. Sparks, and J. C. Stromberg. 1997. The natural flow regime. *BioScience* **47**:769-784.

Poff, N. L., M. M. Brinson, and J. W. Day, Jr. 2002. Aquatic ecosystems & Global climate change. Potential Impacts on Inland Freshwater Coastal Wetland Ecosystems in the United States. Prepared for the Pew Center on Global Climate Change. Arlington, Virginia.

Poff, N. L., B. D. Richter, A. H. Arthington, S. E. Bunn, R. J. Naiman, E. Kendy, M. Acreman, C. Apse, B. P. Bledsoe, M. C. Freeman, J. Henriksen, R. B. Jacobson, J. G. Kennen, D. M. Merritt, J. H. O’Keeffe, J. D. Olden, K. Rogers, R. E. Tharme, and A. Warner. 2010. The ecological limits of hydrologic alteration (ELOHA): a new framework for developing regional environmental flow standards. *Freshwater Biology* **55**:147-170.

Pollinator Health Task Force 2015. National Strategy to Promote the Health of Honey Bees and Other Pollinators. Available from <https://www.whitehouse.gov/sites/default/files/microsites/ostp/Pollinator%20Health%20Strategy%202015.pdf> (accessed July 2015).

Pomara, L. Y., B. Zuckerberg, O. LeDee, and K. J. Martin. 2014. A Climate Change Vulnerability Assessment for the Eastern Massasauga Rattlesnake an Endemic of the Upper Midwest and Great Lakes Region. A report to the Upper Midwest Great Lakes Landscape Conservation Cooperative. Available from <http://greatlakeslcc.org/wp-content/uploads/2013/03/Eastern-Massasauga-Climate-Change-Vulnerability-UMGL-LCC-2014.pdf>

Popescu, V. D., and J. P. Gibbs. 2009. Interactions between climate, beaver activity, and pond occupancy by the cold-adapted mink frog in New York State, USA. *Biological Conservation* **142**:2059-2068.

Possingham, H. P., S. J. Andelman, M. A. Burgman, R. A. Medelin, L. L. Master, and D. A. Keith. 2002. Limits to the use of threatened species lists. *Trends in Ecology and Evolution* **17**: 503-507.

POWR (Pennsylvania Organization for Watersheds and Rivers). 2001. Small Dam Removal in Pennsylvania: Free-Flowing Watershed Restoration. Harrisburg, Pennsylvania.

PNDI (Pennsylvania Natural Diversity Inventory). 2015. Available from <http://www.gis.dcnr.state.pa.us/hgis-er/default.aspx>



Price, S. J., R. A. Browne, and M. E. Dorcas. 2012. Resistance and Resilience of A Stream Salamander To Supraseasonal Drought. *Herpetologica* **68**:312-323.

Princé, K., and B. Zuckerberg. 2015. Climate change in our backyards: the reshuffling of North America's winter bird communities. *Global Change Biology* **21**:572-585.

PRI (Public Radio International). 2014. One of offshore wind power's best hopes is fading on Lake Erie. Reporter: Julie Grant, Contributor: Adam Wernick. Posted: 07.16.14. Available from <http://www.pri.org/stories/2014-07-16/one-offshore-wind-powers-best-hopes-fading-lake-erie> (accessed February 2015).

Primack, R. B., D. Bray, H. A. Galletti, and I. Ponciano. 1998. *Timber, Tourists, and Temples: Conservation and Development in the Maya Forest of Belize, Guatemala, and Mexico*. Island Press, Washington D.C. and Covelo, California.

Pringle, C. M., Freeman, M. C., and Freeman, B. J. 2000. Regional Effects of Hydrologic Alteration on Riverine Macrobiota in the New World: Tropical-Temperate Comparisons. *BioScience* **50**:807-823.

PSG (Pennsylvania Sea Grant). 2013. Round Goby (*Neogobius melanostomus*). Fact Sheet. Erie, Pennsylvania. Available from http://www.paseagrant.org/wp-content/uploads/2012/11/goby2013_reduced.pdf (accessed May 2015).

PSU (Pennsylvania State University). 2004. Timber Harvesting in Pennsylvania: Information for Citizens and Local Government Officials. College of Agricultural Sciences, School of Forest Resources. Available from http://extension.psu.edu/publications/xh0036/at_download/file (accessed May 2015).

Public Law (PL 935 No. 70). 2008. Pennsylvania Climate Change Act. General Assembly of the Commonwealth of Pennsylvania. Harrisburg, Pennsylvania. Available from <http://www.legis.state.pa.us/WU01/LI/LI/US/HTM/2008/0/0070..HTM> (accessed May 2015).

Public Law 106-291. 2000 (Oct 11). Department of the Interior and Related Agencies Appropriations Act of 2001. United States Statutes at Large, 114 STAT. 1025. Washington, D.C.

R

Radeloff, V. C., R. B. Hammer, S. I. Stewart, J. S. Fried, S. S. Holcomb, and J. F. McKeefry. 2005. The Wildland Urban Interface in the United States. *Ecological Applications* **15**:799-805.

Rahbek, C. R., N. J. Gotelli, R. K. Colwell, G. L. Entsminger, T. F. L. V. B. Rangel, G. R. Graves. 2007. Predicting continental-scale patterns of bird species richness with spatially explicit models. *Proceedings of the Royal Society of London B: Biological Sciences* **274**:165-174.

Rahmstorf, S., J. E. Box, G. Feulner, M. E. Mann, A. Robinson, S. Rutherford, and E. J. Schaffernicht. 2015. Exceptional twentieth-century slowdown in Atlantic Ocean overturning circulation. *Nature Climate Change* **5**:475-480.

Rangwala, I., and J. R. Miller. 2012. Climate change in mountains: a review of elevation-dependent warming and its possible causes. *Climatic Change* **114**:527-547.



- Rappole J. H., and M. V. McDonald. 1994. Cause and effect in population declines of migratory birds. *The Auk* **111**:652-660.
- Rawlins, M. A., R. S. Bradley, and H. F. Diaz. 2012. Assessment of regional climate model simulation estimates over the northeast United States. *Journal of Geophysical Research: Atmospheres* **117**:D23112.
- Reading, C. J. 2007. Linking global warming to amphibian declines through its effects on female body condition and survivorship. *Oecologia* **151**:125-131.
- Reed, A. W. and M. L. Kennedy. 2000. Conservation status of the eastern spotted skunk *Spilogale putorius* in the Appalachian Mountains of Tennessee. *American Midland Naturalist* **144**:133-138.
- Reeder, D. M., C. L. Frank, G. G. Turner, C. U. Meteyer, A. Kurta, et al. 2012. Frequent Arousal from Hibernation Linked to Severity of Infection and Mortality in Bats with White-Nose Syndrome. *PLoS ONE* DOI:10.1371/journal.pone.0038920. Available from <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0038920>
- Reeder, D. M. 2013. Laboratory and field Testing of Treatments for White Nose Syndrome: Immediate Funding Need for the Northeast Region. Regional Conservation Needs Grant: 2010-01. Available from <http://rcngrants.org/content/laboratory-and-field-testing-treatments-white-nose-syndrome-immediate-funding-need-northeast>
- Reese, J. S., and R. F. Noss. 2014. Prioritizing species by conservation value and vulnerability: a new index applied to species threatened by sea-level rise and other risks in Florida. *Natural Areas Journal* **34**:31-45.
- Refsnider, J. M., B. L. Bodensteiner, J. L. Reneker, and F. J. Janzen. 2013. Nest depth may not compensate for sex ratio skews caused by climate change in turtles. *Animal Conservation* **16**:481-490.
- Reitsma, L., M. Goodnow, M. T. Hallworth and C. J. Conway. 2010. Canada Warbler (*Cardellina canadensis*). In A. Poole, editor. *The Birds of North America Online*. Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu.bnaproxy.birds.cornell.edu/bna/species/421>.
- Rennie, M. D., W. G. Sprules, and T. B. Johnson. 2009. Factors affecting the growth and condition of lake whitefish (*Coregonus clupeaformis*). *Canadian Journal of Fisheries and Aquatic Sciences* **66**:2096-2108.
- Rentch, J. S., R. H. Fortney, S. L. Stephenson, H. S. Adams, W. N. Grafton, and J. T. Anderson. 2005. Vegetation-site relationships off roadside plant communities in West Virginia-site relationships of roadside plant communities in West Virginia, USA. *Journal of Applied Ecology* **42**:129-138.
- Responsive Management. 1996. Pennsylvania Resident's Opinions on and Attitudes Toward Non-game Wildlife. A report developed for the Pennsylvania Game Commission. Harrisburg, Pennsylvania.
- Responsive Management. 2014. Pennsylvania Residents' Opinions on and Attitudes Toward Nongame Wildlife. A report to the Pennsylvania Game Commission, Harrisburg, Pennsylvania. Available from http://www.portal.state.pa.us/portal/server.pt/document/1434348/pa_2014_nongame_survey_report_pdf?qid=97273584&rank=1 (accessed May 2015).



Rhein, M., et al. 2013. Observations: Ocean. Climate Change 2013: The Physical Science Basis. Pages 255- 315 In T. F. Stocker, D. Qin, G. K. Plattner, M. Tignor, S. K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex, and P. M. Midgley, editors. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge, United Kingdom and New York, New York.

Riahi, K., S. Rao, V. Krey, C. Cho, V. Chirkov, G. Fischer, G. Kindermann, N. Nakicenovic, and P. Rafaj. 2011. RCP 8.5-A scenario of comparatively high greenhouse gas emissions. *Climatic Change* **109**:33-57.

Ricciardi, A., and J. B. Rasmussen. 1999. Extinction rates of North American freshwater fauna. *Conservation Biology* **13**:1220-1222.

Rich, T. D., C. J. Beardmore, H. Berlanga, P. J. Blancher, M. S. W. Bradstreet, G. S. Butcher, D. W. Demarest, E. H. Dunn, W. C. Hunter, E. E. Inogo-Elias, J. A. Kennedy, A.M. Martell, A. O. Panjabi, D.N. Pashley, K. V. Rosenberg, C. M. Rustay, J. S. Wendt, T. C. Will. 2004. Partners in Flight North American Landbird Conservation Plan, Cornell Laboratory of Ornithology, Ithaca, New York.

Rodenhouse, N. L., S. N. Matthews, K. P. McFarland, J. D. Lambert, L. R. Iverson, A. Prasad, T. S. Sillett, and R. T. Holmes. 2008. Potential effects of climate change on birds of the Northeast. *Mitigation and Adaptation Strategies for Global Change* **13**:517-540.

Rodenhouse, N. L., L. M. Christenson, D. Parry, and L. E. Green. 2009. Climate change effects on native fauna of northeastern forests. *Canadian Journal of Forest Research* **39**:249-263.

Rodewald, P. G., and M. C. Brittingham. 2004. Stopover habitats of landbirds during fall: used of edge-dominated and early-successional habitats. *The Auk* **121**:1040-1055.

Rodewald, P. G., and M. C. Brittingham. 2007. Stopover habitat use by spring migrant landbirds: the roles of habitat structure, leaf development, and food availability. *The Auk* **124**:1063-1074.

Roe, G. H. 2005. Orographic precipitation. *Annual Review of Earth and Planetary Sciences* **33**:645-671.

Rogers, C. E., and J. P. McCarty. 2000. Climate change and ecosystems of the Mid-Atlantic Region. *Climate Research* **14**:235-244.

Roni, P., editor. 2005. *Monitoring Stream and Watershed Restoration*. American Fisheries Society, Bethesda, Maryland.

Rosenberry, C. S., J. T. Fleegle, and B. D. Wallingford. 2009. Management and biology of white-tailed deer in Pennsylvania, 2009-2018. Pennsylvania Game Commission. Harrisburg, Pennsylvania.

Ross, R. M., R. M. Bennett, C. D. Snyder, J. A. Young, D. R. Smith, and D. P. Lemarie. 2003. Influence of eastern hemlock (*Tusga Canadensis* L.) on fish community structure and function in headwater streams of the Delaware River Basin. *Ecology of Freshwater Fishes* **12**:60-65.

Ross, A., et al. 2013. Pennsylvania Climate Impacts Assessment Update. The Pennsylvania State University. A report to the Pennsylvania Department of Environmental Protection, Harrisburg, Pennsylvania.



Rowland, M. M., and C. D. Vojta, editors. 2013. A technical guide for monitoring wildlife habitat. General Technical Report WO-89. U.S. Department of Agriculture, Forest Service, Washington, D.C.

Roy, A. H., A. D. Rosemond, D. S. Leigh, M. J. Paul, and J. B. Wallace. 2003. Habitat-specific responses of stream insects to land cover disturbance: biological consequences and monitoring implications. *Journal of the North American Benthological Society* **22**:292-307.

RPI-project.org. 2013. Raptor Population Index Project: 2013 Analysis. Available from <http://rpi-project.org/2013/> (accessed February 2014).

Rundölf, M., et al. 2015. Seed coating with a neonicotinoid insecticide negatively affects wild bees. *Nature* **521**:77-80.

Rush, S., E. Soehren, M. Woodrey, C. Graydon, and R. Cooper. 2009. Occupancy of select marsh birds within northern Gulf of Mexico tidal marsh: current estimates and projected change. *Wetlands* **29**:798-808.

S

Sabine, C. L., et al. 2004. The oceanic sink for anthropogenic CO₂. *Science* **305**:367-371.

Sagarese, S. R., M. G. Frisk, R. M. Cerrato, K. A. Sosebee, J. A. Musick, and P. J. Rago. 2014. Application of generalized additive models to examine ontogenetic and seasonal distributions of spiny dogfish (*Squalus acanthias*) in the Northeast (US) shelf large marine ecosystem. *Canadian Journal of Fisheries and Aquatic Sciences* **71**:847-877.

Salafsky, N., D. Salzer, A. J. Stattersfield, C. Hilton-Taylor, R. Neugarten, S. H. M. Butchart, B. Collen, N. Cox, L. L. Master, S. O'Connor, and D. Wilkie. 2008. A Standard Lexicon for Biodiversity Conservation: Unified Classifications of Threats and Actions. *Conservation Biology* **22**:897-911.

Sargent, S., and J. Fidorra. 2013. Climate change vulnerability of wetland and water birds in Pennsylvania. A report to the Pennsylvania Department of Conservation and Natural Resources, Wild Resource Conservation Program, Harrisburg, Pennsylvania.

Santos, R. M. B., L. F. Sanches Fernandes, S. G. P. Varandas, M. G. Pereira, R. Sousa, A. Teixeira, M. Lopes-Lima, R. M. V. Cortes, and F. A. L. Pacheco. 2015. Impacts of climate change and land-use scenarios on *Margaritifera margaritifera*, an environmental indicator and endangered species. *Science of the Total Environment* **511**:477-488.

Sauer, J. R., W. A. Link, J. E. Fallon, K. L. Pardieck, D. J. Ziolkowski, Jr. 2013. The North American Breeding Bird Survey 1966-2011: Summary Analysis and Species Accounts. *North American Fauna* **79**:1–32.

Sauer, J. R., J. E. Hines, J. E. Fallon, K. L. Pardieck, D. J. Ziolkowski, Jr., and W. A. Link. 2014. The North American Breeding Bird Survey, Results and Analysis 1966-2012. Version 02.19.2014. U.S. Geological Survey, Patuxent Wildlife Research Center. Laurel, Maryland.



Saunders, S. C., M. R. Mislivets, J. Chen, and D. T. Cleland. 2002. Effects of roads on landscape structure within nested ecological units of the Northern Great Lakes Region, USA. *Biological Conservation* **103**:209-225.

Saunders, S. P., and F. J. Cuthbert. 2014. Genetic and environmental influences on fitness-related traits in an endangered shorebird population. *Biological Conservation* **177**:26-34.

Savva, Y., C. W. Swarth, J. Gupchup, and K. Szlavecz. 2010. Thermal environments of overwintering Eastern Box Turtles (*Terrapene carolina carolina*). *Canadian Journal of Zoology* **88**:1086-1094.

Scharold, J., T. D. Corry, P. M. Yurista, and J. R. Kelly. 2015. Benthic macroinvertebrate assemblages in the US nearshore zone of Lake Erie, 2009: Status and linkages to landscape-derived stressors. *Journal of Great Lakes Research* **41**:338-347.

Schindler, D. W. 1988. Effects of Acid Rain on Freshwater Ecosystems. *Science* **239**:149-157.

Schlesinger, M. D., J. D. Corser, K. A. Perkins, and E. L. White. 2011. Vulnerability of at-risk species to climate change in New York. New York Natural Heritage Program, Albany, New York.

Schoof, J. T. 2015. High resolution projections of 21st century daily precipitation for the contiguous US. *Journal of Geophysical Research: Atmospheres* DOI:10.1002/2014JD022376.

Schummer, M. L., R. M. Kaminski, A. H. Raedeke, and D. A. Graber. 2010. Weather-Related Indices of Autumn-Winter Dabbling Duck Abundance in Middle North America. *The Journal of Wildlife Management* **74**:97-101.

Scoccimarro, E., S. Gualdi, M. Zampieri, A. Bellucci, and A. Navarra. 2013. Heavy precipitation events in a warmer climate: results from CMIP5 models. *Journal of Climate* **26**:7902-7911.

Seaber, P. R., F. P. Kapinos, and G. L. Knapp. 1987. Hydrologic Unit Maps: U.S. Geological Survey (USGS), Water-Supply Paper 2294. Denver, Colorado.

Seavey, J. R., B. Gilmer, and K. M. McGarigal. 2011. Effect of sea-level rise on piping plover (*Charadrius melodus*) breeding habitat. *Biological Conservation* **144**:393-401.

Sedell, J. R., G. H. Reeves, F. R. Hauer, J. A. Stanford, and C. P. Hawkins. 1990. Role of refugia in recovery from disturbances: modern fragmented and disconnected river systems. *Environmental Management* **14**:711-724.

Sevon, W. D. 2000. Physiographic Provinces of Pennsylvania, Map 13. Pennsylvania Geological Survey. Pennsylvania Department of Conservation and Natural Resources, Harrisburg, Pennsylvania.

Sharma, S., D. A. Jackson, and C. K. Minns. 2009. Quantifying the potential effects of climate change and the invasion of smallmouth bass on native lake trout populations across Canadian lakes. *Ecography* **32**:517-525.

Sherry T. W., and R. T. Holmes. 1995. Summer versus winter limitation of populations: conceptual issues and evidence. In T. Martin and D. Finch, editors. *Ecology and management of Neotropical migratory birds: a synthesis and review of critical issues*. Oxford University Press, New York, New York.



- Shi, X., and D. R. Durran. 2014. The response of orographic precipitation over idealized midlatitude mountains due to global increases in CO₂. *Journal of Climate* **27**:3938-3956.
- Shi, X., and D. Durran. 2015. Estimating the Response of Extreme Precipitation. *Journal of Climate* In Press DOI: 10.1175/JCLI-D-14-00750.1.
- Shortle, J., D. Abler, S. Blumsack, R. Crane, Z. Kaufman, M. McDill, R. Najjar, R. Ready, T. Wagener, and D. Wardrop. 2009. Pennsylvania Climate Impact Assessment. Report to the Pennsylvania Department of Environmental Protection, Environment and Natural Resources Institute, The Pennsylvania State University, University Park, Pennsylvania.
- Shortle, J., et al. 2015. Pennsylvania Climate Impacts Assessment Update. Report 2700-BK-DEP4494 (08/2015) from The Pennsylvania State University to the Pennsylvania Department of Environmental Protection, Harrisburg, Pennsylvania.
- Shuter, B. J., A. G. Finstad, I. P. Helland, I. Zweimüller, and F. Hölker. 2012. The role of winter phenology in shaping the ecology of freshwater fish and their sensitivities to climate change. *Aquatic Sciences* **74**:637-657.
- Sillmann, J., V. Kharin, X. Zhang, F. Zwiers, and D. Bronaugh. 2013a. Climate extremes indices in the CMIP5 multimodel ensemble: Part 1. Model evaluation in the present climate. *Journal of Geophysical Research: Atmospheres* **118**:1716-1733.
- Sillmann, J., V. Kharin, F. Zwiers, X. Zhang, and D. Bronaugh. 2013b. Climate extremes indices in the CMIP5 multimodel ensemble: Part 2. Future climate projections. *Journal of Geophysical Research: Atmospheres* **118**:2473-2493.
- Silvius, K. M., R. E. Bodmer, and J. M. V. Fragosa, editors. 2004. *People in Nature: Wildlife Conservation in South and Central America*. Columbia University Press, New York, New York.
- Small-Lorenz, S. L., L. A. Culp, T. B. Ryder, T. C. Will, and P. P. Marra. 2013. A blind spot in climate change vulnerability assessments. *Nature Climate Change* **3**:91–93.
- Smith, T. A., E. S. Meyer, and M. C. Walsh. 2009. 3rd State of the Stream Report on the Health of French Creek: Aquatic Communities and Habitats in the Tributaries to French Creek, Pennsylvania. Report Number RC-RCI-11-17. A report to the Pennsylvania Department of Conservation and Natural Resources. Pennsylvania Natural Heritage Program, Western Pennsylvania Conservancy, Pittsburgh, Pennsylvania. Available from http://waterlandlife.org/assets/3rd_French_Cr_full_rept.pdf (accessed May 2015).
- Smith, L. M., S. Whitehouse, and C. A. Oviatt. 2010. Impacts of Climate Change on Narragansett Bay. *Northeastern Naturalist* **17**:77-90.
- Smith, S. B., and P. W. C. Paton. 2011. Long-term shifts in autumn migration by songbirds at a coastal eastern North American stopover site. *The Wilson Journal of Ornithology* **123**:557-566.
- Smith, S. A., R. A. Seigel, C. P. Driscoll, K. J. Monson, E. H. Campbell Grant, B. Zarate, C. Urban, J. D. Kleopfer, H. S. Niederriter, S. D. Farnsworth. 2012. Detecting the Extent of Mortality Events from



Ranavirus in Amphibians in the Northeastern U.S. Regional Conservation Needs Grant Program. Project 2012-01. Available from <http://rcngrants.org/content/detecting-extent-mortality-events-ranavirus-amphibians-northeastern-us>. (accessed May 2015).

Smith, W. P. 2012. Sentinels of Ecological Processes: The Case of the Northern Flying Squirrel. *BioScience* **62**:950-961.

Sneddon, L. A., and G. Hammerson. 2014. Climate change vulnerability assessments of selected species in the North Atlantic LCC region. NatureServe, Arlington, Virginia.

Snyder, C. D., J. A. Young, D. P. Lemané, D. R. Smith. 2002. Influence of eastern hemlock (*Tsuga canadensis*) forests on aquatic invertebrate assemblages in headwater streams. *Canadian Journal of Fisheries and Aquatic Sciences* **59**:262-275.

Sohl, T. L. 2014. The Relative Impacts of Climate and Land-Use Change on Conterminous United States Bird Species from 2001 to 2075. *PLoS ONE* **9**:e112251.

Solomon, S., G. K. Plattner, R. Knutti, and P. Friedlingstein. 2009. Irreversible climate change due to carbon dioxide emissions. *Proceedings of the National Academy of Sciences* **106**:1704-1709.

Somma, L. A., A. Foster, and P. Fuller. 2015. *Trachemys scripta elegans*. USGS Nonindigenous Aquatic Species Database, Gainesville, FL. Revision Date: 10.28.2009. Available from <http://nas.er.usgs.gov/queries/FactSheet.aspx?speciesID=1261> (accessed May 2015).

Sorenson, L. G., R. Goldberg, T. L. Root, and M. G. Anderson. 1998. Potential effects of global warming on waterfowl populations breeding in the Northern Great Plains. *Climatic Change* **40**:343-369.

Southwick Associates. 2011. The economics associated with outdoor recreation, natural resources conservation and historic preservation in the United States. A report prepared for The National Fish and Wildlife Foundation. Fernandina Beach, Florida.

Sparks, R. E. 1995. Need for Ecosystem Management of Large Rivers and Their Floodplains. *BioScience* **45**:168-182.

Spaulding, S., and L. Elwell. 2007. Increase in Nuisance Blooms and Geographic Expansion of the Freshwater Diatom *Didymosphenia geminata*. U.S. Environmental Protection Agency. Open-File Report 2007–1425. Available from http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fsbdev3_015176.pdf (accessed May 2015).

Sperry, J. H., G. Blouin-Demers, G. L. F. Carfagno, and P. J. Weatherhead. 2010. Latitudinal variation in seasonal activity and mortality in ratsnakes (*Elaphe obsoleta*). *Ecology* **91**:1860-1866.

SRAFRFC (Susquehanna River Anadromous Fish Restoration Cooperative). 2010. Migratory Fish Management and Restoration Plan for the Susquehanna River Basin. Harrisburg, Pennsylvania. Available from <http://fishandboat.com/pafish/shad/susq/SRAFRFC-RestorationPlan.pdf>. (accessed May 2015).

SRBC (Susquehanna River Basin Commission). 2012. Frequently Asked Questions. SRBC's Role in Regulating Natural Gas Development. 03.16.12. Available from



http://www.srbc.net/programs/docs/NaturalGasFAQ_20120323_140574v1.pdf (accessed May 2015).

Stankey, G. H., R. N. Clark, and B. T. Bormann. 2005. Adaptive management of natural resources, theory, concepts, and management institutions. General Technical Report PNW-GTR-654. U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station, Portland, Oregon. Available from http://www.fs.fed.us/pnw/pubs/pnw_gtr654.pdf (accessed May 2015).

Stanley, C. Q., E. A. McKinnon, K. C. Fraser, M. P. Macpherson, G. Casbourn, L. Friesen, P. P. Marra, C. Studds, T. B. Ryder, N. E. Diggs, and B. J. M. Stutchbury. 2014. Connectivity of Wood Thrush Breeding, Wintering and Migration Sites Based on Range-wide Tracking. *Conservation Biology* **29**:164-174.

Staudinger, M. D., N. Grimm, A. Staudt, S. Carter, F. S. Chapin, III, P. Kareiva, M. Ruckelshaus, and B. Stein. 2012. Impacts of climate change on biodiversity, ecosystems, and ecosystem services: technical input to the 2013 National Climate Assessment. Cooperative Report to the 2013 National Climate Assessment. Available from <http://assessment.globalchange.gov> (accessed April 2015) In Staudinger et al. (2015c).

Staudinger, M. D., et al. 2013. Biodiversity in a changing climate: a synthesis of current and projected trends in the United States. *Frontiers in Ecology and the Environment* **11**:465-473.

Staudinger, M. D., T. L. Morelli, and A. M. Bryan. 2015a. Integrating Climate Change into Northeast and Midwest State Wildlife Action Plans. DOI Northeast Climate Science Center Report, Amherst, Massachusetts. Available from <http://necsc.umass.edu/projects/integrating-climate-change-state-wildlife-action-plans> (accessed July 2015).

Staudinger, M. D., L. Hilberg, M. Janowiak, and C. Swanston. 2015b. Chapter 2: Northeast and Midwest regional species and habitats at greatest risk and most vulnerable to climate impacts. In Staudinger et al. (2015a). DOI Northeast Climate Science Center Report, Amherst, Massachusetts.

Staudinger, M. D., L. Hilberg, M. Janowiak, C. Caldwell, A. W. D'Amato, E. Grant, R. Horton, R. Katz, C. Neill, K. Nislow, K. Potter, E. Rowland, C. Swanston, F. R. Thompson, K. Winiarski. 2015c. Chapter 4: Scale appropriate adaptation strategies and actions in the Northeast and Midwest United States In Staudinger et al. (2015a).

Steele, M. A., M. C. Brittingham, T. J. Maret, J. F. Merritt, editors. 2010. *Terrestrial Vertebrates of Pennsylvania—A Complete Guide to Species of Conservation Concern*. The Johns Hopkins University Press, Baltimore, Maryland.

Steen, V., and A. N. Powell. 2012. Potential Effects of Climate Change on the Distribution of Waterbirds in the Prairie Pothole Region, U.S.A. *Waterbirds* **35**:217-229.

Steen, D. A., and K. Barrett. 2015. Should states in the USA value species at the edge of their geographic range? *The Journal of Wildlife Management* DOI: 10.1002/jwmg.897.

Stein, B. A., A. Staudt, M. S. Cross, N. S. Dubois, C. Enquist, R. Griffis, L. J. Hansen, J. J. Hellmann, J. J. Lawler, E. J. Nelson, A. Pairis. 2013. Preparing for and managing change: Climate adaptation for biodiversity and ecosystems. *Frontiers in Ecology and the Environment* **11**:502–510.



- Stem, C., R. Margoluis, N. Salafsky, and M. Brown. 2005. Monitoring and Evaluation in Conservation: a Review of Trends and Approaches. *Conservation Biology* **19**:295-309.
- Stenseth, N. C., A. Shabbar, K.-S. Chan, S. Boutin, E. K. Rueness, D. Ehrich, J. W. Hurrell, O. C. Lingjærde, and K. S. Jakobsen. 2004. Snow conditions may create an invisible barrier for lynx. *Proceedings of the National Academy of Sciences of the United States of America* **101**:10632-10634.
- Stitt, B. C., G. Burness, K. A. Burgomaster, S. Currie, J. L. McDermid, and C. C. Wilson. 2014. Intraspecific Variation in Thermal Tolerance and Acclimation Capacity in Brook Trout (*Salvelinus fontinalis*): Physiological Implications for Climate Change. *Physiological and Biochemical Zoology* **87**:15-29.
- Stokes, E., A. Johnson, and M. Rao. 2010. Monitoring Wildlife Populations for Management. Training Module 7 for the Network of Conservation Educators and Practitioners. American Museum of Natural History and the Wildlife Conservation Society, Vientiane, Lao PDR.
- Stotz, D. F., J. W. Fitzpatrick, T. A. Parker III, and D. K. Moskovits. 1996. Neotropical Birds Ecology and Conservation with Ecological and Distributional Databases. The University of Chicago Press, Chicago and London.
- Strayer, D. L., J. A. Downing, W. R. Haag, T. L. King, J. B. Layzer, T. J. Newton, S. J. Nichols. 2004. Changing perspectives on pearly mussels, North America's most imperiled animals. *Bioscience* **54**:429-439.
- Stroeve, J. C., V. Kattsov, A. Barrett, M. Serreze, T. Pavlova, M. Holland, and W. N. Meier. 2012. Trends in Arctic sea ice extent form CMIP5; CMIP3 and observations. *Geophysical Research Letters* **39**. DOI:10.1029/2012GL052676.
- Studds, C. E., W. V. DeLuca, M. E. Baker, R. S. King, and P. P. Marra. 2012. Land cover and rainfall interact to shape waterbird community composition. *PlosOne* **7**:e35969.
- Stutchbury, B. 2007. *Silence of the Songbirds*. Walker and Company, New York, New York.
- Suen, J. P. 2008. Potential impacts to freshwater ecosystems caused by flow regime alteration under changing climate conditions in Taiwan. *Hydrology and Earth Systems Sciences Discussions* **5**:3005-3032.
- Sullivan, B. L., C. L. Wood, M. J. Iliff, R. E. Bonney, D. Fink, and S. Kelling. 2009. eBird: A citizen-based bird observation network in the biological sciences. *Biological Conservation* **142**:2282-2292.
- Swain, S., and K. Hayhoe. 2015. CMIP5 projected changes in spring and summer drought and wet conditions over North America. *Climate Dynamics* **44**:2737-2750.
- Swanston, C., and M. Janowiak, editors. 2012. *Forest adaptation resources: climate change tools and approaches for land managers*. General Technical Report NRS-87. U.S. Department of Agriculture, Forest Service, Northern Research Station, Newtown Square, Pennsylvania.
- Sweeney, B. W., J. K. Jackson, J. D. Newbold, D. H. Funk. 1991. Climate change and the life histories and biogeography of aquatic insects in eastern North America. Pages 143-176 In P. Firth and S. G. Fisher, editors. *Global climate change and freshwater ecosystems*. Springer-Verlag, New York, New York.



Swink, W. D. 1993. Effect of Water Temperature on Sea Lamprey Growth and Lake Trout Survival. *Transactions of the American Fisheries Society* **122**:1161-1166.

T

Taucher, J., T. Librandi Mumma, and W. Capouillez. 2012. Pennsylvania Game Commission Wind Energy Voluntary Cooperation Agreement: Third Summary Report. Available from www.pgc.state.pa.us (accessed March 2015).

Taylor, J., W. Fisher, C. Apse, E. Kendy, D. Klein, G. Schuler, S. Adams, and D. Crabtree. 2013. Flow Recommendations for the Tributaries of the Great Lakes in New York and Pennsylvania. The Nature Conservancy, Rochester, New York.

Taylor, K. E, R. J. Stouffer, and G. A. Meehl. 2012. An overview of CMIP5 and the experiment design. *Bulletin of the American Meteorological Society* **93**:485-498.

Tayyebi, A., B. K. Pekin, B. C. Pijanowski, J. D. Plourde, J. S. Doucette, and D. Braun. 2013. Hierarchical modeling of urban growth across the conterminous USA: developing meso-scale quantity drivers for the Land Transformation Model. *Journal of Land Use Science* **8**:422-442.

Terborgh, J. W. 1980. The conservation status of neotropical migrants: present and future. Pages 21-30 in A. Keast and E. S. Morton, editors. *Migrant birds in the neotropics: ecology, behavior, distribution, and conservation*. Smithsonian Institution Press, Washington, D.C.

Terborgh, J. 1989. *Where have all the birds gone?* Princeton University Press, Princeton, New Jersey.

Terrell, K. A., R. P. Quintero, S. Murray, J. D. Kleopfer, J. B. Murphy, M. J. Evans, B. D. Nissen, and B. Gratwicke. 2013. Cryptic Impacts of Temperature Variability on Amphibian Immune Function. *Journal of Experimental Biology* **216**:4204-4211.

Terwilliger Consulting and NEFWDC (Northeast Fish and Wildlife Diversity Technical Committee). 2013. Taking Action Together: Northeast Regional Synthesis for State Wildlife Action Plans. A report submitted to the Northeast Fish and Wildlife Diversity Committee. Locustville, Virginia. Available from <http://rcngrants.org/content/northeast-regional-conservation-synthesis-state-wildlife-action-plan-revisions-0>

Tesauro, J. 2001. Restoring Wetland Habitats with Cows and other Livestock. *Conservation Biology In Practice* **2**:26-30.

Tesauro, J., and D. Ehrenfeld. 2007. The Effects of Livestock Grazing on the Bog Turtle [*Glyptemys* (=Clemmys) muhlenbergii]. *Herpetologica* **63**:293-300.

Tetratech. 2013. Vermont Agency of Natural Resources Climate Change Adaptation Framework. Vermont Agency of Natural Resources, Waterbury, Vermont.

The Advocate (Baton Rouge) 2014. North shore man helps feds untangle turtle smuggling ring. Reported by Jim Mustiani. 09.10.14. Available from <http://theadvocate.com/news/neworleans/10118337-148/north-shore-man-helps-feds> (accessed May 2015).



- Thibeault, J. M., and A. Seth. 2014. Changing climate extremes in the Northeast United States: observations and projections from CMIP5. *Climatic Change* **127**:273-287.
- Thomas, M. A. 2013. Last gasps for Allegheny dredging. *Pittsburgh Tribune-Review*. Available from <http://triblive.com/neighborhoods/yourallekiskivalley/yourallekiskivalleymore/4332002-74/dredging-river-allegheny#axzz3mUgcTVC5> (accessed July 2015).
- Thompson, L. M., M. D. Staudinger, and S. L. Carter. 2015. Summarizing components of U.S. Department of Interior vulnerability assessments to focus climate adaptation planning. *USGS Open File Report* 2015-1110.
- Thogmartin, W. E., M. G. Knutson, and J. R. Sauer. 2006. Predicting Regional Abundance of Rare Grassland Birds with a Hierarchical Spatial Count Model. *The Condor* **108**:25-46.
- Thogmartin, W. E., J. R. Sauer, and M. G. Knutson. 2007. Modeling and Mapping Abundance of American Woodcock Across the Midwestern and Northeastern United States. *The Journal of Wildlife Management* **71**:376-382.
- Thorne, S., K. C. Kim, K. C. Steiner, and B. J. McGuinness. 1995. *A Heritage for the 21st Century: Conserving Pennsylvania's Native Biological Diversity*. Pennsylvania Fish and Boat Commission, Harrisburg, Pennsylvania.
- Thorne, K. M., J. Y. Takekawa, and D. L. Elliott-Fisk. 2012. Ecological Effects of Climate Change on Salt Marsh Wildlife: A Case Study from a Highly Urbanized Estuary. *Journal of Coastal Research* **28**:1477-1487.
- Tiner, R. W. 1990. *Pennsylvania's Wetlands: Current Status and Recent Trends*. U. S. Fish and Wildlife Service report, Washington, D.C.
- Tiner Jr, R. W., and J. T. Finn. 2012. *Status and Recent Trends of Wetlands in Five Mid-Atlantic States: Delaware, Maryland, Pennsylvania, Virginia, and West Virginia*. Cooperative publication by U.S. Fish and Wildlife Service, Region 5, National Wetlands Inventory Project, Newton Comer, Massachusetts and U.S. Environmental Protection Agency, Region III. Philadelphia, Pennsylvania.
- Ting, M., S. J. Camargo, C. Li, and Y. Kushnir. 2015. Natural and Forced North Atlantic Hurricane Potential Intensity Change in CMIP5 Models. *Journal of Climate* DOI:10.1175/JCLI-D-14- 00520.1.
- TNC (The Nature Conservancy). 2010. *Weathering Climate Change: Framing Strategies to Minimize Impacts on Pennsylvania Ecosystems and Wildlife*. Harrisburg, Pennsylvania. Available from <http://www.nature.org/ourinitiatives/regions/northamerica/unitedstates/pennsylvania/explore/weathering-climate-change-perspectives-on-adaptation.pdf>. (accessed May 2015).
- TNC (The Nature Conservancy). 2014. *Fire Management Manual*. Available from <http://tncfiremanual.org/require.htm> (accessed June 2015).
- TNC (The Nature Conservancy), et al. 2015. *Controlled burning for Healthy Forest Management in the Appalachians* (unpublished). The Nature Conservancy, Harrisburg, Pennsylvania.



- TNC-ELI (The Nature Conservancy and Environmental Law Institute). 2014. Watershed Approach Handbook. Improving Outcomes and Increasing Benefits Associated with Wetland and Stream Restoration and Protection Projects. A report to the U.S. Environmental Protection Agency. The Nature Conservancy, Arlington, Virginia and Environmental Law Institute, Washington, D.C.
- Tockner, K., F. Malard, and J. V. Ward. 2000. An extension of the flood pulse concept. *Hydrological Processes* **14**:2861-2883.
- Todd, A. W., and L. B. Keith. 1983. Coyote demography during a snowshoe hare decline in Alberta. *The Journal of Wildlife Management* **47**:394-404.
- Todd, B. D., D. E. Scott, J. H. K. Pechmann, and J. W. Gibbons. 2010. Climate Change Correlates with Rapid Delays and Advancements in Reproductive Timing in an Amphibian Community. *Proceedings of the Royal Society B: Biological Sciences* **278**:2191-2197.
- Toreti, A., P. Naveau, M. Zampieri, A. Schindler, E. Scoccimarro, E. Xoplaki, H. A. Dijkstra, S. Gualdi, and J. Luterbacher. 2013. Projections of global changes in precipitation extremes from Coupled Model Intercomparison Project Phase 5 models. *Geophysical Research Letters* **40**:4887-4892.
- Townsend, A. K., T. S. Sillett, N. K. Lany, S. A. Kaiser, N. L. Rodenhouse, and et. al. 2013. Warm Springs, Early Lay Dates, and Double Brooding in a North American Migratory Songbird, the Black-Throated Blue Warbler. *PLoS ONE* **8**:e59467.
- Trebitz, A. S., J. C. Brazner, A. M. Cotter, M. L. Knuth, J. A. Morrice, G. S. Peterson, M. E. Sierszen, J. A. Thompson, and J. R. Kelly. 2007. Water Quality in Great Lakes Coastal Wetlands: Basin-wide Patterns and Responses to an Anthropogenic Disturbance Gradient. *Journal of Great Lakes Research* **33**:67-85.
- Trombulak, S. C., and C. A. Frissell. 2000. Review of ecological effects of roads on terrestrial and aquatic communities. *Conservation Biology* **14**:18-30.
- Trumbo, B., M. Hudy, E. P. Smith, D. Y. Kim, B. A. Wiggins, K. H. Nislow, and C. A. Dolloff. 2010. Sensitivity and vulnerability of brook trout populations to climate change. Pages 62-68 in *Wild trout X: conserving wild trout*. Wild Trout Symposium, West Yellowstone, Montana.
- Trumbo, D. R., A. A. Burgett, and J. H. Knouft. 2011. Testing climate-based species distribution models with recent field surveys of pond-breeding amphibians in eastern Missouri. *Canadian Journal of Zoology* **89**:1074-1083.
- Trumpickas, J., B. J. Shuter, and C. K. Minns. 2009. Forecasting impacts of climate change on Great Lakes surface water temperatures. *Journal of Great Lakes Research* **35**:454-463.
- Tryjanowski, P., et al. 2015. Winter Bird Assemblages in Rural and Urban Environments: A National Survey. *PLoS ONE* DOI:10.1371/journal.pone.0130299.
- Turner, G. G., D. M. Reeder, J. T. H. Coleman. 2011. A five-year assessment of mortality and geographic spread of white-nose syndrome in North American bats and a look to the future. *Bat Research News* **52**: 13-27.



Turner, G., and C. Butchkoski. 2009. Indiana Bat Hibernacula Surveys. Project Annual Job Report 71401. Pennsylvania Game Commission, Harrisburg, Pennsylvania.

Turner, G. G., et al. 2014. Nonlethal screening of bat-wing skin with the use of ultraviolet fluorescence to detect lesions indicative of white-nose syndrome. *Journal of Wildlife Diseases* **50**:566-573.

UCS (Union of Concerned Scientists). 2008. Climate Change in Pennsylvania: Impacts and Solution for the Keystone State. UCS Publications, Cambridge, Massachusetts. Available from http://www.ucsusa.org/assets/documents/global_warming/Climate-Change-in-Pennsylvania_Impacts-and-Solutions.pdf (accessed May 2015).

U

U.S. Congress. Title 42, United States Code Chapter 85 Subchapter IV-A §7651. Available from <http://uscode.house.gov/view.xhtml?path=/prelim@title42/chapter85&edition=prelim> (accessed May 2015).

USACOE (U.S. Army Corps of Engineers). 2010. National Inventory of Dams (NID). Referenced In Anderson et al. (2013a) as (ACE 2010).

USACOE (U.S. Army Corps of Engineers). 2015. National Inventory of Dams (NID). Available from http://geo.usace.army.mil/pgis/f?p=397:3:0::NO::P3_STATES:PA (accessed April 2015).

USDA (U.S. Department of Agriculture). 2007. Fish Passage and Screening Design. Technical Supplement 14N. Part 654. National Engineering Handbook. Available from <http://directives.sc.egov.usda.gov/17824.wba>

USDA (U.S. Department of Agriculture). 2011. Biomass Crop Assistance Program (BCAP) Factsheet; Area 5. Available from http://www.fsa.usda.gov/Internet/FSA_File/bcap_areas2_5_2011.pdf. (accessed May 2015).

USDA (U.S. Department of Agriculture). 2014. Water Quality Effects and Placement of Pasture BMPs in the Spring Creek Watershed (Centre County, PA). Conservation Effects Assessment Program (CEAP) Science Note. 09/2014. Available from http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1261674.pdf. (accessed May 2015).

USDA (U.S. Department of Agriculture). 2015a. 2014 State Agriculture Overview, Pennsylvania. Available from http://www.nass.usda.gov/Quick_Stats/Ag_Overview/stateOverview.php?state=PENNSYLVANIA (accessed May 2015).

USDA (U.S. Department of Agriculture). 2015b. Field Office Technical Guide (FOTG). Available from <http://efotg.sc.egov.usda.gov/> (accessed May 2015).

USDA-FS (U.S. Department of Agriculture-Forest Service). 2009. Forest Inventory and Analysis National Program. Available from <http://www.fia.fs.fed.us/> in Anderson et al. (2013a).

USDA-FS (U. S. Department of Agriculture-Forest Service). 2013. Forest Health Protection-Hemlock Woolly Adelgid Distribution Maps. 2012. USDA-Forest Service. Available from <http://na.fs.fed.us/fhp/hwa/maps/2012.pdf>. (accessed May 2015).



USDA-FS (U.S. Department of Agriculture-Forest Service). 2015. Conservation and Management of Monarch Butterflies: A Strategic Framework. FS-1044. Available from http://www.fs.fed.us/wildflowers/pollinators/Monarch_Butterfly/documents/ConservationManagementMonarchButterflies.pdf (accessed June 2015).

USDA-NRCS (U.S. Department of Agriculture-Natural Resources Conservation Service). 2012. Pennsylvania NRCS Strategic Plan FY 2011-2015. USDA-NRCS, Pennsylvania Office, Harrisburg, Pennsylvania. Available from https://prod.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1101586.pdf (accessed June 2015).

USDA-NRCS (U.S. Department of Agriculture-Natural Resources Conservation Service). Golden-winged Warbler Conservation. Available from http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/pa/plantsanimals/?cid=nrcs142p2_018212 (accessed March 2015).

USDA-NRCS (U.S. Department of Agriculture-Natural Resources Conservation Service). Bog Turtle. Available from <http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/programs/?cid=stelprdb1047032> (accessed March 2015).

USDOE (U.S. Department of Energy). 2012. State Renewable Electricity Profiles 2010. U.S. Energy Information Administration, U.S. Department of Energy, Washington, D.C.

USDOE-NETL (U.S. Department of Energy, National Energy Technology Laboratory). 2013. Modern shale gas development in the United States: an update. U.S. Department of Energy. Available from <http://www.netl.doe.gov/File%20Library/Research/Oil-Gas/shale-gas-primer-update-2013.pdf> (accessed April 2015).

USDOI (U.S. Department of the Interior). 2010. Secretarial order establishing the Climate Science Centers. Secretarial Order No. 3289. Available from https://nccwsc.usgs.gov/sites/default/files/documents/other/SO_3289_Amended.pdf (accessed May 2015).

USDOI (U.S. Department of the Interior), U.S. Fish and Wildlife Service, and U.S. Department of Commerce, and U.S. Census Bureau. 2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation. Washington, D.C.

USEPA (U.S. Environmental Protection Agency). 2000. Mid-Atlantic Highlands Streams Assessment. EPA/903/R-00/015. U.S. Environmental Protection Agency Region 3, Philadelphia, Pennsylvania.

USEPA (U.S. Environmental Protection Agency). 2008. EPA's Report on the Environment. Report EPA/600/R-07/045F. Washington, D.C. Available from http://ofmpub.epa.gov/eims/eimscomm.getfile?p_download_id=485027 (September 2015).

USEPA (U.S. Environmental Protection Agency). 2009. National Lakes Assessment: A Collaborative Survey of the Nation's Lakes. EPA 841-R-09-001. U.S. Environmental Protection Agency, Office of Water and Office of Research and Development, Washington, D.C. Available from http://www.epa.gov/owow/lakes/lakessurvey/pdf/nla_report_low_res.pdf (accessed May 2015).



USEPA (U.S. Environmental Protection Agency). 2012. Section 404 of the Clean Water Act: How Wetlands Are Defined and Identified | Outreach & Communication. Last modified October 12, 2012. Available from <http://water.epa.gov/type/wetlands/outreach/fact11.cfm>. (accessed June 2015).

USEPA (U.S. Environmental Protection Agency). 2013. History of the Clean Air Act. Available from <http://www.epa.gov/air/caa/amendments.html> (accessed April 2015).

USEPA (U.S. Environmental Protection Agency). 2015. Summary of the Clean Water Act. Available from <http://www2.epa.gov/laws-regulations/summary-clean-water-act> (accessed April 2015).

USFWS (U.S. Fish & Wildlife Service). 2006. Endangered Species Bulletin Vo. XXXI, No. 3. Available at http://www.fws.gov/Endangered/bulletin/2006/bulletin_nov2006.pdf

USFWS (U.S. Fish and Wildlife Service). 2012. U.S. Fish and Wildlife Service land-based wind energy guidelines. Washington, D.C.

USFWS (U.S. Fish and Wildlife Service). 2014. Wildlife TRACS Action Levels v20 with Indicators (version date 08/20/14). Available from <https://tracs.fws.gov/wiki/download/attachments/32178259/Wildlife%20TRACS%20Action%20Levels%20v20%20w%20Indicators.pdf?version=1&modificationDate=1424969979000&api=v2> (accessed May 2015).

USFWS (U.S. Fish and Wildlife Service). 2015. Wildlife Tracking and Reporting on Actions for the Conservation of Species [Wildlife TRACS] (Version 1.0) [Web application software]. Available from <https://tracs.fws.gov> (accessed August 2015).

USFWS (U.S. Fish and Wildlife Service). 2015b. Where is it now? White-nose syndrome. Available from <https://www.whitenosesyndrome.org/about/where-is-it-now> (accessed April 2015).

USGS (U.S. Geological Survey) and Environmental Protection Agency. 2006. National Hydrography Dataset Plus, 1:100,000 scale. (referenced in Anderson and Olivero Sheldon 2011).

USGS (U.S. Geological Survey) 2014. Long-Term Monitoring Program (LTRMP). Upper Midwest Environmental Sciences Center. Open Rivers and Wetland Field Station. Available from http://www.umesc.usgs.gov/field_stations/fs5/open_river.html (accessed May 2015).

V

Vannote, R. L., G. W. Minshall, K. W. Cummins, J. R. Sedell, and C. E. Cushing. 1980. The River Continuum Concept. *Canadian Journal of Fisheries and Aquatic Sciences* **37**:130-137.

van Vrancken, J., and M. O'Connell. 2010. Effects of Hurricane Katrina on Freshwater Fish Assemblages in a Small Coastal Tributary of Lake Pontchartrain, Louisiana. *Transactions of the American Fisheries Society* **139**:1723-1732.

van Vuuren, D. P., et al. 2011. The representative concentration pathways: an overview. *Climatic Change* DOI10.1007/s10584-011-0148-z.

Vavrus, S., M. Notaro, and A. Zarrin. 2013. The role of ice cover in heavy lake-effect snowstorms over the Great Lakes Basin as simulated by RegCM4. *Monthly Weather Review* **141**:148-165.



Veilleux, J. P., P. R. Moosman, D. Scott Reynolds, K. E. LaGory, and L. J. Walston. 2009. Observations of Summer Roosting and Foraging Behavior of a Hoary Bat (*Lasiurus cinereus*) in Southern New Hampshire. *Northeastern Naturalist* **16**:148-152.

Verme, L. J. 1968. An Index of Winter Weather Severity for Northern Deer. *The Journal of Wildlife Management* **32**:566-574.

Vidic, R. D., S. L. Brantley, J. M. Vandenbossche, D. Yoxtheimer, and J. D. Abad. 2013. Impact of shale gas development on regional water quality. *Science* **340**:1235009. DOI: 10.1126/science.1235009.

Villarini, G., and J. A. Smith. 2010. Flood peak distributions for the eastern United States. *Water Resources Research* **46**:W06504.

Villarini, G., J. A. Smith, M. L. Baeck, R. Vitolo, D. B. Stephenson, and W. F. Krajewski. 2011. On the frequency of heavy rainfall for the Midwest of the United States. *Journal of Hydrology* **400**:103-120.

Visser, M.E., and C. Both. 2005. Shifts in phenology due to global climate change: the need for a yardstick. *Proceedings of the Royal Society B: Biological Sciences* **272**:2561-2569.

W

Wagner, D. L., M. W. Nelson, and D. L. Schweitzer. 2003. Shrubland Lepidoptera of southern New England and southeastern New York: ecology, conservation, and management. *Forest Ecology and Management* **185**:95-112.

Walsh, M. C., J. Deeds, and B. Nightingale. 2007. User's Manual and Data Guide to the Pennsylvania Aquatic Community Classification. Pennsylvania Natural Heritage Program, Western Pennsylvania Conservancy, Middletown, Pennsylvania and Pittsburgh, Pennsylvania.

Walsh, M. C., and E. S. Meyer. 2010. Distribution of Yellow Lampmussel (*Lampsilis cariosa*) in the Susquehanna River Watershed. Final report for State Wildlife Grant Project T-51-R-1 to Pennsylvania Fish and Boat Commission. Harrisburg, Pennsylvania.

Walsh, J., et al. 2014. Chapter 2: Our Changing Climate. Pages 19-67 In *Climate Change Impacts in the United States: The Third National Climate Assessment*. J. M. Melillo, T. C. Richmond, and G. W. Yohe, editors. U.S. Global Change Research Program. U.S. Government Printing Office, Washington, D.C.

Wang, L., J. Lyons, P. Kanehl, and R. Bannerman. 2001. Impacts of Urbanization on Stream Habitat and Fish Across Multiple Spatial Scales. *Environmental Management* **28**:255-266.

Ward, J. V., and J. A. Stanford. 1995. Ecological Connectivity in Alluvial River Ecosystems and its Disruption by Flow Regulation. *Regulated Rivers: Research & Management* **11**:105-119.

Ward, J. V. 1992. *Aquatic insect ecology. 1. Biology and habitat*. John Wiley and Sons, New York, New York.

Wardrop, D. H., M. E. Kentula, S. F. Jensen, D. L. Stevens, K. C. Hychka, and R. P. Brooks. 2007. Assessment of wetlands in the Upper Juniata watershed in Pennsylvania, USA using the hydrogeomorphic approach. *Wetlands* **27**:432-445.



- Wardrop, D. H., M. E. Kentula, D. L. Stevens, Jr., S. F. Jensen, and R. P. Brooks. 2007. Assessment of wetland condition: an example from the Upper Juniata Watershed in Pennsylvania, USA. *Wetlands* **27**:416–431.
- Warnecke, L., J. M. Turner, T. K. Bollinger, J. M. Lorch, V. Misra, P. M. Cryan, G. Wibbelt, D. S. Blehert, and C. K. R. Willis. 2012. Inoculation of bats with European *Geomyces destructans* supports the novel pathogen hypothesis for the origin of white-nose syndrome. *Proceedings of the National Academy of Sciences* **109**:6999-7003.
- Warnecke, L., J. M. Turner, T. K. Bollinger, V. Misra, P. M. Cryan, D. S. Blehert, G. Wibbelt, and C. K. R. Willis. 2013. Pathophysiology of white-nose syndrome in bats: a mechanistic model linking wing damage to mortality. *Biology Letters* **9**:20130177.
- Wasserman, T. N., S. A. Cushman, A. S. Shirk, E. L. Landguth, and J. S. Littell. 2012. Simulating the effects of climate change on population connectivity of American marten (*Martes americana*) in the northern Rocky Mountains, USA. *Landscape Ecology* **27**:211-225.
- Watanabe, N. C., I. Mori, and I. Yoshitaka. 1999. Effect of water temperature on the mass emergence of the mayfly, *Ephoron shigae*, in a Japanese river (Ephemeroptera: Polymitarcyidae). *Freshwater Biology* **41**:537-541.
- Waters, T. F. 1995. *Sediment in Streams Sources, Biological Effects, and Controls*. American Fisheries Society Monograph 7. Bethesda, Maryland.
- Webb, B. 1996. Trends in Stream and River Temperature. *Hydrological Processes* **10**:205-226.
- Webster, M. S., and P. P. Marra. 2005. The importance of understanding migratory connectivity and seasonal interactions. Pages 199-209 In R. Greenberg and P. P. Marra, editors. *Birds of two worlds: the ecology and evolution of migration*. Johns Hopkins University Press, Baltimore, Maryland.
- Webster, P. J., G. J. Holland, J. A. Curry, and H. R. Chang. 2005. Changes in tropical cyclone number, duration, and intensity in a warming environment. *Science* **309**:1844-1846.
- Webster, W. D., J. F. Parnell and W. C. Biggs. 1985. *Mammals of the Carolinas, Virginia, and Maryland*. University of North Carolina Press, Chapel Hill, North Carolina.
- Wehrly, K. E., M. J. Wiley, and P. W. Seelbach. 2003. Classifying Regional Variation in Thermal Regime Based on Stream Fish Community Patterns. *Transactions of the American Fisheries Society* **132**:18-38.
- Weidensaul, S. 1999. *Living on the Wind*. North Point Press, New York, New York.
- Weigl, P. D. 2007. The northern flying squirrel (*Glaucomys sabrinus*): A conservation challenge. *Journal of Mammalogy* **88**:897-907.
- Wells, J., B. Robertson, K. Rosenberg, and D. Mehlman. 2010. Global versus local conservation focus of U.S. state agency endangered bird species lists. *PLoS ONE* **5**:e8608.
(<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0008608>)



Welsch, D. 1991. Riparian Forest buffers. Function and Design for Protection and Enhancement of Water Resources. NA-PR-07-91. U.S. Department of Agriculture. Forest Service, Northeastern Area, Radnor, Pennsylvania.

Welte, N. 2015. A Field Guide to Pennsylvania's Freshwater Mussels. Natural Diversity Section, Division of Environmental Services, Pennsylvania Fish and Boat Commission. Bellefonte, Pennsylvania.

Weltman-Fahs, M, and J. M. Taylor. 2013. Hydraulic Fracturing and Brook Trout Habitat in the Marcellus Shale Region: Potential Impacts and Research Needs. *Fisheries* **38**:4-15.

West, J. M., S. H. Julius, P. Kareiva, C. Enquist, J. J. Lawler, B. Petersen, A .E. Johnson, and M. R. Shaw. 2009. U.S. natural resources and climate change: concepts and approaches for management adaptation. *Environmental Management* **44**:1001-1021.

Westbrook, C. J., D. J. Cooper, and B. W. Baker. 2006. Beaver dams and overbank floods influence groundwater–surface water interactions of a Rocky Mountain riparian area. *Water Resources Research* **W06404**.

Whitaker, D. M., and D. F. Stauffer. 2003. Night roost selection during winter by ruffed grouse in the central Appalachians. *Southeastern Naturalist* **2**:377-392.

Whitaker, J. O., Jr., and W.J. Hamilton, Jr. 1998. *Mammals of the eastern United States*. Comstock Publishing Associates, Cornell University Press, Ithaca, New York.

White, E. L., P. D. Hunt, M. D. Schlesinger, J. D. Corser, and P. G. deMaynadier. 2014. A conservation status assessment of Odonata for the Northeastern United States. New York Natural Heritage Program, Albany, New York.

Whitehead, D. R., and T. Taylor. 2002. Acadian Flycatcher (*Empidonax vireescens*). In A. Poole, editor. *The Birds of North America Online* Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu.bnaproxy.birds.cornell.edu/bna/species/614>. DOI:10.2173/bna.614.

[Whitlock, A. L., and L. L. Carpenter](#). 2007. A Comprehensive List of Species of Greatest Conservation Need from the Northeast States' Wildlife Action Plans. Unpublished Report for the Northeast Wildlife Diversity Technical Committee of the Northeastern Association of Fish and Wildlife Agencies.

Whitman, A., A. Cutko, P. De Maynadier, S. Walker, B. Vickery, S. Stockwell, and R. Houston. 2013. Climate change and biodiversity in Maine: vulnerability of habitats and priority species. Report SEI-2013-03. Manomet Center for Conservation Sciences (in collaboration with Maine Beginning with Habitat Climate Change Working Group), Brunswick, Maine.

Williams, B. K., R. C. Szaro, and C. D. Shapiro. 2007. *Adaptive Management: The U.S. Department of the Interior Technical Guide*. Adaptive Management Working Group, U.S. Department of the Interior, Washington, D.C.

Williams, B. K., and E. D. Brown. 2012. *Adaptive Management: The U.S. Department of the Interior Application Guide*. Adaptive Management Working Group, U.S. Department of the Interior, Washington D.C. Available from



<http://www.usgs.gov/sdc/doc/DOI-Adaptive-Management-Applications-Guide-27.pdf> (accessed April 2015) In Staudinger et al. (2015c).

Williams, S. E., L. P. Shoo, J. L. Isaac, A. A. Hoffmann, and G. Langham. 2008. Towards an integrated framework for assessing the vulnerability of species to climate change. PLOS Biology DOI: 10.1371/journal.pbio.0060325.

Willis, C. K. R., and R. M. Brigham. 2003. New records of the Eastern Red Bat, *Lasiurus borealis*, from Cypress Hills Provincial Park, Saskatchewan: a response to climate change? Canadian Field-Naturalist **117**:651-654.

Wilson, A. M., D. W. Brauning, and R. S. Mulvihill, editors. 2012. Second Atlas of Breeding Birds of Pennsylvania. The Pennsylvania State University Press, University Park, Pennsylvania.

Wilson, W. H., Jr. 2012. Spring arrivals of Maine migratory breeding birds: response to an extraordinarily warm spring. Northeastern Naturalist **19**:691-697.

Wilson, W. H., Jr. 2013. A Deeper Statistical Examination of Arrival Dates of Migratory Breeding Birds in Relation to Global Climate Change. Biology **2**:742-754.

Winder, M., and D. E. Schindler. 2004. Climate change uncouples trophic interactions in an aquatic ecosystem. Ecology **85**:2100-2106.

Winker, K., J. H. Rappole, and M. A. Ramos. 1990. Population dynamics of the Wood Thrush in southern Veracruz, Mexico. The Condor **92**:444-460.

Wisconsin Initiative on Climate Change Impacts. 2011. Wisconsin's changing climate: impacts and adaptation. Nelson Institute for Environmental Studies, University of Wisconsin- Madison and the Wisconsin Department of Natural Resources, Madison, WI. Available from http://www.wicci.wisc.edu/report/2011_WICCI-Report.pdf (accessed May 2015) in Staudinger et al. (2015c).

Woodrey, M., S. Rush, J. Cherry, B. Nuse, R. Cooper, and A. Lehmicke. 2012. Understanding the Potential Impacts of Global Climate Change on Marsh Birds in the Gulf of Mexico Region. Wetlands **32**:35-49.

Windberg, L. A. 1995. Demography of a high-density coyote population. Canadian Journal of Zoology **73**:942-954.

Wingate, R. L., and D. H. Secor. 2008. Effects of Winter Temperature and Flow on a Summer-Fall Nursery Fish Assemblage in the Chesapeake Bay, Maryland. Transactions of the American Fisheries Society **137**:1147-1156.

Worrall, J. J., Rehfeldt, G. E., Hamann, A., Hogg, E. H., Marchetti, S. B., Michaelian, M., and L. K. Gray. 2013. Recent declines of *Populus tremuloides* in North America linked to climate. Forest Ecology and Management **299**:35-51.

WPC (Western Pennsylvania Conservancy). 2005. Lake Pleasant Watershed Conservation Plan. Pittsburgh, Pennsylvania. Available from http://dcnr.state.pa.us/cs/groups/public/documents/document/dcnr_004936.pdf.



WPC (Western Pennsylvania Conservancy). 2015. Aquatic Sciences; Aquatic Species Passage. Available from <http://waterlandlife.org/379/aquatic-science>. (accessed April 2015).

Wright, D. M., D. J. Posselt, and A. L. Steiner. 2013. Sensitivity of lake-effect snowfall to lake ice cover and temperature in the Great Lakes region. *Monthly Weather Review* **141**:670-689.

Wuebbles, D., et al. 2014. CMIP5 Climate Model Analyses: Climate Extremes in the United States. *Bulletin of the American Meteorological Society* **95**:571-583.

Y

Yan, C., N. C. Stenseth, C. J. Krebs, and Z. Zhang. 2013. Linking climate change to population cycles of hares and lynx. *Global Change Biology* **19**:3263-3271.

Yarrow, G. 2009. Wildlife Damage Management. Fact Sheet 37. Clemson Extension, Clemson University, Clemson, South Carolina. Available from http://www.clemson.edu/extension/natural_resources/wildlife/publications/fs37_wildlife_damage_management.html (accessed June 2015).

Yin, J. H. 2005. A consistent poleward shift of the storm tracks in simulations of 21st century climate. *Geophysical Research Letters* **32**:L18701.

Yin, J., M. E. Schlesinger, and R. J. Stouffer. 2009. Model projections of rapid sea-level rise on the northeast coast of the United States. *Nature Geoscience*. **2**:262-266.

Young, B. E., E. Byers, K. Gravuer, K. Hall, G. Hammerson, A. Redder, J. Cordeiro, and K. Szabo. 2011. Guidelines for using the NatureServe Climate Change Vulnerability Index, version 2.1. NatureServe, Arlington, Virginia.

Young, B. E. 2013. Completing Northeast Regional Vulnerability Assessment: Incorporating the NatureServe Climate Change Vulnerability Index. NatureServe, Arlington, Virginia. Available from <http://www.northeastatlanticlcc.org/projects/completing-northeast-regional-vulnerability-assessment-incorporating-the-natureserve-climate-change-vulnerability-index>

Z

Zhang, X., F. W. Zwiers, G. C. Hegerl, F. H. Lambert, N. P. Gillett, S. Solomon, P. A. Stott, and T. Nozawa. 2007. Detection of human influence on twentieth-century precipitation trends. *Nature* **448**:461-465.

Zimmerman, E., T. Davis, G. Podniesinski, M. Furedi, J. McPherson, S. Seymour, B. Eichelberger, N. Dewar, J. Wagner, and J. Fike, editors. 2012. *Terrestrial and Palustrine Plant Communities of Pennsylvania*, 2nd Edition. Pennsylvania Natural Heritage Program, Pennsylvania Department of Conservation and Natural Resources, Harrisburg, Pennsylvania. Available from <http://www.naturalheritage.state.pa.us/Communities.aspx>.

Zimmerman, J. K. H. 2006. Response of physical processes and ecological targets to altered hydrology in the Connecticut River basin. The Nature Conservancy, Connecticut River Program, Northampton, Massachusetts.



Zimova, M., L. S. Mills, P. M. Lukacs, and M. S. Mitchell. 2014. Snowshoe hares display limited phenotypic plasticity to mismatch in seasonal camouflage. *Proceedings of the Royal Society B* **281**:20140029.

Zumeta, D. C., and R. T. Holmes. 1978. Habitat Shift and Roadside Mortality of Scarlet Tanagers during a Cold Wet New England Spring. *The Wilson Bulletin* **90**:575-586.