

BOG TURTLE HABITAT SCREENING SUMMARY

Portions of the Project within Carbon, Northampton, and Bucks counties are within the known range of the bog turtle (*Clemmys [Glyptemis] muhlenbergii*). Accordingly, PennEast contracted United States Fish and Wildlife Service (USFWS) Recognized, Qualified Bog Turtle Surveyors (RQBTS) to assess all delineated wetlands within the 400-foot survey corridor to determine whether bog turtles or conditions suitable for their use were present. PennEast also consulted with the USFWS and Pennsylvania Fish and Boat Commission (PFBC) to determine whether any known bog turtle populations were present along the proposed Project route.

On November 28, 2017, the USFWS issued their Biological Opinion (BO) for the proposed Project. At the time of their review, bog turtle surveys were not complete in Pennsylvania; however, one documented population in Carbon County was already known and included in the environmental review process. The USFWS's BO determined that the Project would not jeopardize the continued existence of the bog turtle, nor would it reduce the reproduction, numbers and distribution (RND) of the species as a whole.

In their November 2017 BO, the USFWS concluded that an auger bore under the Carbon County bog turtle wetland was not likely to adversely affect the species. However, other project sub-activities in as-yet undocumented bog turtle wetlands were deemed likely to adversely affect the bog turtle.

To minimize impacts to the species, PennEast committed to implementing the following conservation measures:

- At the known bog turtle wetland crossing in Carbon County, PA, PennEast will have a RQBTS on site before and during the auger bore installation, and PennEast will complete the crossing between April 1 and October 15, during a time when bog turtles are assumed to be active. This will avoid potential impacts to hibernating turtles at the crossing location.
- PennEast committed to avoid and minimize disturbance to wetlands with known or presumed bog turtle presence, wherever feasible, by deviation, workspace adjustment, or trenchless crossing method.
- A RQBTS will be employed prior to construction and during periods of active construction. The RQBTS will have the authority to stop work at any time. Work will cease immediately if a bog turtle is encountered at any time, and the USFWS will be immediately notified.
- If the RQBTS is on-site and determines that the proposed method of crossing a particular wetland will result in unanticipated impacts to bog turtles, given the site-specific characteristics of the wetland or potential for bog turtle presence, the RQBTS will consult with PennEast and the USFWS immediately for further direction.
- Project contractors will receive site-specific environmental training related to the environmental review process, minimizing wetland impacts, species of concern, bog turtle habitat, and special protections for specific watershed areas (this is typically done by the RQBTS).
- Construction activities near areas that could support bog turtles will be confined by the installation of habitat exclusion barriers designed to keep turtles from entering the limit of disturbance outside of the wetland. This barrier will consist of backfilled 24-inch-high silt fence without voids. This barrier will be installed manually under the supervision of a RQBTS, in areas of soft soils and muck, and by equipment in uplands and areas containing 3-18 inch firm soils. Habitat exclusion barriers will be removed by hand immediately upon completion of all construction activities.

- Prior to construction, a RQBTS will oversee hand-clearing and removal of vegetation along the access path, the installation of the habitat exclusion barrier, and the placement of timber matting within the habitat exclusion barrier.
- Timber mats and equipment will be either new or pressure-washed of free-standing soil and vegetative materials prior to arrival on-site. This minimizes the potential impacts that could occur from the introduction of invasive plants, contaminants, or bog turtle pathogens or that can make their habitats unsuitable.
- Any matted wetland crossings will be completed in a manner that does not lower the water table or alter the hydrological characteristics of the wetland.
- Any Horizontal Direction Drilling (HDD) work proposed for crossing a wetland or waterbody with known, or presumed, bog turtle presence will take place outside of the winter hibernation months (October 16 to March 31), to avoid any potential subterranean disturbance that may occur during an inadvertent return of drilling fluid.
- The Federal Energy Regulatory Commission (FERC)'s Upland Erosion Control, Revegetation, and Maintenance Plan (Plan) and Wetland and Waterbody Construction and Mitigation Procedures (Procedures) will be adhered to for all activities in wetlands, including but not limited to signage, restrictions on fueling activities and repairs, and wetland restoration measures.
- The RQBTS will forward the results of pre-construction surveys, construction monitoring, Project timelines, and photographic documentation of site restoration to the USFWS and FERC. The Service will be contacted immediately if bog turtles are observed or if take occurs.

Although surveys were incomplete at the time the USFWS issued their BO, PennEast has continued surveying for bog turtles since receiving the USFWS's BO, and submitted survey reports to the USFWS as requested by the agency. Since the time that the BO was issued, PennEast has completed Phase 1 bog turtle surveys for all other delineated wetlands within the survey corridor in Northampton County. In August 2018, PennEast delineated a new wetland complex within Northampton County as a result of route revisions that had physical characteristic suitable for bog turtles. Because the Phase 1 habitat assessment of this wetland complex was completed in August and surpassed the spring Phase 2 survey season, Phase 2 surveys have not been completed. PennEast intends to complete the Phase 2 surveys in spring 2019; if a new population is identified, or if PennEast elects to forego Phase 2 surveys and assume presence, then PennEast will adhere to the avoidance and minimization measures presented in the BO.

Through surveys and consultation with the USFWS, PennEast identified one previously documented bog turtle population in Northampton County along the proposed Project route. PennEast met with the USFWS and provided plans for avoiding and minimizing impacts to the population. The USFWS reviewed the plans and concurred that the plans follow the recommended avoidance and minimization measures within the 2017 BO. USFWS has since recommended that FERC re-initiate consultation to modify the 2017 BO under the minor change process. Re-initiation will result in a consultation update letter which addresses route amendments and updated survey results. The recommendation of re-initiation was made due to the changed action area resulting from proposed route modifications.