

Natural Heritage Resource Highlight: Bethany Beach firefly

Global Rarity Rank: G1- Critically Imperiled **State Rarity Rank:** S1-Critically Imperiled

Legal Status: Federal Listing-Proposed Threatened / State Listing-None



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In 2019, the U.S. Fish and Wildlife Service (USFWS) found that the Bethany Beach firefly (*Photuris bethaniensis*, G1/S1/PT/NL) warranted further review to determine if it should be added to the list of federally threatened and endangered species under the Endangered Species Act. The Bethany Beach firefly is a nocturnal firefly characterized by two bright green flashes given off by males to attract females for mating, while females flash or emit a low glow in response. Bethany Beach fireflies occupy freshwater swales that form as groundwater and rain collect in shallow depressions between or behind coastal sand dunes. Adult Bethany Beach fireflies are active from mid-late June through early-mid August and emerge well after sunset (USFWS Endangered and Threatened Wildlife and Plants, 2024). The species was thought to be endemic to coastal Delaware, where it occupies interdunal swales, a habitat type also found throughout much of coastal Virginia. Under a grant from the USFWS, DCR-Division of Natural Heritage (DCR-DNH) conducted surveys for Bethany Beach firefly in 2021 and 2025. A number of specimens were collected by DCR-DNH biologists that exhibited similar behavior and the double green flash pattern exhibited by the Bethany Beach firefly, and after further examination and genetic comparison, the species has now been confirmed from four locations in coastal Virginia. The USFWS proposed to list the Bethany Beach firefly as threatened in 2024. As of 2025, the Bethany Beach firefly has been documented from Accomack County, Northampton County, and the City of Virginia Beach.

Literature Cited

U.S. Fish and Wildlife Service, Endangered and Threatened Wildlife and Plants; Threatened Species Status with Section 4(d) Rule for Bethany Beach Firefly, 89 F.R. 79857 (proposed October 1, 2024) (to be codified at 50 C.F.R. pt. 17).
<https://www.federalregister.gov/d/2024-22358>