February 22, 2018

Wetlands and Subaqueous Lands Section
Delaware Department of Natural Resources
And Environmental Control
89 Kings Highway
Dover, DE 19901

ATTN: Mr. Steven Smailer, Supervisor

Sturgeon Comments from Riverkeeper

We at Riverkeeper Inc., are providing public comment for Project Notice 3 posted on January 31, 2018. Subsequent to our investigations and conferrals with our partners, we unequivocally declare that: 1) the deep hole (referred to as a scour hole by applicant) at the southern end of the Harbor of Refuge outer breakwater at Lewes, Sussex County provides one of the most important marine/estuarine habitats to adult and sub-adult Atlantic Sturgeon from all five federally listed distinct population segments (DPSs) in the United States and 2) disturbance of the magnitude presented in the proposal of work, dumping 300,000 cubic yards of materials in a very short timeframe, will negatively impact this crucial habitat in both the short and long time frames. Consequently, we strongly urge you to conduct a thorough environmental review of this federal action including consultation with the National Marine Fisheries Service and hold a public hearing on this matter.

Atlantic Sturgeon

Atlantic Sturgeon is a long-lived, anadromous fish species found along the east coast of North America and whose origins date back to the Triassic period. Overfishing in the late 19th and early 20th century combined with the loss and degradation of habitat severely diminished Atlantic Sturgeon populations. Yet, despite a reduction in fishing pressure and improved water quality the fish have not recovered. As a result, the National Marine Fisheries Service listed Atlantic Sturgeon under the Endangered Species Act (ESA) in 2012. When Congress passed the Endangered Species Act in 1973, it recognized that our rich natural heritage is of esthetic,

ecological, educational, recreational, and scientific value to our nation and its people. The purpose of the ESA is to protect and recover imperiled species and the ecosystems upon which they depend. The ESA is administered by the U.S. Fish and Wildlife Service and the Commerce Department's National Marine Fisheries Service (NMFS). Moreover, the recovery of endangered species hinges upon conservation and protection of an organism's critical habitat. Critical habitat is defined as the specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the provisions of the ESA, on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection (United States Office of the Federal Registry 2016a). Destruction or adverse modification of this habitat means a direct or indirect alteration that appreciably diminishes the value of critical habitat for the conservation of a listed species.

The Delaware River Estuary once supported the largest population of Atlantic Sturgeon in North America, but that same population has precariously declined largely through the synergistic effects of overexploitation and a variety of anthropogenic activities acting on a slowing growing species of fish (Secor and Waldman 1999; Secor et al. 2002). Sadly, the once highly robust populations of Atlantic Sturgeon still remain imperiled and are now classified as an endangered species, threatened with extinction. Further adding to the onslaught of insults directed towards Atlantic Sturgeon over the course of the past 150 years, an area of prime habitat crucial for multiple life-stages located at the mouth of the Delaware Bay will be compromised if the intended plan of dumping 300,000 cubic yards were to move forward. In this area at the mouth of Delaware Bay, unique bathymetry and water currents create a thermal refuge and well optimal forage habitat where aggregations of Atlantic Sturgeon remain for extended periods of residency. Because this area lies in close proximity to dense human habitation it receives large amounts of commercial vessel traffic and subsequently sturgeon are vulnerable multifarious forms of habitat modifications and vessel strikes.

To be sure, organisms do not live in a vacuum, especially highly mobile species such as Atlantic Sturgeon. This large species of anadromous fish though born in freshwater will venture across haline barriers as sub-adults, entering coastal waters to transit beyond geophysical and jurisdictional boundaries. These fish frequently make wide ranging movements beyond their natal estuaries (Waldman 1996). As Atlantic Sturgeons foray into coastal waters, they travel along thin migratory corridors and tend to concentrate in and around the mouths of estuaries and

inlets (Laney et al. 2007; Dunton et al. 2010; Erickson et al. 2011) (Figure 1). Numerous studies have shown that Atlantic Sturgeon primarily occupy inshore areas of the continental shelf and that coastal features including inlets and mouths of bays hold seasonally higher concentrations of Atlantic Sturgeon (Laney et al. 2007; Dunton et al. 2010; Erickson et al. 2011; Breece et al. 2016, 2017). Accordingly, all major estuaries in the Mid-Atlantic have areas where Atlantic Sturgeon are known to concentrate e.g., Chesapeake Bay (Erickson et al. 2011), Delaware Bay (Breece et al. 2013, 2016), Hudson River Estuary (Dunton et al. 2015), and the Long Island Sound (Savoy and Pacileo 2003). Atlantic Sturgeon from the Hudson River like those fish from other populations remain in their natal estuaries for the first few years of their lives, then will emigrate to coastal waters and often to other estuaries (Dovel & Berggren 1983; Waldman et al. 2013) (Figure 2). However, the large-scale coastal migrations of anadromous sturgeons increase their vulnerability to a host of anthropogenic impacts as they move along migration routes (Collins et al. 2000). As a result of these threats, developing strategies that reduce human interactions with Atlantic Sturgeon in the coastal ocean are key to the conservation and recovery of this species (ASMFC 2007).

New York Bight Distinct Population Segment of Atlantic Sturgeon

As previously stated, mouths of estuaries and inlets are known to concentrate Atlantic sturgeon in the coastal inshore waters, but more specifically, a growing body of scientific evidence reveals that the mouth of the Delaware Bay is an area where Atlantic Sturgeon maintain residency in a unique and critical habitat for extended periods of time. Advanced scientific methods utilizing acoustic tagging techniques and genetic data have indicated that Atlantic Sturgeon readily move between the Hudson River Estuary and the Delaware River Estuary and the fish that utilize these respective estuaries form a mixed stock aggregation (Waldman et al. 1996). The National Marine Fisheries Service (2012), has classified four distinct populations of Atlantic Sturgeon as endangered species. One of those populations includes the New York Bight Distinct Population Segment (New York Bight DPS).

From our perspective, we stand with our partners in steadfast opposition to this proposed project to dump a large amount of material into a scour hole at the mouth of Delaware Bay, because of the potential detriment to populations of Atlantic Sturgeon that inhabit the Hudson

River and beyond. The Delaware Bay and nearshore coastal waters are a vital aggregation area that once supported the largest population of sturgeon in North America (Secor and Waldman 1999) and currently is utilized by adult Atlantic Sturgeon from every distinct population segment in the United States (Breece et al. 2017). Ample scientific research has clearly shown that Atlantic Sturgeon that spawn in the Hudson River will readily travel to Delaware Bay and mix with spawning populations from the Delaware River. As a result of this mixed aggregation, protection of the fish within the New York Bight DPS is especially critical since two populations from the same DPS are believed to have already been extirpated (NMFS 2018). Furthermore, as a result of the mixing of the two populations, the NYSDEC works closely with Dr. DeWayne Fox from Delaware State University on many projects related to Atlantic Sturgeon in the Hudson River. Doctor Fox uses acoustic tags to track Atlantic Sturgeon movements along the Delaware coast during their spring migration. Approximately 400 tags have deployed in this research as of 2016. A large portion of the acoustically tagged fish move into the Hudson to the spawning grounds every year (D Fox, personal communication). During Dr Fox's visit to the area in question, 20 percent of his acoustically tagged fish were present, and according to the genetic findings of Wirgin et al. (2015), 50 percent of the fish tagged along the coast by Dr Fox originate from the New York Bight DPS. A portion of the fish using this area are Hudson River origin fish and it needs to be protected to help protect the fish during this very vulnerable part of the year. Atlantic Sturgeon exhibiting increased residency at the mouth of the Delaware Bay are at a critical stage when energy demands are high and this area may provide the resources needed to meet those demands. Scientific research suggests this area is of high importance to Atlantic Sturgeon and the physical and biological/physiological features that occur here are essential to their conservation and recovery (Breece et al. 2018). Overall, it is known that Atlantic Sturgeon spend the vast majority of their life in marine, polyhaline waters, and without enhanced protection for these habitats, their recovery may never be realized.

In closing, we contend that the project goal of dumping approximately 300,000 cubic yards of a rock/cobble/sand/gravel mix in the deep hole located on the South side of the Inner Wall of the Harbor Refuge Breakwater located approximately 3,000 feet North of the Cape Henlopen Point in the Delaware Bay, Sussex County, Delaware will cause irreparable harm to the already endangered Atlantic Sturgeon and directly threaten recovery efforts. Dumping material into the scour hole indisputably impinges upon critical habitat where a high occurrence of Atlantic

Sturgeon from multiple DPS units are known to congregate. The proposed action stands in stark contrast with the basic tenets of the ESA and threatens the viability of extant populations of Atlantic Sturgeon by impairing unique and essential fish habitat, which is necessary for various life stages and for the species' recovery efforts. The physical features of this area create ideal habitat for many months of the year that may not be duplicated anywhere in their range. Filling this hole would essentially eliminate this feature and displace this federally listed species to sub-optimal habitats. At a minimum, we urge an additional 60 days for written comment as well as a series of public hearings open to all communities (within Delaware and beyond) that are concerned about the perilous threat this project poses to Atlantic Sturgeon of the region. We also strongly request that you conduct a comprehensive environmental review of this action including consultation with the National Marine Fisheries Service and hold any necessary public hearing on this matter.

We thank you for the opportunity to comment. If you require additional information, please do not hesitate to contact us directly.

Comments Respectfully Submitted By:

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