

## Literature Cited

### **Endangered and Threatened Wildlife and Plants; Threatened Species Status with Section 4(d) Rule for Bethany Beach Firefly (*Photuris bethaniensis*)**

- Asaeda, T. and Karunaratne, S. 2000. Dynamic modeling of the growth of *Phragmites australis*: model description. *Aquatic Biology* 67: 301–318.
- Anderson Jr., W.P. 2002. Aquifer salinization from storm overwash. *Journal of Coastal Research* 18(3): 413–420.
- Angel, J., C. Swanston, B.M. Boustead, K.C. Conlon, K.R. Hall, J.L. Jorns, K.E. Kunkel, M.C. Lemos, B. Lofgren, T.A. Ontl, J. Posey, K. Stone, G. Takle, and D. Todey, 2018: Midwest. In *Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II* [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, pp. 872–940. doi: 10.7930/NCA4.2018.CH21.
- Breckels, R. and Kilgour, B. 2018. Aquatic herbicide applications for the control of aquatic plants in Canada: effects to non-target aquatic organisms. *Canadian Science Publishing Environmental Reviews*. 26 pp.
- Breden, T.F., Y.R. Alger, K.S. Walz, A.G. Windisch. 2001. Classification of vegetation communities of New Jersey: Second iteration. Association for Biodiversity Information and New Jersey Natural Heritage Program, Office of Natural Lands Management, Division of Parks and Forestry, NJ Dept. of Environmental Protection. Trenton, NJ. 230 pp.
- Brodman, R., Newman, W.P., Laurie, K., Osterfield, S., Lenzo, N. 2010. Interaction of an aquatic herbicide and predatory salamander density on wetland communities. *Journal of Herpetology*, Vol. 44, No. 1, pp. 69–82.
- Brown, T. C., Mahat, V., and Ramirez, J. A. 2019. Adaptation to future water shortages in the United States caused by population growth and climate change. *Earth's Future* 7: pp. 1-16. <https://doi.org/10.1029/2018EF001091>.
- Colle, B.A., Booth, J.F., and Chang, E.K.M. 2015. A review of historical and future changes of extratropical cyclones and associated impacts along the US East Coast. *Curr Clim Change Rep* 1, 125–143 (2015). <https://doi.org/10.1007/s40641-015-0013-7>.
- Davis, J. 2023c. J. Davis (Biologist, Delaware Division of Fish and Wildlife) field observation regarding active season, dispersal, and the species using swales with *S. patens* present shared during Species Status Assessment Core team call. June 5, 2023.
- Davis, J. 2023d. J. Davis (Biologist, Delaware Division of Fish and Wildlife) excel spreadsheet with threats for swales in Delaware shared with the Core Team. September 8, 2023.

- Davis, J. 2023e. J. Davis (Biologist, Delaware Division of Fish and Wildlife) comments on invasive plant species shared with the Core Team. May 9, 2023.
- Davis, J. 2023f. J. Davis (Biologist, Delaware Division of Fish and Wildlife) comments on Draft SSA on interdunal swales that have a high occurrence of large trees losing the herbaceous layer below and converting to woody thickets. September 15, 2023.
- Davis, J. 2023g. (Biologist, Delaware Division of Fish and Wildlife) comments on Draft SSA on whether there is artificial dune construction or other shoreline erosion structures. October 17, 2023.
- Davis, J. 2023i. (Biologist, Delaware Division of Fish and Wildlife) comments on Draft SSA on mosquito control in the Delaware Parks. January 3, 2023.
- Davis, J. 2023j. (Biologist, Delaware Division of Fish and Wildlife) response to review comment on invasives control in Delaware State Parks. January 4, 2023.
- Delaware Coastal Program. Preparing for tomorrow's high tide sea level rise vulnerability assessment for the state of Delaware. 2012. Prepared for the Delaware Sea Level Rise Advisory Committee by the Delaware Coastal Programs of the Department of Natural Resources and Environmental Control. pp. 192
- Delaware Department of Natural Resources and Environmental Control (DNREC). 2004. Striking a balance: A guide to coastal dynamics and beach management in Delaware. 46 pp.
- Delaware Wetlands Act (7 Del. Code, Chapter 66).  
<https://delcode.delaware.gov/title7/c066/index.html>, accessed February 14, 2024.
- Delaware Wetland Regulations ([7 DE Admin. Code 7502](#)).  
<https://regulations.delaware.gov/AdminCode/title7/7000/7500/7502.shtml#:~:text=This%20section%20requires%20a%20permit,those%20exempt%20in%20the%20Act>, accessed February 14, 2024.
- Drake, J. M. and Kramer, A. M. 2011. Allee Effects. *Nature Education Knowledge* 3(10): 1–8.
- Dupigny-Giroux, L.A., E.L. Mecray, M.D. Lemcke-Stampono, G.A. Hodgkins, E.E. Lentz, K.E. Mills, E.D. Lane, R. Miller, D.Y. Hollinger, W.D. Solecki, G.A. Wellenius, P.E. Sheffield, A.B. MacDonald, and C. Caldwell, 2018: Northeast. *In* Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, pp. 669–742. doi: 10.7930/NCA4.2018.CH18.
- Edinger, G. J., Evans, D.J., Gebauer, S., Howard, T.G., Hunt, D.M. and Olivero, A.M. (editors). 2014. *Ecological Communities of New York State. Second Edition. A revised and expanded edition of Carol Reschke's Ecological Communities of New York State.* New

- York Natural Heritage Program, New York State Department of Environmental Conservation, Albany, NY. 160 pp.
- Environmental Protection Agency. 1993. Registration eligibility decision: glyphosate. EPA 738-R-93-014. 291 pp.
- Evans, T.R., Salvatore, D., van de Pol, M., and Musters, C.G.M. 2019. Adult firefly abundance is linked to weather during the larval stage in the previous year. *Ecol. Entomology* 44(2): 265–273.
- Fallon, C., Walker, A., Lewis, S., and Jespen, S. 2022. State of the Fireflies of the United States and Canada: Distributions, Threats, and Conservation Recommendations. The Xerces Society for Invertebrate Conservation, Portland, OR, USA, 64 pp.
- Faust, L.F. 2010. Natural history and flash repertoire of the synchronous firefly *Photinus carolinus* (Coleoptera: Lampyridae) in the Great Smoky Mountains National Park. *Florida Entomologist* 93(2): 208–217.
- Faust, L.F. 2017. Fireflies, glow-worms, and lightning bugs: identification and natural history of the fireflies of the eastern and central United States and Canada. The University of Georgia, Athens, Georgia, USA. 356 pp.
- Faust, L.F. and Weston, P.A. 2009. Degree-Day Prediction of Adult Emergence of *Photinus carolinus* (Coleoptera: Lampyridae). *Environmental Entomology* 38(5): 1505–1512.
- Gascoigne, J., Gregory, S.D., Berek, L., and Courchamp, F. 2009. Dangerously few liaisons: A review of mate finding allee effects. *Popul Ecol.* 51: 355–372.
- Gilbert, J.M., Vidler, N., Cloud Sr., P., Jacobs, D., Slavik, E., Letourneau, F., and Alexander, K. 2014. *Phragmites australis* at the crossroads: Why we cannot afford to ignore this invasion. pp: 78–83 in Great Lakes Wetlands Day Proceedings. Prepared by members of the Great Lakes Action Plan.
- Hapke, C.J., Himmelstoss, E.A., Kratzmann, M.G., and Thieler, E.R. 2011. National Assessment of Shoreline Change: Historical Shoreline Change along the New England and Mid-Atlantic Coasts. Marine Science Faculty Publications. 2498. [https://digitalcommons.usf.edu/msc\\_facpub/2498](https://digitalcommons.usf.edu/msc_facpub/2498).
- Heckscher, C. M. and Bartlett, C. R. 2004. Rediscovery and Habitate Associations of *Photuris Bethaniesis* McDermott (Coleoptera: Lampyridae). *The Coleopterists Bulletin.* 58(3): 349 - 353.
- Holcomb, K. 2023. Conference call with K. Holcomb (Chincoteague National Wildlife Refuge, Refuge Manager) and J. Slacum, Cherry Keller, Emily Argo (U.S. Fish and Wildlife Service) regarding management at the Refuge. July 31, 2023.

- Huslander, B. 2023. Conference call with B. Huslander (Assateague Island National Seashore, Chief of Resource Management) and J. Slacum, Cherry Keller (U.S. Fish and Wildlife Service) regarding management at the park. June 18, 2023.
- Laskowski, H.P., Larsen, H.C., O’Shea, G.F., Pittendrigh, B.R. 1999. Effect of xanthum gum and traditional mosquito larvicides on Chironomid larvae. *Wildlife Society Bulletin* 27(3): 741–745.
- Leathers, Daniel, David Legates, and Robert Scarborough, 2011. Delaware Coastal Storm Climatology and Damage Assessment 1871–2009: Final Report, submitted to Delaware Department of Natural Resources and Environmental Control, 20 pp.
- Lewis, F.B., McManus, M.L., Schneeberger, N.F. 1979. Guidelines for use of GYPCHEK to control the gypsy moth. Forest Service Research Paper NE-441. U.S. Forest Service. U.S. Department of Agriculture. Northeast Forest Experimental Station. 370 Reed Road, Broomall, PA. 19008. 10 pp.
- Lewis, S.M., Wong, C.H., Owens, A.C.S., Fallon, C., Jepsen, S., Thancharoen, A., Chiahsiong, W., Cock, R.D., Novák, M., López-Palafox, Khoo, V., and Reed, J.M. 2020. A global perspective on firefly extinction threats. *Bioscience* 70: 157–167.
- Levine L. 2023. Conference call (L. Levine and S. Miller, NASA’s Wallops Flight Facility) with Emily Argo and Cherry Keller (U.S. Fish and Wildlife Service) regarding potential threats to Bethany Beach firefly at the facility. July 5, 2023.
- Lloyd, J.E. 1966. Studies on the flash communication system in *Photinus* fireflies. *Miscellaneous Publications Museum of Zoology, University of Michigan*, No. 30. 95 pp.
- Lloyd, J.E. 2018. A naturalist’s long walk among shadows: of North American *Photuris* – patterns, outlines, silhouettes...echoes. Self-published, Gainesville, FL, USA. 477 pp.
- Lower, S.E., Stanger-Hall, K.F., and Hall, D.W. 2018. Molecular variation across populations of a widespread North American firefly, *Photinus pyralis*, reveals that coding changes do not underly flash color variation or associated visual sensitivity. *Evolutionary Biology* 18: pp. 1–14.
- McDermott, F.A. 1953. *Photuris bethaniensis*, a new lampyrid firefly. *Proceedings of the U.S. National Museum* 103(3114): 35-37.
- Meyerson, L.A., Saltonstall, K., Windham, L., Kiviat, E. & Findlay, S. 2000. A comparison of *Phragmites australis* in freshwater and brackish marsh environments in North America. *Wetlands and Ecology Management* 8: 89–103.
- Miller, S. 2023. Conference call with S. Miller (NASA Wallops Island Flight Facility) and C. Keller, Emily Argo (U.S. Fish and Wildlife Service) regarding management at the facility. July 5, 2023.

- Nelson, J.B. 1986. The natural communities of South Carolina. Initial classification and description. S.C. Wildlife and Marine Resources Department. Division of Wildlife and Freshwater Fisheries. 64 pp.
- National Oceanic and Atmospheric Administration (NOAA). 2023. Sea Level Rise Viewer, online tool. <https://coast.noaa.gov/digitalcoast/tools/slr.html>, Accessed September 1, 2023.
- Ohenhe, L.E., Shirzaei, M., and Barnard, P.L. 2024. Slowly but surely: Exposure of communities and infrastructure to subsidence on the U.S. East Coast. *PNAS Nexus* 3: 1–14.
- Owens, A.C.S. and Lewis, S. 2018. The impact of artificial light at night on nocturnal insects: A review and synthesis. *Ecology and Evolution* 8: 11337-11388.
- Effects of artificial light on growth, development, and dispersal of two North American fireflies. *J. Insect Physiol.* 130:104200. doi: 10.1016/j.jinsphys.2021.104200.
- Owens, A.C.S, Van den Broeck, M, De Cock, R. and Lewis, S.M. 2022. Behavioral responses of bioluminescent fireflies to artificial light at night. *Front. Ecol. Evol.* 10:946640. doi: 10.3389/fevo.2022.946640.
- Pearsons, K.A., Lower, S.E., Tooker J.F. 2021. Toxicity of clothianidin to common Eastern North American fireflies. *PeerJ* 9:e12495 <https://doi.org/10.7717/peerj.12495>.
- Pinkney, A.E., McGowan, P., Murphy, D.R., Lowe, J.P., Sparling, D.W. 2000. Effects of the mosquito larvicides Temephos and Methoprene on insect populations in experimental ponds. *Environmental Toxicology and Chemistry* 19(3): 678–684.
- Pisa, L.W., Amaral-Rogers, V., Belzunces, L.P., Bonmatin, J.M., Downs, C.A., Goulson, D., Kreuzweiser, D.P., Krupke, C., Liess, M., McField, M., Morrissey, C.A., Noome, D.A., Settele, J., Simon-Delso, N., Stark, J.D., Van der Sluijs, J.P., Van Dyck, H., Wiemers, M. 2015. Effects of neonicotinoids and fipronil on non-target invertebrate. *Environ Sci Pollut Res* 22:68–102.
- Rooth, J.E., Stevenson, J.C., Cornwell, J.C. 2003. Increased sedimentation accretion rates following invasion by *Phragmites australis*: The role of litter. 26(2B): 475–483.
- Sánchez-Bayo, F. 2011. Impacts of pesticides on terrestrial ecosystems. *Ecological impacts of toxic chemicals.* 2011: 63-87.
- Shafale, M.P. 2012. Guide to the natural communities of North Carolina Fourth Approximation. North Carolina Natural Heritage Program Department of Environment and Natural Resources. 217 pp.
- Shaffer, M.L. and B.A. Stein. 2000. Safeguarding our precious heritage. Pp. 301-321 in Stein BA, Kutner LS, Adams JS, eds. *Precious heritage: the status of biodiversity in the United States.* New York: Oxford University Press.

- Sinnott, T. 2015. Recommendations regarding the use of aquatic herbicides in fish-bearing waters of the state. New York Department of Environmental Conservation, Division of Fish, Wildlife and Marine Resources, Bureau of Habitat Technical Memorandum. 35 pp.
- Smith, D.R., N.L. Allan, C.P. McGowan, J.A. Szymanski, S.R. Oetker and H.M. Bell. 2018. Development of a Species Status Assessment Process for Decisions under the U.S. Endangered Species Act. *Journal of Fish and Wildlife Management*.
- Swain, C. 2023. Conference call between C. Swain (Manager, False Cape State Park) and J. Slacum, C. Keller, E. Argo (U.S. Fish and Wildlife Service) regarding management at the park. August 1, 2023.
- Sweet, W.V., R.E. Kopp, C.P. Weaver, J. Obeysekera, R.M. Horton, E.R. Thieler, and C. Zervas. 2017. Global and Regional Sea Level Rise Scenarios for the United States. NOAA Technical Report NOS CO-OPS 083. NOAA/NOS Center for Operational Oceanographic Products and Services.  
[https://tidesandcurrents.noaa.gov/publications/techrpt83\\_Global\\_and\\_Regional\\_SLR\\_Scenarios\\_for\\_the\\_US\\_final.pdf](https://tidesandcurrents.noaa.gov/publications/techrpt83_Global_and_Regional_SLR_Scenarios_for_the_US_final.pdf)
- Sweet, W.V., Dusek, G., J. Obeysekera, and J. Marra. 2018. Patterns and projections of high tide flooding along the US coastline using a common impact threshold. NOAA Technical Report NOS CO-OPS 086. NOAA/NOS Center for Operational Oceanographic Products and Services.
- Sweet, W.V., B.D. Hamlington, R.E. Kopp, C.P. Weaver, P.L. Barnard, D. Bekaert, W. Brooks, M. Craghan, G. Dusek, T. Frederikse, G. Garner, A.S. Genz, J.P. Krasting, E. Larour, D. Marcy, J.J. Marra, J. Obeysekera, M. Osler, M. Pendleton, D. Roman, L. Schmied, W. Veatch, K.D. White, and C. Zuzak, 2022: Global and Regional Sea Level Rise Scenarios for the United States: Updated Mean Projections and Extreme Water Level Probabilities Along U.S. Coastlines. NOAA Technical Report NOS 01. National Oceanic and Atmospheric Administration, National Ocean Service, Silver Spring, MD, 111 pp.
- U.S. Fish and Wildlife Service (Service). 2024. Species Status Assessment Report for the Bethany Beach firefly (*Photuris bethaniensis*), Version 1.0. February 2024. Annapolis, MD.
- Wang, Y., Cao, C., and Wang, D. 2022. Physiological responses of the firefly *Pyrocoelia analis* (Coleoptera: Lampyridae) to an environmental residue from chemical pesticide Imidacloprid. *Front. Physiol.* 13: 879216. doi: 10.3389/fphys.2022.879216.
- Wilcox, K.L., Petrie, S.A., Maynard, L.A., Meyer, S.W. 2003. Historical distribution and abundance of *Phragmites australis* at Long Point, Lake Erie, Ontario. *J. Great Lakes Res.* 29(4): 664–680.

- Windham, L. and Lathrop, R.G. 1999. Effects of *Phragmites australis* (Common Reed) on aboveground biomass and soil properties in brackish tidal marsh of the Mullica River in New Jersey. *Estuaries* 22(4): 927–935.
- Wright, T., Tomlinson, J., Schueler, T., Capiella, K., Kitchell, A., Hirschman, D. 2006. Direct and indirect impacts of urbanization on water quality. Center for Watershed Restoration. Ellicott City, Maryland. 81 pp.