THE NATURE CONSERVANCY’S COMMENTS ON DRAFT MULTI-PROJECT ENVIRONMENTAL IMPACT STATEMENT FOR HYDROPOWER LICENSES, SUSQUEHANNA RIVER HYDROELECTRIC PROJECTS

The Nature Conservancy (the Conservancy) provides comments in response to the “Draft Multi-Project Environmental Impact Statement for Hydropower Licenses” (DEIS), prepared by the Federal Energy Regulatory Commission, Office of Energy Projects (OEP), and dated July 2014.¹

In addition to comments below, the Conservancy generally supports the comments that we expect to be filed by the United States Fish and Wildlife Service (USFWS), the United States Environmental Protection Agency (USEPA), National Marine Fisheries Service (NMFS), Pennsylvania Fish and Boat Commission (PFBC), Pennsylvania Department of Environmental Protection (PADEP), Susquehanna River Basin Commission (SRBC), and Maryland Department of Natural Resources (MD DNR).

I. DESCRIPTION OF THE NATURE CONSERVANCY AND ITS INTERESTS

The Nature Conservancy is a party to these proceedings, having filed a timely Motion to Intervene (MOI).²

The Conservancy is a private, non-profit 501(c)(3) organization with membership and operations throughout the Susquehanna River and Chesapeake Bay watersheds and around the globe. Given the ecological and economic importance of the Susquehanna River and the Chesapeake Bay, and expertise on issues directly relevant to these proceedings, the Conservancy

¹ eLibrary no. 20140730-4001.

The Nature Conservancy’s DEIS Comments
Exelon, Conowingo (P-405-106) and Muddy Run Projects (P-2355-018)
York Haven, York Haven Project (P-1888-030)
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II. THE NATURE CONSERVANCY’S COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT

A. The DEIS Does Not Give Full Consideration to Feasible Alternatives.

Section 2.0 of the DEIS, “Proposed Actions and Alternatives,” only considers three alternatives for the Conowingo relicensing: (1) No Action; (2) Exelon’s Proposal; and (3) the Staff Alternative. These alternatives differ only slightly in their proposed operations. Section 2.0 does not include the two operational alternatives – the Ecosystem Restoration Alternative and Ecosystem Enhancement Alternative – proposed by the Conservancy in its NREA Comments. Only those alternatives listed in Section 2.0 are included in Section 4.0, “Developmental Analysis.”

FPA section 10(a)(1) requires that the Commission determine the new license is best adapted to a comprehensive plan for developing or improving a waterway for beneficial uses, after it has undertaken a thorough study of alternatives based on a complete record. The Commission has a parallel obligation under NEPA section 102(2)(E) to “study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources.”

With respect, OEP’s consideration of two slight variations of the status quo does not satisfy the Commission’s substantive obligation under FPA section 10(a)(1) or its procedural

3 Id.
4 DEIS, pp. 21, 44-49, 53-54.
5 Id. at 54.
6 Id. at 325-27.
7 16 U.S.C. § 803(a)(1); Scenic Hudson v. FPC, 354 F.2d 608, 617-18 (2d Cir. 1965).
8 42 U.S.C. § 4332(2)(E). The purpose of this requirement is to “insist that no major federal project should be undertaken without intense consideration of other more ecologically sound courses of action, including . . . accomplishing the same result by entirely different means.” Environmental Defense Fund v. U.S. Army Corps of Engineers, 492 F.2d 1123 (5th Cir. 1974) (emphasis added).
9 Id. at 53 (“Under the staff alternative, the project would include most of Exelon’s proposed measures as outlined above, with the addition of a modified flow regime that would enhance current Exelon minimum flows from December through February and in the first 2 weeks of June.”).
obligations under NEPA section 102(2)(E). “FERC is statutorily obligated, pursuant to the ‘best adapted’ standard . . . to give full consideration to all feasible alternatives, even where it ultimately cannot license those alternatives.” However, the DEIS does not demonstrate that OEP considered any other operational alternatives to the Applicant’s Proposal and the Staff Alternative and found them to be infeasible.

The DEIS mentions that the Conservancy asked OEP to evaluate two operational alternatives in the DEIS: the Ecosystem Restoration Alternative and the Ecosystem Enhancement Alternative. The DEIS interprets the Ecosystem Restoration Alternative as “strict run-of-river operation” and concludes, based on a string of probabilities, that it “does not appear to be technically feasible.” Based on OEP’s limited discussion, it is not clear whether run-of-river is truly infeasible, or would just be “an operational challenge” for Exelon. The DEIS does not indicate that OEP investigated modified run-of-river operations, or compared run-of-river operations to other operational alternatives for purposes of predicting aquatic habitat. The DEIS also summarily dismisses the Ecosystem Enhancement Alternative in a single paragraph as too costly.

No reason is given for not including these alternatives in Sections 2.0 and 4.0 of the DEIS. Their omission from Sections 2.0 and 4.0 undermines the purpose for requiring alternatives analysis in an EIS, which is to “present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public.” The disparate treatment and summary dismissal of these alternatives violates the Commission’s duty under the FPA and NEPA to provide “full consideration” and “intense consideration” of feasible alternatives.

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10 See also 42 U.S.C. § 4332(2)(C)(iii).

11 Green Island Power Authority v. FERC, 577 F.3d 148, 168 (2d Cir. 2009). The Conservancy’s proposed alternatives for consideration would be within FERC’s jurisdiction to ultimately license.

12 DEIS, p. 142.

13 Id. at 143.

14 DEIS, p. 389, 400 (“Our primary reason for not adopting the TNC Flow Regime is the benefits to some species life stages would not justify the effects on project operation and costs, with a levelized annual cost of $329,130.”).

15 Reasonable alternatives are not limited to those that contain all elements of the proposed action. Daniel R. Mandelker, NEPA Law and Litigation (Thompson West 2003), § 9:18, p. 9-43 (citing Calvert Cliffs’ Coordinating Comm., Inc. v. U.S. Atomic Energy Comm’n, 449 F.2d 1109, 1114 (D.C. Cir. 1971)).


17 Green Island, 577 F.3d at 168.

18 Environmental Defense, 492 F.2d at 1135

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The Conservancy requests that OEP comply with its statutory obligations to fully consider the alternatives proposed for analysis by the Conservancy when it prepares the FEIS. This includes updating Section 2.0 to include descriptions of these alternatives and Section 4.0 to include developmental analysis of these alternatives.

B. The DEIS Does Not Demonstrate that the Project Will Be Consistent with Applicable Comprehensive Plans.

1. The Commission Must Explain the Basis for Its Finding of Consistency with Comprehensive Plans.

Under Section 10(a)(2), the Commission is required to consider comprehensive plans in making its determination that the project as licensed will be best adapted to a comprehensive plan of development under Section 10(a)(1):

(2) In order to ensure that the project adopted will be best adapted to the comprehensive plan described in paragraph (1), the Commission shall consider each of the following:

(A) The extent to which the project is consistent with a comprehensive plan (where one exists) for improving, developing, or conserving a waterway or waterways affected by the project . . . . 19

The DEIS states that OEP reviewed 26 comprehensive plans applicable to the Susquehanna River Projects, and “[n]o inconsistencies were found.”20

Under Administrative Procedures Act section 557, the Commission must provide supporting reasons for its proposed findings or conclusions:

The record shall show the ruling on each finding, conclusion, or exception presented. All decisions, including initial, recommended, and tentative decisions, are a part of the record and shall include a statement of—

(A) findings and conclusions, and the reasons or basis therefor, on all the material issues of fact, law, or discretion presented on the record . . . . 21

This requirement is intended to prevent arbitrary agency decisions and provide parties with a reasoned explanation for those decisions.22 Compliance with this requirement is necessary to ensure agency accountability:


20 DEIS, p. 413.


22 Armstrong v. CFTC, 12 F.3d 401, 403 (3d Cir. 1993).
The requirement for administrative decisions based on substantial evidence and reasoned findings—which alone make effective judicial review possible—would become lost in the haze of so-called expertise. Administrative expertise would then be on its way to becoming “a monster which rules with no practical limits on its discretion.”

The DEIS’s one-sentence conclusion of consistency does permit the review that is necessary to assure agency accountability. It does not provide “reasoned explanation” of how OEP considered each applicable plan and concluded that the new license would be consistent. As a result, the public, and any reviewing court down the line, cannot confirm that Commission Staff properly exercised its discretion in reaching this conclusion.

The Conservancy requests that OEP set forth the specific findings of consistency with the applicable comprehensive and bases therefor in the FEIS.

2. **The Commission Should Consider the Chesapeake Bay TMDL under FPA Section 10(a)(2).**

As stated above, FPA section 10(a)(2)(A) requires the Commission to consider the extent to which a project is consistent with Federal or state comprehensive plans for improving, developing, or conserving a waterway or waterways affected by the project. In its NREA Comments the Conservancy requested that OEP add the Chesapeake Bay Total Maximum Daily Load for Nitrogen, Phosphorus, and Sediment (Dec. 29, 2010) (Chesapeake Bay TMDL) to the list of comprehensive plans for the states of Pennsylvania and Maryland. It explained that the Chesapeake Bay TMDL met the specific criteria established in Order No. 481-A for the Commission’s consideration of a plan under Section 10(a)(2).

The DEIS does not respond to this request. The Conservancy has not received separate response to its request. Nonetheless, the TMDL does not appear on the list of comprehensive plans for Maryland or Pennsylvania, and it is not identified as such in the DEIS.

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24 Under APA section 706(2), a court shall “hold unlawful and set aside agency action findings and conclusions found to be—(A) arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law; . . . or (D) without observance of procedure required by law; or (E) unsupported by substantial evidence.”


26 TNC MOI and NREA Comments, p. 18. The Conservancy submitted the Chesapeake Bay TMDL under separate cover in Docket No. ZZ09-5-000 pursuant to the Commission’s rules. See eLibrary no. 201402195156.

27 TNC MOI and NREA Comments, pp. 19-20.

The Conservancy requests that the Commission add the Chesapeake Bay TMDL to the list of comprehensive plans and consider it under FPA section 10(a)(2) in the FEIS. If the Commission declines to consider the TMDL under Section 10(a)(2), we request that it explain the basis for its finding that the plan does not meet the criteria established by Order No. 481-A.

C. The DEIS Does Not Adequately Analyze the Impact of Existing and Proposed Flow Regimes on Habitat in the Lower Susquehanna River and Chesapeake Bay.

The DEIS does not permit a sharp comparison of the alternative flow regimes modeled by Exelon.

1. Exelon Has Not Yet Disclosed the Complete Results of Study 3.11.

The record is incomplete with regard to the effects of operational alternatives on aquatic habitat. Study 3.11 required that Exelon model alternative flow management scenarios and compare these scenarios to its baseline operations proposal. Exelon has not yet filed the complete results of that study, which should include information necessary to compare the alternatives presented, in the record. The Conservancy reiterates its previous request that OEP direct Exelon to file the complete results of this study because they are important to OEP’s evaluation of operational alternatives.

2. The DEIS Mischaracterizes the Biological Objectives Developed by the Conservancy in Consultation with other Resource Agencies.

The DEIS provides a “broad-brush” analysis of instream flows downstream of Conowingo, relying in part on biological objectives articulated in the Conservancy’s MOI and supported by the Department of Interior’s FPA section 10(j) fish and wildlife recommendations. We appreciate OEP’s recognition and use of these biological objectives. However, the DEIS mischaracterizes the objectives and misrepresents that the Staff Alternative will achieve the objectives. We take this opportunity to clarify the differences in interpretation of the objectives and their significance to OEP’s determination of impact. We request that OEP use this supplemental explanation to correct this significant misinformation in the FEIS.

Specifically, there are three major points of clarification and correction we request be reflected in the FEIS. They include (1) the representation of persistent habitat in articulating the Conservancy’s biological objectives and comparing alternative operating scenarios, (2)...

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29 DEIS, pp. 413-15.
30 TNC MOI and NREA Comments, pp. 8-9 (specific discussion of Study 3.11), 17-18 (request for disclosure in the DEIS).
31 DEIS, p. 142.
inaccurate values reported in Table 3-21,\textsuperscript{32} representing 70\% of maximum weighted useable area (MWUA) for listed species, and (3) the basis for and conclusion that “Exelon’s current flow regime is generally adequate for protection of aquatic resources downstream of the project.”\textsuperscript{33}

**Persistent Habitat**

In our MOI, we articulated the importance of our biological objectives related to restoring persistent habitat availability and the need to compare operational alternatives using this metric. While we support the use of MWUA as a shared objective, because Conowingo project operations cause rapid and significant sub-daily fluctuations to instream habitat (depth, wetted width, velocity and shear stress), availability of habitat should be compared among alternatives using units of persistent habitat, especially for species and life stages with low mobility.\textsuperscript{34} Based on our review of the DEIS (see DEIS, pp. 141-42), we understand that OEP is in agreement on the appropriateness of using this metric to compare operating alternatives for Conowingo. The DEIS specifically addresses Exelon’s habitat persistence analysis and summarizes the results in Table 3-21.\textsuperscript{35}

However, Table 3-21 does not summarize the results of the habitat persistence analysis. Rather, it summarizes the results of the MWUA analysis. Again, we request alternatives be compared using the habitat persistence analysis. In addition to being the appropriate habitat metric for use in comparing alternatives for a hydroelectric facility with sub-daily peaking operations, the appropriate use of this metric makes a significant difference, biologically, on the Lower Susquehanna River.

We have included an example, using American shad spawning, to illustrate the discrepancy between using the instantaneous metric (MWUA) and the habitat persistence metric (Attached Figure 1). Using MWUA significantly overestimates available habitat for aquatic species under sub-daily peaking operations, and therefore consistently and significantly underestimates the impacts of current project operations. In this example, the scientifically relevant metric, persistent habitat, estimates about 3 acres of habitat would be available if minimum and maximum flow operating ranges were 14,472 and 82,757 cfs (the bounds of 70\% MWUA), respectively. This is orders of magnitude (100 times) less than the estimated habitat available using the MWUA method (> 350 acres).

The difference between methods is biologically significant for the Lower Susquehanna River. As mentioned in our January MOI, the populations of all migratory fish species, including American shad, river herring, sturgeon, American eel and striped bass are critically

\textsuperscript{32} DEIS, p. 144.

\textsuperscript{33} Id. at 142.

\textsuperscript{34} TNC MOI and NREA Comments, pp. 9-10.

\textsuperscript{35} See id.
low. From our estimates, reservoir operations have reduced their habitat in the Lower Susquehanna River by 75 to 95%. 36 This license provides the opportunity to mitigate for that impact, while still meeting hydropower production goals. Figures 2, 3, and 4 in Attachment 1 illustrate the magnitude of potential habitat benefits of this license for American shad, shortnose sturgeon, and striped bass spawning, using May as an example.

This fall the Conservancy intends to file an expert report prepared by Dr. Clair Stalnaker, retired fisheries ecologist for the Fish and Wildlife Service who led in the development of the Instream Flow Incremental Methodology (IFIM) and trained others in its implementation for several decades, as to the importance of using persistent habitat analysis data to achieve the biological objectives articulated based on the objectives adopted by the resource agencies.

Inaccurate Values in Table 3-21

Table 3-21 in the DEIS reports inaccurate text and values of 70% MWUA for listed species.37 The table and related discussion in the DEIS and in the table title indicate that the table illustrates results of the habitat persistence analysis. This is incorrect. We request that OEP correct this mistake.

Further, Row 1, in the table indicates that the values represent the range of flows that provide 70% MWUA across species and life stages listed below the table. This error is significant. Part of the basis for OEP’s conclusion of impact is that the range of current operations (presented in Row 2) approximate conditions to provide 70% MWUA for species and life stages listed below the table. In order to accurately represent the range of discharges that provide 70% MWUA for the species listed, the table should report the overlapping ranges.

For example, in Table 3-21, the range that provides 70% MWUA is listed as 7,744 to 86,000 cfs for adults, spawning and fry for American shad, shortnose sturgeon, and striped bass. In actuality, the range of flows that provides 70% MWUA for all species and life stages is 22,977 to 67,028 cfs.

We have included a revised Table 1, in Attachment 1 to cross-walk the values in Table 3-21 with the values reported in Gomez and Sullivan 2012 for species listed in the footnotes and request this also be addressed in the FEIS.

36 TNC MOI and NREA Comments, Attachment 1, Table 4, pp. 9-13.
37 DEIS, p. 142.

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York Haven, York Haven Project (P-1888-030)
Existing Flow Regime is Inadequate

With respect, we completely disagree with OEP’s basis for and conclusion that “Exelon’s current flow regime is generally adequate for protection of aquatic resources downstream of the project.”\textsuperscript{38}

As stated in our MOI, baseline operations significantly impact instream flows and resulting downstream habitat by the combination of (1) decreasing daily minimum flows during storage and increasing the duration of low flows during dry conditions, (2) increasing daily maximum flows during generation, and (3) increasing the rate and frequency of rise and fall events. The specific magnitude and significance of these impacts to stakeholder biological objectives is documented in our MOI and in Attachment 1, Table 4, Column III, infra.

OEP’s following statements of conclusion are unsupported and are inconsistent with our understanding of river processes and biological condition on the Susquehanna River below Conowingo dam:

- **SAV:** “SAV distribution downstream of the dam is more influenced by existing substrate conditions and natural high-flow events . . . than by normal day-today project operations.”\textsuperscript{39}

- **Fish stranding:** “Although implementing run-of-river or TNC Flow Regime flows could reduce this source of mortality, the results of Exelon’s stranding surveys indicate that the magnitude of this benefit would be minor.”\textsuperscript{40} In a collaborative assessment with MDNR, we found that in the 2011 migration and spawning season, peaking may have resulted in the stranding of an estimated 1,485 migrating shad and 562 migrating river herring. This information was submitted in our January MOI, but is not reflected here.

- **Freshwater mussels:** “[T]he distribution of mussels below Conowingo dam is likely limited by the shear stress that occurs during spring runoff.”

We ask that the basis for these analyses and conclusions are well documented in the FEIS.

\textsuperscript{38} Id.

\textsuperscript{39} Id. at 138.

\textsuperscript{40} Id. at 139.
D. The DEIS's Analysis of Fish Passage Alternatives and Recommendations Is Not Supported by Substantial Evidence.

Based on our review, the DEIS’s findings of fact with regard to fish passage measures at the project are not supported by substantial evidence as required by FPA section 313(b).41 Further, the DEIS does not show how OEP’s recommended fish passage measures would be consistent with applicable comprehensive plans, e.g., Amendment 3 of the Interstate Fishery Management Plan for shad and river herring (Feb. 2010), as required by FPA section 10(a)(2).

The DEIS indicates that OEP Staff does not recommend adopting the Department of Interior’s alternative (“Alternative G”) as a fishway prescription.42 Instead, OEP Staff recommends a set of phased improvements for upstream fish passage. It is unclear how these recommended improvements are related to or consistent with biological performance goals, which have been established through existing comprehensive plans (e.g., SRAFRAC 2010).

References in the DEIS to American shad populations on the Columbia River are not appropriate, as shad in that river occupy a very different ecological niche as an introduced and invasive species, and are not the priority management target for passage. A more relevant comparison would be Pacific salmon in the Columbia system, or even more appropriate, American shad populations elsewhere in the Chesapeake. The latest assessment of shad abundance as developed by the Chesapeake Bay Program43 clearly indicates that other rivers are making significant progress toward restoration goals. The DEIS indicates that “Fish passage impediments were removed on the James River (Bosher’s dam fishway) and on the Rappahannock River (removal of Embrey dam) some years ago, but shad populations has [sic] not responded as expected to this increased availability of habitat.”44 But the latest assessment indicates that the Rappahannock River has exceeded 80% of restoration goals for the past three years, and the Potomac has exceeded its restoration goals for the past three years.

At the same time, progress toward meeting restoration goals on the Susquehanna has been extremely limited; in fact, progress is so small that it does not register visually on a chart.45 Despite a relatively stable tailrace population, it is clear that passage efficiency at Conowingo has declined significantly over the past decade (see Figure 1, infra). This declining trend, taken in tandem with restoration progress at the neighboring Potomac and Rappahannock Rivers, indicates that site specific improvements in the Susquehanna can result, despite regional declines in shad abundance.

42 Id. at 400.
44 DEIS, p. 168.
The Conservancy requests that the FEIS provide substantial evidence in support of its findings on fish passage and state the specific basis for its finding that any fish passage recommendations are consistent with the applicable comprehensive plans. We also request that OEP include in the FEIS a comparative analysis of the extent to which the Staff Alternative and Department of Interior’s Alternative G will achieve the biological performance goals articulated in existing comprehensive plans.

E. The DEIS’s Analysis of Water Quality and Sediment Transport Is Not Supported by Substantial Evidence.

Based on our review, the DEIS’s findings of fact with regard water quality, particularly sediment transport, are not supported by substantial evidence as required by FPA section 313(b).46 Further, the DEIS does not show how OEP’s recommended fish passage measures would be consistent with Chesapeake Bay TMDL, as described above.

In our MOI, we highlighted that the record (as demonstrated in Exelon’s FLA) is clear that living resources are negatively affected by the lack of coarse substrate in the project area below Conowingo dam.47 The DEIS states that “any attempt to mitigate that effect by placement of coarser grained sediments downstream of the dam would likely have limited success because

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46 16 U.S.C. § 825i(b).

47 TNC MOI and NREA Comments, p. 15.

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of high velocities and turbulence that would transport those materials farther downstream and away from areas where habitat enhancement was targeted.48

The transport of coarse grained sediments from the Susquehanna into the Chesapeake Bay is a natural process. Current hydropower infrastructure inhibits movement of coarse grained material downstream into riverine and estuarine habitats that rely on this material for their health and persistence. Current hydropower operations would likely accelerate transport of material placed to mitigate habitat impacts to downstream habitats in the Chesapeake Bay proper. It is important to note that habitat enhancement by the addition of coarse grained materials is not limited to the riverine section of the Susquehanna. The Upper Chesapeake Bay also requires coarse grained sediments to support critical habitats, such as striped bass spawning grounds and submerged aquatic vegetation, and to counteract shoreline erosion.

Consequently, we reiterate that the findings in the DEIS do not demonstrate consistency with SRBC’s Comprehensive Plan for Management and Development of the Water Resources of the Susquehanna River Basin,49 specifically for ecosystem restoration (id. at 64), and Chesapeake Bay restoration and maintenance (id. at 68). Accordingly, we request that OEP staff develop and consider alternatives in the FEIS that mitigate the effects on living resources to meet these goals.

With regards to impacts of transport of sediment and associated nutrients on water quality in the Chesapeake Bay, the DEIS notes that “relevant findings in the Corps’ [Lower Susquehanna River Watershed Assessment (LSRWA)] study report, if available in time, may result in additional recommendations in the final EIS or in any license order issued for the project, depending on when the study results are available to Commission staff.”50 It is critical that findings from the LSRWA be integrated into the FEIS, as they provide new information about sediment and nutrient transport processes through the reservoir system, and render analysis in the DEIS inaccurate. Conclusions and recommendations made in the DEIS, such as there is “no justification at this time for requiring Exelon to implement measures such as dredging to help control sediment and nutrient loading in the Bay, which would occur in the long term whether or not Conowingo dam was in place”51 must be revisited given the new information available through the LSRWA.

Furthermore, additional studies requested by the State of Maryland are underway and will provide further quantification of water quality impacts from the reservoir system. We urge OEP

48 DEIS, p. 69.
50 DEIS, p. 388.
51 Id. at 128.
Staff to await the results of these studies, which are necessary to complete the record, before it prepares the FEIS.

Finally, the inclusion of the LSRWA and associated studies is critical to establish consistency between the DEIS and the Chesapeake Bay TMDL.

F. **OEP Should Prepare a Biological Assessment.**

The Conservancy supports National Marine Fisheries Service’s (NMFS) request that OEP prepare a Biological Assessment to evaluate the effects of the continued operation of Conowingo on shortnose and Atlantic sturgeon for the reason stated in its letter dated September 28, 2014.52 NMFS reports that the “best available information indicates that shortnose sturgeon are present in the Susquehanna River from the Susquehanna Flats to the Conowingo Tailrace.” We reserve the right to comment on this Biological Assessment once it is issued, including providing relevant habitat analyses developed by the Conservancy at that time.

G. **The DEIS’s Developmental Analysis Is Not Supported by Substantial Evidence.**

As stated above, the Developmental Analysis only evaluates the No Action Alternative, Exelon’s Proposal, and the Staff Alternative. It finds that the project under each alternative would produce power at a cost less than the cost of alternative power.53 It finds that the Ecological Enhancement Alternative would be too costly but does not actually study the cost of that alternative to the cost of alternative power. The evidence in the record indicates that this alternative, as well as the Ecological Restoration Alternative, may also be economical.

Study 3.11, as approved in the Study Plan Determination, required that Exelon model alternative flow management scenarios and compare these scenarios to its baseline operations proposal. Exelon shared modeling results with the stakeholder workgroup which included the estimate of power generation gained or lost under various alternatives. Both the Ecosystem Restoration Alternative (+31 GWh/yr) and the Ecosystem Enhancement Alternative (+9 to 27 GWh/yr) resulted in more generation than the No Action Alternative (baseline).

This gain in net power produced is a result of fewer hours of pumping at Muddy Run. From the FLA, Muddy Run purchases 1,995,980 MWh/yr of energy for pumping during off-peak hours. This means that not only do the Ecosystem Restoration Alternative and the Ecosystem Enhancement Alternative increase total electricity produced, they likely result in more electricity being sourced from renewable sources.

We request OEP make the results of Exelon’s scenario analysis publicly available and use that data to analyze the Annual Power Value of the Ecological Restoration and Ecological

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53 DEIS, pp. 326-27.
Enhancement Alternatives. The FEIS should include an updated Table 4-6, “Summary of the annual cost of alternative power and annual project cost for alternatives for the Conowingo Project” that includes these alternatives.

CONCLUSION

The Nature Conservancy respectfully requests that the OEP Staff address these comments prior to issuing the Final EIS.

Dated: September 29, 2014

Respectfully submitted,

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DECLARATION OF SERVICE

Exelon Generation Company, LLC’s Conowingo (P-405) and Muddy Run Hydroelectric Projects (P-2355) and York Haven Power Company, LLC’s York Haven Hydroelectric Project (P-1888)

I, Nicholas Niiro, declare that I today served the attached “The Nature Conservancy’s Comments On Draft Multi-Project Environmental Impact Statement For Hydropower Licenses, Susquehanna River Hydroelectric Projects” by electronic mail, or by first-class mail if no e-mail address is provided, to each person on the official service list compiled by the Secretary in this proceeding.

Dated: September 29, 2014

By:

___________________________
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**ATTACHMENT 1**

**Figure 1.** A comparison to illustrate the discrepancy in estimating habitat benefits between MWUA and habitat persistence using American shad spawning as an example. The blue bar represents the instantaneous habitat available for streamflows that range between 14,472 and 82,757 cfs (70% MWUA, Study 3.16, Table 3-1). The orange bar represents the habitat that persists under hydro-peaking operations that transition from a minimum flow of 14,472 to a maximum generation of 82,757. (Study 3.16, Appendix G).
**Figure 2.** A comparison of estimated persistent habitat available for American shad spawning during May between the No Action and Staff Alternatives (Blue), Ecological Restoration Alternative (Purple), and Ecological Enhancement Alternative (Green).
Figure 3. A comparison of estimated persistent habitat available for Shortnose sturgeon spawning during May between the No Action and Staff Alternatives (Blue), Ecological Restoration Alternative (Purple), and Ecological Enhancement Alternative (Green).
Figure 4. A comparison of estimated persistent habitat available for Striped bass spawning during May between the No Action and Staff Alternative (Blue), Ecological Restoration Alternative (Purple), and Ecological Enhancement Alternative (Green).
**Table 1.** Corrections to Table 3-21. The following table references ranges cited in the DEIS as providing 70% MWUA across relevant species and life stages and includes a cross-reference to Gomez and Sullivan 2012, Study 3.16, Table 3-1 to summarize ranges (overlapping) across relevant species that provide 70% MWUA. Juvenile small mouth bass are the only target species life stage that does not overlap in range, therefore a separate line is included.

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*The Nature Conservancy’s DEIS Comments*

*Exelon, Conowingo (P-405-106) and Muddy Run Projects (P-2355-018)*

*York Haven, York Haven Project (P-1888-030)*
**Figure 5.** Comparison of the Baseline condition, FERC Staff alternative and TNC Proposal to the range of flows on the Lower Susquehanna River.

*Natural Flow Variability: Susquehanna River at Conowingo*

*Estimated distribution of unaltered daily flows using Marietta Baseflows (1930-2007) - basin area ratio method*

- High Flow Events, $Q_{20}$ to $Q_{5}$
- Seasonal Flow, $Q_{25}$ to $Q_{50}$
- Low Flow, $Q_{88}$ to $Q_{25}$

- Estimated Minimum Historic Daily Flow at Conowingo - Run-of-river
- Estimated Historic Median Daily Flow at Conowingo
- Exelon’s Current Seasonal Minimum Flow Requirements
- TNC Proposal for Minimum Flow Releases
- FERC Staff Alternative for Minimum Flow Releases