UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 1
1 Congress Street, Suite 1100
BOSTON, MA 02114-2023

Mary Colligan
Assistant Regional Administrator
Protected Resources Division
National Marine Fisheries Service
One Blackburn Drive
Gloucester, MA 01930-2293

Re: Reissuance of National Pollutant Discharge Elimination System (NPDES) for Salisbury Sewer Commission Wastewater Treatment Plant, (Permit No. MA0102873) - Endangered Species Act Correspondence

Dear Ms. Colligan:

The U.S. Environmental Protection Agency, Region I, New England (EPA) has issued a draft NPDES permit to the Salisbury Sewer Commission Wastewater Treatment Plant, (Salisbury WWTP or facility), MA0102873, in Massachusetts. With limitations, the NPDES permit will allow the facility to discharge treated municipal wastewater to an unnamed tidal creek that ultimately drains to the north bank of the Merrimack River.

Section 7(a) of the Endangered Species Act of 1973, as amended (ESA) grants authority to and imposes requirements upon Federal agencies regarding endangered or threatened species of fish, wildlife, or plants ("listed species") and habitat of such species that has been designated as critical (a "critical habitat"). The ESA requires every Federal agency, in consultation with and with the assistance of the Secretary of Interior, to insure that any action it authorizes, funds, or carries out, in the United States or upon the high seas, is not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of critical habitat. The United States Fish and Wildlife Service (USFWS) administers Section 7 consultations for freshwater species. The National Marine Fisheries Service (NOAA Fisheries) administers Section 7 consultations for marine species and anadromous fish. It is EPA's understanding that the only federally listed species that has the potential to occur in the vicinity of the Salisbury facility is the shortnose sturgeon (*Acipenser brevirostrum*). It is EPA's opinion that the location and operation of this facility, as governed by the permit, are not likely to adversely affect the species of concern. It is our position that this permit action does not warrant a formal consultation under section 7 of the ESA. The reasoning to support this position follows.

The shortnose sturgeon was placed on the original endangered species list in 1967 [32 Fed. Reg. 4001 (1967)] by the United States Fish and Wildlife Service. Currently, NOAA Fisheries has authority over this species under Section 4(a) (2) of the ESA, 16 U.S.C. Section 1533 (a) (2). At present, there are 20 recognized distinct population segments [63 Fed. Reg. No. 242, pp. 69613-69615, December 17, 1998], which all remain listed as endangered.

Shortnose Sturgeon in the Merrimack River
According to information presented in the Final Recovery Plan for the Shortnose Sturgeon (NMFS, December 1998) studies done in 1989 and 1990 indicated that the Merrimack River supports a foraging,

or total adult population, of less than 100 fish. Elsewhere in the document, a more specific estimate of approximately 33 adult shortnose sturgeon is recorded for the Merrimack River. These anadromous fish are benthic omnivores. In the Merrimack River, adults are thought to remain in freshwater all year, but some adults briefly enter low saline river reaches in May-June, then return upriver. The "concentration areas" used by fish in the Merrimack were reaches where natural or artificial features cause a decrease in river flow, possibly creating suitable substrate conditions for freshwater mussels (Kieffer and Kynard 1993), a major prey item for adult sturgeon. The fish are generally associated with shallow and deep tidal channels and overwinter in deeper water. Spawning is thought to take place in the most upstream reach of the river used by the sturgeon, and channels are important for spawning. In the Merrimack River, spawning males have been found at a depth of 2.3 to 5.8 meters (NMFS, December 1998).

Salisbury Waster Water Treatment Plant Discharge

The NPDES permit authorized for this facility requires that the effluent discharged to the Merrimack River meet water quality standards. This reach of the river is classified by the Commonwealth of Massachusetts as SA water. An average monthly flow limit of 1.3 million gallons per day (MGD) is in the draft permit, although the annual average discharge from January 2005 through March 2007 ranged between 0.61 MGD and 0.70 MGD. The effluent mixes with the creek water and flows approximately 0.5 miles before emptying into the mainstem of the Merrimack River. The tidal range in this area is approximately 7 feet. For brief periods during low tides, the creek may contain facility wastewater only, with no appreciable dilution until reaching the Merrimack River. Therefore, a conservative dilution factor of 1 is used for water quality based effluent limits. A review of historical monitoring data of the effluent at Outfall 001 shows that Biological Oxygen Demand, Total Suspended Solids, Dissolved Oxygen, Fecal Coliform, and Whole Effluent Toxicity Testing did not exceed permitted limits. Copper and Ammonia-Nitrogen monitoring did show some exceedance, and pH showed occasional violations of the minimum pH limit. An average monthly Total Copper limit of 3.1ug/l and a maximum daily limit of 4.8 ug/l have been included in the permit along with a two-year compliance schedule to meet the limits. Effluent limits for enterococci have also been added to the permit.

Merrimack River Characteristics

Hydrographic studies were performed in the Merrimack River in May and June of 1997 as part of the Newburyport WWTP permit renewal process. These studies were conducted only a few miles downstream from the unnamed creek that carries the Salisbury WWTP discharge to the Merrimack River. The studies confirm a high-energy tidal flux of water moving in and out of the river, with average tidal velocities of from 0.74 knots to 1.53 knots. A 7Q10 flow or other low flow estimate for section of the Merrimack River is not appropriate because it is tidally influenced. The average Merrimack River flow during the hydrographic study was estimated to be approximately 5000 cfs. Using this rough estimate of Merrimack River conditions and the maximum discharge from the Salisbury WWTP, a dilution of 2,486:1 could be expected (5000 cfs /1.3 MGD x 1.547). The effluent from the facility is essentially a freshwater surface discharge from the bank of the river that enters a waterbody with varying concentrations of salinity. Therefore, total mixing of the discharge to deeper portions of the river would be inhibited by the differences in density between the fresh and saline water.

EPA Findings

EPA has made the preliminary determination that the location and operation of the Salisbury WWTP, as governed by the permit, are not likely to adversely affect the shortnose sturgeon or its critical habitat. The following summary supports this determination:

1) EPA has structured the permit to be sufficiently stringent to assure that Water Quality Standards will be met for Class SA water, both for aquatic life protection and human health protection. The effluent limitations established in this permit ensures the protection of aquatic life and

maintenance of the receiving water as an aquatic habitat. The permit is more restrictive than the permit it replaces, establishing limits for total copper and enterococci.

2) Shortnose sturgeon are not expected to be found in the unnamed tidal creek or the associated bank of the Merrimack River where initial dilution of the effluent takes place. Site-specific data indicate that the fish are likely to inhabit the deeper channel of the mainstem of the river, away from the surface discharge.

3) The tidal energy and volume of the Merrimack River in this reach of the river is characterized by average tidal velocities of from 0.74 knots to 1.53 knots and an average river flow of approximately 5000 cfs. A dilution of 2,486:1 could be expected under these conditions.

Please contact Betsy Davis at 617-918-1576 or John Nagle at 617-918-1054 if you have any questions or require additional information.

Sincerely,

Betsy Davis, Environmental Engineer
Municipal NPDES Permit Branch
Office of Ecosystem Protection

cc: Julie Crocker, NMFS-PRD