



**PSEG**  
*Nuclear LLC*

LR-E14-0073

EPP 5.4.2 Appendix B

**MAY 01 2014**

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555-0001

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED  
ARTICLE NUMBER: 7012 1640 0000 4257 3084

SUBJECT: **REPORT OF IMPINGEMENT OF ATLANTIC STURGEON  
SALEM GENERATING STATION  
DOCKET NO. 50-272**

The Nuclear Environmental Event Report, "Report of Impingement of Atlantic Sturgeon" is being submitted pursuant to the requirements of Section 5.4.2 of Appendix B, Environmental Protection Plan, to the Operating License for the Salem Generating Station, PSEG Nuclear LLC (PSEG).

Please find enclosed a letter and four (4) attachments with further information regarding this impingement event. This report reflects one deceased and two live Atlantic Sturgeon collected on April 7<sup>th</sup>, 2014.

If you have any questions or require additional information, please do not hesitate to contact Kenneth Strait, Manager – Biological Programs at (856) 339-3929.

Sincerely,

Lawrence M. Wagner  
Plant Manager - Salem  
PSEG Nuclear LLC

Attachments (4)

JE77  
KRR

## REPORT OF IMPINGEMENT OF ATLANTIC STURGEON

In accordance with Section 5.4.2 of Appendix B, Environmental Protection Plan, to the Operating License for the Salem Generating Station, PSEG Nuclear LLC (PSEG) hereby transmits notification of a nonroutine event, and documents the occurrence and removal of an Atlantic sturgeon (*Acipenser oxyrinchus*) from the Salem Generating Station circulating water intake structure trash bars.

Consultation pursuant to Section 7 of the Endangered Species Act of 1973 (ESA) between NRC and the National Marine Fisheries Service (NMFS) on the effects of the operation of Salem Station on threatened and endangered species has been ongoing since 1979. The most recent revision to the Biological Opinion and Incidental Take Statement issued in January 1999 exempts the specified annual take of shortnose sturgeon and sea turtles. In advance of relicensing for Salem Station, consultation pursuant to Section 7 of the ESA between NRC and NMFS was reinitiated in 2009. On April 6, 2012, the NMFS listed five Distinct Population Segments of Atlantic sturgeon as threatened or endangered under the ESA. In May 2012, NRC requested consultation on the effects of the continued operation of Salem Station on Atlantic sturgeon. The NMFS issued a draft Biological Opinion and Incidental Take Statement (ITS) in July 2012 that, when finalized, will authorize a specified incidental take of both Atlantic sturgeon and shortnose sturgeon associated with operation of the Salem Station circulating water intake system.

Pursuant to Section 5.4.2 of the Environmental Protection Plan for Salem Station, nonroutine events which require reporting to other federal agencies shall be reported in accordance with the other agencies' reporting requirements. Accordingly, enclosed please find four (4) attachments. Attachment 1 (one per Sturgeon) provides the information requested by the NMFS in Appendix II to the current ITS and in Appendix B, Part 2, to the revised draft ITS. Also enclosed is a copy of a Sturgeon Salvage Form verbally requested by the NMFS for the deceased Sturgeon.

There are no commitments contained in this letter.

LR-E14-0073  
Document Control Desk

cc: Mr. William Dean, Administrator - Region I  
U. S. Nuclear Regulatory Commission  
2100 Renaissance Blvd., Suite 100  
King of Prussia, PA 19406-2713

Mr. John Lamb, Licensing Project Manager  
U. S. Nuclear Regulatory Commission  
11555 Rockville Pike  
Rockville, MD 20852

USNRC Senior Resident Inspector - Salem  
Mail Code X24

Ms. Lynn Lankshear  
National Marine Fisheries Service  
Protected Resources Division  
Lynn.Lankshear@noaa.gov

Mr. Patrick Mulligan  
Bureau of Nuclear Engineering  
New Jersey Department of Environmental Protection  
Patrick.Mulligan@DEP.State.NJ.US

Mr. Dave Jenkins  
Endangered and Nongame Species Program  
New Jersey Department of Environmental Protection  
Dave.Jenkins@DEP.State.NJ.US

Jeanette Bowers  
Department of Fish and Wildlife  
New Jersey Department of Environmental Protection  
Jeanette.Bowers@DEP.State.NJ.US

Salem Commitment Coordinator  
Mail Code X25

## ATTACHMENT 1 (Sturgeon)

Observer's full name: Edwin W. Obrecht  
 Reporter's full name: Edwin W. Obrecht

Species Identification (Key attached): Atlantic Sturgeon (Acipenser oxyrinchus)

Site of Impingement (Unit 1 or 2, CWS or DWS, Bay #, etc.): SGS Unit 1; CWI 11B

Date animal observed: 04/07/14 Time animal observed: 09:40am  
 Date animal collected: 04/07/14 Time animal collected: 09:40am  
 Date rehab facility contacted: \_\_\_\_\_ Time rehab facility contacted: \_\_\_\_\_  
 Date animal picked up: \_\_\_\_\_ Time animal picked up: \_\_\_\_\_

Environmental conditions at time of observation (i.e., tidal stage, weather):  
Air temp. - 6.8°C; sal. - 2.0ppt; wind- East; sky- light rain; wave - slight; tide - Ebb 2 (89.2ft)

Date and time of last inspection of screen: 04/07/14 at 07:37am  
 Water temperature (°C) at site and time of observation: 7.5°C

Number of pumps operating at time of observation: Unit 1 6 Unit 2 6

Average percent of power generating capacity achieved per unit at time of observation:

Unit 1 100 Unit 2 100

Average percent of power generating capacity achieved per unit over the 48 hours previous to observation:

Unit 1 100 Unit 2 100

**Sturgeon Information:**

Species Atlantic Sturgeon (Acipenser oxyrinchus)

Fork length (or total length) 609mm (FL) / 702mm(TL) Weight 1.49kg

**Condition of specimen/description of animal**

Specimen was deceased at the time of retrieval by Salem Yard Crew. Processing was completed by ECSI fisheries technician, who did not observe any significant damage, and did not detect the existence of external tags or PIT tags. Specimen was transported back to the ECSI office and preserved on ice. At the request of the NMFS, custody of the specimen was transferred to Delaware DNREC on 4/8/14.

Fish Decomposed: ☒ NO SLIGHTLY MODERATELY SEVERELY

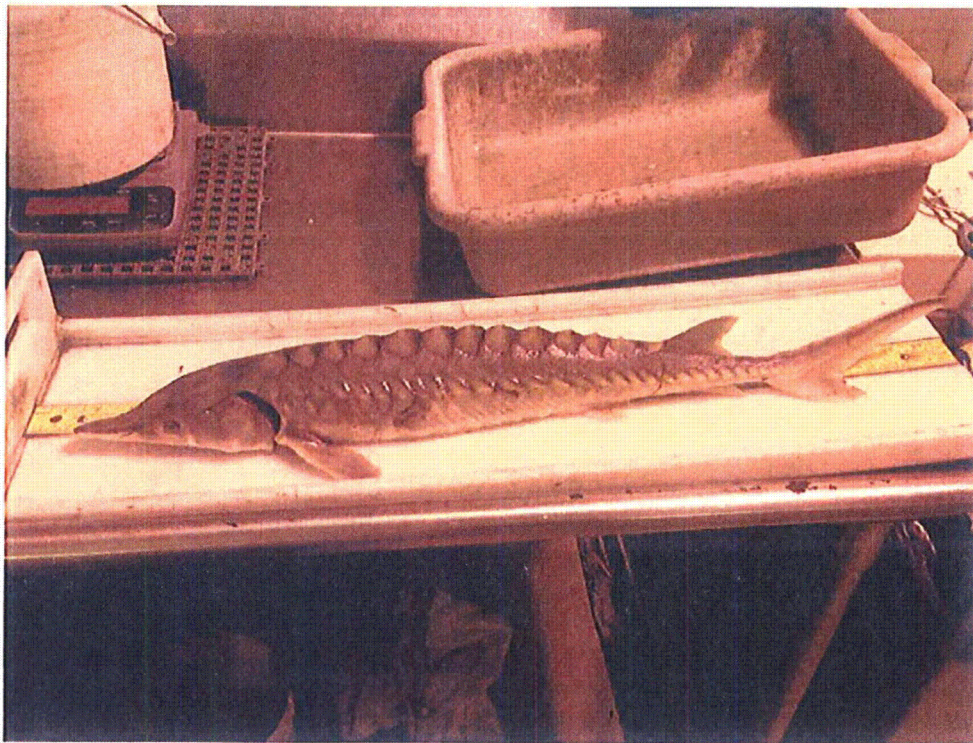
Fish tagged: YES ☒ NO Please record all tag numbers. Tag # \_\_\_\_\_

Photograph attached: ☒ YES / NO

(please label species, date, geographic site and vessel name on back of photograph)



## Photographs



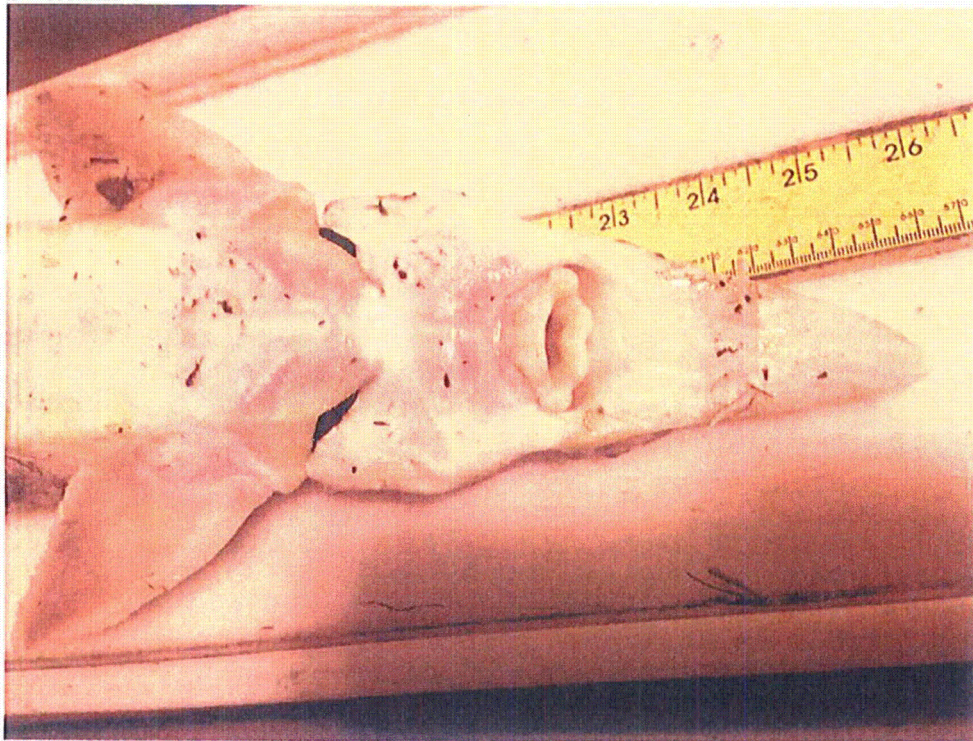
View showing the size and condition of the deceased Atlantic Sturgeon (*Acipenser oxyrinchus*), retrieved at 09:40 on 04/07/14 by Salem Yard Crew personnel during routine trash rack cleaning at the Salem CWIB. Except for a small, irregular shaped puncture wound on the left lateral side of the body, the specimen did not show evidence of significant damage (04/07/14).



Another photo that provides a right lateral view of the same specimen (04/07/14).



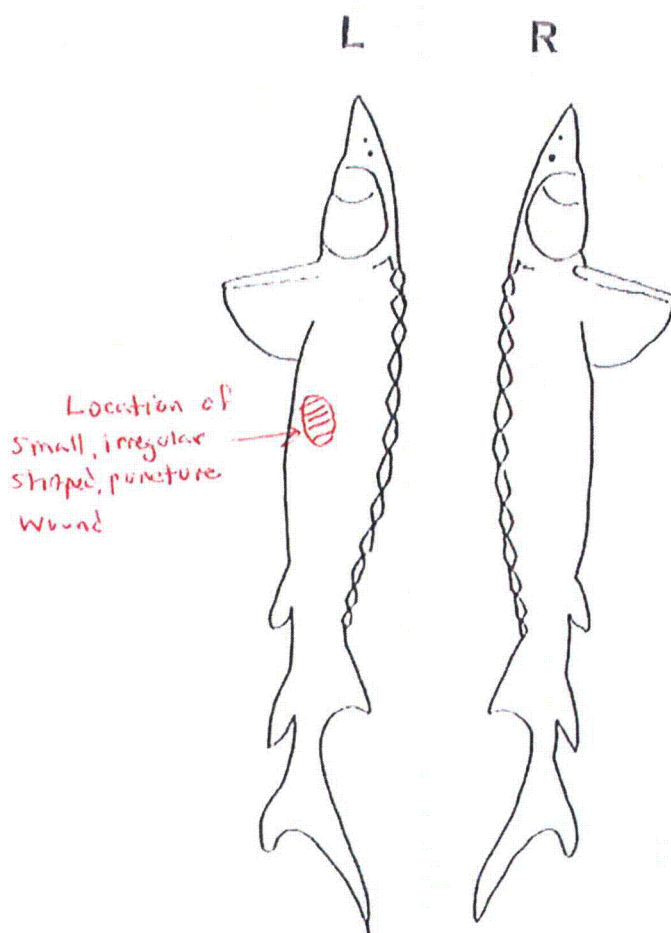
Photographs



This photo provides a ventral view of the specimen, and shows the characteristic small mouth and elongated rostrum (04/07/14).

# ATTACHMENT 1 (Sturgeon) continued

Draw wounds, abnormalities, tag locations on diagram and briefly describe below



## Description of fish condition:

At the time of processing of the deceased specimen, no evidence of significant external damage or normal decomposition was observed. However, a small, irregular shaped puncture like wound was observed on the left lateral side of the body. The wound did not appear to be recent, and there is no indication that the wound or death of the specimen was caused by plant operations. The National Marine Fisheries Service was notified of the collection at 10:44am and the NJDEP was notified at 10:46am.

# STURGEON SALVAGE FORM

Sturgeon 1

For use in documenting dead sturgeon in the wild under ESA permit no. 1614 (version 05-16-2012)

## INVESTIGATORS'S CONTACT INFORMATION

Name: First Douglas Last Potts  
 Agency Affiliation PSEG subcontractor Email dpotts@ecsi-del.com  
 Address 100 South Cass Street, Middletown, DE 19709  
 Area code/Phone number (302) 378-9881

UNIQUE IDENTIFIER (Assigned by NMFS)

## DATE REPORTED:

Month 04 Day 07 Year 2014

## DATE EXAMINED:

Month 04 Day 07 Year 2014

## SPECIES: (check one)

- ☐ shortnose sturgeon  
☒ Atlantic sturgeon  
☐ Unidentified *Acipenser* species  
 Check "Unidentified" if uncertain.  
 See reverse side of this form for aid in identification.

## LOCATION FOUND: ☐ Offshore (Atlantic or Gulf beach) ☒ Inshore (bay, river, sound, inlet, etc)

River/Body of Water Delaware River City Hancocks Bridge State NJ

Descriptive location (be specific Removed from Circulating Water Intake Structure (CWIS) intake trash racks, Intake bay 11B, during routine trash rack cleaning at the Salem Generating Station, PSEG Nuclear LLC.

Latitude 39° 27'38.17 N (Dec. Degrees) Longitude 75° 32'10.08 W (Dec. Degrees)

## CARCASS CONDITION at time examined: (check one)

- ☒ 1 = Fresh dead  
☐ 2 = Moderately decomposed  
☐ 3 = Severely decomposed  
☐ 4 = Dried carcass  
☐ 5 = Skeletal, scutes & cartilage

## SEX:

- ☒ Undetermined  
☐ Female ☐ Male  
 How was sex determined?  
☐ Necropsy  
☐ Eggs/milt present when pressed  
☐ Borescope

## MEASUREMENTS:

Circle unit

Fork length 6.09 cm  
 Total length 7.02 cm  
 Length ☒ actual ☐ estimate  
 Mouth width (inside lips, see reverse side) 1.8 cm  
 Interorbital width (see reverse side) 4.2 cm  
 Weight ☒ actual ☐ estimate 1.48 kg

TAGS PRESENT? Examined for external tags including fin clips? ☒ Yes ☐ No Scanned for PIT tags? ☒ Yes ☐ No

Tag #

Tag Type

Location of tag on carcass

## CARCASS DISPOSITION: (check one or more)

- ☐ 1 = Left where found  
☐ 2 = Buried  
☐ 3 = Collected for necropsy/salvage  
☒ 4 = Frozen for later examination  
☐ 5 = Other (describe) \_\_\_\_\_

## Carcass Necropsied?

☐ Yes ☒ No

Date Necropsied: \_\_\_\_\_

Necropsy Lead: \_\_\_\_\_

Photos/video taken? ☒ Yes ☐ No

Disposition of Photos/Video PSEG Nuclear Environmental Affairs

## SAMPLES COLLECTED? ☐ Yes ☒ No

Sample

How preserved

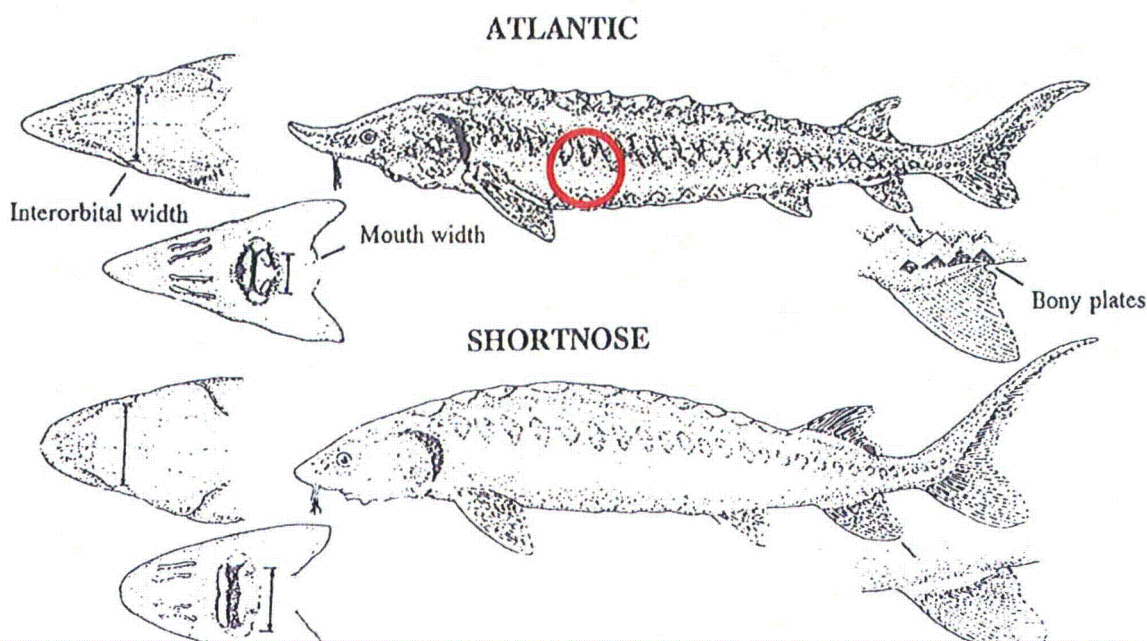
Disposition (person, affiliation, use)

Comments: The deceased Atlantic sturgeon was collected from the Salem Circulating Water Intake Structure during routine trash rack cleaning on 04/07/14. Positive identification was made by Environmental Consulting Services personnel at 09:45am. The specimen was measured, photographed, and inspected for tags, but none were found. The State of New Jersey DEP, Division of Fish and Wildlife, and National Marine Fisheries (NMFS) were contacted in regards to the incidental take at 10:46 and 10:44 respectively. Upon completion of processing, the fish was transported back to the ECSI main office in Middletown, DE, and preserved (frozen), waiting further instruction of final disposition from NMFS. At the request of the NMFS, Delaware DNREC was directed to take possession of the specimen. Transfer of custody, from ECSI to DNREC, occurred on 4/08/14 at 15:53pm.



Characteristic	Atlantic Sturgeon, <i>Acipenser oxyrinchus</i>	Shortnose Sturgeon, <i>Acipenser brevirostrum</i>
Maximum length	> 9 feet/ 274 cm	4 feet/ 122 cm
Mouth	Football shaped and small. Width inside lips < 55% of bony interorbital width	Wide and oval in shape. Width inside lips > 62% of bony interorbital width
*Pre-anal plates	Paired plates posterior to the rectum & anterior to the anal fin.	1-3 pre-anal plates almost always occurring as median structures (occurring singly)
Plates along the anal fin	Rhombic, bony plates found along the lateral base of the anal fin (see diagram below)	No plates along the base of anal fin
Habitat/Range	Anadromous; spawn in freshwater but primarily lead a marine existence	Freshwater amphidromous; found primarily in fresh water but does make some coastal migrations

\* From Vecsei and Peterson, 2004



Describe any wounds / abnormalities (note tar or oil, gear or debris entanglement, propeller damage, etc.). Please note if no wounds / abnormalities are found.

The specimen was deceased at the time of initial observation and collection by Salem Yard Crew. Some minor damage was observed in the form of a small puncture or laceration located mid-dorsally on the left side of the body, just below the lateral row of scutes (refer to illustration above). No evidence of decomposition was observed. Based on these observations, it appears that the specimen has been deceased only a short period of time however there is no indication that the death was caused by plant operations prior to or at the time of collection.

Data Access Policy: Upon written request, information submitted to National Marine Fisheries Service (NOAA Fisheries) on this form will be released to the requestor provided that the requestor credit the collector of the information and NOAA Fisheries. NOAA Fisheries will notify the collector that these data have been requested and the intent of their use.

**Submit completed forms (within 30 days of date of investigation) to:** Northeast Region Contacts – Shortnose Sturgeon Recovery Coordinator (Jessica Pruden, [Jessica.Pruden@noaa.gov](mailto:Jessica.Pruden@noaa.gov), 978-282-8482) or Atlantic Sturgeon Recovery Coordinator (Lynn Lankshear, [Lynn.Lankshear@noaa.gov](mailto:Lynn.Lankshear@noaa.gov), 978-282-8473); Southeast Region Contacts- Shortnose Sturgeon Recovery Coordinator (Stephanie Bolden, [Stephanie.Bolden@noaa.gov](mailto:Stephanie.Bolden@noaa.gov), 727-824-5312) or Atlantic Sturgeon Recovery Coordinator (Kelly Shotts, [Kelly.Shotts@noaa.gov](mailto:Kelly.Shotts@noaa.gov), 727-551-5603).

## ATTACHMENT 1 (Sturgeon)

Observer's full name: Edwin W. Obrecht  
 Reporter's full name: Edwin W. Obrecht

Species Identification (Key attached): Atlantic Sturgeon (Acipenser oxyrinchus)

Site of Impingement (Unit 1 or 2, CWS or DWS, Bay #, etc.): SGS Unit 1; CWI 11A

Date animal observed: 04/07/14 Time animal observed: 10:40am  
 Date animal collected: 04/07/14 Time animal collected: 10:40am  
 Date rehab facility contacted: \_\_\_\_\_ Time rehab facility contacted: \_\_\_\_\_  
 Date animal picked up: \_\_\_\_\_ Time animal picked up: \_\_\_\_\_

Environmental conditions at time of observation (i.e., tidal stage, weather):  
 Air temp.- 8.2°C; sal.- 2.0ppt; wind- East; sky- light rain; wave - slight; tide - Ebb 2 (88.3ft)

Date and time of last inspection of screen: 04/07/14 at 07:37am  
 Water temperature (°C) at site and time of observation: 8.4°C

Number of pumps operating at time of observation: Unit 1 6 Unit 2 6

Average percent of power generating capacity achieved per unit at time of observation:

Unit 1 100 Unit 2 100

Average percent of power generating capacity achieved per unit over the 48 hours previous to observation:

Unit 1 100 Unit 2 100

**Sturgeon Information:**

Species Atlantic Sturgeon (Acipenser oxyrinchus)

Fork length (or total length) 611mm (FL) / 702mm(TL) Weight 1.69kg

**Condition of specimen/description of animal**

One of two live specimens retrieved by Salem Yard Crew during routine trash rack cleaning at Salem CWIB. Data collection was completed by ECSI fisheries technician, who did not observe any external damage to the specimen. No external tags and no PIT tags were indicated. After processing, specimen was released back to the Delaware River via the Detritus Discharge Pipe at 10:53am.

Fish Decomposed: (NO) SLIGHTLY MODERATELY SEVERELY

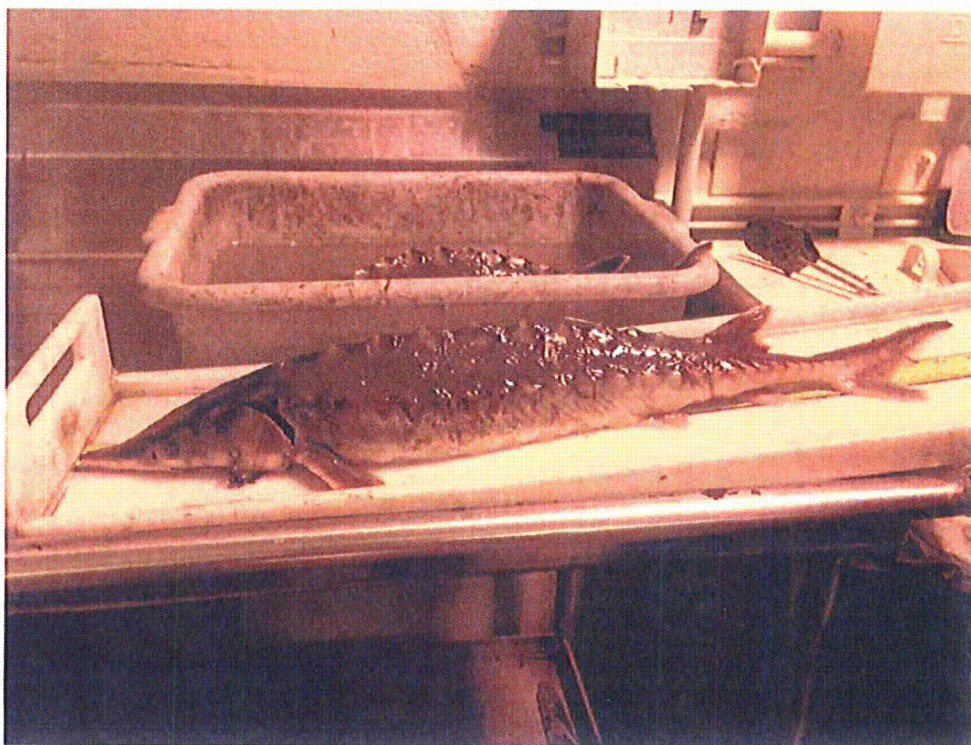
Fish tagged: YES / (NO) Please record all tag numbers. Tag # \_\_\_\_\_

Photograph attached: (YES) / NO

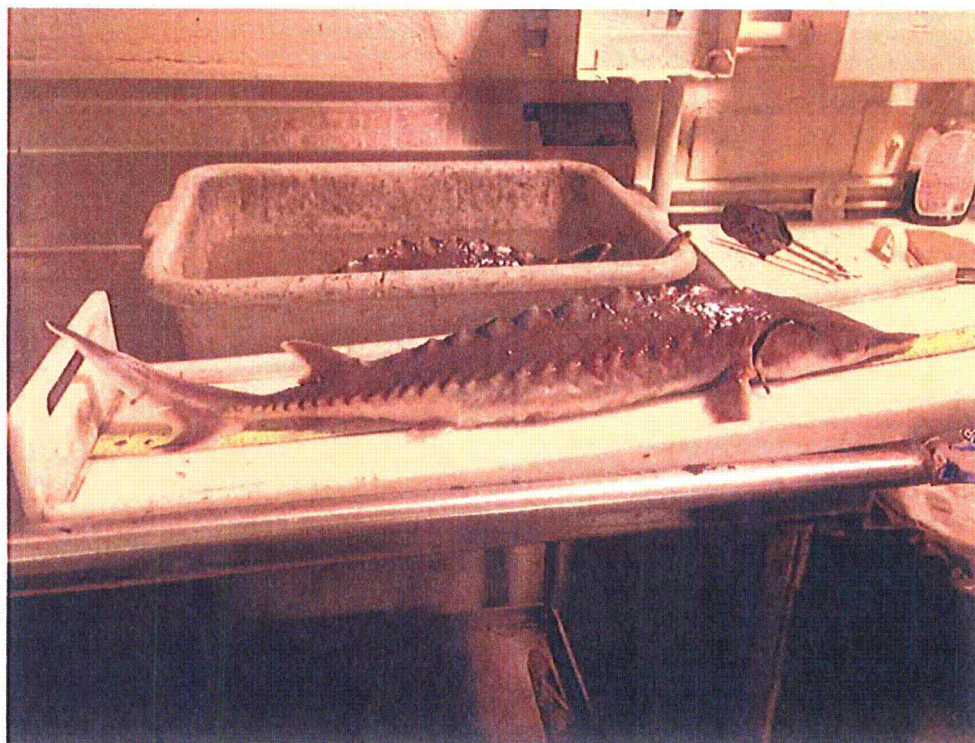
(please label species, date, geographic site and vessel name on back of photograph)



Photographs



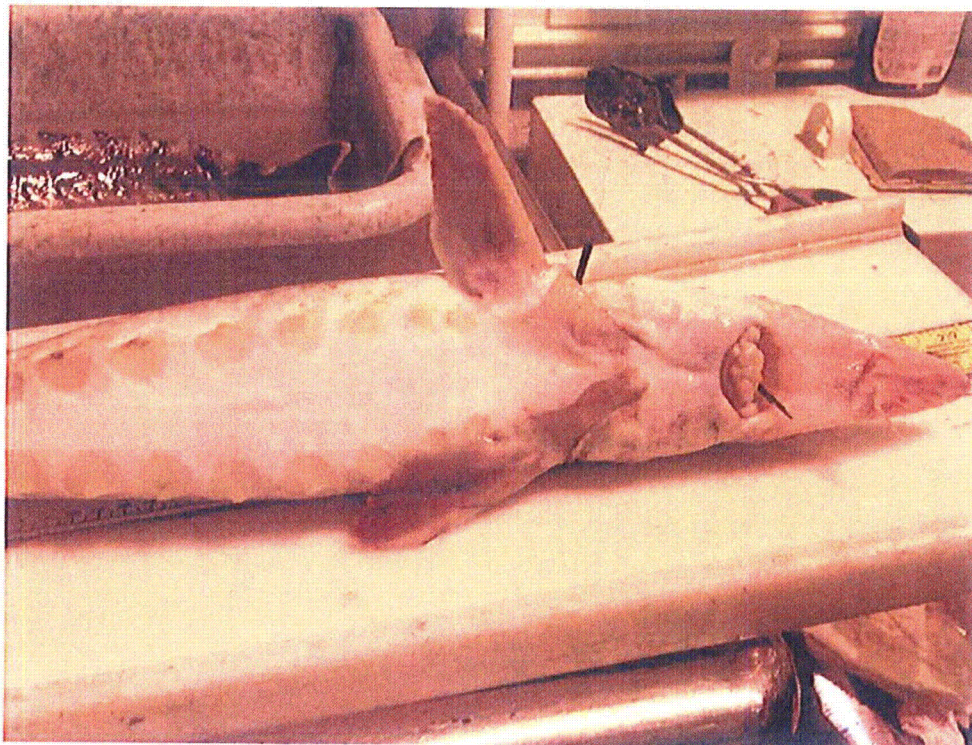
View showing the size and condition of one of two, live Atlantic Sturgeon (*Acipenser oxyrinchus*) collected at 10:40am on 04/07/14 by Salem Yard Crew personnel during routine trash rack cleaning at the Salem CWIB (04/07/14).



Another photo providing a right lateral view of the same specimen (04/07/14).



Photographs

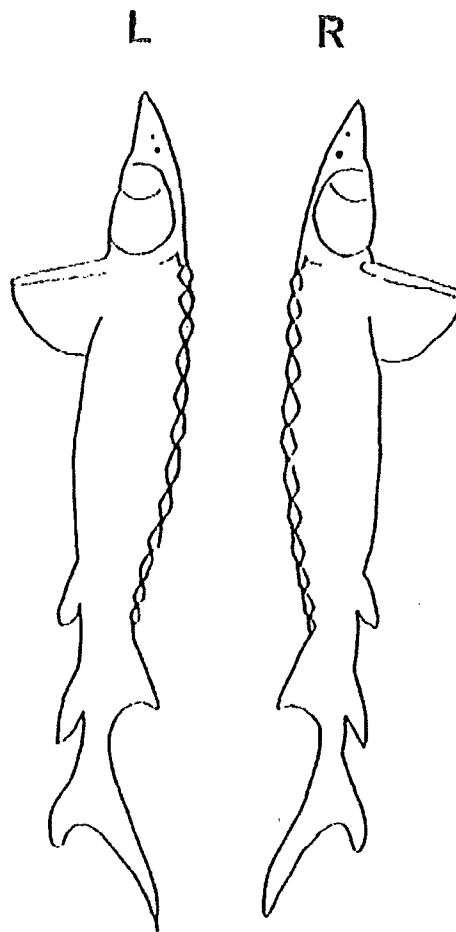


This photo provides a ventral view of the specimen, and shows the small mouth and elongated rostrum, which are characteristic of the species(04/07/14).



**ATTACHMENT 1 (Sturgeon) continued**

Draw wounds, abnormalities, tag locations on diagram and briefly describe below



**Description of fish condition:**

Specimen was alive at the time of retrieval by Salem Yard Crew. During processing, no external damage to the specimen was observed. After processing, the specimen was released back to the river at 10:53am. The National Marine Fisheries was notified of the collection at 10:58am and the NJDEP was notified at 10:50am.

## ATTACHMENT 1 (Sturgeon)

Observer's full name: Edwin W. Obrecht  
 Reporter's full name: Edwin W. Obrecht

Species Identification (Key attached): Atlantic Sturgeon (Acipenser oxyrinchus)

Site of Impingement (Unit 1 or 2, CWS or DWS, Bay #, etc.): SGS Unit 1; CWI 11A

Date animal observed: 04/07/14 Time animal observed: 10:40am  
 Date animal collected: 04/07/14 Time animal collected: 10:40am  
 Date rehab facility contacted: \_\_\_\_\_ Time rehab facility contacted: \_\_\_\_\_  
 Date animal picked up: \_\_\_\_\_ Time animal picked up: \_\_\_\_\_

Environmental conditions at time of observation (i.e., tidal stage, weather):  
Air temp.- 8.2°C; sal.- 2.0ppt; wind- East; sky- light rain; wave - slight; tide - Ebb 2 (88.3ft)

Date and time of last inspection of screen: 04/07/14 at 07:37am  
 Water temperature (°C) at site and time of observation: 8.4°C

Number of pumps operating at time of observation: Unit 1 6 Unit 2 6  
 Average percent of power generating capacity achieved per unit at time of observation:

Unit 1 100 Unit 2 100

Average percent of power generating capacity achieved per unit over the 48 hours previous to observation:

Unit 1 100 Unit 2 100

**Sturgeon Information:**

Species Atlantic Sturgeon (Acipenser oxyrinchus)

Fork length (or total length) 590mm (FL) / 676mm(TL) Weight 1.37kg

**Condition of specimen/description of animal**

The second of two live specimens retrieved by Salem Yard Crew during routine trash rack cleaning at Salem CWIB. Data collection was completed by ECSI fisheries technician, who did not observe any external damage to the specimen. No external tags and no PIT tags were indicated. After processing, specimen was released back to the Delaware River via the Detritus Discharge Pipe at 10:53am.

Fish Decomposed: ☒ NO SLIGHTLY MODERATELY SEVERELY

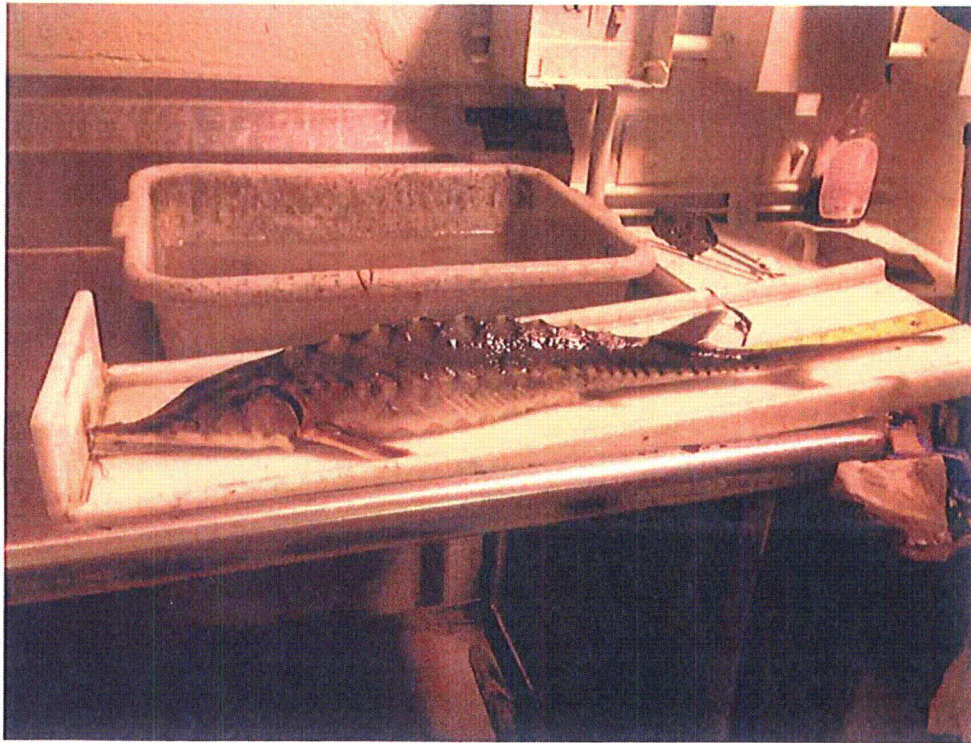
Fish tagged: YES / ☒ NO Please record all tag numbers. Tag # \_\_\_\_\_

Photograph attached: ☒ YES / NO

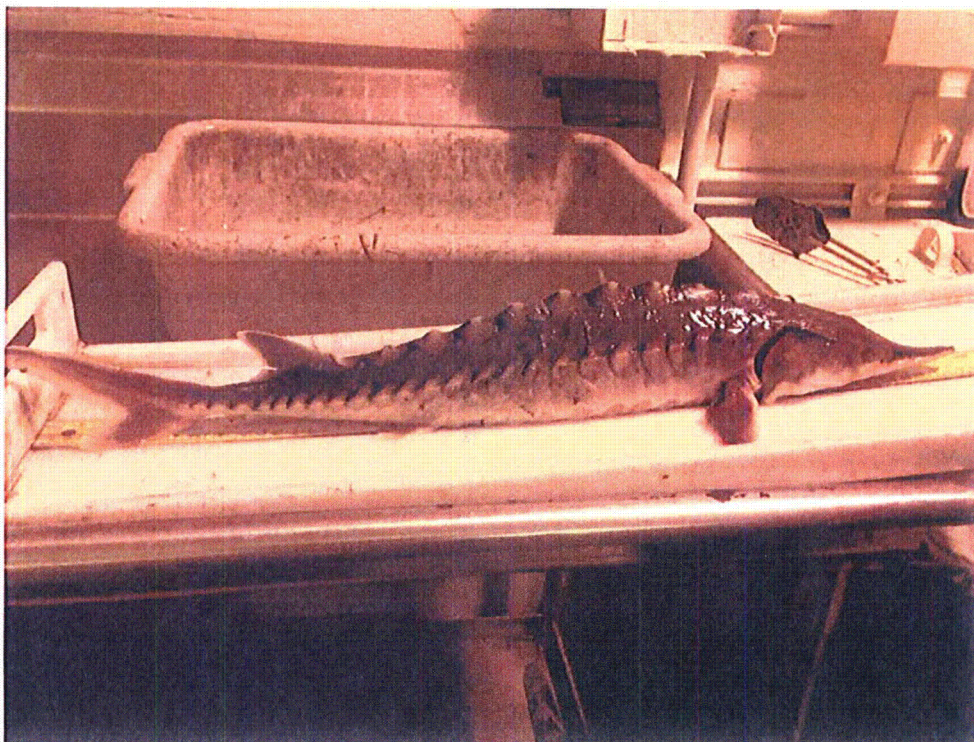
(please label species, date, geographic site and vessel name on back of photograph)



Photographs



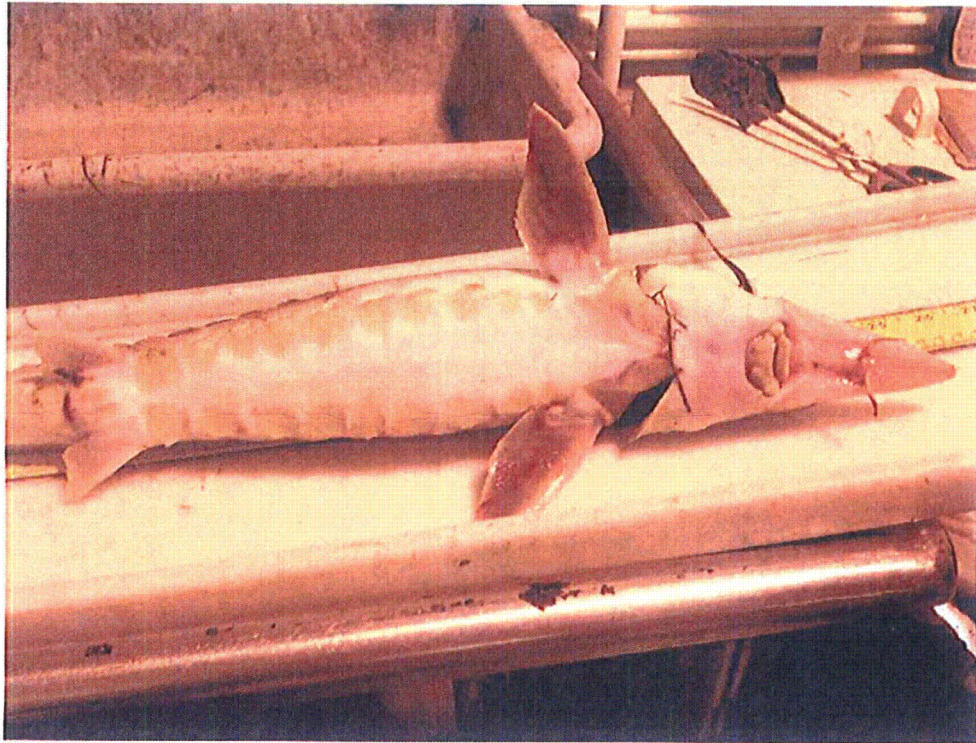
View showing the size and condition of the second of two, live and undamaged Atlantic Sturgeon (*Acipenser oxyrinchus*) collected at 10:40am on 04/07/14 by Salem Yard Crew personnel during routine trash rack cleaning at the Salem CWIB (04/07/14).



This photo provides a right lateral view of the same specimen. Measurements taken during processing, indicate that this specimen was slightly smaller in size than the first (04/07/14).



Photographs

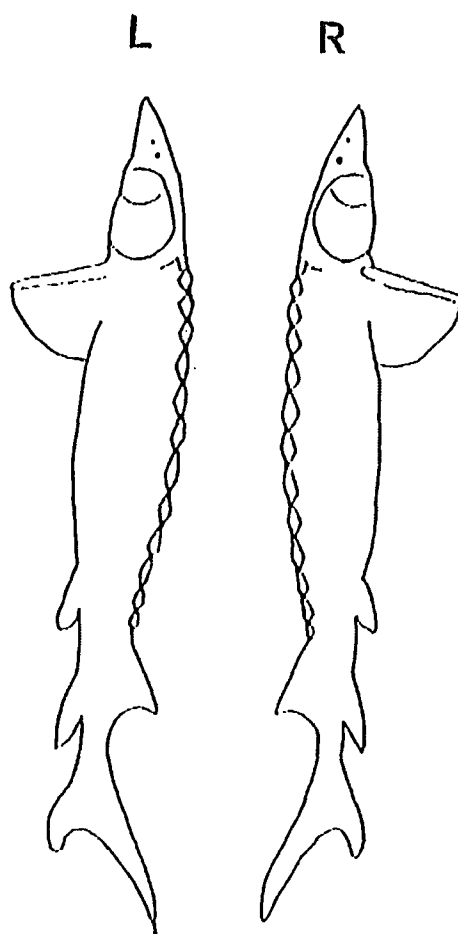


This photo provides a ventral view of the second specimen, which also shows the characteristic small mouth and the elongated rostrum (04/07/14).



ATTACHMENT 1 (Sturgeon) continued

Draw wounds, abnormalities, tag locations on diagram and briefly describe below



Description of fish condition:

The second of two live specimens retrieved together by Salem Yard Crew during trash rack cleaning. No external damage to the specimen was observed. After processing, the specimen was released back to the river at 10:53am. The National Marine Fisheries was notified of the collection at 10:58am and the NJDEP was notified at 10:50am.