the Act, including the factors identified in this finding and explanation (see Request for Information, above).

Conclusion

On the basis of our evaluation of the information presented under section 4(b)(3)(A) of the Act, we have determined that the petition to remove the golden-cheeked warbler from the List of Endangered and Threatened Wildlife does not present substantial scientific or commercial information indicating that the requested action may be warranted. Therefore, we are not initiating a status review for this species.

We have further determined that the petition to list the U.S. population of northwestern moose (*Alces alces andersoni*) as an endangered or threatened DPS presents substantial scientific or commercial information indicating that the requested action may be warranted. Because we have found that the petition presents substantial information indicating that the petitioned action may be warranted, we are initiating a status review to determine whether this action under the Act is warranted. At the conclusion of the status review, we will issue a 12-month finding in accordance with section 4(b)(3)(B) of the Act, as to whether or not the Service believes the petitioned action is warranted.

It is important to note that the ''substantial information'' standard for a 90-day finding differs from the Act's ''best scientific and commercial data'' standard that applies to a status review to determine whether a petitioned action is warranted. A 90-day finding does not constitute a status review under the Act. In a 12-month finding, we will determine whether a petitioned action is warranted after we have completed a thorough status review of the species, which is conducted following a substantial 90-day finding. Because the Act's standards for 90-day and 12-month findings are different, as described above, a substantial 90-day finding does not mean that the 12-month finding will result in a finding that the petitioned action is warranted.

References Cited

A complete list of references cited is available for each species addressed in this document on the Internet at *http://www.regulations.gov* and upon request from the appropriate person listed under **FOR FURTHER INFORMATION CONTACT**, above.

Authors

The primary authors of this document are the staff members of the Branch of Recovery and State Grants, Ecological Services Program, U.S. Fish and Wildlife Service.

Authority

The authority for these actions is the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Dated: May 25, 2016.

Stephen Guertin,

Acting Director, U.S. Fish and Wildlife Service.

[FR Doc. 2016–13120 Filed 6–2–16; 8:45 am]

BILLING CODE 4333–15–P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 226

[Docket No. 150818735–6236–01]

RIN 0648–BF28

Endangered and Threatened Species; Designation of Critical Habitat for the Gulf of Maine, New York Bight, and Chesapeake Bay Distinct Population Segments of Atlantic Sturgeon

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Proposed rule; request for comments.

SUMMARY: We, the National Marine Fisheries Service (NMFS), propose to designate critical habitat for the Gulf of Maine, New York Bight, and Chesapeake Bay Distinct Population Segments (DPSs) of Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*). The specific areas proposed for designation include approximately 244 kilometers (152 miles) of aquatic habitat in rivers in Maine, New Hampshire, and Massachusetts for the Gulf of Maine DPS, approximately 547 kilometers (340 miles) of aquatic habitat in rivers in Connecticut, Massachusetts, New York, New Jersey, Pennsylvania, and Delaware for the New York Bight DPS, and approximately 729 kilometers (453 miles) of aquatic habitat in rivers in Maryland, Virginia, and the District of Columbia for the Chesapeake Bay DPS of Atlantic sturgeon. We are soliciting comments from the public on all aspects of the proposal, including information on the economic, national security, and other relevant impacts of the proposed designations, as well as the benefits to the DPSs.

DATES: Comments on this proposed rule must be received by September 1, 2016.

Public hearings and public information meetings: We will hold two public hearings and two public informational meetings on this proposed rule. We will hold a public informational meeting from 2 to 4 p.m., in Annapolis, Maryland on Wednesday, July 13 (see **ADDRESSES**). A second public informational meeting will be held from 3 to 5 p.m., in Portland, Maine on Monday, July 18 (see **ADDRESSES**). We will hold two public hearings, from 3 to 5 p.m. and 6 to 8 p.m., in Gloucester, Massachusetts on Thursday, July 21 (see **ADDRESSES**).

ADDRESSES: You may submit comments, identified by the NOAA–NMFS–2015–0107, by either of the following methods:

- *Electronic Submissions:* Submit all electronic public comments via the Federal eRulemaking Portal. Go to *www.regulations.gov/#!docketDetail;D=NOAA-NMFS-2015-0107*, Click the ''Comment Now!'' icon, complete the required fields, and enter or attach your comments.
- *Mail:* Kimberly B. Damon-Randall, Assistant Regional Administrator, Protected Resources Division, NMFS, Greater Atlantic Regional Office, 55 Great Republic Drive, Gloucester, MA 01930.

Instructions: Comments sent by any other method, to any other address or individual, or received after the end of the comment period, may not be considered by us. All comments received are a part of the public record and will generally be posted for public viewing on *www.regulations.gov* without change. All personal identifying information (*e.g.,* name, address, etc.), confidential business information, or otherwise sensitive information submitted voluntarily by the sender will be publicly accessible. We will accept anonymous comments (enter ''N/A'' in the required fields if you wish to remain anonymous).

Public informational meetings and public hearings: The July 13, 2016, public informational meeting will be held at the Environmental Protection Agency, Information and Conference Center, 410 Severn Avenue, Annapolis, MD 21403. The July 18, 2016, public informational meeting will be held at the Gulf of Maine Research Institute, Cohen Center, 350 Commercial Street, Portland, Maine 04101. The July 21, 2016, public hearings will be held at the NMFS, Greater Atlantic Region Fisheries Office, 55 Great Republic Drive, Gloucester, MA 01930. People needing reasonable accommodations in order to attend and participate or who have questions about the public

hearings should contact Lynn Lankshear, NMFS, Greater Atlantic Region Fisheries Office (GARFO), as soon as possible (see **FOR FURTHER INFORMATION CONTACT**).

FOR FURTHER INFORMATION CONTACT: Lynn Lankshear, NMFS, GARFO at 978–282–8473; Julie Crocker, NMFS, GARFO at 978–282–8480; or Lisa Manning, NMFS, Office of Protected Resources at 301–427–8466.

SUPPLEMENTARY INFORMATION: In accordance with section 4(b)(2) of the ESA (16 U.S.C. 1533(b)(2)) and our implementing regulations (50 CFR 424.12), this proposed rule is based on the best scientific information available concerning the range, biology, habitat, and threats to the habitat for the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs of Atlantic sturgeon. We have reviewed the information (*e.g.,* provided in reports, peer-reviewed literature, and technical documents) and have used it to identify the physical and biological features essential to the conservation of each DPS, the specific areas within the occupied areas that contain the essential physical and biological features that may require special management protection, the federal activities that may impact those features, and the potential impacts of designating critical habitat for each DPS. We have gathered this information for all three DPSs into a single document, the Draft Biological Information and ESA section 4(b)(2) Source Document. The economic impacts of the proposed critical habitat designations for each DPS are described in the document titled, Draft Economic Impact Analysis of Critical Habitat Designation for the Gulf of Maine, New York Bight, and Chesapeake Bay Distinct Population Segments of Atlantic Sturgeon (*Acipenser oxyrinchus oxyrinchus*), which was prepared by King and Associates, Incorporated. These supporting documents are available on the Federal eRulemaking Portal at *http://www.regulations.gov.* Electronic copies can also be obtained at *http://www.greateratlantic.fisheries.noaa.gov/protected/atlsturgeon/index.html* or upon request (see **ADDRESSES**).

We invite the submission of information that may help to identify other physical or biological features. For example, while we know that there are specific estuarine areas that sturgeon often use for foraging (*e.g.,* the mouth of the Merrimack and Saco rivers), and we can identify aggregation areas (*e.g.,* off of western Long Island, New York) and general movement patterns in the marine environment (*e.g.,* typically within the 50 meter depth contour) to and from estuarine areas, we could not identify what the specific features are of these habitats that make them important to sturgeon and that may require special management.

Background

Under section 4 of the ESA, critical habitat shall be specified to the maximum extent prudent and determinable at the time a species is listed as threatened or endangered (16 U.S.C. 1533(b)(6)(C)). We concluded that critical habitat was not determinable for the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs when we published the final listing rule (77 FR 5880, February 6, 2012). However, we anticipated that critical habitat would be determinable in the future, given on-going research. We, therefore, announced in the final rule that we would propose critical habitat for each DPS in a separate rulemaking.

Section 3(5)(A) of the ESA defines critical habitat as the specific areas within the geographical area occupied by the species at the time it is listed on which are found those physical or biological features essential to the conservation of the species and which may require special management considerations or protections, and specific areas outside the geographical area occupied by the species at the time it is listed that are essential for the conservation of the species (16 U.S.C. 1532(5)(A)). Conservation is defined in section 3(3) of the ESA as ''. . . to use, and the use of, all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this Act are no longer necessary . . .'' (16 U.S.C. 1532(3)). Therefore, critical habitat is the habitat essential for the species' recovery. However, section 3(5)(C) of the ESA clarifies that except in those circumstances determined by the Secretary, critical habitat shall not include the entire geographical area which can be occupied by the threatened or endangered species.

As described in section 4(b)(2) of the ESA, we are required to designate critical habitat based on the best available scientific data and after taking into consideration the economic impact, impact on national security, and any other relevant impact, of specifying any particular area as critical habitat. Section 4(b)(2) provides us with discretion to exclude particular areas from a designation if the benefits of excluding that area outweigh the benefits of including it in the designation, unless failure to designate such areas as critical habitat will result in the extinction of the species. Finally, section 4(a)(3)(B) prohibits designating as critical habitat any lands or other geographical areas owned or controlled by the Department of Defense or designated for its use, that are subject to an Integrated Natural Resources Management Plan (INRMP) prepared under section 101 of the Sikes Act (16 U.S.C. 670a), if the Secretary determines in writing that such plan provides a conservation benefit to the species, and its habitat, for which critical habitat is proposed for designation. Although not expressly stated in section 4(b)(2), our regulations clarify that critical habitat shall not be designated within foreign countries or in other areas outside of United States jurisdiction (50 CFR 424.12(g)).

Once critical habitat is designated, section 7(a)(2) of the ESA requires Federal agencies to ensure that any action they fund, authorize or carry out is not likely to destroy or adversely modify that habitat (16 U.S.C. 1536(a)(2)). This requirement is in addition to the section 7(a)(2) requirement that Federal agencies ensure that their actions are not likely to jeopardize the continued existence of ESA-listed species. Specifying the geographic location of critical habitat also facilitates implementation of section 7(a)(1) of the ESA by identifying areas where Federal agencies can focus their conservation programs and use their authorities to further the purposes of the ESA. Critical habitat requirements do not apply to citizens engaged in activities on private land that do not involve a Federal agency. However, designating critical habitat can help focus the efforts of other conservation partners (*e.g.,* State and local governments, individuals and nongovernmental organizations).

Accordingly, our step-wise approach for identifying potential critical habitat areas for the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs included the following: (1) Identify the physical and biological features essential to the conservation of the DPS and which may require special management considerations or protection; (2) identify specific areas where those features occur within the occupied geographic range of a particular DPS; (3) identify any unoccupied habitat essential to the conservation of a particular DPS; (4) consider economic, national security, or any other impacts of designating critical habitat and determine whether to exercise our discretion to exclude any particular areas; and (5) determine whether any area that contains essential

features is covered under an INRMP that provides a conservation benefit to the DPS.

Biology and Habitat of the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs of Atlantic Sturgeon

Although there is considerable variability among species, all sturgeon species (order *Acipenseriformes*) have some common life history traits. They all: (1) Occur within the Northern Hemisphere; (2) spawn in freshwater over hard bottom substrates; (3) generally do not spawn annually; (4) are benthic foragers; (5) mature relatively late and are relatively long lived; and, (6) are relatively sensitive to low dissolved oxygen levels (Dees, 1961; Vladykov and Greeley, 1963; Klyashtorin, 1976; Bemis and Kynard, 1997; Sulak and Randall, 1999; Billard and Lecointre, 2001; Secor and Niklitschek, 2002; Pikitch *et al.,* 2005).

Atlantic sturgeon have all of these traits. They occur along the eastern coast of North America from Hamilton Inlet, Labrador, Canada, to Cape Canaveral, Florida, USA (Bigelow and Welsh, 1924; Dees, 1961; Vladykov and Greeley, 1963; Scott and Scott, 1988; NMFS and USFWS, 2007; T. Savoy, CT DEEP, pers. comm.). They have a lifespan of up to 60 years, although the typical lifespan is probably much shorter (Sulak and Randall, 2001; Balazik *et al.,* 2010). As described in the Status Review, Atlantic sturgeon reach maturity at about 5 to 34 years of age, after years of moving between marine waters and coastal estuaries, and spawn in freshwater of tidal-affected rivers every 1 to 5 years (males) or 2 to 5 years (females) (NMFS and USFWS, 2007). Analysis of stomach contents for adults, subadults (*i.e.,* sexually immature Atlantic sturgeon that have emigrated from the natal estuary), and juveniles (*i.e.,* sexually immature Atlantic sturgeon that have not yet emigrated from the natal estuary) confirms that Atlantic sturgeon are benthic foragers (Ryder, 1888; Bigelow and Schroeder, 1953; Johnson *et al.,* 1997; Secor *et al.,* 2000; NMFS and USFWS, 2007; Guilbard *et al.,* 2007; Hatin *et al.,* 2007; Savoy, 2007; Dzaugis, 2013; McLean *et al.,* 2013).

An anadromous species, Atlantic sturgeon are spawned in freshwater of rivers that flow into a coastal estuary. Tagging records and the relatively low rate of gene flow reported in population genetic studies provide evidence that Atlantic sturgeon return to their natal river to spawn (NMFS and USFWS, 2007). Spawning sites are well-oxygenated areas with flowing water ranging in temperature from 13 °C to 26 °C, and hard bottom substrate such as cobble, coarse sand, hard clay, and bedrock (Ryder, 1888; Dees, 1961; Vladykov and Greeley, 1963; Scott and Crossman, 1973; Gilbert, 1989; Smith and Clugston, 1997; Bain *et al.* 2000; Collins *et al.,* 2000; Caron *et al.,* 2002; Hatin *et al.,* 2002; Mohler, 2003; Greene *et al.,* 2009; Balazik *et al.* 2012; Hager *et al.* 2014). Water depth leading to spawning sites may be highly variable. Since the exact location of spawning is unknown, spawning depth is also uncertain. Atlantic sturgeon in spawning condition have been tracked and captured near presumed spawning habitat at depths up to 27 m (Borodin 1925; Dees 1961; Scott and Crossman 1973; Shirey *et al.* 1999; Bain *et al.* 2000; Hatin *et al.,* 2002; Balazik *et al.,* 2012; Hager *et al.,* 2014).

Within minutes of being fertilized, the eggs become sticky and adhere to the substrate for the relatively short and temperature-dependent period of larval development (Ryder, 1888; Vladykov and Greeley, 1963; Murawski and Pacheco, 1977; Smith *et al.,* 1980; Van den Avyle, 1984; Mohler, 2003). In hatchery studies, hatching occurred approximately 60 hours after egg deposition at water temperatures of 20 °C to 21 °C and 96 hours after egg deposition with a water temperature of approximately 18 °C (Smith *et al.,* 1980; J. Fletcher, USFWS pers. comm. in Mohler, 2003).

Larval Atlantic sturgeon (*i.e.,* less than 4 weeks old, with total lengths less than 30 mm; Van Eenennaam *et al.,* 1996) are assumed to inhabit the same areas where they were spawned and live at or near the bottom (Ryder, 1888; Smith *et al.,* 1980; Bain *et al.,* 2000; Kynard and Horgan, 2002; Greene *et al.,* 2009). The best available information for behavior of larval Atlantic sturgeon is described from hatchery studies. Upon hatching, larvae are nourished by the yolk sac, are mostly pelagic (*e.g.,* exhibit a ''swim-up and drift-down'' behavior in hatchery tanks; Mohler, 2003), and move away from light (*i.e.* negative photo-taxis; Kynard and Horgan, 2002; Mohler, 2003). Within days, larvae exhibit more benthic behavior until the yolk sac is absorbed at about 8 to 10 days post-hatching (Kynard and Horgan, 2002; Mohler, 2003). Post-yolk sac larvae occur in the water column but feed at the bottom of the water column (Mohler, 2003; Richardson *et al.,* 2007).

The next phase of development, referred to as the juvenile stage, lasts months to years in brackish waters of the natal estuary (Hatin *et al.,* 2007; NMFS and USFWS, 2007; Greene *et al.,* 2009; Calvo *et al.,* 2010; Schueller and Peterson, 2010). Juveniles occur in oligohaline waters (salinity of 0.5 to 5 parts per thousand) and mesohaline waters (salinity of 5 to 18 parts per thousand) of the natal estuary during growth and development. They will eventually move into polyhaline waters (salinity of 18–30 parts per thousand) before emigrating to the marine environment. Larger, presumably older, juveniles occur across a broader salinity range than smaller, presumably younger, juveniles (Hatin *et al.,* 2007; McCord *et al.,* 2007; Munro *et al.,* 2007; NMFS and USFWS, 2007; Sweka *et al.,* 2007; Greene *et al.,* 2009; Calvo *et al.,* 2010).

The distribution of Atlantic sturgeon juveniles in the natal estuary is a function of physiological development and habitat selection based on water quality factors of temperature, salinity, and dissolved oxygen, which are inter-related environmental variables. In laboratory studies, juveniles less than a year old (also known as young-of-year) had reduced growth at 40 percent dissolved oxygen saturation with salinity of 8 and 15 parts per thousand and temperature at 12 °C, 20 °C, and 28 °C. They grew best at 70 percent dissolved oxygen saturation with salinity of 8 and 15 parts per thousand and temperature of 12 °C and 20 °C (*i.e.,* dissolved oxygen concentrations greater than 6.5 mg/L), and selected for conditions that supported growth (Niklitschek and Secor, 2009; Niklitschek and Secor, 2010). Similar results were obtained for age-1 juveniles (*i.e.,* greater than 1 year old and less than 2 years old), which have been shown to tolerate salinities of 33 parts per thousand (*e.g.,* a salinity level associated with seawater), but grow faster in lower salinity waters (Niklitschek and Secor, 2009; Allen *et al.,* 2014).

Once suitably developed, Atlantic sturgeon leave the natal estuary and enter marine waters (*i.e.,* waters with salinity greater than 30 parts per thousand) which marks the beginning of the subadult life stage. In the marine environment, subadults mix with adults and subadults from other river systems (NMFS and USFWS, 2007; Grunwald *et al.,* 2008; Dunton *et al.,* 2010; Erickson *et al.,* 2011; Dunton *et al.,* 2012; Wirgin *et al.,* 2012; Waldman *et al.,* 2013; O'Leary *et al.,* 2014, Wirgin *et al.,* 2015a; Wirgin *et al.,* 2015b). Atlantic sturgeon travel long distances in marine waters, aggregate in both ocean and estuarine areas at certain times of the year, and exhibit seasonal coastal movements in the spring and fall (NMFS and USFWS, 2007; Dunton *et al.,* 2010; Dunton *et al.,* 2012; Erickson

et al., 2011; Oliver *et al.,* 2013; Wippelhauser and Squiers, 2015). Existing and new technologies are providing additional information for the life history and distribution of the Atlantic sturgeon in marine waters (Nelson *et al.,* 2013; Breece *et al.,* 2016). However, there is still a paucity of data to inform distribution of subadult and adult Atlantic sturgeon within the marine environment and their habitat use.

The exact spawning locations for Gulf of Maine, New York Bight and Chesapeake Bay DPS Atlantic sturgeon are unknown but inferred based on the location of freshwater, hard substrate, water depth, tracking of adults to upriver locations and the behavior of adults at those locations, capture of young-of-year and, in limited cases, larvae, and historical accounts of where the caviar fishery occurred. Based on one or more of these lines of evidence, multiple sites have been identified within many of the rivers used for spawning (NMFS and USFWS, 2007; Simpson, 2008; Hager, 2011; Austin, 2012; Balazik *et al.,* 2012; Breece *et al.,* 2013). Spawning sites at different locations within the tidal-affected river would help to ensure successful spawning given annual changes in the location of the salt wedge.

Male Atlantic sturgeon in spawning condition have been observed to stage in more saline waters of the coastal estuary before moving upriver once the water temperature reaches approximately 6 °C (43 °F). They may spend weeks moving upstream and downstream of the presumed spawning area(s) before moving back downriver to the lower estuary and residing there until outmigration in the fall. In contrast, spawning females move upriver when temperatures are closer to 12 °C to 13 °C (54 ° to 55 ° F), return downriver relatively quickly, and may leave the estuary and travel to other coastal estuaries until outmigration to marine waters in the fall (Smith *et al.,* 1982; Dovel and Berggren, 1983; Smith, 1985; Bain, 1997; Bain *et al.,* 2000; Collins *et al.,* 2000; NMFS and USFWS, 2007; Greene *et al.,* 2009; Balazik *et al.,* 2012; Breece *et al.,* 2013).

There is a growing body of evidence that some Atlantic sturgeon river populations have two spawning seasons comprised of different spawning adults (Balazik and Musick, 2015). Evidence of fall spawning for the Carolina and South Atlantic DPSs was available when the five Atlantic sturgeon DPSs were listed under the ESA (77 FR 5914; Smith *et al.,* 1984; NMFS and USFWS 1998; Collins *et al.,* 2000). Since the listings, additional evidence of fall as well as spring spawning has been obtained for the Chesapeake Bay DPS (Balazik *et al.,* 2012; Hager *et al.* 2014; Kahn *et al.,* 2014). Spring is the only currently known spawning period for the Gulf of Maine and New York Bight DPSs. However, an 1870's report of Atlantic sturgeon spawning during August in the Hudson River (Dovel and Berggren, 1983) and other historical information (Borodin, 1925; Balazik and Musick, 2015) suggests spring and fall spawning runs were typical, and may still occur in many areas of the Atlantic sturgeon's range. Given seasonal changes in the location of the salt-wedge for estuarine systems, it is likely that fall spawning would occur or would have occurred further upstream than the locations for spring spawning in rivers.

In addition to providing access to spawning habitat, estuaries provide foraging opportunities for subadult and adult Atlantic sturgeon. Stomach content analysis of Atlantic sturgeon captured in coastal estuaries confirm that sturgeon are foraging in coastal estuaries (Hatin *et al.,* 2007; Savoy, 2007; Calvo *et al.,* 2010; Wippelhauser, 2012; Dzaugis, 2013; McLean *et al.,* 2013; McLean *et al.,* 2014). The occurrence of subadult and adults in association with the salt front (Brundage and Meadows, 1982; Savoy and Shake, 1993; Collins *et al.* 2000; Savoy and Pacileo, 2003; Hatin *et al.,* 2007; Calvo *et al.,* 2010; Hager, 2011; Balazik, 2012; Breece *et al.,* 2013), a biologically-rich area of estuaries, also suggests use of estuarine waters for seasonal foraging. At least some Atlantic sturgeon subadults and adults move between estuarine environments in the spring through fall (Savoy and Pacileo, 2003; Simpson, 2008; Collins *et al.,* 2000; Balazik *et al.,* 2012).

The directed movement of subadult and adult Atlantic sturgeon to coastal estuaries in the spring is reversed in the fall (NMFS and USFWS, 2007; Greene *et al.,* 2009; Hager, 2011; Erickson *et al.,* 2011; Balazik *et al.,* 2012; Wippelhauser, 2012; Oliver *et al.,* 2013). The whereabouts of these fish once they leave coastal estuaries is uncertain. Atlantic sturgeon aggregate off of Long Island, New York and off of the Virginia/North Carolina coastline (Laney *et al.,* 2007; Dunton *et al.,* 2015). Others have been tracked to the southern extent of the range (T. Savoy, CT DEEP, pers. comm.) while at least one was tracked to the more northern area of the subspecies range, the Back River, Maine, in winter (G. Zydlewski, Univ. of Maine, pers. comm.). Two adults originally tagged in the Delaware River were detected in the Appomattox River, Virginia (C. Hager, Chesapeake Scientific, pers. comm.) during the winter. A recent study of Atlantic sturgeon tracked in the Delaware Bay found that some of the fish migrating from the estuary in the fall remained in nearby coastal marine waters within a plume of water flowing out from the estuary, suggesting a continued affinity with the estuary even after emigrating from the estuary proper (Oliver *et al.,* 2013). Further work suggests Atlantic sturgeon distribution in the marine environment is affected more by the characteristics of the water (*e.g.,* eddies, coastal upwelling, temperature) than characteristics of the landscape (*e.g.,* depth, substrate) (Breece *et al.,* 2016).

To identify specific habitats used by an Atlantic sturgeon DPS, we considered available information that described: (1) Capture location and/or tracking locations of a subadult or adult Atlantic sturgeon identified to its DPS by genetic analysis; (2) capture location and/or tracking locations of a subadult or adult Atlantic sturgeon identified to its DPS based on the presence of a tag that was applied when the sturgeon was captured as a juvenile in its natal estuary; (3) capture or detection location of adults in spawning condition (*i.e.,* extruding eggs or milt) or post-spawning condition (*e.g.,* concave abdomen for females); (4) capture or detection of young-of year and other juvenile age classes; and, (5) collection of eggs or larvae. In the case of estuaries of known spawning rivers, we assumed based on the available information that a portion of the subadults and adults present originated from that river and, thus, the habitats used by subadults and adults in a spawning river were indicative of habitats used by the DPS which spawned in the river. Previous studies have demonstrated that a combination of microsatellite and mitochondrial DNA analyses provide the most accurate information to identify an Atlantic sturgeon to its DPS, and using mitochondrial analysis, alone, provides much lower assignment accuracy given the prevalence of a common Atlantic sturgeon haplotype (NMFS and USFWS, 2007; Wirgin *et al.,* 2012; Waldman *et al.,* 2013). Therefore, when reviewing the available information on habitats used by Atlantic sturgeon, we also considered what genetic analyses were used to assign the sampled sturgeon to its DPS of origin.

The Kennebec River was the only known spawning river for the Gulf of Maine DPS when the DPS was listed as threatened (NMFS and USFWS, 2007; 77 FR 5880, February 6, 2012). Spawning has since been confirmed in the Androscoggin River (Wippelhauser, 2012). The Brunswick Dam at Pejepscot

Falls, the head-of-tide, is the upstream limit of Atlantic sturgeon distribution in the Androscoggin River. The dam is located approximately 10 kilometers upstream of the confluence of the Kennebec and Androscoggin rivers (ASMFC, 1998; NMFS and USFWS, 2007; NMFS, 2013; Wippelhauser and Squiers, 2015). The Lockwood Dam at river kilometer 103 is the current upstream limit for Atlantic sturgeon in the Kennebec River; it is located at the site of a natural falls (NMFS and USFWS, 2007). From 1837 to 1999, the Edwards Dam was the upstream limit of Atlantic sturgeon in the Kennebec River. Located near the head-of-tide, approximately 29 kilometers downstream of the Lockwood Dam at Augusta, the Edwards Dam (rkm 74) prevented Atlantic sturgeon from accessing historical habitat. Sturgeon were sighted above the former Edwards Dam site after removal of the dam and in June 2005, an Atlantic sturgeon was incidentally captured at river kilometer 102 (NMFS and USFWS, 2007; Wippelhauser, 2012).

Substrate type in the Kennebec estuary is largely sand and bedrock (Fenster and Fitzgerald, 1996; Moore and Reblin, 2008). Mesohaline waters occur upstream of Doubling Point during summer low flows, transitioning to oligohaline waters and then essentially tidal freshwater from Chops Point (the outlet of Merrymeeting Bay) upriver to the head-of tide on the Kennebec and Androscoggin rivers (ASMFC, 1998; Kistner and Pettigrew, 2001). A thorough description of the Kennebec Estuary is provided in Moore and Reblin 2008.

During the period 1977–2001, Atlantic sturgeon in spawning condition (*i.e.,* ripe males releasing sperm) or of size presumed to be sexually mature adults (*i.e.,* greater than 150 cm total length) were caught between river kilometers 52.8 and 74 of the Kennebec River during the months of June and July, the likely spawning season. From 2009 to 2011, 31 sturgeon, including 6 ripe males, were caught in the Kennebec River between river kilometers 70 and 75 (Wippelhauser, 2012; Wippelhauser and Squiers, 2015). Sturgeon in the Upper Kennebec Estuary (defined as river kilometer 45 to river kilometer 74 at head-of tide in the cited document) repeatedly moved between river kilometers 48 and 75 (Wippelhauser, 2012). An additional eight sturgeon, including one ripe male, were caught in the Androscoggin in June and July of 2009–2011 (Wippelhauser, 2012). Three larvae were also captured in the Upper Kennebec Estuary, 1 to 1.6 river kilometers upstream of river kilometer 74, the former Edwards Dam site (Wippelhauser, 2012).

The Merrymeeting Bay and Lower Kennebec Estuary are used by post-spawn adults, juveniles, and other life stages at least as late as November, and some Atlantic sturgeon may overwinter in Merrymeeting Bay (Wippelhauser, 2012). Sturgeon captured and tagged in the Saco and Penobscot rivers are also detected in the Kennebec Estuary, typically Merrymeeting Bay and downstream locations, although at least one male, captured in the Saco in 2010, was the single ripe male also captured in the Androscoggin suggesting that the Saco and Penobscot are important habitat areas for the Androscoggin spawning population (Wippelhauser, 2012). However, genetic information identifying the river of origin of the Atlantic sturgeon is not yet available.

While there is no current evidence that Atlantic sturgeon are spawning in Gulf of Maine rivers other than the Kennebec and Androscoggin, captures of sturgeon in the Merrimack and Penobscot Rivers as well as the presence of the features necessary to support reproduction and recruitment in these rivers indicate that there is the potential for spawning to occur (Kieffer and Kynard, 1993; Fernandes *et al.,* 2010; Wippelhauser, 2012). The 1998 and 2007 status reviews for Atlantic sturgeon described information for presence of Atlantic sturgeon in the Piscataqua River, including capture of a large female Atlantic sturgeon in spawning condition in 1990. The presence of this female (NMFS and USFWS, 1998; ASSRT, 2007) as well as the presence of the features necessary to support reproduction and recruitment in this river indicates that there is the potential for spawning to occur in the Piscataqua.

Genetic information is available for Atlantic sturgeon captured in six specific areas of the marine range: Minas Basin, Bay of Fundy, Canada; the Connecticut River estuary; Long Island Sound; the Atlantic Ocean off of Rockaway, New York; the Atlantic Ocean off of Delaware Bay; and, the Atlantic Ocean off of Virginia/North Carolina (Laney *et al.,* 2007; Wirgin *et al.,* 2012; Waldman *et al.,* 2013; O'Leary *et al.,* 2014; Wirgin *et al.,* 2015a). Atlantic sturgeon belonging to the Gulf of Maine DPS comprised 35 percent of the Minas Basin, Bay of Fundy samples collected in the summer, suggesting this is an important foraging area for the Gulf of Maine DPS. The DPS comprised less than 2 percent to 14.5 percent of Atlantic sturgeon sampled in the Connecticut River, Long Island Sound, the Atlantic Ocean off of Rockaway, New York, and the Atlantic Ocean off of Delaware Bay. The DPS was not detected in the sampled Atlantic sturgeon incidentally captured during winter from waters off of Virginia/North Carolina.

At the time of listing, the Delaware and Hudson rivers were the only known spawning rivers for the New York Bight DPS of Atlantic sturgeon (Dovel and Berggren, 1983; Bain, 1998; Kahnle *et al.,* 1998; NMFS and USFWS, 2007; Calvo *et al.,* 2010). In spring 2014, several small Atlantic sturgeon were captured in the Connecticut River (T. Savoy, CT DEEP, pers. comm.). We presume these to be juveniles less than a year old based on their apparent size seen in a photo provided in the Connecticut Weekly Diadromous Fish Report, report date May 20, 2014. Though it was previously thought that the Atlantic sturgeon population in the Connecticut had been extirpated (Savoy and Pacileo, 2003; NMFS and USFWS, 2007), capture of these juvenile Atlantic sturgeon strongly suggests that spawning is occurring in this river. For the Housatonic River, the 1998 and 2007 status reviews for Atlantic sturgeon described information for historical presence of Atlantic sturgeon in that river, including Whitworth's (1996) reference to a large fishing industry for Atlantic sturgeon (NMFs and USFWS, 1998; NMFS and USFWS, 2007). Since the commercial fisheries targeted spawning sturgeon, historical captures of sturgeon in the Housatonic River as well as the presence of the features necessary to support reproduction and recruitment in this river indicates that there is the potential for spawning to occur in the Housatonic.

The Hudson River is one of the most studied areas for Atlantic sturgeon. The upstream limit for Atlantic sturgeon on the Hudson River is the Federal Dam at the fall line, approximately river kilometer 246 (Dovel and Berggren, 1983; Bain, 1998; Kahnle *et al.,* 1998; Everly and Boreman, 1999). Recent tracking data indicate Atlantic sturgeon presence at this upstream limit (D. Fox, DESU, pers. comm.). Sturgeon occurring in the upstream limits of the river are suspected, but not yet confirmed, to belong to the New York Bight DPS.

Spawning may occur in multiple sites within the river (Dovel and Berggren, 1983; Van Eenennaam *et al.,* 1996; Kahnle *et al.,* 1998; Bain *et al.,* 2000). The area around Hyde Park (approximately river kilometer 134) is considered a likely spawning area based on scientific studies and historical records of the Hudson River sturgeon fishery (Dovel and Berggren, 1983; Van Eenennaam *et al.,* 1996; Kahnle *et al.,*

1998; Bain *et al.,* 2000). Habitat conditions at the Hyde Park site are described as freshwater year round with substrate, including bedrock, and waters depths of 12 to 24 meters (Bain *et al.,* 2000). Similar conditions occur at river kilometer 112, an area of freshwater and water depths of 21 to 27 meters (Bain *et al.,* 2000).

Catches of Atlantic sturgeon less than 63 cm fork length suggest that these sexually immature fish utilize the Hudson River estuary from the Tappan Zee (river kilometer 40) through Kingston (river kilometer 148) (Dovel and Berggren, 1983; Haley, 1999; Bain *et al.,* 2000). Seasonal movements of the immature fish are apparent as they primarily occupy waters from river kilometers 60 to 107 during summer months and then move downstream as water temperatures decline in the fall, primarily occupying waters between river kilometers 19 to 74 (Dovel and Berggren, 1983; Haley, 1999; Bain *et al.,* 2000). In a separate study, Atlantic sturgeon ranging in size from 32 to 101 cm fork length were captured at highest concentrations during spring in soft-deep areas of Haverstraw Bay, even though this habitat type comprised only 25 percent of the available habitat in the Bay (Sweka *et al.,* 2007).

In the Delaware River, there is evidence of Atlantic sturgeon presence from the mouth of the Delaware Bay to the head-of-tide at the fall line near Trenton on the New Jersey side and Morrisville on the Pennsylvania side of the River, a distance of 220 river kilometers (Shirey *et al.,* 1997; Brundage and O'Herron, 2007; Simpson, 2008; Calvo *et al.,* 2010; Fisher, 2011; Breece *et al.,* 2013). There are no dams on the Delaware River and an Atlantic sturgeon carcass was found as far upstream as Easton, PA in 2014 (M. Fisher, DE DNREC, pers. comm.), suggesting that sturgeon can move beyond the fall line.

The presence of hard bottom habitat, the location of the salt-wedge in April through July, and tracking of adult Atlantic sturgeon in spawning condition suggests that spawning habitat for Atlantic sturgeon occurs within the Delaware River between river kilometer 125 (near Claymont, Delaware) and the fall line at river kilometer 211 (landmarks of Trenton, New Jersey, and Morrisville, Pennsylvania) (Sommerfield and Madsen, 2003; Simpson 2008; Breece *et al.,* 2013).

Twenty Atlantic sturgeon less than 30 cm fork length (26.2 to 34.9 cm total length) and presumed to be less than one year old were captured in the Delaware River from September through November 2009 and tracked for up to one year using a passive acoustic array (Calvo *et al.,* 2010; Fisher, 2011). The data collected indicate this life stage makes use of Delaware River habitats from river kilometers 105 to 199 with seasonal changes in distribution (Fisher, 2009; Calvo *et al.,* 2010; Fisher, 2011). For example, during the winter months, some remained around river kilometer 134 (*i.e.,* the Marcus Hook area) while others moved upstream or downstream, exhibiting migrations in and out of the area (Calvo *et al.,* 2010; Fisher, 2011). Overall, the studies demonstrated the complexity of habitat needs for juvenile Atlantic sturgeons in the natal estuary during the first 1 to 2 years. In contrast to juveniles, subadult Atlantic sturgeon occur further downriver in polyhaline waters of the Bay and River (Brundage and Meadows, 1982; Lazzari *et al.,* 1986; Shirey *et al.,* 1997; Shirey *et al.,* 1999; Simpson, 2008; Brundage and O'Herron, 2009; Calvo *et al.,* 2010; Fisher, 2011).

The Connecticut River has long been known as a seasonal aggregation area for subadult Atlantic sturgeon, and both historical and contemporary records document presence of Atlantic sturgeon in the river as far upstream as Hadley, MA (Savoy and Shake, 1993; Savoy and Pacileo, 2003; NMFS and USFWS, 2007). The Enfield Dam located along the fall line at Enfield, CT prevented upstream passage of Atlantic sturgeon from 1827 until 1977 when it was breached (NMFS and USFWS, 2007). Although Atlantic sturgeon may generally remain below the fall line, an Atlantic sturgeon was captured at the Holyoke Dam fish lift in 2006, upstream of Enfield (NMFS and USFWS, 2007). As noted previously, the capture of juvenile Atlantic sturgeon in the Connecticut River in May 2014 (T. Savoy, CT DEEP, pers. comm.; Connecticut Weekly Diadromous Fish Report, report date May 20, 2014) suggests spawning may be occurring in the river.

The genetics information for Atlantic sturgeon captured in six specific areas of the marine range demonstrated that Atlantic sturgeon belonging to the New York Bight DPS were present in each area. In addition, the New York Bight DPS was the most represented DPS in each collection, comprising 55 percent to 87 percent of the sturgeon sampled in each area, with the exception of the Minas Basin collection where the New York Bight DPS comprised only 1 to 2 percent of the sampled sturgeon (Laney *et al.,* 2007; Wirgin *et al.,* 2012; Waldman *et al.,* 2013; O'Leary *et al.,* 2014; Wirgin *et al.,* 2015a). The results suggest that New York Bight DPS Atlantic sturgeon travel great distances, including into Canadian waters, but occur most predominantly in marine waters in areas off New York and the Mid-Atlantic Bight.

At the time of listing, the James River was the only known spawning river for the Chesapeake Bay DPS (NMFS and USFWS, 2007; Hager, 2011; Balazik *et al.,* 2012). Since the listing, spawning has been confirmed to occur in the Pamunkey River, a tributary of the York River (Hager *et al.,* 2014; Kahn *et al.,* 2014). Spawning is also suspected to be occurring in Marshyhope Creek, a tributary of the Nanticoke River, based on the presence of adult sturgeon in spawning condition in areas and at times when spawning would be expected to occur (Maryland DNR, web article, September 17, 2014).

Adult Atlantic sturgeon enter the James River in the spring, with at least some eventually moving as far upstream as Richmond (river kilometer 155), which is also the head-of-tide and close to the likely upstream extent of Atlantic sturgeon in the river, given the presence of Boshers Dam at the fall line (approximately river kilometer 160) (Bushnoe *et al.,* 2005; Hager, 2011; Balazik *et al.,* 2012). Adults disperse through downriver sites and begin to move out of the river in late September to early October, occupy only lower river sites by November, and are undetected on tracking arrays in the lower river by December, suggesting that the sturgeon leave the river for the winter (Hager, 2011; Balazik *et al.,* 2012).

The availability of hard-bottom habitat remains relatively limited in the James River and appears to be significantly reduced compared to the amount of available hard-bottom habitat described in historic records (Bushnoe *et al.,* 2005; Austin, 2012). In general, tracked adults occurred further upstream during the late summer and early fall residency (*e.g.,* river kilometer 108 to river kilometer 132; Balazik *et al.,* 2012) than during the spring and early summer residency (*e.g.,* river kilometer 29 to river kilometer 108; Hager, 2011), suggesting two different spawning areas depending on season.

The capture of adult Atlantic sturgeon in spawning condition in the low salinity waters of the Pamunkey River, a major tributary of the York River, in August 2013, and subsequent genetic testing demonstrate that there is a spawning population of Atlantic sturgeon in the Pamunkey River (Hager *et al.,* 2014; Kahn *et al.,* 2014). The York River is 55 kilometers long from its mouth, after which it divides into two major tributaries, the Mattaponi and the Pamunkey Rivers (Bushnoe *et al.,* 2005; Friedrichs, 2009; Reay, 2009). The

transition to freshwater typically occurs within these tributaries (Friedrichs, 2009; Reay, 2009). Bushnoe *et al.* (2005) previously reviewed available information on substrate, salinity, and dissolved oxygen for the Pamunkey and Mattaponi rivers and concluded that Atlantic sturgeon spawning habitat was likely present in each river.

For the Susquehanna and Potomac Rivers, the 1998 and 2007 Atlantic sturgeon status reviews provided the information for presence of Atlantic sturgeon in the rivers, including: (1) Historical newspaper accounts of large sturgeon in the lower reaches of the Susquehanna River during the period 1765 to 1895; (2) personal communication of a limited but more recent sturgeon fishery on the Susquehanna near Perryville, Maryland (R. St. Pierre, USFWS, personal comm.); (3) several sightings of sturgeon near the Susquehanna River mouth during the period 1978 to 1987; (4) a historical fishery for Atlantic sturgeon in the Potomac; and (5) observations of a large mature female Atlantic sturgeon in the Potomac River in 1970 ((NMFS and USFWS, 1998; NMFS and USFWS, 2007). Since the commercial fisheries targeted spawning sturgeon, historical captures of sturgeon in the Susquehanna and Potomac Rivers, as well as the presence of the features necessary to support reproduction and recruitment in each river, indicate that there is the potential for spawning to occur in both the Susquehanna and Potomac.

The 1998 and 2007 status reviews for Atlantic sturgeon described information for presence of Atlantic sturgeon in the Rappahannock River, including commercial landings data from the 1880s and incidental captures reported to the U.S. Fish and Wildlife Service Reward Program in the 1990's (NMFS and USFWS 1998; NMFS and USFWS, 2007). Most recently, in September 2015, researchers captured a male Atlantic sturgeon in spawning condition in the Rappahannock River (M. Balazik, Virginia Commonwealth University, pers. comm.). The historical and contemporary accounts of Atlantic sturgeon in the Rappahannock River (NMFS and USFWS, 1998; ASSRT, 2007), as well as the presence of the features necessary to support reproduction and recruitment in this river indicate that there is the potential for spawning to occur in the Rappahannock.

The condition of Atlantic sturgeon captured in the late summer-fall in the James River (*e.g.,* adults expressing milt or eggs), the rapid upstream movement of adults in the fall, and the aggregation of adults relative to the salt wedge provide evidence of fall spawning in the James River (NMFS and USFWS; 2007; Hager, 2011; Balazik *et al.,* 2012). Similar evidence was found for adult sturgeon captured in the Pamunkey River in mid to late August 2013, and adult sturgeon captured in Marshyhope Creek in late August 2014 (Maryland DNR, web article, September 17, 2014). All of these instances provide evidence that Chesapeake DPS Atlantic sturgeon spawn in the fall.

The genetics information for Atlantic sturgeon captured in six specific areas of the marine range demonstrates that Atlantic sturgeon belonging to the Chesapeake Bay DPS were present in at least four of the sampled areas: The Connecticut River, Long Island Sound, the Atlantic Ocean off of Rockaway, New York, and the Atlantic Ocean off of Delaware Bay. The DPS comprised approximately 5 percent to 21 percent of the Atlantic sturgeon sampled in these areas (Waldman *et al.,* 2013; O'Leary *et al.,* 2014; Wirgin *et al.,* 2015a). The Chesapeake Bay DPS was not detected in the relatively small number of samples collected from Atlantic sturgeon captured in the winter off of North Carolina (Laney *et al.,* 2007), and comprised no more that 1 percent of Atlantic sturgeon sampled in the Minas Basin in the summer (Wirgin *et al.,* 2012). The results suggest that Chesapeake Bay DPS Atlantic sturgeon travel great distances, including into Canadian waters, but occur most predominantly in marine waters of the New York and Mid-Atlantic Bight.

Geographical Area Occupied by Each DPS

Consistent with our past practice, we interpret ''geographical area occupied'' for critical habitat designations to mean the range of the listed entity (*e.g.,* species, subspecies or DPS) at the time of listing (45 FR 13011; February 27, 1980). In February 2016, NMFS and the USFWS published a joint final rulemaking that included a regulatory definition for ''geographical area occupied'' (81 FR 7417, February 11, 2016). The new definition provides clarity to the critical habitat designation process, but does not change how we approached critical habitat designations.

The marine range of the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs, including coastal bays and estuaries, is Hamilton Inlet, Labrador, Canada, to Cape Canaveral, Florida (77 FR 5880, February 6, 2012). The listing rule also identified the known spawning rivers for each of these DPSs, but it did not describe the specific in-river range for any of the DPSs. Therefore, areas were considered to be within the range of a DPS if there were: (1) Presence of Atlantic sturgeon belonging to that DPS in that area; (2) presence of Atlantic sturgeon in a similar area within the boundaries of the otherwise established DPSs range; and, for rivers, (3) all areas downstream of the farthest known upstream location of Atlantic sturgeon belonging to that DPS in that river. Areas were identified as unoccupied by a DPS if the area was completely inaccessible to Atlantic sturgeon.

Genetic analyses indicate the presence of Atlantic sturgeon belonging to the Gulf of Maine, New York Bight, and Chesapeake Bay DPS in many parts of the marine range including the Bay of Fundy, the Connecticut River Estuary, Long Island Sound, the New York Bight, and coastal waters from Delaware to North Carolina (Waldman *et al.,* 1996; Laney *et al.,* 2007; Dunton *et al.,* 2010; Dunton *et al.,* 2012; Wirgin *et al.,* 2012; Waldman *et al.,* 2013; O'Leary *et al.,* 2014; Wirgin *et al.,* 2015a). In addition, tracking and tagging studies indicate the presence of Atlantic sturgeon throughout the marine range (Vladykov and Greeley, 1963; Holland and Yelverton 1973; Dovel and Berggren, 1983; Gilbert 1989; Savoy and Pacileo, 2003; Stein *et al.* 2004; Eyler, 2006; Laney *et al.,* 2007; Dunton *et al.,* 2010; Dunton *et al.,* 2012; Oliver *et al.,* 2013). Based on our review of the literature and other available data, we concluded that Atlantic sturgeon: Typically occur in marine waters within the 50 m depth contour, but also occur in deeper marine waters; occur in many coastal sounds and bays from the Maine/Canada border to Cape Canaveral, Florida, regardless of whether or not the sound or bay is part of an estuary of a known spawning river; and, occur in tidally-affected rivers along the coast.

The ''geographical area occupied'' is only aquatic habitat (*e.g.,* below the high tide line). In addition, certain natural features (*e.g.,* large waterfalls) and dams are impassable barriers to sturgeon. Therefore, we consider those parts of the range that are currently inaccessible to Atlantic sturgeon due to dams, other manmade structures, or natural features to be unoccupied, and not part of the geographic area occupied by the DPS at the time of listing.

Physical and Biological Features Essential to Conservation That May Require Special Management Considerations or Protections

As described above, critical habitat is defined as those specific areas in the geographical area occupied that (1) have the physical or biological features essential to the conservation of the

listed entity, and (2) may require special management considerations or protections. Each of these two prongs must be met when designating critical habitat within the occupied geographical area. If we identify physical or biological features that are essential to the conservation of the listed entity, but there are no special management considerations or protections that may be required, then we do not designate critical habitat based on those physical or biological features. Finally, we do not designate critical habitat based solely on the presence of the listed entity. The presence of the listed entity can, however, help us identify the essential physical or biological features. For example, repeated use of an area by the listed entity suggests the presence of essential physical or biological features.

We determined that a key conservation objective for the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs is to increase the abundance of each DPS by facilitating increased successful reproduction and recruitment to the marine environment. We know that each DPS is at a low level of abundance and successful reproduction and recruitment, which are essential to the conservation of the species, occur in a limited number of rivers for each DPS. Since the listing, additional rivers have either been confirmed to support spawning, or are suspected of supporting spawning for the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs (Wippelhauser, 2012; Hager *et al.,* 2014; Kahn *et al.,* 2014; T. Savoy, CT DEEP, pers. comm.). Nevertheless, the number of known spawning rivers for each DPS is still limited compared to the four to six rivers for each DPS in which spawning occurred in the past (NMFS and USFWS, 2007). Further, we do not know how successful reproduction is for any of the known spawning rivers (*e.g.,* we do not have counts of the number of juveniles of each DPS or spawning river that recruit to the marine environment, compared to the number of fertilized eggs that hatched).

The term ''physical or biological features'' is defined as the features that support the life-history needs of the species, including, but not limited to, water characteristics, soil type, geological features, sites, prey, vegetation, symbiotic species or other features. A feature may be a single habitat characteristic or a more complex combination of habitat characteristics. Features may include habitat characteristics that support ephemeral or dynamic habitat conditions. Features may also be expressed in terms of relating to principles of conservation biology, such as patch size, distribution distances, and connectivity (50 CFR 424.02). The term ''special management considerations or protection'' is defined as the methods or procedures useful in protecting the physical or biological features essential to the conservation of the listed species (50 CFR 424.02). In addition, the term ''may'' in the phrase ''may require special management considerations or protections'' was the focus of two cases in Federal district courts that ruled that features can meet this provision because of either a present requirement for special management considerations or protection or possible future requirements (see *Center for Biol. Diversity* v. *Norton,* 240 F. Supp. 2d 1090 (D. Ariz. 2003); *Cape Hatteras Access Preservation Alliance* v. *DOI,* 344 F. Supp. 108 (D.D.C. 2004)).

Atlantic sturgeon are estuarine-dependent, anadromous fish that require specific estuarine habitat for successful reproduction and recruitment. Adults require unimpeded access (*e.g.,* suitable water depth to be able to move freely and a lack of obstructions) to and from all spawning sites. In addition, spawning males require unimpeded access to search for spawning females throughout the spawning season. Fertilized eggs require freshwater, hard, clean substrate to adhere to, and flowing water that helps to disperse and aerate the eggs. Larval Atlantic sturgeon (less than 4 weeks old and less than 30 mm total length), assumed to inhabit the same freshwater areas where they were spawned, require hard substrate with interstitial spaces that provide refuge from predators. The relatively lengthy juvenile phase requires developing Atlantic sturgeon have access to aquatic habitat with a gradual downstream salinity gradient of 0.5 to 30 parts per thousand (*e.g.,* inclusive of oligohaline, mesohaline, and polyhaline waters), and areas of soft substrate that provide an environment for benthic prey necessary for juvenile foraging. Last, Atlantic sturgeon juvenile rearing habitat, habitat for spawning adults and subadults, and larval habitat must have sufficient levels of dissolved oxygen both before the fish are present (to enable fish to utilize the habitat when they migrate to it) and when fish arrive since Atlantic sturgeon are particularly sensitive to low oxygen levels and, similar to other fish species, will avoid habitats that are hypoxic (*i.e.,* have insufficient oxygen) (Secor and Niklitschek, 2001; Breitburg, 2002; EPA, 2003). Oxygen concentrations that fish avoid are approximately equal to concentrations that reduce their growth rate, even when at concentration levels higher than necessary for their survival (Breitburg 2002; EPA, 2003). Lab studies have shown that a dissolved oxygen concentration of about 6.5 mg/L supports growth and habitat use of juvenile Atlantic sturgeon less than two years old (Niklitschek and Secor, 2009; Niklitschek and Secor, 2010; Allen *et al.,* 2014). The complex relationship between dissolved oxygen, temperature, and salinity, as well as other factors that can affect dissolved oxygen levels in estuaries (*e.g.,* water depth and mixing), makes it difficult for us to specify water quality parameters necessary to support Atlantic sturgeon use of reproduction and recruitment habitat. The EPA's guidance on ambient water quality criteria for dissolved oxygen for the Chesapeake Bay recommends dissolved oxygen concentrations of greater than 6 mg/L, based on a seven-day mean, in tidal habitats with salinity of 0 to 0.5 parts per thousand for the growth of larval and juvenile tidal-fresh resident fish, including Atlantic sturgeon (EPA, 2003). This concentration has been shown to increase the likelihood of habitat use by Atlantic sturgeon juveniles less than two years old (Niklitschek and Secor 2009; Niklitscheck and Secor, 2010). Since these early age groups are more sensitive to dissolved oxygen levels than older, larger juveniles, subadults, and adults, a dissolved oxygen concentration of 6 mg/L supports habitat use by all age groups. Therefore, the physical features essential for reproduction and recruitment are:

- Hard bottom substrate (*e.g.,* rock, cobble, gravel, limestone, boulder, etc.) in low salinity waters (*i.e.,* 0.0 to 0.5 parts per thousand range) for settlement of fertilized eggs, refuge, growth, and development of early life stages;
- Aquatic habitat with a gradual downstream salinity gradient of 0.5 to 30 parts per thousand and soft substrate (*e.g.,* sand, mud) downstream of spawning sites for juvenile foraging and physiological development;
- Water of appropriate depth and absent physical barriers to passage (*e.g.,* locks, dams, reservoirs, gear, etc.) between the river mouth and spawning sites necessary to support: (1) Unimpeded movement of adults to and from spawning sites; (2) seasonal and physiologically dependent movement of juvenile Atlantic sturgeon to appropriate salinity zones within the river estuary; and (3) staging, resting, or holding of subadults or spawning condition adults. Water depths in main river channels must also be deep enough (*e.g.,* ≥1.2 m) to ensure

continuous flow in the main channel at all times when any sturgeon life stage would be in the river; and

• Water, especially in the bottom meter of the water column, with the temperature, salinity, and oxygen values that, combined, support: (1) Spawning; (2) annual and interannual adult, subadult, larval, and juvenile survival; and (3) larval, juvenile, and subadult growth, development, and recruitment (*e.g.,* 13 °C to 26 °C for spawning habitat and no more than 30° C for juvenile rearing habitat, and 6 mg/L dissolved oxygen for juvenile rearing habitat).

The specific oxygen concentration and temperature values are provided as examples and guidance to inform the combinations of temperature, salinity, and oxygen that support successful reproduction and recruitment. Temperature, salinity, and oxygen are ephemeral by nature, fluctuating daily and seasonally in estuaries. Specific areas designated as critical habitat based on the four features are not expected to have water with oxygen concentration of 6 mg/L and the specific water temperatures at all times and within all parts of the area.

Barriers (*e.g.,* dams) and in-water structures (*e.g.,* tidal turbines) in rivers used by Atlantic sturgeon can damage or destroy bottom habitat needed for spawning and rearing of juveniles, as well as restrict movement of adults to and from spawning grounds, and prevent juveniles from accessing the full range of salinity exposure in the natal estuary. Land development, as well as commercial and recreational activities on the river, contribute to the persistence of nutrient loading and sediment deposition, which negatively affect the water quality necessary for successful spawning and recruitment. For example, nutrient loading can result in unnaturally enhanced growth of aquatic vegetation or phytoplankton and algal blooms, which disrupt normal functioning of the ecosystem, causing a variety of problems, including a lack of sufficient levels of oxygen that fish, such as Atlantic sturgeon, need to survive. Excessive sediment deposition reduces Atlantic sturgeon egg adherence on hard spawning substrate and reduces the interstitial spaces used by larvae for refuge from predators. Dredging to remove sediment build-up or to facilitate vessel traffic may remove or alter hard substrate that is necessary for egg adherence and as refuge for larvae, and may change the water depth, resulting in shifts in the salt wedge within the estuary or change other characteristics of the water quality (*e.g.,* temperature, dissolved oxygen) necessary for the developing eggs, larvae, and juveniles.

The features essential for successful Atlantic sturgeon reproduction may also require special management considerations or protection as a result of global climate change. Many communities and commercial facilities withdraw water from the rivers containing the features essential to Atlantic sturgeon reproduction. Water withdrawals during times of low flow can affect the position of the salt wedge, impact the water depth necessary for successful sturgeon reproduction, and affect water flow. Because dissolved oxygen concentrations increase wherever the water flow becomes turbulent, decreasing flow can result in decreases in dissolved oxygen concentrations. Attempts to control water during very high flows (*e.g.,* spilling water from dams upriver of Atlantic sturgeon spawning and rearing habitat) can create barriers (*e.g.,* from debris) to upstream and downstream passage of adults and juveniles. Therefore, we concluded that the features essential to the conservation of each of the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs may require special management considerations or protections.

For the reasons provided above, we have concluded that the habitat features that support successful spawning and recruitment of Atlantic sturgeon juveniles to the marine environment are: Essential to the conservation of the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs; within the geographical area occupied by each DPS; and, may require special management considerations or protection. As such, we used these features to identify specific areas as potential critical habitat for the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs of Atlantic sturgeon.

We determined another conservation objective for the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs is to increase the abundance of each DPS by facilitating increased survival of subadults and adults. The ability of subadults to find food is necessary for continued survival, growth, and physiological development to the adult life stage. Likewise, given that Atlantic sturgeon mature late and do not necessarily spawn annually, increased adult survival would improve the chances that adult Atlantic sturgeon spawn more than once.

We considered all studies that have collected Atlantic sturgeon stomach contents. All of the prey species identified are indicative of benthic foraging, and all of the identified prey are found in soft substrates. However, different types of prey were consumed, and different soft substrates were identified for the areas where Atlantic sturgeon were foraging (Bigelow and Schroeder, 1953; Johnson *et al.,* 1997; NMFS and USFWS, 2007; Guilbard *et al.,* 2007; Savoy, 2007; Dzaugis, 2013; McLean *et al.,* 2013). No data are available to differentiate areas of preferred prey items or higher prey abundance within or across estuaries. Adding to our uncertainty of the essential features that support successful foraging for growth and survival of subadults and adults, Atlantic sturgeon move between estuarine environments in the spring through fall, and can occur in estuarine environments during the winter as well (Savoy and Pacileo, 2003; Simpson, 2008; Collins *et al.,* 2000; Balazik *et al.,* 2012). For example, subadult Atlantic sturgeon spawned in one riverine system may utilize multiple estuaries for foraging and growth, including those not directly connected to their natal river. Due to the paucity of data on their estuarine needs and specific habitat or resource utilization, we could not at this time identify the physical or biological features of estuaries for foraging and growth that are essential to the conservation of the Gulf of Maine, New York Bight or Chesapeake Bay DPSs.

Subadult and adult Atlantic sturgeon use marine waters to traverse between estuarine areas, particularly within the 50 meter depth contour. In addition, several congregations of Atlantic sturgeon in the marine environment are known to occur. However, the exact importance of those areas is not known, nor whether Atlantic sturgeon are drawn to particular areas based on physical or biological features of the habitat. Therefore, while we can identify general movement patterns and behavior in the marine environment (*e.g.,* aggregating behavior) that may contribute to subadult and adult survival, due to the paucity of data on each DPSs' needs and specific habitat utilization in the marine environment, we could not at this time identify physical or biological features in the marine environment essential to conservation of the Gulf of Maine, New York Bight or Chesapeake Bay DPSs.

Unoccupied Areas

As mentioned, the definition of critical habitat includes areas outside of the geographical area occupied by the listed entity (*i.e.,* unoccupied areas) at the time it is listed if these areas are essential to the conservation of the listed entity. We do not need to identify

physical or biological features requiring special management consideration or protection within the unoccupied areas in order to designate unoccupied areas as critical habitat. However, the area must be essential to the conservation of the listed species.

There are riverine areas outside of the geographical area occupied by the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs as a result of dams and natural falls. We considered whether these unoccupied areas were essential to the conservation of the respective DPS and concluded that they were not essential because nearly all known historical habitat is accessible to the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs (NMFS and USFWS, 2007; 77 FR 5880, February 6, 2012).

Critical Habitat Units

Critical habitat must be defined by specific limits using reference points and lines as found on standard topographic maps of the area, and cannot use ephemeral reference points (50 CFR 424.12(c)). When several habitats, each satisfying the requirements for designation as critical habitat, are located in proximity to one another, an inclusive area may be designated as critical habitat (50 CFR 424.12(d)).

The habitat containing the physical features essential to the conservation of the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs and that may require special management or protection is aquatic habitat of main stem rivers flowing into a coastal estuary. We are designating only occupied habitat. Atlantic sturgeon typically cannot pass dams or natural features such as waterfalls and rapids found at the fall line of rivers from Maine through Virginia. Therefore, we are defining each critical habitat unit by an upriver landmark on the main stem river (*e.g.,* the most downriver dam or a bridge immediately downriver of the fall line of that river) and all waters of the main stem downriver of that landmark to where the waters empty at its mouth into an identified water body.

Identified Critical Habitat for Each DPS

Based on the physical features that we identified as essential for successful spawning and recruitment and the best available information, we identified five critical habitat units for the Gulf of Maine DPS as follows: (1) Penobscot River main stem from the Milford Dam downstream for 53 river kilometers to where the main stem river drainage discharges at its mouth into Penobscot Bay; (2) Kennebec River main stem from the Ticonic Falls/Lockwood Dam downstream for 103 river kilometers to where the main stem river discharges at its mouth into the Atlantic Ocean; (3) Androscoggin River main stem from the Brunswick Dam downstream for 10 river kilometers to where the main stem river drainage discharges into Merrymeeting Bay; (4) Piscataqua River from its confluence with the Salmon Falls and Cocheco rivers downstream for 19 river kilometers to where the main stem river discharges at its mouth into the Atlantic Ocean as well as the waters of the Cocheco River from its confluence with the Piscataqua River and upstream 5 river kilometers to the Cocheco Falls Dam, and waters of the Salmon Falls River from its confluence with the Piscataqua River and upstream 6 river kilometers to the Route 4 Dam; and (5) Merrimack River from the Essex Dam (also known as the Lawrence Dam) downstream for 48 river kilometers to where the main stem river discharges at its mouth into the Atlantic Ocean. In total, these designations encompass approximately 244 kilometers (152 miles) of aquatic habitat.

The physical features essential for successful reproduction and recruitment may require special management or protection in these specific areas because of potential adverse impacts from activities such as the operation of dams, dredging operations, other construction (*e.g.,* bridge construction or repair), and impacts from development along the river that includes wastewater treatment and water withdrawals (Ceasar *et al.,* 1976; Short, 1992; Kistner and Pettigrew, 2001; Odell *et al.,* 2006; NMFS and USFWS, 2007; Mohlar, 2008; Moore and Reblin, 2008; McFarlane, 2012).

We identified four critical habitat units for the New York Bight DPS: (1) Connecticut River from the Holyoke Dam downstream for 140 river kilometers to where the main stem river discharges at its mouth into Long Island Sound; (2) Housatonic River from the Derby Dam downstream for 24 river kilometers to where the main stem discharges at its mouth into Long Island Sound; (3) Hudson River from the Troy Lock and Dam (also known as the Federal Dam) downstream for 246 river kilometers to where the main stem river discharges at its mouth into New York City Harbor; and (4) Delaware River from the crossing of the Trenton-Morrisville Route 1 Toll Bridge, downstream for 137 river kilometers to where the main stem river discharges at its mouth into Delaware Bay. In total, these designations encompass approximately 547 kilometers (340 miles) of aquatic habitat.

The physical features that are essential to successful reproduction and recruitment may require special management or protection in these specific areas because of potential adverse impacts from, for example, the operation of dams, dredging operations, other construction (*e.g.,* bridge construction or repair), and impacts from development along the river that includes wastewater treatment and water withdrawals (Hammerson, 2004; NMFS and USFWS, 2007; Henshaw, 2011; Breece *et al.,* 2013; 78 FR 1145).

We identified five critical habitat units for the Chesapeake Bay DPS: (1) Susquehanna River from the Conowingo Dam downstream for 16 river kilometers to where the main stem river discharges at its mouth into the Chesapeake Bay; (2) Potomac River from the Little Falls Dam downstream for 189 river kilometers to where the main stem river discharges at its mouth into the Chesapeake Bay; (3) Rappahannock River from the U.S. Highway 1 Bridge, downstream for 172 river kilometers to where the river discharges at its mouth into the Chesapeake Bay; (4) York River from its confluence with the Mattaponi and Pamunkey rivers downstream to where the main stem river discharges at its mouth into the Chesapeake Bay as well as the waters of the Mattaponi River from its confluence with the York River and upstream to the Virginia State Route 360 Bridge crossing of the Mattaponi River, and waters of the Pamunkey River from its confluence with the York River and upstream to the Virginia State Route 360 Bridge crossing of the Pamunkey River for a total of 192 kilometers of aquatic habitat, (5) James River from Boshers Dam downstream for 160 river kilometers to where the main stem river discharges at its mouth into the Chesapeake Bay at Hampton Roads. In total, these designations encompass approximately 729 kilometers (453 miles) of aquatic habitat.

The physical features essential for successful spawning and recruitment may require special management or protection in these specific areas because of potential adverse impacts from activities such as the operation of dams, dredging operations, other construction (*e.g.,* bridge construction or repair), and impacts from development along the river that includes wastewater treatment and water withdrawals (Bushnoe *et al.,* 2005; CBF, 2006; NMFS and USFWS, 2007; Friedrichs, 2009; Reay, 2009; Austin, 2012; SRBC, 2013; Potomac Conservancy, 2014).

Military Lands

Section 4(a)(3)(B) of the ESA prohibits designating as critical habitat any lands

or other geographical areas owned or controlled by the Department of Defense, or designated for its use, that are subject to an INRMP prepared under section 101 of the Sikes Act (16 U.S.C. 670a), if the Secretary determines in writing that such a plan provides a benefit to the species for which critical habitat is proposed for designation.

In February 2014, we requested information from the Department of Defense to assist in our analysis. Specifically, we asked for a list of facilities that occur within the potential critical habitat areas and available INRMPs for those facilities. There are a limited number of facilities with INRMPs that overlap with the potential critical habitat areas for the New York Bight and Chesapeake Bay DPSs. The Department of the Army identified the U.S. Military Academy—West Point, New York as a facility that overlapped with the Hudson River Critical Habitat Unit of the New York Bight DPS. The Department of the Air Force identified Joint Base Langley—Eustis, Virginia as a facility that overlapped with the James River Critical Habitat Unit of the Chesapeake Bay DPS. The Navy identified Marine Corps Base Quantico, Virginia, and Naval Support Facility Dahlgren as facilities that overlapped with the Potomac River Critical Habitat Unit, and identified Naval Weapons Station Yorktown, a complex of three facilities, as facilities that overlapped with the York River Critical Habitat Unit of the Chesapeake Bay DPS. We reviewed the INRMP for each facility and concluded that each INRMP provides a benefit to Atlantic sturgeon and its habitat belonging to the respective DPS. Therefore, in accordance with section 4(a)(3)(B) of the ESA, the particular areas of each facility with an approved INRMP that overlaps with a proposed critical habitat unit will not be part of the designated critical habitat unit. No Department of Defense facilities were identified as overlapping with potential critical habitat areas of the Gulf of Maine DPS.

Economic, National Security, and Other Relevant Impacts

The administrative cost of conducting ESA section 7 consultations was determined to be the primary source of economic impacts as a result of designating critical habitat for the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs. We used the consultation record over the past 10 years to identify the types of Federal activities that may affect proposed Atlantic sturgeon critical habitat if implemented in the future. We also requested that federal action agencies provide us with information on future consultations if we omitted any future actions likely to affect the proposed critical habitat. Of the types of past consultations that ''may affect'' some or all of the essential features in any unit of proposed critical habitat, we determined that no activities would solely affect the essential features. That is, all categories of the activities identified have potential routes of adverse effects to both Atlantic or shortnose sturgeon and the critical habitat.

There were no section 7 consultations for activities in the Housatonic River over the past ten years. Activities that have occurred did not trigger the need for section 7 consultation for a listed ESA species under NMFS jurisdiction (*e.g.,* shortnose sturgeon), and there is no critical habitat designated in the Housatonic River for any other ESA-listed species under NMFS jurisdiction. Based on this information, the projected administrative cost of section 7 consultations likely to occur over the next ten years as a result of designating the Housatonic River Critical Habitat Unit was zero. However, the potential Housatonic River Critical Habitat Unit contains a federal navigation channel as well as a major highway bridge. Channel dredging, bridge maintenance, and bridge replacement are activities likely to trigger section 7 consultation if critical habitat for Atlantic sturgeon are designated in the Housatonic River. We expect the federal navigation channel will require periodic dredging. Bridge replacement has recently occurred (78 FR 1145; January 8, 2013), but we expect that routine maintenance will be required within the next 10 years. Therefore, the administrative section 7 costs as a result of designating the Housatonic River Critical Habitat Unit are unlikely to be zero. Based on the past history and the likely need for maintenance, we anticipate up to three formal consultations will occur over the next 10 years for federal agency actions that affect the features of the Housatonic River Critical Habitat Unit. However, consultation would also assess whether the proposed actions may affect one or more of the Atlantic sturgeon DPSs. Therefore, no incremental administrative impacts are anticipated as a result of designating critical habitat in the Housatonic River.

Nine nationwide consultations with EPA are also expected to occur within the next 10 years. These consultations will involve all listed species and designated critical habitat under NMFS's jurisdiction, and thus costs attributable solely to this proposed rule are expected to be very small. To be conservative, we added nine consultations to each critical habitat unit, and nine to each DPS's total number of consultations. We spread the costs of these consultations ($5,080 each) evenly across all critical habitat units included in this proposed rule and the companion proposed rule to designate critical habitat for the Carolina and South Atlantic DPSs. This resulted in a total cost of $1,474.84 per critical habitat unit.

We cannot be certain that the numbers of informal and formal consultations involving Atlantic sturgeon critical habitat in the future will be exactly the same as the number that would have occurred during the past ten years if critical habitat was designated at the time. We also have no information about the scope, methods, exact location or timing of future actions, which are key factors for determining whether an action may adversely affect critical habitat, which essential features may be affected, and whether the action may also affect Atlantic sturgeon. Similar to economic analyses for other NMFS critical habitat designations (*e.g.,* for Gulf sturgeon (IEc, 2003), and for the southern DPS of green sturgeon (IEc, 2009)), uncertainty was addressed by presenting three cost estimate scenarios: Consultations of low, medium, or high complexity. These cost estimate scenarios help to demonstrate how changes in the number of informal and formal consultations and differing percentages of coextensive and incremental consultations could influence the cost projections. The scenarios are: (1) Low administrative section 7 cost estimates, which are based on the assumption that the numbers of informal and formal consultations in the future will be the same as they were in the past, and that half of the consultations will be co-extensive (*i.e.,* initiated as a result of listing and critical habitat designation) and half will be incremental (*i.e.,* initiated as a result of the critical habitat designation); (2) medium administrative section 7 cost estimates, which are based on the assumption that the numbers of informal and formal consultations in the future will be the same as they were in the past, and that they will all be incremental; and, (3) high administrative section 7 cost estimates, which are based on the assumption that all consultations in the next ten years will be formal and incremental.

The regulatory baseline conditions, including the listing of the Atlantic sturgeon, will greatly affect the number of incremental consultations. Specifically, the number of incremental

consultations will likely be relatively small, because Atlantic sturgeon of a given life stage are likely to be either directly or indirectly affected by the federal activities projected to occur within the proposed critical habitat. In general, we expect Atlantic sturgeon of a given life stage could occur year round in the particular areas proposed for designation. Therefore, the section 7 consultations we anticipate to occur will need to evaluate potential effects to both the Atlantic sturgeon DPS present in the area and the critical habitat since impacts will be co-extensive. Because the high and medium administrative costs estimates both assumed that all project consultations would be incremental, we consider the low administrative cost estimates to be the most realistic costs estimates.

Based on the Draft Economic Impacts Analysis, the projected low administrative costs of designating all of the Gulf of Maine DPS critical habitat units total $816,574.20. The individual low costs for the five critical habitat units range from $54,274.84 for the Piscataqua River Critical Habitat Unit to $305,874.84 for the Kennebec River Critical Habitat Unit. The medium and high administrative costs for the Gulf of Maine DPS critical habitat units total $1,625,774.20 and $2,707,374.20, respectively. The projected low administrative costs for the New York Bight DPS critical habitat units total $1,418,299.301. The individual low costs for the four critical habitat units range from 31,474.84 for the Housatonic River Critical Habitat Unit to $752,674.84 for the Hudson River Critical Habitat Unit. The medium and high administrative costs for the New York Bight DPS critical habitat units total $2,830,699.30 and $5,565,899.30, respectively. The projected low administrative costs of designating all of the Chesapeake Bay DPS critical habitat units total $524,974.20. The individual low costs for the five critical habitat units range from $45,474.84 for the Rappahannock River Critical habitat Unit to $276,274.84 for the Potomac River Critical Habitat Unit. The medium and high administrative costs for the Chesapeake Bay DPS critical habitat units total $1,042,574.20 and $1,947,374.20, respectively.

Currently, there is no information indicating that any of the section 7 consultations expected to result from the critical habitat designations will result in project modifications. However, there is potential that section 7 consultation stemming from these designations may, sometime in the future, result in project modifications and associated costs. Therefore, for illustrative purposes, the draft economic analysis similarly presents low, medium, and high cost estimate scenarios for project modifications that may need to be made to specific projects as a result of section 7 consultation. The same caveats noted above apply to costs associated with modifications, *i.e.,* while the three broad categories of costs based on broad assumptions provide a potential range of costs, in most instances, modifications will occur as a result of coextensive impacts. It is extremely unlikely that modifications that would be required to avoid destruction or adverse modification of critical habitat would not also be required because of adverse effects to the species. Details of the cost projections and the number of past formal and informal consultations for each critical habitat unit of the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs are provided in the draft economic analysis and the Draft Biological Information and 4(b)(2) Source Document.

The Navy expressed concern that designating the Kennebec River and Piscataqua River critical habitat units, including the area of the Kennebec River adjacent to the location of Bath Iron Works, a private shipbuilder for the Navy, and the area of the Piscataqua River surrounding Portsmouth Naval Shipyard on Seavey Island at the mouth of the Piscataqua River, will impact the national security. The Navy described the activities likely to occur in one or both of the particular areas as: Flooding and dewatering dry docks, updating and maintaining pier structures including pile driving, and dredging activities to maintain proper channel and berthing depths.

We considered the impact these activities are likely to have on the physical features. The physical features of critical habitat in the areas requested for exclusion are salinity suitable for older juveniles, open passage for juveniles suitably developed to leave the natal river, open passage for adults traveling through the area to and from spawning areas, open passage for subadults traveling through the area, and soft substrate. Withdrawing water from the river to flood dry docks and returning that water to the river would not change the salinity or substrate in the river and would have no impact on open passage. Maintaining and/or updating the pier structures is not likely to adversely affect salinity, but may affect open passage and substrate (*e.g.,* placing more pier structures in the area, altering the substrate to make it more suitable for the pier structure). Similarly, dredging activities to maintain proper channel and berthing depths may affect (*e.g.,* remove) the substrate that supports foraging, and change the depth affecting salinity (*e.g.,* as a result of changes to mixing in the estuarine river or the extent of saltwater intrusion). However, dredging and maintaining and/or updating the pier structures also may affect the species. For example, construction to maintain and/or update pier structures can produce sounds that disrupt normal behaviors such as sturgeon foraging, staging, and spawning. Dredging may injure or kill sturgeon that come into contact with the gear (*e.g.,* older juveniles passing through as they leave the natal river, adults traveling through the area to and from spawning areas, and subadults traveling through the area). Therefore, we determined that any resulting consultations will likely be coextensive.

The Navy expressed concern that designating the Delaware River critical habitat unit in the area surrounding the Philadelphia Naval Yard Annex (three specific areas), will impact national security. The Navy described the activities likely to occur in the particular areas as: updating and maintaining pier structures including pile driving, dredging activities to maintain proper channel and berthing depths, barge loading and unloading, and fuel unloading.

We considered the impact these activities are likely to have on the physical features. The physical features of critical habitat in the areas requested for exclusion are salinity suitable for younger juveniles, open passage for juveniles to access all parts of the estuary needed for development, open passage for adults traveling through the area to and from spawning areas, and soft substrate. The activities described by the Navy may affect salinity, open passage, and substrate. Maintaining and/or updating the pier structures may affect open passage and substrate (*e.g.,* placing more pier structures in the area, and altering the substrate to make it more suitable for the pier structure). Dredging activities to maintain proper channel and berthing depths may affect (*e.g.,* remove) the substrate that supports foraging and spawning. Changing the depth could affect salinity (*e.g.,* as a result of changes to mixing in the estuarine river or the extent of saltwater intrusion). Barge loading and unloading, and fuel unloading may affect water quality (*e.g.,* as a result of spills). Maintaining and/or updating the pier structures, dredging, and barge traffic also may affect the species. For example, maintaining and/or updating pier structures can produce sounds that

harass sturgeon and disrupt normal behaviors such as foraging, staging, and spawning. Dredging may result in injury or death of sturgeon that come into contact with the gear (*e.g.,* older juveniles passing through as they leave the natal river, adults traveling through the area to and from spawning areas, and subadults traveling through the area). Vessels for fuel deliveries and barge traffic can strike sturgeon resulting in injuries and mortality. Since the activities described by the Navy are also likely to impact the species (*e.g.,* juveniles and spawning adults), we expect consultations will be coextensive.

The Navy also expressed concern that designating the Rappahannock and James River critical habitat units will impact national security. The activities conducted in these areas are in-water training on the Rappahannock, including small boat tactic, amphibious landings, and helicopter rope suspension techniques, and training activities on the lower James River, which include underwater diving and salvage operations, helicopter rope suspension techniques, small boat launch and recovery, high-speed boat tactics training, small boat defense drills, visit, board, search and seizure drills, integrated swimmer defense, submarine maintenance and system upgrades, sonar testing, towing of in-water devices, unmanned vehicle testing, and mine countermeasure testing.

The physical features of critical habitat in the areas requested for exclusion are salinity suitable for older juveniles, open passage for juveniles to access all parts of the estuary needed for development, open passage for adults traveling through the area to and from spawning areas, open passage for subadults traveling through the area, and soft substrate. The described training activities are not likely to adversely affect salinity, but may affect open passage and substrate (*e.g.,* from placement of structures, activities resulting in increased siltation or erosion of substrate). However, the training activities also may affect the species. For example, sonar testing and various in-water testing can produce sounds that harass sturgeon and disrupt normal behaviors such as foraging and staging. Small and large vessel operations can result in vessel strikes to sturgeon. Since the activities described by the Navy are also likely to impact the species (*e.g.,* juveniles, subadults, and adults), we expect consultations will be coextensive.

There are a number of potential beneficial impacts of designating critical habitat that extend beyond the conservation benefits to Atlantic sturgeon. For example, protecting essential features of sturgeon habitat, including preserving water quality and natural flow regimes, will benefit other organisms that are co-located in these areas. Benefits can result from additional protections in the form of project modifications or conservation measures due to section 7 consultations or, conversely, a benefit of excluding an area from designation could be avoiding the costs associated with those protections (78 FR 53058, August 28, 2013). Because it is often difficult to quantify the benefits of designating critical habitat, Executive Order (EO) 12866, Regulatory Planning and Review, provides guidance on assessing costs and benefits. The EO directs Federal agencies to assess all costs and benefits of available regulatory alternatives, and to select those approaches that maximize net benefits.

The designation of critical habitat will provide conservation benefits such as improved education and outreach by informing the public about areas and features important to the conservation of the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs. As stated in the Background, specifying the geographic location of critical habitat facilitates implementation of section 7(a)(1) of the ESA by identifying areas where Federal agencies can focus their conservation programs and use their authorities to further the purposes of the ESA. Designating critical habitat can also help focus the efforts of other conservation partners (*e.g.,* State and local governments, individuals and nongovernmental organizations).

Discretionary Exclusion Analysis

Based on our consideration of impacts above, we are not excluding any particular areas from the critical habitat designation based on economic, national security, or other relevant impacts. Section 4(b)(2) of the ESA provides the Secretary with broad discretion to exclude any area from critical habitat if she determines that the benefits of such exclusion outweigh the benefits of specifying such area as part of the critical habitat, unless it is determined, based on the best scientific and commercial data available, that the failure to designate such area as critical habitat will result in the extinction of the species concerned. The agency has considerable discretion in evaluating the various impacts and determining how the impacts will be considered and weighed in deciding whether to exclude any particular area.

We have analyzed the economic, national security, and other relevant impacts of designating critical habitat. Although we have used the best available information and an approach designed to avoid underestimating economic impacts, many of the potential impacts are speculative and may not occur in the future. Our conservative identification of potential, incremental, economic impacts indicates that any such impacts, if they were to occur, would be very small. Any incremental economic impacts will consist solely of the administrative costs of consultation; no project modifications are projected to be required to address impacts solely to the proposed critical habitat. The Navy requested exclusion of two areas within the Gulf of Maine DPS proposed critical habitat units, three areas within the New York Bight critical habitat units, and two areas within the Chesapeake Bay critical habitat units. As noted above, no impacts to national security are expected as a consequence of the proposed critical habitat. Other relevant impacts include conservation benefits of the designation, both to the species and to society. The designation of critical habitat will provide conservation benefits such as improved education and outreach by informing the public about areas and features important to the conservation of the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs. There are also a number of potential beneficial impacts of designating critical habitat that extend beyond the conservation benefits to Atlantic sturgeon. For example, protecting essential features of sturgeon habitat, including preserving water quality and natural flow regimes, will benefit other organisms that are co-located in these areas. While we cannot quantify nor monetize the benefits, we believe they are not negligible and would be an incremental benefit of this designation. Therefore, we have concluded that there is no basis to exclude any particular area from the proposed critical habitat units.

Activities That May Be Affected

Section 4(b)(8) of the ESA requires that any proposed or final regulation to designate critical habitat describe briefly and evaluate those activities that may adversely modify such habitat or that may be affected by such designation. A wide variety of activities may affect critical habitat and, when carried out, funded, or authorized by a Federal agency, will require an ESA section 7 consultation. Such activities (detailed in the economic analysis) include in-water construction, dredging, bridge, culvert,

and road projects (*e.g.,* for restoration projects), hydropower (unknown capacity), utility lines, sand and gravel mining, and activities requiring National Pollutant Discharge Elimination System permits. Private entities may also be affected by these proposed critical habitat designations if a Federal permit is required, Federal funding is received, or the entity is involved in or receives benefits from a Federal project. These activities will need to be evaluated with respect to their potential to destroy or adversely modify critical habitat. Specifically, as discussed above, activities (dredging, mining, utility lines, in water construction, placement of dams and tidal turbines) may adversely modify the substrate essential feature by removing or altering the substrate. The open passage feature may also be adversely modified by the placement of structures such as dams and tidal turbines. The salinity feature may be adversely affected by activities that impact fresh water input, such as operation of water control structures and water withdrawals, and activities that impact water depth, such as dredging. The water quality feature may be adversely affected by land development, and commercial and recreational activities on rivers may adversely affect the water quality feature by contributing to the persistence of nutrient loading, resulting in decreased dissolved oxygen levels and increased water temperature, and by increasing sediment deposition, which reduces Atlantic sturgeon egg adherence on hard spawning substrate and reduces the interstitial spaces used by larvae for refuge from predators. Dredging to remove sediment build-up or to facilitate vessel traffic may remove or alter the hard substrate that is necessary for egg adherence and as refuge for larvae, and may change the water depth, resulting in shifts in the salt wedge within the estuary or changes to other characteristics of the water quality (*e.g.,* temperature, dissolved oxygen) necessary for the developing eggs, larvae, and juveniles. These activities would require ESA section 7 consultation when they are implemented, funded, or carried out by a federal agency.

Questions regarding whether specific activities will constitute destruction or adverse modification of critical habitat should be directed to NMFS (see **ADDRESSES** and **FOR FURTHER INFORMATION CONTACT**).

Public Comments Solicited

We request that interested persons submit comments, information, and suggestions concerning this proposed rule during the comment period (see **DATES**). We are soliciting comments or suggestions from the public, other concerned governments and agencies, the scientific community, industry, or any other interested party concerning this proposed rule, including any foreseeable economic, national security, or other relevant impact resulting from the proposed designations. You may submit your comments and materials concerning this proposal by any one of several methods (see **ADDRESSES**). Copies of the proposed rule and supporting documentation can be found on the NMFS Greater Atlantic Region Web site at *www.greateratlantic.fisheries.noaa.gov/.* We will consider all comments pertaining to this designation received during the comment period in preparing the final rule. Accordingly, the final designation may differ from this proposal.

Information Quality Act and Peer Review

The data and analyses supporting this proposed action have undergone a pre-dissemination review and have been determined to be in compliance with applicable information quality guidelines implementing the Information Quality Act (IQA) (Section 515 of Pub. L. 106–554). On July 1, 1994, a joint USFWS/NMFS policy for peer review was issued stating that the Services would solicit independent peer review to ensure the best biological and commercial data is used in the development of rulemaking actions and draft recovery plans under the ESA (59 FR 34270). In addition, on December 16, 2004, the Office of Management and Budget (OMB) issued its Final Information Quality Bulletin for Peer Review (Bulletin). The Bulletin was published in the **Federal Register** on January 14, 2005 (70 FR 2664), and went into effect on June 16, 2005. The primary purpose of the Bulletin is to improve the quality and credibility of scientific information disseminated by the Federal government by requiring peer review of 'influential scientific information'' and ''highly influential scientific information'' prior to public dissemination. ''Influential scientific information'' is defined as ''information the agency reasonably can determine will have or does have a clear and substantial impact on important public policies or private sector decisions.'' The Bulletin provides agencies broad discretion in determining the appropriate process and level of peer review. Stricter standards were established for the peer review of ''highly influential scientific assessments,'' defined as information whose ''dissemination could have a potential impact of more than $500 million in any one year on either the public or private sector or that the dissemination is novel, controversial, or precedent-setting, or has significant interagency interest.''

The Draft Biological Information and 4(b)(2) Source Document (NMFS, 2015) and the Draft Economic Impact Analysis (King and Associates Inc., 2014) supporting this proposed critical habitat rule are considered influential scientific information and subject to peer review. To satisfy our requirements under the OMB Bulletin, we obtained independent peer review of these draft documents, and incorporated the peer review comments prior to dissemination of this proposed rulemaking. For this action, compliance with the OMB Peer Review Bulletin satisfies any peer review requirements under the 1994 joint peer review policy. The Draft Biological Information and 4(b)(2) Source Document and the Draft Economic Impact Analysis prepared in support of this proposal are available on our Web site at *www.greateratlantic.fisheries.noaa.gov.* Comments received from peer reviewers on these documents will also be made available via our Web site at the time of publication of the proposed rule.

Classification

Takings (Executive Order 12630)

Under E.O. 12630, Federal agencies must consider the effects of their actions on constitutionally protected private property rights and avoid unnecessary takings of property. A taking of property includes actions that result in physical invasion or occupancy of private property, and regulations imposed on private property that substantially affect its value or use. In accordance with E.O. 12630, this proposed rule would not have significant takings implications. The designation of critical habitat for the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs of Atlantic sturgeon are not expected to impose additional burdens on land use or affect property values. Therefore, a takings implication assessment is not required.

Regulatory Planning and Review (Executive Order 12866)

This proposed rule has been determined to be significant for purposes of E.O. 12866. A draft economic report has been prepared to support an impacts analysis under section 4(b)(2) of the ESA.

Federalism (Executive Order 13132)

Pursuant to the Executive Order on Federalism, E.O. 13132, we determined that this proposed rule does not have significant Federalism effects and that a Federalism assessment is not required. However, in keeping with Department of Commerce policies and consistent with ESA regulations at 50 CFR 424.16(c)(1)(ii), we will request information for this proposed rule from state resource agencies in Maine, New Hampshire, Massachusetts, Connecticut, New York, New Jersey, Delaware, Maryland, and Virginia as well as appropriate authorities for the District of Columbia. The proposed designations may have some benefit to state and local resource agencies in that the proposed rule more clearly defines the physical and biological features essential to the conservation of the species and the areas on which those features are found.

Energy Supply, Distribution, and Use (Executive Order 13211)

Executive Order 13211 requires agencies to prepare Statements of Energy Effects when undertaking an action expected to lead to the promulgation of a final rule or regulation that is a significant regulatory action under E.O. 12866 and is likely to have a significant adverse effect on the supply, distribution, or use of energy. OMB Guidance on Implementing E.O. 13211 (July 13, 2001) states that significant adverse effects could include any of the following outcomes compared to a world without the regulatory action under consideration: (1) Reductions in crude oil supply in excess of 10,000 barrels per day; (2) reductions in fuel production in excess of 4,000 barrels per day; (3) reductions in coal production in excess of 5 million tons per year; (4) reductions in natural gas production in excess of 25 million mcf per year; (5) reductions in electricity production in excess of 1 billion kilowatt-hours per year or in excess of 500 megawatts of installed capacity; (6) increases in energy use required by the regulatory action that exceed any of the thresholds above; (7) increases in the cost of energy production in excess of one percent; (8) increases in the cost of energy distribution in excess of one percent; or (9) other similarly adverse outcomes. A regulatory action could also have significant adverse effects if it: (1) Adversely affects in a material way the productivity, competition, or prices in the energy sector; (2) adversely affects in a material way productivity, competition or prices within a region; (3) creates a serious inconsistency or otherwise interferes with an action taken or planned by another agency regarding energy; or (4) raises novel legal or policy issues adversely affecting the supply, distribution or use of energy arising out of legal mandates, the President's priorities, or the principles set forth in E.O. 12866 and 13211.

This rule, if finalized, will not have a significant adverse effect on the supply, distribution, or use of energy. Therefore, we have not prepared a Statement of Energy Effects.

Regulatory Flexibility Act (5 U.S.C. 601 et seq.)

We prepared an initial regulatory flexibility analysis (IRFA) pursuant to section 603 of the Regulatory Flexibility Act (RFA) (5 U.S.C. 601, *et seq.*). The IRFA analyzes the impacts of this proposed rule, if enacted, on small entities. Specifically, the IRFA describes the economic impact on small entities in those areas where critical habitat is proposed, and is included as Appendix A of the Draft Biological Information and 4(b)(2) Source Document available at the location identified in the **ADDRESSES** section. A summary of the IRFA follows.

We determined that the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs of Atlantic sturgeon warranted listing under the Endangered Species Act (ESA) and published notice of that decision on February 6, 2012 (77 FR 5880). We are required to designate critical habitat for each of the DPSs of Atlantic sturgeon (16 U.S.C. 1533(a)(3)). The critical habitat provisions of the ESA are intended to promote recovery of the ESA-listed species by prohibiting federal agency actions from destroying or adversely modifying the physical or biological features that are essential to conservation of the listed entity.

The ESA section 7 consultation requirement for critical habitat does not apply to citizens engaged in activities on private land that do not involve a Federal agency. However, there may be an impact to private citizens and small entities that are engaged in activities that involve a Federal agency action. For example, small businesses involved in construction activities such as breakwater, dock, pier, and harbor construction may be impacted if a federal agency must issue a permit for the work to be conducted, will provide funds for the work, or will otherwise be involved in carrying out the work. Such involvement by a federal agency triggers the need for section 7 consultation.

We considered three alternatives: (1) No action, (2) designating some of the identified critical habitat areas, or (3) designating all critical habitat areas identified for the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs of Atlantic sturgeon. Under the ''no action'' alternative, we would not designate critical habitat for the Gulf of Maine, New York Bight or Chesapeake Bay DPSs. By comparison, designating some of the identified critical habitat areas (*i.e.,* Alternative 2) could result in an increase in the number of section 7 consultations required to avoid adverse impacts relative to the ''no action'' alternative, while Alternative 3 would likely result in the greatest number of section 7 consultations relative to the other alternatives.

We have determined that the physical features forming the basis for our proposed critical habitat designations are essential to the conservation of the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs. Therefore, we rejected the no action alternative and Alternative 2. We have analyzed the economic, national security, and other relevant impacts of designating all critical habitat identified for the DPSs. Our conservative identification of potential, incremental economic impacts indicates that any such impacts, if they were to occur, would be very small. Any incremental economic impacts will consist solely of the administrative costs of consultation; no project modifications are projected to be required to address impacts solely to the proposed critical habitat. No impacts to national security are expected as a consequence of the proposed critical habitat. Other relevant impacts include conservation benefits of the designation, both to the species and to society. While we cannot quantify or monetize the benefits, we believe that the benefits of this critical habitat designation would be incremental, and that they are not negligible.

The Small Business Administration has established numerical definitions of small businesses, or ''size standards,'' for all for-profit industries. Based on these size standards (*e.g.,* in millions of dollars or number of employees), King and Associates, Inc. (2014), concluded a high percent of business entities located in the counties that include one or more of the critical habitat units, an average of 99.8% across all units, are small businesses. However, data are not available to determine the location of these small business entities within each county in order to determine how many are located in or near areas proposed as critical habitat. Therefore, for purposes of projecting the impacts of administrative section 7 costs on small businesses in each critical habitat unit, King and Associates assumed that the

percentage of private entities involved in those consultations that are small entities is the same as the percentage of businesses that are small entities in the counties that include critical habitat units.

The same approach that was used by King and Associates to estimate low, medium, and high overall ESA section 7 administrative costs was used as a basis for developing low, medium, and high estimates of section 7 impacts on small entities. Impacted small entities may include contractors involved in construction activities such as breakwater, dock, pier, bridge, and harbor construction, contractors involved in restoration activities such as culvert replacements, and marina owners who must maintain pier and dock structures. King and Associates concluded that costs to small entities associated with the designation range from about $16,500 to $47,250 annually in the Gulf of Maine DPS, about $30,000 to $96,000 annually in the New York Bight DPS, and about $11,000 to $34,000 annually in the Chesapeake Bay DPS (King and Associates, Inc., 2014). We found no data to suggest that the designation would place small entities at a competitive disadvantage compared to large entities.

Coastal Zone Management Act

Under section 307(c)(1)(A) of the Coastal Zone Management Act (CZMA) (16 U.S.C. 1456(c)(1)(A)) and its implementing regulations, each Federal activity within or outside the coastal zone that has reasonably foreseeable effects on any land or water use or natural resource of the coastal zone shall be carried out in a manner which is consistent to the maximum extent practicable with the enforceable policies of approved State coastal management programs. We have determined that any effects of this proposed designation of critical habitat on coastal uses and resources in Maine, New Hampshire, Massachusetts, Connecticut, New York, New Jersey, Delaware, Pennsylvania, Maryland, and Virginia are not reasonably foreseeable at this time. This proposed designation may trigger ESA section 7 obligations for federal agencies. These consultations will consider effects of Federal actions on coastal uses and resources to the extent they overlap with critical habitat. We considered the range of Federal actions that this designation may affect (*e.g.,* dredging, bridge construction/repair, water withdrawals) and which may affect coastal uses and resources in the affected States. However, we do not have sufficient information on the specifics of any future activities (*e.g.,* when, where and how they will be carried out) to characterize any of these as reasonable foreseeable. Therefore, because the effects are not reasonably foreseeable, we cannot make a determination as to whether the Federal activities will be consistent with any enforceable policies of approved State coastal management programs. Through the consultation process, we will receive information on proposed Federal actions and their effects on listed species and the designated critical habitat upon. We base any biological opinions on this information. It will then be up to the Federal action agencies to decide how to comply with the ESA in light of our biological opinion, as well as to ensure that their actions comply with the CZMA's Federal consistency requirement. At this time, we do not anticipate that this designation is likely to result in any additional management measures by other Federal agencies.

Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.)

This proposed rule does not contain any new or revised collection of information. This rule, if adopted, would not impose recordkeeping or reporting requirements on State or local governments, individuals, businesses, or organizations.

Unfunded Mandates Reform Act (2 U.S.C. 1501 et seq.)

This proposed rule will not produce a Federal mandate. The designation of critical habitat does not impose a legally-binding duty on non-Federal government entities or private parties. The only regulatory effect is that Federal agencies must ensure that their actions do not destroy or adversely modify critical habitat under section 7 of the ESA. Non-Federal entities which receive Federal funding, assistance, permits or otherwise require approval or authorization from a Federal agency for an action may be indirectly impacted by the designation of critical habitat but, the Federal agency has the legally binding duty to avoid destruction or adverse modification of critical habitat.

We do not anticipate that this rule, if finalized, will significantly or uniquely affect small governments. Therefore, a Small Government Action Plan is not required.

Consultation and Coordination With Indian Tribal Governments (Executive Order 13175)

The longstanding and distinctive relationship between the Federal and tribal governments is defined by treaties, statutes, executive orders, judicial decisions, and agreements, which differentiate tribal governments from the other entities that deal with, or are affected by, the Federal Government. This relationship has given rise to a special Federal trust responsibility involving the legal responsibilities and obligations of the United States toward Indian Tribes and the application of fiduciary standards of due care with respect to Indian lands, tribal trust resources, and the exercise of tribal rights.

Executive Order 13175, Consultation and Coordination with Indian Tribal Governments, outlines the responsibilities of the Federal Government in matters affecting tribal interests. If NMFS issues a regulation with tribal implications (defined as having a substantial direct effect on one or more Indian tribes, on the relationship between the Federal Government and Indian tribes, or on the distribution of power and responsibilities between the Federal Government and Indian tribes) we must consult with those governments or the Federal Government must provide funds necessary to pay direct compliance costs incurred by tribal governments. The proposed critical habitat designations for Gulf of Maine, New York Bight, and Chesapeake Bay Atlantic sturgeon DPSs do not have tribal implications.

References Cited

A complete list of all references cited in this rulemaking can be found at *www.greateratlantic.fisheries.noaa.gov,* and is available upon request from the NMFS Greater Atlantic Region Fisheries Office in Gloucester, Massachusetts (see **ADDRESSES**).

List of Subjects in 50 CFR Part 226

Endangered and threatened species.

Dated: May 24, 2016.

Samuel D. Rauch, III,

Deputy Assistant Administrator for Regulatory Programs, National Marine Fisheries Service.

For the reasons set out in the preamble, we propose to amend 50 CFR part 226 as follows:

PART 226—DESIGNATED CRITICAL HABITAT

■ 1. The authority citation for part 226 continues to read as follows:

Authority: 16 U.S.C. 1533.

■ 2. Add § 226.225 to read as follows:

§ 226.225 Critical habitat for the Gulf of Maine, New York Bight, and Chesapeake Bay Distinct Population Segments of Atlantic Sturgeon.

Critical habitat is designated for the Gulf of Maine, New York Bight, and Chesapeake Bay Distinct Population Segments (DPSs) of Atlantic sturgeon as described in paragraphs (a) through (c) of this section. The textual descriptions in paragraphs (c) through (f) of this section are the definitive source for determining the critical habitat boundaries.

(a) The physical features essential for the conservation of Atlantic sturgeon belonging to the Gulf of Maine, New York Bight, and Chesapeake Bay Distinct Population Segments are those habitat components that support successful reproduction and recruitment. These are:

(1) Hard bottom substrate (*e.g.,* rock, cobble, gravel, limestone, boulder, etc.) in low salinity waters (*i.e.,* 0.0–0.5 parts per thousand range) for settlement of fertilized eggs, refuge, growth, and development of early life stages;

(2) Aquatic habitat with a gradual downstream salinity gradient of 0.5–30 parts per thousand and soft substrate (*e.g.,* sand, mud) downstream of spawning sites for juvenile foraging and physiological development;

(3) Water of appropriate depth and absent physical barriers to passage (*e.g.,* locks, dams, reservoirs, gear, etc.) between the river mouth and spawning sites necessary to support:

(i) Unimpeded movement of adults to and from spawning sites;

(ii) Seasonal and physiologically dependent movement of juvenile Atlantic sturgeon to appropriate salinity zones within the river estuary; and

(iii) Staging, resting, or holding of subadults or spawning condition adults. Water depths in main river channels must also be deep enough (*e.g.,* ≥1.2 m) to ensure continuous flow in the main channel at all times when any sturgeon life stage would be in the river;

(4) Water, especially in the bottom meter of the water column, with the temperature, salinity, and oxygen values that, combined, support:

(i) Spawning;

(ii) Annual and interannual adult, subadult, larval, and juvenile survival; and

(iii) Larval, juvenile, and subadult growth, development, and recruitment (*e.g.,* 13 °C to 26 °C for spawning habitat and no more than 30 °C for juvenile rearing habitat, and 6 mg/L dissolved oxygen for juvenile rearing habitat).

(b) Critical habitat is designated for the following DPSs in the following states and counties:

DPS	State/district—counties
Gulf of Maine	ME—Androscoggin, Cumberland, Kennebec, Lincoln, Penobscot, Sagadahoc, Somerset, Waldo, York. NH—Rockingham, Stafford. MA—Essex.
New York Bight	CT—Fairfield, Hartford, Litchfield, Middlesex, New Haven, New London, Tolland. NJ—Bergen, Burlington, Camden, Cape May, Cumberland, Gloucester, Hudson, Mercer, Monmouth, Salem. NY—Albany, Bronx, Columbia, Dutchess, Greene, Kings, New York, Orange, Putnam, Queens, Rensselaer, Richmond, Rockland, Saratoga, Ulster, Westchester. DE—Kent, New Castle, Sussex. PA—Bucks, Delaware, Philadelphia.
Chesapeake Bay	D.C.—District of Columbia. MD—Charles, Montgomery, Prince George's, St. Mary's. VA—Arlington, Caroline, Charles City, Chesterfield, Dinwiddie, Essex, Fairfax, Gloucester, Hanover, Henrico, Isle of Wight, King George, James City, King and Queen, King William, Lancaster, Loudoun, Middlesex, New Kent, Northumberland, Prince George, Prince William, Richmond, Spotsylvania, Stafford, Surry, Westmoreland, York.

(c) *Critical habitat boundaries for the Gulf of Maine DPS.* Critical habitat for the Gulf of Maine DPS of Atlantic sturgeon is the waters of:

(1) Penobscot River main stem from the Milford Dam downstream to where the main stem river drainage discharges at its mouth into Penobscot Bay;

(2) Kennebec River main stem from the Ticonic Falls/Lockwood Dam downstream to where the main stem river discharges at its mouth into the Atlantic Ocean;

(3) Androscoggin River main stem from the Brunswick Dam downstream to where the main stem river drainage discharges into Merrymeeting Bay;

(4) Piscataqua River from its confluence with the Salmon Falls and Cocheco rivers downstream to where the main stem river discharges at its mouth into the Atlantic Ocean as well as the waters of the Cocheco River from its confluence with the Piscataqua River and upstream to the Cocheco Falls Dam, and waters of the Salmon Falls River from its confluence with the Piscataqua River and upstream to the Route 4 Dam; and,

(5) Merrimack River from the Essex Dam (also known as the Lawrence Dam) downstream to where the main stem river discharges at its mouth into the Atlantic Ocean.

(d) *Critical Habitat Boundaries of the New York Bight DPS.* Critical habitat for the New York Bight DPS of Atlantic sturgeon is the waters of:

(1) Connecticut River from the Holyoke Dam downstream to where the main stem river discharges at its mouth into Long Island Sound;

(2) Housatonic River from the Derby Dam downstream to where the main stem discharges at its mouth into Long Island Sound;

(3) Hudson River from the Troy Lock and Dam (also known as the Federal Dam) downstream to where the main stem river discharges at its mouth into New York City Harbor; and

(4) Delaware River at the crossing of the Trenton-Morrisville Route 1 Toll Bridge, downstream to where the main stem river discharges at its mouth into Delaware Bay.

(e) *Critical Habitat Boundaries of the Chesapeake Bay DPS.* Critical habitat for the Chesapeake Bay DPS of Atlantic sturgeon is the waters of:

(1) Susquehanna River from the Conowingo Dam downstream to where the main stem river discharges at its mouth into the Chesapeake Bay;

(2) Potomac River from the Little Falls Dam downstream to where the main stem river discharges at its mouth into the Chesapeake Bay;

(3) Rappahannock River from the U.S. Highway 1 Bridge, downstream to where the river discharges at its mouth into the Chesapeake Bay;

(4) York River from its confluence with the Mattaponi and Pamunkey rivers downstream to where the main stem river discharges at its mouth into the Chesapeake Bay as well as the waters of the Mattaponi River from its confluence with the York River and upstream to the Virginia State Route 360 Bridge of the Mattaponi River, and

waters of the Pamunkey River from its confluence with the York River and upstream to the Virginia State Route 360 Bridge crossing of the Pamunkey River; and

(5) James River from Boshers Dam downstream to where the main stem river discharges at its mouth into the Chesapeake Bay at Hampton Roads.

(f) *Sites owned or controlled by the Department of Defense.* Critical habitat for the New York Bight and Chesapeake Bay DPSs of Atlantic sturgeon do not include the following areas owned or controlled by the Department of Defense, or designated for its use, in the States of New York and Virginia.

(1) The Department of the Army, U.S. Military Academy—West Point, NY;

(2) The Department of the Air Force, Joint Base Langley—Eustis, VA;

(3) The Department of the Navy, Marine Corps Base Quantico, VA;

(4) The Department of the Navy, Naval Weapons Station Yorktown, VA; and,

(5) The Department of the Navy, Naval Support Facility Dahlgren, VA.

(g) Maps of the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs follow:

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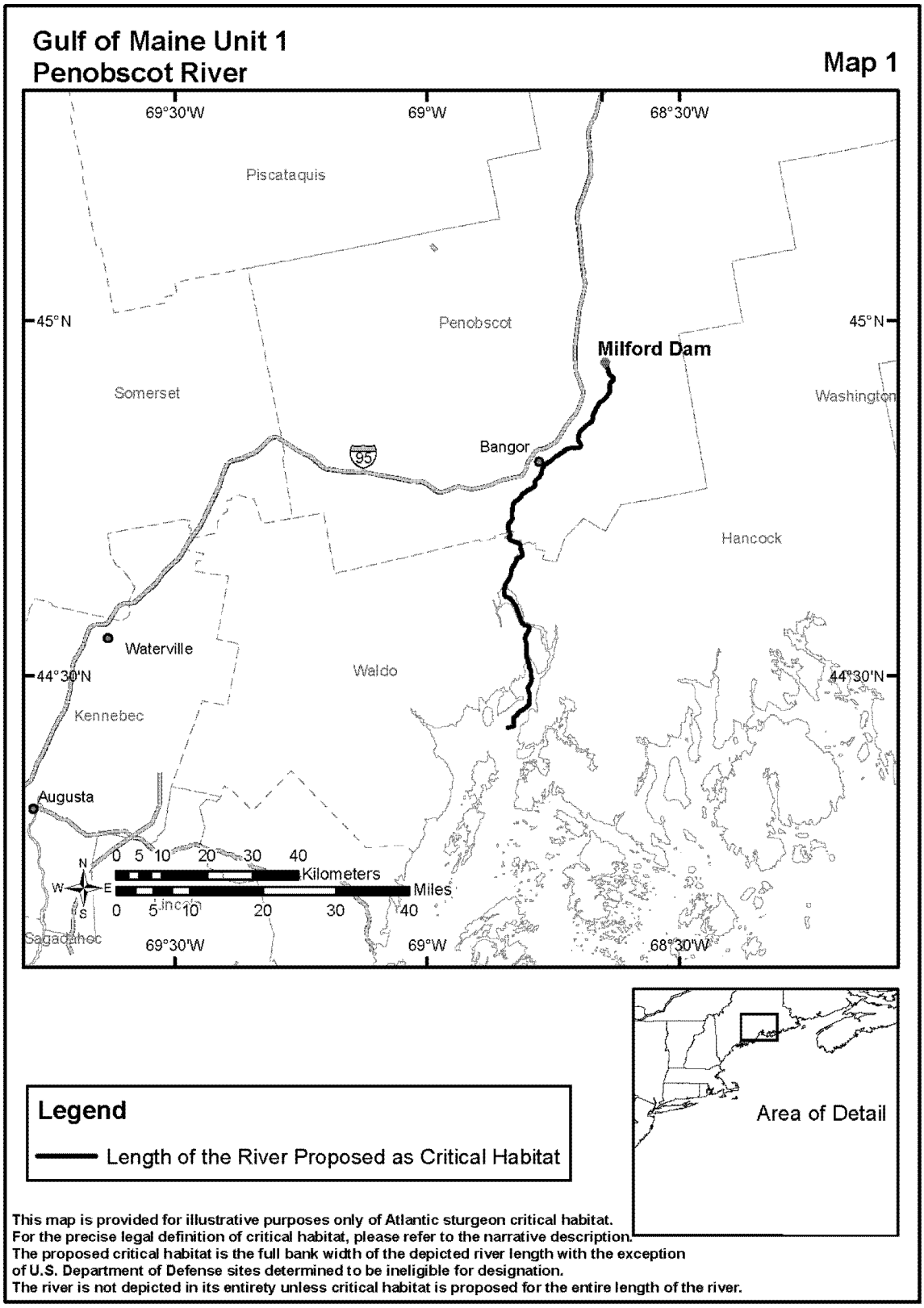
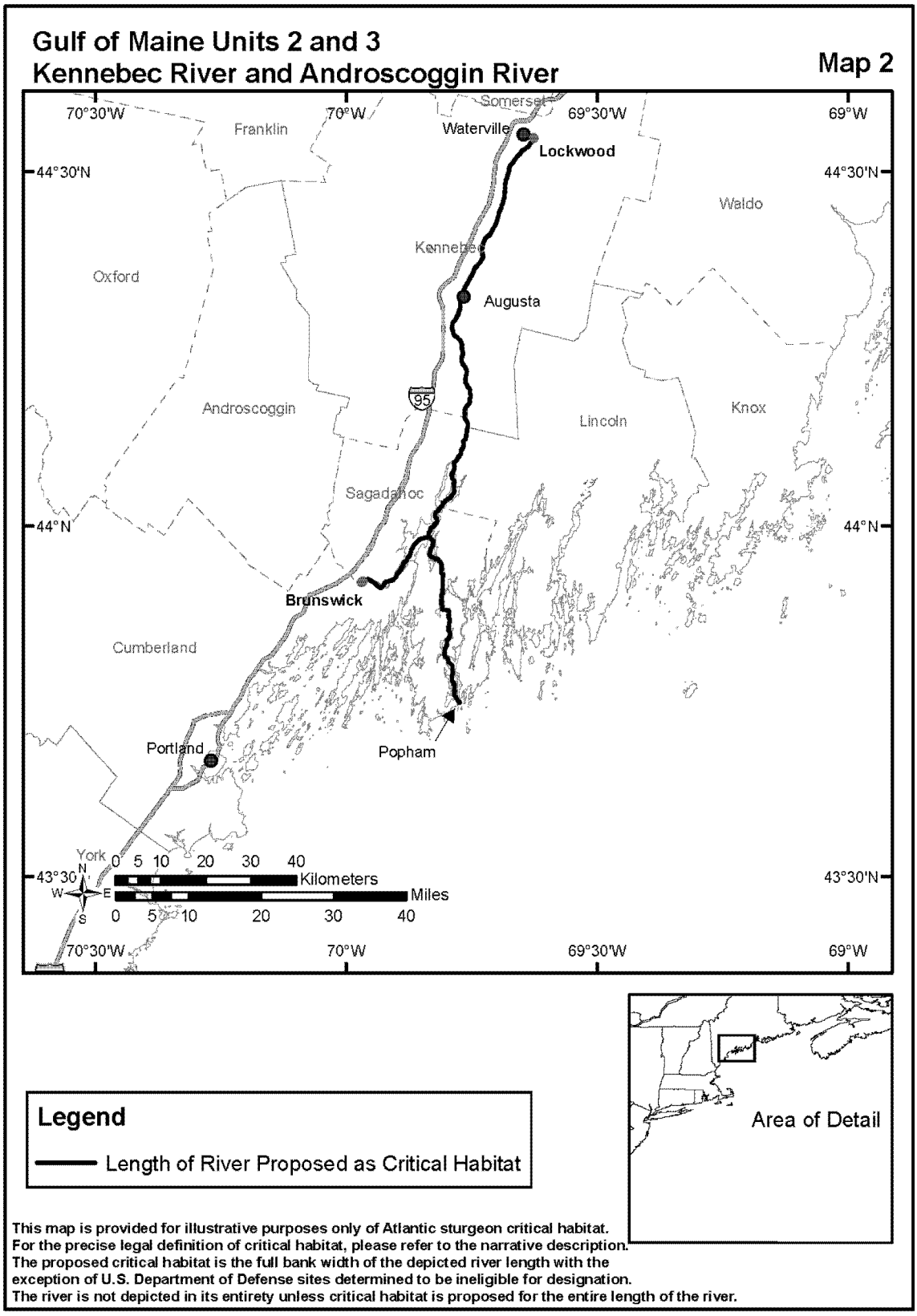

Gulf of Maine Unit 1
Penobscot River
Map 1
69°30'W
69°W
68°30'W
Piscataquis
45°N
Penobscot
Milford Dam
Somerset
Washington
Bangor
95
Hancock
Waterville
44°30'N
Waldo
Kennebec
Augusta
0 5 10 20 30 40 Kilometers
N
W E
S
0 5 10 20 30 40 Miles
Sagadahoc
Area of Detail
Legend
Length of the River Proposed as Critical Habitat
This map is provided for illustrative purposes only of Atlantic sturgeon critical habitat.
For the precise legal definition of critical habitat, please refer to the narrative description.
The proposed critical habitat is the full bank width of the depicted river length with the exception of U.S. Department of Defense sites determined to be ineligible for designation.
The river is not depicted in its entirety unless critical habitat is proposed for the entire length of the river.


Gulf of Maine Units 2 and 3
Kennebec River and Androscoggin River
Map 2
70°30'W
70°W
69°30'W
69°W
44°30'N
44°N
43°30'N
Somerset
Franklin
Waterville
Lockwood
Waldo
Kennebec
Oxford
Augusta
95
Androscoggin
Lincoln
Knox
Sagadahoc
Brunswick
Cumberland
Portland
Popham
York
0 5 10 20 30 40
Kilometers
Miles
0 5 10 20 30 40
N
W
E
S
Area of Detail
Legend
Length of River Proposed as Critical Habitat
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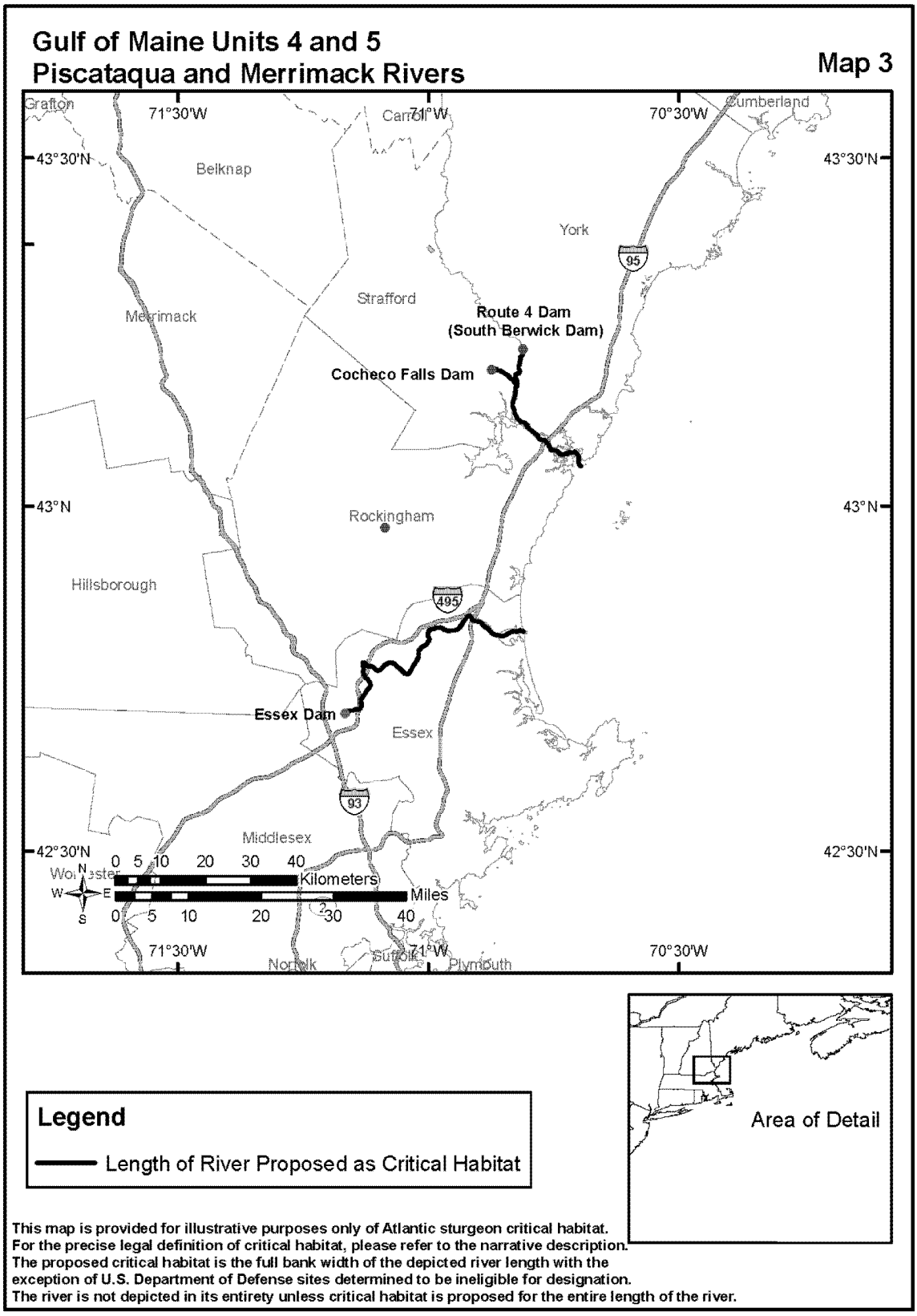
Gulf of Maine Units 4 and 5
Piscataqua and Merrimack Rivers
Map 3
Grafton
71°30'W
Carroll
71°W
70°30'W
Cumberland
43°30'N
Belknap
York
95
Strafford
Merrimack
Route 4 Dam
(South Berwick Dam)
Cocheco Falls Dam
43°N
Rockingham
Hillsborough
495
Essex Dam
Essex
93
Middlesex
42°30'N
0 5 10 20 30 40
Kilometers
Miles
0 5 10 20 30 40
N
W
E
S
Norfolk
Suffolk
Plymouth
Area of Detail
Legend
Length of River Proposed as Critical Habitat
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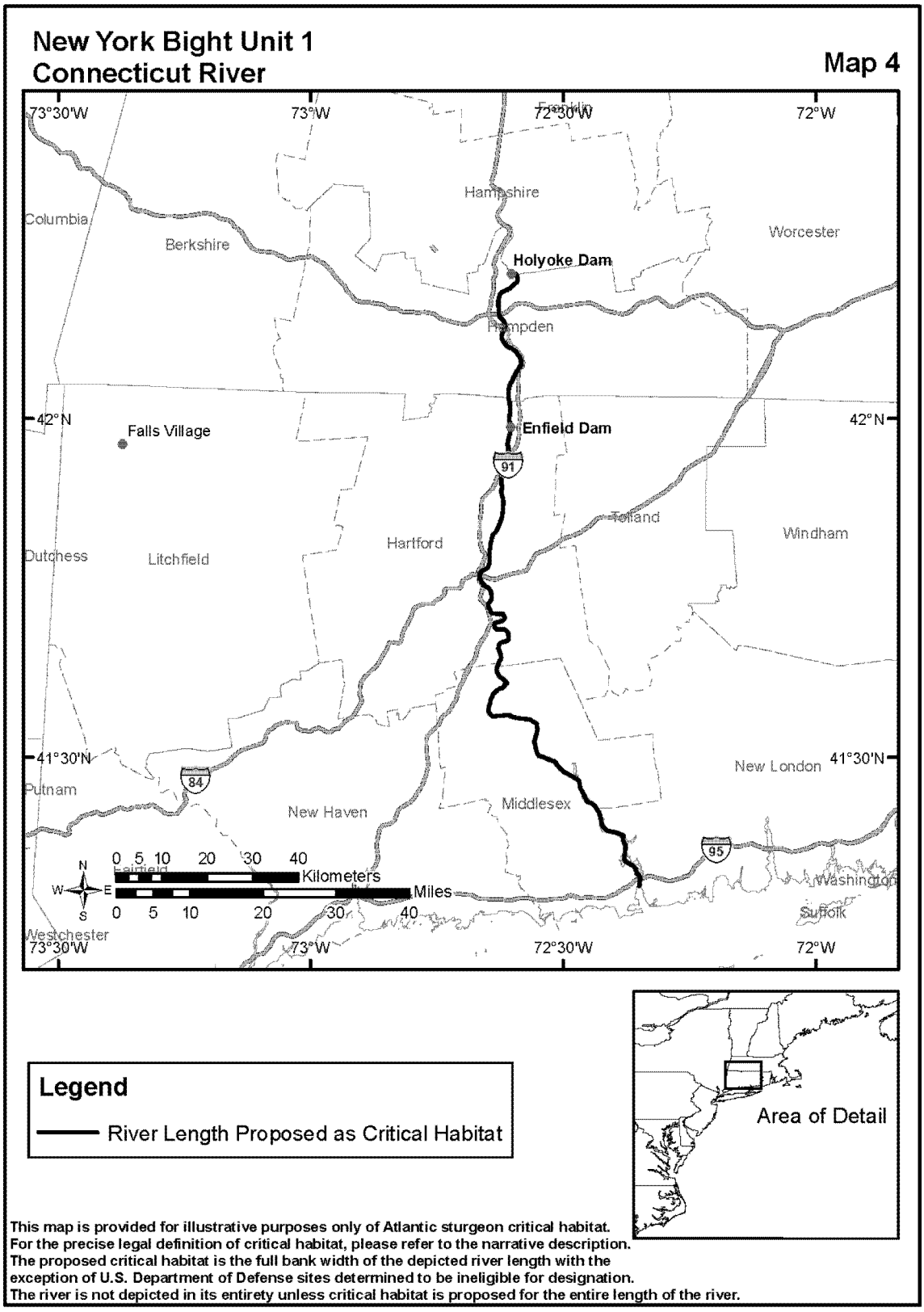
New York Bight Unit 1
Connecticut River
Map 4
73°30'W
73°W
72°30'W
72°W
42°N
41°30'N
Columbia
Berkshire
Hampshire
Worcester
Holyoke Dam
Hampden
Falls Village
Enfield Dam
91
Tolland
Windham
Dutchess
Litchfield
Hartford
84
Putnam
New Haven
Middlesex
New London
95
Fairfield
Washington
Suffolk
Westchester
0 5 10 20 30 40
Kilometers
0 5 10 20 30 40
Miles
N
W
E
S
Legend
River Length Proposed as Critical Habitat
Area of Detail
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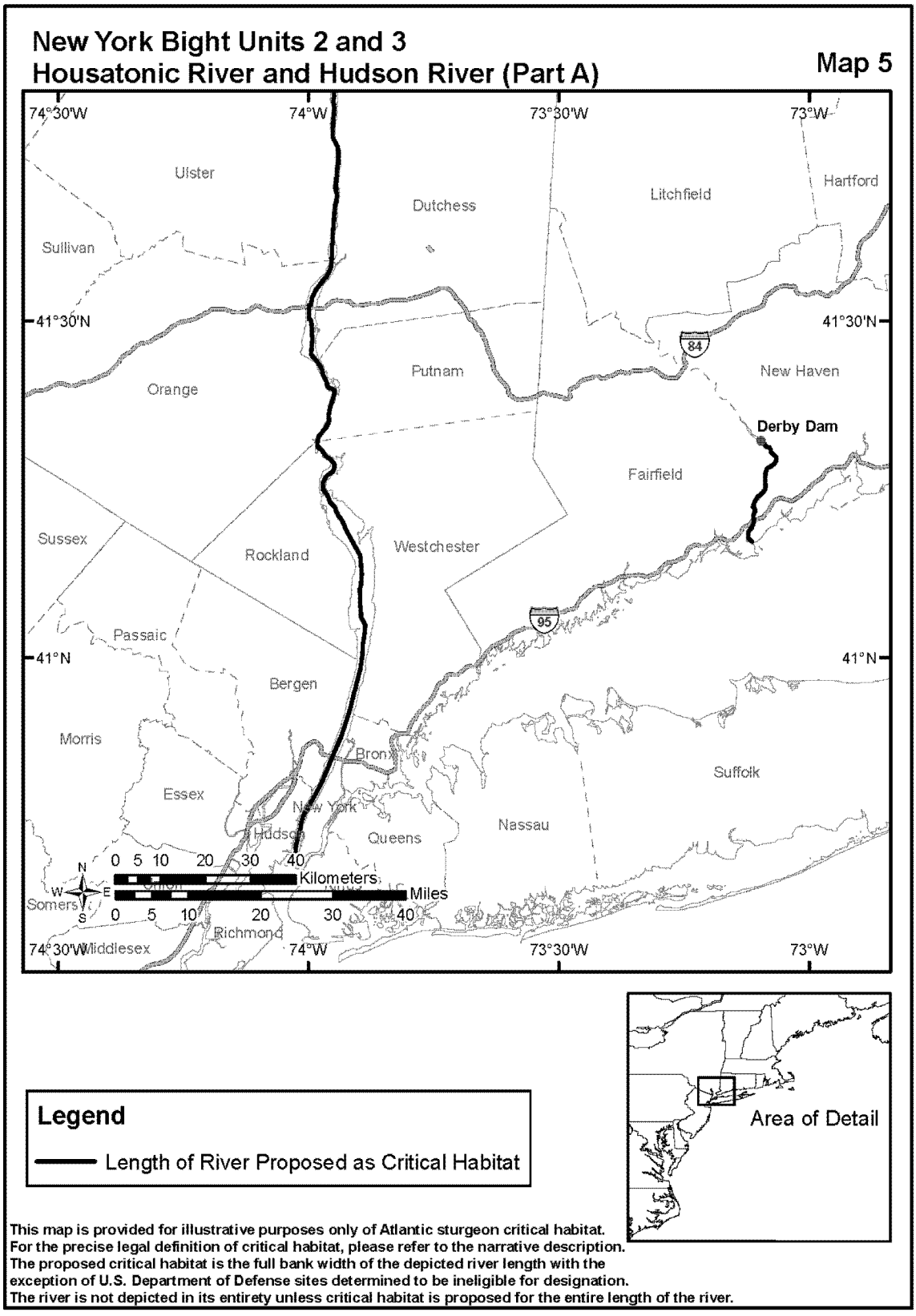
New York Bight Units 2 and 3
Housatonic River and Hudson River (Part A)
Map 5
74°30'W
74°W
73°30'W
73°W
41°30'N
41°N
Ulster
Sullivan
Orange
Dutchess
Putnam
Litchfield
Hartford
New Haven
Derby Dam
Fairfield
Sussex
Rockland
Westchester
Passaic
Bergen
Morris
Essex
Hudson
Queens
Nassau
Suffolk
Bronx
New York
Richmond
Middlesex
Somerset
Union
84
95
0 5 10 20 30 40
Kilometers
0 5 10 20 30 40
Miles
N
W
E
S
Area of Detail
Legend
Length of River Proposed as Critical Habitat
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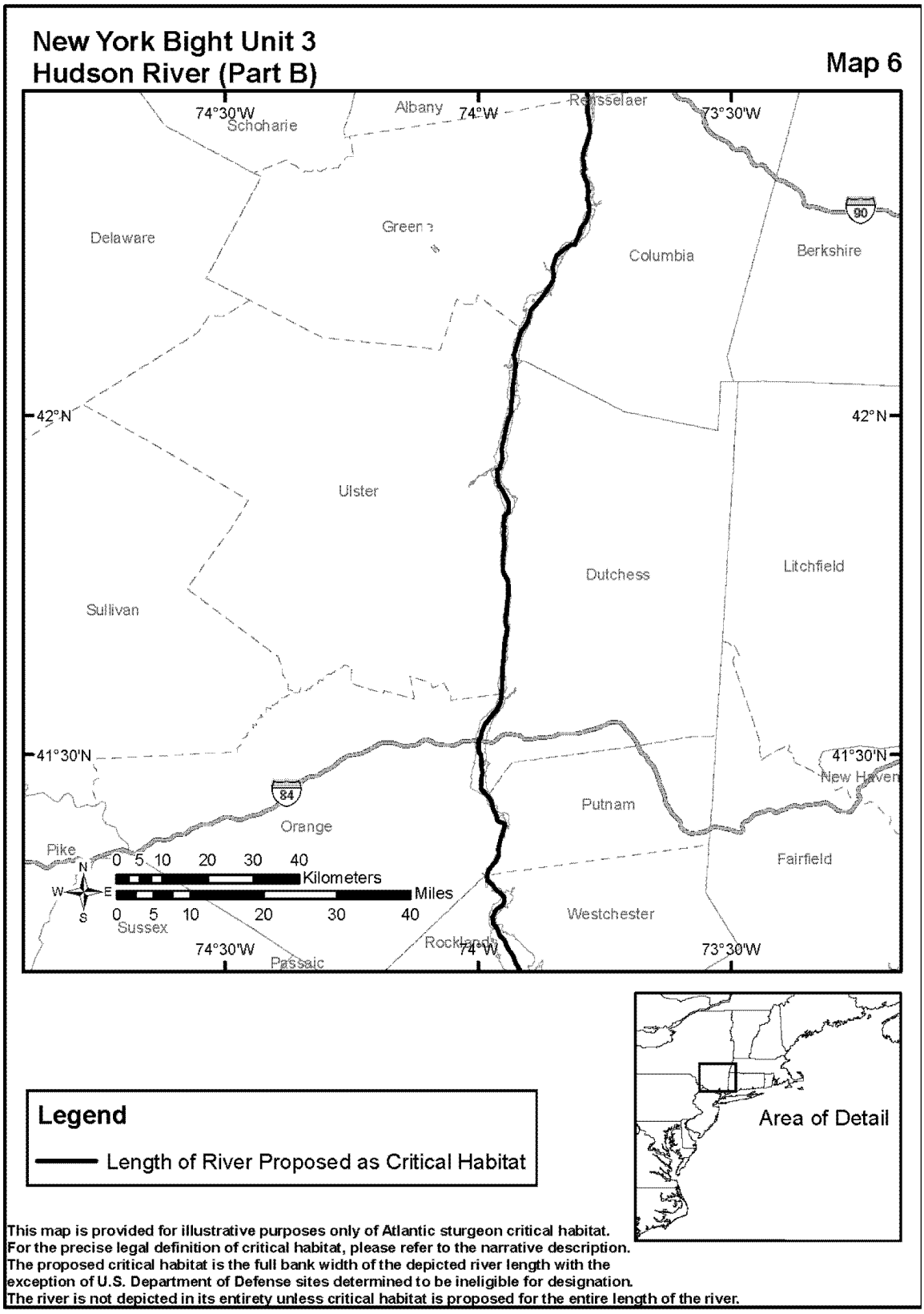

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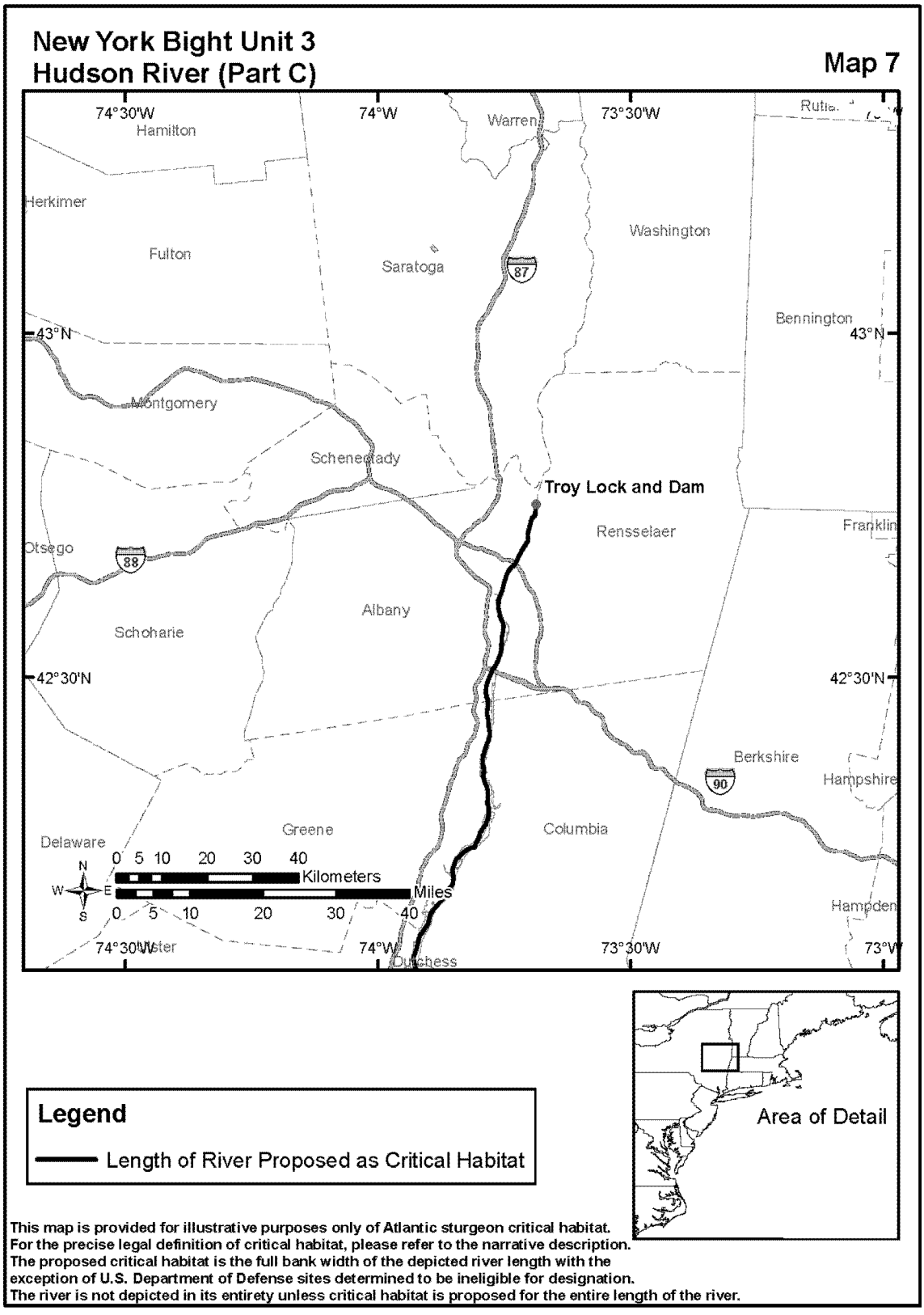
New York Bight Unit 3
Hudson River (Part C)
Map 7
74°30'W
74°W
73°30'W
Hamilton
Warren
Herkimer
Fulton
Saratoga
Washington
Bennington
43°N
Montgomery
Schenectady
Troy Lock and Dam
Rensselaer
Franklin
Otsego
Albany
Schoharie
42°30'N
Berkshire
Hampshire
Greene
Columbia
Delaware
Hampden
Ulster
Dutchess
0 5 10 20 30 40
Kilometers
Miles
0 5 10 20 30 40
N
W
E
S
Area of Detail
Legend
Length of River Proposed as Critical Habitat
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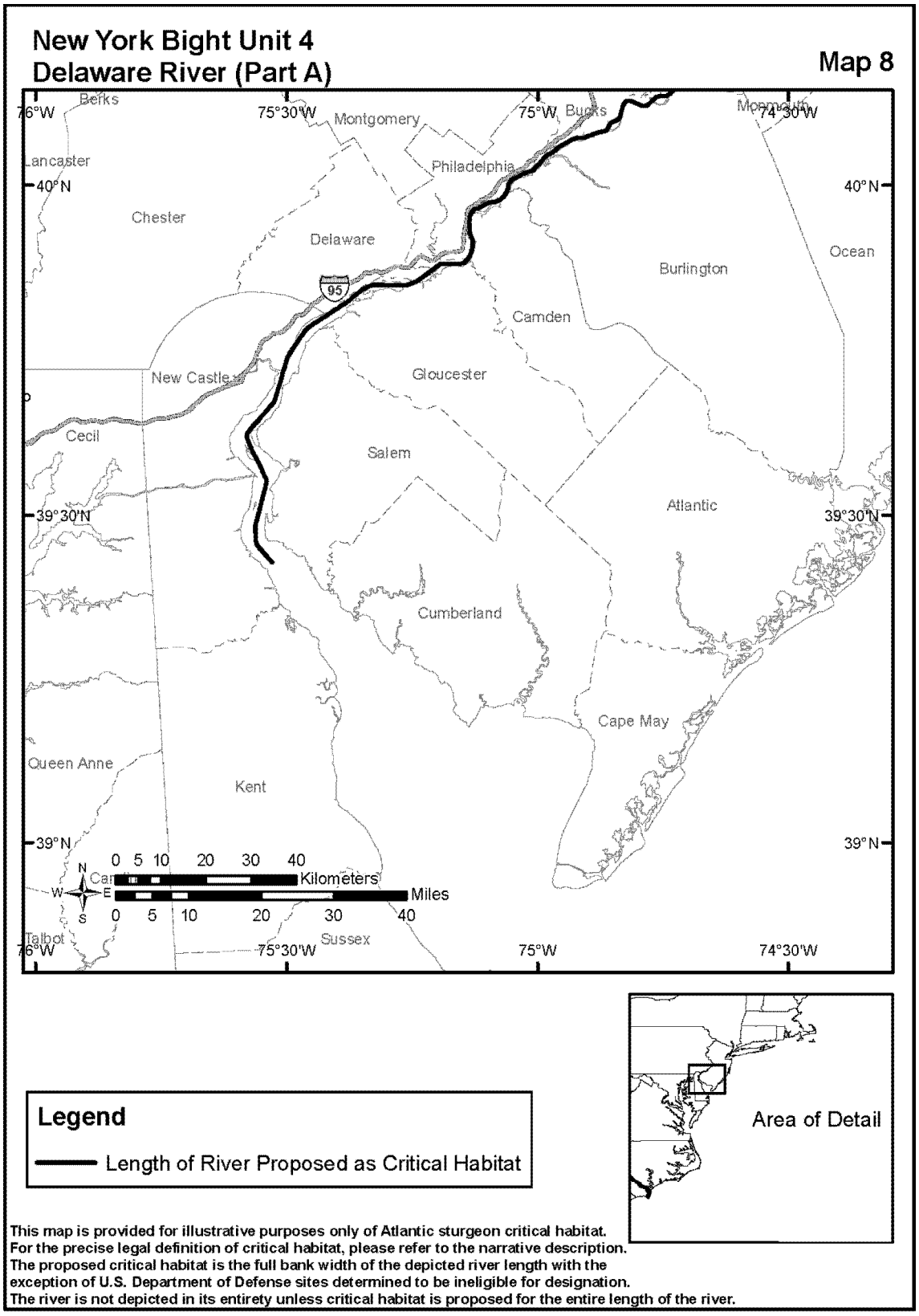
New York Bight Unit 4
Delaware River (Part A)
Map 8
Berks
Montgomery
Bucks
Monmouth
Lancaster
Philadelphia
Chester
Delaware
Burlington
Ocean
Camden
New Castle
Gloucester
Cecil
Salem
Atlantic
Cumberland
Cape May
Queen Anne
Kent
Talbot
Sussex
76°W
75°30'W
75°W
74°30'W
40°N
39°30'N
39°N
95
0 5 10 20 30 40
Kilometers
0 5 10 20 30 40
Miles
N
W
E
S
Legend
Length of River Proposed as Critical Habitat
Area of Detail
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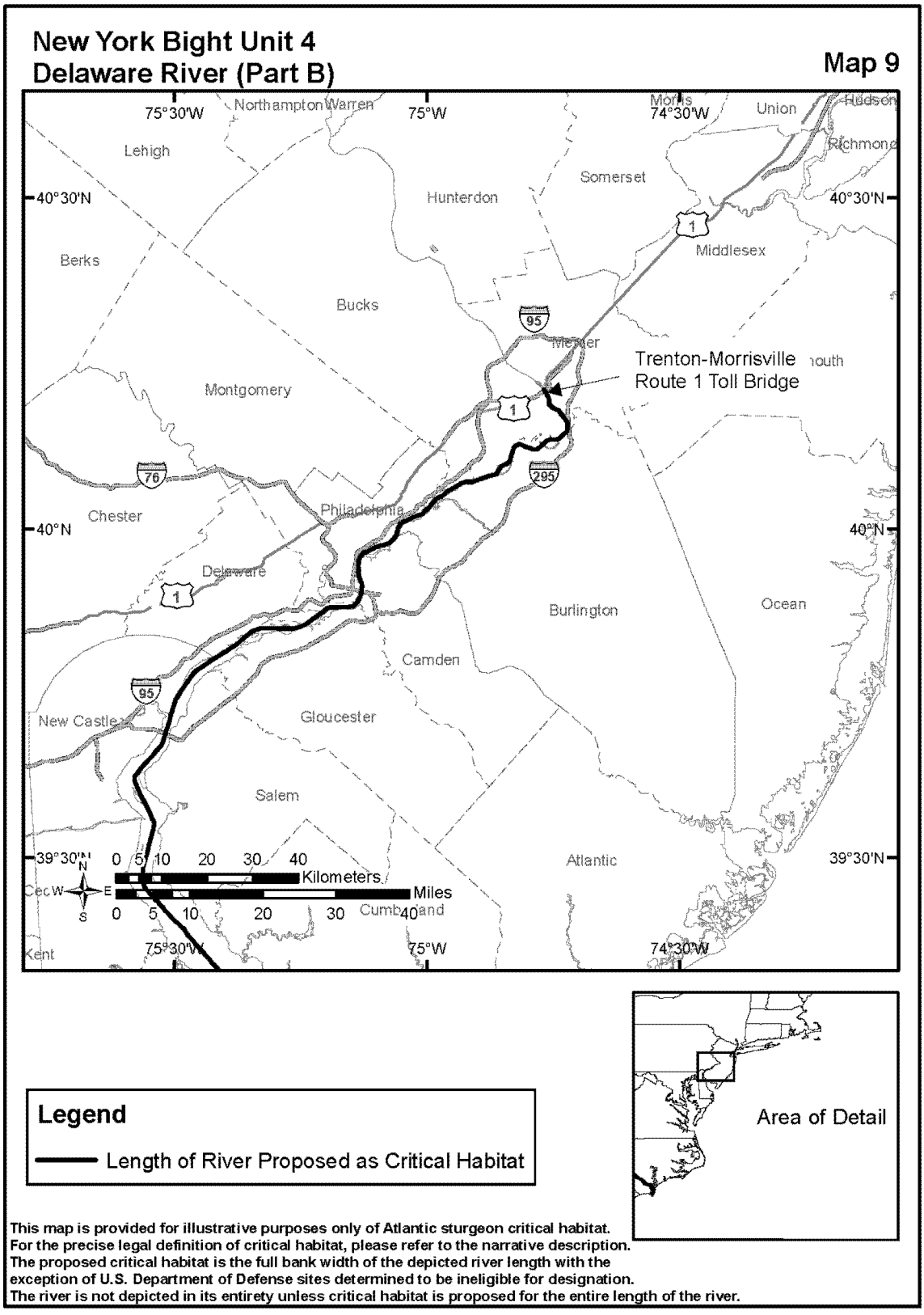
New York Bight Unit 4
Delaware River (Part B)
Map 9
75°30'W
75°W
74°30'W
40°30'N
40°N
39°30'N
Northampton
Warren
Morris
Union
Hudson
Lehigh
Somerset
Hunterdon
Middlesex
Berks
Bucks
Mercer
Trenton-Morrisville
Route 1 Toll Bridge
Montgomery
Chester
Philadelphia
Delaware
Burlington
Ocean
Camden
New Castle
Gloucester
Salem
Atlantic
Cumberland
Kent
0 5 10 20 30 40
Kilometers
0 5 10 20 30 40
Miles
N
W
E
S
Area of Detail
Legend
Length of River Proposed as Critical Habitat
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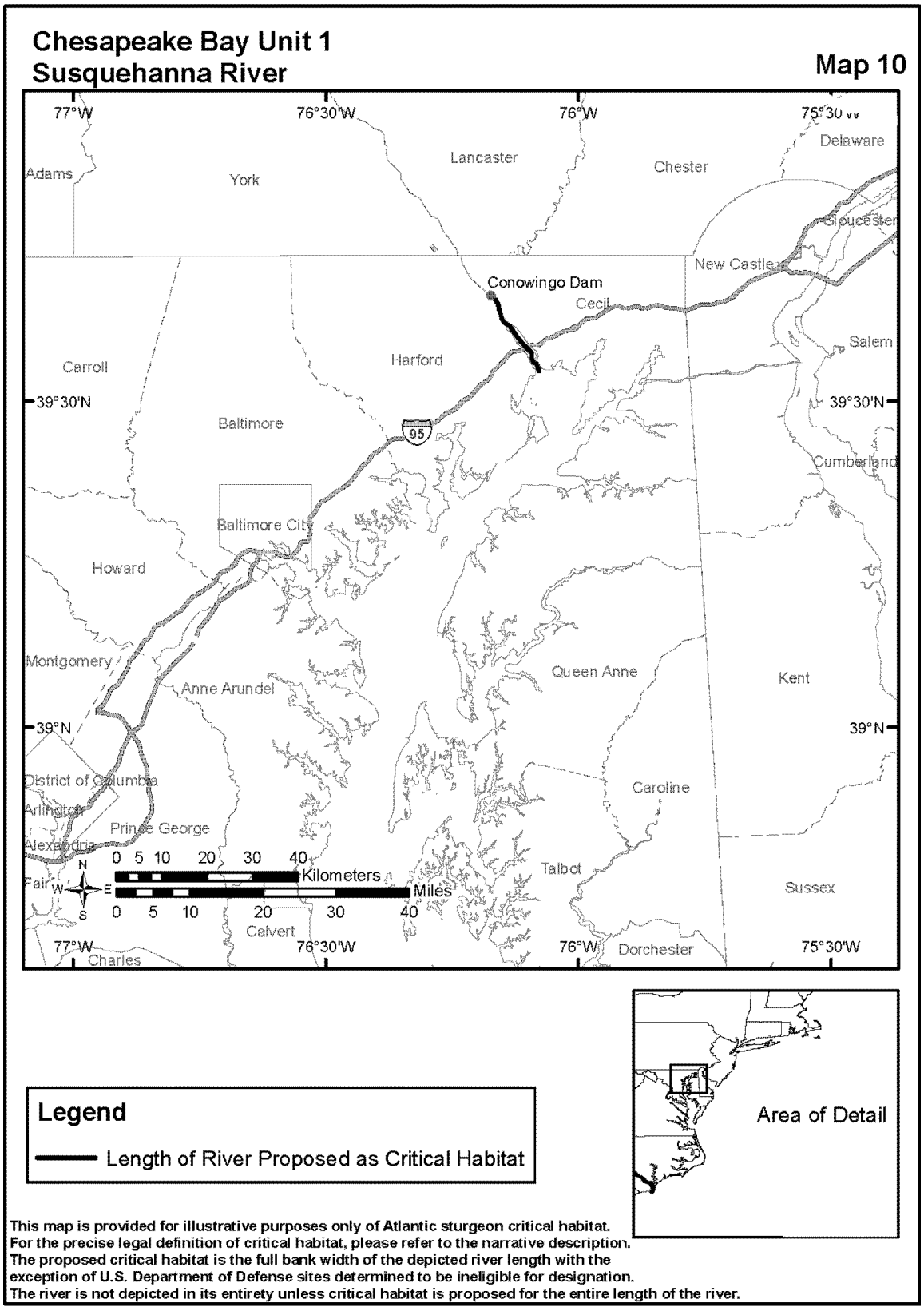

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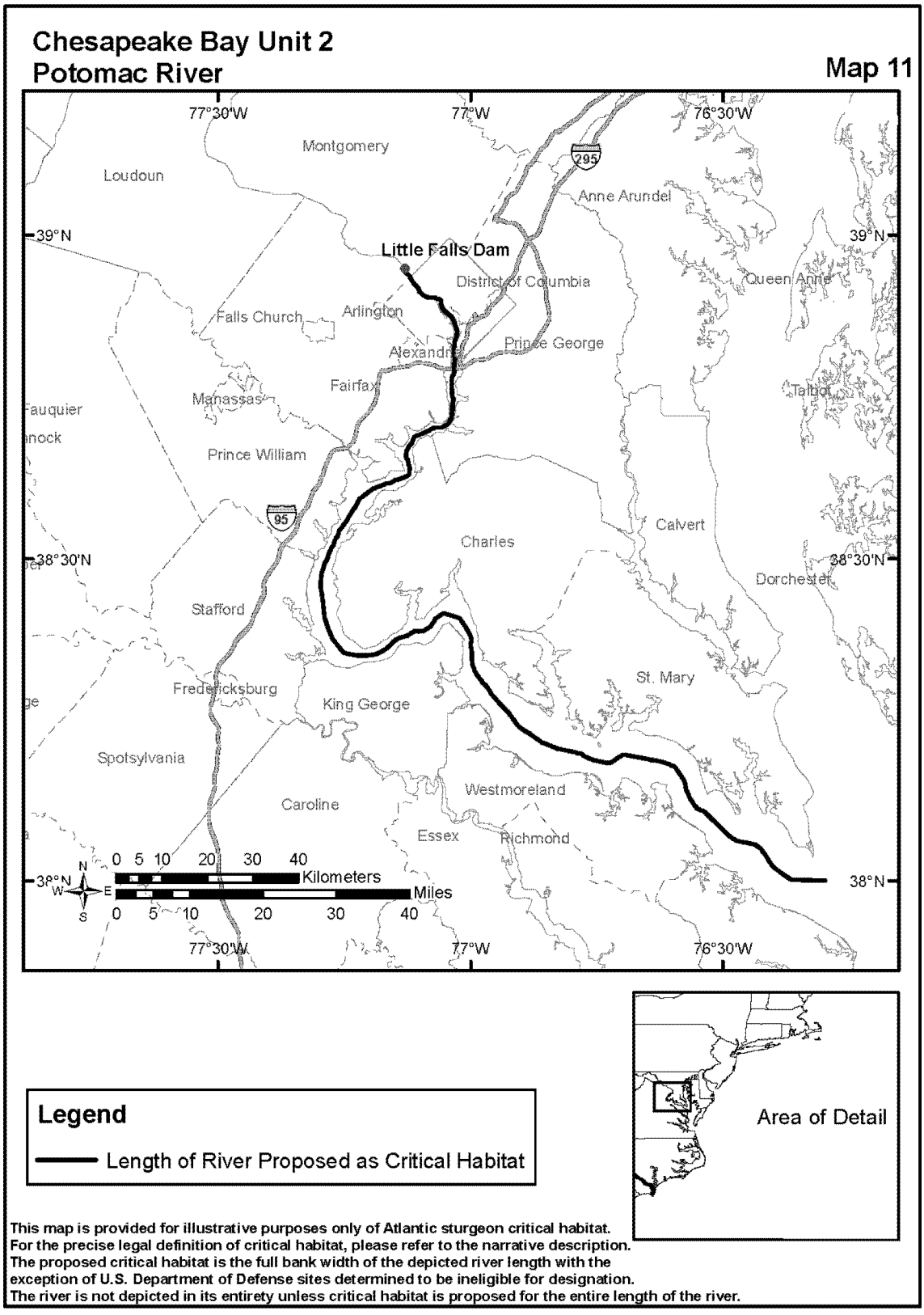
The river is not depicted in its entirety unless critical habitat is proposed for the entire length of the river.


Chesapeake Bay Unit 2
Potomac River
Map 11
77°30'W
77°W
76°30'W
39°N
38°30'N
38°N
Montgomery
Loudoun
Anne Arundel
Little Falls Dam
District of Columbia
Queen Anne
Falls Church
Arlington
Alexandria
Prince George
Fairfax
Manassas
Talbot
Fauquier
Prince William
Calvert
Charles
Dorchester
Stafford
St. Mary
Fredericksburg
King George
Spotsylvania
Westmoreland
Caroline
Essex
Richmond
295
95
0 5 10 20 30 40
Kilometers
0 5 10 20 30 40
Miles
N
W
E
S
Area of Detail
Legend
Length of River Proposed as Critical Habitat
This map is provided for illustrative purposes only of Atlantic sturgeon critical habitat.
For the precise legal definition of critical habitat, please refer to the narrative description.
The proposed critical habitat is the full bank width of the depicted river length with the exception of U.S. Department of Defense sites determined to be ineligible for designation.
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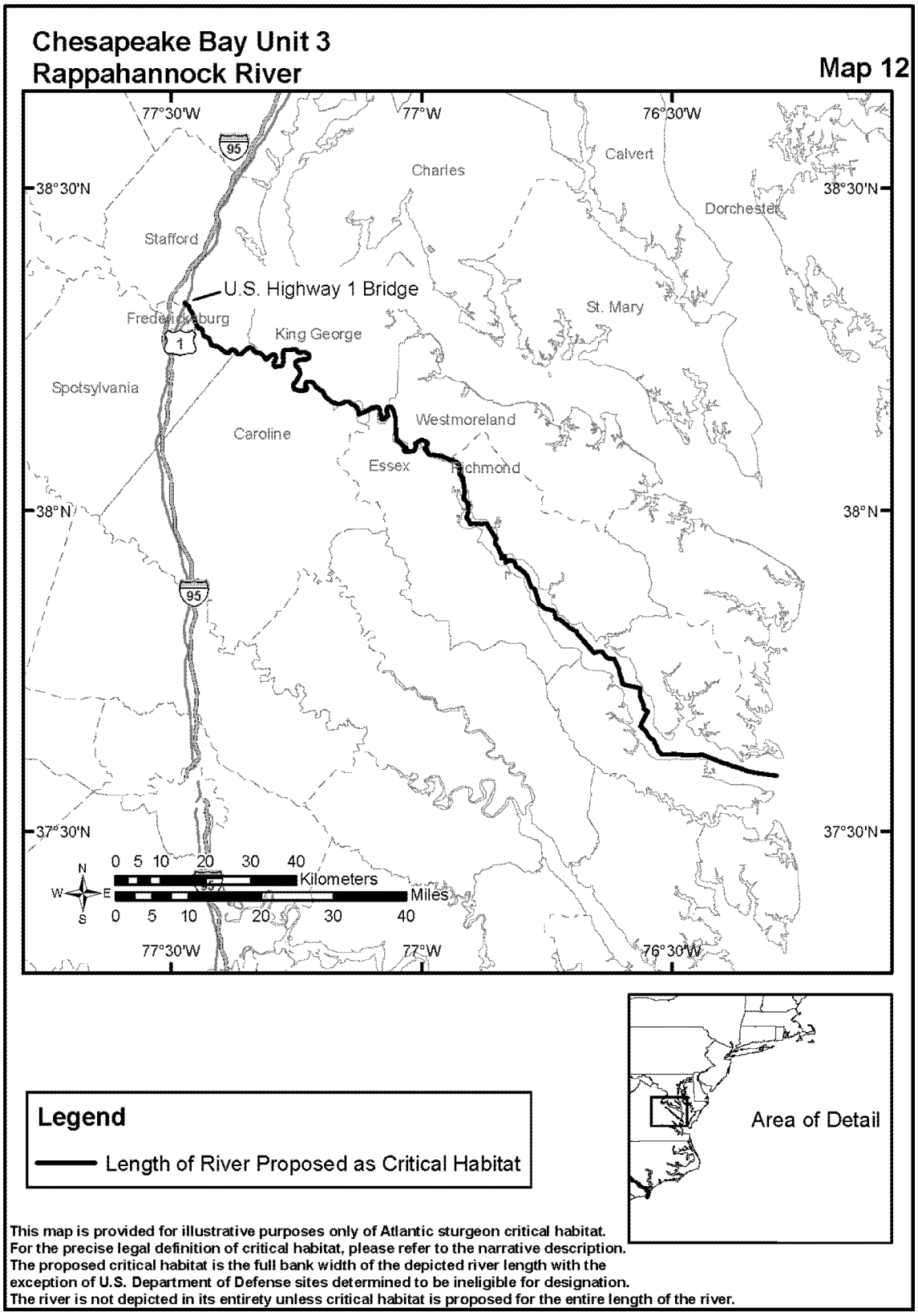
Chesapeake Bay Unit 3
Rappahannock River
Map 12
77°30'W
77°W
76°30'W
38°30'N
38°N
37°30'N
95
1
Charles
Calvert
Dorchester
Stafford
U.S. Highway 1 Bridge
Fredericksburg
King George
St. Mary
Spotsylvania
Caroline
Westmoreland
Essex
Richmond
0 5 10 20 30 40
Kilometers
Miles
0 5 10 20 30 40
N
W
E
S
Area of Detail
Legend
Length of River Proposed as Critical Habitat
This map is provided for illustrative purposes only of Atlantic sturgeon critical habitat.
For the precise legal definition of critical habitat, please refer to the narrative description.
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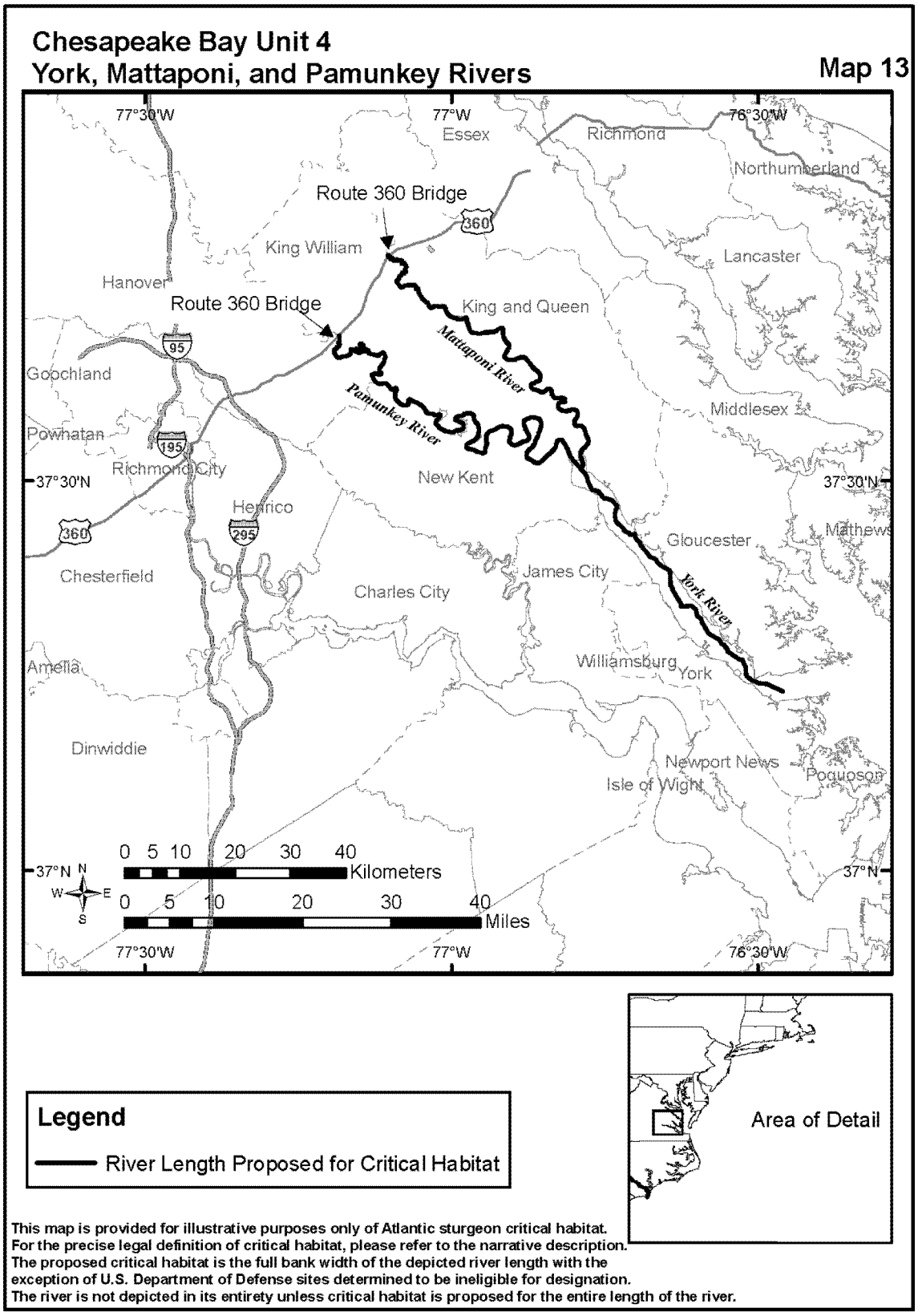
The river is not depicted in its entirety unless critical habitat is proposed for the entire length of the river.


Chesapeake Bay Unit 4
York, Mattaponi, and Pamunkey Rivers
Map 13
77°30'W
77°W
76°30'W
Essex
Richmond
Northumberland
Route 360 Bridge
360
King William
Lancaster
Hanover
Route 360 Bridge
King and Queen
95
Mattaponi River
Pamunkey River
Goochland
Middlesex
Powhatan
195
Richmond City
37°30'N
New Kent
Henrico
295
Gloucester
Mathews
Chesterfield
James City
Charles City
York River
Amelia
Williamsburg
York
Dinwiddie
Newport News
Poquoson
Isle of Wight
0 5 10 20 30 40
Kilometers
37°N
N
W
E
S
0 5 10 20 30 40
Miles
Area of Detail
Legend
River Length Proposed for Critical Habitat
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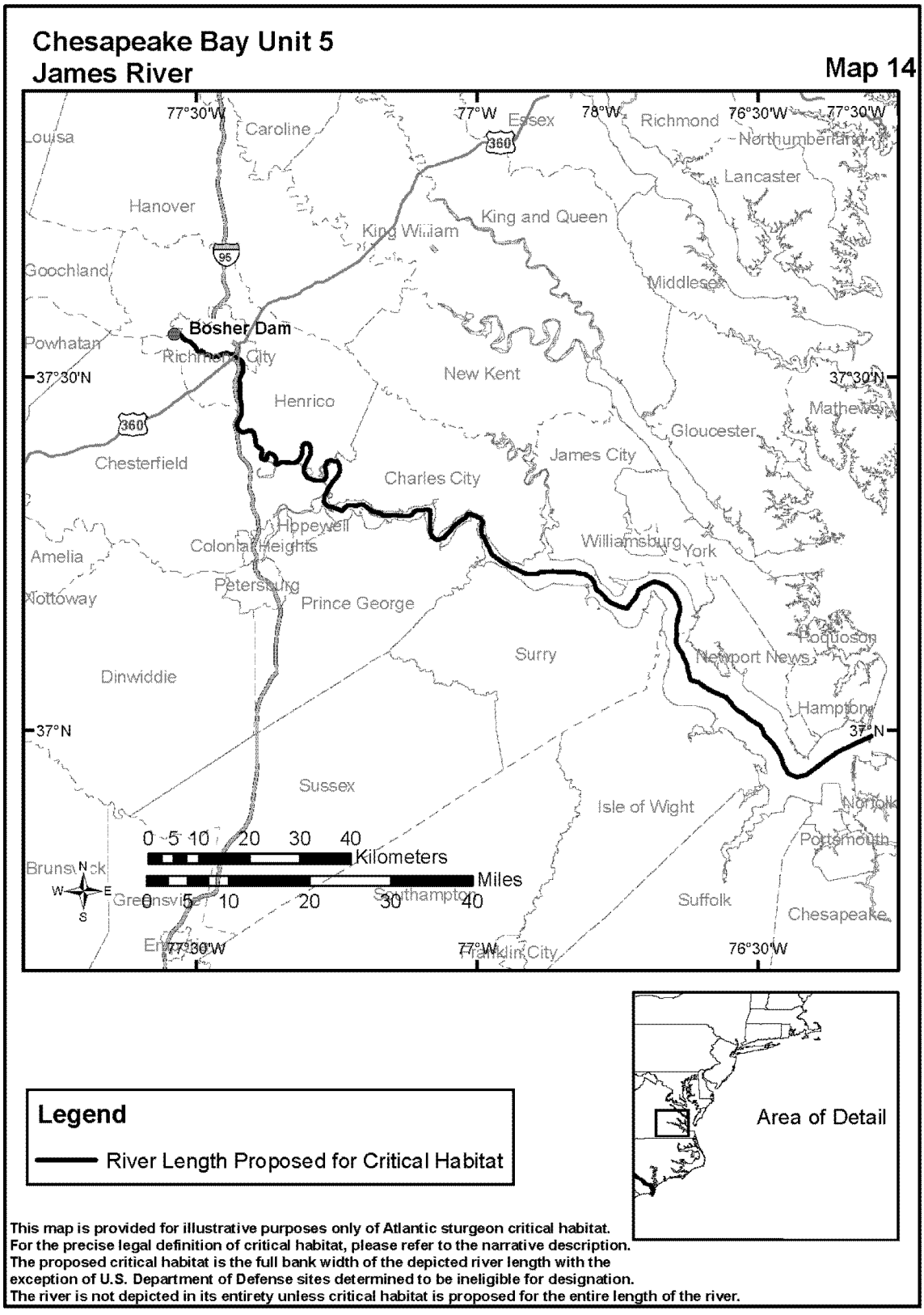
The river is not depicted in its entirety unless critical habitat is proposed for the entire length of the river.



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