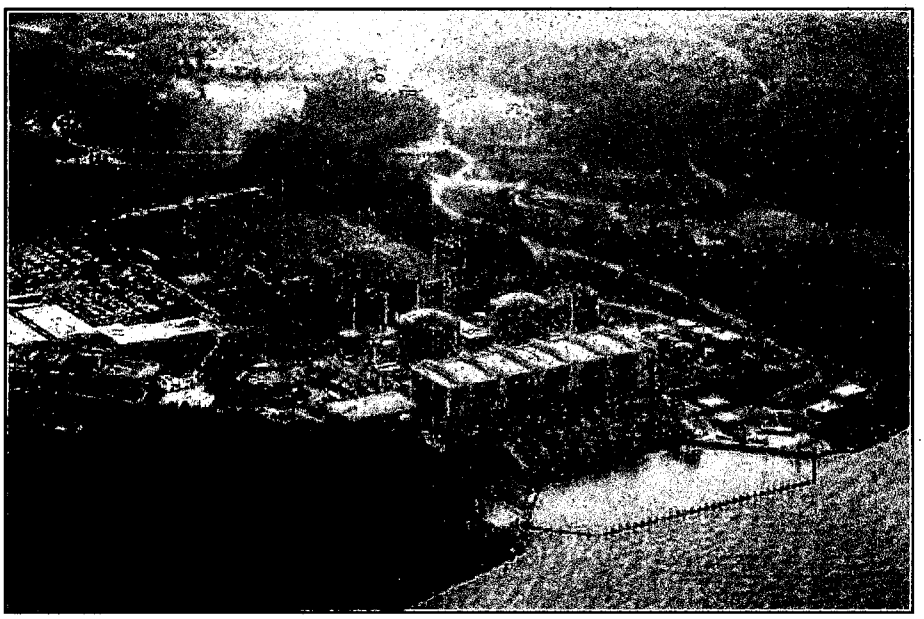
Attachment 2

Entrainment Characterization Data Report for Calvert Cliffs Nuclear Power Plant, June 2008, Final

ENTRAINMENT CHARACTERIZATION DATA REPORT FOR CALVERT CLIFFS NUCLEAR POWER PLANT



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June 2008
Final

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LIST OF ACRONYMS

°C	Degrees Celsius
°F	Degrees Fahrenheit
µs/cm	Microsiemens per Centimeter
µm	Micron
BPJ	Best Professional Judgement
BTA	Best Technology Available
CDS	Comprehensive Demonstration Study
CE	Constellation Energy
CFR	Code of Federal regulations
cfs	Cubic Feet per Second
CCNPP	Calvert Cliffs Nuclear Power Plant
CWIS	Cooling Water Intake Structure
DO	Dissolved Oxygen
EA	EA Engineering, Science, and Technology, Inc.
ECS	Entrainment Characterization Study
El	Elevation
ft	Feet
fpm	Feet per Minute
ft/s	Feet per Second
gpm	Gallons per Minute
in	Inches
m^3	Cubic Meters
m^3/min	Cubic Meters per Minute
MDDNR	Maryland Department of Natural Resources
MDE	Maryland Department of the Environment
mg/L	Milligram per Liter
MGD	Million Gallons per Day
mL	Milliliter
mm	Millimeters
mph	Miles per Hour
MW_{net}	Megawatts Net
MW_h	Megawatt Hours
NPDES	National Pollutant Discharge Elimination System
PIC	Proposal for Information Collection
ppt	Parts per Thousand
SOP	Standard Operating Procedure
Sq ft	Square Feet
USEPA	United States Environmental Protection Agency

SUMMARY

In accordance with the United States Environmental Protection Agency (USEPA) Phase II Rule for implementation of Section 316(b) of the Clean Water Act, Constellation Energy (CE) initiated activities in 2004 in anticipation of demonstrating compliance with new performance standards for the reduction of entrainment of aquatic organisms within the cooling-water system at the Calvert Cliffs Nuclear Power Plant (CCNPP). In response to the first requirement of the rule, CE submitted the Proposal for Information Collection (PIC) to the Maryland Department of the Environment (MDE) for approval on 28 December 2005. The PIC included a sampling plan which covered those activities necessary to collect the required entrainment data at CCNPP for development of scientifically valid estimates. In consultation with MDE, CE determined that new impingement data were not required because CCNPP has 22 years of historical data collected between 1974 and 1995. However, a special study to assess whether the baffle wall that encloses the CCNPP cooling water intake structure (CWIS) provides any benefit with respect to entrainment was included in the study plan. The same methodology was used to collect data at both the traveling screens and the baffle wall. The entrainment characterization study was conducted in 2006 and 2007; the baffle wall study was conducted in 2006.

Code of Maryland Regulations (COMAR 26.08.03.05) stipulates that the location, design, construction, and capacity of cooling water intake structures must reflect the best technology available (BTA) for minimizing adverse environmental impacts. The requirement in the Clean Water Act §316(b) and COMAR 26.08.03.05 to utilize the BTA for minimizing adverse environmental impact are referred to as the "BTA Standard." MDE implements the BTA Standard through the National Pollutant Discharge Elimination System (NPDES) permit and its state discharge permit programs. Decisions on BTA are to be made using best professional judgment (BPJ) as directed by both MDE and EPA. COMAR 26.08.03.05 §E requires installation of modifications to mitigate entrainment losses, if significant measurable losses occur to spawning and nursery areas of concern beyond the defined mixing zone.

In March 2007, USEPA Administrator of Water, Mr. Benjamin Grumbles issued a memorandum to the Regional Administrators that the Phase II Rule should be considered suspended and BTA decisions made based on BPJ. EPA officially suspended the Phase II Rule, excepting 40 CFR 125.90(b) on July 9, 2007. In May 2007, CE met with MDE to discuss how to proceed in anticipation of the rule being suspended and it was agreed that the entrainment characterization study was an essential element for a BPJ determination. This report presents the results of these studies as originally envisioned to comply with the Rule and to support a BPJ determination.

Results of the entrainment study showed that entrainment densities at the intake were highest during May though June, with smaller peaks in July and August, and the period of lowest abundance was from September through April. Average density was lower overall in 2007 than in 2006. A total of 25 taxa were collected during both years. A total

of seven taxa in 2006 and eight taxa in 2007 accounted for 97 percent of the ichthyoplankton collected. The dominant taxa in 2006 were bay anchovy fertilized eggs; Sciaenidae fertilized eggs; bay anchovy post-yolk sac larvae and juveniles; Atlantic menhaden fertilized eggs; and naked goby post-yolk sac larvae. The dominants were similar in 2007 with the addition of hogchoker fertilized eggs. Density of entrained individuals was significantly greater at night than day for most of the abundant taxa during both years. Bay anchovy eggs and post-yolk sac larvae were more abundant during the day in 2007 and Atlantic menhaden fertilized eggs were more abundant during the day in 2006 and 2007.

At the baffle wall in 2006, fewer taxa (15) were collected than at the intake. The dominant taxa were the same as the intake but bay anchovy fertilized eggs comprised a larger percentage of the total at the baffle wall. Peak abundance occurred at the same time as at the intake but density was lower at the baffle wall than the intake during most sampling dates. Day and night abundance trends were similar at the baffle wall but there were no significant differences for any of the taxa. Statistical comparison of the density data for the intake and the baffle wall did not reveal any clear pattern with some taxa significantly higher at the intake and some higher at the baffle wall. The presence of the baffle wall did not provide any consistent reduction in entrainment as evidenced by the fact that there was no substantial difference in the results between the intake and baffle wall.

Total estimated entrainment (number/100m^3) for maximum design cooling water flow at CCNPP is summarized below:

	2006	2007	Total
Unit 1	3,645,962,339 (±1,869,955,084)[(a)]	2,291,077,396 (±565,930,432)[(a)]	5,937,039,735 (±2,435,885,516)[(a)]
Unit 2	3,645,962,339 (±1,869,955,084)[(a)]	2,291,077,396 (±565,930,432)[(a)]	5,937,039,735 (±2,435,885,516)[(a)]
Total	7,291,924,678 (±3,739,910,169)[(a)]	4,582,154,792 (±1,131860,863)[(a)]	11,874,079,470 (±4,871,771,032)[(a)]

(a) Eighty percent (80%) Confidence limits.

The two- year, two-unit estimate of entrainment based on maximum design flow was approximately 1.6 percent higher than the estimates for observed cooling water flows; this is associated with a 4.0 percent difference in cooling water volume between the two scenarios. Based on entrainment survival studies conducted at CCNPP (EA 1981), at least 10 percent of these organisms are likely to have survived entrainment.

1.0 INTRODUCTION

1.1 REGULATORY BACKGROUND

Pursuant to the United States Environmental Protection Agency (USEPA) Phase II Rule for implementation of Section 316(b) of the Clean Water Act, Constellation Energy (CE) initiated activities in anticipation of demonstrating compliance with new performance standards for the reduction of impingement and entrainment of aquatic organisms within the cooling-water intake system at the Calvert Cliffs Nuclear Power Plant (CCNPP) Impingement refers to the trapping of juvenile and adult fish and larger macroinvertebrates on the cooling water intake traveling screens. Entrainment is the pumping of small aquatic organisms through the cooling water system.

The Phase II Rule was finalized in 2004 and required large existing power plants (> 50 million gallons per day (MGD) cooling-water flow) to meet national performance standards for the reduction of impingement mortality and entrainment. These standards specified that impingement mortality be reduced by 80-95 percent and, in certain circumstances, that entrainment be reduced by 60-90 percent from the current level of entrainment and/or impingement mortality or the site-specific Calculation Baseline values, at a standard, or "baseline" facility.

The Rule required a sequence of evaluations and studies, collectively called a Comprehensive Demonstration Study (CDS) for each cooling water intake structure (CWIS). The first requirement was the Proposal for Information Collection (PIC), which describes the owner's approach to achieving compliance with the Rule. The PIC for CCNPP was submitted to the Maryland Department of the Environment (MDE) on December 28, 2005. Since extensive impingement data had been collected each year from 1974 through 1995, additional impingement studies were not recommended in the PIC. The PIC did include a sampling plan for collection of entrainment samples (Appendix B of the PIC). This sampling plan covered those activities necessary to collect the required entrainment data at CCNPP for development of a scientifically valid estimate of entrainment. In addition to in-plant entrainment, the PIC included a study plan for determining abundance and percent composition of ichythyoplankton just outside the baffle wall. An Entrainment Characterization Study (ECS) was conducted from March 2006 through September 2007 and is the subject of this report.

On July 9, 2007, USEPA formally suspended the Phase II Rule, except for 40 Code of Federal Regulation (CFR) 90(b) (72 Fed. Reg. 130:37107-37109) and directed states to continue to issue National Pollutant Discharge Elimination System (NPDES) permits using Best Professional Judgment (BPJ) to determine Best Technology Available (BTA) for fish protection at power plant intakes as outlined in a March 20, 2007 memo from Mr. Benjamin Grumbles, Assistant Administrator for Water. In anticipation of the Rule's suspension, CE met with MDE representatives on May 03, 2007 to discuss the process for a BPJ determination. CE and MDE representatives concurred that the impingement and entrainment characterization study is an essential element for a BPJ determination.

In accordance with the Phase II Rule a PIC (HDR/LMS 2005) was prepared on behalf of CCNPP for CE. The PIC addressed the requirements of the remanded Phase II Rule and included the following components:

1) Information on the location, design, and operation of the facility, its existing CWIS, and the source of cooling water for the plant;
2) A summary of past studies of impingement and entrainment and discussion of their relevance;
3) A summary of relevant historical consultations with the State and Federal fish and wildlife agencies;
4) A preliminary review of technologies and operational and/or restoration compliance measures already implemented and the measures proposed to be evaluated further in the CDS; and
5) Sampling plans for additional field studies.

This report summarizes the results of the additional ECS proposed in the PIC and conducted during 2006 and 2007 by EA Engineering, Science, and Technology, Inc. (EA). An evaluation of feasible technologies performed by Alden Research Laboratory, Inc (Alden and EPRI 2008) and this final report on biological studies will provide input into CE's assessment of the compliance status of the CCNPP CWIS.

The pertinent information needs for CCNPP have been provided previously as part of the PIC or will be provided in this report. This report is organized to provide the information as follows:

Historic Studies—the PIC provided a summary (Section 2 and Appendix A) of the historic studies of the aquatic community, impingement, and entrainment conducted at CCNPP since 1974. This information is briefly summarized in Section 1.2 of this report and used for perspective in Section 5.

Source Water Physical Data—the information required by MDE related to the source water falls under the requirements at 40 CFR 122.21(r) (2) that are needed in application for a reissued permit to characterize the facility and evaluate the type of waterbody and species potentially affected by the CWIS. This information was submitted to MDE on November 21, 2001 as part of the NPDES permit renewal and was briefly covered in the PIC. The required narrative description is provided in Section 2 of this report.

Cooling Water Intake Structure Data—the information required by MDE related to CWIS falls under the requirements at 40 CFR 122.21 (r) (3) that is also needed to characterize the CWIS in applications for a reissued permit. This information was submitted to MDE on November 21, 2001 as part of the NPDES permit renewal and was included in the PIC. The required narrative description related to the CWIS is provided in Section 3 of this report.

Cooling System Data—the information required by MDE related to the cooling water system falls under the requirements at 40 CFR 122.21(r) (5) that is needed to characterize the relationship of the cooling system to the CWIS in application for a reissued permit. This information was submitted to MDE on November 21, 2001 as part of the NPDES permit renewal and was provided in the PIC. The required narrative description related to the CWIS is provided in Section 4 of this report.

Biological Baseline Characterization Data—the information required by MDE related to impacts of the CWIS was addressed through ECS that were conducted during 2006-2007 under a sampling plan incorporated in PIC for CCNPP (HDR/LMS 2005) and reviewed by MDE (Appendix B). The ECS were conducted consistent with the Phase II rule at § 125.95(b) (3). Results from the ECS with comparisons to earlier entrainment studies conducted at the facility are provided in Section 5 of this report.

1.2 HISTORIC STUDIES

The previous entrainment study was conducted from April 1978 through September 1980 (EA 1981) covering three seasons. A total of 22 taxa were collected and the overwhelming dominant taxon was the hogchoker (*Trinectes maculatus*) which comprised 75 percent of the total number of ichthyoplankton entrained and included four life stages. Other common taxa included the bay anchovy (*Anchoa mitchilli*) fertilized eggs and post-yolk sac larvae at 14 percent and 5 percent, respectively, and naked goby (*Gobiosoma bosci*) post-yolk sac larvae at 3 percent. These four taxa were the most abundant during each of the three summers sampled comprising 97 percent of all ichthyoplankton collected.

The greatest number of individuals were collected during mid-May through the end of August; peak abundance was in July (primarily hogchoker eggs) during most years followed by May or August for some taxa (bay anchovy eggs and larvae, naked goby larvae). In general, no ichthyoplankton were collected during the period of October through April. Hogchoker and bay anchovy egg densities were consistently higher during the night than during the day. The diel trends were not as strong with the bay anchovy and naked goby larvae which were higher at night some years and inconsistent during others.

Since these entrainment data are more than 27 years old and species composition and abundance have potentially changed in the Chesapeake Bay, CE decided to conduct additional sampling to obtain more recent species data at CCNPP.

1.3 ENTRAINMENT CALCULATION BASELINE

The calculation baseline, that is, the CWIS design benchmark against which any reduction of entrainment is to be calculated under the Phase II Rule is an intake constructed flush to and parallel with the shoreline with flow perpendicular to the shoreline. A facility can claim credit for any existing technology or operational factors at

the site that have resulted in a reduction in entrainment from what would be expected under the baseline conditions. The existing CWIS at CCNPP is a close representation of USEPA's baseline definition but as noted in the PIC, with three notable differences: 1) there is a baffle wall in front of the screens designed to withdraw water from lower in the water column, and 2) the existing traveling water screens return fish and debris back to the Chesapeake Bay, and 3) two of the screens are dual flow screens with a low pressure spray wash. In the case of CCNPP, credit may be claimed if a reduction of impingement mortality and/or entrainment can be documented because of these differences.

The first deviation may reduce impingement and entrainment rates by withdrawing water from the lower portion of the water column. The fish/debris return reduces impingement mortality by returning fish back to the Bay but will have no effect on entrainment. The dual flow screens may reduce impingement mortality as they have low pressure spray washes but this will have no effect on entrainment. Also, the calculation baseline assumes that the facility operates at full cooling water and service water pumping capacity throughout the year, but this is not the case because of planned or unscheduled outages.

The calculation baseline used for this report assumes that both Units 1 and 2 operate at full design pumping capacity; that is, 1,730 MGD at Unit 1 and 1,730 MGD at Unit 2 for 365 days each year. As described in the PIC, abundance studies were conducted to determine the effects of the baffle wall. Sampling was conducted outside of the baffle wall simultaneously with sampling at the intake to evaluate if differences existed between the two locations, with the objective of determining if there was a reduction in entrainment because of the baffle wall that could be claimed as credit by CCNPP.

2.0 SOURCE WATER PHYSICAL DATA

2.1 INTRODUCTION

As part of the USEPA §316 (b) Phase II Rule for cooling water intake structures, CCNPP is required to provide source water physical data in order to characterize the facility and provide information on the waterbody from which cooling-water is withdrawn. This information will be used to assess potential impacts of cooling-water intakes on fish and shellfish.

The CCNPP is located on the shoreline of the Chesapeake Bay in Lusby, Maryland. The CCNPP facility has two nuclear generating units, both using once-through cooling water withdrawn from the Chesapeake Bay through a shoreline CWIS consisting of 24 intake bays located behind a single baffle wall designed to direct water flow from the lower portion of the water column. Each unit once-through condenser cooling water system withdraws a maximum of 1,728 MGD from the Chesapeake Bay.

2.2 BACKGROUND AND ENVIRONMENTAL SETTING

CCNPP is located on the western shoreline of the Chesapeake Bay approximately ten miles north of the mouth of the Patuxent River in Calvert County, Maryland (Figure 2-1). CCNPP comprises approximately 2,300 acres of land situated on the western shore uplands region of the Coastal Plain physiographic region (Edwards 1981). This geological province is characterized by relatively flat relief and underlain by crystalline rock covered by unconsolidated sediments including sand, gravel, and silt, and clay (USEPA 2004).

The Chesapeake Bay is the largest estuary in the United States spanning approximately 195 miles in length with a width varying from 4 to 30 miles across (White 1989). The Chesapeake Bay is located in Maryland and Virginia and the main basin comprises a surface area of 2,500 square miles and a volume of 18 trillion gallons (White 1989). The drainage area of the Chesapeake Bay watershed spans approximately 64,000 square miles and covers parts of six states (USEPA 2004). The average depth of the Chesapeake is 21 feet (ft) and maximum depth is 174 ft. In the vicinity of CCNPP depths range from 1.5 to 39.0 ft (Figure 2-2). The residence time of freshwater in the Chesapeake Bay is approximately 7 months (NRC 2004).

Water circulation in the Bay is principally driven by the movement of freshwater from the northern Bay and incoming saltwater from the Atlantic Ocean at the southern end of the Bay. Such water movement results in two-layer circulation typical of many estuaries (Smith et al. 1996). Wind also influences Bay circulation with strong winds capable of forcing water into and out of the Bay and temporarily causing extreme changes in water levels. Tides in the Chesapeake Bay are semidiurnal, ranging from 1 to 3 ft, except during storms and unusual meteorological events. In the vicinity of CCNPP, tidal range is approximately 1.2 ft (Hicks 1964).

The climate of southern Maryland, near CCNPP, is characterized as humid subtropical, with mild winters and humid summers. The mean average high temperature in July is 86 degrees Fahrenheit (°F) and the mean average low temperature in January is 28°F. The mean annual precipitation in this area is approximately 44 inches (in). The majority of precipitation in Maryland occurs during summer, although drought-conditions are also most common during this season (MSCO 2008). Mean surface wind speeds in Maryland range from 9 to 10 miles per hour (mph) in summer and fall to 10 to 12 mph in winter and early spring (MSCO 2008). Weather events such as northeasters occasionally occur in Maryland, causing strong winds and resulting in higher than normal tides in the western Chesapeake Bay and lower than normal tides on the eastern side (MSCO 2008).

Water Quality

The water quality conditions in the Chesapeake Bay vary because of differences in salinity, season, and depth. Salinity in the Chesapeake Bay varies widely based upon the amount of freshwater input during each season. Throughout the Bay salinity typically ranges from <0.5 parts per thousand (ppt) in the upper reaches of the Chesapeake Bay to 30 ppt near the mouth. The waters in the vicinity of CCNPP are mesohaline and range from 5 to 18 ppt. Water temperature in the Chesapeake Bay also varies widely because of relatively shallow water depths, ranging from 34 to 84°F throughout the year. In summer, the warming of surface waters combined with the upstream movement of dense salt water results in stratification. Stratification influences oxygen levels in the Bay by restricting mixing of surface water into the dense bottom water often depleting dissolved oxygen levels and resulting in hypoxic or anoxic conditions (MDDNR 2008). Dissolved oxygen (DO) levels in the Chesapeake Bay are also influenced by the rate of consumption and production by biological processes. The pH of the Chesapeake Bay generally ranges between 7 and 9, with higher pH during algal bloom events (MDDNR 2008). Mean monthly water quality characteristics collected from a Chesapeake Bay fixed monitoring station just east of CCNPP at the mid-channel of the Chesapeake Bay are provided below.

Mean Water Quality Measurements from Chesapeake Bay Mainstem Fixed Monitoring Station - Cove Point (CB4.4), 1985 - 2006

Month	Surface Temp (°C)	Bottom Dissolved Oxygen (mg/l)	Surface Salinity (ppt)	Surface pH	Water Clarity (Secchi, meters)
January	3.96	9.59	14.52	8.02	2.11
February	2.88	10.01	14.44	8.06	2.14
March	5.97	9.03	12.87	8.11	1.93
April	11.51	6.08	10.62	8.28	1.6
May	17.66	2.88	10.14	8.4	1.81
June	23.29	1.19	10.97	8.33	1.37
July	27.18	0.29	12.05	8.32	1.28
August	26.98	0.35	13.13	8.27	1.42
September	24.64	0.77	14.88	8.16	1.6
October	19.22	4.21	16.06	8.03	1.91
November	12.98	6.06	15.72	8.09	2.09
December	8.05	7.94	14.7	8.09	2.06

Source: MDNR Water Quality Monitoring Program

Water quality in the Chesapeake has declined as a result of inputs of excess nutrients, primarily phosphorus and nitrogen, resulting in eutrophication throughout the entire estuary. The main sources of nutrients to the Bay include wastewater effluent and urban and agricultural runoff (MDE 2008). Eutrophication in the Chesapeake Bay has resulted in areas of decreased dissolved oxygen, increased turbidity, loss of submerged aquatic vegetation, and alteration of food webs (Boesch et al. 2001).

Chemical contamination of water, sediment, and fish tissue in the Chesapeake Bay has resulted from both human activities and natural processes (CBP 1999). Sources of chemical contaminants in the Chesapeake Bay include urban and industrial discharges, runoff from residential and agricultural areas, shipping and boating activities, and atmospheric deposition (CBP 1999). Chemical contamination in the Chesapeake Bay is not widespread, generally occurring in historically industrial areas of the Bay, and efforts to control point-source loads have led to significant reductions of contaminants. In 2000, the Chesapeake 2000 agreement was implemented to reduce inputs of sediment loads, contaminants, and nutrients to the Bay along with other ecological restoration goals.

Fish Community

The fish community of the Chesapeake Bay is very dynamic because of multiple salinity regimes, extreme seasonal water temperature changes, and a diversity of habitat types (Murdy et al. 1997). A total of 267 fish species are known to occur in the Chesapeake Bay, although only 32 are year-long residents (Murdy et al. 1997). The Chesapeake Bay fish community includes freshwater, estuarine, marine, anadromous, and catadromous species. Some of the common year-round fishes include bay anchovy, naked goby, hogchoker, white perch (*Morone americana*), yellow perch (*Perca flavescens*), Atlantic silverside (*Menidia menidia*), and skilletfish (*Gobiesox strumosus*). Common anadromous fish species that utilize tributaries of the Bay for spawning include striped bass (*Morone saxatilus*), alewife (*Alosa pseudoharengus*), blueback herring (*Alosa aestivalis*), hickory shad (*Alosa mediocris*), and American shad (*Alosa sapidissima)*. The American eel (*Anguilla rostrata*), the only catadromous fish in the Bay, is also a common resident of the Bay and its tributaries.

Although the Chesapeake Bay supports a diverse fish community, several factors have led to decline in the abundance of many fish species including poor water quality, destruction of habitat, overfishing, and disease (CBFEAP 2006). In the past, the relatively clear waters of the Chesapeake Bay supported an ecosystem based upon extensive seagrass beds and oyster reefs, however increased development within the Bay watershed has led to excess nutrient levels and turbidity in the water column resulting in a phytoplankton-based ecosystem (CBFEAP 2006). These changes to the ecosystem have subsequently led to alterations in fish abundance and community structure.

Nutrient-enrichment of Bay waters has led to seasonal oxygen depletion, particularly in deeper water, resulting in reduced abundance, diversity, and productivity of benthic organisms and bottom-dwelling and bottom-feeding fish species (Boesch et al. 2001). Increased turbidity in the water column has resulted in the significant decline of submerged aquatic vegetation which provided important nursery areas for juvenile fish and crustaceans. Habitat loss and overfishing have been correlated with the decline of many commercially important fish in the Chesapeake Bay including anadromous species such as striped bass, river herring (*Alosa sp.*), American shad, and Atlantic sturgeon (*Acipenser oxyrhynchus*) (CBFEAP 2006). Other fish species that have also declined because of overfishing include Atlantic croaker (*Micropogonias undulatus*), weakfish (*Cynoscion regalis*), and summer flounder (*Paralichthys dentatus*). Populations of commercially important shellfish, such as blue crab (*Callinectes sapidus*) and American oyster (*Crassostrea virginica*), have also significantly declined as a result of overexploitation, habitat degradation, and disease.

Efforts to restore and manage the Chesapeake Bay fish community have been conducted with some success under the USEPA Chesapeake Bay Program and more recently the Chesapeake 2000 agreement. These efforts have included restoring migratory fish passages through removal of physical and chemical blockages, revising fisheries-

management plans to achieve target fish population size, restoring oyster and seagrass beds, and establishing harvest targets for blue crabs.

Hydraulic Zone of Influence

Hydraulic conditions near the CWIS at CCNPP were calculated at mean tidal level elevations (El) 0.61 ft and full flow conditions (5,442.3 cubic feet per second [cfs])(Alden and EPRI 2008). These calculations indicate that the velocity under the baffle wall was 0.4 feet per second (ft/s) assuming a bottom elevation of El -51 ft (Constellation 2006). However, because of siltation under the baffle wall, the bottom elevation is approximately El -43 ft (Wright 2008), resulting in a velocity of about 0.6 ft/s. These calculations indicated that at low water the approach velocity is 0.8 ft/s at the trash racks and increases to 0.9 ft/s at the traveling water screens. Because of uncertainties in the open areas of the screens, through-screen velocities were not calculated but are expected to be about twice the screen approach velocity.

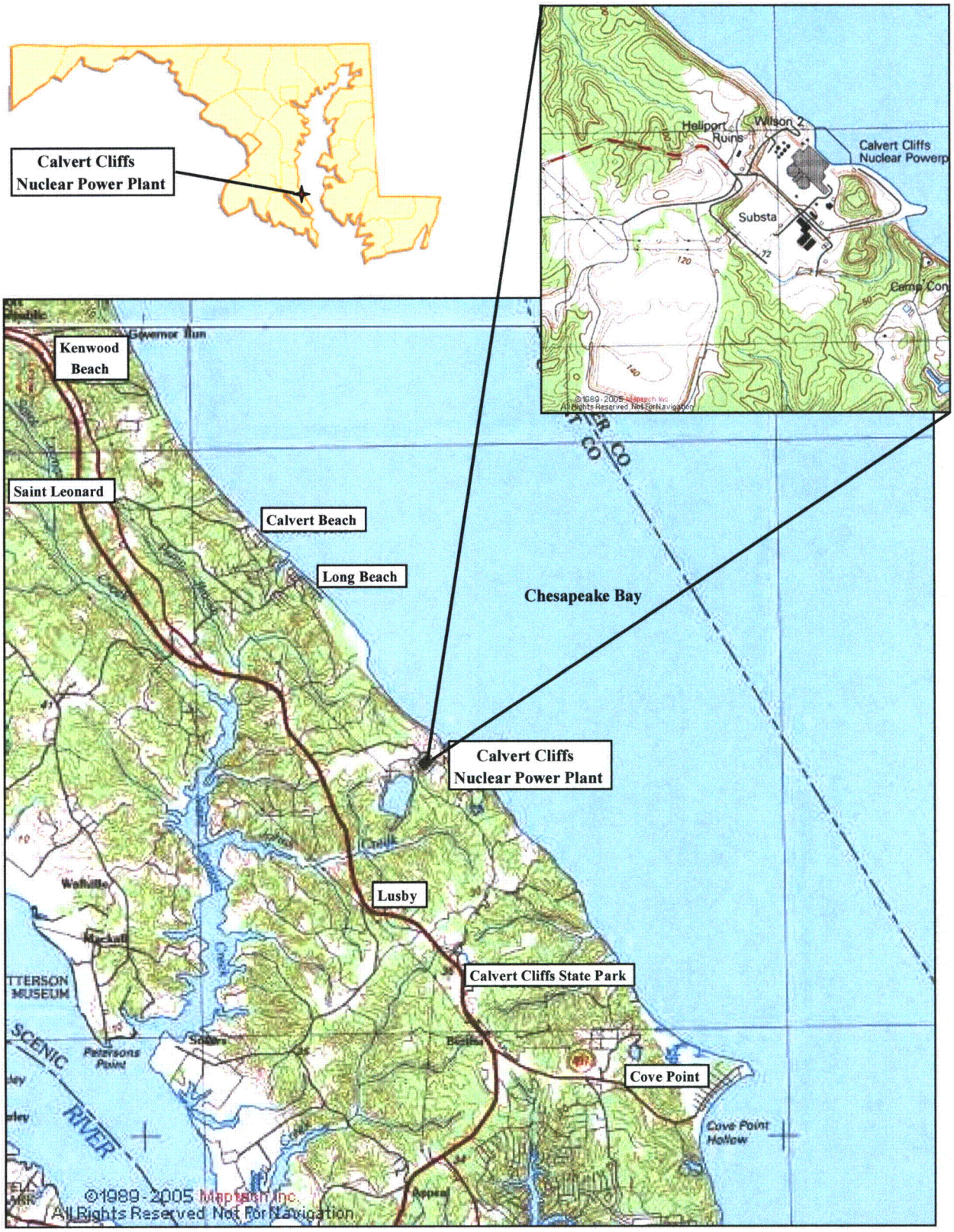


Figure 2-1. Site Location of Calvert Cliffs Nuclear Power Plant, Lusby, Maryland

Figure 2-2. Bathymetry Near Calvert Cliffs Nuclear Power Plant

SOURCES:
Survey done by EA Engineering, 2006
Photography - USDA-FSA-APFO, 2007

3.0 COOLING WATER INTAKE STRUCTURE

The CCNPP has two pressurized light water nuclear generating units both using once-through CWIS that withdraw water from and discharge water to Chesapeake Bay. The CCNPP layout including location of the intake and discharge are shown on Figure 3-1. Unit 1 began operation in 1975 and Unit 2 began operation in 1977. Calvert Cliffs currently operates under State Discharge Permit No. 02-DP-0187, NPDES MD0002399. Each generating unit has three separate water loops. The primary coolant loop is a closed piping system that circulates water through the reactor and transfers heat from the reactor to the steam generator. The primary coolant system for each unit consists of a reactor, two steam generators, two reactor coolant loops, and four reactor coolant pumps. The secondary loop, another closed loop system, uses water converted to steam to drive the turbine. The third loop is an open system that uses water drawn from the Chesapeake Bay to cool the spent steam in the secondary loop and is then discharged back into the Bay. The service water system circulates cooling water through heat exchangers that serve various plant components. The circulating water system also contains a condensate cooler that is used to cool condensate to the hydrogen coolers and air ejectors (Alden unpublished).

3.1 COOLING WATER INTAKE STRUCTURE CONFIGURATIONS

The CWIS for CCNPP is a single intake system for both units comprised of a dredged intake channel, a baffle wall, and an intake screen area, circulating water pumps, condensers, and discharge conduits (Alden unpublished). A section and plan view of the intake is shown in Figure 3-2. When originally dredged, the intake channel extended into the bay about 4,800 ft out from the baffle wall. The original depth of the intake channel varied from El -40 ft at its mouth down to El -51 ft at the baffle wall. The baffle wall is located about 300 ft in front of the screens and is approximately 560 ft long, extending to a depth of approximately -28 ft (Constellation 2006). It functions to allow water to be withdrawn from the bottom of the water column although there is evidence that some mixing of surface water and cooler bottom water occurs before entrance into the plant (Alden unpublished). Due to siltation the opening height under the baffle wall is about 15 ft, originally the opening was about 23 ft high (Constellation 2006 and Wright 2008). Fish can swim under the baffle wall into the embayment behind the baffle wall and become trapped when dissolved oxygen (DO) levels in the bottom waters are low. To allow the fish to escape without entering the low bottom waters, two baffle panels are removed during the summer.

The intake structure is bisected; twelve northern-most bays are used by Unit 1 while the southern twelve are for Unit 2. Each of the 24 bays is 11.2 ft wide and spans from an invert at El -26.0 ft to the top deck at El 10 ft (HDR/LMS 2005) (Figure 3-2).

The bays are all equipped with a trash rack and traveling screen. The steel trash racks are made out of three panels, each 12.2 ft high, and are the same width as the screen bays, 11.2 ft wide. The trash racks are made out of 3.5 in by 1/2 in steel bars providing 2.5 in

clear spacing. To lessen the effects of biofouling the bars are coated in silicone. The trash racks are cleaned by a rail mounted trash rake (HDR/LMS 2005).

All but four of the 24 traveling screens are identical. The four different screens are the end screens for each unit, 11 A and B and 26 A and B. The 20 remaining screens are identical and comprised of 3/8 in square mesh 9.5 ft wide. The screens are normally rotated in sets of four for 10 minutes every hour, but are also auto-rotated when there is an 8 in of water differential across the screens. From July through October, jellyfish are the main source of debris loading. In the fall, debris issues are attributed to the hydroid *Garvia francesca.*

Fish and debris impinged on the screens are removed via a front spray wash system and flushed into a trash trough – one trash trough per unit. Each trough has 0.9 cfs of flow to facilitate transportation of fish and debris. The Unit 1 trough discharge is located north of the screens while the Unit 2 trough discharges south of the screens. The troughs each discharge just above the water level, outside of the baffle wall and at the face of the riprap shoreline.

Of the four other screens, the Unit 1 end screens (11 A and B) are both Beaudrey dual-flow traveling water screens. Dual flow screens are similar to standard flow through screens except that the screen faces are set perpendicular to the flow allowing water to be withdrawn through both the ascending and descending screens. This arrangement eliminates the potential for debris carryover. The effective screen area is about the same as a flow through screen in the same size screen bay. The screens have 3/8 in mesh, can rotate at one of two speeds depending on the debris loading, and are equipped with dual spray washes. When there is a 6 in differential across the screens, the Beaudrey screens rotate at 16.5 ft per minute. If the differential increases to 10 in of water, the screens rotate faster at 50 ft per minute. There is a low pressure spray wash on the ascending side of the screens and a high pressure wash on the descending side of the screens. Fish and debris rinsed from the two Beaudrey screens flow into the Unit 1 trough.

The end screens at Unit 2 (26 A and B) are through-flow screens similar to the other Unit 2 screens, except that they can be rotated at two speeds. When the water differential pressure reaches 4 in, the screens rotate at 10 ft per minute (Wright 2008). If the differential across the screens increases to 10 in of water, the rotation increases to 38 ft per minute. These screens also have both an ascending and a descending spray wash. Fish and debris removed from these two screens flow into the Unit 2 trough.

3.2 COOLING WATER INTAKE STRUCTURE OPERATIONS

Once the cooling water passes through the traveling screens, there are six circulating water pumps per unit located downstream of the screens that pump the cooling water to the condensers. Each set of two pumps flow into a common condenser shell, allowing each unit to generate with one pump per condenser shell. Water passing through the CCNPP condensers is warmed and returned to the Chesapeake Bay via four discharge

conduits (two for each unit). Each conduit is a 12.5 by 12.5 square foot (sq ft) pipe and discharges the warmed water approximately 850 ft north of the facility (HDR/LMS 2005). The discharge is in approximately 10 ft of water.

3.3 FLOW DISTRIBUTION AND WATER BALANCE

Water use associated with the operation of CCNPP consists of water withdrawn from the Chesapeake Bay that is primarily used for cooling. Calvert Cliffs has a once-through cooling system and each unit has a total design flow of circulating water through the turbine condenser systems of approximately 1,728 MGD for a total of 3,456 MGD for both units. A flow of approximately 200,000 gallons per minute (GPM) is withdrawn by each of the six circulating water pumps (HDR/LMS 2005). Up to an additional 20,000 gpm is used for the service water supply. Additional uses include water for the main condensers, auxiliary systems, and reactor shutdown heat removal.

Groundwater wells provide the source for water for domestic, plant service and de-mineralized make-up water needs. CCNPP has five groundwater production wells that supply process and domestic water in the protected area of the plant and eight wells that supply water for domestic use in outlying areas. The production wells extend into the Aquia Aquifer. CCNPP withdraws an average of 284 GPM with both units operating (Alden unpublished). All effluents are combined before being discharged to Chesapeake Bay (Alden unpublished).

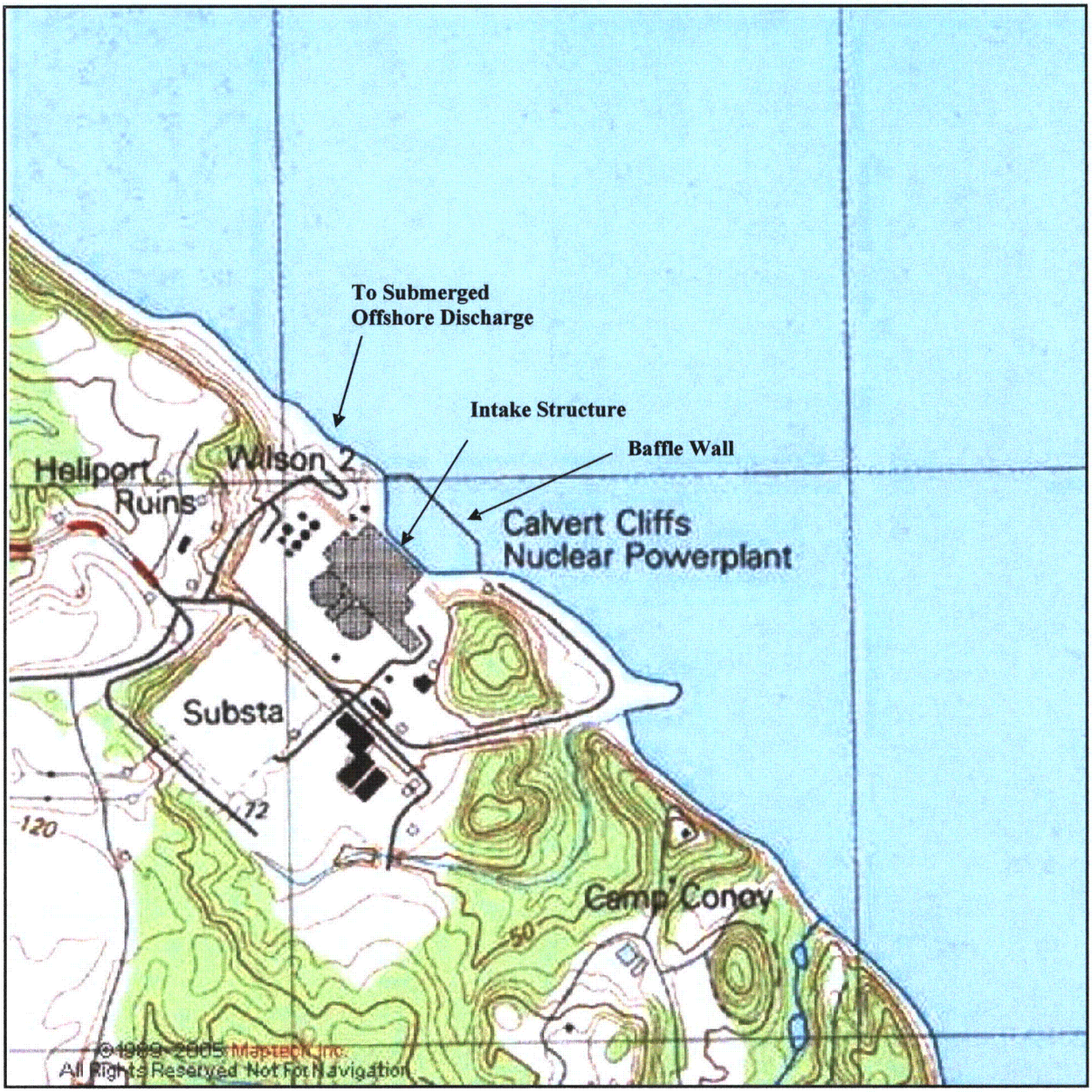


Figure 3-1. Calvert Cliffs Nuclear Power Plant Layout

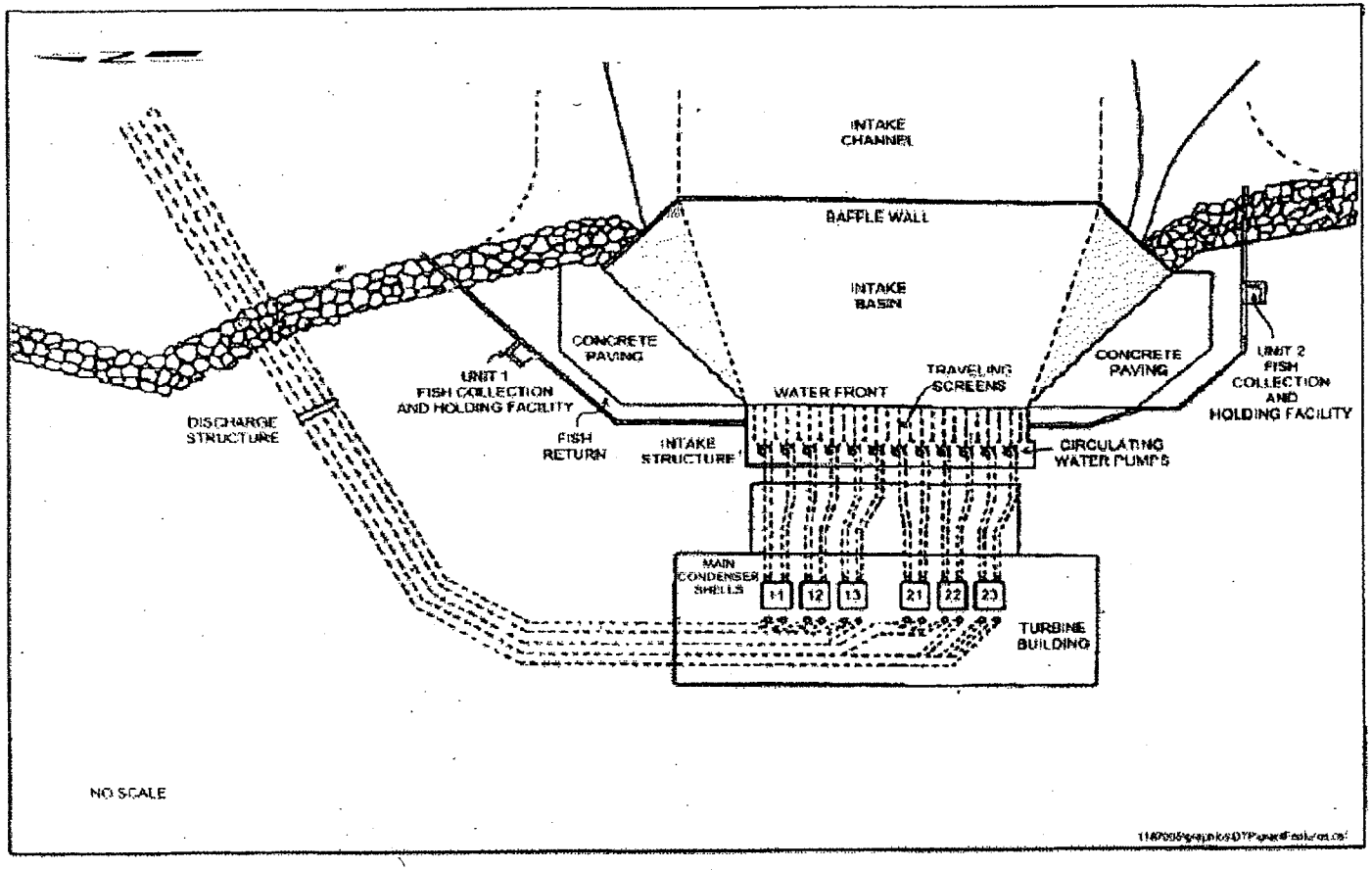


Figure 3-2. Section and Plan View of the Calvert Cliffs Nuclear Power Plant Intake

4.0 COOLING WATER SYSTEM DATA

The nuclear generating units at CCNPP are pressurized light water reactors and each has a design rating of 845 megawatts (MW net). As described in Section 3 the cooling water system for CCNPP uses a single cooling water intake system for both units.

System Design Capacities

The normal water level at Calvert Cliffs is El 0.7 ft, with an extreme low water level of El -3.5 ft. Velocities within the CWIS were calculated at mean low water level (El 0.0 ft) and full flow conditions for both units (3,456 MGD). The calculated velocity under the curtain wall is 0.4 ft/s assuming a bottom elevation of El -51 ft. However, due to siltation, the actual bottom is about El -43 ft, resulting in a velocity of 0.6 ft/s (Wright 2008). The velocity approaching the trash racks is 0.8 ft/s and increases to 0.9 ft/s at the traveling screens. Through screen velocities were not calculated due to uncertainties in the open area of the screens, this velocity is expected to be about twice the traveling screen approach velocity (HDR/LMS 2005). Water passes through the plant in approximately 4 minutes (NRC 1999).

The once-through cooling system for each unit at CCNPP has six circulating water pumps that are each rated for 200,000 GPM (288 MGD) for a combined capacity of approximately 1,728 MGD of cooling water through a single intake system (HDR/LMS 2005). The service water system uses six pumps rated at a capacity of 20,000 GPM each that provide salt water used for cooling plant equipment (NRC 1999). The system is designed to operate two pumps at a time (on each unit) with a per pump flow of approximately 12,000 GPM for each pump (NRC 1999). The discharge combines into four discharge conduits that enter the Chesapeake Bay approximately 850 ft north of the facility (HDR/LMS 2005).

Current System Design Capacities for Calvert Cliffs Nuclear Plant

Circulating Water Pumps	288 MGD
Service Water Pumps	28.8 MGD
NPDES Permitted ΔT	12 °F
Net Power Output	845 MW net per unit

Thermal Limits

MDE Water Management Administration issued CCNPP a State Discharge Permit (No. 02-DP-0187) NPDES Permit (No. MD0002399). The permit became effective on June 1, 2004 and expires May 31, 2009. Effluent limitations in the permit restrict thermal discharge temperature increase not to exceed 12 °F. Studies were conducted in 1979 to determine the characteristics of the thermal plume during one or two unit operation. Studies included the determination of current speed and direction during tidal cycles. The study results on the thermal mixing zone determined that the surface area of the

mixing zone where temperature rise is above 3.6 °F was estimated to be 0.13 square miles and the area for temperature rise of 1.3 °F was approximately 0.4 square miles when the condenser ΔT is 12.0 °F and complies with the mixing zone requirements for discharges to tidal waters at full-load (NRC 1999). Figures 4-1 and 4-2 present the average intake and discharge temperatures by month for 2003-2007 for Unit 1 and Unit 2.

Power Generation

The two reactors at CCNPP are operated at a maximum thermal output of 2700 MW thermal (NRC 1999). From 2003-2007 the 5-year average capacity factor was 92.6% for Units 1 and 2 combined. The total energy generated by CCNPP from 2003-2007 was 71,166,797 megawatt hours (MWh) (data provided by CE). Table 4-1 provides the historic generation data for both units at Calvert Cliffs for 2003-2007.

Scheduled refueling outages generally last for approximately one month and occur at two year intervals for each unit and are scheduled for alternating years to avoid both units being out of service in the same year. Periodic inspection and maintenance outages occur and can vary in length depending on work conducted. The table below provides the number of outage days per year for 2003-2007 for both units

Number of Outage Days Per Year at Calvert Cliffs Nuclear Plant 2003-2007		
	Unit 1	**Unit 2**
2003	0	66.5 days
2004	29 days	0
2005	1.4 days	21 days
2006	49 days; 7.4 days	5.2 days
2007	1.2 days; 1.1 days	35 days

Figure 4-1. Average Intake and Discharge Temperatures, Unit 1, Calvert Cliffs Nuclear Power Plant

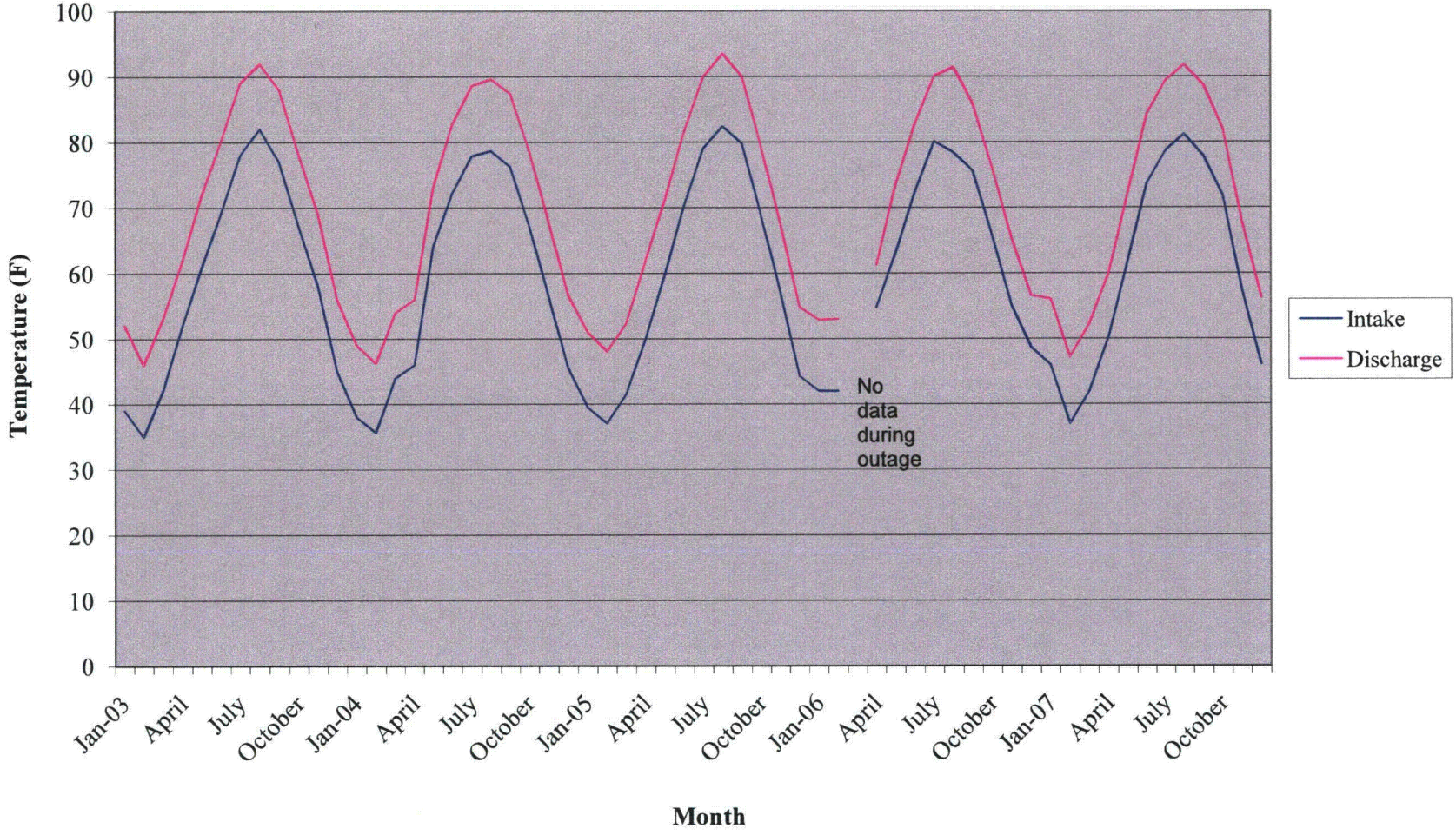


Figure 4-2. Average Intake and Discharge Temperatures, Unit 2, Calvert Cliffs Nuclear Power Plant

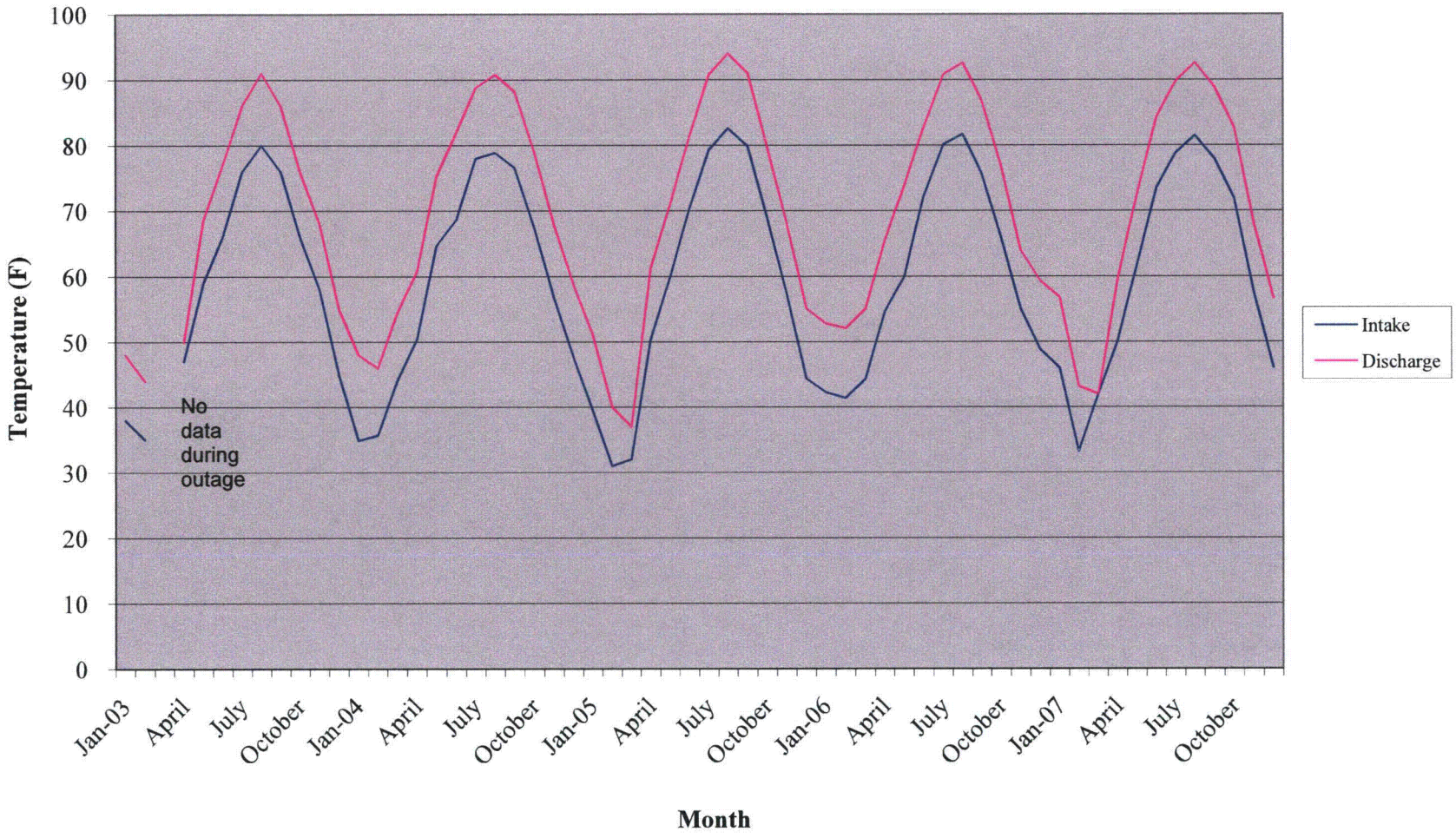


TABLE 4-1. HISTORIC GENERATION DATA (in MWh) AT CALVERT CLIFFS NUCLEAR POWER PLANT UNITS 1 AND 2, 2003-2007[a]

	UNIT 1 (MWh)						UNIT 2 (MWh)					
Month	2003	2004	2005	2006	2007	5-year Average	2003	2004	2005	2006	2007	5-year Average
January	647,173	641,232	667,734	660,291	645,996	**652,485**	645,490	604,448	655,256	636,357	652,001	**638,710**
February	584,126	604,298	601,330	407,845	586,474	**556,815**	288,107	614,650	446,049	585,000	499,602	**486,682**
March	647,476	606,234	628,760	0	661,313	**508,757**	0	655,017	320,966	648,193	0	**324,835**
April	624,201	182,967	632,470	389,533	643,783	**494,591**	160,643	633,487	635,178	625,025	538,238	**518,514**
May	644,533	459,377	655,416	659,333	649,923	**613,716**	614,563	645,250	652,315	644,508	653,306	**641,988**
June	617,925	632,339	618,560	629,651	625,294	**624,754**	622,126	618,470	621,570	616,754	615,938	**618,972**
July	631,896	645,229	629,018	638,517	637,887	**636,509**	638,338	633,739	625,913	625,749	628,632	**630,474**
August	624,440	642,833	627,491	636,519	631,196	**632,496**	633,814	629,875	624,870	622,124	620,200	**626,177**
September	607,094	626,231	610,670	625,168	614,691	**616,771**	619,244	604,825	607,707	608,000	608,527	**609,661**
October	642,356	659,618	644,727	656,500	636,405	**647,921**	651,317	642,016	638,690	631,365	628,138	**638,305**
November	615,725	644,799	636,566	638,906	637,788	**634,757**	629,339	629,906	621,803	514,338	624,993	**604,076**
December	645,509	667,686	659,206	496,077	661,483	**625,992**	655,278	655,534	649,956	634,658	651,384	**649,362**
Annual	627,705	584,404	634,329	536,528	636,019	**603,797**	513,188	630,601	591,689	616,006	560,080	582,313

(a) Data provided by CE

5.0 ENTRAINMENT CHARACTERIZATION

5.1 ENTRAINMENT MONITORING METHODS

In accordance with the study plan (EA 2006) EA conducted entrainment sampling at the intake beginning in March 2006 and continuing through September 2007. Sampling was conducted at the baffle wall simultaneously with the intake sampling during April 2006 through December 2006. The objective of sampling at the baffle wall was to determine if differences in abundance and species composition existed between the intake and the baffle wall which might provide potential credit of the baffle wall against the calculation baseline. Sampling at the baffle wall was discontinued following approval from MDE and Maryland Department of Natural Resources (MDNR) on 16 January 2007 after review of the data comparing the intake and baffle wall data showed no substantial difference in the results.

Entrainment samples were collected from either the Unit 1 or 2 intake forebay from a sampling frame which was in the stop log slot. Samples were collected at the Unit 2 intake (24A) during April 2006 through December 2006 until the unit was shut down for a scheduled outage and then at Unit 1(intake 14A) during January 2007 through September 2007. Samples at the baffle wall were collected from a boat anchored approximately 100 ft from the wall. In accordance with the Sampling Plan, samples were collected once per week from March through August 2006, twice per month from September 2006 through February 2007, and weekly from March through September 2007. Samples were collected on each sample date between dusk and dawn (approximately 1900-0700 hours). During the peak ichthyoplankton season (March through August 2006) and within the same 24-hr period for night samples, additional daytime entrainment samples were collected once per month from approximately 0800-1800 hours to characterize the diurnal period. In the 2007 study year, day time sampling was increased to twice per month and was conducted from March through September 2007.

Sampling was conducted using a pump and net/barrel collection system. The systems used at the intake and the baffle wall were identical in design. A 4-in gas powered trash pump fitted with 4-in discharge hose was used to direct water to the barrel/net device (Figure 5-1). An inline flowmeter was used to measure sample volume. The pump was throttled to provide approximately 300 gpm (1.1 cubic meters/ per minute [m^3/min]) into the net/barrel system. At the intake, the pump hose was coupled to the fixed pipes on the sampling frame starting with the surface followed by the mid-depth and then near-bottom. At the baffle wall the inlet hose to the pump was positioned to sample at the three depths: near-surface, mid-depth and near-bottom. Samples were collected for approximately 20 minutes at each depth during each sampling event at the intake and the baffle wall. Five independent sampling events were conducted during each dusk to dawn or daytime sampling period. The water was pumped through the pump into a plastic barrel containing a plankton net made of 500-micron (μm) mesh netting with an attached codend ring and collection jar. After the required sample interval were completed the

pump was turned off, the net was rinsed from the outside to wash the sample material into the codend. The contents of the sample jar were preserved with 5 percent buffered formalin and transported to EA's Biology Laboratory for later analysis.

Actual sampling procedures started by positioning the pump inlet hose at the surface depth. The inlet hose was flushed for 5 minutes before sampling. During this flush, flow adjustments were made and water was discharged directly into the sampling barrel, not through the plankton net. After flushing the sampling line, the start volume was recorded from the flowmeter and pumping was started through the plankton net suspended in the barrel. The outlet was positioned just beneath the surface of the water in the barrel to avoid damage to any organisms. Sampling continued for approximately 20 minutes at each of the three depths (surface, mid-depth, and bottom) resulting in a 1-hour composite sample during each event. During the sample collection period the system was continuously monitored for any net clogging and resulting overflow, or other problems. If net clogging was evident a clean net complete with codend ring and sample collection jar was switched into the barrel. The resulting sample was marked as "1 of 2" and "2 of 2" and the sample was combined in the laboratory for analysis. At the end of each 1-hour sample period, the end volume and total volume sampled were recorded from the flowmeter, and the pump was turned off. The standpipe in the barrel was pulled to drain the barrel, and the net was washed down from the outside to move all sample material into the codend receiver. Excess water was removed from the sample jar by pouring it through the 500-µm mesh net while the collection jar was still attached. All samples were preserved with 5 percent buffered formalin containing Rose Bengal stain and stored in jars labeled inside and out. All collection information was recorded by field crews onto standard Entrainment Sampling Data Sheets. All samples were checked for proper preservation before being packed up onsite for return to the laboratory.

Measurements of water temperature, DO, pH, specific conductance, and salinity were made at mid-depth in the intake forebay at the beginning and end of each sample period (dusk-dawn and daytime). At the baffle wall, measurements were made at each depth sampled.

In the lab, the contents in each sample jar were placed in a standard 500-µm mesh sieve under a hood and rinsed with water to remove the formalin from the sample. Small portions of the sample were placed in a sorting dish with water (approximately 25 milliliters [mL] total volume), and viewed under dissecting microscopes. Fish larvae and fish eggs were removed from each portion of the sample with forceps and placed into small vials containing five percent formalin. All sample information, including sample site, sample collection date and time, and the number of individuals for each taxonomic group were recorded on a general sorting sheet. The Quality Assurance/Quality Control program was conducted for sample sorting as described in Section 5.3.

Those samples containing a high abundance of organisms were split with a Folsom Plankton Splitter to obtain manageable portions for sorting. The Folsom Plankton

Splitter is used to proportion the sample into equal aliquots for sorting. These aliquots were then sorted using the procedures mentioned above.

The fish eggs and larvae were identified with the aid of a stereomicroscope. Key characteristics were examined and compared to published taxonomic keys and descriptions. Organisms were identified to the lowest practicable taxonomic level, enumerated, and assigned a life stage (i.e. fertilized egg, yolk-sac larvae, post-yolk sac larvae, juvenile, or adult). Taxonomic resources included Fuiman et al (1983), USFWS (1978), and Wang and Kernehan (1979). For each sample, 25 fish larvae were measured to the nearest 0.1 millimeter (mm) using an ocular micrometer. If more than 25 larvae of a given species were collected, 25 randomly selected specimens per life stage were measured. Occasional measurements of fish eggs were done to aid in the identification process.

5.2 CALCULATION OF ENTRAINMENT ESTIMATES AND CONFIDENCE INTERVALS

An example of the calculation sequence used to generate entrainment estimates and confidence intervals is provided in Appendix A (Table A-1) using data from one sampling event at CCNPP. This procedure is consistent with historic entrainment programs conducted at CCNPP and general industry-wide procedures reviewed by EPRI (2004). To estimate the total entrainment catch under maximum cooling-water flow conditions, the number of entrained organisms collected from Unit 1 or Unit 2 was multiplied by the ratio of maximum possible Unit 1 or Unit 2 cooling-water flow to the actual flow on that day. The estimated entrainment total for the sampled day was assumed to be the total for other days that were not sampled within a given temporal stratum. Over the annual sampling period, strata were designated around each individual sampling day. A stratum was determined by counting the days from the sampling day halfway back to the previous sampling date and halfway forward to the subsequent sampling date. The total annual estimate for each taxon was calculated by summing the entrainment estimates for individual stratum.

In order to compute confidence intervals for the annual estimate, the year was partitioned into superstrata consisting of 3 to 4 temporally sequential strata as defined above. The estimate E_i and variance $s^2(E_i)$ for the ith superstrata were then obtained for each taxon as follows:

$$E_i = \sum_{i=1}^{N_i} V_{ij} \times \rho_{ij} ,$$

$$s^2(E_i) = N_i \times s_i^2 ,$$

where

V_{ij} = total intake volume for the jth strata in the ith superstrata,
ρ_{ij} = average estimate per unit volume for the jth strata in the ith superstrata,
N_i = total number of strata in the ith superstrata, and
s_i^2 = estimate of the variance of entrainment in ith superstrata.

The annual estimate and variance was then obtained by summing across superstrata as follows:

$$E_T = \sum E_i$$

$$s^2(E_T) = \sum_{i=1}^{\#\text{superstrata}} s^2(E_i)$$

The 80 percent confidence interval for E_T was then calculated by assuming a normal distribution as

$$E_T \pm 1.28 \times \sqrt{Var(E_T)}.$$

The total number and 80 percent statistical confidence intervals for entrained fish were calculated using this procedure with the addition of separate strata for daytime (sunrise to sunset) and nighttime periods (sunset to sunrise) (Appendix A, Table A-1).

5.3 QUALITY CONTROL

All sampling was conducted in accordance with the Standard Operating Procedures (SOP) prepared by EA (2006). All staff were trained and supervised by experienced senior staff in all aspects of the sampling protocol. All sampling crews consisted of at least two persons one of whom was an experienced member of EA's technical staff.

All ichthyoplankton samples were delivered to EA's Biology Laboratory in Sparks, MD for processing. Samples were logged into the lab and stored in secure vented cabinets until processed. All field data sheets were filed in a central location near the lab. Fish identification was conducted by trained, experienced staff familiar with the taxonomy of the Chesapeake Bay ichthyoplankton. A quality control re-sort program, based on the SOP (EA 2006), was instituted to assure that all specimens were removed from the samples. Identification of specimens was overseen by senior staff to assure accurate organism identification. A voucher collection of species/lifestages was developed for the ichthyoplankton sampling program. The voucher collection was inclusive of all species/lifestages collected during the entrainment sampling program and was available

in the lab for species identification and verification along with taxonomic keys and reference material. Individual specimens of each species collected were preserved in 5 percent formalin and labeled with common and scientific species name, location and date of capture, and identification information of the sample from which it was collected. Voucher specimen identification was verified by a senior EA taxonomist. Following completion of the taxonomy the voucher collection was stored in a cabinet to be maintained for a period of up to five years.

Completed field data sheets were reviewed by EA's site manager to assure completeness, accuracy, and legibility. Laboratory data sheets were reviewed by the laboratory manager. Entry into the electronic database was completed on-site and hard copy printouts of the database received a 100 percent check against the original data sheets before the database was certified as complete.

5.4 RESULTS

5.4.1 Species Composition and Relative Abundance

Table 5-1 contains a list of all fish species collected during entrainment sampling at the intake and baffle wall. A total of 25 distinct species/genera, were collected during the 2006 and 2007 studies at CCNPP. At the intake, 18 species were collected in 2006 and 21 were collected in 2007 (Tables 5-2 and 5-3). At the baffle wall, 15 species were collected in 2006 (Table 5-4). Except for one species, the halfbeak (*Hyporhamphus* sp.), all species collected at the baffle wall were the same as found in the intake samples. They were represented by many life stages including eggs, post-yolk sac larvae, yolk sac larvae, juveniles, and adults. Each species/life stage will be classified as taxon for discussion here.

A total of six taxa in 2006 and eight taxa in 2007 accounted for 97 percent of the ichthyoplankton collected at the intake (Figures 5-2 and 5-3; Appendix Tables B-1 and B-2). In 2006, the dominant taxa were bay anchovy fertilized eggs (64.2 percent) and Sciaenidae sp. fertilized eggs (18.5 percent). Sciaenidae sp. represents eggs from this family that were either damaged or dead and difficult to identify further. According to their life histories (Lippson and Moran 1974), sciaenids that are anticipated to spawn in the vicinity of CCNPP include weakfish and silver perch (*Bairdiella chrysoura*), both of which were collected as larvae in the entrainment studies and were likely to have comprised many of these damaged eggs. Other abundant taxa in 2006 included bay anchovy juveniles (5.0 percent), bay anchovy post-yolk sac larvae (4.4 percent), Atlantic menhaden (*Brevoortia tyrannus*) fertilized eggs (2.9 percent), naked goby post-yolk sac larvae (1.5 percent), and damaged fertilized eggs (0.5 percent). In 2007, species composition was similar except for the increased abundance of hogchoker. The dominants were bay anchovy fertilized eggs (49.7 percent), bay anchovy post-yolk sac larvae (15.7 percent) and hogchoker fertilized eggs (14.1 percent). Other abundant taxa in 2007 included Sciaenidae sp. fertilized eggs (6.0 percent), Atlantic menhaden fertilized eggs (4.5 percent), bay anchovy juveniles (3.1 percent), naked goby post-yolk sac larvae

(2.4 percent), and skilletfish post-yolk sac larvae (1.1 percent). The differences between years were not attributable to the different sampling periods in 2006 (March – December) and 2007 (January – September). Comparing entrainment rates for the equivalent time period of April – September (Figure 5-4), the top taxa comprised identical percentages in 2006 and 2007 compared to the entire periods sampled each year (Figures 5-2 and 5-3).

A total of five taxa accounted for 97 percent of the individuals collected at the baffle wall in 2006 (Table 5-4; Appendix Table B-3). The dominant taxa were the same as at the intake but bay anchovy fertilized eggs (78.1 percent) comprised a larger percentage at the baffle wall and Sciaenidae sp. fertilized eggs (11.9 percent) comprised a smaller percentage. Other abundant taxa at the baffle wall were bay anchovy post-yolk sac larvae (3.5 percent), naked goby post-yolk sac larvae (2.0 percent), and Atlantic menhaden fertilized eggs (1.5 percent) and they comprised similar percentages to the intake entrainment rates. The relative abundance of bay anchovy juveniles was much lower at the baffle wall (0.02 percent) compared to the intake (5.0 percent).

Over all months, the average density of ichthyoplankton was higher at night (405/100 cubic meters [m^3]) than day (324/100m^3) in 2006 when day sampling was conducted once per month (Table 5-5). In 2007, when sampling was conducted during the day twice per month, average density was also higher at night (194/100m^3) than day (164/100m^3) (Table 5-6). The difference in density between day and night was not that great for some of the dates. In 2006, during May through August when abundance was highest, density was higher during the day in June and July and higher at night in May and August (Figure 5-6). During the same time period in 2007, the trend was stronger for higher night time abundance with higher density in six out of eight sampling dates. At the baffle wall in 2006 the trend was similar during May through August with three dates higher at night and one higher during the day (July) (Table 5-7). This pattern is influenced by the composition of taxa during a particular sampling event, since some taxa had a much stronger nighttime trend than others, and a few were more abundant during the day.

Statistical comparison of paired densities for day and night samples by taxon-lifestage was performed using the Wilcoxon Signed-Rank (WSR) test, which is the nonparametric analog to the paired t-test. The null hypothesis that there is no difference between night and day entrainment, versus the alternative hypothesis that night entrainment is greater than day. The densities in night samples at the intake were significantly greater ($p<0.05$) than day samples for some of the abundant taxa including Atlantic silverside post-yolk sac larvae, hogchoker fertilized eggs, naked goby post-yolk sac larvae, and Sciaenidae sp. fertilized eggs (Table 5-8). Bay anchovy eggs (most abundant taxa) and post yolk sac larvae which were abundant taxa, were more abundant at night in 2006 (not significantly different) but more abundant during the day in 2007 (Tables 5-5 and 5-6). Atlantic menhaden fertilized eggs were more abundant during the day in 2006 and 2007. The trends were similar at the baffle wall, but there were no statistically significant differences for any of the taxa (Table 5-9).

Given these significant differences between day and night densities and the fact that day samples were not collected on all sampling dates, separate estimates of total entrainment were calculated for day and night (Section 6.1). Thus, while each night sampling date represents temporal strata approximately 1-week in duration, day sampling dates represent longer temporal strata (approximately 2-weeks for 2007 or 4-weeks for 2006).

Differences between the density of organisms in in-plant entrainment samples versus samples outside of the baffle wall were evaluated using the Wilcoxon Signed-Rank test; the null hypothesis was that differences in density between the two locations were not significant ($p < 0.05$). No clear pattern was demonstrated by the results of this statistical test. Of 70 taxon/lifestage combinations tested, only 7 exhibited significant differences (Table 5-10). Bay anchovy yolk sac larvae, northern pipefish post-yolk sac larvae, and rough silverside eggs had significantly higher densities at the baffle wall; bay anchovy juveniles, damaged eggs, naked goby post-yolk sac larvae, and unidentified sciaenid eggs had significantly higher densities in entrainment samples. If significant differences were accepted at $p < 0.1$, an additional 5 taxon/lifestages would be significantly higher at the baffle wall and three additional taxon/lifestages would be significantly higher in entrainment; that is a total of 8 tests higher at the baffle wall and 7 tests higher in entrainment. These results indicate that differences between the two sampling locations are likely associated with random patchiness of ichthyoplankton populations rather than effects associated with the location itself.

Average water temperature (degrees Celsius [°C]), dissolved oxygen (milligrams per liter [mg/L]), pH, conductivity (microsemens per centimeter [µS/cm]), and salinity (ppt) measurements for each sampling date are summarized in Appendix C and monthly average values are displayed in Figure 5-7 for the intake and Figure 5-8 for the baffle wall. During 2006, at the intake the water temperature ranged from 8.1°C on 30 March to 28.2°C on 31 July; DO ranged from 1.0 mg/L on 10 July to 12.8 mg/L on 18 December; pH ranged from 6.55 on 25 September to 8.3 on 8 and 15 May; salinity ranged from 8.5 ppt on 17 July to 18.5 ppt on 26 October; and conductivity ranged from 15,462 µS/cm on 17 July to 24,321 µS/cm on 26 October (Appendix C, Table C-1).

During 2007, at the intake the water temperature ranged from 1.6°C on 19 February to 28.2°C on 9 August; DO ranged from 1.5 mg/L on 26 June to 15.6 mg /L on 9 April; pH ranged from 7.4 on 26 June to 8.4 on 16 April and 8 May; salinity ranged from 8.4 ppt on 9 April to 17.1 on 18 September; and conductivity ranged from 10,053 µS/cm on 9 April to 27,200 µS/cm on 18 September (Appendix C, Table C-2).

During 2006, at the baffle wall the temperature ranged from 9.1°C on 18 December to 29.5°C on 7 August; DO ranged from 1.8 mg/L on 10 July to 12.9 mg/L on 18 December; pH ranged from 7.0 on 10 July to 8.5 on 12 June; salinity ranged from 6.9 ppt on 17 July to 18.1 ppt on 25 September; and conductivity ranged from 15,435 µS/cm on 21 September to 29,026 µS/cm on 21 August (Appendix C, Table C-3).

Most of the water quality values were within normal and expected ranges with the following exceptions. Conductivity and salinity were higher than normal in April 2006 as a result of an unusually dry spring. Much higher than normal rainfall in late June 2006 resulted in lower than normal conductivity and salinity levels during July 2006. DO levels were low (<4 mg/l) during some sampling weeks in June, July and August 2006 and 2007. More low values were recorded at the intake than at the baffle wall. Anoxia in the deeper regions of this part of the Bay occurs often during the warmer months (MDDNR 2008). See Section 2.2 of this report for further details. Since the intake water is taken primarily from the bottom (at approximately 25-35 ft) because of the design of the baffle wall, lower levels at the intake were not that unexpected, nor were they directly attributable to the operation of CCNPP.

The cooling water volume pumped during each sampling date ranged from 1,730.3 MGD to 3,460.7 MGD in 2006 and 2007 (Appendix D).

5.4.2 Size Distribution

The entrained fish collected in 2006 and 2007 consisted of primarily larvae or juveniles for most taxa and some adults (e.g. bay anchovy) were also collected. Length statistics for all taxa are provided in Tables 5-11, 5-12, and 5-13. In 2006, the fish collected at the intake ranged from 1.5 mm (bay anchovy) to 66.0 mm (bay anchovy). In 2007, the range was 2.0 mm (bay anchovy) to 61.0 mm (American eel). At the baffle wall in 2006, the range was 1.1 mm (Atlantic menhaden) to 65.0 mm (northern pipefish, *Syngnathus fuscus*).

The length frequency of five abundant taxa, Atlantic menhaden, Atlantic silverside, bay anchovy, naked goby, and skilletfish are displayed in Figures 5-9 through 5-13 and Appendix E (Tables E-1 through E-10). In the intake samples in 2006, Atlantic menhaden were predominantly between 27-29.9 mm and 30-32.9 mm but in 2007 they were most abundant at 3-5.9 mm. Atlantic silversides were most numerous in the 4-5.9 mm and 8-9.9 mm range in 2006 and 4-5.9 mm and 6-7.9 mm in 2007. Bay anchovy were most abundant in the 5-9.9 mm range in 2006 and 2007. Naked goby were most numerous in the 2-3.9 mm range in 2006 and 2007. Skilletfish were most abundant in the 2-3.9 mm range in 2006 and 2007. Except for the 30-32.9 mm Atlantic menhaden which were early juveniles, the other taxa were dominated by larvae.

At the baffle wall in 2006, four species including Atlantic silverside, bay anchovy, naked goby, and skilletfish are presented in Tables E-11 through E-14. Atlantic silverside were abundant in the 4-5.9 mm range. Bay anchovy were most numerous in the 0-4.9 mm range, which was smaller than at the intake. Naked goby were most abundant in the 2-3.9 mm range. Skilletfish were most numerous in the 2-3.9 mm range. Except for bay anchovy, the same size ranges for these taxa were predominant at the intake.

5.4.3 Seasonal Distribution

Abundance of ichthyoplankton at the intake was lowest during 30 March through 24 April and 9 October through 18 December in 2006 (Table 5-2). In 2007, average density was low 11 January through 8 May and again 18 through 25 September (Table 5-3) when sampling ceased for the year. Collectively for the two year study, the lowest abundance period was from late September through early May which is expected for this part of the Bay. The density of organisms increased in mid-May during both years and remained high through mid-June due primarily to bay anchovy fertilized eggs and to a much lesser degree Atlantic menhaden fertilized eggs.

The highest entrainment rate in 2006 occurred on 12 June (2,193/100m^3) followed by 23 May (1,272/100m^3) due to the high abundance of bay anchovy. Smaller peaks in abundance occurred early July through late August due to Sciaenidae fertilized eggs, naked goby post-yolk sac larvae, and bay anchovy eggs, post-yolk sac larvae and juveniles. Peak density for the abundant taxa occurred as follows: bay anchovy fertilized eggs (2,089/100m^3) on 12 June, bay anchovy post-yolk sac larvae (239/100m^3) on 28 August, bay anchovy juveniles (262/100m^3) on 24 July, Sciaenidae fertilized eggs (506/100m^3) on 31 July, Atlantic menhaden fertilized eggs (84/100m^3) on 1 May, and naked goby post-yolk sac larvae (50/100m^3) on 12 June (Table 5-2). Except for bay anchovy juveniles, the peak abundance occurred in nighttime samples for the dominant taxa.

The highest entrainment rate in 2007 occurred on 22 May (903/100m^3) followed by 12 June (744/100m^3) due primarily to bay anchovy fertilized eggs but on 12 June bay anchovy post-yolk sac larvae were also abundant. Average density was lower overall in 2007 than in 2006. Smaller peaks in abundance occurred mid-June to late August due to Sciaenidae fertilized eggs, hogchoker fertilized eggs, naked goby post-yolk sac larvae, and bay anchovy fertilized eggs, post-yolk sac larvae and juveniles. The same taxa and trends were similar to 2006 except that hogchoker abundance was very low in 2006 compared to 2007. Densities for the most abundant taxa in 2006 and 2007 are displayed in Figure 5-14. Peak density for the abundant taxa occurred as follows: bay anchovy fertilized eggs (833/100m^3) on 22 May, bay anchovy post-yolk sac larvae (395/100m^3) on 12 June, bay anchovy juveniles (32/100m^3) on 12 June, hogchoker fertilized eggs (391/100m^3) on 24 July, Sciaenidae fertilized eggs (133/100m^3) on 18 July, Atlantic menhaden fertilized eggs (177/100m^3) on 15 May, and naked goby post-yolk sac larvae (28/100m^3) on 9 August (Table 5-3). For the dominant taxa, peak abundance occurred during the night except for bay anchovy post-yolk sac larvae and Atlantic menhaden eggs.

At the baffle wall in 2006, abundance was highest on 12 June (3,641/100m^3) which was also the date of the peak entrainment rate at the intake, although average density was lower (2,193/100m^3). The next highest abundance at the baffle wall was on 23 May

(1,029/100m³) and also the second highest abundance at the intake (1,272/100m³). Overall, density was lower at the baffle wall than the intake during most sampling dates. After the high abundance period between early May and mid-June the only other high abundance was recorded on 28 August (527/100m³) due to Sciaenidae fertilized eggs and bay anchovy post-yolk sac larvae. Peak density for the abundant taxa occurred as follows: bay anchovy fertilized eggs (3,425/100m³) on 12 June, bay anchovy post-yolk sac larvae (150/100m³) on 28 August, Sciaenidae fertilized eggs (351/100m³) on 28 August, Atlantic menhaden fertilized eggs (48/100m³) on 8 May, and naked goby post-yolk sac larvae (145/100m³) on 12 June (Table 5-4). Peak density occurred at night for the dominant taxa. Densities for the most abundant taxa collected at the baffle wall are displayed in Figure 5-15. Bay anchovy juveniles were only collected during three sampling dates and in much lower numbers at the baffle wall compared to the intake where they were collected during most dates.

5.4.4 Historic Entrainment Patterns and Trends

The previous entrainment studies conducted at CCNPP were conducted from April 1978 through mid-September 1980 (EA 1981). Sampling was conducted once per month during fall and winter and once per week during the spring and summer. Three serial replicate samples were collected during the day and three were collected during the night at both the intake and discharge. In addition to abundance sampling, there were special diel and entrainment viability studies conducted at some time during the period of study. Sampling was conducted at either Unit 1 or Unit 2 depending on the outage schedule. Abundance samples were collected for one hour with a pump discharging into a 505 µm mesh net using a three-depth manifold at the intake and at one depth in the discharge conduit in the well-mixed water which was the very similar to the present study. In the past studies the three depths were sampled simultaneously versus 20 minutes at each depth in the present study.

Four taxa comprised 97 percent of the total ichthyoplankton entrained during the study. The hogchoker was the overwhelming dominant comprising 74.9 percent of the total followed by bay anchovy eggs (14.0 percent) and post-yolk sac larvae (4.9 percent), and naked goby post-yolk sac larvae (3.3 percent). In decreasing order of abundance, other taxa in the top ten, included unidentified blenny post-yolk sac larvae, spot juveniles, skilletfish post-yolk sac larvae, bay anchovy juveniles, Atlantic menhaden juveniles, and bay anchovy adults. All these taxa were also collected in the 2006 and 2007 studies but composition was different. The biggest difference was that hogchoker eggs, which dominated previous sampling, comprised only 0.3 percent of the total entrained in 2006 and 14.1 percent in 2007. Bay anchovy eggs ranked first both years in the present study comprising 64.2 percent in 2006 and 49.7 percent in 2007, but were ranked second in previous studies. Bay anchovy post-yolk sac larvae comprised 4.4 percent in 2006 and 15.7 percent in 2007. Naked goby post-yolk sac larvae comprised 1.5 percent in 2006 and 2.4 percent in 2007 (Appendix B, Table B-1 and B-2).

The greatest number of entrained ichthyoplankton was collected in the past study during mid-May through the end of August which spans the time that most individuals were collected in 2006 and 2007. Hogchoker and bay anchovy eggs were the most abundant taxa in the past study and were responsible for the seasonal peaks in density. Peak abundance for hogchoker in the past study was in mid-July to mid-August and in late July to mid-August in the present study. Bay anchovy eggs varied annually in the past but were most abundant in late May/early June in 1978 and 1979 with another peak in July and a peak only in late June/July in 1980. In 2006 and 2007 bay anchovy were very abundant in May and June with a lesser peak in August. Sciaenidae eggs were uncommon in the past study but they were an abundant taxon in 2006 and 2007 with peak abundance in late June and July in 2006 and also August in 2007.

Density numbers in the past study were very high for hogchoker ranging as high as 4,319/100m^3 (25 July 1978), 534/100m^3 (31 July 1979), and 3,233/100m^3 (14 July 1980) but only 10/100m^3 in 2006 (3 July) and 391/100m^3 (24 July) in 2007. Bay anchovy eggs were similar or lower in the past ranging from highs of 860/100m^3 (30 May 1978), 542/100m^3 (17 July 1979), and only 64/100m^3 (22 July 1980) compared to 833/100m^3 in 2006 (22 May) and 3,425/100m^3 in 2007 (12 June).

In the 1979-1980 study, hogchoker and bay anchovy eggs exhibited a strong trend of higher night than day time abundance. The diel pattern was not as evident with the bay anchovy and naked goby post-yolk sac larvae which were higher some years at night and inconsistent during others. In 2006, hogchoker density was so low that it contributed to the lack of discernable day/night patterns, but it was consistently higher at night in 2007. Bay anchovy density was higher at night than day in 2006, but only slightly higher. In 2007 density averaged slightly higher during the day.

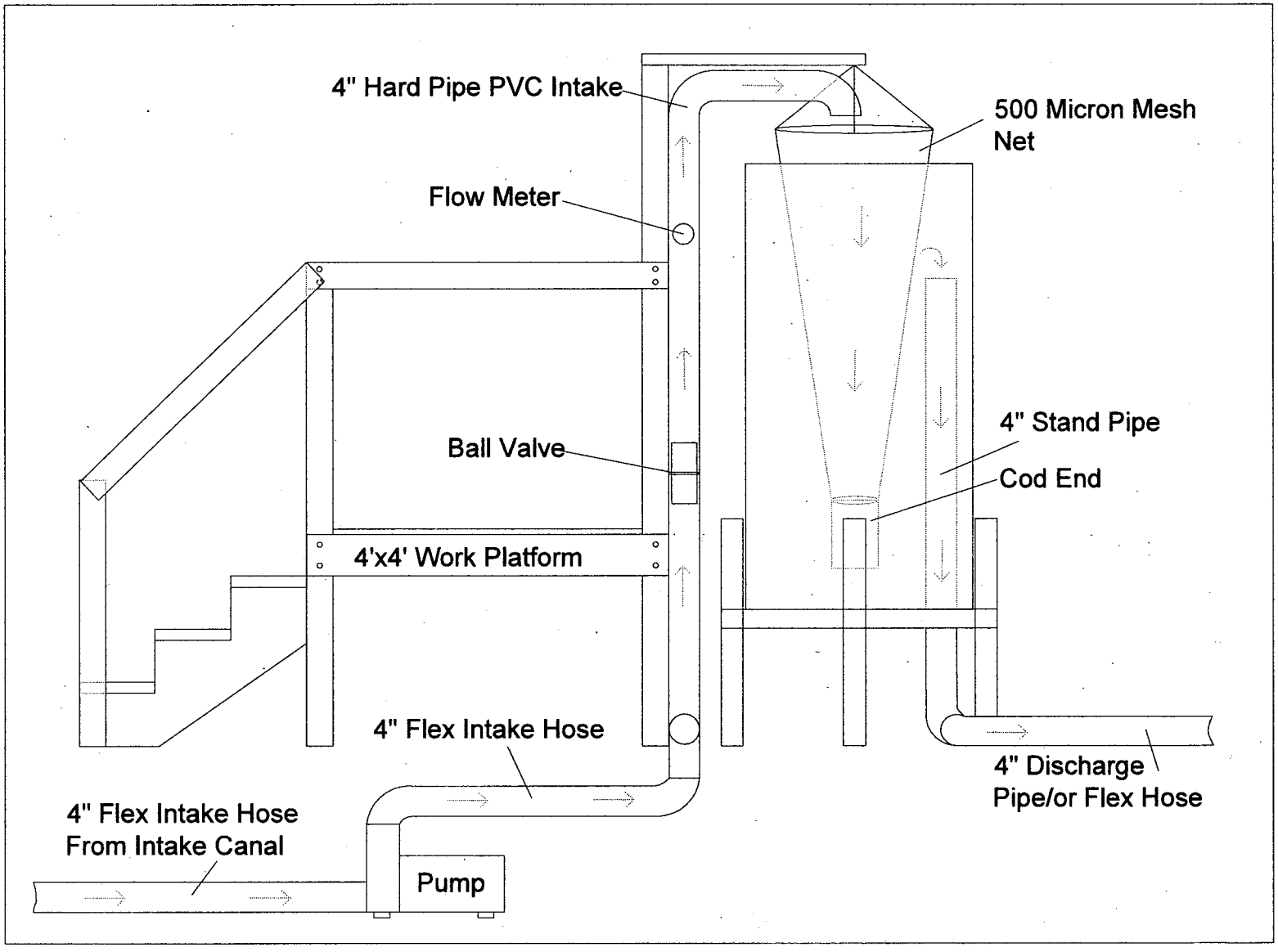


Figure 5-1. Configuration of Net and Barrel Sampler Used for Collection of Entrained Ichthyoplankton

Figure 5-2. Relative Abundance of Entrained Ichthyoplankton Collected at Calvert Cliffs Nuclear Power Plant Cooling Water Intake During March 2006 - December 2006

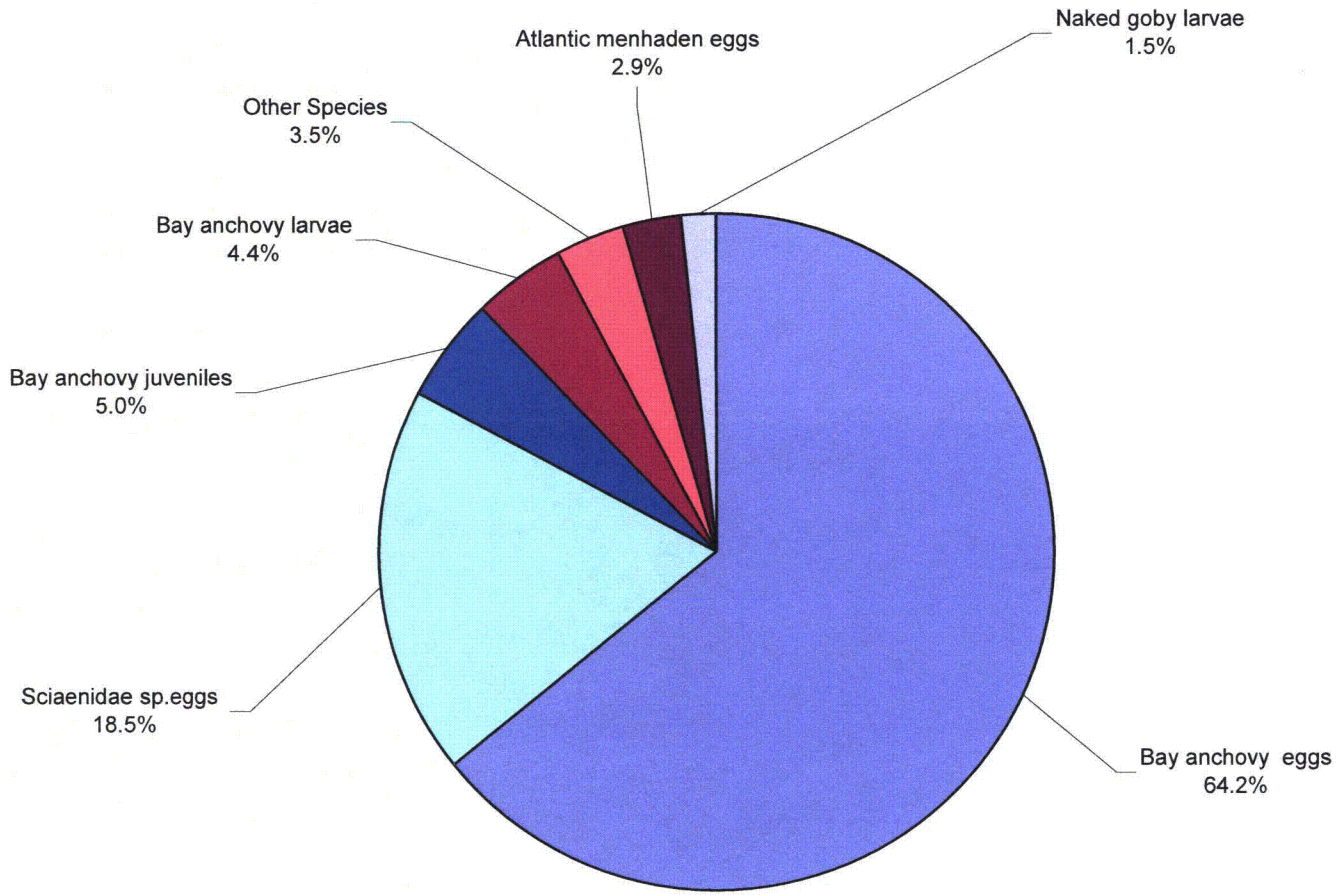
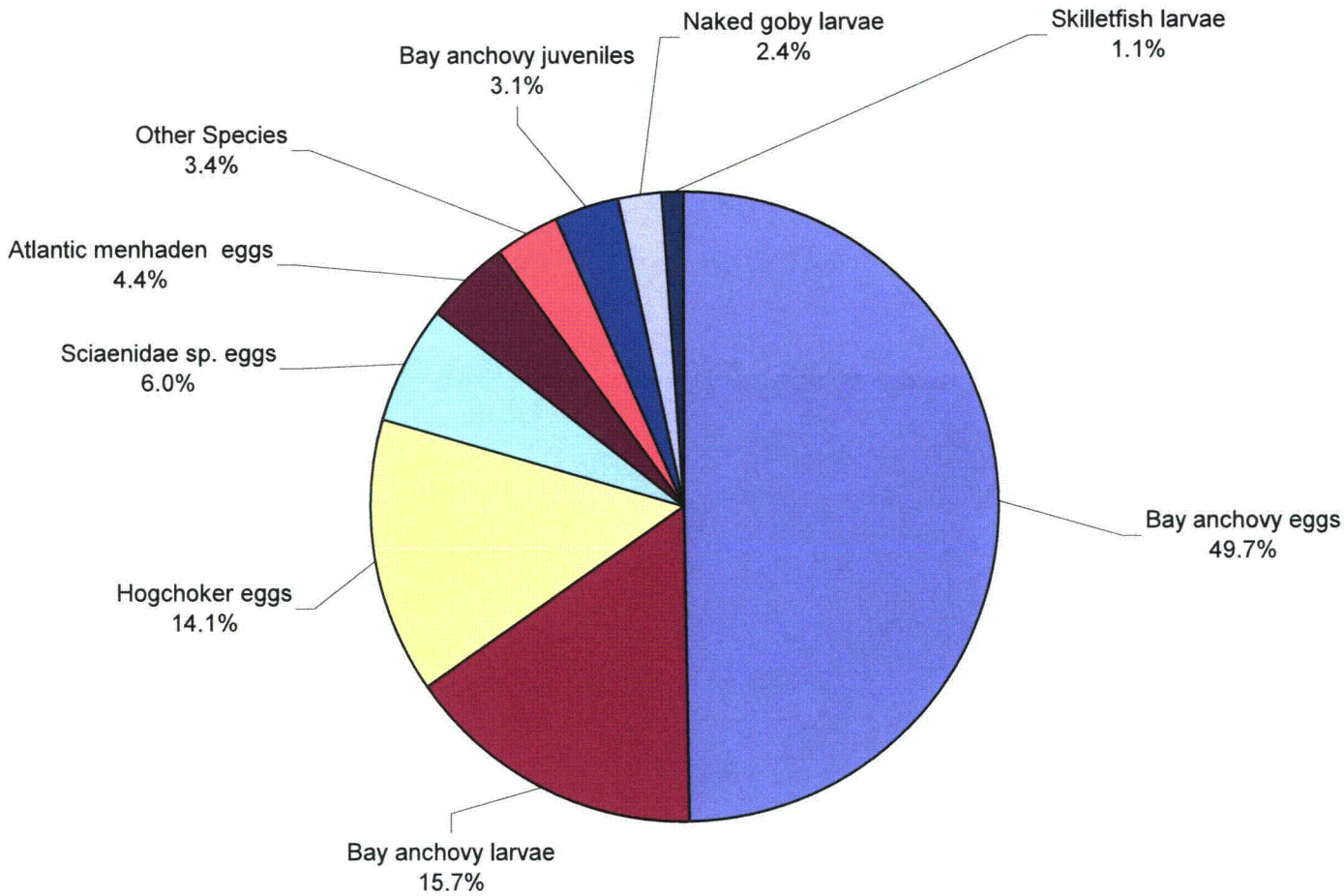


Figure 5-3. Relative Abundance of Entrained Ichthyoplankton Collected at Calvert Cliffs Nuclear Power Plant Cooling Water Intake During January 2007 - September 2007



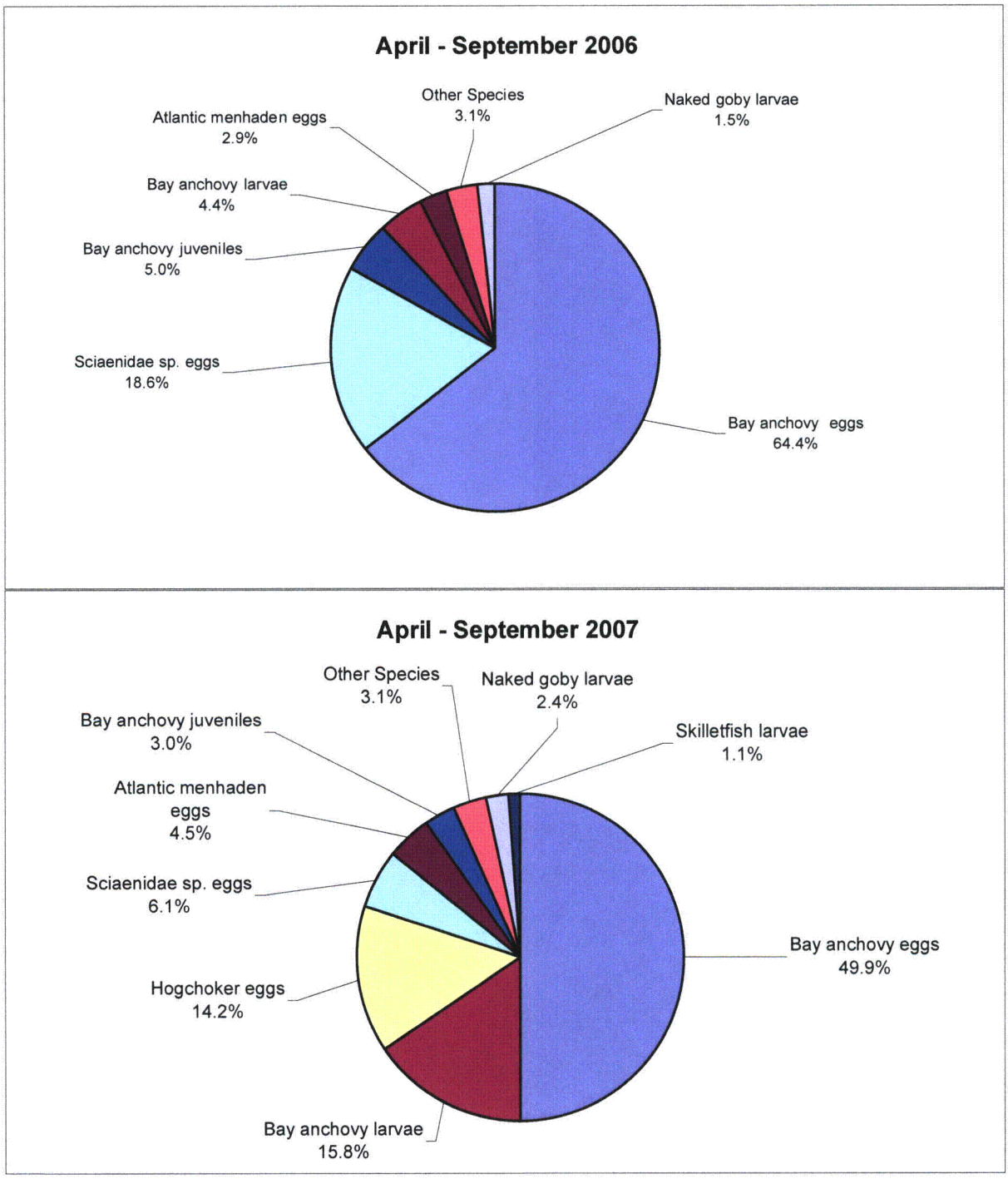
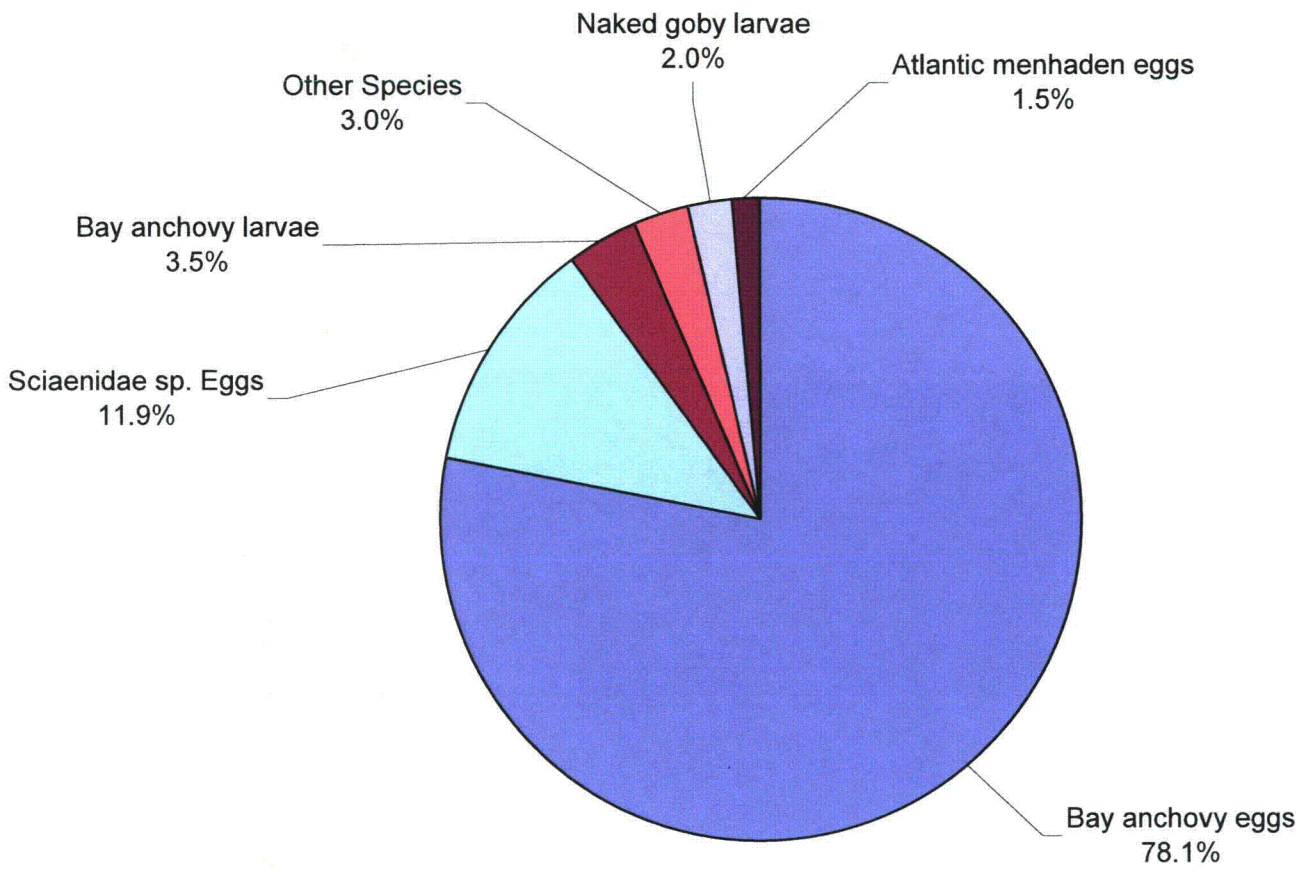


Figure 5-4. Relative Abundance of Entrained Ichthyoplankton Collected at Calvert Cliffs Nuclear Power Plant Cooling Water Intake During April through September 2006 and 2007

Figure 5-5. Relative Abundance of Entrained Ichthyoplankton Collected at Calvert Cliffs Nuclear Power Plant Baffle Wall During April 2006 - December 2006



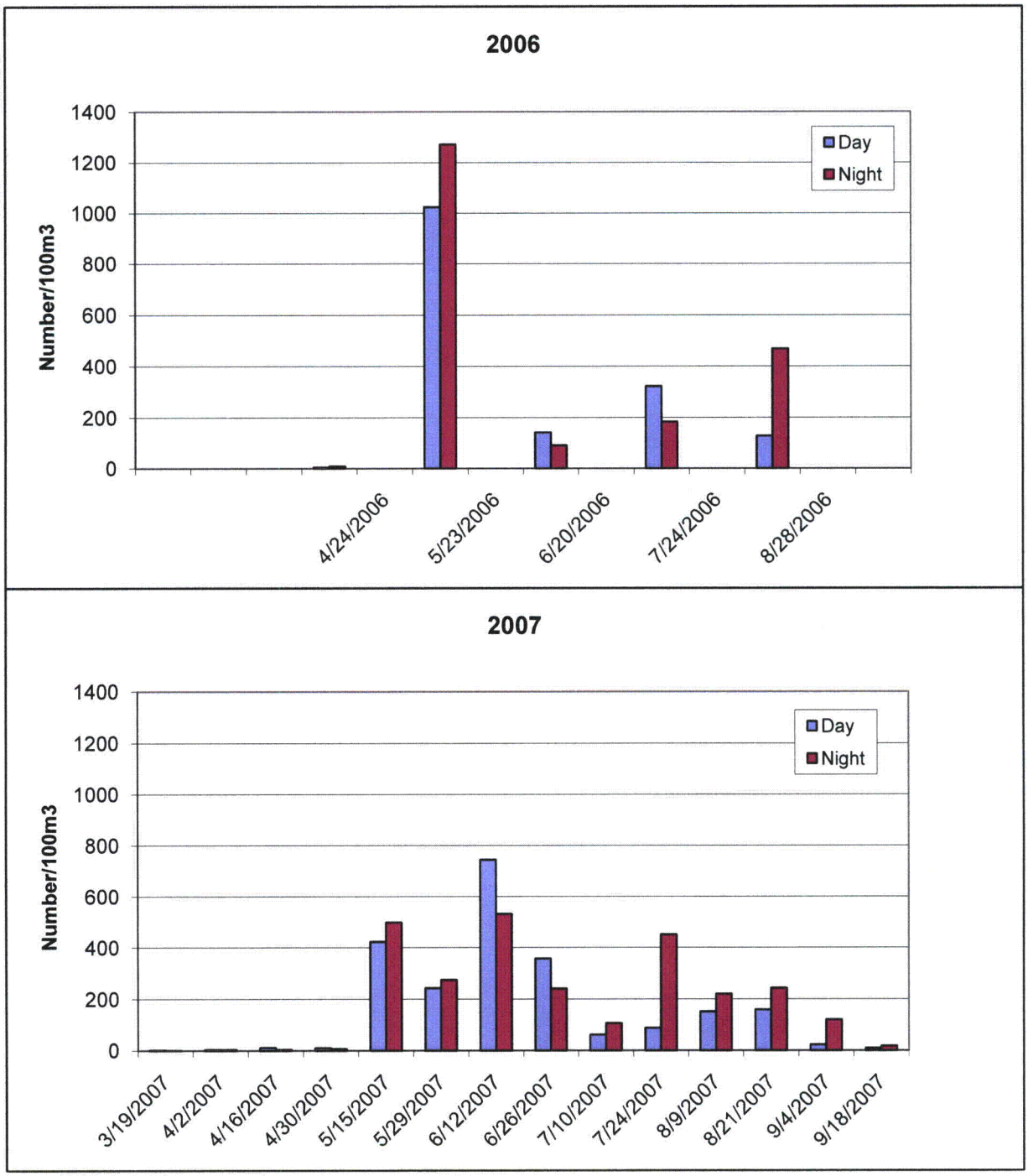


Figure 5-6. Diel Distribution of Entrained Fish Collected at Calvert Cliffs Nuclear Power Plant Cooling Water Intake During 2006 - 2007

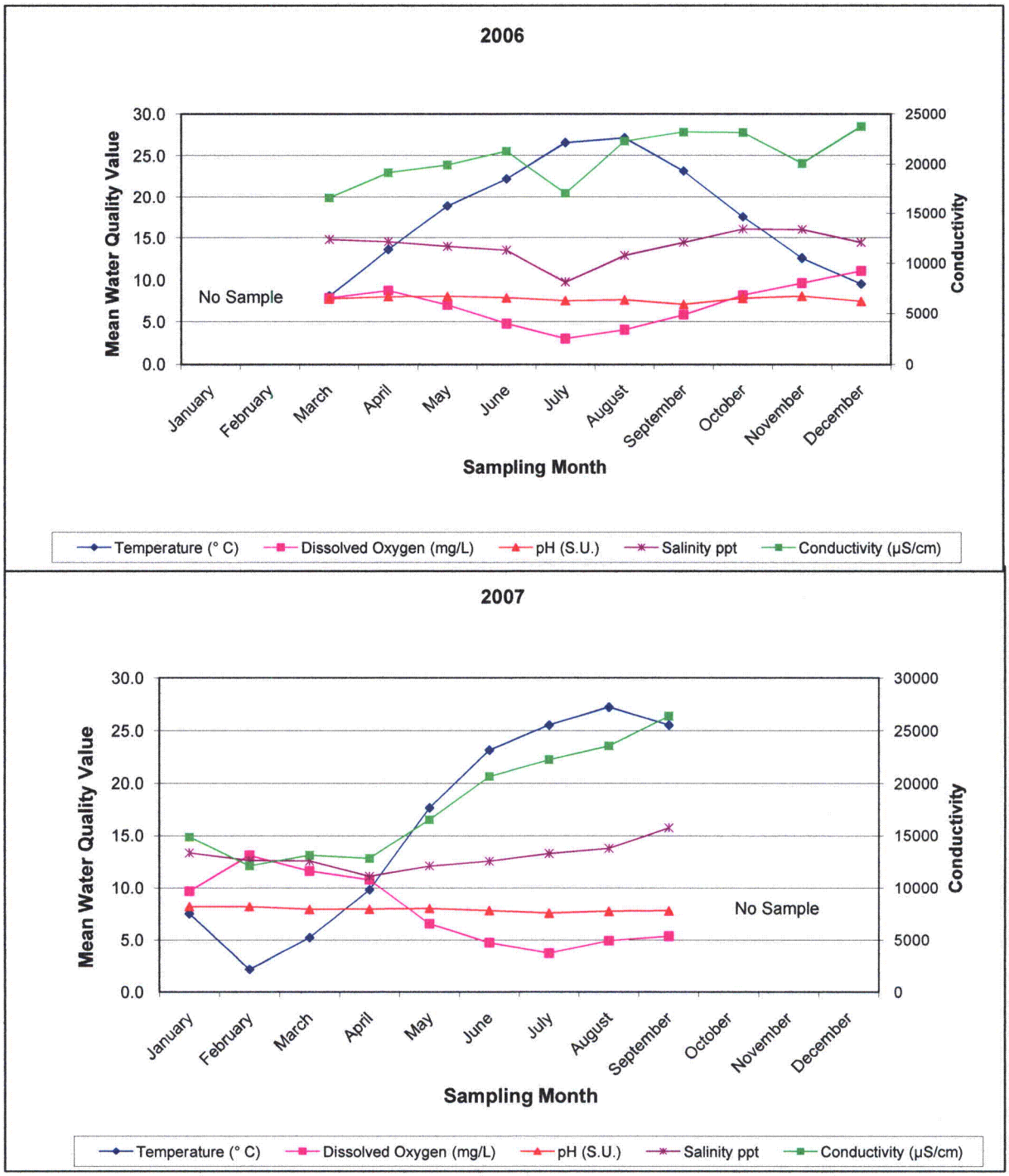


Figure 5-7. Average Monthly Water Quality Data Collected During Entrainment Sampling at Calvert Cliffs Nuclear Power Plant Cooling Water Intake, 2006-2007

Figure 5-8. Average Monthly Water Quality Data Collected During Entrainment Sampling at Calvert Cliffs Nuclear Power Plant Baffle Wall, 2006

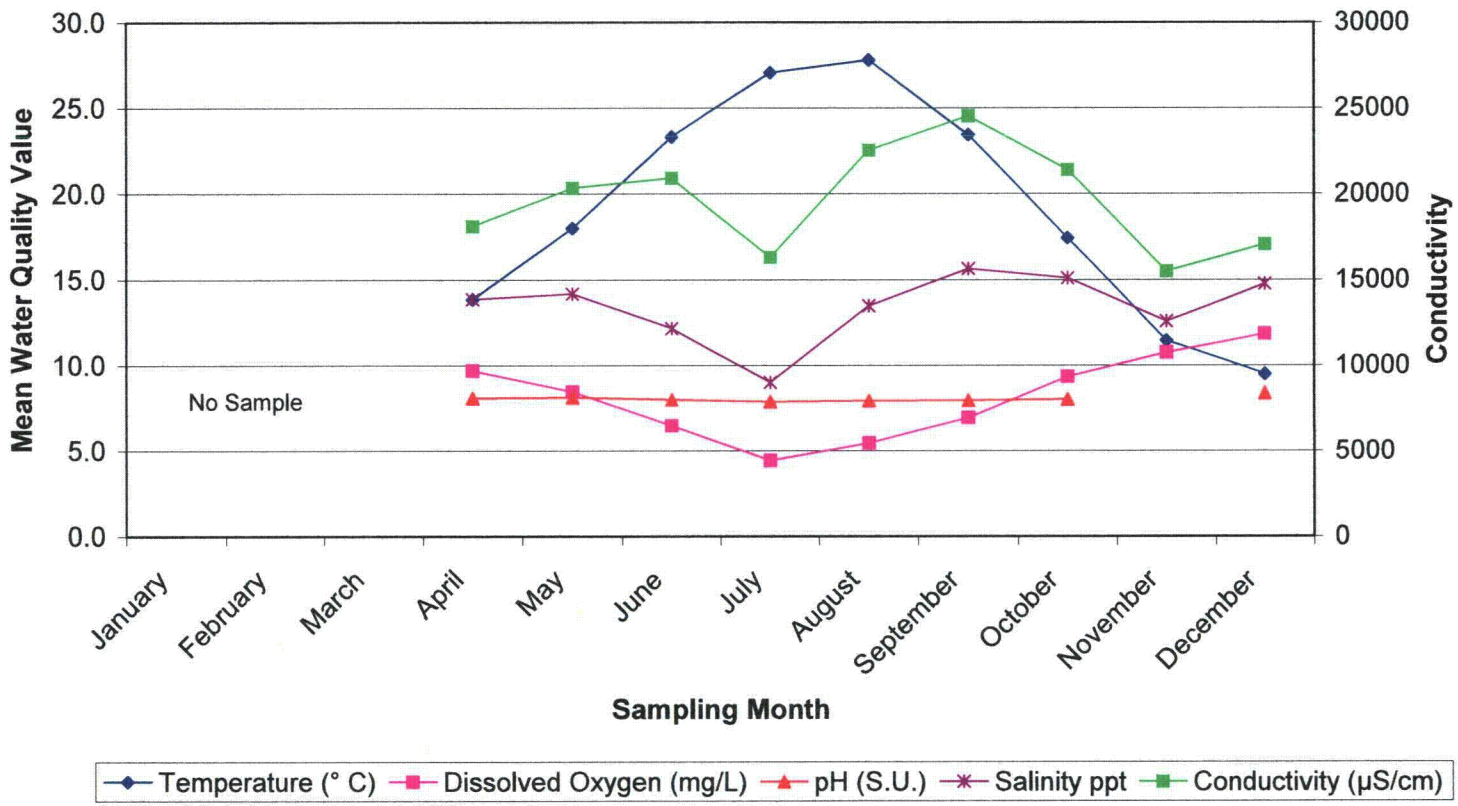


Figure 5-9. Length Frequency Distribution of Atlantic Menhaden Collected During Entrainment Sampling at Calvert Cliffs Nuclear Power Plant Cooling Water Intake in 2006 and 2007

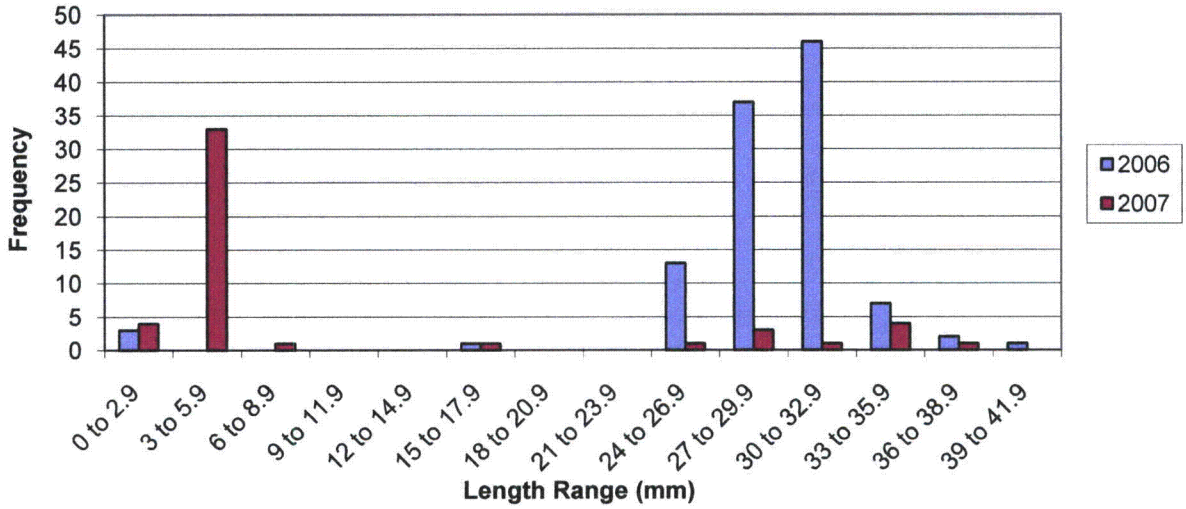


Figure 5-10. Length Frequency Distribution of Atlantic Silverside Collected During Entrainment Sampling at Calvert Cliffs Nuclear Power Plant Cooling Water Intake in 2006 and 2007

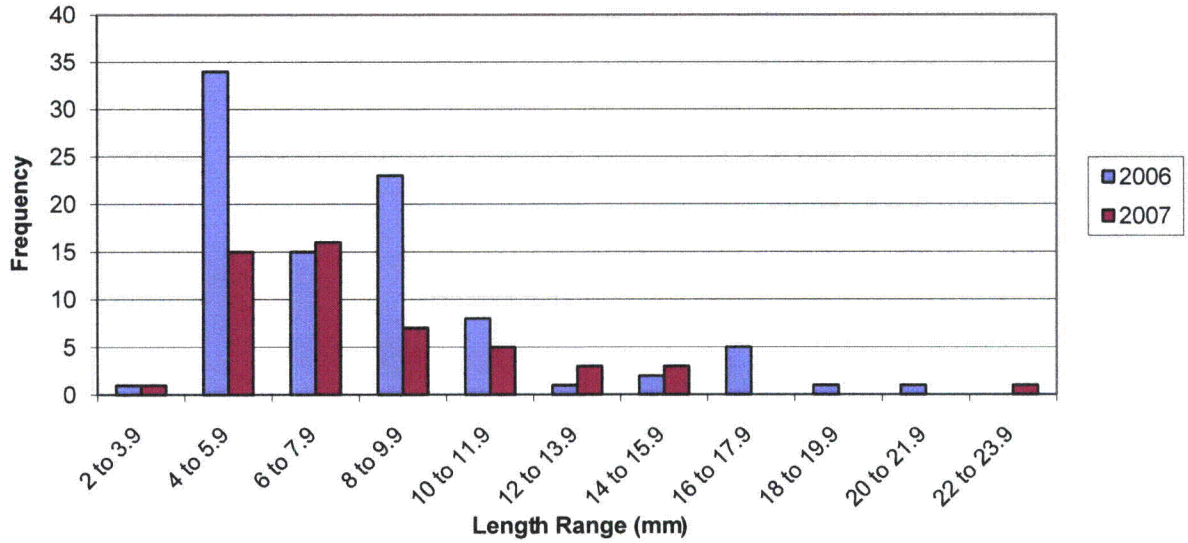


Figure 5-11. Length Frequency Distribution of Bay Anchovy Collected During Entrainment Sampling at Calvert Cliffs Nuclear Power Plant Cooling Water Intake in 2006 and 2007

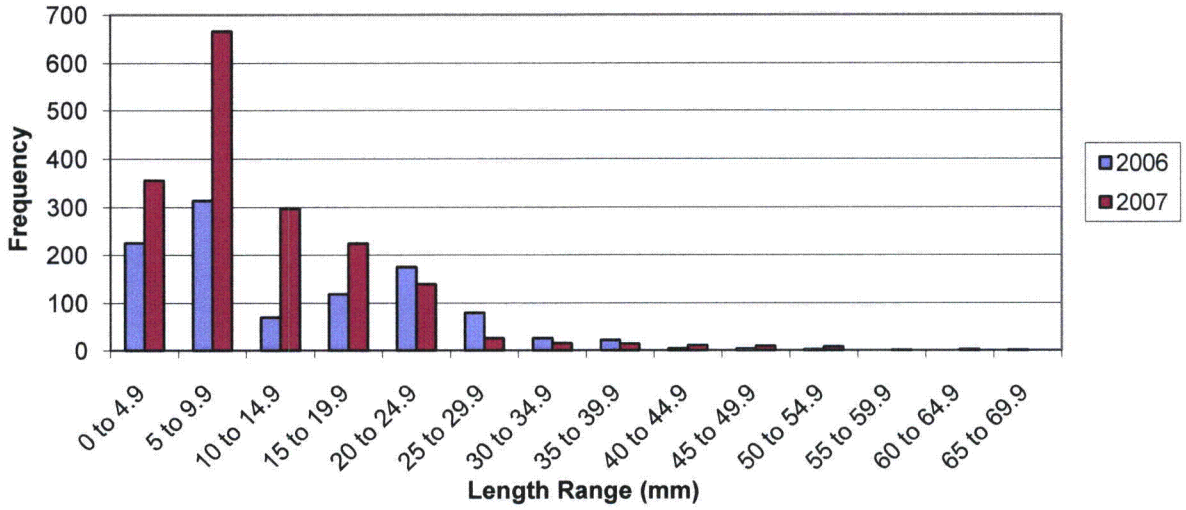


Figure 5-12. Length Frequency Distribution of Naked Goby Collected During Entrainment Sampling at Calvert Cliffs Nuclear Power Plant Cooling Water Intake in 2006 and 2007

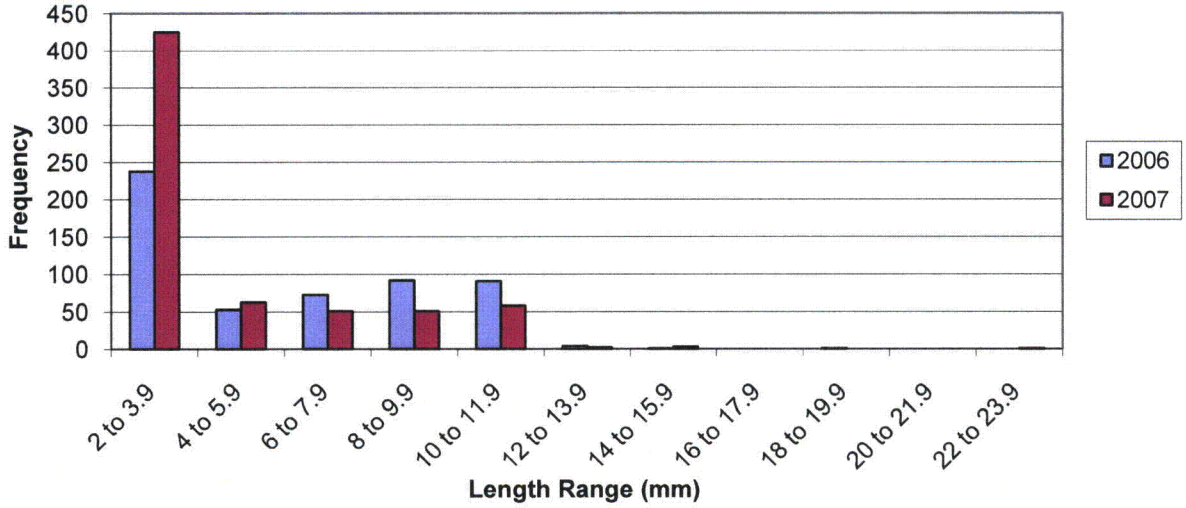
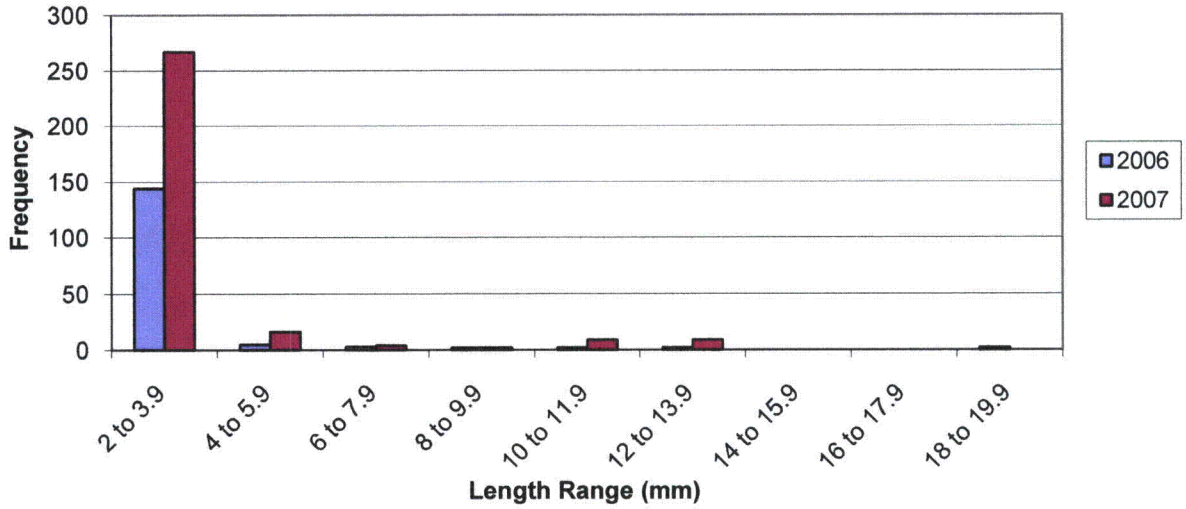


Figure 5-13. Length Frequency Distribution of Skilletfish Collected During Entrainment Sampling at Calvert Cliffs Nuclear Power Plant Cooling Water Intake in 2006 and 2007



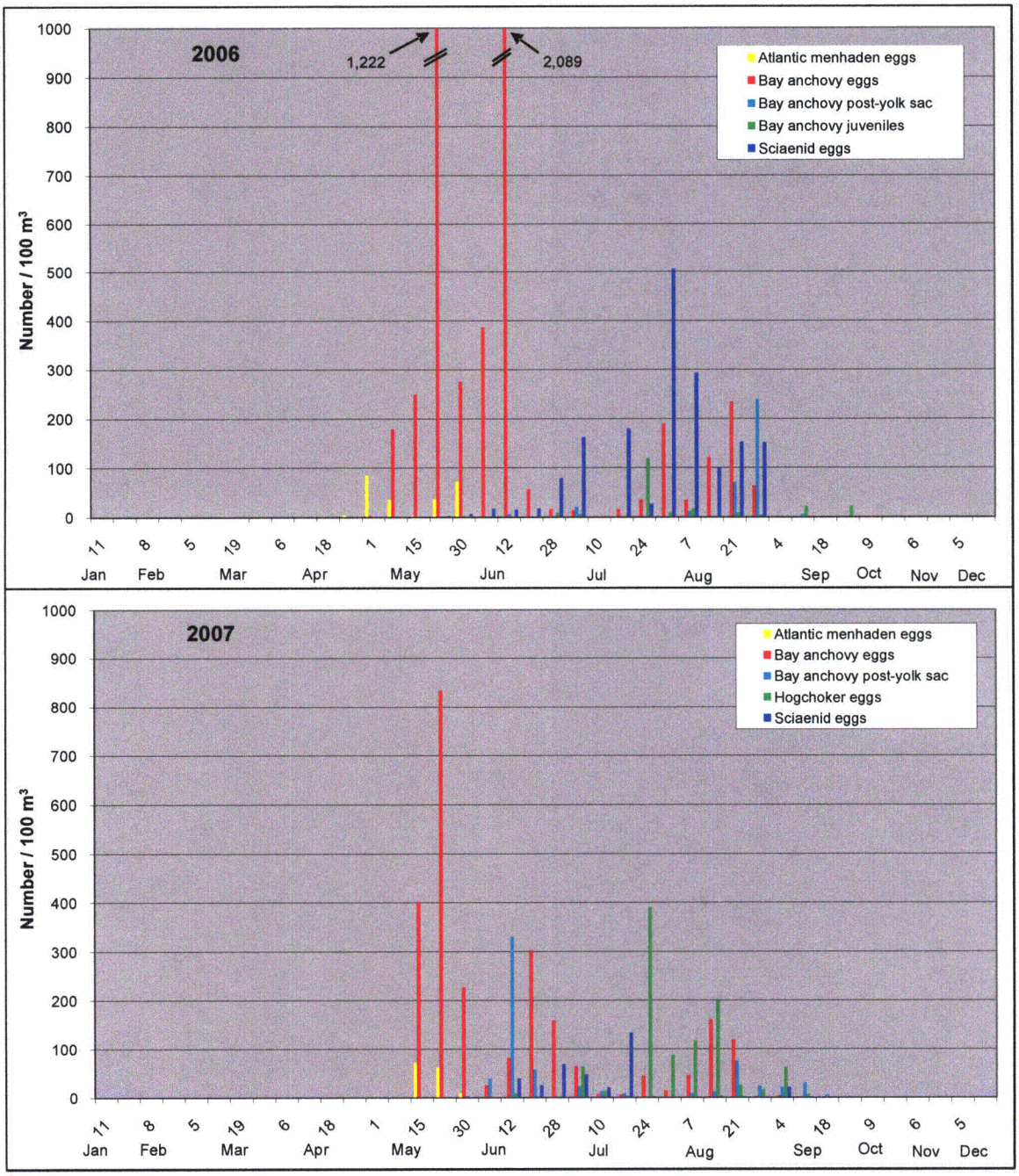


Figure 5-14. Density of Most Abundant Entrained Taxa Collected at the Calvert Cliffs Nuclear Power Plant Cooling Water Intake During 2006 - 2007

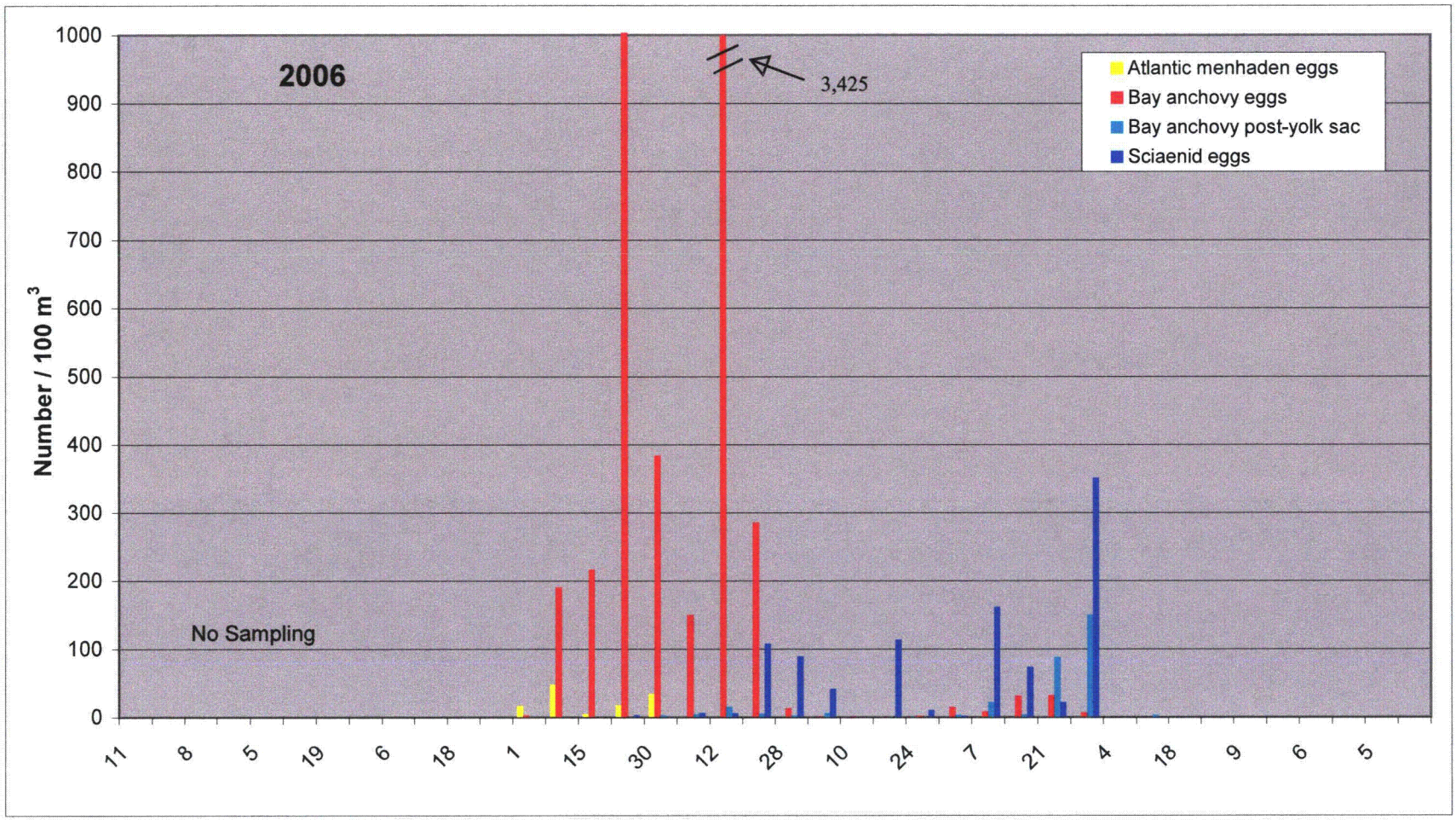


Figure 5-15. Density of Most Abundant Entrained Taxa Collected at the Baffle Wall at Calvert Cliffs Nuclear Power Plant During 2006

TABLE 5-1 NAMES OF FINFISH COLLECTED AT CALVERT CLIFFS NUCLEAR POWER PLANT

	FAMILY	COMMON NAME [a]	SCIENTIFIC NAME
FISHES			
Anguillidae	Freshwater eels	American eel	*Anguilla rostrata*
Engraulidae	Anchovies	Bay anchovy	*Anchoa mitchilli*
Clupeidae	Herrings	Gizzard shad	*Dorosoma cepedianum*
		Atlantic menhaden	*Brevoortia tyrannus*
		River Herring	*Alosa sp.*
Gobiescidae	Clingfishes	Skilletfish	*Gobiesox strumosus*
Hemiramphidae	Halfbeaks	Halfbeak	*Hyporhamphus sp.*
Cyprinodontidae	Topminnows	Killifish	*Fundulus sp.*
Atherinopsidae	New World Silversides	Atlantic silverside	*Menidia menidia*
		Inland silverside	*Menidia beryllina*
		Rough silverside	*Membras martinica*
Syngnathidae	Pipefishes and Seahorses	Northern pipefish	*Syngnathus fuscus*
Sciaenidae	Drums and croakers	Atlantic croaker	*Micropogonias undulatus*
		Weakfish	*Cynoscion regalis*
		Spot	*Leiostomus xanthurus*
		Silver perch	*Bairdiella chrysoura*
		Northern kingfish	*Menticirrhus saxatilis*
		Black drum	*Pogonias cromis*
Gobiidae	Gobies	Naked goby	*Gobiosoma bosci*
		Green goby	*Microgobius thalassinus*
Moronidae	Temperate basses	White perch	*Morone americana*
Blennidae	Combtooth blennies	Feather blenny	*Hypsoblennius hentz*
		Striped blenny	*Chasmodes bosquianus*
Cynoglossidae	Tonguefishes	Blackcheek tonguefish	*Symphurus plagiusa*
Achiridae	American soles	Hogchoker	*Trinectes maculatus*

(a) Finfish names from Nelson et al (2004).

TABLE 5-2. AVERAGE DENSITY (NO/100M^3) OF ENTRAINED FISH AT CALVERT CLIFFS NUCLEAR POWER PLANT COOLING WATER INTAKE, MARCH 2006 - DECEMBER 2006

	March	April					May						June					July						August					September		October		November		December	
	30	6	13	18	24		1	8	15	23		30	5	12	20		28	3	10	17	24		31	7	14	21	28		11	25	9	26	6	27	5	18
Species/Life Stage	N	N	N	N	D	N	N	N	N	D	N	N	N	N	D	N	N	N	N	N	D	N	N	N	N	N	D	N	N	N	N	N	N	N	N	N	N
American eel-juvenile	0.00	0.00	0.00	0.00	0.00	0.29	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atherinopsidae sp.-fertilized egg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.29	0.89	0.00	0.00	2.34	0.00	0.00	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atherinopsidae sp.-N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atherinopsidae sp.-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atlantic croaker-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.58	0.84	2.62	0.29	0.58	3.47	0.00	0.86
Atlantic croaker-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.13	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atlantic menhaden-fertilized egg	0.00	0.00	0.00	0.00	4.73	5.24	84.41	35.37	3.28	40.70	37.00	73.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atlantic menhaden-juvenile	23.17	8.11	4.63	0.00	0.00	0.87	0.58	0.00	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atlantic menhaden-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atlantic menhaden-yolk-sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atlantic silverside-fertilized egg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.00	0.00	0.00	0.00	0.29	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atlantic silverside-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.86	1.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.86
Atlantic silverside-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.29	6.20	3.87	0.48	1.45	0.28	5.75	0.86	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atlantic silverside-unfertilized egg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atlantic silverside-yolk-sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.08	0.00	0.21	0.28	2.30	0.29	0.00	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bay anchovy-adult	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bay anchovy-fertilized egg	0.00	0.00	0.00	0.00	0.00	0.00	2.91	177.95	248.37	972.53	1222.12	274.19	386.17	2089.43	44.48	56.15	15.49	12.54	0.88	14.90	36.72	34.51	189.06	33.92	120.73	233.09	38.97	63.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bay anchovy-juvenile	0.00	2.03	0.00	0.29	0.00	0.87	0.58	0.00	0.00	0.00	0.41	0.00	0.29	1.44	0.00	0.30	9.01	6.84	0.00	2.04	261.77	118.91	9.57	16.52	0.30	9.20	0.29	4.26	20.95	21.39	1.45	0.59	1.73	0.29	0.00	0.57
Bay anchovy-N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bay anchovy-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.00	0.48	0.21	2.56	2.01	6.63	0.88	1.77	1.97	19.66	0.00	0.29	0.00	0.00	0.56	11.60	2.07	70.99	58.88	238.90	6.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bay anchovy-yolk-sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.95	4.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Damaged egg-fertilized egg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.73	0.00	0.00	2.48	0.00	0.86	0.00	18.26	4.43	0.28	9.69	0.29	3.51	1.45	1.25	7.03	0.00	1.77	0.57	1.44	0.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Damaged egg-N/A	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Damaged fish-N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Damaged fish-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.00	0.00	0.00	1.71	0.00	0.29	0.00	0.00	0.28	5.13	1.17	4.38	0.00	0.42	0.56	0.87	0.30	2.01	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Feather blenny-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Feather blenny-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.57	1.15	4.32	0.00	0.00	0.28	1.14	0.00	0.00	0.00	0.00	0.00	1.16	0.00	1.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Feather blenny-yolk-sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fundulus sp.-fertilized egg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.29	0.29	0.00	0.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gizzard shad-fertilized egg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Goby sp.-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	6.63	0.00	0.89	0.00	2.56	2.05	0.00	0.00	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Green goby-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Green goby-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.57	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.29	0.29	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hogchoker-fertilized egg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.86	5.76	2.06	4.43	1.97	9.97	0.29	1.17	0.36	0.00	0.00	0.00	0.00	0.00	4.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hogchoker-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Naked goby-fertilized egg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Naked goby-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	2.85	14.32	3.80	0.36	0.00	1.69	2.32	0.00	0.57	0.00	0.00	2.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Naked goby-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.99	4.31	49.57	1.18	3.55	11.55	25.36	17.54	4.67	1.45	0.83	3.94	2.61	1.77	7.19	4.91	4.54	1.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Naked goby-yolk-sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.86	0.00	0.00	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Northern Kingfish-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.00	0.00	0.00	0.00	0.00	0.00
Northern pipefish-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.00	0.00	0.00	0.00	0.00	0.00
Northern pipefish-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60	0.00	0.21	0.57	0.00	0.29	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rough silverside-fertilized egg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rough silverside-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rough silverside-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.29	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rough silverside-yolk-sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sciaenidae sp.-fertilized egg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60	1.92	2.89	6.26	16.67	15.27	74.23	17.14	78.59	162.40	0.88	178.77	20.36	25.78	505.56	292.78	99.18	152.62	8.37	150.66	0.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sciaenidae sp.-N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Silver perch-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Skilletfish-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.86	0.86	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Skilletfish-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.19	7.66	3.72	1.99	5.46	6.05	0.00	0.30	0.85	0.85	0.00	0.00	0.00	0.00	0.00	0.00	0.59	0.00	0.58	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Skilletfish-yolk-sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.00	0.00	0.00	0.00	2.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Spot-juvenile	0.58	1.16	0.29	0.29	0.00	1.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Spot-post-yolk sac larvae	1.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Weakfish-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**24.91**	**11.30**	**5.21**	**0.88**	**4.73**	**8.74**	**89.64**	**222.08**	**276.67**	**1023.76**	**1271.94**	**365.59**	**428.98**	**2193.47**	**141.98**	**91.02**	**122.53**	**259.55**	**40.93**	**226.96**	**322.48**	**184.18**	**718.25**	**361.77**	**226.69**	**478.54**	**128.15**	**470.14**	**33.46**	**22.79**	**4.07**	**0.88**	**2.31**	**3.76**	**0.00**	**2.28**

TABLE 5-3. AVERAGE DENSITY (NO/100M3) OF ENTRAINED FISH AT CALVERT CLIFFS NUCLEAR POWER PLANT COOLING WATER INTAKE, JANUARY 2007 - SEPTEMBER 2007

Species/Life Stage	January		February		March					April								May						June						July						August							September					
	11	22	8	19	5	12	19		26	2		9	16		23	30		8	15		22	29		5	12		20	26		4	10		18	24		1	9		14	21		28	4		11	18		25
	N	N	N	N	N	N	D	N	N	D	N	N	D	N	N	D	N	N	D	N	N	D	N	N	D	N	N	D	N	N	D	N	N	D	N	N	D	N	N	D	N	N	D	N	N	D	N	N
American eel-juvenile	0.00	0.00	0.00	0.00	0.58	0.29	0.00	0.00	0.29	0.00	0.00	0.29	0.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atherinopsidae sp.-fertilized egg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atherinopsidae sp.-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.28	0.00	0.00	2.02	1.46	0.00	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atlantic croaker-juvenile	0.85	5.98	0.59	0.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00
Atlantic menhaden-fertilized egg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	177.47	71.61	62.70	11.19	9.22	0.29	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atlantic menhaden-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.59	0.00	0.87	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atlantic menhaden-post-yolk sac larvae	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.58	0.00	0.00	0.00	0.00	13.20	15.22	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atlantic menhaden-yolk-sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.64	1.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atlantic silverside-fertilized egg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atlantic silverside-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.29	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atlantic silverside-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.13	0.29	0.57	2.59	2.92	2.04	4.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atlantic silverside-yolk-sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bay anchovy-adult	0.00	1.14	0.00	1.15	0.29	1.74	0.00	0.24	0.29	0.00	0.00	0.00	0.29	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.29	0.00	0.00	0.00	0.28	0.00	0.29	0.00	0.29	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.59
Bay anchovy-fertilized egg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	218.24	401.77	832.69	196.34	226.97	25.11	302.12	81.53	303.07	288.60	158.99	63.61	11.58	7.55	6.43	45.12	44.23	14.77	88.69	46.16	160.77	80.35	118.36	2.59	5.85	3.55	1.75	0.00	0.00	0.00
Bay anchovy-juvenile	0.00	4.84	0.00	0.86	0.87	0.00	0.00	0.00	0.57	0.29	0.58	0.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.94	31.80	2.32	1.43	0.57	18.38	3.19	31.65	3.80	1.16	1.75	8.24	29.95	10.81	9.81	2.05	7.89	11.53	1.17	6.22	3.51	2.07	11.15	2.86
Bay anchovy-post-yolk sac larvae	0.00	0.00	0.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.07	3.46	39.12	395.46	329.89	57.53	7.18	1.71	23.64	8.98	13.36	7.90	0.58	1.16	0.28	1.74	8.47	12.12	77.93	75.11	23.34	7.03	21.32	29.82	6.51	5.57	1.78
Bay anchovy-yolk-sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	2.56	0.00	1.16	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Black drum-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Blackcheek tonguefish-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Damaged egg-fertilized egg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.88	3.22	0.29	0.00	10.91	5.85	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	1.16	0.00	0.57	0.57	0.00	0.00	0.29	0.00	0.29	0.00	0.00	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Damaged fish-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Damaged fish-N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Damaged fish-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.44	3.67	4.04	3.44	3.74	0.00	0.00	0.87	0.00	0.29	0.00	0.29	1.16	0.00	0.00	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00
Damaged fish-undetermined	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Damaged fish-yolk-sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Feather blenny-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.00	0.00
Feather blenny-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	2.34	1.16	0.00	0.00	0.00	0.00	0.00	0.00	0.87	0.00	0.00	0.00	0.57	0.29	1.75	0.29	0.58	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00
Feather blenny-yolk-sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.87	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30
Gizzard shad-fertilized egg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gizzard shad-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gizzard shad-yolk-sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.26	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Green goby-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.00	0.00	0.00	0.00
Green goby-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00
Hogchoker-fertilized egg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.38	2.62	2.58	1.99	64.19	1.16	13.65	3.51	32.89	390.54	87.50	15.12	117.16	199.44	4.10	25.43	16.71	2.05	61.90	7.60	0.00	0.00	0.00
Hogchoker-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.28	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00
Hogchoker-yolk-sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Inland silverside-fertilized egg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Inland silverside-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Naked goby-fertilized egg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Naked goby-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.57	1.14	0.00	2.03	2.03	2.92	1.46	0.58	0.28	0.29	1.17	0.29	0.00	0.58	1.15	1.17	0.59	0.00	0.00	0.29	0.00
Naked goby-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.89	9.89	21.40	0.87	1.72	3.99	2.63	5.21	9.87	11.41	4.08	7.86	3.69	10.47	27.76	6.93	10.84	10.81	6.05	3.22	4.15	0.88	0.00	0.00	0.30
Naked goby-yolk-sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	2.89	0.00	0.00	0.00	0.58	0.87	0.29	0.58	0.29	0.29	0.00	0.29	0.00	0.58	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00
Northern pipefish-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Northern pipefish-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.29	0.29	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
River Herring-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.57	4.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rough silverside-fertilized egg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.58	0.29	0.29	0.29	0.00	0.58	0.00	0.29	0.29	0.00	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rough silverside-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.73	0.29	0.87	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00
Sciaenidae sp.-fertilized egg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.41	0.00	1.15	0.29	0.00	4.65	39.03	25.28	52.73	68.67	47.27	25.77	20.62	133.08	1.16	2.04	0.00	0.00	0.88	2.89	0.00	1.46	0.00	1.46	21.32	0.88	0.00	0.00	0.00
Sciaenidae sp.-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.59
Sciaenidae sp.-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.29	0.00	0.00	0.59	0.00	0.00	0.00	0.00
Skilletfish-fertilized egg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Skilletfish-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	2.04	0.58	2.02	0.58	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.28	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Skilletfish-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.31	14.64	15.84	11.39	4.65	4.05	1.74	0.29	0.00	0.00	0.58	1.45	2.92	0.58	0.87	2.56	3.49	5.26	0.87	2.34	1.46	0.00	0.29	0.30	0.58	0.00	0.00	0.30
Skilletfish-yolk-sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.57	0.00	0.00	0.00	1.45	0.00	0.00	0.00	0.00	0.29	1.45	1.75	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.00	0.00
Spot-juvenile	0.00	0.00	0.00	0.00	0.00	0.29	1.81	0.97	8.59	2.87	0.58	0.00	1.17	1.75	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Spot-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
striped blenny-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
striped blenny-yolk-sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Weakfish-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30
Weakfish-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.59	0.58	0.88	0.00	0.30	1.17	0.00	0.59	0.00
White perch-fertilized egg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	2.88	4.13	4.98	1.46	3.77	0.00	1.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.85	11.96	0.59	3.44	2.04	2.32	1.81	1.21	9.73	3.73	4.03	6.19	12.01	4.37	6.81	10.91	7.81	0.88	422.98	499.04	903.19	243.13	274.21	101.31	744.39	631.70	396.06	357.09	240.76	222.35	62.26	106.67	174.80	88.20	451.07	119.32	151.79	220.01	394.27	159.88	243.16	63.69	22.64	120.63	46.49	9.18	17.60	7.11

TABLE 5-4. AVERAGE DENSITY (NO/100M^3) OF FISH COLLECTED DURING ENTRAINMENT SAMPLING AT CALVERT CLIFFS NUCLEAR POWER PLANT BAFFLE WALL, APRIL 2006 - DECEMBER 2006

Species/Life Stage	April					May						June					July						August					September		October		November		December	
	6	13	18	24		1	8	15	23		30	5	12	20		28	3	10	17	24		31	7	14	21	28		11	25	9	26	6	27	5	18
	N	N	N	D	N	N	N	N	D	N	N	N	N	D	N	N	N	N	N	D	N	N	N	N	N	D	N	N	N	N	N	N	N	N	N
Atherinopsidae sp.-fertilized egg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atherinopsidae sp.-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	1.47	0.00	0.29	5.40	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atlantic menhaden-fertilized egg	0.00	0.00	0.00	0.00	0.00	16.78	46.19	4.88	10.26	17.72	34.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atlantic menhaden-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atlantic menhaden-yolk-sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atlantic silverside-fertilized egg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atlantic silverside-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	1.18	2.34	1.15	3.78	0.42	0.58	1.75	0.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atlantic silverside-yolk-sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.86	0.00	0.00	0.86	2.92	1.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bay anchovy-fertilized egg	0.00	0.00	0.00	0.00	0.00	2.65	190.73	216.66	987.64	1003.55	384.23	150.34	3424.67	44.96	285.78	13.14	1.15	1.17	0.29	56.49	1.70	14.58	8.25	31.08	32.02	77.85	6.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bay anchovy-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.00	0.57	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bay anchovy-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.42	3.16	4.38	15.06	0.00	5.16	2.34	6.02	0.00	0.58	0.00	0.00	3.21	21.81	3.99	88.21	4.11	150.12	3.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bay anchovy-yolk-sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.58	3.84	0.00	0.00	1.46	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	3.82	15.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Damaged egg-fertilized egg	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.29	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Damaged fish-N/A	0.00	0.00	0.00	0.00	0.00	0.00	1.75	0.00	0.00	0.21	1.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.66	1.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Damaged fish-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.58	0.29	3.24	0.21	3.45	0.29	17.13	0.29	0.00	0.00	1.72	3.23	0.00	0.00	0.00	0.58	12.08	1.43	0.87	0.00	0.00	0.58	0.00	0.29	0.00	0.00	0.00	0.00	0.00
Damaged fish-yolk-sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Feather blenny-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Feather blenny-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.03	0.88	7.38	0.29	0.57	0.88	0.57	0.88	0.00	0.00	0.00	0.58	0.88	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Feather blenny-yolk-sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fundulus sp.-fertilized egg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.17	0.58	2.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gizzard shad-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	3.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Goby sp.-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Goby sp.-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.43	3.82	0.00	0.00	2.13	0.00	0.00	0.00	0.00	0.00	1.15	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Green goby-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hogchoker-fertilized egg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	2.36	10.22	6.03	3.80	1.43	0.00	1.16	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hogchoker-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.59	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hogchoker-yolk-sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hyporhamphus Sp.-yolk-sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Naked goby-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	32.30	0.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Naked goby-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.90	4.38	144.70	0.00	3.16	0.58	0.29	4.70	0.29	0.00	0.00	0.58	2.36	1.43	7.57	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Naked goby-yolk-sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Northern pipefish-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.59	0.00	0.29	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.00
Northern pipefish-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.86	0.00	0.42	1.44	1.46	0.30	0.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rough silverside-fertilized egg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.46	1.77	0.00	0.57	0.00	0.00	0.88	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sciaenidae sp.-fertilized egg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.54	3.54	0.86	6.42	5.91	54.89	108.17	89.35	41.84	0.29	113.74	6.04	10.64	1.75	161.51	73.84	21.83	7.64	351.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Silver perch-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Skilletfish-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	2.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Skilletfish-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.30	0.54	1.67	7.48	2.92	15.06	0.00	0.00	0.29	0.57	0.29	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Skilletfish-yolk-sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.86	0.58	0.30	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Weakfish-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.29**	**0.00**	**22.08**	**248.27**	**227.28**	**1011.40**	**1029.40**	**449.52**	**179.53**	**3641.42**	**110.66**	**411.17**	**112.41**	**55.02**	**58.73**	**118.39**	**65.01**	**14.90**	**22.75**	**207.48**	**112.90**	**156.33**	**95.48**	**527.45**	**4.62**	**0.00**	**0.29**	**0.00**	**0.00**	**0.00**	**0.30**	**0.00**

TABLE 5-5. AVERAGE DENSITY (NO/100M^3) OF ENTRAINED FISH COLLECTED DURING DAYTIME AND NIGHTTIME HOURS AT CALVERT CLIFFS NUCLEAR POWER PLANT COOLING WATER INTAKE, MARCH 2006 - AUGUST 2006

Species/Life Stage	04/24/06		05/23/06		06/20/06		07/24/06		08/28/06		Total	
	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night
American eel-juvenile	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
Atherinopsidae sp.-fertilized egg	0.00	0.00	0.00	0.21	0.29	0.89	0.00	0.42	0.00	0.00	0.06	0.30
Atherinopsidae sp.-N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atherinopsidae sp.-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atlantic croaker-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atlantic croaker-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.13	0.00	0.23
Atlantic menhaden-fertilized egg	4.73	5.24	40.70	37.00	0.00	0.00	0.00	0.00	0.00	0.00	9.09	8.45
Atlantic menhaden-juvenile	0.00	0.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17
Atlantic menhaden-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.30	0.00	0.00	0.00	0.00	0.00	0.06
Atlantic menhaden-yolk-sac larvae	0.00	0.00	0.00	0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08
Atlantic silverside-fertilized egg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atlantic silverside-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atlantic silverside-post-yolk sac larvae	0.00	0.00	0.48	1.45	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.29
Atlantic silverside-unfertilized egg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atlantic silverside-yolk-sac larvae	0.00	0.00	0.00	0.21	0.00	0.30	0.00	0.00	0.00	0.00	0.00	0.10
Bay anchovy-adult	0.00	0.00	0.00	0.41	0.00	0.00	0.00	0.42	0.00	0.00	0.00	0.17
Bay anchovy-fertilized egg	0.00	0.00	972.53	1222.12	44.48	56.15	36.72	34.51	38.97	63.27	218.54	275.21
Bay anchovy-juvenile	0.00	0.87	0.00	0.41	0.00	0.30	261.77	118.91	0.29	4.26	52.41	24.95
Bay anchovy-N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bay anchovy-post-yolk sac larvae	0.00	0.00	0.48	0.21	0.88	1.77	0.00	0.00	58.88	238.90	12.05	48.18
Bay anchovy-yolk-sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.95	4.54	1.79	0.91
Damaged egg-fertilized egg	0.00	0.00	0.00	2.48	18.26	4.43	1.45	1.25	1.44	0.85	4.23	1.80
Damaged egg-N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Damaged fish-N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Damaged fish-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.42	0.29	0.00	0.06	0.08
Feather blenny-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Feather blenny-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Feather blenny-yolk-sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85	0.00	0.17
Fundulus sp.-fertilized egg	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.83	0.00	0.00	0.06	0.17
Gizzard shad-fertilized egg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Goby sp.-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.89	0.00	0.42	0.00	0.00	0.00	0.26
Green goby-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.42	0.00	0.00	0.00	0.08
Green goby-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.06	0.00
Hogchoker-fertilized egg	0.00	0.00	0.00	0.00	2.06	4.43	0.36	0.00	4.91	0.00	1.47	0.89
Hogchoker-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.57	0.00	0.11
Naked goby-fertilized egg	0.00	0.00	0.00	0.00	0.00	0.59	0.00	0.00	0.00	0.00	0.00	0.12
Naked goby-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.00	0.00	0.00	0.07	0.00
Naked goby-post-yolk sac larvae	0.00	0.00	0.00	0.00	1.18	3.55	1.45	0.83	4.91	4.54	1.51	1.78
Naked goby-yolk-sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Northern Kingfish-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Northern pipefish-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Northern pipefish-post-yolk sac larvae	0.00	0.00	0.00	0.21	0.29	0.00	0.00	0.00	0.00	0.00	0.06	0.04
Rough silverside-fertilized egg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.06	0.00
Rough silverside-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rough silverside-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rough silverside-yolk-sac larvae	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
Sciaenidae sp.-fertilized egg	0.00	0.00	1.92	2.89	74.23	17.14	20.36	25.78	8.37	150.66	20.98	39.29
Sciaenidae sp.-N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Silver perch-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.00	0.06
Skilletfish-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Skilletfish-post-yolk sac larvae	0.00	0.00	7.66	3.72	0.00	0.30	0.00	0.00	0.58	0.28	1.65	0.86
Skilletfish-yolk-sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Spot-juvenile	0.00	1.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29
Spot-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Weakfish-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**4.73**	**8.74**	**1023.76**	**1271.94**	**141.98**	**91.02**	**322.48**	**184.18**	**128.15**	**470.14**	**324.22**	**405.20**

TABLE 5-6. AVERAGE DENSITY (NO/100M3) OF ENTRAINED FISH COLLECTED DURING DAYTIME AND NIGHTTIME HOURS AT CALVERT CLIFFS NUCLEAR POWER PLANT COOLING WATER INTAKE, MARCH 2007 - SEPTEMBER 2007

Species/Life Stage	03/19/07		04/02/07		04/16/07		04/30/07		05/15/07		05/29/07		06/12/07		06/26/07		07/10/07		07/24/07		08/09/07		08/21/07		09/04/07		09/18/07		Total	
	D	N	D	N	D	N	D	N	D	N	D	N	D	N	D	N	D	N	D	N	D	N	D	N	D	N	D	N	D	N
American eel-juvenile	0.00	0.00	0.00	0.00	0.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00
Atherinopsidae sp.-fertilized egg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.06
Atherinopsidae sp.-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.00	2.02	0.00	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23
Atlantic croaker-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atlantic menhaden-fertilized egg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	177.47	71.61	11.19	9.22	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.48	5.79
Atlantic menhaden-juvenile	0.00	0.00	0.00	0.00	0.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00
Atlantic menhaden-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	13.20	15.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.94	1.13
Atlantic menhaden-yolk-sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.64	1.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.10
Atlantic silverside-fertilized egg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
Atlantic silverside-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00
Atlantic silverside-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.13	0.57	2.59	2.04	4.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.19	0.60
Atlantic silverside-yolk-sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
Bay anchovy-adult	0.00	0.24	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.29	0.29	0.29	0.00	0.00	0.00	0.00	0.04	0.08
Bay anchovy-fertilized egg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	218.24	401.77	196.34	226.97	302.12	81.53	288.60	158.99	11.58	7.55	45.12	44.23	88.69	46.16	60.35	118.36	5.85	3.55	0.00	0.00	86.92	77.79
Bay anchovy-juvenile	0.00	0.00	0.29	0.58	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.94	31.80	1.43	0.57	3.19	31.65	1.16	1.75	29.95	10.81	2.05	7.89	1.17	6.22	2.07	11.15	4.53	7.32
Bay anchovy-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.07	3.46	395.46	329.89	7.16	1.71	8.98	13.38	0.58	1.16	1.74	8.47	77.93	75.11	7.03	21.32	6.51	5.57	37.10	32.86
Bay anchovy-yolk-sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.56	1.16	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.20
Black drum-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
Blackcheek tonguefish-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
Damaged egg-fertilized egg	0.00	0.00	0.29	0.00	3.22	0.29	10.91	5.85	0.00	0.00	0.29	0.00	0.00	1.16	0.57	0.57	0.00	0.29	0.29	0.00	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.15	0.58
Damaged fish-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
Damaged fish-N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Damaged fish-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.44	3.67	3.44	3.74	0.00	0.87	0.29	0.00	1.16	0.00	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.21	0.59
Damaged fish-undetermined	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19
Damaged fish-yolk-sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
Feather blenny-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.00	0.02	0.00
Feather blenny-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	1.16	0.00	0.00	0.00	0.00	0.87	0.00	0.00	0.29	1.75	0.59	0.00	0.00	0.00	0.00	0.00	0.15	0.21
Feather blenny-yolk-sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.87	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10
Gizzard shad-fertilized egg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
Gizzard shad-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
Gizzard shad-yolk-sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16
Green goby-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.00	0.00	0.00	0.02
Green goby-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
Hogchoker-fertilized egg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.38	2.58	1.99	1.16	13.65	32.89	390.54	15.12	117.16	4.10	25.43	2.05	61.90	0.00	0.00	4.14	44.22
Hogchoker-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
Hogchoker-yolk-sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Inland silverside-fertilized egg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Inland silverside-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
Naked goby-fertilized egg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00	0.00	0.02	0.04
Naked goby-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.57	1.14	2.03	2.03	1.46	0.58	0.29	1.17	0.00	0.58	1.17	0.59	0.00	0.29	0.39	0.46
Naked goby-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.89	21.40	1.72	3.99	5.21	9.87	4.08	7.86	10.47	27.76	10.84	10.81	3.22	4.15	0.00	0.00	3.24	8.13
Naked goby-yolk-sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	2.89	0.00	0.00	0.87	0.29	0.29	0.29	0.29	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.15	0.25
Northern pipefish-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Northern pipefish-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02
River Herring-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.57	4.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.33
Rough silverside-fertilized egg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.58	0.29	0.29	0.00	0.00	0.29	0.00	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.08
Rough silverside-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.73	0.87	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.14
Sciaenidae sp.-fertilized egg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.41	1.15	0.29	4.65	39.03	52.73	68.67	25.77	20.62	1.16	2.04	0.00	0.88	0.00	1.46	1.46	21.32	0.00	0.00	6.21	11.12
Sciaenidae sp.-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sciaenidae sp.-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.29	0.00	0.59	0.00	0.00	0.02	0.06
Skilletfish-fertilized egg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
Skilletfish-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.58	2.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.06	0.17
Skilletfish-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.64	15.84	4.65	4.05	0.29	0.00	0.58	1.45	0.58	0.87	3.49	5.26	2.34	1.46	0.29	0.30	0.00	0.00	1.92	2.09
Skilletfish-yolk-sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.57	0.00	0.00	1.45	0.00	0.00	0.29	1.45	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.30	0.00	0.00	0.10	0.21
Spot-juvenile	1.81	0.97	2.87	0.58	1.17	1.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.42	0.24
Spot-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
striped blenny-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
striped blenny-yolk-sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
Weakfish-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
Weakfish-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.28	0.00	0.00	0.00	0.00	0.29	0.00	0.59	0.58	0.00	0.30	0.00	0.59	0.08	0.13
White perch-fertilized egg	0.00	0.00	0.29	2.88	4.98	1.46	0.00	1.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38	0.43
Total	**1.81**	**1.21**	**3.73**	**4.03**	**12.01**	**4.37**	**10.91**	**7.61**	**422.98**	**499.04**	**243.13**	**274.21**	**744.39**	**531.70**	**357.09**	**240.76**	**62.26**	**106.57**	**88.20**	**451.07**	**181.79**	**220.01**	**159.68**	**243.15**	**22.54**	**120.53**	**9.18**	**17.60**	**163.55**	**194.42**

TABLE 5-7. AVERAGE DENSITY (NO/100M3) OF FISH COLLECTED DURING ENTRAINMENT SAMPLING DURING DAYTIME AND NIGHTTIME HOURS AT CALVERT CLIFFS NUCLEAR POWER PLANT BAFFLE WALL, APRIL 2006 - AUGUST 2006

Species/Life Stage	04/24/06		05/23/06		06/20/06		07/24/06		08/28/06		Total	
	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night
Atherinopsidae sp.-fertilized egg	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
Atherinopsidae sp.-post-yolk sac larvae	0.00	0.00	5.40	0.42	0.00	0.00	0.00	0.00	0.00	0.00	1.08	0.08
Atlantic menhaden-fertilized egg	0.00	0.00	10.26	17.72	0.00	0.00	0.00	0.00	0.00	0.00	2.05	3.54
Atlantic menhaden-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atlantic menhaden-yolk-sac larvae	0.00	0.00	0.00	0.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13
Atlantic silverside-fertilized egg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atlantic silverside-post-yolk sac larvae	0.00	0.00	3.78	0.42	0.00	0.00	0.00	0.43	0.00	0.00	0.76	0.17
Atlantic silverside-yolk-sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bay anchovy-fertilized egg	0.00	0.00	987.64	1003.55	44.96	285.78	56.49	1.70	77.85	6.93	233.39	259.59
Bay anchovy-juvenile	0.00	0.00	0.00	0.00	0.00	0.57	0.00	0.00	0.00	0.29	0.00	0.17
Bay anchovy-post-yolk sac larvae	0.00	0.00	0.00	0.42	0.00	5.16	0.00	0.00	4.11	150.12	0.82	31.14
Bay anchovy-yolk-sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.82	15.88	0.76	3.18
Damaged egg-fertilized egg	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.12	0.00
Damaged fish-N/A	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00	1.18	0.00	0.24	0.04
Damaged fish-post-yolk sac larvae	0.00	0.00	3.24	0.21	0.29	0.00	0.00	0.00	0.00	0.00	0.71	0.04
Damaged fish-yolk-sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Feather blenny-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Feather blenny-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.29	0.57	0.00	0.00	0.00	0.00	0.06	0.11
Feather blenny-yolk-sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fundulus sp.-fertilized egg	0.00	0.00	0.00	0.00	0.00	0.00	2.49	0.00	0.00	0.00	0.50	0.00
Gizzard shad-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Goby sp.-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Goby sp.-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.13	0.00	1.15	0.00	0.66
Green goby-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.06
Hogchoker-fertilized egg	0.00	0.00	0.00	0.00	10.22	6.03	0.00	0.00	0.00	0.58	2.04	1.32
Hogchoker-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.59	0.58	0.12	0.12
Hogchoker-yolk-sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hyporhamphus Sp.-yolk-sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Naked goby-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Naked goby-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	3.16	0.00	0.00	0.00	0.29	0.00	0.69
Naked goby-yolk-sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Northern pipefish-juvenile	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.06
Northern pipefish-post-yolk sac larvae	0.00	0.00	0.00	0.42	0.00	0.57	0.00	0.00	0.00	0.00	0.00	0.20
Rough silverside-fertilized egg	0.00	0.00	0.00	0.00	0.00	0.57	0.00	0.00	0.00	0.00	0.00	0.11
Sciaenidae sp.-fertilized egg	0.00	0.00	0.54	3.54	54.89	108.17	6.04	10.64	7.64	351.34	13.82	94.74
Silver perch-post-yolk sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.06
Skilletfish-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Skilletfish-post-yolk sac larvae	0.00	0.00	0.54	1.67	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.33
Skilletfish-yolk-sac larvae	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Weakfish-juvenile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.29**	**0.00**	**1011.40**	**1029.40**	**110.66**	**411.17**	**65.01**	**14.90**	**95.48**	**527.45**	**256.57**	**396.58**

TABLE 5-8. STATISTICAL EVALUATION OF DIFFERENCE BETWEEN NIGHT AND DAY ENTRAINMENT SAMPLES AT CALVERT CLIFFS NUCLEAR POWER PLANT INTAKE

Plant	Survey Type	Taxon	N	Difference between Night and Day Entrainment (#/100 m³)		Wilcoxon Signed-Rank S	Right-Tailed Probability[1]
				Average	Median		
Calvert Cliffs	ENT-INTAKE	American eel-juvenile	19	-0.02	0.00	-0.5	0.50
Calvert Cliffs	ENT-INTAKE	Atherinopsidae sp.-fertilized egg	19	0.09	0.00	5	0.06
Calvert Cliffs	ENT-INTAKE	Atherinopsidae sp.-N/A	5	0.00	0.00		
Calvert Cliffs	ENT-INTAKE	Atherinopsidae sp.-post-yolk sac larvae	19	0.17	0.00	5	0.06
Calvert Cliffs	ENT-INTAKE	Atlantic croaker-juvenile	19	0.00	0.00		
Calvert Cliffs	ENT-INTAKE	Atlantic croaker-post-yolk sac larvae	5	0.23	0.00	0.5	0.50
Calvert Cliffs	ENT-INTAKE	Atlantic menhaden-fertilized egg	19	-5.83	0.00	-4.5	0.84
Calvert Cliffs	ENT-INTAKE	Atlantic menhaden-juvenile	19	0.00	0.00	0	0.50
Calvert Cliffs	ENT-INTAKE	Atlantic menhaden-post-yolk sac larvae	19	0.15	0.00	3	0.13
Calvert Cliffs	ENT-INTAKE	Atlantic menhaden-yolk-sac larvae	19	-0.04	0.00	-0.5	0.50
Calvert Cliffs	ENT-INTAKE	Atlantic silverside-fertilized egg	19	0.02	0.00	0.5	0.50
Calvert Cliffs	ENT-INTAKE	Atlantic silverside-juvenile	19	-0.03	0.00	-1.5	0.75
Calvert Cliffs	ENT-INTAKE	Atlantic silverside-post-yolk sac larvae	19	0.35	0.00	7.5	***0.03***
Calvert Cliffs	ENT-INTAKE	Atlantic silverside-unfertilized egg	5	0.00	0.00		
Calvert Cliffs	ENT-INTAKE	Atlantic silverside-yolk-sac larvae	19	0.04	0.00	3	0.13
Calvert Cliffs	ENT-INTAKE	Bay anchovy-adult	19	0.07	0.00	8	0.11
Calvert Cliffs	ENT-INTAKE	Bay anchovy-fertilized egg	19	8.19	0.00	5.5	0.37
Calvert Cliffs	ENT-INTAKE	Bay anchovy-juvenile	19	-5.17	0.30	20	0.14
Calvert Cliffs	ENT-INTAKE	Bay anchovy-N/A	5	0.00	0.00		
Calvert Cliffs	ENT-INTAKE	Bay anchovy-post-yolk sac larvae	19	6.38	0.00	2	0.45
Calvert Cliffs	ENT-INTAKE	Bay anchovy-yolk-sac larvae	19	-0.14	0.00	-1	0.63
Calvert Cliffs	ENT-INTAKE	Black drum-post-yolk sac larvae	14	-0.02	0.00	-0.5	0.50
Calvert Cliffs	ENT-INTAKE	Blackcheek tonguefish-post-yolk sac larvae	14	0.02	0.00	0.5	0.50
Calvert Cliffs	ENT-INTAKE	Damaged egg-fertilized egg	19	-1.06	0.00	-21.5	0.93
Calvert Cliffs	ENT-INTAKE	Damaged egg-N/A	5	0.00	0.00		
Calvert Cliffs	ENT-INTAKE	Damaged fish-juvenile	14	-0.02	0.00	-0.5	0.50
Calvert Cliffs	ENT-INTAKE	Damaged fish-N/A	19	0.00	0.00		
Calvert Cliffs	ENT-INTAKE	Damaged fish-post-yolk sac larvae	19	-0.45	0.00	-5	0.73
Calvert Cliffs	ENT-INTAKE	Damaged fish-undetermined	14	0.19	0.00	0.5	0.50
Calvert Cliffs	ENT-INTAKE	Damaged fish-yolk-sac larvae	14	-0.02	0.00	-0.5	0.50
Calvert Cliffs	ENT-INTAKE	Feather blenny-juvenile	19	-0.02	0.00	-0.5	0.50
Calvert Cliffs	ENT-INTAKE	Feather blenny-post-yolk sac larvae	19	0.05	0.00	1.5	0.41
Calvert Cliffs	ENT-INTAKE	Feather blenny-yolk-sac larvae	19	0.12	0.00	5	0.06
Calvert Cliffs	ENT-INTAKE	Fundulus sp.-fertilized egg	5	0.11	0.00	0.5	0.50
Calvert Cliffs	ENT-INTAKE	Gizzard shad-fertilized egg	19	0.01	0.00	0.5	0.50
Calvert Cliffs	ENT-INTAKE	Gizzard shad-post-yolk sac larvae	14	0.02	0.00	0.5	0.50
Calvert Cliffs	ENT-INTAKE	Gizzard shad-yolk-sac larvae	14	0.16	0.00	0.5	0.50
Calvert Cliffs	ENT-INTAKE	Goby sp.-post-yolk sac larvae	5	0.26	0.00	1.5	0.25
Calvert Cliffs	ENT-INTAKE	Green goby-juvenile	19	0.04	0.00	1.5	0.25
Calvert Cliffs	ENT-INTAKE	Green goby-post-yolk sac larvae	19	0.00	0.00	0.5	0.50
Calvert Cliffs	ENT-INTAKE	Hogchoker-fertilized egg	19	29.38	0.00	20.5	***0.02***
Calvert Cliffs	ENT-INTAKE	Hogchoker-post-yolk sac larvae	19	0.05	0.00	1.5	0.25
Calvert Cliffs	ENT-INTAKE	Hogchoker-yolk-sac larvae	14	0.00	0.00		
Calvert Cliffs	ENT-INTAKE	Inland silverside-fertilized egg	14	0.00	0.00		
Calvert Cliffs	ENT-INTAKE	Inland silverside-post-yolk sac larvae	14	0.02	0.00	0.5	0.50
Calvert Cliffs	ENT-INTAKE	Naked goby-fertilized egg	19	0.05	0.00	2	0.25
Calvert Cliffs	ENT-INTAKE	Naked goby-juvenile	19	0.03	0.00	3	0.37
Calvert Cliffs	ENT-INTAKE	Naked goby-post-yolk sac larvae	19	2.20	0.00	21.5	***0.01***
Calvert Cliffs	ENT-INTAKE	Naked goby-yolk-sac larvae	19	0.08	0.00	-2.5	0.69
Calvert Cliffs	ENT-INTAKE	Northern Kingfish-post-yolk sac larvae	5	0.00	0.00		
Calvert Cliffs	ENT-INTAKE	Northern pipefish-juvenile	19	0.00	0.00		
Calvert Cliffs	ENT-INTAKE	Northern pipefish-post-yolk sac larvae	19	0.00	0.00	-2	0.69
Calvert Cliffs	ENT-INTAKE	River Herring-post-yolk sac larvae	14	0.29	0.00	0.5	0.50
Calvert Cliffs	ENT-INTAKE	Rough silverside-fertilized egg	19	0.00	0.00	0.5	0.50
Calvert Cliffs	ENT-INTAKE	Rough silverside-juvenile	5	0.00	0.00		
Calvert Cliffs	ENT-INTAKE	Rough silverside-post-yolk sac larvae	19	0.06	0.00	0.5	0.50
Calvert Cliffs	ENT-INTAKE	Rough silverside-yolk-sac larvae	5	0.04	0.00	0.5	0.50
Calvert Cliffs	ENT-INTAKE	Sciaenidae sp.-fertilized egg	19	8.44	0.87	25.5	***0.04***
Calvert Cliffs	ENT-INTAKE	Sciaenidae sp.-juvenile	14	0.00	0.00		
Calvert Cliffs	ENT-INTAKE	Sciaenidae sp.-N/A	5	0.00	0.00		
Calvert Cliffs	ENT-INTAKE	Sciaenidae sp.-post-yolk sac larvae	14	0.04	0.00	0.5	0.50
Calvert Cliffs	ENT-INTAKE	Silver perch-post-yolk sac larvae	5	0.06	0.00	0.5	0.50
Calvert Cliffs	ENT-INTAKE	Skilletfish-fertilized egg	14	0.04	0.00	0.5	0.50
Calvert Cliffs	ENT-INTAKE	Skilletfish-juvenile	19	0.08	0.00	1	0.38
Calvert Cliffs	ENT-INTAKE	Skilletfish-post-yolk sac larvae	19	-0.08	0.00	2	0.45
Calvert Cliffs	ENT-INTAKE	Skilletfish-yolk-sac larvae	19	0.08	0.00	1.5	0.41
Calvert Cliffs	ENT-INTAKE	Spot-juvenile	19	-0.06	0.00	-1	0.56
Calvert Cliffs	ENT-INTAKE	Spot-post-yolk sac larvae	19	0.00	0.00		
Calvert Cliffs	ENT-INTAKE	striped blenny-juvenile	14	0.00	0.00		
Calvert Cliffs	ENT-INTAKE	striped blenny-yolk-sac larvae	14	0.06	0.00	0.5	0.50
Calvert Cliffs	ENT-INTAKE	Weakfish-juvenile	19	0.01	0.00	0.5	0.50
Calvert Cliffs	ENT-INTAKE	Weakfish-post-yolk sac larvae	14	0.04	0.00	1.5	0.41
Calvert Cliffs	ENT-INTAKE	White perch-fertilized egg	14	0.06	0.00	0	0.50

TABLE 5-9. STATISTICAL EVALUATION OF DIFFERENCE BETWEEN NIGHT AND DAY ICHTHYOPLANKTON SAMPLES COLLECTED AT CALVERT CLIFFS NUCLEAR POWER PLANT BAFFLE WALL

Plant	Survey Type	Taxon	N	Difference between Night and Day Entrainment (#/100 m^3)		Wilcoxon Signed-Rank S	Right-Tailed Probability[1]
				Average	Median		
Calvert Cliffs	ENT-BAFFLE	Atherinopsidae sp.-fertilized egg	5	0.04	0.00	0.5	0.50
Calvert Cliffs	ENT-BAFFLE	Atherinopsidae sp.-post-yolk sac larvae	5	-1.00	0.00	-0.5	0.50
Calvert Cliffs	ENT-BAFFLE	Atlantic menhaden-fertilized egg	5	1.49	0.00	0.5	0.50
Calvert Cliffs	ENT-BAFFLE	Atlantic menhaden-post-yolk sac larvae	5	0.00	0.00		
Calvert Cliffs	ENT-BAFFLE	Atlantic menhaden-yolk-sac larvae	5	0.13	0.00	0.5	0.50
Calvert Cliffs	ENT-BAFFLE	Atlantic silverside-fertilized egg	5	0.00	0.00		
Calvert Cliffs	ENT-BAFFLE	Atlantic silverside-post-yolk sac larvae	5	-0.59	0.00	-0.5	0.50
Calvert Cliffs	ENT-BAFFLE	Atlantic silverside-yolk-sac larvae	5	0.00	0.00		
Calvert Cliffs	ENT-BAFFLE	Bay anchovy-fertilized egg	5	26.20	0.00	0	0.50
Calvert Cliffs	ENT-BAFFLE	Bay anchovy-juvenile	5	0.17	0.00	1.5	0.25
Calvert Cliffs	ENT-BAFFLE	Bay anchovy-post-yolk sac larvae	5	30.32	0.42	3	0.13
Calvert Cliffs	ENT-BAFFLE	Bay anchovy-yolk-sac larvae	5	2.41	0.00	0.5	0.50
Calvert Cliffs	ENT-BAFFLE	Damaged egg-fertilized egg	5	-0.12	0.00	-1.5	0.75
Calvert Cliffs	ENT-BAFFLE	Damaged fish-N/A	5	-0.19	0.00	-0.5	0.50
Calvert Cliffs	ENT-BAFFLE	Damaged fish-post-yolk sac larvae	5	-0.66	0.00	-1.5	0.75
Calvert Cliffs	ENT-BAFFLE	Damaged fish-yolk-sac larvae	5	0.00	0.00		
Calvert Cliffs	ENT-BAFFLE	Feather blenny-juvenile	5	0.00	0.00		
Calvert Cliffs	ENT-BAFFLE	Feather blenny-post-yolk sac larvae	5	0.06	0.00	0.5	0.50
Calvert Cliffs	ENT-BAFFLE	Feather blenny-yolk-sac larvae	5	0.00	0.00		
Calvert Cliffs	ENT-BAFFLE	Fundulus sp.-fertilized egg	5	-0.50	0.00	-0.5	0.50
Calvert Cliffs	ENT-BAFFLE	Gizzard shad-post-yolk sac larvae	5	0.00	0.00		
Calvert Cliffs	ENT-BAFFLE	Goby sp.-juvenile	5	0.00	0.00		
Calvert Cliffs	ENT-BAFFLE	Goby sp.-post-yolk sac larvae	5	0.66	0.00	1.5	0.25
Calvert Cliffs	ENT-BAFFLE	Green goby-post-yolk sac larvae	5	0.06	0.00	0.5	0.50
Calvert Cliffs	ENT-BAFFLE	Hogchoker-fertilized egg	5	-0.72	0.00	-0.5	0.50
Calvert Cliffs	ENT-BAFFLE	Hogchoker-post-yolk sac larvae	5	0.00	0.00	-0.5	0.50
Calvert Cliffs	ENT-BAFFLE	Hogchoker-yolk-sac larvae	5	0.00	0.00		
Calvert Cliffs	ENT-BAFFLE	Hyporhamphus Sp.-yolk-sac larvae	5	0.00	0.00		
Calvert Cliffs	ENT-BAFFLE	Naked goby-juvenile	5	0.00	0.00		
Calvert Cliffs	ENT-BAFFLE	Naked goby-post-yolk sac larvae	5	0.69	0.00	1.5	0.25
Calvert Cliffs	ENT-BAFFLE	Naked goby-yolk-sac larvae	5	0.00	0.00		
Calvert Cliffs	ENT-BAFFLE	Northern pipefish-juvenile	5	0.06	0.00	0.5	0.50
Calvert Cliffs	ENT-BAFFLE	Northern pipefish-post-yolk sac larvae	5	0.20	0.00	1.5	0.25
Calvert Cliffs	ENT-BAFFLE	Rough silverside-fertilized egg	5	0.11	0.00	0.5	0.50
Calvert Cliffs	ENT-BAFFLE	Sciaenidae sp.-fertilized egg	5	80.92	4.60	5	0.06
Calvert Cliffs	ENT-BAFFLE	Silver perch-post-yolk sac larvae	5	0.06	0.00	0.5	0.50
Calvert Cliffs	ENT-BAFFLE	Skilletfish-juvenile	5	0.00	0.00		
Calvert Cliffs	ENT-BAFFLE	Skilletfish-post-yolk sac larvae	5	0.23	0.00	0.5	0.50
Calvert Cliffs	ENT-BAFFLE	Skilletfish-yolk-sac larvae	5	0.00	0.00		
Calvert Cliffs	ENT-BAFFLE	Weakfish-juvenile	5	0.00	0.00		

TABLE 5-10. STATISTICAL COMPARISON OF ENTRAINMENT AT THE INTAKE AND BAFFLE WALL AT CALVERT CLIFFS NUCLEAR POWER PLANT

Plant	Taxon	Day/Night	N	Difference between Intake and Inshore (#/100 m^3) Average	Median	Wilcoxon Signed-Rank S	Two-Tailed Probability	
Calvert Cliffs	Atherinopsidae sp.-fertilized egg	D	5	0.06	0.00	0.5	0.50	
Calvert Cliffs	Atherinopsidae sp.-fertilized egg	N	30	0.11	0.00	4.5	0.16	
Calvert Cliffs	Atherinopsidae sp.-post-yolk sac larvae	D	5	-1.08	0.00	-0.5	0.50	
Calvert Cliffs	Atherinopsidae sp.-post-yolk sac larvae	N	30	-0.07	0.00	-5.5	0.16	
Calvert Cliffs	Atlantic menhaden-fertilized egg	D	5	7.03	0.00	1.5	0.25	
Calvert Cliffs	Atlantic menhaden-fertilized egg	N	30	3.88	0.00	7	0.15	
Calvert Cliffs	Atlantic menhaden-post-yolk sac larvae	D	5	0.00	0.00			
Calvert Cliffs	Atlantic menhaden-post-yolk sac larvae	N	30	0.00	0.00	0.5	0.50	
Calvert Cliffs	Atlantic menhaden-yolk-sac larvae	D	5	0.00	0.00			
Calvert Cliffs	Atlantic menhaden-yolk-sac larvae	N	30	0.00	0.00	0.5	0.50	
Calvert Cliffs	Atlantic silverside-fertilized egg	D	5	0.00	0.00			
Calvert Cliffs	Atlantic silverside-fertilized egg	N	30	0.02	0.00	2	0.25	
Calvert Cliffs	Atlantic silverside-post-yolk sac larvae	D	5	-0.66	0.00	-0.5	0.50	
Calvert Cliffs	Atlantic silverside-post-yolk sac larvae	N	30	0.35	0.00	11.5	0.10	
Calvert Cliffs	Atlantic silverside-yolk-sac larvae	D	5	0.00	0.00			
Calvert Cliffs	Atlantic silverside-yolk-sac larvae	N	30	-0.01	0.00	-1.5	0.42	
Calvert Cliffs	Bay anchovy-fertilized egg	D	5	-14.85	-15.11	-5	0.06	
Calvert Cliffs	Bay anchovy-fertilized egg	N	30	-19.78	0.00	32.5	0.08	
Calvert Cliffs	Bay anchovy-juvenile	D	5	52.41	0.00	1.5	0.25	
Calvert Cliffs	Bay anchovy-juvenile	N	30	7.61	0.73	157.5	***0.00***	***1***
Calvert Cliffs	Bay anchovy-post-yolk sac larvae	D	5	11.23	0.48	3	0.13	
Calvert Cliffs	Bay anchovy-post-yolk sac larvae	N	30	1.91	0.00	-24	0.09	
Calvert Cliffs	Bay anchovy-yolk-sac larvae	D	5	1.03	0.00	0.5	0.50	
Calvert Cliffs	Bay anchovy-yolk-sac larvae	N	30	-0.54	0.00	-7.5	***0.03***	***2***
Calvert Cliffs	Damaged egg-fertilized egg	D	5	4.12	1.15	4	0.13	
Calvert Cliffs	Damaged egg-fertilized egg	N	30	1.10	0.00	45.5	***0.00***	***1***
Calvert Cliffs	Damaged fish-N/A	D	5	-0.24	0.00	-0.5	0.50	
Calvert Cliffs	Damaged fish-N/A	N	30	-0.25	0.00	-5.5	0.09	
Calvert Cliffs	Damaged fish-post-yolk sac larvae	D	5	-0.65	0.00	-2	0.25	
Calvert Cliffs	Damaged fish-post-yolk sac larvae	N	30	-0.84	0.00	-24.5	0.13	
Calvert Cliffs	Feather blenny-juvenile	D	5	0.00	0.00			
Calvert Cliffs	Feather blenny-juvenile	N	30	0.01	0.00	0.5	0.50	
Calvert Cliffs	Feather blenny-post-yolk sac larvae	D	5	-0.06	0.00	-0.5	0.50	
Calvert Cliffs	Feather blenny-post-yolk sac larvae	N	30	-0.23	0.00	-17	0.07	
Calvert Cliffs	Feather blenny-yolk-sac larvae	D	5	0.00	0.00			
Calvert Cliffs	Feather blenny-yolk-sac larvae	N	30	0.02	0.00	0	0.50	
Calvert Cliffs	Fundulus sp.-fertilized egg	D	5	-0.44	0.00	-0.5	0.50	
Calvert Cliffs	Fundulus sp.-fertilized egg	N	30	-0.18	0.00	-1	0.38	
Calvert Cliffs	Goby sp.-post-yolk sac larvae	D	5	0.00	0.00			
Calvert Cliffs	Goby sp.-post-yolk sac larvae	N	30	0.13	0.00	-2	0.42	
Calvert Cliffs	Green goby-post-yolk sac larvae	D	5	0.06	0.00	0.5	0.50	
Calvert Cliffs	Green goby-post-yolk sac larvae	N	30	0.03	0.00	4.5	0.22	
Calvert Cliffs	Hogchoker-fertilized egg	D	5	-0.58	0.00	0	0.50	
Calvert Cliffs	Hogchoker-fertilized egg	N	30	0.28	0.00	2.5	0.41	
Calvert Cliffs	Hogchoker-post-yolk sac larvae	D	5	-0.12	0.00	-0.5	0.50	
Calvert Cliffs	Hogchoker-post-yolk sac larvae	N	30	0.00	0.00	-0.5	0.50	
Calvert Cliffs	Naked goby-juvenile	D	5	0.07	0.00	0.5	0.50	
Calvert Cliffs	Naked goby-juvenile	N	30	-0.16	0.00	10	0.10	
Calvert Cliffs	Naked goby-post-yolk sac larvae	D	5	1.51	1.18	3	0.13	
Calvert Cliffs	Naked goby-post-yolk sac larvae	N	30	-1.14	0.00	32	***0.04***	***1***
Calvert Cliffs	Naked goby-yolk-sac larvae	D	5	0.00	0.00			
Calvert Cliffs	Naked goby-yolk-sac larvae	N	30	0.02	0.00	-2.5	0.31	
Calvert Cliffs	Northern pipefish-juvenile	D	5	0.00	0.00			
Calvert Cliffs	Northern pipefish-juvenile	N	30	-0.04	0.00	-6.5	0.06	
Calvert Cliffs	Northern pipefish-post-yolk sac larvae	D	5	0.06	0.00	0.5	0.50	
Calvert Cliffs	Northern pipefish-post-yolk sac larvae	N	30	-0.11	0.00	-10.5	***0.02***	***2***
Calvert Cliffs	Rough silverside-fertilized egg	D	5	0.06	0.00	0.5	0.50	
Calvert Cliffs	Rough silverside-fertilized egg	N	30	-0.13	0.00	-8.5	***0.05***	***2***
Calvert Cliffs	Sciaenidae sp.-fertilized egg	D	5	7.15	1.38	5	0.06	
Calvert Cliffs	Sciaenidae sp.-fertilized egg	N	30	23.86	0.00	37.5	***0.04***	***1***
Calvert Cliffs	Silver perch-post-yolk sac larvae	D	5	0.00	0.00			
Calvert Cliffs	Silver perch-post-yolk sac larvae	N	30	0.02	0.00	2	0.25	
Calvert Cliffs	Skilletfish-juvenile	D	5	0.00	0.00			
Calvert Cliffs	Skilletfish-juvenile	N	30	0.00	0.00	0	0.50	
Calvert Cliffs	Skilletfish-post-yolk sac larvae	D	5	1.54	0.00	1.5	0.25	
Calvert Cliffs	Skilletfish-post-yolk sac larvae	N	30	0.14	0.00	11	0.21	
Calvert Cliffs	Skilletfish-yolk-sac larvae	D	5	0.00	0.00			
Calvert Cliffs	Skilletfish-yolk-sac larvae	N	30	0.01	0.00	-0.5	0.50	
Calvert Cliffs	Weakfish-juvenile	D	5	0.00	0.00			
Calvert Cliffs	Weakfish-juvenile	N	30	0.00	0.00	0.5	0.50	

1. Intake entrainment densities are significantly greater than baffle wall (Wilcoxon Signed-Rank test, $p < 0.05$).
2. Baffle wall entrainment densities are significantly greater than at the intake (Wilcoxon Signed-Rank test, $p < 0.05$).

TABLE 5-11. LENGTH STATISTICS FOR ICHTHYOPLANKTON COLLECTED DURING ENTRAINMENT STUDIES AT CALVERT CLIFFS NUCLEAR POWER PLANT COOLING WATER INTAKE, MARCH 2006 - DECEMBER 2006

Species/Taxon	Count	Minimum (mm)	Maximum (mm)	Average (mm)	Std Deviation (mm)
American eel	2	53.0	55.0	54.0	1.4
Atherinopsidae sp.	1	9.5	9.5	9.5	
Atlantic croaker	37	2.0	23.6	14.2	5.4
Atlantic menhaden	110	2.0	39.0	28.7	5.4
Atlantic silverside	91	3.7	20.3	8.2	3.7
Bay anchovy	1041	1.5	66.0	13.4	9.7
Feather blenny	41	2.5	11.6	3.6	1.5
Goby sp.	9	3.0	5.9	4.0	0.9
Green goby	8	7.6	14.1	10.2	2.0
Hogchoker	2	1.8	2.5	2.2	0.5
Naked goby	553	2.0	18.2	6.1	3.1
Northern kingfish	1	12.9	12.9	12.9	
Northern pipefish	8	9.4	42.0	16.8	11.2
Rough silverside	5	5.2	16.4	9.6	4.1
Silver perch	3	2.9	7.5	4.5	2.6
Skilletfish	160	2.4	19.0	3.7	2.4
Spot	17	12.3	19.1	16.0	2.0
Weakfish	1	19.8	19.8	19.8	

TABLE 5-12. LENGTH STATISTICS FOR ICHTHYOPLANKTON COLLECTED DURING ENTRAINMENT STUDIES AT CALVERT CLIFFS NUCLEAR POWER PLANT COOLING WATER INTAKE, JANUARY 2007 - SEPTEMBER 2007

Species/Taxon	Count	Minimum (mm)	Maximum (mm)	Average (mm)	Std Deviation (mm)
American eel	7	53.0	61.0	56.6	2.9
Atherinopsidae sp.	7	4.5	11.0	6.3	2.2
Atlantic croaker	29	10.9	31.0	21.4	4.9
Atlantic menhaden	49	2.5	36.0	9.8	11.3
Atlantic silverside	51	3.1	23.8	8.0	3.7
Bay anchovy	1769	2.0	60.0	11.1	8.3
Black drum	1	7.0	7.0	7.0	
Blackcheek tonguefish	1	7.5	7.5	7.5	
Feather blenny	36	2.3	15.2	4.3	2.5
Gizzard shad	11	3.5	17.4	5.8	4.1
Green goby	3	5.3	17.9	11.7	6.3
Hogchoker	4	2.4	6.1	4.2	2.0
Inland silverside	1	7.5	7.5	7.5	
Naked goby	654	2.1	22.4	4.8	2.9
Northern pipefish	7	9.0	49.0	20.2	15.8
River herring	16	6.5	10.0	7.9	1.1
Rough silverside	13	4.5	11.0	7.7	2.2
Sciaenidae sp.	6	3.3	13.0	6.7	4.5
Skilletfish	307	2.1	13.3	3.7	2.2
Spot	61	13.1	20.9	16.2	1.6
Striped blenny	3	3.7	12.0	6.7	4.6
Weakfish	19	2.8	19.8	8.9	5.0

TABLE 5-13. LENGTH STATISTICS FOR ICHTHYOPLANKTON COLLECTED DURING ENTRAINMENT STUDIES AT CALVERT CLIFFS NUCLEAR POWER PLANT BAFFLE WALL, APRIL 2006 - DECEMBER 2006

Species/Taxon	Count	Minimum (mm)	Maximum (mm)	Average (mm)	Std Deviation (mm)
Atherinopsidae sp.	12	3.1	6.5	5.1	1.12
Atlantic menhaden	4	1.1	5.2	2.6	1.82
Atlantic silverside	55	3.3	11.5	5.4	1.80
Bay anchovy	471	2.0	14.9	4.8	1.90
Damaged fish	6	2.5	5.2	3.9	0.87
Feather blenny	62	2.5	13.2	4.0	2.12
Gizzard shad	8	3.9	4.8	4.4	0.32
Goby sp.	19	2.5	5.5	3.5	0.96
Green goby	2	5.4	7.6	6.5	1.56
Hogchoker	5	1.9	3.1	2.5	0.48
Hyporhamphus sp.	1	5.9	5.9	5.9	
Naked goby	266	2.1	17.8	5.9	4.03
Northern pipefish	23	10.0	65.0	19.9	17.21
Silver perch	1	3.1	3.1	3.1	
Skilletfish	125	2.3	22.0	4.0	4.00
Weakfish	1	15.8	15.8	15.8	

6.0 ENTRAINMENT ESTIMATES OF COOLING WATER SYSTEM

6.1 ENTRAINMENT ESTIMATES FOR OBSERVED COOLING WATER FLOWS

Daily cooling water flows are based on flows reported in the NPDES Permit Monthly Discharge Monitoring Reports which reflect any outages or periods of reduced pumping. The total observed cooling water flows (in million gallons) at Unit 1 during the entrainment sampling period (March-December 2006 and January-September 2007) were 465,730.093 million gallons in 2006 and 471,408.501 million gallons in 2007; flows at Unit 2 were 477,872.565 million gallons in 2006 and 410,862.89 million gallons in 2007 (Appendix D). Observed cooling water flow for the combined Units in 2006 was approximately 98.4 percent of the maximum design flow (Section 6.1.2) and in 2007 was 93.4 percent of maximum design flow.

Separate day and night monthly estimates of organisms entrained at CCNPP were calculated based on observed cooling water flows (Table 6-1, Appendixes F-1 to F-12). As discussed in Section 5, the density of entrained organisms was typically higher in night samples than in day samples; several of the more abundant taxon/lifestages were significantly more abundant at night. Based on day versus night sampling frequency, the entrainment calculation method (Section 5.2) applied strata of differing durations to day samples (14-18 days) versus night samples (7 days). As a consequence while densities of night samples were generally higher than day samples, collected on the same date, the calculated estimate of entrainment at both units was 1.2 to 1.4 times higher for the day than the night (Table 6-1). The estimated total number of organisms entrained at observed flows and 80% confidence limits (+/-) are:

	2006	2007	Total # Entrained
Unit 1	3,547,815,266 (±1,945,244,002)[a]	2,234,576,983 (±556,189,00)[a]	5,782,392,249 (±2,501,433,902)[a]
Unit 2	3,633,761,663 (±1,987,692,744)[a]	2,271,938,750 (±565,864,501)[a]	5,905,700,413 (±2,553,557,245)[a]
Total	7,181,576,929 (±3,932,936,746)[a]	4,506,515,733 (±1,122,054,401)[a]	11,688,092,662 (±5,054,991,147)[a]

(a) Eighty percent (80%) Confidence limits.

Over the 2 year study period estimated entrainment at CCNPP Unit 1 was 5.8 billion fish eggs, larvae, and early juveniles and 5.9 billion at Unit 2. Total entrainment for both years and Units was 11.7 billion fish eggs, larvae, and early juveniles.

6.2 ENTRAINMENT ESTIMATES FOR MAXIMUM DESIGN COOLING WATER FLOW

The maximum design cooling water flows for CCNPP Unit 1 and for Unit 2 during the entrainment sampling period were 479,305.84 million gallons and 472,384.45 million gallons in 2006 and 2007, respectively. These maximum design flows assume full circulating water pumping capacity at each unit for 277 days (March-December) in 2006 and 273 days (March-September) in 2007 with no outages for any purpose.

Separate day and night monthly estimates of organisms entrained at CCNPP were calculated based on maximum as-built design cooling water flows (Table 6-2, Appendixes F-13 to F-24). Total estimated number of organisms entrained at maximum design cooling water flow during the study period at CCNPP with the 80% confidence intervals is summarized below:

	2006	2007	Total # Entrained
Unit 1	3,645,962,339 (±1,869,955,084)[a]	2,291,077,396 (±565,930,432)[a]	5,937,039,735 (±2,435,885,516)[a]
Unit 2	3,645,962,339 (±1,869,955,084)[a]	2,291,077,396 (±565,930,432)[a]	5,937,039,735 (±2,435,885,516)[a]
Total	7,291,924,678 (±3,739,910,169)[a]	4,582,154,792 (±1,131,860,863)[a]	11,874,079,470 (±4,871,771,032)[a]

(b) Eighty percent (80%) Confidence limits.

The reduction in cooling water flow between maximum design and observed conditions during the 2006-2007 entrainment study is summarized below:

	Percent Flow Reduction	
Year	Unit 1	Unit 2
2006	2.8	0.3
2007	0.2	13.0
Combined	1.5	6.6

The 2-year estimate of entrainment for maximum as-built design cooling water flow was 5.9 billion fish eggs, larvae, and early juveniles at both Units 1 and 2. The two year, two Unit estimate based on maximum as-built design flow was approximately 1.6 percent higher than the estimates for observed cooling water flows (Table 6-1); there was a 4 percent difference in cooling water volume between the two scenarios.

When estimates based on maximum design flow are compared to the estimates for flow conditions observed during the 2006-2007 studies, the reduction is approximately 1.6

percent; that is, from 11.9 billion ichthyoplankters at the calculation baseline to 11.7 billion entrained ichthyoplankters at observed cooling water flows.

6.3 ENTRAINMENT SURVIVAL

EA (1981) demonstrated a significant potential for several of the more common taxa to survive entrainment at CCNPP. It was difficult to quantify the affect of entrainment on survival of eggs and larvae, because survival rates of organisms collected at the cooling water intake were generally not significantly different than observed for those collected at the discharge subsequent to entrainment. This indicates that the stress of collection, handling, and holding these early lifestages (intake survival) was equal to the stress of entrainment plus collection, handling, and holding (discharge survival). EA (1981) concluded that survival at the discharge provided the best estimate of entrainment survival; although it likely overestimated mortality due to the confounding effect of collection and handling associated mortality. Percent survival estimated at 36-40 hours following collection varied by taxon/lifestage and among sampling years:

Taxon	Lifestage	Percent Survival
Bay anchovy	Eggs	14.9
Bay anchovy	Larvae	2.6-4.9
Naked goby	Larvae	55.9-98.0
Blenny	Larvae	57.9-59.2
Skilletfish	Larvae	11.1-28.6
Menhaden	Juveniles	7.1
American eel	Juveniles	66.7-95.4
Winter flounder	Larvae	85.4-100
Hogchoker	Eggs	9.0-69.0
Spot	Juveniles	40.9-69.8

These taxa/lifestages accounted for approximately 71 percent of the estimated total number of organisms entrained during the 2006-2007 studies at CCNPP. Given these survival rates and the limitations of the studies, the estimate of numbers of ichthyoplankton lost to entrainment at CCNPP would be reduced by at least 10 percent.

TABLE 6-1. SUMMARY OF ESTIMATED NUMBER OF FISH ENTRAINED AT CALVERT CLIFFS NUCLEAR POWER PLANT BASED ON OBSERVED COOLING WATER FLOWS, 2006 - 2007

Taxon-Lifestage	Unit 1						Unit 2								
	2006		2007		Total (2006-2007)		2006		2007		Total (2006-2007)		Total (Unit 1 and Unit 2)		
	D	N	D	N	D	N	D	N	D	N	D	N	D	N	D+N
American eel-juvenile	0	105,211	298,393	394,304	298,393	499,515	0	107,064	305,488	77,245	305,488	184,309	603,881	683,824	1,287,704
Atherinopsidae sp.-fertilized egg	374,356	687,295	165,044	151,150	539,400	838,445	383,677	697,010	168,968	154,744	552,645	851,754	1,092,045	1,690,200	2,782,245
Atherinopsidae sp.-N/A	0	55,942	0	0	0	55,942	0	56,624	0	0	0	56,624	0	112,566	112,566
Atherinopsidae sp.-post-yolk sac larvae	0	129,912	0	907,618	0	1,037,530	0	131,587	0	926,493	0	1,058,081	0	2,095,611	2,095,611
Atlantic croaker-juvenile	0	4,927,684	0	4,237,693	0	9,165,378	0	5,082,506	0	4,264,426	0	9,346,933	0	18,512,310	18,512,310
Atlantic croaker-post-yolk sac larvae	0	486,661	0	0	0	486,661	0	505,318	0	0	0	505,318	0	991,979	991,979
Atlantic menhaden-fertilized egg	52,201,954	43,789,852	111,156,738	26,241,212	163,358,692	70,031,064	53,307,816	44,465,650	111,221,181	26,434,592	164,528,997	70,900,242	327,887,689	140,931,306	468,818,995
Atlantic menhaden-juvenile	0	2,648,923	465,611	224,467	465,611	2,873,390	0	8,115,877	476,682	228,648	476,682	8,344,525	942,293	11,217,915	12,160,207
Atlantic menhaden-post-yolk sac larvae	0	57,417	7,796,213	3,199,969	7,796,213	3,257,386	0	58,782	7,795,061	3,198,273	7,795,061	3,257,055	15,591,274	6,514,442	22,105,715
Atlantic menhaden-yolk-sac larvae	0	129,559	1,559,243	257,619	1,559,243	387,178	0	131,992	1,559,012	260,207	1,559,012	392,199	3,118,255	779,377	3,897,632
Atlantic silverside-fertilized egg	0	167,548	0	50,383	0	217,932	0	169,649	0	51,581	0	221,230	0	439,162	439,162
Atlantic silverside-juvenile	0	784,091	332,392	49,401	332,392	833,492	0	820,676	340,295	50,576	340,295	871,252	672,687	1,704,744	2,377,431
Atlantic silverside-post-yolk sac larvae	554,108	3,396,830	1,495,705	2,124,959	2,049,813	5,521,789	565,996	3,449,652	1,527,637	2,173,142	2,093,633	5,622,794	4,143,445	11,144,583	15,288,029
Atlantic silverside-unfertilized egg	0	246,523	0	0	0	246,523	0	254,264	0	0	0	254,264	0	500,788	500,788
Atlantic silverside-yolk-sac larvae	0	972,068	0	151,037	0	1,123,105	0	998,471	0	154,628	0	1,153,099	0	2,276,204	2,276,204
Bay anchovy-adult	0	199,230	287,600	2,284,334	287,600	2,483,564	0	203,967	294,836	1,564,999	294,836	1,768,966	582,436	4,252,530	4,834,965
Bay anchovy-fertilized egg	1,280,659,975	974,512,493	692,623,385	447,877,783	1,973,283,359	1,422,390,276	1,308,367,952	997,474,003	704,895,870	454,882,747	2,013,263,822	1,452,356,750	3,986,547,181	2,874,747,026	6,861,294,207
Bay anchovy-juvenile	363,832,094	54,011,600	34,637,140	33,359,674	388,469,234	87,371,274	358,706,347	56,044,001	35,432,335	33,601,889	394,138,682	89,645,891	782,607,915	177,017,165	959,625,080
Bay anchovy-N/A	0	154,321	0	0	0	154,321	0	153,819	0	0	0	153,819	0	308,140	308,140
Bay anchovy-post-yolk sac larvae	75,956,508	101,078,001	289,037,486	117,435,239	364,993,995	218,513,239	78,224,114	104,972,145	295,948,931	120,486,275	374,173,045	225,458,419	739,167,039	443,971,659	1,183,138,698
Bay anchovy-yolk-sac larvae	11,287,546	1,648,022	660,175	536,335	11,947,721	2,184,357	11,626,077	1,715,550	675,873	549,088	12,301,950	2,264,638	24,249,671	4,448,994	28,698,665
Black drum-post-yolk sac larvae	0	0	162,589	0	162,589	0	0	0	164,639	0	164,639	0	327,228	0	327,228
Blackcheek tonguefish-post-yolk sac larvae	0	0	0	59,419	0	59,419	0	0	0	60,832	0	60,832	0	120,251	120,251
Damaged egg-fertilized egg	26,994,362	5,941,252	8,505,437	1,863,660	35,499,800	7,804,912	27,653,891	6,067,793	8,715,964	1,924,737	36,369,855	7,992,529	71,869,655	15,797,441	87,667,096
Damaged egg-N/A	0	51,359	0	0	0	51,359	0	52,580	0	0	0	52,580	0	103,938	103,938
Damaged fish-juvenile	0	0	165,174	0	165,174	0	0	0	169,101	0	169,101	0	334,275	0	334,275
Damaged fish-N/A	0	41,124	0	61,934	0	103,058	0	42,102	0	63,294	0	105,396	0	208,454	208,454
Damaged fish-post-yolk sac larvae	364,114	2,989,494	9,879,393	2,399,407	10,243,508	5,388,901	375,035	3,035,176	9,931,397	2,429,901	10,306,432	5,465,077	20,549,940	10,853,978	31,403,917
Damaged fish-undetermined	0	0	0	518,893	0	518,893	0	0	0	531,232	0	531,232	0	1,050,125	1,050,125
Damaged fish-yolk-sac larvae	0	0	156,084	0	156,084	0	0	0	159,796	0	159,796	0	315,880	0	315,880
Feather blenny-juvenile	0	94,205	129,077	60,045	129,077	154,250	0	96,445	132,833	61,339	132,833	157,784	261,910	312,033	573,943
Feather blenny-post-yolk sac larvae	0	1,833,596	1,101,763	1,123,943	1,101,763	2,957,539	0	1,877,341	1,128,756	1,149,224	1,128,756	3,026,565	2,230,519	5,984,104	8,214,623
Feather blenny-yolk-sac larvae	0	327,233	0	319,458	0	646,690	0	340,328	0	328,241	0	668,569	0	1,315,259	1,315,259
Fundulus sp.-fertilized egg	374,356	251,161	0	0	374,356	251,161	383,677	254,914	0	0	383,677	254,914	758,033	506,074	1,264,108
Gizzard shad-fertilized egg	0	61,631	0	51,524	0	113,155	0	63,566	0	52,041	0	115,607	0	228,762	228,762
Gizzard shad-post-yolk sac larvae	0	0	0	99,678	0	99,678	0	0	0	102,048	0	102,048	0	201,726	201,726
Gizzard shad-yolk-sac larvae	0	0	0	463,847	0	463,847	0	0	0	468,060	0	468,060	0	931,908	931,908
Goby sp.-post-yolk sac larvae	0	2,324,701	0	0	0	2,324,701	0	2,374,506	0	0	0	2,374,506	0	4,699,207	4,699,207
Green goby-juvenile	0	126,076	0	62,363	0	188,439	0	127,683	0	63,844	0	191,527	0	379,966	379,966
Green goby-post-yolk sac larvae	364,114	318,235	0	115,392	364,114	433,627	375,035	324,484	0	118,451	375,035	442,935	739,149	876,562	1,615,711
Hogchoker-fertilized egg	9,301,365	4,131,375	32,776,377	179,949,734	42,077,742	184,081,108	9,559,014	4,224,496	33,594,114	184,683,864	43,153,128	188,908,360	85,230,870	372,989,469	458,220,339
Hogchoker-post-yolk sac larvae	0	180,300	0	169,245	0	349,545	0	188,130	0	171,959	0	360,089	0	709,635	709,635
Hogchoker-yolk-sac larvae	0	0	0	50,019	0	50,019	0	0	0	51,208	0	51,208	0	101,228	101,228
Inland silverside-fertilized egg	0	0	0	54,589	0	54,589	0	0	0	53,888	0	53,888	0	108,476	108,476
Inland silverside-post-yolk sac larvae	0	0	0	57,655	0	57,655	0	0	0	59,026	0	59,026	0	116,681	116,681
Naked goby-fertilized egg	0	114,834	167,218	113,363	167,218	228,197	0	117,565	171,194	119,343	171,194	236,907	338,412	465,105	803,517
Naked goby-juvenile	490,928	5,596,785	3,085,813	2,004,012	3,576,741	7,599,797	497,682	5,670,530	3,161,597	2,050,734	3,659,280	7,721,264	7,236,020	15,321,061	22,557,082
Naked goby-post-yolk sac larvae	9,651,080	26,380,328	24,401,688	23,545,927	34,052,768	49,926,254	9,901,029	26,967,226	25,003,324	24,149,458	34,904,353	51,116,684	68,957,121	101,042,938	170,000,060
Naked goby-yolk-sac larvae	0	368,232	1,136,171	895,423	1,136,171	1,263,655	0	376,988	1,163,720	917,029	1,163,720	1,294,017	2,299,891	2,557,672	4,857,563
Northern Kingfish-post-yolk sac larvae	0	121,455	0	0	0	121,455	0	131,534	0	0	0	131,534	0	252,989	252,989
Northern pipefish-juvenile	0	121,455	0	149,129	0	270,584	0	131,534	0	152,675	0	284,209	0	554,793	554,793
Northern pipefish-post-yolk sac larvae	374,356	316,385	167,218	157,383	541,574	473,767	383,677	324,847	171,194	161,125	554,871	485,972	1,096,446	959,740	2,056,185
River Herring-post-yolk sac larvae	0	0	325,179	922,477	325,179	922,477	0	0	329,278	944,412	329,278	944,412	654,457	1,866,889	2,521,346
Rough silverside-fertilized egg	364,114	181,846	499,610	459,548	863,724	641,394	375,035	184,286	511,490	469,106	886,524	653,392	1,750,248	1,294,787	3,045,035
Rough silverside-juvenile	0	56,782	0	0	0	56,782	0	58,133	0	0	0	58,133	0	114,915	114,915
Rough silverside-post-yolk sac larvae	0	150,708	501,654	564,469	501,654	715,176	0	152,900	513,582	576,580	513,582	729,481	1,015,237	1,444,657	2,459,894
Rough silverside-yolk-sac larvae	0	36,808	0	0	0	36,808	0	37,684	0	0	0	37,684	0	74,492	74,492
Sciaenidae sp.-fertilized egg	134,605,444	327,954,525	49,822,271	64,075,656	184,427,715	392,030,182	137,696,865	335,861,304	51,002,077	65,605,996	188,698,942	401,467,300	373,126,657	793,497,482	1,166,624,139
Sciaenidae sp.-juvenile	0	0	0	133,727	0	133,727	0	0	0	138,653	0	138,653	0	272,380	272,380
Sciaenidae sp.-N/A	0	1,903,298	0	0	0	1,903,298	0	1,897,095	0	0	0	1,897,095	0	3,800,394	3,800,394
Sciaenidae sp.-post-yolk sac larvae	0	0	138,403	181,408	138,403	181,408	0	0	142,092	187,360	142,092	187,360	280,495	368,768	649,263
Silver perch-post-yolk sac larvae	0	192,041	0	0	0	192,041	0	196,159	0	0	0	196,159	0	388,200	388,200
Skilletfish-fertilized egg	0	0	0	155,786	0	155,786	0	0	0	160,119	0	160,119	0	315,905	315,905
Skilletfish-juvenile	0	398,702	472,839	964,266	472,839	1,362,968	0	406,525	484,480	987,061	484,480	1,393,586	957,320	2,756,554	3,713,874
Skilletfish-post-yolk sac larvae	9,593,954	6,664,282	14,933,908	9,539,023	24,527,863	16,203,305	9,805,999	6,848,588	15,200,361	9,765,414	25,006,361	16,614,002	49,534,223	32,817,307	82,351,530
Skilletfish-yolk-sac larvae	0	459,108	775,384	808,274	775,384	1,267,381	0	470,494	790,875	827,493	790,875	1,297,987	1,566,258	2,565,368	4,131,627
Spot-juvenile	0	507,542	2,882,262	2,792,177	2,882,262	3,299,719	0	738,501	1,686,856	995,848	1,686,856	1,734,349	4,569,118	5,034,068	9,603,186
Spot-post-yolk sac larvae	0	23,868	0	162,328	0	186,196	0	259,136	0	63,294	0	322,431	0	508,627	508,627
striped blenny-juvenile	0	0	0	49,401	0	49,401	0	0	0	50,576	0	50,576	0	99,977	99,977
striped blenny-yolk-sac larvae	0	0	0	148,053	0	148,053	0	0	0	151,574	0	151,574	0	299,627	299,627
Weakfish-juvenile	0	61,631	0	115,369	0	177,000	0	63,566	0	118,985	0	182,552	0	359,551	359,551
Weakfish-post-yolk sac larvae	0	0	598,065	784,426	598,065	784,426	0	0	613,081	802,831	613,081	802,831	1,211,146	1,587,257	2,798,403
White perch-fertilized egg	0	0	2,675,660	2,917,013	2,675,660	2,917,013	0	0	2,701,144	2,825,223	2,701,144	2,825,223	5,376,804	5,742,235	11,119,039
Total	**1,987,344,729**	**1,580,470,537**	**1,295,974,362**	**938,602,621**	**3,283,319,091**	**2,519,073,158**	**2,008,188,917**	**1,625,572,746**	**1,318,285,117**	**953,653,633**	**3,326,474,034**	**2,579,226,379**	**6,589,793,125**	**5,098,299,537**	**11,688,092,662**
Calculation Baseline (CB)	**2,017,785,113**	**1,628,177,226**	**1,328,211,583**	**962,865,813**	**3,345,996,696**	**2,591,043,039**	**2,017,785,113**	**1,628,177,226**	**1,328,211,583**	**962,865,813**	**3,345,996,696**	**2,591,043,039**	**6,691,993,392**	**5,182,086,078**	**11,874,079,470**
Percent Reduction from CB	**2.5%**	**2.9%**	**2.4%**	**2.5%**	**2.5%**	**2.8%**	**0.5%**	**0.2%**	**0.7%**	**1.0%**	**0.6%**	**0.5%**	**1.5%**	**1.6%**	**1.6%**

TABLE 6-2. SUMMARY OF ESTIMATED NUMBER OF FISH ENTRAINED AT CALVERT CLIFFS NUCLEAR POWER PLANT BASED ON MAXIMUM DESIGN FLOW, 2006 - 2007

Taxon-Lifestage	Unit 1						Unit 2								
	2006		2007		Total (2006-2007)		2006		2007		Total (2006-2007)		Total (Unit 1 and Unit 2)		
	D	N	D	N	D	N	D	N	D	N	D	N	D	N	D+N
American eel-juvenile	0	107,712	305,488	403,680	305,488	511,392	0	107,712	305,488	403,680	305,488	511,392	610,976	1,022,784	1,633,760
Atherinopsidae sp.-fertilized egg	383,713	705,343	168,968	154,744	552,681	860,087	383,713	705,343	168,968	154,744	552,681	860,087	1,105,362	1,720,173	2,825,536
Atherinopsidae sp.-N/A	0	57,272	0	0	0	57,272	0	57,272	0	0	0	57,272	0	114,545	114,545
Atherinopsidae sp.-post-yolk sac larvae	0	133,471	0	929,256	0	1,062,727	0	133,471	0	929,256	0	1,062,727	0	2,125,453	2,125,453
Atlantic croaker-juvenile	0	5,086,559	0	4,340,114	0	9,426,674	0	5,086,559	0	4,340,114	0	9,426,674	0	18,853,347	18,853,347
Atlantic croaker-post-yolk sac larvae	0	505,318	0	0	0	505,318	0	505,318	0	0	0	505,318	0	1,010,636	1,010,636
Atlantic menhaden-fertilized egg	53,540,092	44,836,258	113,799,831	26,865,178	167,339,923	71,701,436	53,540,092	44,836,258	113,799,831	26,865,178	167,339,923	71,701,436	334,679,846	143,402,872	478,082,718
Atlantic menhaden-juvenile	0	8,117,173	476,682	229,804	476,682	8,346,977	0	8,117,173	476,682	229,804	476,682	8,346,977	953,384	16,693,954	17,647,318
Atlantic menhaden-post-yolk sac larvae	0	58,782	7,981,592	3,276,058	7,981,592	3,334,841	0	58,782	7,981,592	3,276,058	7,981,592	3,334,841	15,963,184	6,669,681	22,632,865
Atlantic menhaden-yolk-sac larvae	0	132,640	1,596,318	263,745	1,596,318	396,385	0	132,640	1,596,318	263,745	1,596,318	396,385	3,192,637	792,769	3,985,406
Atlantic silverside-fertilized egg	0	171,532	0	51,581	0	223,114	0	171,532	0	51,581	0	223,114	0	446,227	446,227
Atlantic silverside-juvenile	0	821,680	340,295	50,576	340,295	872,256	0	821,680	340,295	50,576	340,295	872,256	680,591	1,744,512	2,425,103
Atlantic silverside-post-yolk sac larvae	568,423	3,483,708	1,531,270	2,177,129	2,099,693	5,660,836	568,423	3,483,708	1,531,270	2,177,129	2,099,693	5,660,836	4,199,386	11,321,672	15,521,058
Atlantic silverside-unfertilized egg	0	254,264	0	0	0	254,264	0	254,264	0	0	0	254,264	0	508,529	508,529
Atlantic silverside-yolk-sac larvae	0	998,471	0	154,628	0	1,153,099	0	998,471	0	154,628	0	1,153,099	0	2,306,198	2,306,198
Bay anchovy-adult	0	203,967	298,615	2,342,040	296,615	2,546,007	0	203,967	296,615	2,342,040	296,615	2,546,007	593,231	5,092,013	5,685,244
Bay anchovy-fertilized egg	1,313,800,554	988,474,520	709,620,795	459,242,201	2,023,421,349	1,457,716,721	1,313,800,554	988,474,520	709,620,795	459,242,201	2,023,421,349	1,457,716,721	4,046,842,698	2,915,433,443	6,962,276,140
Bay anchovy-juvenile	362,247,801	56,063,052	35,483,761	34,216,239	397,731,563	90,279,292	362,247,801	56,063,052	35,483,761	34,216,239	397,731,563	90,279,292	795,463,125	180,558,584	976,021,709
Bay anchovy-N/A	0	157,991	0	0	0	157,991	0	157,991	0	0	0	157,991	0	315,982	315,982
Bay anchovy-post-yolk sac larvae	78,226,648	104,976,849	296,511,690	120,673,102	374,738,338	225,649,951	78,226,648	104,976,849	296,511,690	120,673,102	374,738,338	225,649,951	749,476,676	451,299,902	1,200,776,578
Bay anchovy-yolk-sac larvae	11,626,077	1,715,550	675,873	549,088	12,301,950	2,264,638	11,626,077	1,715,550	675,873	549,088	12,301,950	2,264,638	24,603,900	4,529,275	29,133,175
Black drum-post-yolk sac larvae	0	0	166,455	0	166,455	0	0	0	166,455	0	166,455	0	332,911	0	332,911
Blackcheek tonguefish-post-yolk sac larvae	0	0	0	60,832	0	60,832	0	0	0	60,832	0	60,832	0	121,664	121,664
Damaged egg-fertilized egg	27,675,781	6,089,995	8,756,125	1,925,074	36,431,905	8,015,069	27,675,781	6,089,895	8,756,125	1,925,074	36,431,905	8,015,069	72,863,811	16,030,138	88,893,949
Damaged egg-N/A	0	52,580	0	0	0	52,580	0	52,580	0	0	0	52,580	0	105,160	105,160
Damaged fish-juvenile	0	0	169,101	0	169,101	0	0	0	169,101	0	169,101	0	338,202	0	338,202
Damaged fish-N/A	0	42,102	0	63,407	0	105,509	0	42,102	0	63,407	0	105,509	0	211,017	211,017
Damaged fish-post-yolk sac larvae	375,035	3,062,461	10,115,267	2,456,670	10,490,302	5,519,130	375,035	3,062,461	10,115,267	2,456,670	10,490,302	5,519,130	20,980,603	11,038,261	32,018,864
Damaged fish-undetermined	0	0	0	531,232	0	531,232	0	0	0	531,232	0	531,232	0	1,062,463	1,062,463
Damaged fish-yolk-sac larvae	0	0	159,796	0	159,796	0	0	0	159,796	0	159,796	0	319,591	0	319,591
Feather blenny-juvenile	0	96,445	132,833	61,473	132,833	157,918	0	96,445	132,833	61,473	132,833	157,918	265,666	315,835	581,501
Feather blenny-post-yolk sac larvae	0	1,877,424	1,132,315	1,150,878	1,132,315	3,028,302	0	1,877,424	1,132,315	1,150,878	1,132,315	3,028,302	2,264,630	6,056,604	8,321,234
Feather blenny-yolk-sac larvae	0	340,328	0	328,241	0	668,569	0	340,328	0	328,241	0	668,569	0	1,337,138	1,337,138
Fundulus sp.-fertilized egg	383,713	257,346	0	0	383,713	257,346	383,713	257,346	0	0	383,713	257,346	767,426	514,692	1,282,118
Gizzard shad-fertilized egg	0	63,566	0	52,749	0	116,315	0	63,566	0	52,749	0	116,315	0	232,630	232,630
Gizzard shad-post-yolk sac larvae	0	0	0	102,048	0	102,048	0	0	0	102,048	0	102,048	0	204,096	204,096
Gizzard shad-yolk-sac larvae	0	0	0	474,877	0	474,877	0	0	0	474,877	0	474,877	0	949,754	949,754
Goby sp.-post-yolk sac larvae	0	2,381,984	0	0	0	2,381,984	0	2,381,984	0	0	0	2,381,984	0	4,763,968	4,763,968
Green goby-juvenile	0	129,073	0	63,846	0	192,919	0	129,073	0	63,846	0	192,919	0	385,839	385,839
Green goby-post-yolk sac larvae	375,035	325,917	0	118,451	375,035	444,367	375,035	325,917	0	118,451	375,035	444,367	750,069	888,734	1,638,804
Hogchoker-fertilized egg	9,564,182	4,231,826	33,642,329	184,805,883	43,206,511	189,037,709	9,564,182	4,231,826	33,642,329	184,805,883	43,206,511	189,037,709	86,413,022	378,075,419	464,488,441
Hogchoker-post-yolk sac larvae	0	188,130	0	173,479	0	361,609	0	188,130	0	173,479	0	361,609	0	723,218	723,218
Hogchoker-yolk-sac larvae	0	0	0	51,208	0	51,208	0	0	0	51,208	0	51,208	0	102,417	102,417
Inland silverside-fertilized egg	0	0	0	55,943	0	55,943	0	0	0	55,943	0	55,943	0	111,886	111,886
Inland silverside-post-yolk sac larvae	0	0	0	59,026	0	59,026	0	0	0	59,026	0	59,026	0	118,051	118,051
Naked goby-fertilized egg	0	117,565	171,194	119,343	171,194	236,907	0	117,565	171,194	119,343	171,194	236,907	342,388	473,815	816,203
Naked goby-juvenile	502,601	5,739,855	3,162,636	2,056,415	3,665,237	7,796,271	502,601	5,739,855	3,162,636	2,056,415	3,665,237	7,796,271	7,330,474	15,592,541	22,923,016
Naked goby-post-yolk sac larvae	9,920,847	27,053,819	25,072,067	24,180,329	34,992,913	51,234,148	9,920,847	27,053,819	25,072,067	24,180,329	34,992,913	51,234,148	69,985,827	102,468,296	172,454,123
Naked goby-yolk-sac larvae	0	376,988	1,163,929	917,029	1,163,929	1,294,017	0	376,988	1,163,929	917,029	1,163,929	1,294,017	2,327,857	2,588,034	4,915,891
Northern Kingfish-post-yolk sac larvae	0	131,534	0	0	0	131,534	0	131,534	0	0	0	131,534	0	263,068	263,068
Northern pipefish-juvenile	0	131,534	0	152,675	0	284,209	0	131,534	0	152,675	0	284,209	0	568,418	568,418
Northern pipefish-post-yolk sac larvae	383,713	324,847	171,194	161,125	554,907	485,972	383,713	324,847	171,194	161,125	554,907	485,972	1,109,814	971,945	2,081,759
River Herring-post-yolk sac larvae	0	0	332,911	944,412	332,911	944,412	0	0	332,911	944,412	332,911	944,412	665,822	1,888,824	2,554,646
Rough silverside-fertilized egg	375,035	186,170	511,490	471,161	886,524	657,331	375,035	186,170	511,490	471,161	886,524	657,331	1,773,049	1,314,662	3,087,710
Rough silverside-juvenile	0	58,133	0	0	0	58,133	0	58,133	0	0	0	58,133	0	116,265	116,265
Rough silverside-post-yolk sac larvae	0	154,291	513,582	578,100	513,582	732,391	0	154,291	513,582	578,100	513,582	732,391	1,027,165	1,464,783	2,491,948
Rough silverside-yolk-sac larvae	0	37,684	0	0	0	37,684	0	37,684	0	0	0	37,684	0	75,367	75,367
Sciaenidae sp.-fertilized egg	137,991,023	336,727,415	51,010,178	65,609,665	189,001,201	402,337,080	137,991,023	336,727,415	51,010,178	65,609,665	189,001,201	402,337,080	378,002,402	804,674,160	1,182,676,562
Sciaenidae sp.-juvenile	0	0	0	138,653	0	138,653	0	0	0	138,653	0	138,653	0	277,306	277,306
Sciaenidae sp.-N/A	0	1,948,555	0	0	0	1,948,555	0	1,948,555	0	0	0	1,948,555	0	3,897,110	3,897,110
Sciaenidae sp.-post-yolk sac larvae	0	0	143,871	187,363	143,871	187,363	0	0	143,871	187,363	143,871	187,363	287,743	374,727	662,470
Silver perch-post-yolk sac larvae	0	198,591	0	0	0	198,591	0	198,591	0	0	0	198,591	0	397,183	397,183
Skilletfish-fertilized egg	0	0	0	160,119	0	160,119	0	0	0	160,119	0	160,119	0	320,239	320,239
Skilletfish-juvenile	0	408,608	486,260	987,195	486,260	1,395,803	0	408,608	486,260	987,195	486,260	1,395,803	972,519	2,791,606	3,764,125
Skilletfish-post-yolk sac larvae	9,844,841	6,848,650	15,307,646	9,775,870	25,152,487	16,624,520	9,844,841	6,848,650	15,307,646	9,775,870	25,152,487	16,624,520	50,304,974	33,249,040	83,554,013
Skilletfish-yolk-sac larvae	0	470,494	794,508	827,493	794,508	1,297,987	0	470,494	794,508	827,493	794,508	1,297,987	1,589,016	2,595,974	4,184,990
Spot-juvenile	0	738,501	2,950,796	2,858,570	2,950,796	3,597,070	0	738,501	2,950,796	2,858,570	2,950,796	3,597,070	5,901,592	7,194,140	13,095,733
Spot-post-yolk sac larvae	0	259,136	0	166,188	0	425,324	0	259,136	0	166,188	0	425,324	0	850,649	850,649
striped blenny-juvenile	0	0	0	50,576	0	50,576	0	0	0	50,576	0	50,576	0	101,152	101,152
striped blenny-yolk-sac larvae	0	0	0	151,574	0	151,574	0	0	0	151,574	0	151,574	0	303,148	303,148
Weakfish-juvenile	0	63,566	0	118,985	0	182,552	0	63,566	0	118,985	0	182,552	0	365,103	365,103
Weakfish-post-yolk sac larvae	0	0	616,640	806,991	616,640	806,991	0	0	616,640	806,991	616,640	806,991	1,233,279	1,613,982	2,847,261
White perch-fertilized egg	0	0	2,739,282	2,991,503	2,739,282	2,991,503	0	0	2,739,282	2,991,503	2,739,282	2,991,503	5,478,564	5,983,007	11,461,571
Total	**2,017,785,113**	**1,628,177,226**	**1,328,211,583**	**962,865,813**	**3,345,996,696**	**2,591,043,039**	**2,017,785,113**	**1,628,177,226**	**1,328,211,583**	**962,865,813**	**3,345,996,696**	**2,591,043,039**	**6,691,993,392**	**5,182,086,078**	**11,874,079,470**

7.0 REFERENCES

Alden Research Laboratory, Inc (Alden) and Electric Power Research Institute (EPRI) (Alden and EPRI). 2008. Potential Alternative Fish Protection Options for the Calvert Cliffs Nuclear Power Plant with Respect to 316(b) BPJ Compliance. Prepared for Constellation Energy. May 2008.

Alden. unpublished. *2005 Appraisal Level Assessment EPA 316(b) Permit Requirements, Calvert Cliffs Nuclear Power Plant.* March 2005.

Boesch, D.F., R.B. Brinsfield, and R.E. Magnien. 2001. Chesapeake Bay Eutrophication: Scientific Understanding, Ecosystem Restoration, and Challenges for Agriculture. *J. Environ. Qual.* 30: 303-320.

Chesapeake Bay Fisheries Ecosystem Advisory Panel (CBFEAP). 2006. Fisheries Ecosystem Planning for Chesapeake Bay. American Fisheries Society, Trends in Fisheries Science and Management 3, Bethesda, Maryland.

Chesapeake Bay Program (CBP). 1999. Targeting Toxics: A Characterization Program Tool for Directing Management and Monitoring Actions in the Chesapeake Bay's Tidal Rivers. June.

Constellation Energy (Constellation). 2006. Circulating Water Description No. 09, 042A 108, Revision 6. Calvert Cliffs Nuclear Power Plant, Inc.

EA Engineering, Science and Technology, Inc. (EA). 2006. Standard Operating Procedures for Entrainment and Near-Shore Ichthyoplankton Sampling at Calvert Cliffs Nuclear Power Plant. February 2006.

Ecological Analysts, Inc. (EA). 1981. Entrainment Abundance and Viability Studies, Calvert Cliffs Nuclear Power Plant, Final Report 1978 – 1980.

Edwards, J. 1981. A Brief Description of the Geology of Maryland. Maryland Geological Survey.

Electric Power Research Institute (EPRI). 2004. Impingement Abundance Monitoring Technical Support Document. EPRI Report 1008470. EPRI, Palo Alto, CA.

Fuiman, L., J. Conner, B. Lathrop, G. Bunyak, D. Snyder, and J. Loos. 1983. State of the art of identification for cyprinid fish larvae from eastern North America. *Trans. Amer. Fish. Soc.* 112:319-332.

HDR/Lawler, Matusky and Skelly Engineers, LLP. 2005. Proposal for Information Collection in Compliance with Section 316(b) Phase II Requirements of the Clean Water Act. Prepared for Constellation Generation Group by HDR/Lawler, Matusky and Skelly Engineers, LLP. Pearl River, NY December 19, 2005

Hicks, S.D. 1964. Tidal Wave Characteristics of Chesapeake Bay. Chesapeake Science 5(3): 103-113.

Lippson, A.J. and R.L. Moran. 1974. Manual for Identification of Early Development Stages of Fishes of the Potomac River Estuary. Martin Marietta Corporation.

Maryland Department of the Environment (MDE). 2008. Chesapeake Bay Restoration. Online at: http://www.mde.state.md.us/Water/bayrestoration.asp.

Maryland Department of Natural Resources (MDDNR). 2008. Tidal Water and Habitat Quality Monitoring. Online at: http://www.dnr.state.md.us/Bay/monitoring/water/

Maryland State Climate Office (MSCO). 2008. Climate of Maryland. Online at: www.atmos.umd.edu/~climate/

Murdy, E.O., R.S. Birdsong, and J.A. Musick. 1997. *Fishes of Chesapeake Bay.* Smithsonian Instution Press, Washington and London.

National Research Council (NRC). 2004. Non-native oysters in the Chesapeake Bay. The National Academics Press, Washington, D.C. 326 pgs.

Nelson, J., E. Crossman, H. Espinosa-Perez, L. Findley, C. Gilbert, R. Lea, and J. Williams. 2004. *Common and Scientific Names of Fishes from the United States, Canada, and Mexico.* Sixth Edition. American Fisheries Society Special Publication 29, Bethesda, MD.

Smith, D.E., M. Leffler, and G. Mackiernan. 1996. *Oxygen Dynamics in the Chesapeake Bay: A Synthesis of Recent Research.* Maryland Sea Grant: College Park, MD. 234 pgs.

U.S. Nuclear Regulatory Commission (NRC) 1999. Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Calvert Cliffs Nuclear Power Plant (NUREG-1437, Supplement 1). Final Report. October 1999.

United States Environmental Protection Agency (USEPA). 2004. Chesapeake Bay: Introduction to an Ecosystem. EPA 903-R-04-003. July.

United Stated Fish and Wildlife Service (USFWS). 1978. *Development of Fishes of the Mid-Atlantic Bight: An Atlas of Egg, Larval, and Juvenile Stages*, Vols. I-VI. U.S. Dept. of Interior.

Wang and Kernehan. 1979. *Fishes of the Delaware Estuaries: A guide to the Early Life Histories.* EA Communications, Towson, MD.

White, C.P. 1989. *Chesapeake Bay: Nature of the Estuary, A Field Guide*. Tidewater Publishers, Centerville, Maryland.

Wright, Brad. 2008. Engineering Analyst for Constellation Energy. Personal Communication.

APPENDIX A

CALCULATION SEQUENCE

Table A-1. Calculation Sequence for 24-Hour Entrainment Estimate for Bay Anchovy, 5/23/06, Parent Event

Constellation - Entrainment Organism Count Averages (24 Hour) with Day Night Factor

Site	Calvert Cliffs	Organism	Bay anchovy-fertilized egg

Parent Date:	5/23/2006	Parent Date Range:	5/9/2006 - 6/6/2006	# Days:	29

Day or Night: D **Location:** ENT/INT

Event #	Count in Sample	Sample Vol M3	IND or BATCH		Count in 100 M3
2	1190	70.384	Batch	Batch	1,690.735
9	460	70.951	Batch	Batch	648.338
10	381	67.503	Batch	Batch	564.417

Average Count in 100m3:	967.830
Day/Night Hour factor:	0.612
Average Count 100m3 * Day/Night Hour factor:	592.124

Day or Night: N **Location:** ENT/INT

Event #	Count in Sample	Sample Vol M3	IND or BATCH		Count in 100 M3
1	836	69.949	Batch	Batch	1,195.158
3	1209	68.218	Batch	Batch	1,772.268
4	652	69.363	Batch	Batch	939.982
5	753	68.713	Batch	Batch	1,095.865
6	1130	68.694	Batch	Batch	1,644.978
7	846	70.437	Batch	Batch	1,201.081
8	486	68.376	Batch	Batch	710.771

Average Count in 100m3:	1222.872
Day/Night Hour factor:	0.388
Average Count 100m3 * Day/Night Hour factor:	474.712

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APPENDIX B

ENTRAINMENT ABUNDANCE

TABLE B-1. AVERAGE DENSITY AND PERCENT COMPOSITION OF ENTRAINED FISH AT CALVERT CLIFFS NUCLEAR POWER PLANT COOLING WATER INTAKE, MARCH 2006 - DECEMBER 2006

Species/Life Stage	Average No/100M^3	Percent	Cumulative Percent
Bay anchovy-fertilized egg	174.12	64.16	64.16
Sciaenidae sp.-fertilized egg	50.33	18.54	82.70
Bay anchovy-juvenile	13.66	5.03	87.73
Bay anchovy-post-yolk sac larvae	11.83	4.36	92.09
Atlantic menhaden-fertilized egg	7.89	2.91	95.00
Naked goby-post-yolk sac larvae	4.19	1.54	96.54
Damaged egg-fertilized egg	1.53	0.56	97.10
Skilletfish-post-yolk sac larvae	1.21	0.45	97.55
Atlantic menhaden-juvenile	1.05	0.39	97.93
Hogchoker-fertilized egg	0.88	0.33	98.26
Naked goby-juvenile	0.80	0.29	98.55
Atlantic silverside-post-yolk sac larvae	0.54	0.20	98.75
Damaged fish-post-yolk sac larvae	0.49	0.18	98.93
Bay anchovy-yolk-sac larvae	0.41	0.15	99.09
Goby sp.-post-yolk sac larvae	0.36	0.13	99.22
Sciaenidae sp.-N/A	0.30	0.11	99.33
Feather blenny-post-yolk sac larvae	0.28	0.10	99.43
Atlantic croaker-juvenile	0.26	0.09	99.53
Atlantic silverside-yolk-sac larvae	0.15	0.06	99.58
Atherinopsidae sp.-fertilized egg	0.12	0.04	99.62
Spot-juvenile	0.10	0.04	99.66
Atlantic silverside-juvenile	0.08	0.03	99.69
Skilletfish-yolk-sac larvae	0.06	0.02	99.72
Skilletfish-juvenile	0.06	0.02	99.74
Naked goby-yolk-sac larvae	0.06	0.02	99.76
Northern pipefish-post-yolk sac larvae	0.05	0.02	99.78
Green goby-post-yolk sac larvae	0.05	0.02	99.80
Fundulus sp.-fertilized egg	0.05	0.02	99.82
Atlantic croaker-post-yolk sac larvae	0.04	0.01	99.83
Rough silverside-fertilized egg	0.03	0.01	99.84
Atlantic silverside-unfertilized egg	0.03	0.01	99.85
Spot-post-yolk sac larvae	0.03	0.01	99.87
Feather blenny-yolk-sac larvae	0.03	0.01	99.88
Bay anchovy-adult	0.03	0.01	99.89
Atlantic silverside-fertilized egg	0.03	0.01	99.90
Bay anchovy-N/A	0.02	0.01	99.91
Silver perch-post-yolk sac larvae	0.02	0.01	99.92
Rough silverside-post-yolk sac larvae	0.02	0.01	99.93
Green goby-juvenile	0.02	0.01	99.93
Atlantic menhaden-yolk-sac larvae	0.02	0.01	99.94
Atherinopsidae sp.-post-yolk sac larvae	0.02	0.01	99.95
Naked goby-fertilized egg	0.02	0.01	99.95
American eel-juvenile	0.02	0.01	99.96
Feather blenny-juvenile	0.02	0.01	99.97
Hogchoker-post-yolk sac larvae	0.02	0.01	99.97
Gizzard shad-fertilized egg	0.01	0.003	99.97
Weakfish-juvenile	0.01	0.003	99.98
Atlantic menhaden-post-yolk sac larvae	0.01	0.003	99.98
Atherinopsidae sp.-N/A	0.01	0.003	99.98
Damaged egg-N/A	0.01	0.003	99.99
Rough silverside-juvenile	0.01	0.003	99.99
Damaged fish-N/A	0.01	0.003	99.99
Northern Kingfish-post-yolk sac larvae	0.01	0.003	100.00
Northern pipefish-juvenile	0.01	0.003	100.00
Rough silverside-yolk-sac larvae	0.01	0.002	100.00

TABLE B-2. AVERAGE DENSITY AND PERCENT COMPOSITION OF ENTRAINED FISH AT CALVERT CLIFFS NUCLEAR POWER PLANT COOLING WATER INTAKE, JANUARY 2007 - SEPTEMBER 2007

Species/Life Stage	Average No/100M^3	Percent	Cumulative Percent
Bay anchovy-fertilized egg	77.43	49.67	49.67
Bay anchovy-post-yolk sac larvae	24.49	15.71	65.38
Hogchoker-fertilized egg	22.05	14.14	79.52
Sciaenidae sp.-fertilized egg	9.42	6.04	85.56
Atlantic menhaden-fertilized egg	6.93	4.45	90.01
Bay anchovy-juvenile	4.87	3.12	93.13
Naked goby-post-yolk sac larvae	3.73	2.39	95.52
Skilletfish-post-yolk sac larvae	1.64	1.05	96.57
Atlantic menhaden-post-yolk sac larvae	0.63	0.40	96.98
Damaged fish-post-yolk sac larvae	0.62	0.40	97.38
Damaged egg-fertilized egg	0.52	0.34	97.71
White perch-fertilized egg	0.40	0.26	97.97
Spot-juvenile	0.39	0.25	98.22
Naked goby-juvenile	0.35	0.22	98.44
Atlantic silverside-post-yolk sac larvae	0.30	0.19	98.63
Feather blenny-post-yolk sac larvae	0.18	0.11	98.75
Atlantic croaker-juvenile	0.17	0.11	98.86
Bay anchovy-adult	0.17	0.11	98.96
Naked goby-yolk-sac larvae	0.15	0.10	99.06
Skilletfish-juvenile	0.13	0.09	99.15
Skilletfish-yolk-sac larvae	0.13	0.08	99.23
River Herring-post-yolk sac larvae	0.11	0.07	99.30
Weakfish-post-yolk sac larvae	0.10	0.07	99.36
Atherinopsidae sp.-post-yolk sac larvae	0.10	0.07	99.43
Bay anchovy-yolk-sac larvae	0.09	0.06	99.49
Atlantic menhaden-yolk-sac larvae	0.08	0.05	99.54
Rough silverside-post-yolk sac larvae	0.08	0.05	99.59
Rough silverside-fertilized egg	0.07	0.05	99.64
Damaged fish-undetermined	0.05	0.03	99.67
Gizzard shad-yolk-sac larvae	0.05	0.03	99.71
American eel-juvenile	0.04	0.03	99.73
Atlantic menhaden-juvenile	0.04	0.03	99.76
Feather blenny-yolk-sac larvae	0.04	0.02	99.78
Sciaenidae sp.-post-yolk sac larvae	0.02	0.02	99.80
Northern pipefish-post-yolk sac larvae	0.02	0.02	99.81
Atherinopsidae sp.-fertilized egg	0.02	0.02	99.83
Naked goby-fertilized egg	0.02	0.01	99.84
Skilletfish-fertilized egg	0.02	0.01	99.85
Atlantic silverside-yolk-sac larvae	0.02	0.01	99.86
Northern pipefish-juvenile	0.02	0.01	99.88
Atlantic silverside-juvenile	0.02	0.01	99.89
striped blenny-yolk-sac larvae	0.02	0.01	99.90
Hogchoker-post-yolk sac larvae	0.02	0.01	99.91
Sciaenidae sp.-juvenile	0.01	0.01	99.92
Spot-post-yolk sac larvae	0.01	0.01	99.93
Green goby-post-yolk sac larvae	0.01	0.01	99.93
Weakfish-juvenile	0.01	0.01	99.94
Gizzard shad-post-yolk sac larvae	0.01	0.01	99.95
Feather blenny-juvenile	0.01	0.01	99.96
Green goby-juvenile	0.01	0.00	99.96
Damaged fish-N/A	0.01	0.00	99.97
Hogchoker-yolk-sac larvae	0.01	0.00	99.97
Inland silverside-fertilized egg	0.01	0.00	99.97
Blackcheek tonguefish-post-yolk sac larvae	0.01	0.00	99.98
Damaged fish-yolk-sac larvae	0.01	0.00	99.98
striped blenny-juvenile	0.01	0.00	99.99
Atlantic silverside-fertilized egg	0.01	0.00	99.99
Inland silverside-post-yolk sac larvae	0.01	0.00	99.99
Black drum-post-yolk sac larvae	0.01	0.00	100.00
Damaged fish-juvenile	0.01	0.00	100.00
Gizzard shad-fertilized egg	0.01	0.00	100.00

TABLE B-3. AVERAGE DENSITY AND PERCENT COMPOSITION OF ENTRAINED FISH AT CALVERT CLIFFS NUCLEAR POWER PLANT BAFFLE WALL, MARCH 2006 - DECEMBER 2006

Species/Life Stage	Average No/100M^3	Percent	Cumulative Percent
Bay anchovy-fertilized egg	198.17	78.08	78.08
Sciaenidae sp.-fertilized egg	30.29	11.93	90.01
Bay anchovy-post-yolk sac larvae	8.93	3.52	93.53
Naked goby-post-yolk sac larvae	5.06	2.00	95.53
Atlantic menhaden-fertilized egg	3.78	1.49	97.02
Damaged fish-post-yolk sac larvae	1.32	0.52	97.54
Naked goby-juvenile	0.95	0.37	97.91
Skilletfish-post-yolk sac larvae	0.91	0.36	98.27
Hogchoker-fertilized egg	0.75	0.29	98.56
Bay anchovy-yolk-sac larvae	0.74	0.29	98.86
Feather blenny-post-yolk sac larvae	0.49	0.19	99.05
Atlantic silverside-post-yolk sac larvae	0.35	0.14	99.19
Fundulus sp.-fertilized egg	0.26	0.10	99.29
Damaged fish-N/A	0.26	0.10	99.39
Goby sp.-post-yolk sac larvae	0.25	0.10	99.49
Atherinopsidae sp.-post-yolk sac larvae	0.23	0.09	99.58
Atlantic silverside-yolk-sac larvae	0.17	0.07	99.65
Northern pipefish-post-yolk sac larvae	0.14	0.06	99.71
Rough silverside-fertilized egg	0.14	0.06	99.76
Gizzard shad-post-yolk sac larvae	0.09	0.04	99.80
Skilletfish-juvenile	0.07	0.03	99.82
Skilletfish-yolk-sac larvae	0.06	0.02	99.85
Goby sp.-juvenile	0.05	0.02	99.87
Northern pipefish-juvenile	0.04	0.02	99.88
Damaged egg-fertilized egg	0.04	0.02	99.90
Bay anchovy-juvenile	0.04	0.02	99.92
Naked goby-yolk-sac larvae	0.04	0.02	99.93
Hogchoker-post-yolk sac larvae	0.03	0.01	99.95
Atlantic menhaden-yolk-sac larvae	0.02	0.01	99.95
Feather blenny-yolk-sac larvae	0.02	0.01	99.96
Damaged fish-yolk-sac larvae	0.02	0.01	99.97
Green goby-post-yolk sac larvae	0.02	0.01	99.97
Atherinopsidae sp.-fertilized egg	0.01	0.01	99.98
Atlantic silverside-fertilized egg	0.01	0.003	99.98
Atlantic menhaden-post-yolk sac larvae	0.01	0.003	99.98
Hogchoker-yolk-sac larvae	0.01	0.003	99.99
Feather blenny-juvenile	0.01	0.003	99.99
Hyporhamphus Sp.-yolk-sac larvae	0.01	0.003	99.99
Weakfish-juvenile	0.01	0.003	100.00
Silver perch-post-yolk sac larvae	0.01	0.003	100.00

APPENDIX C

WATER QUALITY DATA

TABLE C-1. MEAN VALUES OF WATER QUALITY PARAMETERS TAKEN DURING ENTRAINMENT SAMPLING AT THE CALVERT CLIFFS NUCLEAR POWER PLANT COOLING WATER INTAKE, MARCH 2006 - DECEMBER 2006

Sampling Date	Temperature Degrees C	Dissolved Oxygen mg/L	pH pH Units	Salinity ppt	Conductivity µs/cm
03/30/06	8.10	7.85	7.75	14.80	16581
04/06/06	10.65	9.50	8.15	12.75	15435
04/13/06	11.57	9.34	7.98	15.01	18332
04/18/06	14.70	7.50	ND	12.95	ND
04/24/06	15.60	8.70	7.88	16.00	21398
05/01/06	15.40	8.20	8.20	13.35	18057
05/08/06	16.50	8.85	8.25	13.20	18306
05/15/06	18.35	8.65	8.25	14.50	20813
05/23/06	21.13	5.35	ND	14.20	22515
05/30/06	19.15	5.60	7.50	13.60	19903
06/05/06	21.80	7.55	8.10	13.25	20687
06/12/06	21.85	7.05	8.15	13.55	21122
06/20/06	21.48	1.35	7.40	14.25	21911
06/28/06	24.50	6.55	8.05	12.65	20656
07/03/06	25.60	3.40	7.20	10.25	17609
07/10/06	24.85	1.00	7.25	11.10	18669
07/17/06	27.56	5.95	8.08	8.51	15462
07/24/06	26.55	1.17	7.35	9.50	16757
07/31/06	28.15	5.35	7.85	9.15	16620
08/07/06	27.70	2.22	7.35	11.30	19115
08/14/06	26.35	ND	7.17	ND	ND
08/21/06	26.75	4.55	7.95	13.35	22877
08/28/06	27.53	4.73	7.83	13.48	23527
09/11/06	24.00	4.25	7.65	14.25	23038
09/25/06	22.35	7.40	6.55	14.90	23310
10/09/06	19.70	7.85	7.80	14.85	21908
10/26/06	15.40	8.55	7.85	18.50	24321
11/06/06	13.12	9.90	8.02	16.82	21149
11/27/06	11.60	8.90	8.20	13.60	16788
12/05/06	10.10	9.50	7.30	14.10	23294
12/18/06	9.00	12.75	7.55	14.65	24196

ND=No Data due to Equipment Malfunction

Figure C-1. Monthly Temperature (Degrees C) Values Collected During Entrainment Sampling at Calvert Cliffs Nuclear Power Plant Cooling Water Intake, March 2006 -- December 2006

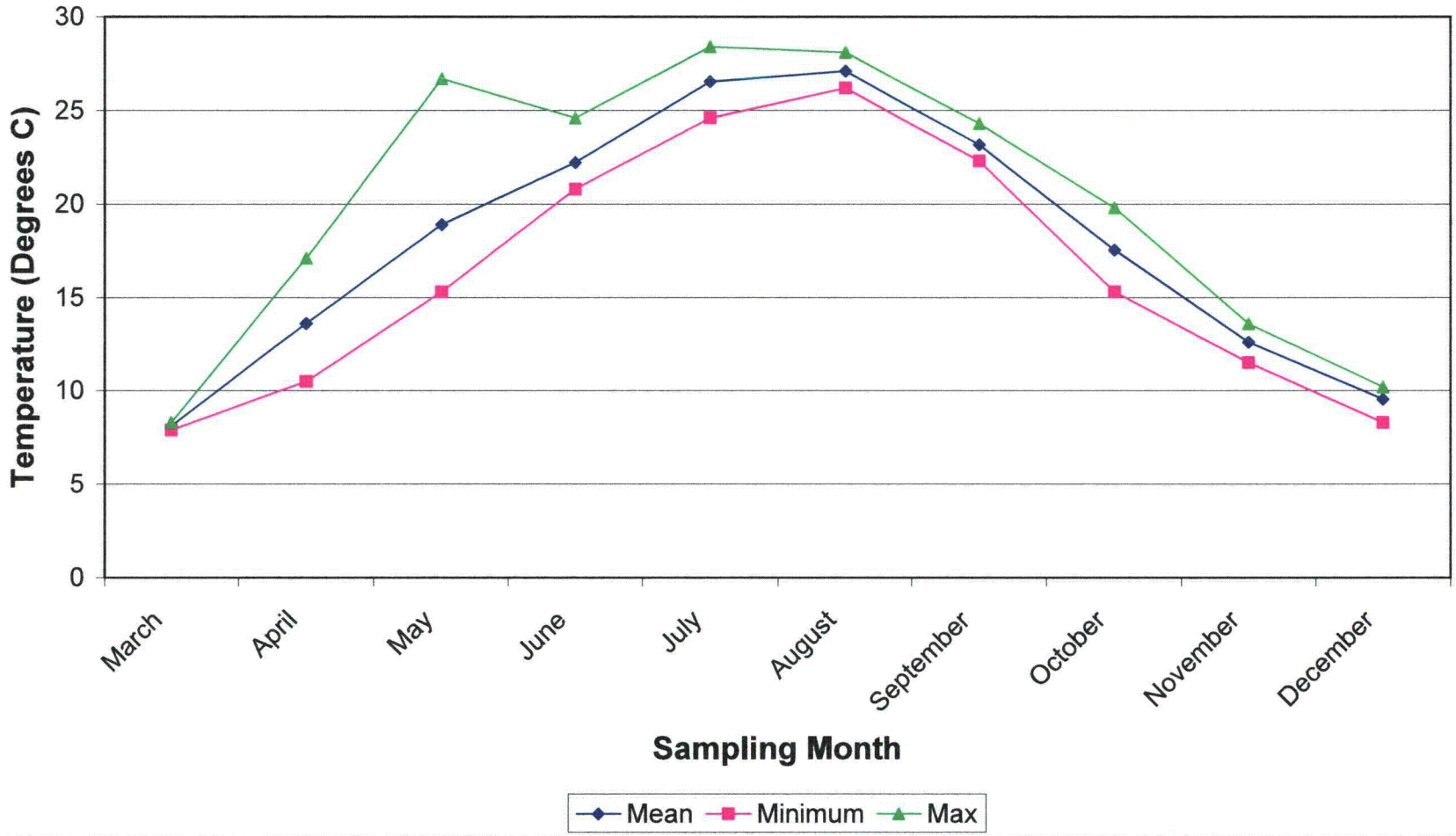


Figure C-2. Monthly Dissolved Oxygen (mg/L) Values Collected During Entrainment Sampling at Calvert Cliffs Nuclear Power Plant Cooling Water Intake, March 2006 -- December 2006

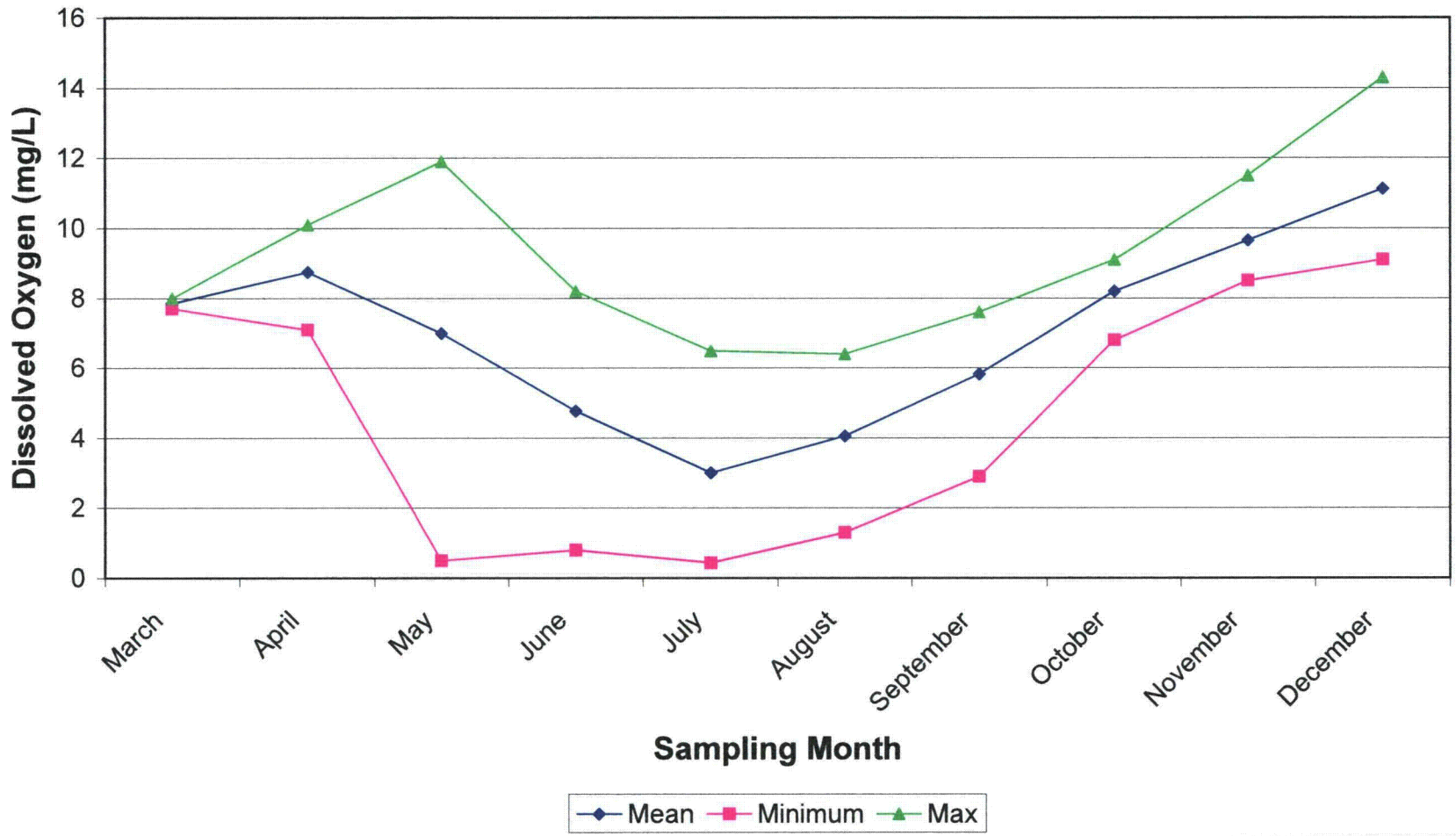


Figure C-3. Monthly Salinity (ppt) Values Collected During Entrainment Sampling at Calvert Cliffs Nuclear Power Plant Cooling Water Intake, March 2006 -- December 2006

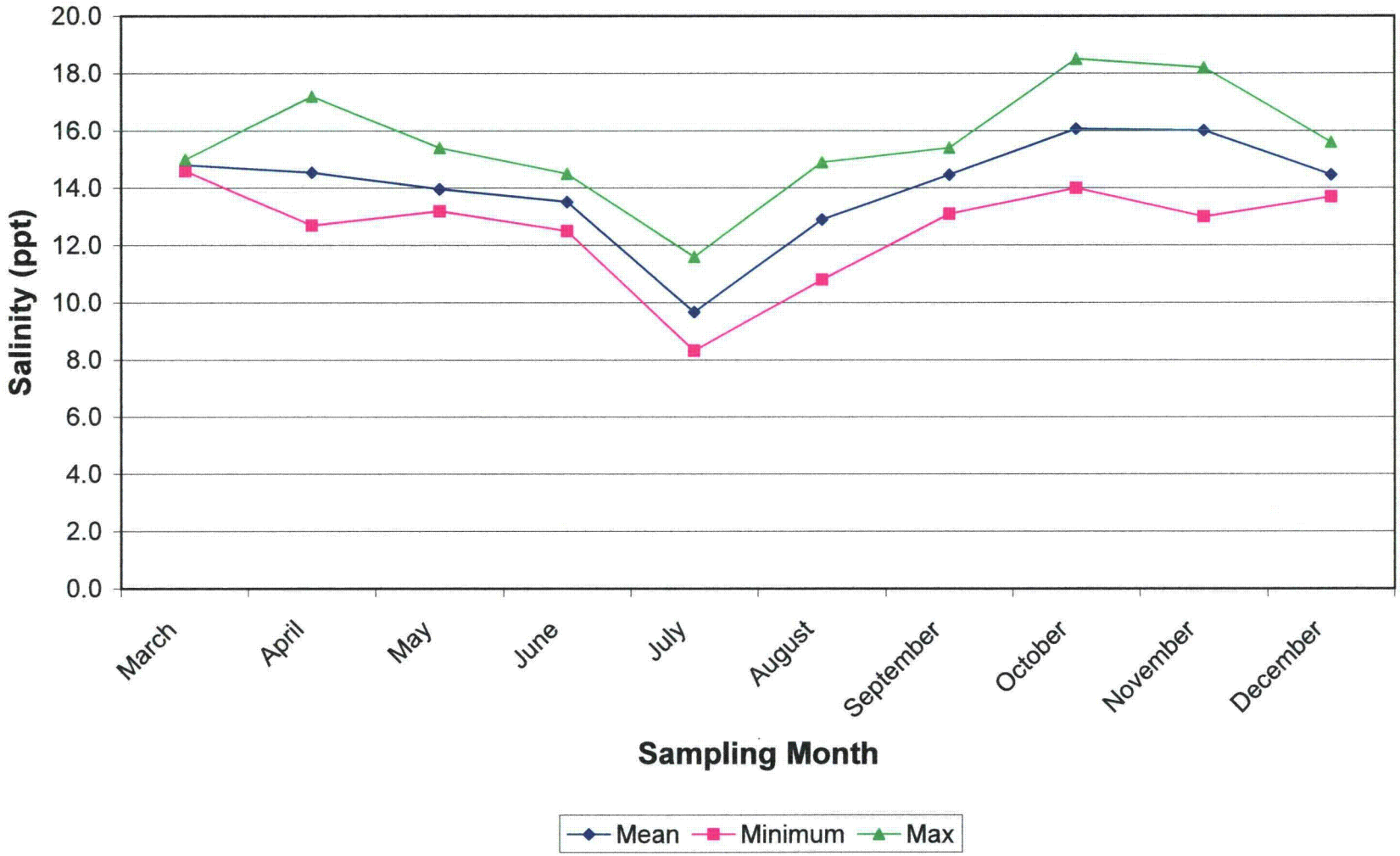


Figure C-4. Monthly pH Values Collected During Entrainment Sampling at Calvert Cliffs Nuclear Power Plant Cooling Water Intake, March 2006 -- December 2006

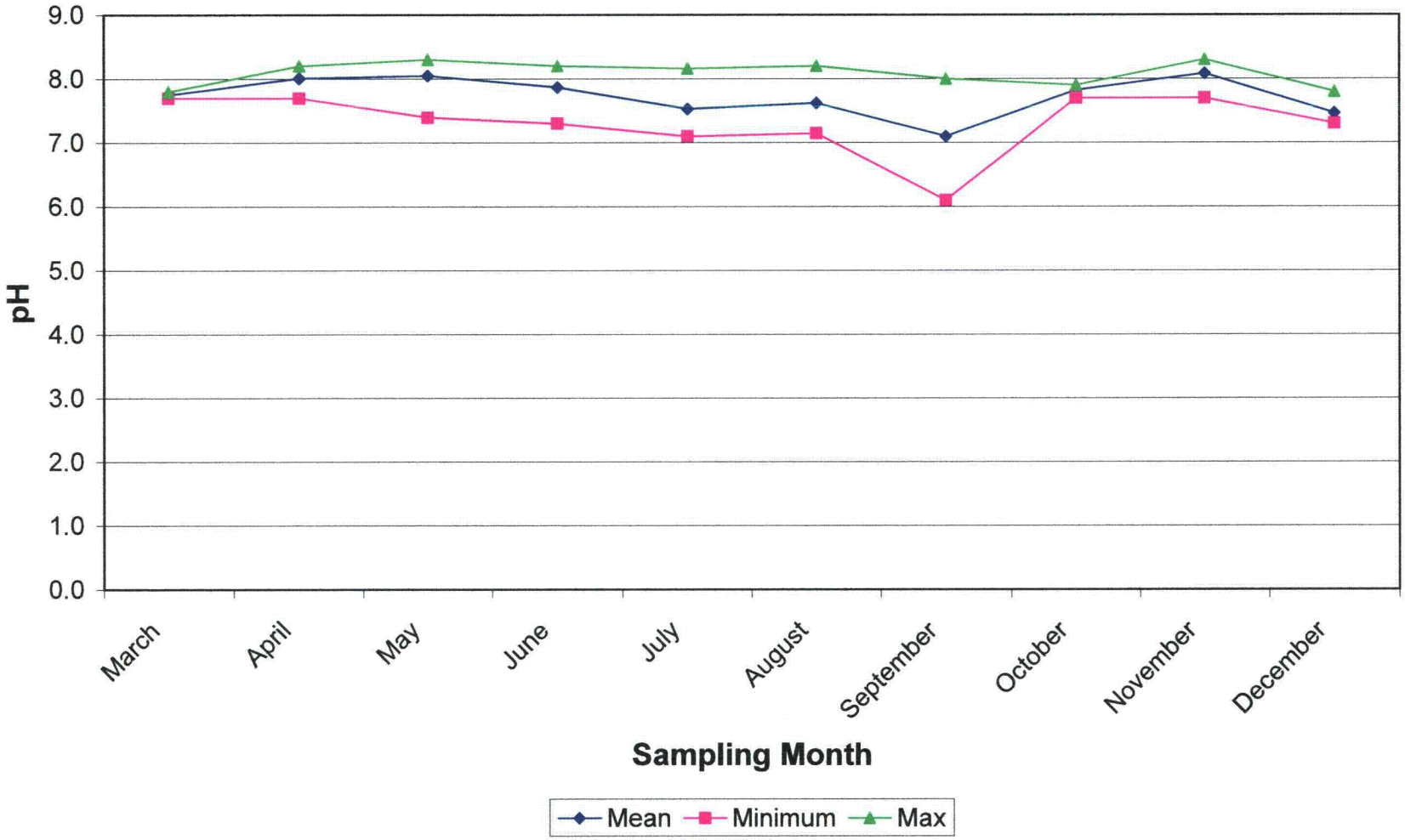


Figure C-5. Monthly Conductivity (µs/cm) Values Collected During Entrainment Sampling at Calvert Cliffs Nuclear Power Plant Cooling Water Intake, March 2006 -- December 2006

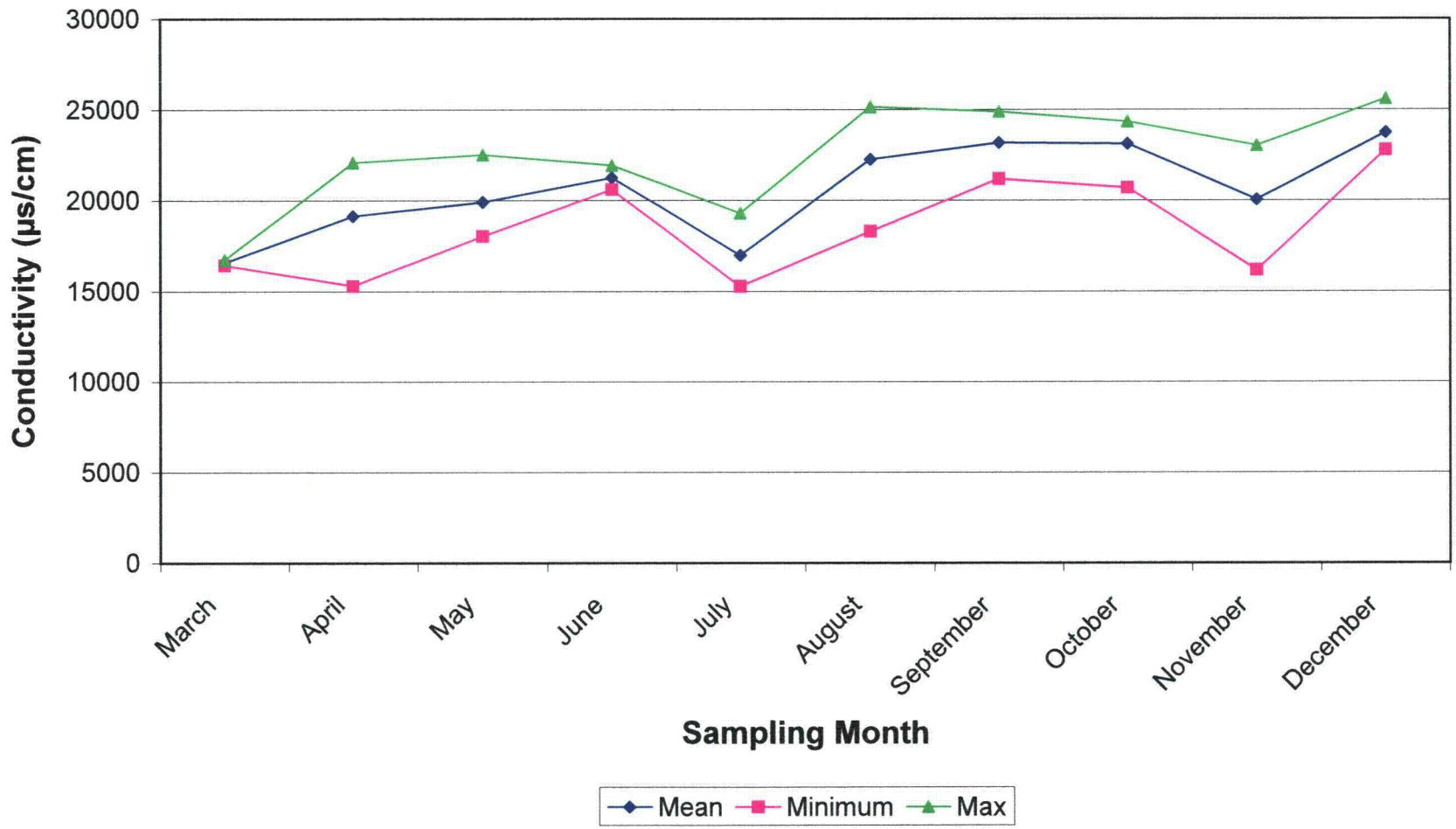


TABLE C-2. MEAN VALUES OF WATER QUALITY PARAMETERS TAKEN DURING ENTRAINMENT SAMPLING AT CALVERT CLIFFS NUCLEAR POWER PLANT COOLING WATER INTAKE, JANUARY 2007 - SEPTEMBER 2007

Sampling Date	Temperature Degrees C	Dissolved Oxygen mg/L	pH pH Units	Salinity ppt	Conductivity µs/cm
01/11/07	8.45	7.55	8.25	15.10	17017
01/22/07	6.60	11.80	8.15	11.55	12679
02/08/07	2.75	13.50	8.20	11.10	10920
02/19/07	1.55	12.30	8.20	14.15	13263
03/05/07	3.90	13.85	7.95	13.15	13256
03/12/07	4.85	12.95	8.10	12.80	13268
03/19/07	5.35	10.35	7.88	12.43	13071
03/26/07	6.60	10.50	7.70	12.00	12951
04/02/07	7.73	10.25	7.70	13.60	15178
04/09/07	9.20	15.60	7.70	8.35	10053
04/16/07	9.08	10.95	8.40	9.90	11711
04/23/07	10.60	10.80	7.90	10.70	13065
04/30/07	12.58	8.80	8.23	11.35	14404
05/08/07	15.10	11.40	8.40	8.75	12129
05/15/07	15.23	5.45	8.00	14.43	16768
05/22/07	17.60	5.95	7.95	10.05	16238
05/29/07	20.68	6.75	8.03	12.18	18584
06/06/07	22.50	6.80	7.95	10.80	18170
06/12/07	23.45	6.28	7.93	11.65	19496
06/20/07	23.55	4.05	7.85	11.75	19685
06/26/07	22.98	1.45	7.38	14.25	23485
07/04/07	23.95	1.67	7.50	15.00	24156
07/10/07	25.69	3.33	7.50	12.75	21569
07/18/07	26.45	3.45	7.55	12.95	22171
07/24/07	25.75	5.28	7.70	13.05	21975
08/01/07	27.20	5.15	7.85	13.20	22948
08/09/07	28.16	5.14	7.97	12.80	22570
08/14/07	27.20	3.00	7.75	12.70	22048
08/21/07	26.30	5.67	7.51	15.18	25594
08/28/07	27.15	4.60	8.00	14.45	24954
09/04/07	27.03	5.13	7.93	14.83	25448
09/11/07	26.75	4.40	7.90	15.55	26459
09/18/07	23.95	6.60	7.83	17.08	27200
09/25/07	24.40	4.30	7.60	16.45	26496

Figure C-6. Monthly Temperature (Degrees C) Values Collected During Entrainment Sampling at Calvert Cliffs Nuclear Power Plant Cooling Water Intake, January 2007 - September 2007

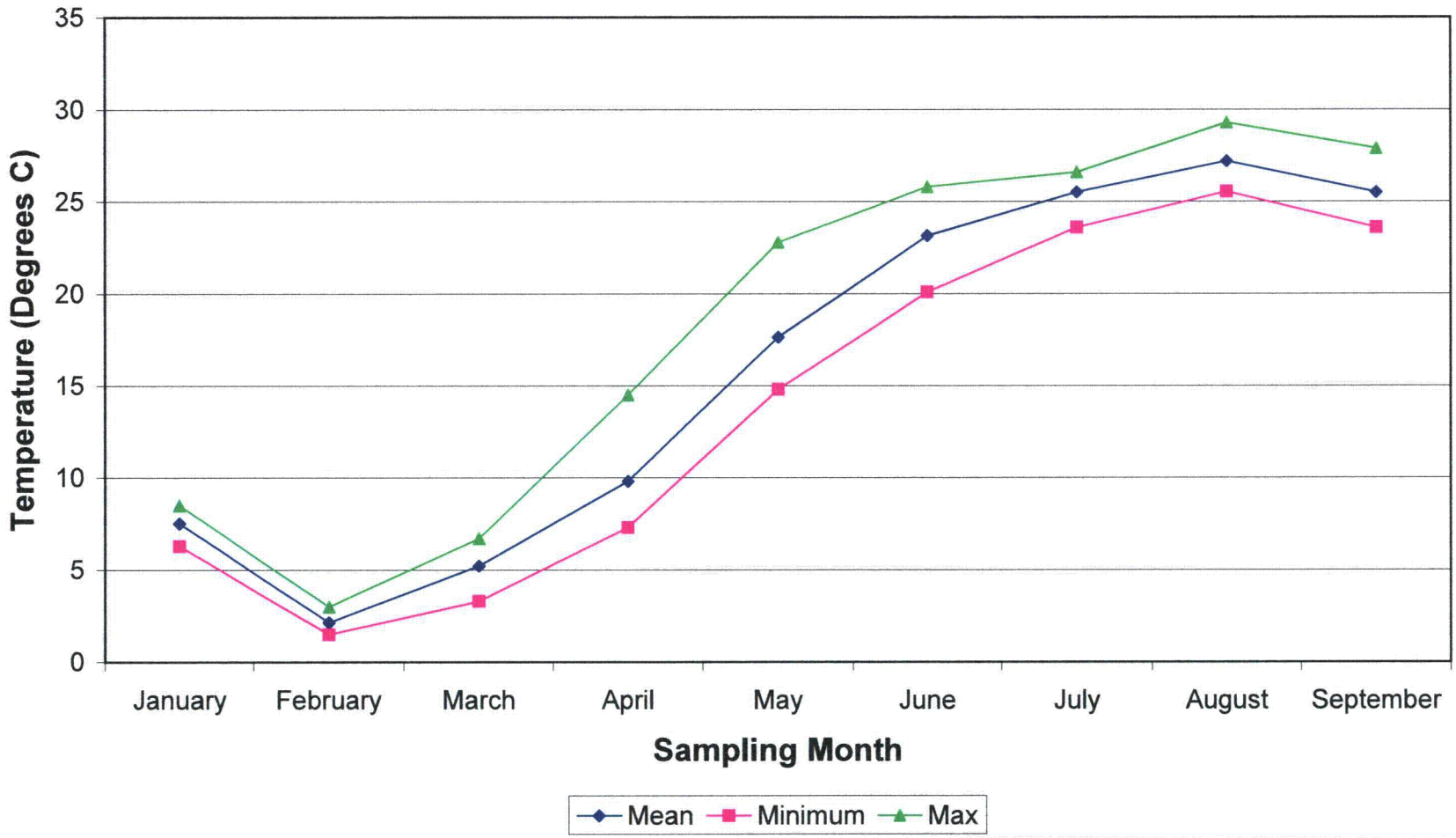


Figure C-7. Monthly Dissolved Oxygen (mg/L) Values Collected During Entrainment Sampling at Calvert Cliffs Nuclear Power Plant Cooling Water Intake, January 2007 - September 2007

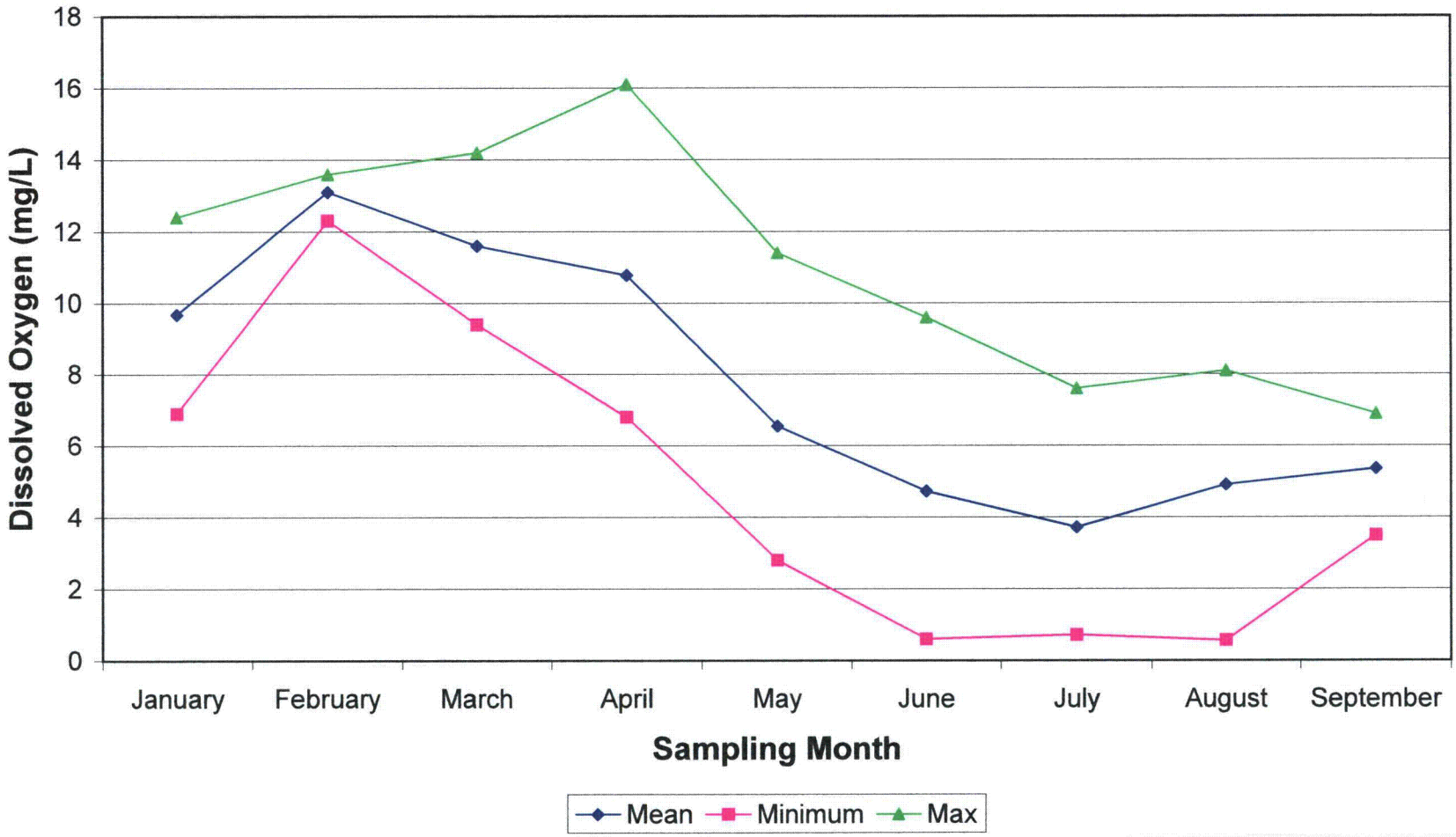


Figure C-8. Monthly Salinity (ppt) Values Collected During Entrainment Sampling at Calvert Cliffs Nuclear Power Plant Cooling Water Intake, January 2007 - September 2007

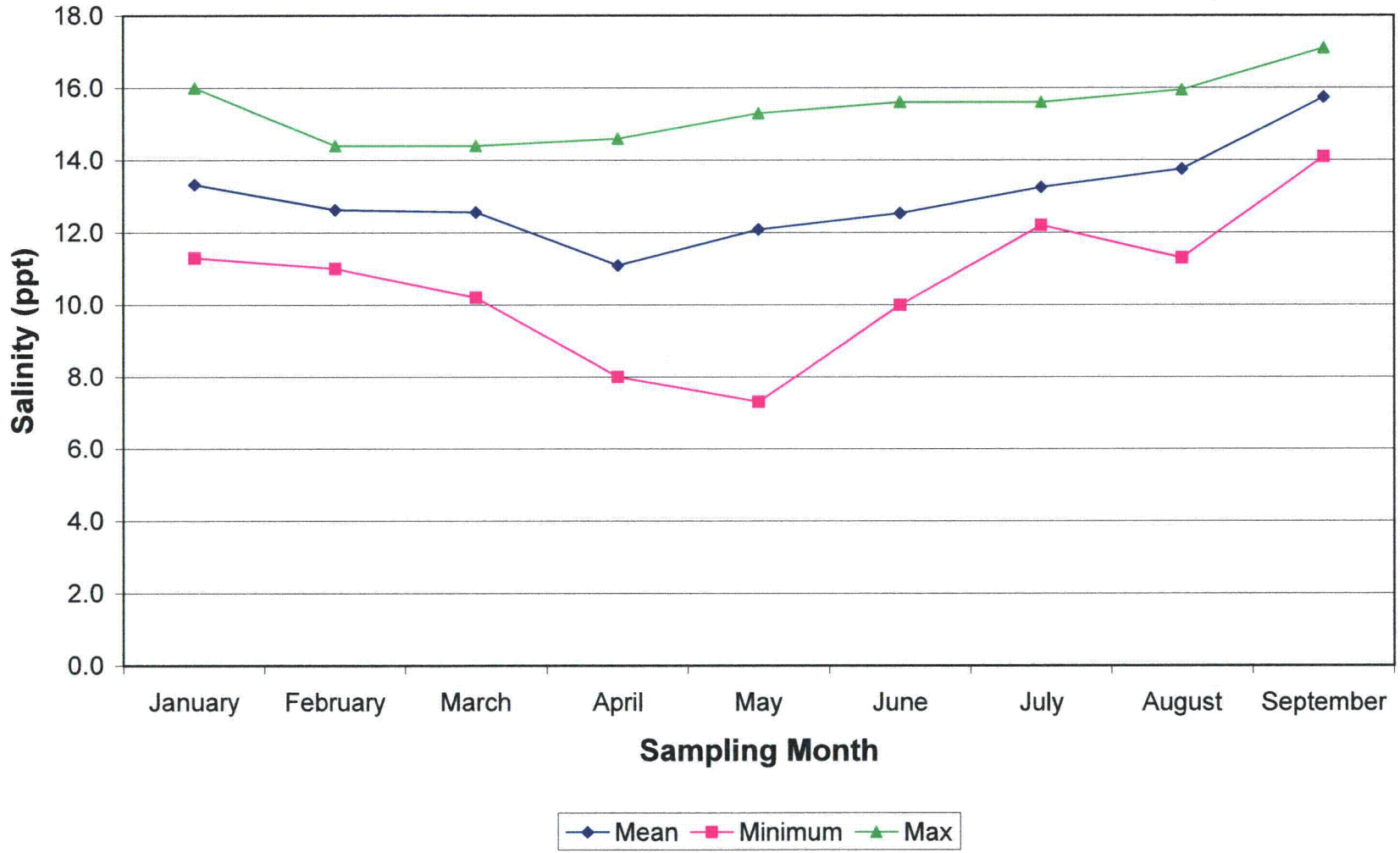


Figure C-9. Monthly pH Values Collected During Entrainment Sampling at Calvert Cliffs Nuclear Power Plant Cooling Water Intake, January 2007 - September 2007

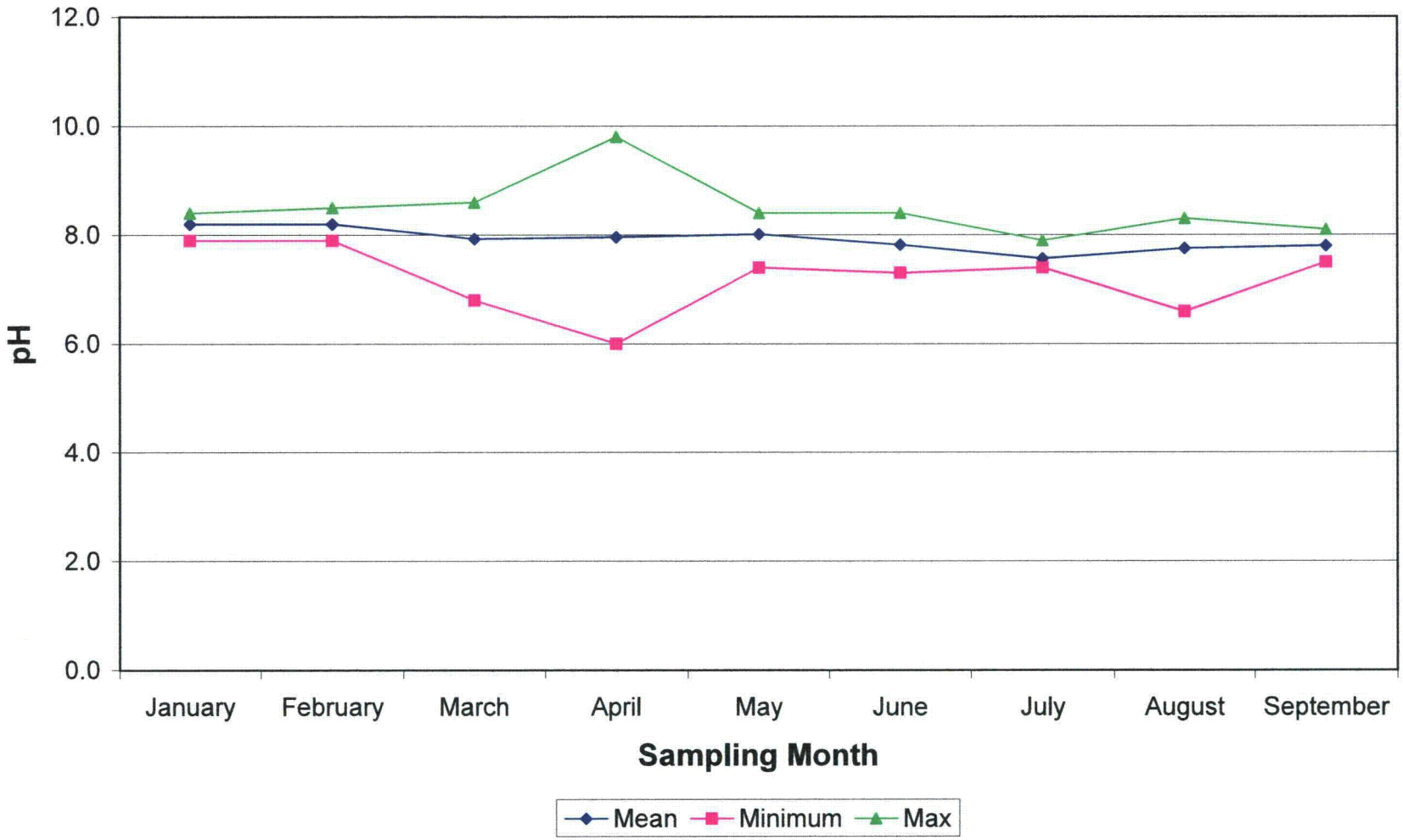


Figure C-10. Monthly Conductivity (µs/cm) Values Collected During Entrainment Sampling at Calvert Cliffs Nuclear Power Plant Cooling Water Intake, January 2007 - September 2007

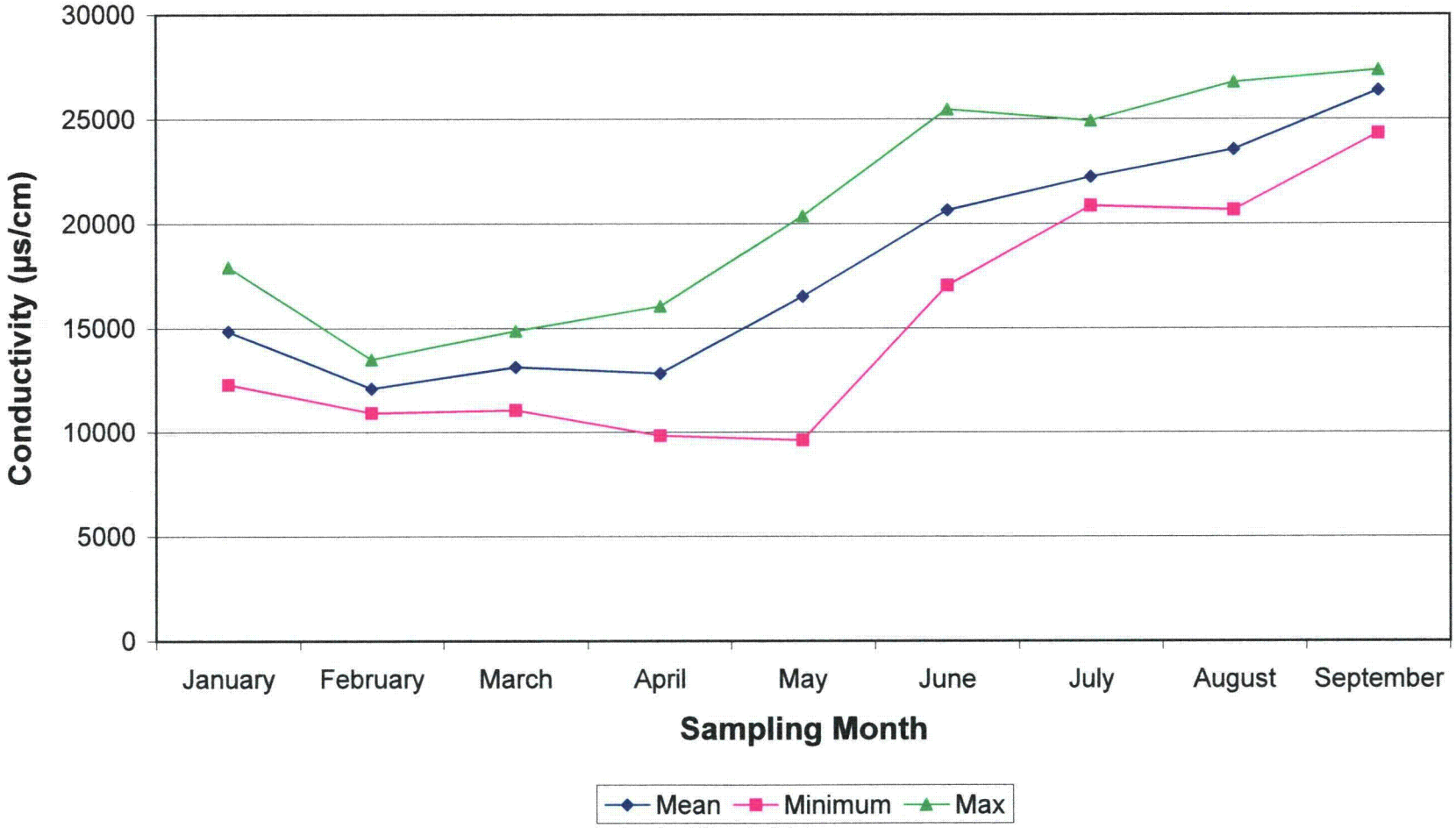


TABLE C-3. MEAN VALUES OF WATER QUALITY PARAMETERS TAKEN DURING ENTRAINMENT SAMPLING AT THE CALVERT CLIFFS NUCLEAR POWER PLANT BAFFLE WALL, APRIL 2006 - DECEMBER 2006

Sampling Date	Temperature Degrees C	Dissolved Oxygen mg/L	pH pH Units	Salinity ppt	Conductivity µs/cm
04/06/06	10.80	11.50	8.25	13.19	15993
04/13/06	11.50	8.85	7.95	15.75	19102
04/18/06	14.00	9.75	8.05	12.20	16048
04/24/06	16.45	9.20	8.18	14.35	19750
05/01/06	15.75	9.55	8.20	13.85	18775
05/08/06	17.05	9.10	8.40	13.00	18270
05/15/06	18.40	8.50	8.40	14.60	20967
05/23/06	18.28	8.20	8.13	15.43	22031
05/30/06	20.45	7.20	7.85	13.50	20405
06/05/06	22.20	8.10	8.20	13.23	20836
06/12/06	22.35	7.45	8.45	12.80	20213
06/20/06	22.08	3.10	7.50	14.18	22093
06/28/06	24.88	8.05	8.23	10.68	20438
07/03/06	26.25	5.78	7.97	9.43	16528
07/10/06	25.26	1.80	7.02	10.70	17880
07/17/06	27.72	6.44	8.32	6.90	15435
07/24/06	27.07	3.23	7.65	8.96	16022
07/31/06	28.48	5.69	8.08	8.73	15971
08/07/06	29.47	4.40	8.15	8.66	16203
08/14/06	26.92	ND	7.70	ND	ND
08/21/06	27.37	6.52	8.20	17.88	29026
08/28/06	27.74	5.46	7.84	13.51	22501
09/11/06	24.10	6.65	8.02	13.03	21270
09/25/06	22.42	7.27	8.02	18.10	27810
10/09/06	19.42	9.20	8.22	13.17	19488
10/26/06	15.55	9.65	7.92	17.63	23352
11/27/06	11.42	10.75	ND	12.58	15503
12/05/06	10.12	10.57	8.37	14.67	17321
12/18/06	9.10	12.90	8.43	14.62	16821

ND=No Data Due to Equipment Malfunction

Figure C-11. Monthly Temperature (Degrees C) Values Collected During Entrainment Sampling at Calvert Cliffs Nuclear Power Plant Baffle Wall, April 2006 -- December 2006

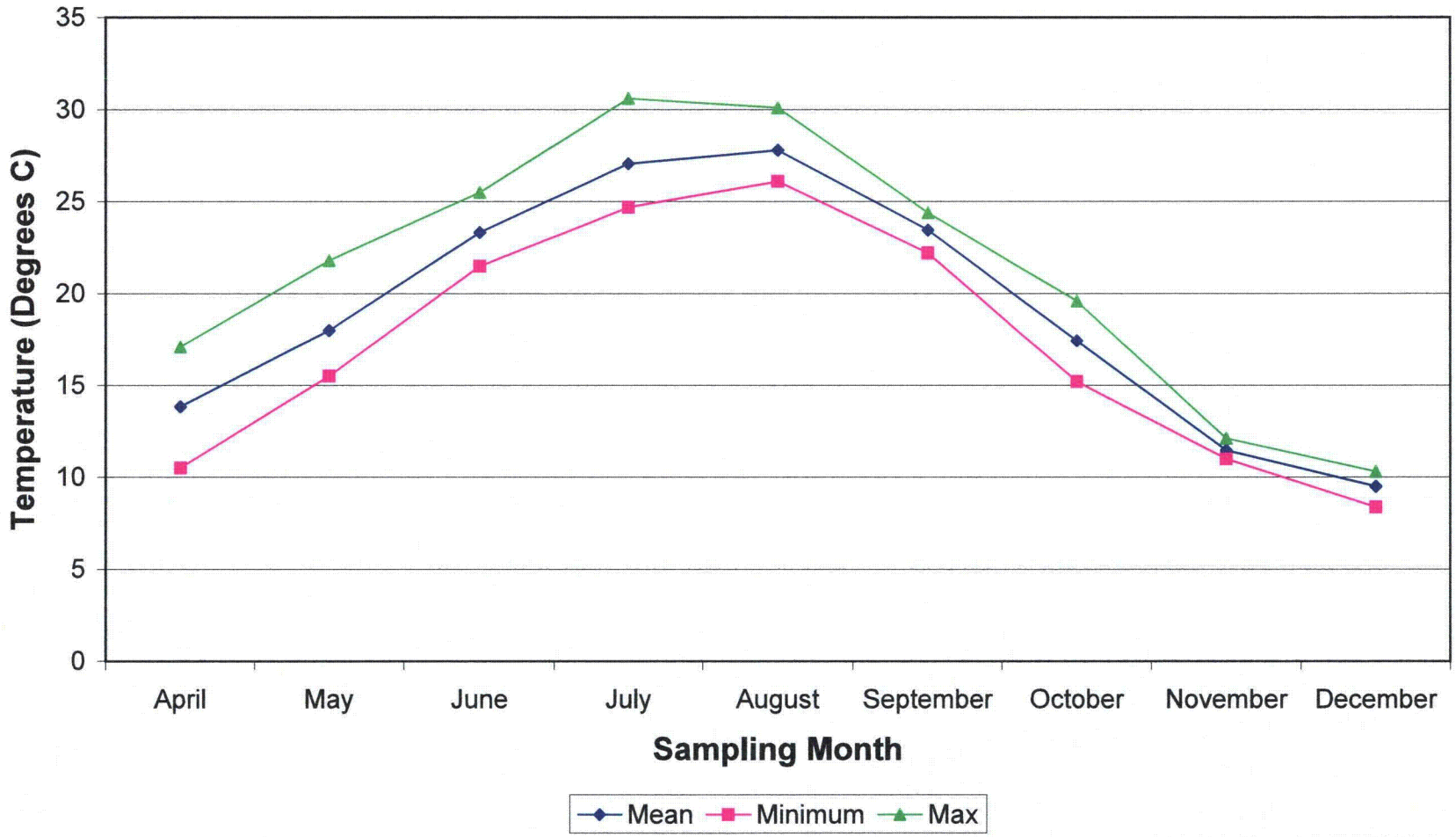


Figure C-12. Monthly Dissolved Oxygen (mg/L) Values Collected During Entrainment Sampling at Calvert Cliffs Nuclear Power Plant Baffle Wall, April 2006 -- December 2006

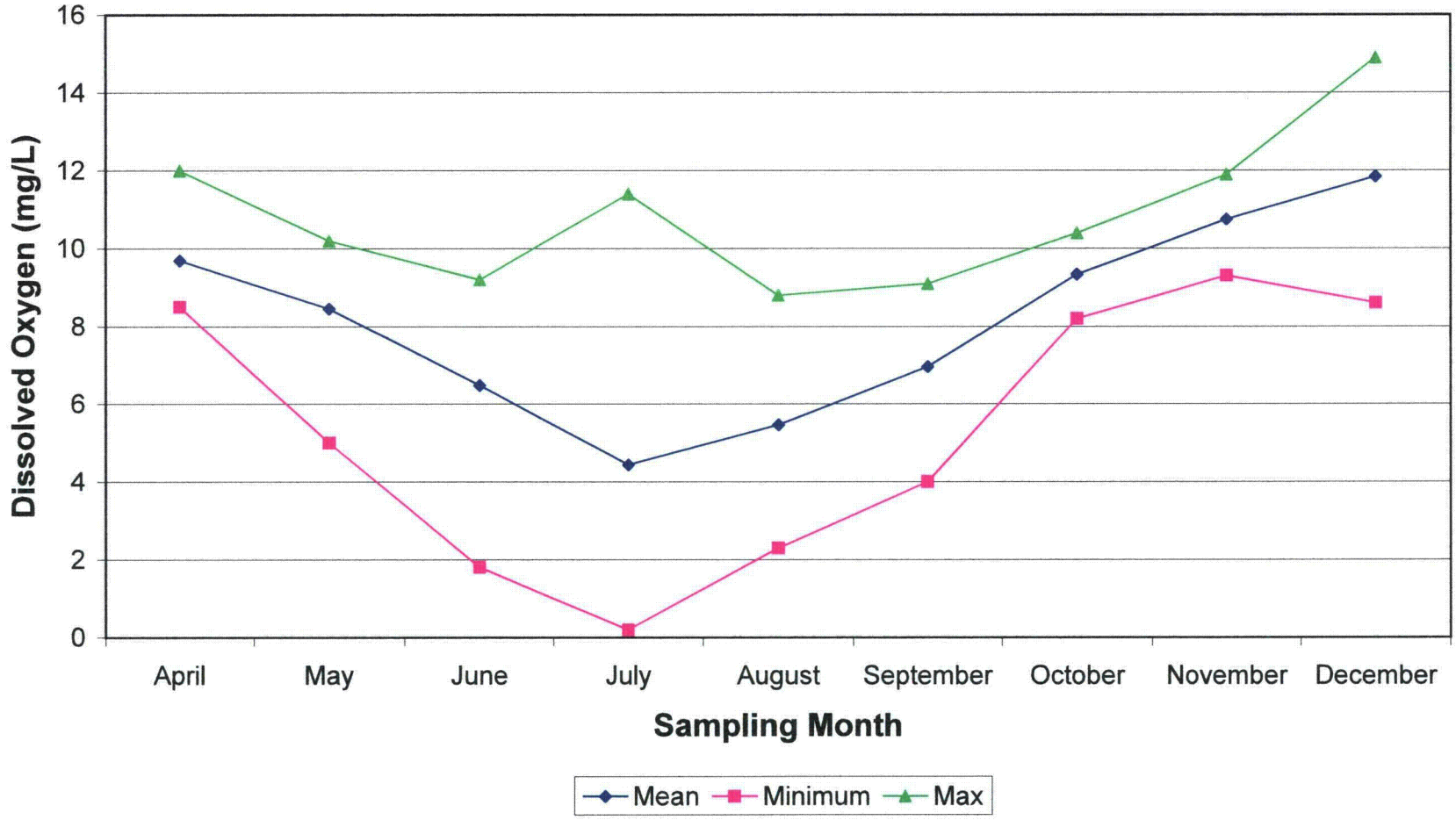


Figure C-13. Monthly Salinity (ppt) Values Collected During Entrainment Sampling at Calvert Cliffs Nuclear Power Plant Baffle Wall, April 2006 -- December 2006

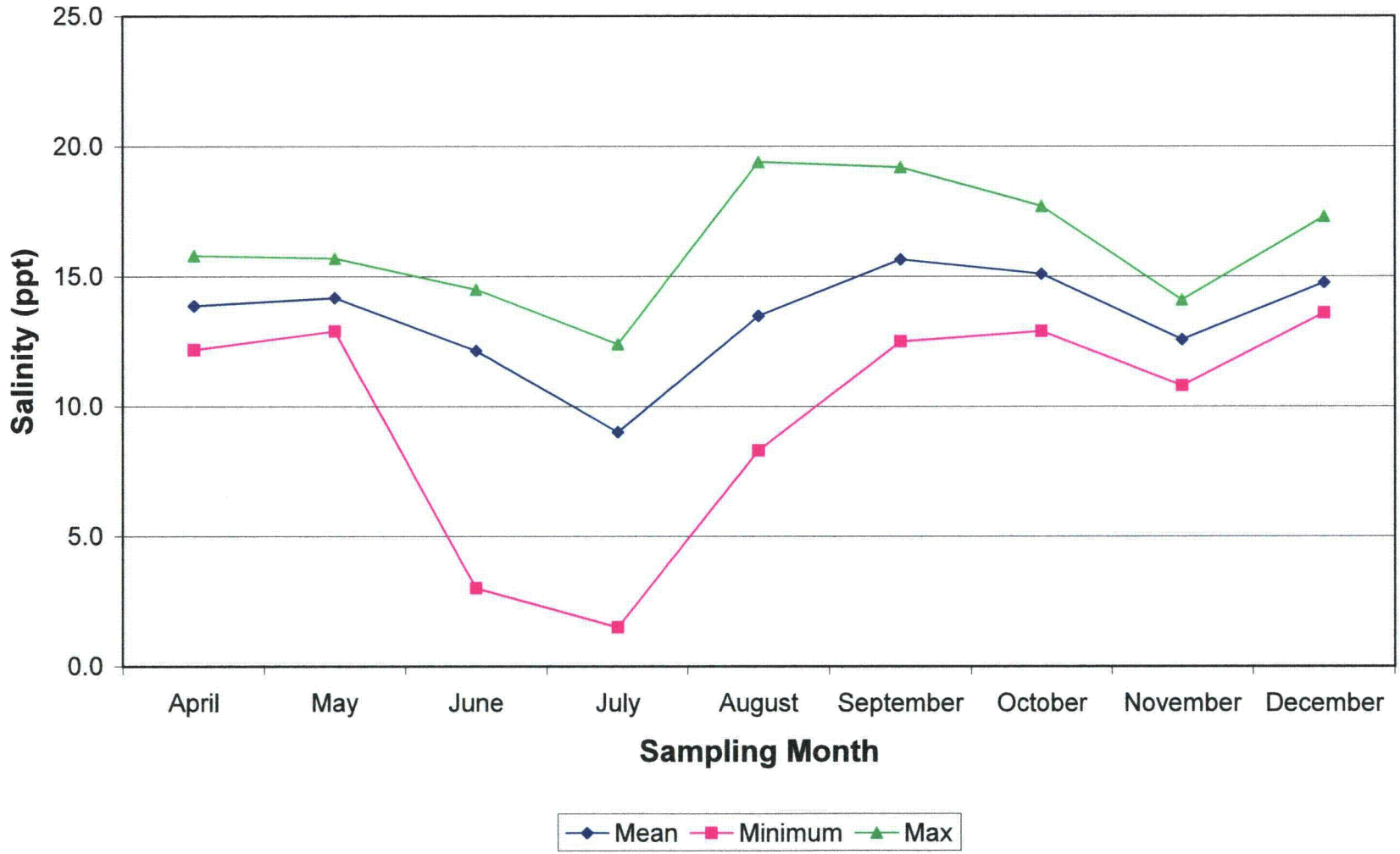


Figure C-14. Monthly pH Values Collected During Entrainment Sampling at Calvert Cliffs Nuclear Power Plant Baffle Wall, April 2006 -- December 2006

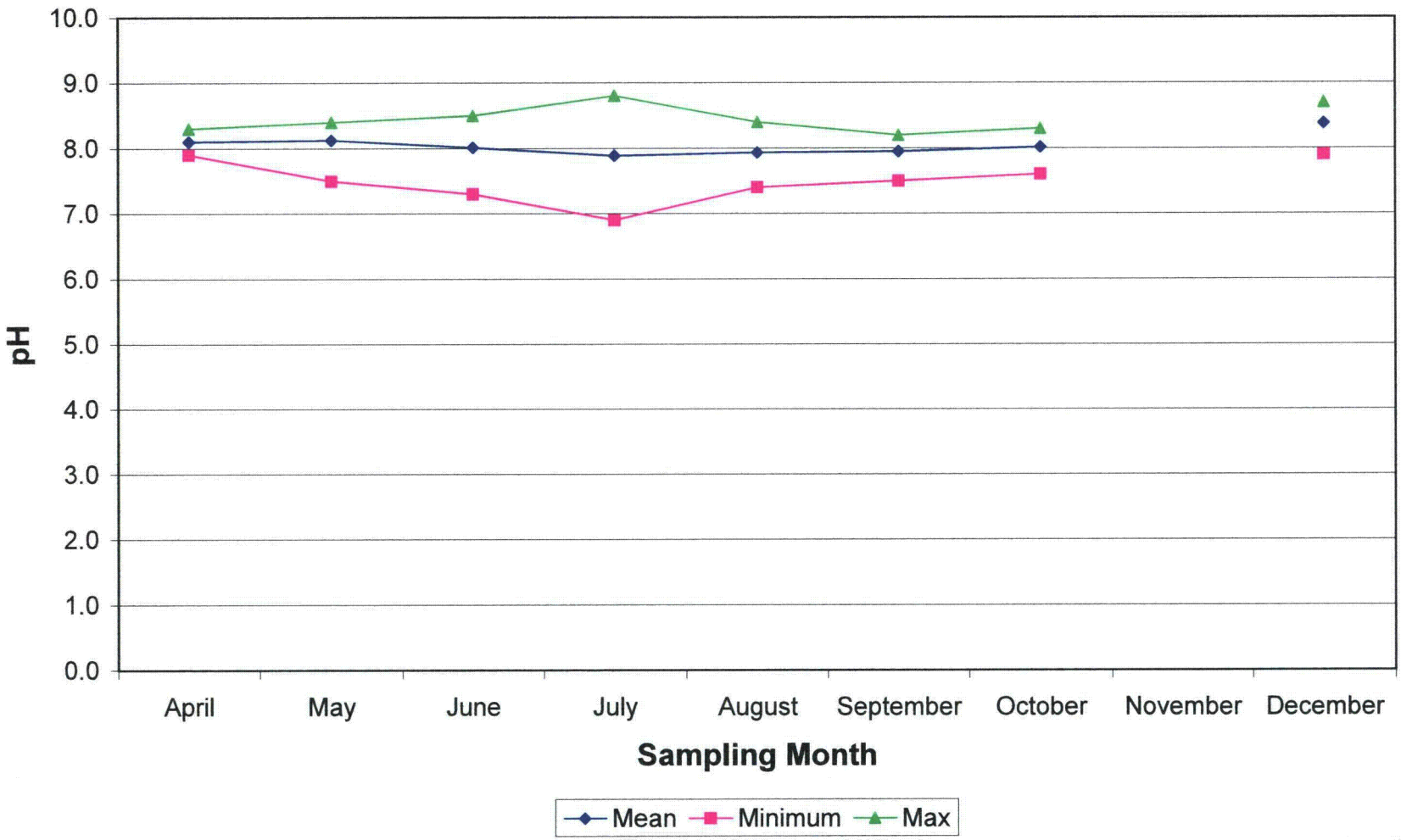
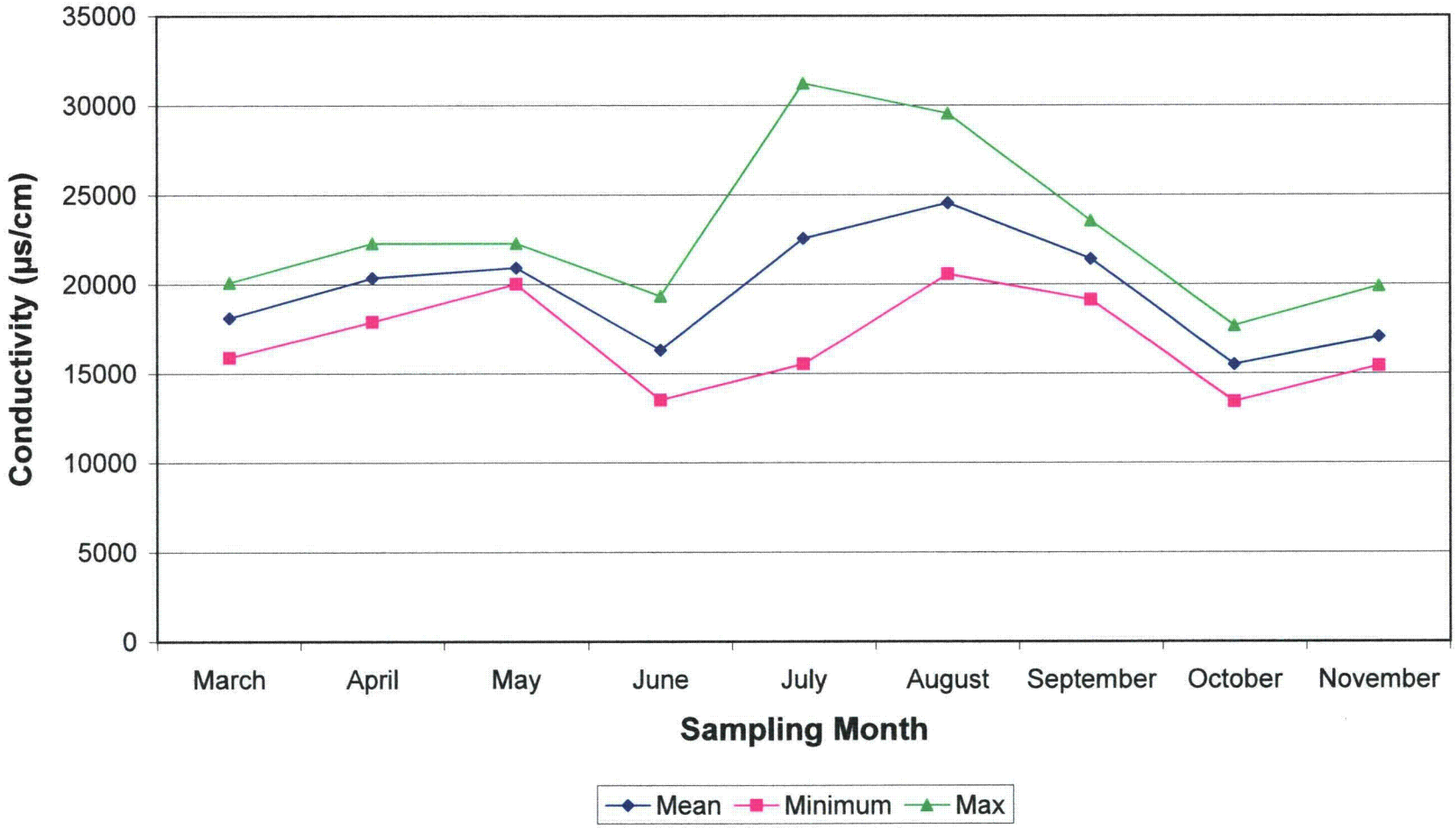


Figure C-15. Monthly Conductivity (µs/cm) Values Collected During Entrainment Sampling at Calvert Cliffs Nuclear Power Plant Baffle Wall, April 2006 -- December 2006



APPENDIX D

PLANT FLOW DATA

TABLE D-1. TOTAL CIRCULATING WATER FLOW DURING ENTRAINMENT SAMPLING AT CALVERT CLIFFS NUCLEAR POWER PLANT COOLING WATER INTAKE, 2006

2006 Entrainment Date	Flow MGD	
	Unit 1	Unit 2
03/30/06	0	1730.346
03/31/06	0	1730.346
04/06/06	780.258	1730.346
04/07/06	1395.002	1730.346
04/13/06	1730.346	1730.346
04/14/06	1730.346	1730.346
04/18/06	1730.346	1730.346
04/19/06	1730.346	1730.346
04/24/06	1730.346	1730.346
04/25/06	1730.346	1730.346
05/01/06	1730.346	1593.363
05/02/06	1730.346	1730.346
05/08/06	1730.346	1730.346
05/09/06	1730.346	1601.774
05/15/06	1628.21	1730.346
05/16/06	1730.346	1730.346
05/23/06	1730.346	1730.346
05/24/06	1730.346	1730.346
05/30/06	1730.346	1730.346
05/31/06	1730.346	1730.346
06/05/06	1730.346	1730.346
06/06/06	1730.346	1730.346
06/12/06	1730.346	1730.346
06/13/06	1730.346	1730.346
06/20/06	1730.346	1730.346
06/21/06	1730.346	1730.346
06/28/06	1730.346	1730.346
06/29/06	1730.346	1730.346
07/03/06	1730.346	1730.346
07/04/06	1730.346	1730.346
07/10/06	1730.346	1730.346

2006 Entrainment Date	Flow MGD	
	Unit 1	Unit 2
07/11/06	1730.346	1730.346
07/17/06	1730.346	1730.346
07/18/06	1730.346	1730.346
07/24/06	1730.346	1730.346
07/25/06	1730.346	1730.346
07/31/06	1730.346	1730.346
08/01/06	1730.346	1730.346
08/07/06	1730.346	1730.346
08/08/06	1730.346	1730.346
08/14/06	1730.346	1730.346
08/15/06	1730.346	1730.346
08/21/06	1730.346	1730.346
08/22/06	1730.346	1730.346
08/28/06	1730.346	1730.346
08/29/06	1730.346	1730.346
09/11/06	1730.346	1730.346
09/12/06	1730.346	1730.346
09/25/06	1730.346	1730.346
09/26/06	1730.346	1730.346
10/09/06	1730.346	1730.346
10/10/06	1730.346	1730.346
10/26/06	1730.346	1730.346
10/27/06	1542.367	1591.574
11/06/06	1730.346	1730.346
11/07/06	1730.346	1730.346
11/27/06	1730.346	1730.346
11/28/06	1730.346	1730.346
12/05/06	1730.346	1730.346
12/06/06	1730.346	1730.346
12/18/06	1730.346	1730.346
12/19/06	1730.346	1730.346

TABLE D-2. TOTAL CIRCULATING COOLING WATER FLOW DURING ENTRAINMENT SAMPLING AT CALVERT CLIFFS NUCLEAR POWER PLANT COOLING WATER INTAKE, 2007

2007 Entrainment Date	Flow MGD	
	Unit 1	Unit 2
01/11/07	1730.346	1730.346
01/12/07	1730.346	1730.346
01/22/07	1730.346	1730.346
01/23/07	1730.346	1730.346
02/08/07	1730.346	1730.346
02/09/07	1730.346	1730.346
02/19/07	1730.346	1441.96
02/20/07	1730.346	1433.144
03/05/07	1730.346	0
03/06/07	1730.346	0
03/12/07	1730.346	0
03/13/07	1730.346	0
03/19/07	1730.346	0
03/20/07	1730.346	0
03/26/07	1730.346	510.894
03/27/07	1730.346	584.394
04/02/07	1730.346	1420.697
04/03/07	1730.346	1730.346
04/09/07	1730.346	1730.346
04/10/07	1730.346	1730.346
04/16/07	1730.346	1730.346
04/17/07	1730.346	1730.346
04/23/07	1730.346	1730.346
04/24/07	1730.346	1730.346
04/30/07	1730.346	1730.346
05/01/07	1730.346	1730.346
05/08/07	1730.346	1730.346
05/09/07	1730.346	1523.069
05/15/07	1730.346	1730.346
05/16/07	1730.346	1730.346
05/22/07	1730.346	1730.346
05/23/07	1730.346	1730.346
05/29/07	1730.346	1730.346
05/30/07	1730.346	1730.346

2007 Entrainment Date	Flow MGD	
	Unit 1	Unit 2
06/06/07	1730.346	1730.346
06/07/07	1730.346	1730.346
06/12/07	1730.346	1730.346
06/13/07	1730.346	1730.346
06/20/07	1730.346	1730.346
06/21/07	1730.346	1730.346
06/26/07	1730.346	1730.346
06/27/07	1730.346	1730.346
07/04/07	1730.346	1730.346
07/05/07	1730.346	1730.346
07/10/07	1730.346	1730.346
07/11/07	1730.346	1730.346
07/18/07	1730.346	1730.346
07/19/07	1730.346	1730.346
07/24/07	1730.346	1730.346
07/25/07	1730.346	1730.346
08/01/07	1730.346	1730.346
08/02/07	1730.346	1730.346
08/09/07	1730.346	1730.346
08/10/07	1730.346	1730.346
08/14/07	1730.346	1730.346
08/15/07	1730.346	1730.346
08/21/07	1730.346	1730.346
08/22/07	1730.346	1730.346
08/28/07	1730.346	1730.346
08/29/07	1688.518	1730.346
09/04/07	1730.346	1730.346
09/05/07	1730.346	1730.346
09/11/07	1730.346	1730.346
09/12/07	1730.346	1730.346
09/18/07	1730.346	1730.346
09/19/07	1730.346	1730.346
09/25/07	1730.346	1730.346
09/26/07	1730.346	1730.346

APPENDIX E

LENGTH FREQUENCY DATA

TABLE E-1. LENGTH FREQUENCY DISTRIBUTION OF ATLANTIC MENHADEN COLLECTED DURING ENTRAINMENT SAMPLING AT CALVERT CLIFFS NUCLEAR POWER PLANT COOLING WATER INTAKE, MARCH 2006 - DECEMBER 2006

Date	Average Length	Count	0 to 2.9 mm	3 to 5.9 mm	6 to 8.9 mm	9 to 11.9 mm	12 to 14.9 mm	15 to 17.9 mm	18 to 20.9 mm	21 to 23.9 mm	24 to 26.9 mm	27 to 29.9 mm	30 to 32.9 mm	33 to 35.9 mm	36 to 38.9 mm	39 to 41.9 mm
03/30/06	29.0	56									9	18	28	1		
04/06/06	28.7	28									3	15	9	1		
04/13/06	30.7	16									1	4	8	3		
04/24/06	33.0	3											1	2		
05/01/06	25.4	3	1												2	
05/15/06	39.0	1														1
05/23/06	2.0	2	2													
06/20/06	15.1	1						1								
Total		**110**	**3**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**13**	**37**	**46**	**7**	**2**	**1**

TABLE E-2. LENGTH FREQUENCY DISTRIBUTION OF ATLANTIC MENHADEN COLLECTED DURING ENTRAINMENT SAMPLING AT CALVERT CLIFFS NUCLEAR POWER PLANT COOLING WATER INTAKE, JANUARY 2007 - SEPTEMBER 2007

Date	Average Length	Count	0 to 2.9 mm	3 to 5.9 mm	6 to 8.9 mm	9 to 11.9 mm	12 to 14.9 mm	15 to 17.9 mm	18 to 20.9 mm	21 to 23.9 mm	24 to 26.9 mm	27 to 29.9 mm	30 to 32.9 mm	33 to 35.9 mm	36 to 38.9 mm	39 to 41.9 mm
02/19/07	36.0	1													1	
04/09/07	27.5	1										1				
04/16/07	29.2	4									1	2		1		
04/23/07	33.0	3											1	2		
05/15/07	3.8	36	4	32												
05/22/07	14.9	3		1	1									1		
06/12/07	16.5	1						1								
Total		**49**	**4**	**33**	**1**	**0**	**0**	**1**	**0**	**0**	**1**	**3**	**1**	**4**	**1**	**0**

TABLE E-3. LENGTH FREQUENCY DISTRIBUTION OF ATLANTIC SILVERSIDE COLLECTED DURING ENTRAINMENT SAMPLING AT CALVERT CLIFFS NUCLEAR POWER PLANT COOLING WATER INTAKE, MARCH 2006 - DECEMBER 2006

Date	Average Length	Count	2 to 3.9 mm	4 to 5.9 mm	6 to 7.9 mm	8 to 9.9 mm	10 to 11.9 mm	12 to 13.9 mm	14 to 15.9 mm	16 to 17.9 mm	18 to 19.9 mm	20 to 21.9 mm	22 to 23.9 mm
05/01/06	5.2	1		1									
05/08/06	8.1	16		3	2	11							
05/15/06	6.4	19		11	5	1	2						
05/23/06	6.7	9		4	3	1	1						
05/30/06	5.4	2		2									
06/05/06	8.1	31		12	5	8	3		1	2			
06/12/06	13.2	8		1		1	2		1	1	1	1	
06/20/06	3.7	1	1										
07/17/06	9.0	1				1							
12/18/06	15.4	3						1		2			
Total		**91**	**1**	**34**	**15**	**23**	**8**	**1**	**2**	**5**	**1**	**1**	**0**

TABLE E-4. LENGTH FREQUENCY DISTRIBUTION OF ATLANTIC SILVERSIDE COLLECTED DURING ENTRAINMENT SAMPLING AT CALVERT CLIFFS NUCLEAR POWER PLANT COOLING WATER INTAKE, JANUARY 2007 - SEPTEMBER 2007

Date	Average Length	Count	2 to 3.9 mm	4 to 5.9 mm	6 to 7.9 mm	8 to 9.9 mm	10 to 11.9 mm	12 to 13.9 mm	14 to 15.9 mm	16 to 17.9 mm	18 to 19.9 mm	20 to 21.9 mm	22 to 23.9 mm
05/15/07	7.0	4		2	1		1						
05/22/07	5.7	1		1									
05/29/07	6.2	11		4	6	1							
06/06/07	6.9	12		6	2	2	2						
06/12/07	9.2	18		1	7	4	1	3	2				
06/20/07	14.9	1							1				
06/26/07	23.8	1											1
07/10/07	3.1	1	1										
08/14/07	10.4	1					1						
08/21/07	5.6	1		1									
Total		**51**	**1**	**15**	**16**	**7**	**5**	**3**	**3**	**0**	**0**	**0**	**1**

TABLE E-5. LENGTH FREQUENCY DISTRIBUTION OF BAY ANCHOVY COLLECTED DURING ENTRAINMENT SAMPLING AT CALVERT CLIFFS NUCLEAR POWER PLANT COOLING WATER INTAKE, MARCH 2006 - DECEMBER 2006

Date	Average Length	Count	0 to 4.9 mm	5 to 9.9 mm	10 to 14.9 mm	15 to 19.9 mm	20 to 24.9 mm	25 to 29.9 mm	30 to 34.9 mm	35 to 39.9 mm	40 to 44.9 mm	45 to 49.9 mm	50 to 54.9 mm	55 to 59.9 mm	60 to 64.9 mm	65 to 69.9 mm
04/06/06	40.1	7								5	1	1				
04/18/06	43.0	2							1				1			
04/24/06	37.3	3								2	1					
05/01/06	38.5	2								1	1					
05/08/06	4.2	1	1													
05/23/06	34.1	6	2								1	2				1
05/30/06	6.0	9	3	6												
06/05/06	7.4	8	1	6		1										
06/12/06	8.4	28	1	21	5	1										
06/20/06	10.6	10	2	5	1		2									
06/28/06	17.9	42	5	6	2	4	15	10								
07/03/06	9.9	89	18	48	4	5	9	5								
07/17/06	16.6	8			3	4		1								
07/24/06	26.1	149				3	63	49	24	9			1			
07/31/06	17.3	36		2	8	20	3	2		1						
08/07/06	14.8	85	12	12	6	25	29	1								
08/14/06	7.0	8	2	5		1										
08/21/06	7.8	159	65	62	5	13	13			1						
08/28/06	5.7	255	113	126	12	2	1	1								
09/11/06	15.3	61		15	11	21	11	3								
09/25/06	19.3	60			13	18	24	5								
10/09/06	22.0	3				1	1	1								
10/26/06	25.0	2					1	1								
11/06/06	27.4	6					3	1		2						
11/27/06	30.0	1							1							
12/18/06	37.5	1								1						
Total		**1041**	**225**	**314**	**70**	**119**	**175**	**80**	**26**	**22**	**4**	**3**	**2**	**0**	**0**	**1**

TABLE E-6. LENGTH FREQUENCY DISTRIBUTION OF BAY ANCHOVY COLLECTED DURING ENTRAINMENT SAMPLING AT CALVERT CLIFFS NUCLEAR POWER PLANT COOLING WATER INTAKE, JANUARY 2007 - SEPTEMBER 2007

Date	Average Length	Count	0 to 4.9 mm	5 to 9.9 mm	10 to 14.9 mm	15 to 19.9 mm	20 to 24.9 mm	25 to 29.9 mm	30 to 34.9 mm	35 to 39.9 mm	40 to 44.9 mm	45 to 49.9 mm	50 to 54.9 mm	55 to 59.9 mm	60 to 64.9 mm	65 to 69.9 mm
01/22/07	39.4	19							5	5	5	3	1			
02/19/07	44.9	8							1	1	2	1	3			
03/05/07	47.5	4								1		2		1		
03/12/07	47.1	6									2	2	2			
03/19/07	51.0	1											1			
03/26/07	40.5	3								1	1	1				
04/02/07	37.3	3							1	1	1					
04/16/07	46.3	4								2			1		1	
04/23/07	60.0	1													1	
05/29/07	4.1	58	46	11	1											
06/06/07	6.0	83	31	51	1											
06/12/07	8.7	389	38	217	112	20	2									
06/20/07	5.2	84	55	22	5	1	1									
06/26/07	6.7	39	20	13	1	2	3									
07/04/07	13.6	93	7	31	24	11	8	10	2							
07/10/07	12.4	132	38	12	27	29	23	2		1						
07/18/07	11.4	32	13	4	1	7	4	3								
07/24/07	16.8	16		2	4	4	6									
08/01/07	19.8	29		1	2	11	10	5								
08/09/07	17.6	115	8	6	12	44	38	2	4	1						
08/14/07	12.9	59	8	14	14	18	3	2								
08/21/07	7.6	241	56	144	24	12	3	1		1						
08/28/07	12.1	92	9	29	21	27	5	1								
09/04/07	9.1	82	25	33	7	8	8		1							
09/11/07	9.9	84	1	64	8	6	4		1							
09/18/07	14.8	74	1	12	27	18	16									
09/25/07	17.4	18			6	6	6									
Total		**1769**	**356**	**666**	**297**	**224**	**140**	**26**	**15**	**14**	**11**	**9**	**8**	**1**	**2**	**0**

TABLE E-7. LENGTH FREQUENCY DISTRIBUTION OF NAKED GOBY COLLECTED DURING ENTRAINMENT SAMPLING AT CALVERT CLIFFS NUCLEAR POWER PLANT COOLING WATER INTAKE, MARCH 2006 - DECEMBER 2006

Date	Average Length	Count	2 to 3.9 mm	4 to 5.9 mm	6 to 7.9 mm	8 to 9.9 mm	10 to 11.9 mm	12 to 13.9 mm	14 to 15.9 mm	16 to 17.9 mm	18 to 19.9 mm	20 to 21.9 mm	22 to 23.9 mm
05/30/06	3.4	13	13										
06/05/06	3.2	16	16										
06/12/06	3.2	125	120	5									
06/20/06	4.9	16	4	10	2								
06/28/06	6.6	43	3	12	20	7	1						
07/03/06	6.7	87	22	10	22	22	11						
07/10/06	9.3	97	4	3	12	29	46	2			1		
07/17/06	9.3	29	2	1	2	11	12	1					
07/24/06	7.7	7			4	2	1						
07/31/06	8.4	20	2		6	6	5	1					
08/07/06	7.6	17	5	1	1	5	5						
08/14/06	2.6	6	6										
08/21/06	3.6	29	25	1	1		1		1				
08/28/06	4.8	33	16	10	1	6							
09/11/06	9.7	15			2	4	9						
Total		**553**	**238**	**53**	**73**	**92**	**91**	**4**	**1**	**0**	**1**	**0**	**0**

TABLE E-8. LENGTH FREQUENCY DISTRIBUTION OF NAKED GOBY DURING ENTRAINMENT SAMPLING AT CALVERT CLIFFS NUCLEAR POWER PLANT COOLING WATER INTAKE, JANUARY 2007 - SEPTEMBER 2007

Date	Average Length	Count	2 to 3.9 mm	4 to 5.9 mm	6 to 7.9 mm	8 to 9.9 mm	10 to 11.9 mm	12 to 13.9 mm	14 to 15.9 mm	16 to 17.9 mm	18 to 19.9 mm	20 to 21.9 mm	22 to 23.9 mm
06/06/07	3.4	44	43	1									
06/12/07	3.4	99	88	11									
06/20/07	4.6	3	2		1								
06/26/07	8.2	25	2	3	4	9	7						
07/04/07	4.6	11	4	5	2								
07/10/07	6.1	70	31	9	8	8	12	1	1				
07/18/07	6.3	51	22	5	6	6	11		1				
07/24/07	5.5	50	27	5	4	8	5						1
08/01/07	6.1	14	5	1	4	2	2						
08/09/07	3.5	130	113	5	3	3	5		1				
08/14/07	4.4	25	15	5	4			1					
08/21/07	3.9	71	53	6	6	4	2						
08/28/07	4.8	25	18	1		2	4						
09/04/07	7.9	31	1	6	9	7	8						
09/11/07	7.2	3	1			1	1						
09/18/07	10.3	1					1						
09/25/07	8.0	1				1							
Total		**654**	**425**	**63**	**51**	**51**	**58**	**2**	**3**	**0**	**0**	**0**	**1**

TABLE E-9. LENGTH FREQUENCY DISTRIBUTION OF SKILLETFISH COLLECTED DURING ENTRAINMENT SAMPLING AT CALVERT CLIFFS NUCLEAR POWER PLANT COOLING WATER INTAKE, MARCH 2006 - DECEMBER 2006

Date	Average Length	Count	2 to 3.9 mm	4 to 5.9 mm	6 to 7.9 mm	8 to 9.9 mm	10 to 11.9 mm	12 to 13.9 mm	14 to 15.9 mm	16 to 17.9 mm	18 to 19.9 mm
05/15/06	3.3	52	49	2	1						
05/23/06	3.1	34	33	1							
05/30/06	3.1	7	7								
06/05/06	4.5	22	18	1			1	2			
06/12/06	3.7	31	27		1	2	1				
06/20/06	4.6	1		1							
06/28/06	3.2	3	3								
07/03/06	4.1	3	2		1						
07/10/06	18.8	2									2
08/14/06	2.8	2	2								
08/28/06	3.0	3	3								
Total		**160**	**144**	**5**	**3**	**2**	**2**	**2**	**0**	**0**	**2**

TABLE E-10. LENGTH FREQUENCY DISTRIBUTION OF SKILLETFISH COLLECTED DURING ENTRAINMENT SAMPLING AT CALVER CLIFFS NUCLEAR POWER PLANT COOLING WATER INTAKE, JANUARY 2007 - SEPTEMBER 2007

Date	Average Length	Count	2 to 3.9 mm	4 to 5.9 mm	6 to 7.9 mm	8 to 9.9 mm	10 to 11.9 mm	12 to 13.9 mm	14 to 15.9 mm	16 to 17.9 mm	18 to 19.9 mm
05/22/07	3.4	8	7	1							
05/29/07	3.6	108	93	14				1			
06/06/07	4.0	46	38	1	4	1	2				
06/12/07	5.1	37	28				6	3			
06/20/07	5.3	8	6					2			
06/26/07	2.4	1	1								
07/04/07	11.9	1					1				
07/10/07	2.7	13	13								
07/18/07	3.4	16	15					1			
07/24/07	2.9	5	5								
08/01/07	3.6	10	9					1			
08/09/07	2.5	31	31								
08/14/07	2.8	3	3								
08/21/07	3.3	14	13					1			
09/04/07	2.9	2	2								
09/11/07	6.0	2	1			1					
09/18/07	2.5	1	1								
09/25/07	3.3	1	1								
Total		**307**	**267**	**16**	**4**	**2**	**9**	**9**	**0**	**0**	**0**

TABLE E-11. LENGTH FREQUENCY DISTRIBUTION OF ATLANTIC SILVERSIDE COLLECTED DURING ENTRAINMENT SAMPLING AT CALVERT CLIFFS NUCLEAR POWER PLANT BAFFLE WALL, APRIL 2006 - DECEMBER 2006

Date	Average Length	Count	2 to 3.9 mm	4 to 5.9 mm	6 to 7.9 mm	8 to 9.9 mm	10 to 11.9 mm
05/01/06	5.5	4		3	1		
05/08/06	5.8	7		6		1	
05/15/06	5.9	7		6			1
05/23/06	6.2	9	1	5	1		2
05/30/06	4.7	5		5			
06/05/06	5.4	16		12	2	2	
06/12/06	4.1	6	2	4			
07/24/06	3.3	1	1				
Total		**55**	**4**	**41**	**4**	**3**	**3**

TABLE E-12. LENGTH FREQUENCY DISTRIBUTION OF BAY ANCHOVY COLLECTED DURING ENTRAINMENT SAMPLING AT CALVERT CLIFFS NUCLEAR POWER PLANT BAFFLE WALL, APRIL 2006 - DECEMBER 2006

Date	Average Length	Count	0 to 4.9 mm	5 to 9.9 mm	10 to 14.9 mm
05/08/06	4.8	2	1	1	
05/23/06	3.8	2	2		
05/30/06	5.9	4	1	3	
06/05/06	4.7	17	13	4	
06/12/06	4.2	55	42	12	1
06/20/06	6.4	18	7	9	2
06/28/06	3.7	13	11	2	
07/03/06	7.0	21	5	15	1
07/10/06	14.9	1			1
07/17/06	5.2	2	1	1	
07/31/06	5.8	12	4	8	
08/07/06	4.7	53	30	23	
08/14/06	3.7	12	10	2	
08/21/06	4.6	112	70	42	
08/28/06	4.7	137	85	51	1
09/11/06	7.0	10	1	9	
Total		**471**	**283**	**182**	**6**

TABLE E-13. LENGTH FREQUENCY DISTRIBUTION OF NAKED GOBY COLLECTED DURING ENTRAINMENT SAMPLING AT CALVERT CLIFFS NUCLEAR POWER PLANT BAFFLE WALL, APRIL 2006 - DECEMBER 2006

Date	Average Length	Count	2 to 3.9 mm	4 to 5.9 mm	6 to 7.9 mm	8 to 9.9 mm	10 to 11.9 mm	12 to 13.9 mm	14 to 15.9 mm	16 to 17.9 mm
05/30/06	3.2	20	20							
06/05/06	3.2	16	16							
06/12/06	3.2	77	77							
06/20/06	4.4	11	4	6	1					
06/28/06	3.0	3	3							
07/03/06	9.2	1				1				
07/10/06	10.9	89	1	4	5	6	44	24	4	1
07/17/06	11.0	4	1					2		1
07/31/06	2.9	2	2							
08/07/06	2.6	8	8							
08/14/06	2.7	6	6							
08/21/06	2.7	28	28							
08/28/06	3.7	1	1							
Total		266	167	10	6	7	44	26	4	2

TABLE E-14. LENGTH FREQUENCY DISTRIBUTION OF SKILLETFISH COLLECTED DURING ENTRAINMENT SAMPLING AT CALVERT CLIFFS NUCLEAR POWER PLANT BAFFLE WALL, APRIL 2006 - DECEMBER 2006

Date	Average Length	Count	2 to 3.9 mm	4 to 5.9 mm	6 to 7.9 mm	8 to 9.9 mm	10 to 11.9 mm	12 to 13.9 mm	14 to 15.9 mm	16 to 17.9 mm	18 to 19.9 mm	20 to 21.9 mm	22 to 23.9 mm
05/15/06	3.4	8	8										
05/23/06	3.1	9	9										
05/30/06	3.1	29	29										
06/05/06	3.8	13	12					1					
06/12/06	3.0	52	52										
06/28/06	2.9	1	1										
07/03/06	2.5	2	2										
07/10/06	15.8	9	2						1	1		3	2
08/14/06	2.4	1	1										
09/11/06	2.5	1	1										
Total		**125**	**117**	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**0**	**3**	**2**

APPENDIX F

ANNUAL ESTIMATES

TABLE F-1. MONTHLY ENTRAINMENT ESTIMATE AT CALVERT CLIFFS NUCLEAR POWER PLANT FOR UNIT 1 DURING DAYTIME AT ACTUAL FLOWS, APRIL - SEPTEMBER 2006

Taxon-Lifestage	April	May	June	July	August	September	Estimated Total	80% Confidence Interval (+/-)
American eel-juvenile	0	0	0	0	0	0	0	0
Atherinopsidae sp.-fertilized egg	0	0	290,278	84,078	0	0	374,356	479,176
Atherinopsidae sp.-N/A	0	0	0	0	0	0	0	0
Atherinopsidae sp.-post-yolk sac larvae	0	0	0	0	0	0	0	0
Atlantic croaker-juvenile	0	0	0	0	0	0	0	0
Atlantic croaker-post-yolk sac larvae	0	0	0	0	0	0	0	0
Atlantic menhaden-fertilized egg	3,651,294	38,596,904	9,953,755	0	0	0	52,201,954	58,435,125
Atlantic menhaden-juvenile	0	0	0	0	0	0	0	0
Atlantic menhaden-post-yolk sac larvae	0	0	0	0	0	0	0	0
Atlantic menhaden-yolk-sac larvae	0	0	0	0	0	0	0	0
Atlantic silverside-fertilized egg	0	0	0	0	0	0	0	0
Atlantic silverside-juvenile	0	0	0	0	0	0	0	0
Atlantic silverside-post-yolk sac larvae	0	437,005	117,103	0	0	0	554,108	709,258
Atlantic silverside-unfertilized egg	0	0	0	0	0	0	0	0
Atlantic silverside-yolk-sac larvae	0	0	0	0	0	0	0	0
Bay anchovy-adult	0	0	0	0	0	0	0	0
Bay anchovy-fertilized egg	0	887,556,865	281,668,138	48,056,930	44,264,659	19,113,383	1,280,659,975	1,396,716,083
Bay anchovy-juvenile	0	0	0	252,079,138	101,611,375	141,581	353,832,094	452,439,014
Bay anchovy-N/A	0	0	0	0	0	0	0	0
Bay anchovy-post-yolk sac larvae	0	437,005	987,936	252,235	45,396,887	28,882,445	75,956,508	1,374,705
Bay anchovy-yolk-sac larvae	0	0	0	0	6,898,547	4,388,999	11,287,546	0
Damaged egg-fertilized egg	0	0	17,997,223	6,613,297	1,675,940	707,903	26,994,362	28,968,147
Damaged egg-N/A	0	0	0	0	0	0	0	0
Damaged fish-N/A	0	0	0	0	0	0	0	0
Damaged fish-post-yolk sac larvae	0	0	0	0	222,534	141,581	364,114	0
Feather blenny-juvenile	0	0	0	0	0	0	0	0
Feather blenny-post-yolk sac larvae	0	0	0	0	0	0	0	0
Feather blenny-yolk-sac larvae	0	0	0	0	0	0	0	0
Fundulus sp.-fertilized egg	0	0	290,278	84,078	0	0	374,356	479,176
Gizzard shad-fertilized egg	0	0	0	0	0	0	0	0
Goby sp.-post-yolk sac larvae	0	0	0	0	0	0	0	0
Green goby-juvenile	0	0	0	0	0	0	0	0
Green goby-post-yolk sac larvae	0	0	0	0	222,534	141,581	364,114	0
Hogchoker-fertilized egg	0	0	2,031,944	938,658	3,923,892	2,406,870	9,301,365	3,200,088
Hogchoker-post-yolk sac larvae	0	0	0	0	0	0	0	0
Naked goby-fertilized egg	0	0	0	0	0	0	0	0
Naked goby-juvenile	0	0	0	350,110	140,818	0	490,928	628,388
Naked goby-post-yolk sac larvae	0	0	1,161,111	1,736,753	4,346,345	2,406,870	9,651,080	2,603,818
Naked goby-yolk-sac larvae	0	0	0	0	0	0	0	0
Northern Kingfish-post-yolk sac larvae	0	0	0	0	0	0	0	0
Northern pipefish-juvenile	0	0	0	0	0	0	0	0
Northern pipefish-post-yolk sac larvae	0	0	290,278	84,078	0	0	374,356	479,176
Rough silverside-fertilized egg	0	0	0	0	222,534	141,581	364,114	0
Rough silverside-juvenile	0	0	0	0	0	0	0	0
Rough silverside-post-yolk sac larvae	0	0	0	0	0	0	0	0
Rough silverside-yolk-sac larvae	0	0	0	0	0	0	0	0
Sciaenidae sp.-fertilized egg	0	1,748,019	73,618,413	40,793,896	14,339,278	4,105,838	134,605,444	112,693,023
Sciaenidae sp.-N/A	0	0	0	0	0	0	0	0
Silver perch-post-yolk sac larvae	0	0	0	0	0	0	0	0
Skilletfish-juvenile	0	0	0	0	0	0	0	0
Skilletfish-post-yolk sac larvae	0	6,992,078	1,873,648	0	445,068	283,161	9,593,954	11,348,129
Skilletfish-yolk-sac larvae	0	0	0	0	0	0	0	0
Spot-juvenile	0	0	0	0	0	0	0	0
Spot-post-yolk sac larvae	0	0	0	0	0	0	0	0
Weakfish-juvenile	0	0	0	0	0	0	0	0
Total	3,651,294	935,767,876	390,280,105	351,073,252	223,710,409	62,861,793	1,967,344,729	1,473,980,899

TABLE F-2. MONTHLY ENTRAINMENT ESTIMATE AT CALVERT CLIFFS NUCLEAR POWER PLANT FOR UNIT 1 DURING NIGHTTIME AT ACTUAL FLOWS, MARCH - DECEMBER 2006

Taxon-Lifestage	March	April	May	June	July	August	September	October	November	December	Estimated Total	80% Confidence Interval (+/-)
American eel-juvenile	0	73,427	31,783	0	0	0	0	0	0	0	105,211	78,064
Atherinopsidae sp.-fertilized egg	0	0	36,808	172,251	478,236	0	0	0	0	0	687,295	500,907
Atherinopsidae sp.-N/A	0	24,159	31,783	0	0	0	0	0	0	0	55,942	71,606
Atherinopsidae sp.-post-yolk sac larvae	0	0	129,912	0	0	0	0	0	0	0	129,912	96,257
Atlantic croaker-juvenile	0	0	0	0	0	0	564,648	1,547,995	2,248,066	566,975	4,927,684	2,771,766
Atlantic croaker-post-yolk sac larvae	0	0	0	0	0	225,103	261,558	0	0	0	486,661	435,236
Atlantic menhaden-fertilized egg	0	7,892,836	32,266,058	3,630,958	0	0	0	0	0	0	43,789,852	24,395,736
Atlantic menhaden-juvenile	0	2,523,725	125,198	0	0	0	0	0	0	0	2,648,923	1,162,722
Atlantic menhaden-post-yolk sac larvae	0	0	0	57,417	0	0	0	0	0	0	57,417	73,494
Atlantic menhaden-yolk-sac larvae	0	24,159	105,400	0	0	0	0	0	0	0	129,559	118,350
Atlantic silverside-fertilized egg	0	0	68,281	99,267	0	0	0	0	0	0	167,548	115,081
Atlantic silverside-juvenile	0	0	0	354,584	0	0	0	0	0	429,507	784,091	617,870
Atlantic silverside-post-yolk sac larvae	0	24,159	2,287,058	1,034,172	51,440	0	0	0	0	0	3,396,830	1,720,962
Atlantic silverside-unfertilized egg	0	0	246,523	0	0	0	0	0	0	0	246,523	315,550
Atlantic silverside-yolk-sac larvae	0	0	503,862	468,206	0	0	0	0	0	0	972,068	671,248
Bay anchovy-adult	0	50,978	73,617	0	74,635	0	0	0	0	0	199,230	149,210
Bay anchovy-fertilized egg	0	241,586	336,970,019	495,548,797	30,576,878	103,621,221	7,553,991	0	0	0	974,512,493	446,692,394
Bay anchovy-juvenile	0	504,226	137,184	1,699,784	23,709,046	6,599,883	17,501,825	2,356,387	1,205,471	297,794	54,011,600	29,486,654
Bay anchovy-N/A	0	0	0	0	154,321	0	0	0	0	0	154,321	197,531
Bay anchovy-post-yolk sac larvae	0	0	425,830	2,362,915	2,994,346	64,125,397	31,169,512	0	0	0	101,078,001	91,261,199
Bay anchovy-yolk-sac larvae	0	0	0	205,620	0	900,411	541,990	0	0	0	1,648,022	1,864,939
Damaged egg-fertilized egg	0	0	578,264	1,029,835	3,048,203	1,183,327	101,623	0	0	0	5,941,252	2,354,045
Damaged egg-N/A	0	51,359	0	0	0	0	0	0	0	0	51,359	65,739
Damaged fish-N/A	0	0	0	41,124	0	0	0	0	0	0	41,124	52,639
Damaged fish-post-yolk sac larvae	0	0	282,108	182,676	1,859,243	665,467	0	0	0	0	2,989,494	1,374,359
Feather blenny-juvenile	0	0	0	42,485	29,417	22,303	0	0	0	0	94,205	85,673
Feather blenny-post-yolk sac larvae	0	0	71,276	1,091,056	167,193	504,071	0	0	0	0	1,833,596	1,111,702
Feather blenny-yolk-sac larvae	0	0	0	56,782	0	168,827	101,623	0	0	0	327,233	353,724
Fundulus sp.-fertilized egg	0	0	0	0	251,161	0	0	0	0	0	251,161	191,376
Gizzard shad-fertilized egg	0	0	61,631	0	0	0	0	0	0	0	61,631	78,887
Goby sp.-post-yolk sac larvae	0	0	0	1,520,732	803,969	0	0	0	0	0	2,324,701	1,717,105
Green goby-juvenile	0	0	0	0	126,076	0	0	0	0	0	126,076	96,273
Green goby-post-yolk sac larvae	0	0	0	0	135,037	57,138	126,060	0	0	0	318,235	198,249
Hogchoker-fertilized egg	0	0	0	2,412,228	1,719,147	0	0	0	0	0	4,131,375	2,159,095
Hogchoker-post-yolk sac larvae	0	0	0	0	0	112,551	67,749	0	0	0	180,300	230,784
Naked goby-fertilized egg	0	0	0	114,834	0	0	0	0	0	0	114,834	146,988
Naked goby-juvenile	0	0	0	41,124	3,735,263	684,854	1,134,544	0	0	0	5,595,785	3,397,192
Naked goby-post-yolk sac larvae	0	0	498,930	12,976,738	8,131,194	3,475,113	1,298,353	0	0	0	26,380,328	12,552,440
Naked goby-yolk-sac larvae	0	0	0	253,956	0	114,276	0	0	0	0	368,232	258,384
Northern Kingfish-post-yolk sac larvae	0	0	0	0	0	0	104,176	17,279	0	0	121,455	155,462
Northern pipefish-juvenile	0	0	0	0	0	0	104,176	17,279	0	0	121,455	155,462
Northern pipefish-post-yolk sac larvae	0	0	231,346	85,039	0	0	0	0	0	0	316,385	190,181
Rough silverside-fertilized egg	0	0	68,281	113,565	0	0	0	0	0	0	181,846	169,615
Rough silverside-juvenile	0	0	0	56,782	0	0	0	0	0	0	56,782	72,682
Rough silverside-post-yolk sac larvae	0	0	0	99,267	51,440	0	0	0	0	0	150,708	99,701
Rough silverside-yolk-sac larvae	0	0	36,808	0	0	0	0	0	0	0	36,808	47,115
Sciaenidae sp.-fertilized egg	0	0	1,422,613	20,588,218	112,947,619	174,630,589	18,365,487	0	0	0	327,954,525	111,961,133
Sciaenidae sp.-N/A	0	0	0	0	1,903,298	0	0	0	0	0	1,903,298	2,436,222
Silver perch-post-yolk sac larvae	0	0	0	0	101,891	56,276	33,874	0	0	0	192,041	147,719
Skilletfish-juvenile	0	0	0	297,802	100,900	0	0	0	0	0	398,702	259,083
Skilletfish-post-yolk sac larvae	0	0	4,055,189	2,279,330	125,394	170,495	33,874	0	0	0	6,664,282	4,127,645
Skilletfish-yolk-sac larvae	0	0	61,631	397,477	0	0	0	0	0	0	459,108	514,850
Spot-juvenile	0	507,542	0	0	0	0	0	0	0	0	507,542	347,960
Spot-post-yolk sac larvae	0	23,868	0	0	0	0	0	0	0	0	23,868	30,551
Weakfish-juvenile	0	0	61,631	0	0	0	0	0	0	0	61,631	78,887
Total	0	11,942,023	380,869,026	549,315,024	193,275,346	357,317,301	79,065,064	3,938,940	3,453,537	1,294,276	1,580,470,537	471,263,103

TABLE F-3. MONTHLY ENTRAINMENT ESTIMATE AT CALVERT CLIFFS NUCLEAR POWER PLANT FOR UNIT 2 DAYTIME AT ACTUAL FLOWS, APRIL - SEPTEMBER 2006

Taxon-Lifestage	April	May	June	July	August	September	Estimated Total	80% Confidence Interval (+/-)
American eel-juvenile	0	0	0	0	0	0	0	0
Atherinopsidae sp.-fertilized egg	0	0	297,180	86,497	0	0	383,677	491,107
Atherinopsidae sp.-N/A	0	0	0	0	0	0	0	0
Atherinopsidae sp.-post-yolk sac larvae	0	0	0	0	0	0	0	0
Atlantic croaker-juvenile	0	0	0	0	0	0	0	0
Atlantic croaker-post-yolk sac larvae	0	0	0	0	0	0	0	0
Atlantic menhaden-fertilized egg	3,738,115	39,379,265	10,190,436	0	0	0	53,307,816	59,692,967
Atlantic menhaden-juvenile	0	0	0	0	0	0	0	0
Atlantic menhaden-post-yolk sac larvae	0	0	0	0	0	0	0	0
Atlantic menhaden-yolk-sac larvae	0	0	0	0	0	0	0	0
Atlantic silverside-fertilized egg	0	0	0	0	0	0	0	0
Atlantic silverside-juvenile	0	0	0	0	0	0	0	0
Atlantic silverside-post-yolk sac larvae	0	446,108	119,887	0	0	0	565,996	724,474
Atlantic silverside-unfertilized egg	0	0	0	0	0	0	0	0
Atlantic silverside-yolk-sac larvae	0	0	0	0	0	0	0	0
Bay anchovy-adult	0	0	0	0	0	0	0	0
Bay anchovy-fertilized egg	0	906,045,602	288,365,663	48,766,210	45,622,614	19,567,862	1,308,367,952	1,426,758,741
Bay anchovy-juvenile	0	0	0	254,531,639	104,029,760	144,947	358,706,347	458,664,079
Bay anchovy-N/A	0	0	0	0	0	0	0	0
Bay anchovy-post-yolk sac larvae	0	446,108	1,011,428	259,492	46,937,872	29,569,214	78,224,114	1,408,527
Bay anchovy-yolk-sac larvae	0	0	0	0	7,132,716	4,493,361	11,626,077	0
Damaged egg-fertilized egg	0	0	18,425,162	6,776,891	1,727,103	724,736	27,653,891	29,696,582
Damaged egg-N/A	0	0	0	0	0	0	0	0
Damaged fish-N/A	0	0	0	0	0	0	0	0
Damaged fish-post-yolk sac larvae	0	0	0	0	230,088	144,947	375,035	0
Feather blenny-juvenile	0	0	0	0	0	0	0	0
Feather blenny-post-yolk sac larvae	0	0	0	0	0	0	0	0
Feather blenny-yolk-sac larvae	0	0	0	0	0	0	0	0
Fundulus sp.-fertilized egg	0	0	297,180	86,497	0	0	383,677	491,107
Gizzard shad-fertilized egg	0	0	0	0	0	0	0	0
Goby sp.-post-yolk sac larvae	0	0	0	0	0	0	0	0
Green goby-juvenile	0	0	0	0	0	0	0	0
Green goby-post-yolk sac larvae	0	0	0	0	230,088	144,947	375,035	0
Hogchoker-fertilized egg	0	0	2,080,260	958,997	4,055,656	2,464,101	9,559,014	3,280,846
Hogchoker-post-yolk sac larvae	0	0	0	0	0	0	0	0
Naked goby-fertilized egg	0	0	0	0	0	0	0	0
Naked goby-juvenile	0	0	0	353,516	144,166	0	497,682	637,033
Naked goby-post-yolk sac larvae	0	0	1,188,720	1,760,053	4,488,154	2,464,101	9,901,029	2,648,562
Naked goby-yolk-sac larvae	0	0	0	0	0	0	0	0
Northern Kingfish-post-yolk sac larvae	0	0	0	0	0	0	0	0
Northern pipefish-juvenile	0	0	0	0	0	0	0	0
Northern pipefish-post-yolk sac larvae	0	0	297,180	86,497	0	0	383,677	491,107
Rough silverside-fertilized egg	0	0	0	0	230,088	144,947	375,035	0
Rough silverside-juvenile	0	0	0	0	0	0	0	0
Rough silverside-post-yolk sac larvae	0	0	0	0	0	0	0	0
Rough silverside-yolk-sac larvae	0	0	0	0	0	0	0	0
Sciaenidae sp.-fertilized egg	0	1,784,432	75,368,917	41,594,200	14,745,848	4,203,467	137,696,865	115,524,781
Sciaenidae sp.-N/A	0	0	0	0	0	0	0	0
Silver perch-post-yolk sac larvae	0	0	0	0	0	0	0	0
Skilletfish-juvenile	0	0	0	0	0	0	0	0
Skilletfish-post-yolk sac larvae	0	7,137,730	1,918,200	0	460,175	289,894	9,805,999	11,591,590
Skilletfish-yolk-sac larvae	0	0	0	0	0	0	0	0
Spot-juvenile	0	0	0	0	0	0	0	0
Spot-post-yolk sac larvae	0	0	0	0	0	0	0	0
Weakfish-juvenile	0	0	0	0	0	0	0	0
Total	3,738,115	955,239,245	399,560,213	355,260,490	230,034,328	64,356,525	2,008,188,917	1,504,646,183

TABLE F-4. MONTHLY ENTRAINMENT ESTIMATE AT CALVERT CLIFFS NUCLEAR POWER PLANT FOR UNIT 2 DURING NIGHTTIME AT ACTUAL FLOWS, MARCH - DECEMBER 2006

Taxon-Lifestage	March	April	May	June	July	August	September	October	November	December	Estimated Total	80% Confidence Interval (+/-)
American eel-juvenile	0	75,173	31,891	0	0	0	0	0	0	0	107,064	79,385
Atherinopsidae sp.-fertilized egg	0	0	37,684	176,347	482,979	0	0	0	0	0	697,010	505,328
Atherinopsidae sp.-N/A	0	24,733	31,891	0	0	0	0	0	0	0	56,624	72,479
Atherinopsidae sp.-post-yolk sac larvae	0	0	131,587	0	0	0	0	0	0	0	131,587	97,356
Atlantic croaker-juvenile	0	0	0	0	0	0	595,048	1,588,686	2,300,374	598,398	5,082,506	2,828,609
Atlantic croaker-post-yolk sac larvae	0	0	0	0	0	237,541	267,777	0	0	0	505,318	454,093
Atlantic menhaden-fertilized egg	0	8,080,512	32,667,842	3,717,295	0	0	0	0	0	0	44,465,650	24,795,384
Atlantic menhaden-juvenile	3,716,591	4,271,937	127,349	0	0	0	0	0	0	0	8,115,877	5,824,551
Atlantic menhaden-post-yolk sac larvae	0	0	0	58,782	0	0	0	0	0	0	58,782	75,241
Atlantic menhaden-yolk-sac larvae	0	24,733	107,259	0	0	0	0	0	0	0	131,992	120,664
Atlantic silverside-fertilized egg	0	0	68,021	101,628	0	0	0	0	0	0	169,649	115,997
Atlantic silverside-juvenile	0	0	0	363,016	0	0	0	0	0	457,661	820,676	653,079
Atlantic silverside-post-yolk sac larvae	0	24,733	2,314,883	1,058,763	51,273	0	0	0	0	0	3,449,652	1,738,204
Atlantic silverside-unfertilized egg	0	0	254,264	0	0	0	0	0	0	0	254,264	325,458
Atlantic silverside-yolk-sac larvae	0	0	519,132	479,339	0	0	0	0	0	0	998,471	690,676
Bay anchovy-adult	0	52,190	75,367	0	76,410	0	0	0	0	0	203,967	152,758
Bay anchovy-fertilized egg	0	247,331	344,448,803	507,331,992	31,232,126	106,480,141	7,733,610	0	0	0	997,474,003	457,319,658
Bay anchovy-juvenile	0	693,910	139,150	1,740,202	24,263,941	6,783,385	18,347,990	2,527,894	1,230,693	316,835	56,044,001	30,459,054
Bay anchovy-N/A	0	0	0	0	153,819	0	0	0	0	0	153,819	196,888
Bay anchovy-post-yolk sac larvae	0	0	434,072	2,419,100	3,066,672	67,141,637	31,910,663	0	0	0	104,972,145	95,311,249
Bay anchovy-yolk-sac larvae	0	0	0	210,510	0	950,162	554,878	0	0	0	1,715,550	1,945,204
Damaged egg-fertilized egg	0	0	588,247	1,054,322	3,104,406	1,216,778	104,040	0	0	0	6,067,793	2,410,282
Damaged egg-N/A	0	52,580	0	0	0	0	0	0	0	0	52,580	67,302
Damaged fish-N/A	0	0	0	42,102	0	0	0	0	0	0	42,102	53,890
Damaged fish-post-yolk sac larvae	0	0	286,933	187,020	1,879,933	681,290	0	0	0	0	3,035,176	1,391,479
Feather blenny-juvenile	0	0	0	43,495	30,116	22,833	0	0	0	0	96,445	87,710
Feather blenny-post-yolk sac larvae	0	0	72,971	1,117,000	171,314	516,057	0	0	0	0	1,877,341	1,138,169
Feather blenny-yolk-sac larvae	0	0	0	58,133	0	178,155	104,040	0	0	0	340,328	368,794
Fundulus sp.-fertilized egg	0	0	0	0	254,914	0	0	0	0	0	254,914	195,559
Gizzard shad-fertilized egg	0	0	63,566	0	0	0	0	0	0	0	63,566	81,365
Goby sp.-post-yolk sac larvae	0	0	0	1,556,892	817,614	0	0	0	0	0	2,374,506	1,757,071
Green goby-juvenile	0	0	0	0	127,683	0	0	0	0	0	127,683	97,947
Green goby-post-yolk sac larvae	0	0	0	0	136,930	58,497	129,058	0	0	0	324,484	202,430
Hogchoker-fertilized egg	0	0	0	2,469,586	1,754,910	0	0	0	0	0	4,224,496	2,211,124
Hogchoker-post-yolk sac larvae	0	0	0	0	0	118,770	69,360	0	0	0	188,130	240,806
Naked goby-fertilized egg	0	0	0	117,565	0	0	0	0	0	0	117,565	150,483
Naked goby-juvenile	0	0	0	42,102	3,765,768	701,139	1,161,521	0	0	0	5,670,530	3,428,955
Naked goby-post-yolk sac larvae	0	0	510,794	13,285,300	8,255,822	3,586,086	1,329,225	0	0	0	26,967,226	12,846,665
Naked goby-yolk-sac larvae	0	0	0	259,995	0	116,993	0	0	0	0	376,988	264,528
Northern Kingfish-post-yolk sac larvae	0	0	0	0	0	0	112,311	19,223	0	0	131,534	168,363
Northern pipefish-juvenile	0	0	0	0	0	0	112,311	19,223	0	0	131,534	168,363
Northern pipefish-post-yolk sac larvae	0	0	237,786	87,061	0	0	0	0	0	0	324,847	195,702
Rough silverside-fertilized egg	0	0	68,021	116,265	0	0	0	0	0	0	184,286	172,418
Rough silverside-juvenile	0	0	0	58,133	0	0	0	0	0	0	58,133	74,410
Rough silverside-post-yolk sac larvae	0	0	0	101,628	51,273	0	0	0	0	0	152,900	100,905
Rough silverside-yolk-sac larvae	0	0	37,684	0	0	0	0	0	0	0	37,684	48,235
Sciaenidae sp.-fertilized egg	0	0	1,457,380	21,077,766	114,800,431	179,723,544	18,802,183	0	0	0	335,861,304	115,310,806
Sciaenidae sp.-N/A	0	0	0	0	1,897,095	0	0	0	0	0	1,897,095	2,428,282
Silver perch-post-yolk sac larvae	0	0	0	0	102,094	59,385	34,680	0	0	0	196,159	151,775
Skilletfish-juvenile	0	0	0	304,883	101,642	0	0	0	0	0	406,525	264,193
Skilletfish-post-yolk sac larvae	0	0	4,175,575	2,333,528	128,485	176,320	34,680	0	0	0	6,848,588	4,255,733
Skilletfish-yolk-sac larvae	0	0	63,566	406,928	0	0	0	0	0	0	470,494	527,185
Spot-juvenile	92,915	645,586	0	0	0	0	0	0	0	0	738,501	402,995
Spot-post-yolk sac larvae	185,830	73,307	0	0	0	0	0	0	0	0	259,136	331,695
Weakfish-juvenile	0	0	63,566	0	0	0	0	0	0	0	63,566	81,365
Total	3,995,336	14,266,725	389,015,285	562,376,676	196,707,649	368,748,714	81,403,374	4,155,027	3,531,066	1,372,894	1,625,572,746	483,046,560

TABLE F-5. MONTHLY ENTRAINMENT ESTIMATE AT CALVERT CLIFFS NUCLEAR POWER PLANT FOR UNIT 1 AND UNIT 2 DURING DAYTIME AT ACTUAL FLOWS, APRIL - SEPTEMBER 2006

Taxon-Lifestage	April	May	June	July	August	September	Estimated Total	80% Confidence Interval (+/-)
American eel-juvenile	0	0	0	0	0	0	0	0
Atherinopsidae sp.-fertilized egg	0	0	580,556	168,157	0	0	748,712	958,352
Atherinopsidae sp.-N/A	0	0	0	0	0	0	0	0
Atherinopsidae sp.-post-yolk sac larvae	0	0	0	0	0	0	0	0
Atlantic croaker-juvenile	0	0	0	0	0	0	0	0
Atlantic croaker-post-yolk sac larvae	0	0	0	0	0	0	0	0
Atlantic menhaden-fertilized egg	7,302,589	77,193,809	19,907,510	0	0	0	104,403,908	116,870,249
Atlantic menhaden-juvenile	0	0	0	0	0	0	0	0
Atlantic menhaden-post-yolk sac larvae	0	0	0	0	0	0	0	0
Atlantic menhaden-yolk-sac larvae	0	0	0	0	0	0	0	0
Atlantic silverside-fertilized egg	0	0	0	0	0	0	0	0
Atlantic silverside-juvenile	0	0	0	0	0	0	0	0
Atlantic silverside-post-yolk sac larvae	0	874,010	234,206	0	0	0	1,108,216	1,418,516
Atlantic silverside-unfertilized egg	0	0	0	0	0	0	0	0
Atlantic silverside-yolk-sac larvae	0	0	0	0	0	0	0	0
Bay anchovy-adult	0	0	0	0	0	0	0	0
Bay anchovy-fertilized egg	0	1,775,113,729	563,336,276	96,113,861	88,529,318	38,226,766	2,561,319,949	2,793,432,167
Bay anchovy-juvenile	0	0	0	504,158,277	203,222,751	283,161	707,664,188	904,878,028
Bay anchovy-N/A	0	0	0	0	0	0	0	0
Bay anchovy-post-yolk sac larvae	0	874,010	1,975,873	504,470	90,793,773	57,764,891	151,913,017	2,749,410
Bay anchovy-yolk-sac larvae	0	0	0	0	13,797,093	8,777,998	22,575,091	0
Damaged egg-fertilized egg	0	0	35,994,445	13,226,593	3,351,880	1,415,806	53,988,725	57,936,295
Damaged egg-N/A	0	0	0	0	0	0	0	0
Damaged fish-N/A	0	0	0	0	0	0	0	0
Damaged fish-post-yolk sac larvae	0	0	0	0	445,068	283,161	728,229	0
Feather blenny-juvenile	0	0	0	0	0	0	0	0
Feather blenny-post-yolk sac larvae	0	0	0	0	0	0	0	0
Feather blenny-yolk-sac larvae	0	0	0	0	0	0	0	0
Fundulus sp.-fertilized egg	0	0	580,556	168,157	0	0	748,712	958,352
Gizzard shad-fertilized egg	0	0	0	0	0	0	0	0
Goby sp.-post-yolk sac larvae	0	0	0	0	0	0	0	0
Green goby-juvenile	0	0	0	0	0	0	0	0
Green goby-post-yolk sac larvae	0	0	0	0	445,068	283,161	728,229	0
Hogchoker-fertilized egg	0	0	4,063,889	1,877,317	7,847,783	4,813,741	18,602,730	6,400,176
Hogchoker-post-yolk sac larvae	0	0	0	0	0	0	0	0
Naked goby-fertilized egg	0	0	0	0	0	0	0	0
Naked goby-juvenile	0	0	0	700,220	281,636	0	981,855	1,256,775
Naked goby-post-yolk sac larvae	0	0	2,322,222	3,473,506	8,692,690	4,813,741	19,302,160	5,207,635
Naked goby-yolk-sac larvae	0	0	0	0	0	0	0	0
Northern Kingfish-post-yolk sac larvae	0	0	0	0	0	0	0	0
Northern pipefish-juvenile	0	0	0	0	0	0	0	0
Northern pipefish-post-yolk sac larvae	0	0	580,556	168,157	0	0	748,712	958,352
Rough silverside-fertilized egg	0	0	0	0	445,068	283,161	728,229	0
Rough silverside-juvenile	0	0	0	0	0	0	0	0
Rough silverside-post-yolk sac larvae	0	0	0	0	0	0	0	0
Rough silverside-yolk-sac larvae	0	0	0	0	0	0	0	0
Sciaenidae sp.-fertilized egg	0	3,496,039	147,236,826	81,587,792	28,678,556	8,211,676	269,210,889	225,386,045
Sciaenidae sp.-N/A	0	0	0	0	0	0	0	0
Silver perch-post-yolk sac larvae	0	0	0	0	0	0	0	0
Skilletfish-juvenile	0	0	0	0	0	0	0	0
Skilletfish-post-yolk sac larvae	0	13,984,155	3,747,296	0	890,135	566,322	19,187,909	22,696,258
Skilletfish-yolk-sac larvae	0	0	0	0	0	0	0	0
Spot-juvenile	0	0	0	0	0	0	0	0
Spot-post-yolk sac larvae	0	0	0	0	0	0	0	0
Weakfish-juvenile	0	0	0	0	0	0	0	0
Total	7,302,589	1,871,535,752	780,560,210	702,146,505	447,420,818	125,723,586	3,934,689,459	2,947,961,798

TABLE F-6. MONTHLY ENTRAINMENT ESTIMATE AT CALVERT CLIFFS NUCLEAR POWER PLANT FOR UNIT 1 AND UNIT 2 DURING NIGHTTIME AT ACTUAL FLOWS, MARCH - DECEMBER 2006

Taxon-Lifestage	March	April	May	June	July	August	September	October	November	December	Estimated Total	80% Confidence Interval (+/-)
American eel-juvenile	0	146,854	63,567	0	0	0	0	0	0	0	210,421	156,128
Atherinopsidae sp.-fertilized egg	0	0	73,617	344,503	956,471	0	0	0	0	0	1,374,591	1,001,814
Atherinopsidae sp.-N/A	0	48,317	63,567	0	0	0	0	0	0	0	111,884	143,212
Atherinopsidae sp.-post-yolk sac larvae	0	0	259,824	0	0	0	0	0	0	0	259,824	192,514
Atlantic croaker-juvenile	0	0	0	0	0	0	1,129,296	3,095,989	4,496,132	1,133,951	9,855,369	5,543,532
Atlantic croaker-post-yolk sac larvae	0	0	0	0	0	450,205	523,116	0	0	0	973,321	870,471
Atlantic menhaden-fertilized egg	0	15,785,671	64,532,116	7,261,917	0	0	0	0	0	0	87,579,704	48,791,471
Atlantic menhaden-juvenile	0	5,047,450	250,396	0	0	0	0	0	0	0	5,297,846	2,325,444
Atlantic menhaden-post-yolk sac larvae	0	0	0	114,834	0	0	0	0	0	0	114,834	146,988
Atlantic menhaden-yolk-sac larvae	0	48,317	210,801	0	0	0	0	0	0	0	259,118	236,699
Atlantic silverside-fertilized egg	0	0	136,562	198,535	0	0	0	0	0	0	335,097	230,162
Atlantic silverside-juvenile	0	0	0	709,168	0	0	0	0	0	859,014	1,568,182	1,235,739
Atlantic silverside-post-yolk sac larvae	0	48,317	4,574,117	2,068,344	102,881	0	0	0	0	0	6,793,659	3,441,925
Atlantic silverside-unfertilized egg	0	0	493,046	0	0	0	0	0	0	0	493,046	631,099
Atlantic silverside-yolk-sac larvae	0	0	1,007,724	936,413	0	0	0	0	0	0	1,944,137	1,342,496
Bay anchovy-adult	0	101,955	147,234	0	149,270	0	0	0	0	0	398,459	298,419
Bay anchovy-fertilized egg	0	483,172	673,940,038	991,097,595	61,153,756	207,242,443	15,107,982	0	0	0	1,949,024,986	893,384,789
Bay anchovy-juvenile	0	1,008,452	274,368	3,399,569	47,418,092	13,199,766	35,003,650	4,712,774	2,410,942	595,587	108,023,200	58,973,308
Bay anchovy-N/A	0	0	0	0	308,643	0	0	0	0	0	308,643	395,063
Bay anchovy-post-yolk sac larvae	0	0	851,661	4,725,830	5,988,692	128,250,795	62,339,024	0	0	0	202,156,001	182,522,398
Bay anchovy-yolk-sac larvae	0	0	0	411,241	0	1,800,822	1,083,981	0	0	0	3,296,043	3,729,878
Damaged egg-fertilized egg	0	0	1,156,527	2,059,670	6,096,406	2,366,654	203,246	0	0	0	11,882,503	4,708,090
Damaged egg-N/A	0	102,717	0	0	0	0	0	0	0	0	102,717	131,478
Damaged fish-N/A	0	0	0	82,248	0	0	0	0	0	0	82,248	105,278
Damaged fish-post-yolk sac larvae	0	0	564,217	365,352	3,718,486	1,330,933	0	0	0	0	5,978,988	2,748,717
Feather blenny-juvenile	0	0	0	84,970	58,834	44,605	0	0	0	0	188,409	171,346
Feather blenny-post-yolk sac larvae	0	0	142,552	2,182,113	334,385	1,008,142	0	0	0	0	3,667,192	2,223,404
Feather blenny-yolk-sac larvae	0	0	0	113,565	0	337,654	203,246	0	0	0	654,465	707,448
Fundulus sp.-fertilized egg	0	0	0	0	502,321	0	0	0	0	0	502,321	382,751
Gizzard shad-fertilized egg	0	0	123,262	0	0	0	0	0	0	0	123,262	157,775
Goby sp.-post-yolk sac larvae	0	0	0	3,041,464	1,607,937	0	0	0	0	0	4,649,401	3,434,211
Green goby-juvenile	0	0	0	0	252,151	0	0	0	0	0	252,151	192,545
Green goby-post-yolk sac larvae	0	0	0	0	270,074	114,276	252,121	0	0	0	636,470	396,499
Hogchoker-fertilized egg	0	0	0	4,824,456	3,438,293	0	0	0	0	0	8,262,749	4,318,190
Hogchoker-post-yolk sac larvae	0	0	0	0	0	225,103	135,498	0	0	0	360,600	461,568
Naked goby-fertilized egg	0	0	0	229,668	0	0	0	0	0	0	229,668	293,975
Naked goby-juvenile	0	0	0	82,248	7,470,526	1,369,709	2,269,088	0	0	0	11,191,570	6,794,384
Naked goby-post-yolk sac larvae	0	0	997,861	25,953,476	16,262,388	6,950,226	2,596,706	0	0	0	52,760,655	25,104,880
Naked goby-yolk-sac larvae	0	0	0	507,912	0	228,552	0	0	0	0	736,464	516,769
Northern Kingfish-post-yolk sac larvae	0	0	0	0	0	0	208,352	34,558	0	0	242,910	310,924
Northern pipefish-juvenile	0	0	0	0	0	0	208,352	34,558	0	0	242,910	310,924
Northern pipefish-post-yolk sac larvae	0	0	462,692	170,078	0	0	0	0	0	0	632,770	380,361
Rough silverside-fertilized egg	0	0	136,562	227,130	0	0	0	0	0	0	363,692	339,229
Rough silverside-juvenile	0	0	0	113,565	0	0	0	0	0	0	113,565	145,363
Rough silverside-post-yolk sac larvae	0	0	0	198,535	102,881	0	0	0	0	0	301,416	199,402
Rough silverside-yolk-sac larvae	0	0	73,617	0	0	0	0	0	0	0	73,617	94,230
Sciaenidae sp.-fertilized egg	0	0	2,845,227	41,176,436	225,895,237	349,261,177	36,730,973	0	0	0	655,909,050	223,922,266
Sciaenidae sp.-N/A	0	0	0	0	3,806,596	0	0	0	0	0	3,806,596	4,872,443
Silver perch-post-yolk sac larvae	0	0	0	0	203,781	112,551	67,749	0	0	0	384,081	295,437
Skilletfish-juvenile	0	0	0	595,604	201,800	0	0	0	0	0	797,404	518,167
Skilletfish-post-yolk sac larvae	0	0	8,110,377	4,558,660	250,789	340,989	67,749	0	0	0	13,328,564	8,255,291
Skilletfish-yolk-sac larvae	0	0	123,262	794,954	0	0	0	0	0	0	918,216	1,029,700
Spot-juvenile	0	1,015,084	0	0	0	0	0	0	0	0	1,015,084	695,920
Spot-post-yolk sac larvae	0	47,736	0	0	0	0	0	0	0	0	47,736	61,103
Weakfish-juvenile	0	0	123,262	0	0	0	0	0	0	0	123,262	157,775
Total	0	23,884,045	761,738,053	1,098,630,049	386,550,691	714,634,602	158,130,128	7,877,879	6,907,074	2,588,551	3,160,941,074	942,526,205

TABLE F-7. MONTHLY ENTRAINMENT ESTIMATE AT CALVERT CLIFFS NUCLEAR POWER PLANT FOR UNIT 1 DURING DAYTIME AT ACTUAL FLOWS, MARCH - SEPTEMBER 2007

Taxon-Lifestage	March	April	May	June	July	August	September	Estimated Total	80% Confidence Interval (+/-)
American eel-juvenile	0	298,393	0	0	0	0	0	298,393	381,943
Atherinopsidae sp.-fertilized egg	0	0	0	0	165,044	0	0	165,044	211,256
Atherinopsidae sp.-post-yolk sac larvae	0	0	0	0	0	0	0	0	0
Atlantic croaker-juvenile	0	0	0	0	0	0	0	0	0
Atlantic menhaden-fertilized egg	0	0	108,876,754	2,279,985	0	0	0	111,156,738	131,681,211
Atlantic menhaden-juvenile	0	298,393	0	167,218	0	0	0	465,611	437,827
Atlantic menhaden-post-yolk sac larvae	0	0	7,796,213	0	0	0	0	7,796,213	9,979,153
Atlantic menhaden-yolk-sac larvae	0	0	1,559,243	0	0	0	0	1,559,243	1,995,831
Atlantic silverside-fertilized egg	0	0	0	0	0	0	0	0	0
Atlantic silverside-juvenile	0	0	0	297,068	35,324	0	0	332,392	245,650
Atlantic silverside-post-yolk sac larvae	0	0	208,256	1,287,448	0	0	0	1,495,705	1,415,034
Atlantic silverside-yolk-sac larvae	0	0	0	0	0	0	0	0	0
Bay anchovy-adult	0	149,196	0	0	0	138,403	0	287,600	260,489
Bay anchovy-fertilized egg	0	0	200,121,081	344,486,019	67,244,665	78,506,706	2,264,913	692,623,385	87,821,632
Bay anchovy-juvenile	48,972	687,135	0	12,688,949	2,639,121	17,216,443	1,356,520	34,637,140	24,383,421
Bay anchovy-post-yolk sac larvae	0	0	5,102,282	233,527,368	6,322,960	38,527,292	5,557,585	289,037,486	289,529,757
Bay anchovy-yolk-sac larvae	0	0	0	0	660,175	0	0	660,175	845,024
Black drum-post-yolk sac larvae	0	0	104,128	58,461	0	0	0	162,589	208,114
Blackcheek tonguefish-post-yolk sac larvae	0	0	0	0	0	0	0	0	0
Damaged egg-fertilized egg	48,972	4,598,780	2,983,581	318,161	232,402	323,540	0	8,505,437	6,887,669
Damaged fish-juvenile	0	0	0	129,850	35,324	0	0	165,174	211,422
Damaged fish-N/A	0	0	0	0	0	0	0	0	0
Damaged fish-post-yolk sac larvae	0	0	8,006,256	831,384	1,019,009	22,744	0	9,879,393	8,109,899
Damaged fish-undetermined	0	0	0	0	0	0	0	0	0
Damaged fish-yolk-sac larvae	0	0	0	0	0	156,084	0	156,084	199,788
Feather blenny-juvenile	0	0	0	0	0	0	129,077	129,077	165,218
Feather blenny-post-yolk sac larvae	0	0	0	668,872	0	432,891	0	1,101,763	922,640
Feather blenny-yolk-sac larvae	0	0	0	0	0	0	0	0	0
Gizzard shad-fertilized egg	0	0	0	0	0	0	0	0	0
Gizzard shad-post-yolk sac larvae	0	0	0	0	0	0	0	0	0
Gizzard shad-yolk-sac larvae	0	0	0	0	0	0	0	0	0
Green goby-juvenile	0	0	0	0	0	0	0	0	0
Green goby-post-yolk sac larvae	0	0	0	0	0	0	0	0	0
Hogchoker-fertilized egg	0	0	0	1,168,651	19,256,410	11,558,596	792,720	32,776,377	22,221,123
Hogchoker-post-yolk sac larvae	0	0	0	0	0	0	0	0	0
Hogchoker-yolk-sac larvae	0	0	0	0	0	0	0	0	0
Inland silverside-fertilized egg	0	0	0	0	0	0	0	0	0
Inland silverside-post-yolk sac larvae	0	0	0	0	0	0	0	0	0
Naked goby-fertilized egg	0	0	0	167,218	0	0	0	167,218	214,039
Naked goby-juvenile	0	0	0	259,700	2,034,729	338,401	452,983	3,085,813	1,656,666
Naked goby-post-yolk sac larvae	0	0	0	6,464,514	5,447,302	11,244,170	1,245,702	24,401,688	8,292,327
Naked goby-yolk-sac larvae	0	0	0	167,218	656,887	198,820	113,246	1,136,171	602,662
Northern pipefish-juvenile	0	0	0	0	0	0	0	0	0
Northern pipefish-post-yolk sac larvae	0	0	0	167,218	0	0	0	167,218	214,039
River Herring-post-yolk sac larvae	0	0	208,256	116,922	0	0	0	325,179	416,229
Rough silverside-fertilized egg	0	0	0	464,286	35,324	0	0	499,610	409,406
Rough silverside-post-yolk sac larvae	0	0	0	501,654	0	0	0	501,654	642,117
Sciaenidae sp.-fertilized egg	0	0	416,513	26,801,754	21,835,467	202,309	566,228	49,822,271	41,922,521
Sciaenidae sp.-juvenile	0	0	0	0	0	0	0	0	0
Sciaenidae sp.-post-yolk sac larvae	0	0	0	0	0	138,403	0	138,403	177,156
Skilletfish-fertilized egg	0	0	0	0	0	0	0	0	0
Skilletfish-juvenile	0	0	0	334,436	0	138,403	0	472,839	463,287
Skilletfish-post-yolk sac larvae	0	0	5,310,538	5,786,857	688,921	3,034,346	113,246	14,933,908	10,089,061
Skilletfish-yolk-sac larvae	0	0	208,256	116,922	165,044	156,084	129,077	775,384	506,903
Spot-juvenile	1,381,976	1,500,286	0	0	0	0	0	2,882,262	1,490,146
Spot-post-yolk sac larvae	0	0	0	0	0	0	0	0	0
striped blenny-juvenile	0	0	0	0	0	0	0	0	0
striped blenny-yolk-sac larvae	0	0	0	0	0	0	0	0	0
Weakfish-juvenile	0	0	0	0	0	0	0	0	0
Weakfish-post-yolk sac larvae	0	0	0	129,850	35,324	432,891	0	598,065	403,684
White perch-fertilized egg	48,972	2,626,688	0	0	0	0	0	2,675,660	3,191,500
Total	1,528,893	10,158,871	340,901,358	639,387,985	128,509,431	162,766,528	12,721,296	1,295,974,362	334,864,861

TABLE F-8. MONTHLY ENTRAINMENT ESTIMATE AT CALVERT CLIFFS NUCLEAR POWER PLANT FOR UNIT 1 DURING NIGHTTIME AT ACTUAL FLOWS, JANUARY - SEPTEMBER 2007

Taxon-Lifestage	January	February	March	April	May	June	July	August	September	Estimated Total	80% Confidence Interval (+/-)
American eel-juvenile	0	40,661	291,709	61,934	0	0	0	0	0	394,304	230,125
Atherinopsidae sp.-fertilized egg	0	0	0	0	0	0	151,150	0	0	151,150	193,472
Atherinopsidae sp.-post-yolk sac larvae	0	0	0	0	409,557	450,475	0	47,587	0	907,618	463,543
Atlantic croaker-juvenile	3,627,347	551,530	0	0	0	0	0	58,817	0	4,237,693	3,743,590
Atlantic menhaden-fertilized egg	0	0	0	0	25,683,755	557,458	0	0	0	26,241,212	18,210,637
Atlantic menhaden-juvenile	0	0	0	172,810	51,657	0	0	0	0	224,467	230,868
Atlantic menhaden-post-yolk sac larvae	0	133,597	0	180,772	2,885,600	0	0	0	0	3,199,969	3,526,641
Atlantic menhaden-yolk-sac larvae	0	0	0	0	257,619	0	0	0	0	257,619	329,753
Atlantic silverside-fertilized egg	0	0	0	0	0	0	50,383	0	0	50,383	64,491
Atlantic silverside-juvenile	0	0	0	0	0	49,401	0	0	0	49,401	63,234
Atlantic silverside-post-yolk sac larvae	0	0	0	0	647,895	1,372,284	0	104,780	0	2,124,959	844,755
Atlantic silverside-yolk-sac larvae	0	0	0	0	0	100,653	50,383	0	0	151,037	144,076
Bay anchovy-adult	616,546	554,717	607,006	57,603	0	0	172,672	142,063	133,727	2,284,334	989,326
Bay anchovy-fertilized egg	0	0	0	0	256,455,548	108,109,498	22,424,467	59,760,116	1,128,154	447,877,783	198,126,914
Bay anchovy-juvenile	2,620,322	461,781	403,214	88,488	0	5,920,847	10,271,615	8,375,159	5,218,248	33,359,674	10,411,937
Bay anchovy-post-yolk sac larvae	0	267,193	0	0	520,190	73,297,566	7,993,008	22,769,225	12,588,056	117,435,239	66,744,721
Bay anchovy-yolk-sac larvae	0	0	0	0	0	485,952	50,383	0	0	536,335	544,402
Black drum-post-yolk sac larvae	0	0	0	0	0	0	0	0	0	0	0
Blackcheek tonguefish-post-yolk sac larvae	0	0	0	59,419	0	0	0	0	0	59,419	76,056
Damaged egg-fertilized egg	0	0	0	895,718	623,143	294,416	50,383	0	0	1,863,660	1,669,166
Damaged fish-juvenile	0	0	0	0	0	0	0	0	0	0	0
Damaged fish-N/A	0	0	0	61,934	0	0	0	0	0	61,934	79,276
Damaged fish-post-yolk sac larvae	0	0	0	0	1,956,545	334,027	50,019	58,817	0	2,399,407	1,381,210
Damaged fish-undetermined	0	0	0	0	390,143	128,751	0	0	0	518,893	664,184
Damaged fish-yolk-sac larvae	0	0	0	0	0	0	0	0	0	0	0
Feather blenny-juvenile	0	0	0	0	0	0	22,250	37,795	0	60,045	76,858
Feather blenny-post-yolk sac larvae	0	0	0	0	43,349	416,919	195,651	468,024	0	1,123,943	625,295
Feather blenny-yolk-sac larvae	0	0	0	0	0	49,351	203,243	0	66,863	319,458	230,636
Gizzard shad-fertilized egg	0	0	0	0	51,524	0	0	0	0	51,524	65,951
Gizzard shad-post-yolk sac larvae	0	0	0	0	0	99,678	0	0	0	99,678	73,670
Gizzard shad-yolk-sac larvae	0	0	0	0	463,847	0	0	0	0	463,847	509,393
Green goby-juvenile	0	0	0	0	0	0	0	0	62,363	62,363	79,825
Green goby-post-yolk sac larvae	0	0	0	0	0	0	52,093	0	63,299	115,392	104,932
Hogchoker-fertilized egg	0	0	0	0	0	2,215,333	90,753,130	72,301,586	14,679,685	179,949,734	64,436,706
Hogchoker-post-yolk sac larvae	0	0	0	0	0	0	72,634	96,611	0	169,245	125,436
Hogchoker-yolk-sac larvae	0	0	0	0	0	0	50,019	0	0	50,019	64,024
Inland silverside-fertilized egg	0	0	0	0	54,589	0	0	0	0	54,589	69,874
Inland silverside-post-yolk sac larvae	0	0	0	0	43,349	14,306	0	0	0	57,655	73,798
Naked goby-fertilized egg	0	0	0	0	0	0	0	113,363	0	113,363	145,105
Naked goby-juvenile	0	0	0	0	0	194,022	995,121	624,869	190,000	2,004,012	643,161
Naked goby-post-yolk sac larvae	0	0	0	0	0	7,045,926	5,871,375	9,498,780	1,129,846	23,545,927	6,990,255
Naked goby-yolk-sac larvae	0	0	0	0	0	493,511	305,715	96,197	0	895,423	654,764
Northern pipefish-juvenile	0	0	0	0	0	149,129	0	0	0	149,129	121,295
Northern pipefish-post-yolk sac larvae	0	0	0	0	43,349	114,033	0	0	0	157,383	67,812
River Herring-post-yolk sac larvae	0	0	0	0	693,587	228,890	0	0	0	922,477	1,180,771
Rough silverside-fertilized egg	0	0	0	0	54,589	98,752	306,207	0	0	459,548	197,300
Rough silverside-post-yolk sac larvae	0	0	0	0	260,095	185,512	22,250	96,611	0	564,469	418,810
Sciaenidae sp.-fertilized egg	0	0	0	0	300,968	22,664,461	35,523,031	907,150	4,680,046	64,075,656	24,035,970
Sciaenidae sp.-juvenile	0	0	0	0	0	0	0	0	133,727	133,727	171,171
Sciaenidae sp.-post-yolk sac larvae	0	0	0	0	0	0	0	56,682	124,726	181,408	151,756
Skilletfish-fertilized egg	0	0	0	0	0	0	155,786	0	0	155,786	148,817
Skilletfish-juvenile	0	0	0	0	43,349	810,853	72,270	37,795	0	964,266	414,632
Skilletfish-post-yolk sac larvae	0	0	0	0	2,797,460	3,736,872	1,124,451	1,624,414	255,825	9,539,023	3,564,062
Skilletfish-yolk-sac larvae	0	0	0	0	0	246,756	561,518	0	0	808,274	524,968
Spot-juvenile	0	0	2,231,968	560,209	0	0	0	0	0	2,792,177	2,360,808
Spot-post-yolk sac larvae	0	20,330	80,064	61,934	0	0	0	0	0	162,328	150,990
striped blenny-juvenile	0	0	0	0	0	49,401	0	0	0	49,401	63,234
striped blenny-yolk-sac larvae	0	0	0	0	0	148,053	0	0	0	148,053	189,508
Weakfish-juvenile	0	0	0	0	0	48,506	0	0	66,863	115,369	105,734
Weakfish-post-yolk sac larvae	0	0	0	0	0	48,506	0	289,813	446,107	784,426	276,160
White perch-fertilized egg	0	0	179,464	2,550,606	186,943	0	0	0	0	2,917,013	796,842
Total	6,864,216	2,029,809	3,793,424	4,751,428	294,918,652	230,160,098	177,551,208	177,566,251	40,967,537	938,602,621	221,325,040

TABLE F-9. MONTHLY ENTRAINMENT ESTIMATE AT CALVERT CLIFFS NUCLEAR POWER PLANT FOR UNIT 2 DURING DAYTIME AT ACTUAL FLOWS, MARCH - SEPTEMBER 2007

Taxon-Lifestage	March	April	May	June	July	August	September	Estimated Total	80% Confidence Interval (+/-)
American eel-juvenile	0	305,488	0	0	0	0	0	305,488	391,024
Atherinopsidae sp.-fertilized egg	0	0	0	0	168,968	0	0	168,968	216,279
Atherinopsidae sp.-post-yolk sac larvae	0	0	0	0	0	0	0	0	0
Atlantic croaker-juvenile	0	0	0	0	0	0	0	0	0
Atlantic menhaden-fertilized egg	0	0	108,886,983	2,334,198	0	0	0	111,221,181	131,633,006
Atlantic menhaden-juvenile	0	305,488	0	171,194	0	0	0	476,682	448,238
Atlantic menhaden-post-yolk sac larvae	0	0	7,795,061	0	0	0	0	7,795,061	9,977,678
Atlantic menhaden-yolk-sac larvae	0	0	1,559,012	0	0	0	0	1,559,012	1,995,536
Atlantic silverside-fertilized egg	0	0	0	0	0	0	0	0	0
Atlantic silverside-juvenile	0	0	0	304,132	36,164	0	0	340,295	251,491
Atlantic silverside-post-yolk sac larvae	0	0	209,576	1,318,062	0	0	0	1,527,637	1,448,961
Atlantic silverside-yolk-sac larvae	0	0	0	0	0	0	0	0	0
Bay anchovy-adult	0	152,744	0	0	0	142,092	0	294,836	267,029
Bay anchovy-fertilized egg	0	0	200,553,173	352,677,232	68,886,126	80,460,613	2,318,726	704,895,870	92,243,371
Bay anchovy-juvenile	18,341	697,131	0	12,990,667	2,702,971	17,629,647	1,393,577	35,432,335	24,962,105
Bay anchovy-post-yolk sac larvae	0	0	5,134,601	239,080,199	6,473,856	39,555,477	5,704,799	295,948,931	296,469,814
Bay anchovy-yolk-sac larvae	0	0	0	0	675,873	0	0	675,873	865,118
Black drum-post-yolk sac larvae	0	0	104,788	59,851	0	0	0	164,639	210,738
Blackcheek tonguefish-post-yolk sac larvae	0	0	0	0	0	0	0	0	0
Damaged egg-fertilized egg	18,341	4,701,787	3,100,672	325,727	238,203	331,233	0	8,715,964	7,131,424
Damaged fish-juvenile	0	0	0	132,938	36,164	0	0	169,101	216,450
Damaged fish-N/A	0	0	0	0	0	0	0	0	0
Damaged fish-post-yolk sac larvae	0	0	8,013,172	851,153	1,043,788	23,285	0	9,931,397	8,106,768
Damaged fish-undetermined	0	0	0	0	0	0	0	0	0
Damaged fish-yolk-sac larvae	0	0	0	0	0	159,796	0	159,796	204,538
Feather blenny-juvenile	0	0	0	0	0	0	132,833	132,833	170,026
Feather blenny-post-yolk sac larvae	0	0	0	684,777	0	443,980	0	1,128,756	944,897
Feather blenny-yolk-sac larvae	0	0	0	0	0	0	0	0	0
Gizzard shad-fertilized egg	0	0	0	0	0	0	0	0	0
Gizzard shad-post-yolk sac larvae	0	0	0	0	0	0	0	0	0
Gizzard shad-yolk-sac larvae	0	0	0	0	0	0	0	0	0
Green goby-juvenile	0	0	0	0	0	0	0	0	0
Green goby-post-yolk sac larvae	0	0	0	0	0	0	0	0	0
Hogchoker-fertilized egg	0	0	0	1,196,439	19,745,284	11,840,837	811,554	33,594,114	22,783,102
Hogchoker-post-yolk sac larvae	0	0	0	0	0	0	0	0	0
Hogchoker-yolk-sac larvae	0	0	0	0	0	0	0	0	0
Inland silverside-fertilized egg	0	0	0	0	0	0	0	0	0
Inland silverside-post-yolk sac larvae	0	0	0	0	0	0	0	0	0
Naked goby-fertilized egg	0	0	0	171,194	0	0	0	171,194	219,129
Naked goby-juvenile	0	0	0	265,875	2,084,483	347,494	463,745	3,161,597	1,697,234
Naked goby-post-yolk sac larvae	0	0	0	6,618,227	5,580,668	11,529,130	1,275,299	25,003,324	8,493,005
Naked goby-yolk-sac larvae	0	0	0	171,194	672,780	203,810	115,936	1,163,720	617,062
Northern pipefish-juvenile	0	0	0	0	0	0	0	0	0
Northern pipefish-post-yolk sac larvae	0	0	0	171,194	0	0	0	171,194	219,129
River Herring-post-yolk sac larvae	0	0	209,576	119,702	0	0	0	329,278	421,476
Rough silverside-fertilized egg	0	0	0	475,326	36,164	0	0	511,490	419,141
Rough silverside-post-yolk sac larvae	0	0	0	513,582	0	0	0	513,582	657,386
Sciaenidae sp.-fertilized egg	0	0	419,151	27,439,048	22,355,769	208,428	579,682	51,002,077	42,922,160
Sciaenidae sp.-juvenile	0	0	0	0	0	0	0	0	0
Sciaenidae sp.-post-yolk sac larvae	0	0	0	0	0	142,092	0	142,092	181,878
Skilletfish-fertilized egg	0	0	0	0	0	0	0	0	0
Skilletfish-juvenile	0	0	0	342,388	0	142,092	0	484,480	474,498
Skilletfish-post-yolk sac larvae	0	0	5,344,176	5,924,457	705,851	3,109,940	115,936	15,200,361	10,218,626
Skilletfish-yolk-sac larvae	0	0	209,576	119,702	168,968	159,796	132,833	790,875	515,434
Spot-juvenile	214,328	1,472,528	0	0	0	0	0	1,686,856	1,284,116
Spot-post-yolk sac larvae	0	0	0	0	0	0	0	0	0
striped blenny-juvenile	0	0	0	0	0	0	0	0	0
striped blenny-yolk-sac larvae	0	0	0	0	0	0	0	0	0
Weakfish-juvenile	0	0	0	0	0	0	0	0	0
Weakfish-post-yolk sac larvae	0	0	0	132,938	36,164	443,980	0	613,081	414,009
White perch-fertilized egg	18,341	2,682,802	0	0	0	0	0	2,701,144	3,281,547
Total	269,352	10,317,968	341,539,516	654,591,398	131,648,242	166,873,720	13,044,921	1,318,285,117	342,247,403

TABLE F-10. MONTHLY ENTRAINMENT ESTIMATE AT CALVERT CLIFFS NUCLEAR POWER PLANT FOR UNIT 2 DURING NIGHTTIME AT ACTUAL FLOWS, JANUARY - SEPTEMBER 2007

Taxon-Lifestage	January	February	March	April	May	June	July	August	September	Estimated Total	80% Confidence Interval (+/-)
American eel-juvenile	0	0	13,950	63,294	0	0	0	0	0	77,245	82,961
Atherinopsidae sp.-fertilized egg	0	0	0	0	0	0	154,744	0	0	154,744	198,073
Atherinopsidae sp.-post-yolk sac larvae	0	0	0	0	416,589	461,186	0	48,718	0	926,493	474,224
Atlantic croaker-juvenile	3,715,045	490,342	0	0	0	0	0	59,039	0	4,264,426	3,866,707
Atlantic menhaden-fertilized egg	0	0	0	0	25,863,879	570,713	0	0	0	26,434,592	18,338,278
Atlantic menhaden-juvenile	0	0	0	176,919	51,729	0	0	0	0	228,648	235,938
Atlantic menhaden-post-yolk sac larvae	0	99,622	0	184,958	2,913,693	0	0	0	0	3,198,273	3,560,585
Atlantic menhaden-yolk-sac larvae	0	0	0	0	260,207	0	0	0	0	260,207	333,065
Atlantic silverside-fertilized egg	0	0	0	0	0	0	51,581	0	0	51,581	66,024
Atlantic silverside-juvenile	0	0	0	0	0	50,576	0	0	0	50,576	64,737
Atlantic silverside-post-yolk sac larvae	0	0	0	0	659,314	1,404,915	0	108,913	0	2,173,142	864,032
Atlantic silverside-yolk-sac larvae	0	0	0	0	0	103,047	51,581	0	0	154,628	147,502
Bay anchovy-adult	631,207	398,489	13,950	58,973	0	0	176,644	147,083	138,653	1,564,999	839,117
Bay anchovy-fertilized egg	0	0	0	0	258,213,573	110,680,133	22,998,541	61,835,542	1,154,957	454,882,747	199,346,525
Bay anchovy-juvenile	2,682,629	298,866	42,878	79,420	0	6,061,633	10,513,857	8,571,584	5,351,021	33,601,889	10,650,781
Bay anchovy-post-yolk sac larvae	0	199,244	0	0	532,559	75,040,441	8,184,191	23,637,356	12,892,483	120,486,275	68,439,124
Bay anchovy-yolk-sac larvae	0	0	0	0	0	497,507	51,581	0	0	549,088	557,347
Black drum-post-yolk sac larvae	0	0	0	0	0	0	0	0	0	0	0
Blackcheek tonguefish-post-yolk sac larvae	0	0	0	60,832	0	0	0	0	0	60,832	77,865
Damaged egg-fertilized egg	0	0	0	916,679	655,060	301,416	51,581	0	0	1,924,737	1,730,185
Damaged fish-juvenile	0	0	0	0	0	0	0	0	0	0	0
Damaged fish-N/A	0	0	0	63,294	0	0	0	0	0	63,294	81,017
Damaged fish-post-yolk sac larvae	0	0	0	0	1,977,684	341,969	51,208	59,039	0	2,429,901	1,399,767
Damaged fish-undetermined	0	0	0	0	399,420	131,812	0	0	0	531,232	679,977
Damaged fish-yolk-sac larvae	0	0	0	0	0	0	0	0	0	0	0
Feather blenny-juvenile	0	0	0	0	0	0	22,646	38,693	0	61,339	78,514
Feather blenny-post-yolk sac larvae	0	0	0	0	44,380	426,832	200,035	477,976	0	1,149,224	639,978
Feather blenny-yolk-sac larvae	0	0	0	0	0	50,525	208,390	0	69,327	328,241	236,653
Gizzard shad-fertilized egg	0	0	0	0	52,041	0	0	0	0	52,041	66,613
Gizzard shad-post-yolk sac larvae	0	0	0	0	0	102,048	0	0	0	102,048	75,422
Gizzard shad-yolk-sac larvae	0	0	0	0	468,060	0	0	0	0	468,060	514,633
Green goby-juvenile	0	0	0	0	0	0	0	0	63,844	63,844	81,721
Green goby-post-yolk sac larvae	0	0	0	0	0	0	53,646	0	64,804	118,451	107,684
Hogchoker-fertilized egg	0	0	0	0	0	2,268,009	93,292,088	74,095,407	15,028,360	184,683,864	66,491,438
Hogchoker-post-yolk sac larvae	0	0	0	0	0	0	74,227	97,732	0	171,959	127,414
Hogchoker-yolk-sac larvae	0	0	0	0	0	0	51,208	0	0	51,208	65,547
Inland silverside-fertilized egg	0	0	0	0	53,888	0	0	0	0	53,888	68,976
Inland silverside-post-yolk sac larvae	0	0	0	0	44,380	14,646	0	0	0	59,026	75,553
Naked goby-fertilized egg	0	0	0	0	0	0	0	119,343	0	119,343	152,759
Naked goby-juvenile	0	0	0	0	0	198,636	1,019,279	638,306	194,514	2,050,734	656,607
Naked goby-post-yolk sac larvae	0	0	0	0	0	7,213,465	6,017,740	9,760,695	1,157,559	24,149,458	7,174,145
Naked goby-yolk-sac larvae	0	0	0	0	0	505,246	313,299	98,484	0	917,029	670,349
Northern pipefish-juvenile	0	0	0	0	0	152,675	0	0	0	152,675	124,179
Northern pipefish-post-yolk sac larvae	0	0	0	0	44,380	116,745	0	0	0	161,125	69,424
River Herring-post-yolk sac larvae	0	0	0	0	710,079	234,333	0	0	0	944,412	1,208,847
Rough silverside-fertilized egg	0	0	0	0	53,888	101,100	314,118	0	0	469,106	201,647
Rough silverside-post-yolk sac larvae	0	0	0	0	266,280	189,923	22,646	97,732	0	576,580	428,469
Sciaenidae sp.-fertilized egg	0	0	0	0	304,587	23,203,378	36,369,902	936,931	4,791,198	65,605,996	24,606,710
Sciaenidae sp.-juvenile	0	0	0	0	0	0	0	0	138,653	138,653	177,476
Sciaenidae sp.-post-yolk sac larvae	0	0	0	0	0	0	0	59,671	127,688	187,360	155,642
Skilletfish-fertilized egg	0	0	0	0	0	0	160,119	0	0	160,119	153,078
Skilletfish-juvenile	0	0	0	0	44,380	830,133	73,854	38,693	0	987,061	424,459
Skilletfish-post-yolk sac larvae	0	0	0	0	2,854,730	3,825,728	1,150,927	1,671,250	262,780	9,765,414	3,647,705
Skilletfish-yolk-sac larvae	0	0	0	0	0	252,623	574,870	0	0	827,493	537,450
Spot-juvenile	0	0	433,491	562,357	0	0	0	0	0	995,848	667,693
Spot-post-yolk sac larvae	0	0	0	63,294	0	0	0	0	0	63,294	81,017
striped blenny-juvenile	0	0	0	0	0	50,576	0	0	0	50,576	64,737
striped blenny-yolk-sac larvae	0	0	0	0	0	151,574	0	0	0	151,574	194,015
Weakfish-juvenile	0	0	0	0	0	49,659	0	0	69,327	118,985	109,155
Weakfish-post-yolk sac larvae	0	0	0	0	0	49,659	0	296,459	456,713	802,831	281,125
White perch-fertilized egg	0	0	74,887	2,553,818	196,518	0	0	0	0	2,825,223	850,510
Total	7,028,881	1,486,563	579,158	4,783,838	297,081,298	235,632,861	182,204,505	182,894,646	41,961,882	953,653,633	223,617,098

TABLE F-11. MONTHLY ENTRAINMENT ESTIMATE AT CALVERT CLIFFS NUCLEAR POWER PLANT FOR UNIT 1 AND UNIT 2 DURING DAYTIME AT ACTUAL FLOWS, MARCH - SEPTEMBER 2007

Taxon-Lifestage	March	April	May	June	July	August	September	Estimated Total	80% Confidence Interval (+/-)
American eel-juvenile	0	596,785	0	0	0	0	0	596,785	763,885
Atherinopsidae sp.-fertilized egg	0	0	0	0	330,088	0	0	330,088	422,512
Atherinopsidae sp.-post-yolk sac larvae	0	0	0	0	0	0	0	0	0
Atlantic croaker-juvenile	0	0	0	0	0	0	0	0	0
Atlantic menhaden-fertilized egg	0	0	217,753,508	4,559,969	0	0	0	222,313,477	263,362,422
Atlantic menhaden-juvenile	0	596,785	0	334,436	0	0	0	931,221	875,655
Atlantic menhaden-post-yolk sac larvae	0	0	15,592,426	0	0	0	0	15,592,426	19,958,306
Atlantic menhaden-yolk-sac larvae	0	0	3,118,485	0	0	0	0	3,118,485	3,991,661
Atlantic silverside-fertilized egg	0	0	0	0	0	0	0	0	0
Atlantic silverside-juvenile	0	0	0	594,136	70,647	0	0	664,784	491,299
Atlantic silverside-post-yolk sac larvae	0	0	416,513	2,574,897	0	0	0	2,991,410	2,830,067
Atlantic silverside-yolk-sac larvae	0	0	0	0	0	0	0	0	0
Bay anchovy-adult	0	298,393	0	0	0	276,807	0	575,199	520,978
Bay anchovy-fertilized egg	0	0	400,242,162	688,972,038	134,489,330	157,013,413	4,529,827	1,385,246,770	175,643,264
Bay anchovy-juvenile	97,944	1,374,271	0	25,377,897	5,278,241	34,432,886	2,713,040	69,274,280	48,766,843
Bay anchovy-post-yolk sac larvae	0	0	10,204,564	467,054,737	12,645,919	77,054,583	11,115,170	578,074,973	579,059,514
Bay anchovy-yolk-sac larvae	0	0	0	0	1,320,351	0	0	1,320,351	1,690,049
Black drum-post-yolk sac larvae	0	0	208,256	116,922	0	0	0	325,179	416,229
Blackcheek tonguefish-post-yolk sac larvae	0	0	0	0	0	0	0	0	0
Damaged egg-fertilized egg	97,944	9,197,561	5,967,162	636,323	464,805	647,081	0	17,010,875	13,775,338
Damaged fish-juvenile	0	0	0	259,700	70,647	0	0	330,347	422,845
Damaged fish-N/A	0	0	0	0	0	0	0	0	0
Damaged fish-post-yolk sac larvae	0	0	16,012,513	1,662,768	2,038,018	45,487	0	19,758,786	16,219,798
Damaged fish-undetermined	0	0	0	0	0	0	0	0	0
Damaged fish-yolk-sac larvae	0	0	0	0	0	312,168	0	312,168	399,576
Feather blenny-juvenile	0	0	0	0	0	0	258,154	258,154	330,437
Feather blenny-post-yolk sac larvae	0	0	0	1,337,744	0	865,782	0	2,203,526	1,845,280
Feather blenny-yolk-sac larvae	0	0	0	0	0	0	0	0	0
Gizzard shad-fertilized egg	0	0	0	0	0	0	0	0	0
Gizzard shad-post-yolk sac larvae	0	0	0	0	0	0	0	0	0
Gizzard shad-yolk-sac larvae	0	0	0	0	0	0	0	0	0
Green goby-juvenile	0	0	0	0	0	0	0	0	0
Green goby-post-yolk sac larvae	0	0	0	0	0	0	0	0	0
Hogchoker-fertilized egg	0	0	0	2,337,302	38,512,821	23,117,192	1,585,439	65,552,755	44,442,246
Hogchoker-post-yolk sac larvae	0	0	0	0	0	0	0	0	0
Hogchoker-yolk-sac larvae	0	0	0	0	0	0	0	0	0
Inland silverside-fertilized egg	0	0	0	0	0	0	0	0	0
Inland silverside-post-yolk sac larvae	0	0	0	0	0	0	0	0	0
Naked goby-fertilized egg	0	0	0	334,436	0	0	0	334,436	428,078
Naked goby-juvenile	0	0	0	519,400	4,069,459	676,801	905,965	6,171,626	3,313,331
Naked goby-post-yolk sac larvae	0	0	0	12,929,027	10,894,604	22,488,341	2,491,405	48,803,376	16,584,653
Naked goby-yolk-sac larvae	0	0	0	334,436	1,313,773	397,641	226,491	2,272,341	1,205,325
Northern pipefish-juvenile	0	0	0	0	0	0	0	0	0
Northern pipefish-post-yolk sac larvae	0	0	0	334,436	0	0	0	334,436	428,078
River Herring-post-yolk sac larvae	0	0	416,513	233,845	0	0	0	650,357	832,457
Rough silverside-fertilized egg	0	0	0	928,572	70,647	0	0	999,220	818,812
Rough silverside-post-yolk sac larvae	0	0	0	1,003,308	0	0	0	1,003,308	1,284,234
Sciaenidae sp.-fertilized egg	0	0	833,026	53,603,508	43,670,934	404,618	1,132,457	99,644,542	83,845,042
Sciaenidae sp.-juvenile	0	0	0	0	0	0	0	0	0
Sciaenidae sp.-post-yolk sac larvae	0	0	0	0	0	276,807	0	276,807	354,313
Skilletfish-fertilized egg	0	0	0	0	0	0	0	0	0
Skilletfish-juvenile	0	0	0	668,872	0	276,807	0	945,679	926,575
Skilletfish-post-yolk sac larvae	0	0	10,621,077	11,573,714	1,377,843	6,068,691	226,491	29,867,816	20,178,123
Skilletfish-yolk-sac larvae	0	0	416,513	233,845	330,088	312,168	258,154	1,550,767	1,013,805
Spot-juvenile	2,763,952	3,000,571	0	0	0	0	0	5,764,523	2,980,292
Spot-post-yolk sac larvae	0	0	0	0	0	0	0	0	0
striped blenny-juvenile	0	0	0	0	0	0	0	0	0
striped blenny-yolk-sac larvae	0	0	0	0	0	0	0	0	0
Weakfish-juvenile	0	0	0	0	0	0	0	0	0
Weakfish-post-yolk sac larvae	0	0	0	259,700	70,647	865,782	0	1,196,129	807,367
White perch-fertilized egg	97,944	5,253,376	0	0	0	0	0	5,351,320	6,383,000
Total	3,057,785	20,317,742	681,802,717	1,278,775,970	257,018,861	325,533,056	25,442,593	2,591,948,723	669,729,721

TABLE F-12. MONTHLY ENTRAINMENT ESTIMATE AT CALVERT CLIFFS NUCLEAR POWER PLANT FOR UNIT 1 AND UNIT 2 DURING NIGHTTIME AT ACTUAL FLOWS, JANUARY - SEPTEMBER 2007

Taxon-Lifestage	January	February	March	April	May	June	July	August	September	Estimated Total	80% Confidence Interval (+/-)
American eel-juvenile	0	81,321	583,418	123,868	0	0	0	0	0	788,608	460,250
Atherinopsidae sp.-fertilized egg	0	0	0	0	0	0	302,300	0	0	302,300	386,944
Atherinopsidae sp.-post-yolk sac larvae	0	0	0	0	819,114	900,950	0	95,173	0	1,815,237	927,086
Atlantic croaker-juvenile	7,254,693	1,103,060	0	0	0	0	0	117,633	0	8,475,387	7,487,180
Atlantic menhaden-fertilized egg	0	0	0	0	51,367,509	1,114,916	0	0	0	52,482,425	36,421,274
Atlantic menhaden-juvenile	0	0	0	345,620	103,314	0	0	0	0	448,933	461,735
Atlantic menhaden-post-yolk sac larvae	0	267,193	0	361,544	5,771,201	0	0	0	0	6,399,938	7,053,281
Atlantic menhaden-yolk-sac larvae	0	0	0	0	515,238	0	0	0	0	515,238	659,505
Atlantic silverside-fertilized egg	0	0	0	0	0	0	100,767	0	0	100,767	128,981
Atlantic silverside-juvenile	0	0	0	0	0	98,802	0	0	0	98,802	126,467
Atlantic silverside-post-yolk sac larvae	0	0	0	0	1,295,790	2,744,569	0	209,560	0	4,249,918	1,689,510
Atlantic silverside-yolk-sac larvae	0	0	0	0	0	201,307	100,767	0	0	302,073	288,152
Bay anchovy-adult	1,233,093	1,109,434	1,214,011	115,207	0	0	345,344	284,126	267,454	4,568,668	1,978,653
Bay anchovy-fertilized egg	0	0	0	0	512,911,097	216,218,996	44,848,933	119,520,232	2,256,308	895,755,566	396,253,829
Bay anchovy-juvenile	5,240,645	923,562	806,428	176,977	0	11,841,694	20,543,229	16,750,317	10,436,497	66,719,348	20,823,875
Bay anchovy-post-yolk sac larvae	0	534,387	0	0	1,040,381	146,595,133	15,986,016	45,538,451	25,176,111	234,870,478	133,489,441
Bay anchovy-yolk-sac larvae	0	0	0	0	0	971,903	100,767	0	0	1,072,670	1,088,804
Black drum-post-yolk sac larvae	0	0	0	0	0	0	0	0	0	0	0
Blackcheek tonguefish-post-yolk sac larvae	0	0	0	118,838	0	0	0	0	0	118,838	152,113
Damaged egg-fertilized egg	0	0	0	1,791,436	1,246,286	588,832	100,767	0	0	3,727,320	3,338,333
Damaged fish-juvenile	0	0	0	0	0	0	0	0	0	0	0
Damaged fish-N/A	0	0	0	123,868	0	0	0	0	0	123,868	158,551
Damaged fish-post-yolk sac larvae	0	0	0	0	3,913,089	668,053	100,038	117,633	0	4,798,814	2,762,420
Damaged fish-undetermined	0	0	0	0	780,286	257,501	0	0	0	1,037,787	1,328,367
Damaged fish-yolk-sac larvae	0	0	0	0	0	0	0	0	0	0	0
Feather blenny-juvenile	0	0	0	0	0	0	44,501	75,590	0	120,091	153,716
Feather blenny-post-yolk sac larvae	0	0	0	0	86,698	833,838	391,302	936,048	0	2,247,886	1,250,590
Feather blenny-yolk-sac larvae	0	0	0	0	0	98,702	406,486	0	133,727	638,915	461,271
Gizzard shad-fertilized egg	0	0	0	0	103,048	0	0	0	0	103,048	131,901
Gizzard shad-post-yolk sac larvae	0	0	0	0	0	199,356	0	0	0	199,356	147,340
Gizzard shad-yolk-sac larvae	0	0	0	0	927,695	0	0	0	0	927,695	1,018,785
Green goby-juvenile	0	0	0	0	0	0	0	0	124,726	124,726	159,650
Green goby-post-yolk sac larvae	0	0	0	0	0	0	104,186	0	126,599	230,784	209,865
Hogchoker-fertilized egg	0	0	0	0	0	4,430,666	181,506,260	144,603,172	29,359,370	359,899,468	128,873,411
Hogchoker-post-yolk sac larvae	0	0	0	0	0	0	145,268	193,223	0	338,491	250,871
Hogchoker-yolk-sac larvae	0	0	0	0	0	0	100,038	0	0	100,038	128,049
Inland silverside-fertilized egg	0	0	0	0	109,177	0	0	0	0	109,177	139,747
Inland silverside-post-yolk sac larvae	0	0	0	0	86,698	28,611	0	0	0	115,310	147,596
Naked goby-fertilized egg	0	0	0	0	0	0	0	226,726	0	226,726	290,209
Naked goby-juvenile	0	0	0	0	0	388,045	1,990,243	1,249,737	380,000	4,008,025	1,286,322
Naked goby-post-yolk sac larvae	0	0	0	0	0	14,091,852	11,742,750	18,997,559	2,259,692	47,091,853	13,980,510
Naked goby-yolk-sac larvae	0	0	0	0	0	987,023	611,429	192,393	0	1,790,846	1,309,528
Northern pipefish-juvenile	0	0	0	0	0	298,258	0	0	0	298,258	242,590
Northern pipefish-post-yolk sac larvae	0	0	0	0	86,698	228,067	0	0	0	314,765	135,624
River Herring-post-yolk sac larvae	0	0	0	0	1,387,174	457,780	0	0	0	1,844,954	2,361,542
Rough silverside-fertilized egg	0	0	0	0	109,177	197,505	612,415	0	0	919,097	394,599
Rough silverside-post-yolk sac larvae	0	0	0	0	520,190	371,023	44,501	193,223	0	1,128,937	837,619
Sciaenidae sp.-fertilized egg	0	0	0	0	601,937	45,328,922	71,046,061	1,814,300	9,360,093	128,151,313	48,071,941
Sciaenidae sp.-juvenile	0	0	0	0	0	0	0	0	267,454	267,454	342,341
Sciaenidae sp.-post-yolk sac larvae	0	0	0	0	0	0	0	113,363	249,453	362,816	303,512
Skilletfish-fertilized egg	0	0	0	0	0	0	311,572	0	0	311,572	297,635
Skilletfish-juvenile	0	0	0	0	86,698	1,621,705	144,539	75,590	0	1,928,532	829,263
Skilletfish-post-yolk sac larvae	0	0	0	0	5,594,921	7,473,744	2,248,902	3,248,828	511,651	19,078,046	7,128,124
Skilletfish-yolk-sac larvae	0	0	0	0	0	493,511	1,123,036	0	0	1,616,547	1,049,935
Spot-juvenile	0	0	4,463,936	1,120,418	0	0	0	0	0	5,584,354	4,721,616
Spot-post-yolk sac larvae	0	40,661	160,127	123,868	0	0	0	0	0	324,656	301,980
striped blenny-juvenile	0	0	0	0	0	98,802	0	0	0	98,802	126,467
striped blenny-yolk-sac larvae	0	0	0	0	0	296,107	0	0	0	296,107	379,017
Weakfish-juvenile	0	0	0	0	0	97,011	0	0	133,727	230,738	211,468
Weakfish-post-yolk sac larvae	0	0	0	0	0	97,011	0	579,626	892,215	1,568,852	552,320
White perch-fertilized egg	0	0	358,927	5,101,212	373,886	0	0	0	0	5,834,025	1,593,685
Total	13,728,431	4,059,617	7,586,849	9,502,855	589,837,303	460,320,196	355,102,416	355,132,502	81,935,074	1,877,205,243	442,650,079

TABLE F-13. MONTHLY ENTRAINMENT ESTIMATE AT CALVERT CLIFFS NUCLEAR POWER PLANT FOR UNIT 1 DURING DAYTIME AT BASELINE FLOWS, APRIL - SEPTEMBER 2006

Taxon-Lifestage	April	May	June	July	August	September	Estimated Total	80% Confidence Interval (+/-)
American eel-juvenile	0	0	0	0	0	0	0	0
Atherinopsidae sp.-fertilized egg	0	0	297,180	86,533	0	0	383,713	491,153
Atherinopsidae sp.-N/A	0	0	0	0	0	0	0	0
Atherinopsidae sp.-post-yolk sac larvae	0	0	0	0	0	0	0	0
Atlantic croaker-juvenile	0	0	0	0	0	0	0	0
Atlantic croaker-post-yolk sac larvae	0	0	0	0	0	0	0	0
Atlantic menhaden-fertilized egg	3,738,115	39,611,540	10,190,436	0	0	0	53,540,092	59,947,912
Atlantic menhaden-juvenile	0	0	0	0	0	0	0	0
Atlantic menhaden-post-yolk sac larvae	0	0	0	0	0	0	0	0
Atlantic menhaden-yolk-sac larvae	0	0	0	0	0	0	0	0
Atlantic silverside-fertilized egg	0	0	0	0	0	0	0	0
Atlantic silverside-juvenile	0	0	0	0	0	0	0	0
Atlantic silverside-post-yolk sac larvae	0	448,536	119,887	0	0	0	568,423	727,582
Atlantic silverside-unfertilized egg	0	0	0	0	0	0	0	0
Atlantic silverside-yolk-sac larvae	0	0	0	0	0	0	0	0
Bay anchovy-adult	0	0	0	0	0	0	0	0
Bay anchovy-fertilized egg	0	910,976,023	288,365,663	49,268,391	45,622,614	19,567,862	1,313,800,554	1,432,860,020
Bay anchovy-juvenile	0	0	0	258,073,094	104,029,760	144,947	362,247,801	463,197,141
Bay anchovy-N/A	0	0	0	0	0	0	0	0
Bay anchovy-post-yolk sac larvae	0	448,536	1,011,428	259,599	46,937,872	29,569,214	78,226,648	1,409,165
Bay anchovy-yolk-sac larvae	0	0	0	0	7,132,716	4,493,361	11,626,077	0
Damaged egg-fertilized egg	0	0	18,425,162	6,798,781	1,727,103	724,736	27,675,781	29,692,971
Damaged egg-N/A	0	0	0	0	0	0	0	0
Damaged fish-N/A	0	0	0	0	0	0	0	0
Damaged fish-post-yolk sac larvae	0	0	0	0	230,088	144,947	375,035	0
Feather blenny-juvenile	0	0	0	0	0	0	0	0
Feather blenny-post-yolk sac larvae	0	0	0	0	0	0	0	0
Feather blenny-yolk-sac larvae	0	0	0	0	0	0	0	0
Fundulus sp.-fertilized egg	0	0	297,180	86,533	0	0	383,713	491,153
Gizzard shad-fertilized egg	0	0	0	0	0	0	0	0
Goby sp.-post-yolk sac larvae	0	0	0	0	0	0	0	0
Green goby-juvenile	0	0	0	0	0	0	0	0
Green goby-post-yolk sac larvae	0	0	0	0	230,088	144,947	375,035	0
Hogchoker-fertilized egg	0	0	2,080,260	964,165	4,055,656	2,464,101	9,564,182	3,280,190
Hogchoker-post-yolk sac larvae	0	0	0	0	0	0	0	0
Naked goby-fertilized egg	0	0	0	0	0	0	0	0
Naked goby-juvenile	0	0	0	358,435	144,166	0	502,601	643,329
Naked goby-post-yolk sac larvae	0	0	1,188,720	1,779,871	4,488,154	2,464,101	9,920,847	2,666,698
Naked goby-yolk-sac larvae	0	0	0	0	0	0	0	0
Northern Kingfish-post-yolk sac larvae	0	0	0	0	0	0	0	0
Northern pipefish-juvenile	0	0	0	0	0	0	0	0
Northern pipefish-post-yolk sac larvae	0	0	297,180	86,533	0	0	383,713	491,153
Rough silverside-fertilized egg	0	0	0	0	230,088	144,947	375,035	0
Rough silverside-juvenile	0	0	0	0	0	0	0	0
Rough silverside-post-yolk sac larvae	0	0	0	0	0	0	0	0
Rough silverside-yolk-sac larvae	0	0	0	0	0	0	0	0
Sciaenidae sp.-fertilized egg	0	1,794,143	75,368,917	41,878,648	14,745,848	4,203,467	137,991,023	115,510,974
Sciaenidae sp.-N/A	0	0	0	0	0	0	0	0
Silver perch-post-yolk sac larvae	0	0	0	0	0	0	0	0
Skilletfish-juvenile	0	0	0	0	0	0	0	0
Skilletfish-post-yolk sac larvae	0	7,176,571	1,918,200	0	460,175	289,894	9,844,841	11,641,307
Skilletfish-yolk-sac larvae	0	0	0	0	0	0	0	0
Spot-juvenile	0	0	0	0	0	0	0	0
Spot-post-yolk sac larvae	0	0	0	0	0	0	0	0
Weakfish-juvenile	0	0	0	0	0	0	0	0
Total	3,738,115	960,455,349	399,560,213	359,640,582	230,034,328	64,356,525	2,017,785,113	1,365,150,360

TABLE F-14. MONTHLY ENTRAINMENT ESTIMATE AT CALVERT CLIFFS NUCLEAR POWER PLANT FOR UNIT 1 DURING NIGHTTIME AT BASELINE FLOWS, MARCH - DECEMBER 2006

Taxon-Lifestage	March	April	May	June	July	August	September	October	November	December	Estimated Total	80% Confidence Interval (+/-)
American eel-juvenile	0	75,173	32,539	0	0	0	0	0	0	0	107,712	79,920
Atherinopsidae sp.-fertilized egg	0	0	37,684	176,347	491,312	0	0	0	0	0	705,343	514,749
Atherinopsidae sp.-N/A	0	24,733	32,539	0	0	0	0	0	0	0	57,272	73,309
Atherinopsidae sp.-post-yolk sac larvae	0	0	133,471	0	0	0	0	0	0	0	133,471	98,858
Atlantic croaker-juvenile	0	0	0	0	0	0	595,048	1,590,588	2,301,521	599,402	5,086,559	2,827,721
Atlantic croaker-post-yolk sac larvae	0	0	0	0	0	237,541	267,777	0	0	0	505,318	454,093
Atlantic menhaden-fertilized egg	0	8,080,512	33,038,451	3,717,295	0	0	0	0	0	0	44,836,258	24,973,309
Atlantic menhaden-juvenile	3,716,591	4,271,937	128,645	0	0	0	0	0	0	0	8,117,173	5,824,566
Atlantic menhaden-post-yolk sac larvae	0	0	0	58,782	0	0	0	0	0	0	58,782	75,241
Atlantic menhaden-yolk-sac larvae	0	24,733	107,907	0	0	0	0	0	0	0	132,640	121,164
Atlantic silverside-fertilized egg	0	0	69,905	101,628	0	0	0	0	0	0	171,532	117,817
Atlantic silverside-juvenile	0	0	0	363,016	0	0	0	0	0	458,665	821,680	654,232
Atlantic silverside-post-yolk sac larvae	0	24,733	2,347,548	1,058,763	52,664	0	0	0	0	0	3,483,708	1,764,200
Atlantic silverside-unfertilized egg	0	0	254,264	0	0	0	0	0	0	0	254,264	325,458
Atlantic silverside-yolk-sac larvae	0	0	519,132	479,339	0	0	0	0	0	0	998,471	690,676
Bay anchovy-adult	0	52,190	75,367	0	76,410	0	0	0	0	0	203,967	152,758
Bay anchovy-fertilized egg	0	247,331	345,374,353	507,331,992	31,307,094	106,480,141	7,733,610	0	0	0	998,474,520	457,367,502
Bay anchovy-juvenile	0	693,910	140,446	1,740,202	24,274,175	6,783,385	18,347,990	2,531,305	1,234,135	317,505	56,063,052	30,453,438
Bay anchovy-N/A	0	0	0	0	157,991	0	0	0	0	0	157,991	202,228
Bay anchovy-post-yolk sac larvae	0	0	435,956	2,419,100	3,069,493	67,141,637	31,910,663	0	0	0	104,976,849	95,311,301
Bay anchovy-yolk-sac larvae	0	0	0	210,510	0	950,162	554,878	0	0	0	1,715,550	1,945,204
Damaged egg-fertilized egg	0	0	592,014	1,054,322	3,122,842	1,216,778	104,040	0	0	0	6,089,995	2,411,853
Damaged egg-N/A	0	52,580	0	0	0	0	0	0	0	0	52,580	67,302
Damaged fish-N/A	0	0	0	42,102	0	0	0	0	0	0	42,102	53,890
Damaged fish-post-yolk sac larvae	0	0	288,816	187,020	1,905,334	681,290	0	0	0	0	3,062,461	1,407,799
Feather blenny-juvenile	0	0	0	43,495	30,116	22,833	0	0	0	0	96,445	87,710
Feather blenny-post-yolk sac larvae	0	0	72,971	1,117,000	171,397	516,057	0	0	0	0	1,877,424	1,138,188
Feather blenny-yolk-sac larvae	0	0	0	58,133	0	178,155	104,040	0	0	0	340,328	368,794
Fundulus sp.-fertilized egg	0	0	0	0	257,346	0	0	0	0	0	257,346	196,018
Gizzard shad-fertilized egg	0	0	63,566	0	0	0	0	0	0	0	63,566	81,365
Goby sp.-post-yolk sac larvae	0	0	0	1,556,892	825,092	0	0	0	0	0	2,381,984	1,758,277
Green goby-juvenile	0	0	0	0	129,073	0	0	0	0	0	129,073	98,562
Green goby-post-yolk sac larvae	0	0	0	0	138,362	58,497	129,058	0	0	0	325,917	203,043
Hogchoker-fertilized egg	0	0	0	2,469,586	1,762,240	0	0	0	0	0	4,231,826	2,211,918
Hogchoker-post-yolk sac larvae	0	0	0	0	0	118,770	69,360	0	0	0	188,130	240,806
Naked goby-fertilized egg	0	0	0	117,565	0	0	0	0	0	0	117,565	150,483
Naked goby-juvenile	0	0	0	42,102	3,835,093	701,139	1,161,521	0	0	0	5,739,855	3,489,538
Naked goby-post-yolk sac larvae	0	0	510,794	13,285,300	8,342,414	3,586,086	1,329,225	0	0	0	27,053,819	12,856,128
Naked goby-yolk-sac larvae	0	0	0	259,995	0	116,993	0	0	0	0	376,988	264,528
Northern Kingfish-post-yolk sac larvae	0	0	0	0	0	0	112,311	19,223	0	0	131,534	168,363
Northern pipefish-juvenile	0	0	0	0	0	0	112,311	19,223	0	0	131,534	168,363
Northern pipefish-post-yolk sac larvae	0	0	237,786	87,061	0	0	0	0	0	0	324,847	195,702
Rough silverside-fertilized egg	0	0	69,905	116,265	0	0	0	0	0	0	186,170	173,648
Rough silverside-juvenile	0	0	0	58,133	0	0	0	0	0	0	58,133	74,410
Rough silverside-post-yolk sac larvae	0	0	0	101,628	52,664	0	0	0	0	0	154,291	102,072
Rough silverside-yolk-sac larvae	0	0	37,684	0	0	0	0	0	0	0	37,684	48,235
Sciaenidae sp.-fertilized egg	0	0	1,457,380	21,077,766	115,666,542	179,723,544	18,802,183	0	0	0	336,727,415	115,067,601
Sciaenidae sp.-N/A	0	0	0	0	1,948,555	0	0	0	0	0	1,948,555	2,494,150
Silver perch-post-yolk sac larvae	0	0	0	0	104,526	59,385	34,680	0	0	0	198,591	153,127
Skilletfish-juvenile	0	0	0	304,883	103,726	0	0	0	0	0	408,608	265,516
Skilletfish-post-yolk sac larvae	0	0	4,175,575	2,333,528	128,548	176,320	34,680	0	0	0	6,848,650	4,255,735
Skilletfish-yolk-sac larvae	0	0	63,566	406,928	0	0	0	0	0	0	470,494	527,185
Spot-juvenile	92,915	645,586	0	0	0	0	0	0	0	0	738,501	402,995
Spot-post-yolk sac larvae	185,830	73,307	0	0	0	0	0	0	0	0	259,136	331,695
Weakfish-juvenile	0	0	63,566	0	0	0	0	0	0	0	63,566	81,365
Total	3,995,336	14,266,725	390,361,827	562,376,676	197,953,008	368,748,714	81,403,374	4,160,339	3,535,655	1,375,572	1,628,177,226	504,804,724

TABLE F-15. MONTHLY ENTRAINMENT ESTIMATE AT CALVERT CLIFFS NUCLEAR POWER PLANT FOR UNIT 2 DURING DAYTIME AT BASELINE FLOWS, APRIL - SEPTEMBER 2006

Taxon-Lifestage	April	May	June	July	August	September	Estimated Total	80% Confidence Interval (+/-)
American eel-juvenile	0	0	0	0	0	0	0	0
Atherinopsidae sp.-fertilized egg	0	0	297,180	86,533	0	0	383,713	491,153
Atherinopsidae sp.-N/A	0	0	0	0	0	0	0	0
Atherinopsidae sp.-post-yolk sac larvae	0	0	0	0	0	0	0	0
Atlantic croaker-juvenile	0	0	0	0	0	0	0	0
Atlantic croaker-post-yolk sac larvae	0	0	0	0	0	0	0	0
Atlantic menhaden-fertilized egg	3,738,115	39,611,540	10,190,436	0	0	0	53,540,092	59,947,912
Atlantic menhaden-juvenile	0	0	0	0	0	0	0	0
Atlantic menhaden-post-yolk sac larvae	0	0	0	0	0	0	0	0
Atlantic menhaden-yolk-sac larvae	0	0	0	0	0	0	0	0
Atlantic silverside-fertilized egg	0	0	0	0	0	0	0	0
Atlantic silverside-juvenile	0	0	0	0	0	0	0	0
Atlantic silverside-post-yolk sac larvae	0	448,536	119,887	0	0	0	568,423	727,582
Atlantic silverside-unfertilized egg	0	0	0	0	0	0	0	0
Atlantic silverside-yolk-sac larvae	0	0	0	0	0	0	0	0
Bay anchovy-adult	0	0	0	0	0	0	0	0
Bay anchovy-fertilized egg	0	910,976,023	288,365,663	49,268,391	45,622,614	19,567,862	1,313,800,554	1,432,860,020
Bay anchovy-juvenile	0	0	0	258,073,094	104,029,760	144,947	362,247,801	463,197,141
Bay anchovy-N/A	0	0	0	0	0	0	0	0
Bay anchovy-post-yolk sac larvae	0	448,536	1,011,428	259,599	46,937,872	29,569,214	78,226,648	1,409,165
Bay anchovy-yolk-sac larvae	0	0	0	0	7,132,716	4,493,361	11,626,077	0
Damaged egg-fertilized egg	0	0	18,425,162	6,798,781	1,727,103	724,736	27,675,781	29,692,971
Damaged egg-N/A	0	0	0	0	0	0	0	0
Damaged fish-N/A	0	0	0	0	0	0	0	0
Damaged fish-post-yolk sac larvae	0	0	0	0	230,088	144,947	375,035	0
Feather blenny-juvenile	0	0	0	0	0	0	0	0
Feather blenny-post-yolk sac larvae	0	0	0	0	0	0	0	0
Feather blenny-yolk-sac larvae	0	0	0	0	0	0	0	0
Fundulus sp.-fertilized egg	0	0	297,180	86,533	0	0	383,713	491,153
Gizzard shad-fertilized egg	0	0	0	0	0	0	0	0
Goby sp.-post-yolk sac larvae	0	0	0	0	0	0	0	0
Green goby-juvenile	0	0	0	0	0	0	0	0
Green goby-post-yolk sac larvae	0	0	0	0	230,088	144,947	375,035	0
Hogchoker-fertilized egg	0	0	2,080,260	964,165	4,055,656	2,464,101	9,564,182	3,280,190
Hogchoker-post-yolk sac larvae	0	0	0	0	0	0	0	0
Naked goby-fertilized egg	0	0	0	0	0	0	0	0
Naked goby-juvenile	0	0	0	358,435	144,166	0	502,601	643,329
Naked goby-post-yolk sac larvae	0	0	1,188,720	1,779,871	4,488,154	2,464,101	9,920,847	2,666,698
Naked goby-yolk-sac larvae	0	0	0	0	0	0	0	0
Northern Kingfish-post-yolk sac larvae	0	0	0	0	0	0	0	0
Northern pipefish-juvenile	0	0	0	0	0	0	0	0
Northern pipefish-post-yolk sac larvae	0	0	297,180	86,533	0	0	383,713	491,153
Rough silverside-fertilized egg	0	0	0	0	230,088	144,947	375,035	0
Rough silverside-juvenile	0	0	0	0	0	0	0	0
Rough silverside-post-yolk sac larvae	0	0	0	0	0	0	0	0
Rough silverside-yolk-sac larvae	0	0	0	0	0	0	0	0
Sciaenidae sp.-fertilized egg	0	1,794,143	75,368,917	41,878,648	14,745,848	4,203,467	137,991,023	115,510,974
Sciaenidae sp.-N/A	0	0	0	0	0	0	0	0
Silver perch-post-yolk sac larvae	0	0	0	0	0	0	0	0
Skilletfish-juvenile	0	0	0	0	0	0	0	0
Skilletfish-post-yolk sac larvae	0	7,176,571	1,918,200	0	460,175	289,894	9,844,841	11,641,307
Skilletfish-yolk-sac larvae	0	0	0	0	0	0	0	0
Spot-juvenile	0	0	0	0	0	0	0	0
Spot-post-yolk sac larvae	0	0	0	0	0	0	0	0
Weakfish-juvenile	0	0	0	0	0	0	0	0
Total	3,738,115	960,455,349	399,560,213	359,640,582	230,034,328	64,356,525	2,017,785,113	1,365,150,360

TABLE F-16. MONTHLY ENTRAINMENT ESTIMATE AT CALVERT CLIFFS NUCLEAR POWER PLANT FOR UNIT 2 DURING NIGHTTIME AT BASELINE FLOWS, MARCH - DECEMBER 2006

Taxon-Lifestage	March	April	May	June	July	August	September	October	November	December	Estimated Total	80% Confidence Interval (+/-)
American eel-juvenile	0	75,173	32,539	0	0	0	0	0	0	0	107,712	79,920
Atherinopsidae sp.-fertilized egg	0	0	37,684	176,347	491,312	0	0	0	0	0	705,343	514,749
Atherinopsidae sp.-N/A	0	24,733	32,539	0	0	0	0	0	0	0	57,272	73,309
Atherinopsidae sp.-post-yolk sac larvae	0	0	133,471	0	0	0	0	0	0	0	133,471	98,858
Atlantic croaker-juvenile	0	0	0	0	0	0	595,048	1,590,588	2,301,521	599,402	5,086,559	2,827,721
Atlantic croaker-post-yolk sac larvae	0	0	0	0	0	237,541	267,777	0	0	0	505,318	454,093
Atlantic menhaden-fertilized egg	0	8,080,512	33,038,451	3,717,295	0	0	0	0	0	0	44,836,258	24,973,309
Atlantic menhaden-juvenile	3,716,591	4,271,937	128,645	0	0	0	0	0	0	0	8,117,173	5,824,566
Atlantic menhaden-post-yolk sac larvae	0	0	0	58,782	0	0	0	0	0	0	58,782	75,241
Atlantic menhaden-yolk-sac larvae	0	24,733	107,907	0	0	0	0	0	0	0	132,640	121,164
Atlantic silverside-fertilized egg	0	0	69,905	101,628	0	0	0	0	0	0	171,532	117,817
Atlantic silverside-juvenile	0	0	0	363,016	0	0	0	0	0	458,665	821,680	654,232
Atlantic silverside-post-yolk sac larvae	0	24,733	2,347,548	1,058,763	52,664	0	0	0	0	0	3,483,708	1,764,200
Atlantic silverside-unfertilized egg	0	0	254,264	0	0	0	0	0	0	0	254,264	325,458
Atlantic silverside-yolk-sac larvae	0	0	519,132	479,339	0	0	0	0	0	0	998,471	690,676
Bay anchovy-adult	0	52,190	75,367	0	76,410	0	0	0	0	0	203,967	152,758
Bay anchovy-fertilized egg	0	247,331	345,374,353	507,331,992	31,307,094	106,480,141	7,733,610	0	0	0	998,474,520	457,367,502
Bay anchovy-juvenile	0	693,910	140,446	1,740,202	24,274,175	6,783,385	18,347,990	2,531,305	1,234,135	317,505	56,063,052	30,453,438
Bay anchovy-N/A	0	0	0	0	157,991	0	0	0	0	0	157,991	202,228
Bay anchovy-post-yolk sac larvae	0	0	435,956	2,419,100	3,069,493	67,141,637	31,910,663	0	0	0	104,976,849	95,311,301
Bay anchovy-yolk-sac larvae	0	0	0	210,510	0	950,162	554,878	0	0	0	1,715,550	1,945,204
Damaged egg-fertilized egg	0	0	592,014	1,054,322	3,122,842	1,216,778	104,040	0	0	0	6,089,995	2,411,853
Damaged egg-N/A	0	52,580	0	0	0	0	0	0	0	0	52,580	67,302
Damaged fish-N/A	0	0	0	42,102	0	0	0	0	0	0	42,102	53,890
Damaged fish-post-yolk sac larvae	0	0	288,816	187,020	1,905,334	681,290	0	0	0	0	3,062,461	1,407,799
Feather blenny-juvenile	0	0	0	43,495	30,116	22,833	0	0	0	0	96,445	87,710
Feather blenny-post-yolk sac larvae	0	0	72,971	1,117,000	171,397	516,057	0	0	0	0	1,877,424	1,138,188
Feather blenny-yolk-sac larvae	0	0	0	58,133	0	178,155	104,040	0	0	0	340,328	368,794
Fundulus sp.-fertilized egg	0	0	0	0	257,346	0	0	0	0	0	257,346	196,018
Gizzard shad-fertilized egg	0	0	63,566	0	0	0	0	0	0	0	63,566	81,365
Goby sp.-post-yolk sac larvae	0	0	0	1,556,892	825,092	0	0	0	0	0	2,381,984	1,758,277
Green goby-juvenile	0	0	0	0	129,073	0	0	0	0	0	129,073	98,562
Green goby-post-yolk sac larvae	0	0	0	0	138,362	58,497	129,058	0	0	0	325,917	203,043
Hogchoker-fertilized egg	0	0	0	2,469,586	1,762,240	0	0	0	0	0	4,231,826	2,211,918
Hogchoker-post-yolk sac larvae	0	0	0	0	0	118,770	69,360	0	0	0	188,130	240,806
Naked goby-fertilized egg	0	0	0	117,565	0	0	0	0	0	0	117,565	150,483
Naked goby-juvenile	0	0	0	42,102	3,835,093	701,139	1,161,521	0	0	0	5,739,855	3,489,538
Naked goby-post-yolk sac larvae	0	0	510,794	13,285,300	8,342,414	3,586,086	1,329,225	0	0	0	27,053,819	12,856,128
Naked goby-yolk-sac larvae	0	0	0	259,995	0	116,993	0	0	0	0	376,988	264,528
Northern Kingfish-post-yolk sac larvae	0	0	0	0	0	0	112,311	19,223	0	0	131,534	168,363
Northern pipefish-juvenile	0	0	0	0	0	0	112,311	19,223	0	0	131,534	168,363
Northern pipefish-post-yolk sac larvae	0	0	237,786	87,061	0	0	0	0	0	0	324,847	195,702
Rough silverside-fertilized egg	0	0	69,905	116,265	0	0	0	0	0	0	186,170	173,648
Rough silverside-juvenile	0	0	0	58,133	0	0	0	0	0	0	58,133	74,410
Rough silverside-post-yolk sac larvae	0	0	0	101,628	52,664	0	0	0	0	0	154,291	102,072
Rough silverside-yolk-sac larvae	0	0	37,684	0	0	0	0	0	0	0	37,684	48,235
Sciaenidae sp.-fertilized egg	0	0	1,457,380	21,077,766	115,666,542	179,723,544	18,802,183	0	0	0	336,727,415	115,067,601
Sciaenidae sp.-N/A	0	0	0	0	1,948,555	0	0	0	0	0	1,948,555	2,494,150
Silver perch-post-yolk sac larvae	0	0	0	0	104,526	59,385	34,680	0	0	0	198,591	153,127
Skilletfish-juvenile	0	0	0	304,883	103,726	0	0	0	0	0	408,608	265,516
Skilletfish-post-yolk sac larvae	0	0	4,175,575	2,333,528	128,548	176,320	34,680	0	0	0	6,848,650	4,255,735
Skilletfish-yolk-sac larvae	0	0	63,566	406,928	0	0	0	0	0	0	470,494	527,185
Spot-juvenile	92,915	645,586	0	0	0	0	0	0	0	0	738,501	402,995
Spot-post-yolk sac larvae	185,830	73,307	0	0	0	0	0	0	0	0	259,136	331,695
Weakfish-juvenile	0	0	63,566	0	0	0	0	0	0	0	63,566	81,365
Total	3,995,336	14,266,725	390,361,827	562,376,676	197,953,008	368,748,714	81,403,374	4,160,339	3,535,655	1,375,572	1,628,177,226	504,804,724

TABLE F-17. MONTHLY ENTRAINMENT ESTIMATE AT CALVERT CLIFFS NUCLEAR POWER PLANT FOR UNIT 1 AND UNIT 2 DURING DAYTIME AT BASELINE FLOWS, APRIL - SEPTEMBER 2006

Taxon-Lifestage	April	May	June	July	August	September	Estimated Total	80% Confidence Interval (+/-)
American eel-juvenile	0	0	0	0	0	0	0	0
Atherinopsidae sp.-fertilized egg	0	0	594,360	173,066	0	0	767,426	982,305
Atherinopsidae sp.-N/A	0	0	0	0	0	0	0	0
Atherinopsidae sp.-post-yolk sac larvae	0	0	0	0	0	0	0	0
Atlantic croaker-juvenile	0	0	0	0	0	0	0	0
Atlantic croaker-post-yolk sac larvae	0	0	0	0	0	0	0	0
Atlantic menhaden-fertilized egg	7,476,230	79,223,081	20,380,872	0	0	0	107,080,183	119,895,823
Atlantic menhaden-juvenile	0	0	0	0	0	0	0	0
Atlantic menhaden-post-yolk sac larvae	0	0	0	0	0	0	0	0
Atlantic menhaden-yolk-sac larvae	0	0	0	0	0	0	0	0
Atlantic silverside-fertilized egg	0	0	0	0	0	0	0	0
Atlantic silverside-juvenile	0	0	0	0	0	0	0	0
Atlantic silverside-post-yolk sac larvae	0	897,071	239,775	0	0	0	1,136,846	1,455,163
Atlantic silverside-unfertilized egg	0	0	0	0	0	0	0	0
Atlantic silverside-yolk-sac larvae	0	0	0	0	0	0	0	0
Bay anchovy-adult	0	0	0	0	0	0	0	0
Bay anchovy-fertilized egg	0	1,821,952,047	576,731,326	98,536,782	91,245,229	39,135,725	2,627,601,109	2,865,720,040
Bay anchovy-juvenile	0	0	0	516,146,188	208,059,520	289,894	724,495,603	926,394,283
Bay anchovy-N/A	0	0	0	0	0	0	0	0
Bay anchovy-post-yolk sac larvae	0	897,071	2,022,855	519,198	93,875,744	59,138,429	156,453,297	2,818,330
Bay anchovy-yolk-sac larvae	0	0	0	0	14,265,432	8,986,722	23,252,154	0
Damaged egg-fertilized egg	0	0	36,850,323	13,597,561	3,454,206	1,449,471	55,351,562	59,385,941
Damaged egg-N/A	0	0	0	0	0	0	0	0
Damaged fish-N/A	0	0	0	0	0	0	0	0
Damaged fish-post-yolk sac larvae	0	0	0	0	460,175	289,894	750,069	0
Feather blenny-juvenile	0	0	0	0	0	0	0	0
Feather blenny-post-yolk sac larvae	0	0	0	0	0	0	0	0
Feather blenny-yolk-sac larvae	0	0	0	0	0	0	0	0
Fundulus sp.-fertilized egg	0	0	594,360	173,066	0	0	767,426	982,305
Gizzard shad-fertilized egg	0	0	0	0	0	0	0	0
Goby sp.-post-yolk sac larvae	0	0	0	0	0	0	0	0
Green goby-juvenile	0	0	0	0	0	0	0	0
Green goby-post-yolk sac larvae	0	0	0	0	460,175	289,894	750,069	0
Hogchoker-fertilized egg	0	0	4,160,520	1,928,331	8,111,311	4,928,202	19,128,364	6,560,379
Hogchoker-post-yolk sac larvae	0	0	0	0	0	0	0	0
Naked goby-fertilized egg	0	0	0	0	0	0	0	0
Naked goby-juvenile	0	0	0	716,870	288,332	0	1,005,202	1,286,659
Naked goby-post-yolk sac larvae	0	0	2,377,440	3,559,742	8,976,308	4,928,202	19,841,693	5,333,396
Naked goby-yolk-sac larvae	0	0	0	0	0	0	0	0
Northern Kingfish-post-yolk sac larvae	0	0	0	0	0	0	0	0
Northern pipefish-juvenile	0	0	0	0	0	0	0	0
Northern pipefish-post-yolk sac larvae	0	0	594,360	173,066	0	0	767,426	982,305
Rough silverside-fertilized egg	0	0	0	0	460,175	289,894	750,069	0
Rough silverside-juvenile	0	0	0	0	0	0	0	0
Rough silverside-post-yolk sac larvae	0	0	0	0	0	0	0	0
Rough silverside-yolk-sac larvae	0	0	0	0	0	0	0	0
Sciaenidae sp.-fertilized egg	0	3,588,286	150,737,834	83,757,296	29,491,697	8,406,933	275,982,046	231,021,948
Sciaenidae sp.-N/A	0	0	0	0	0	0	0	0
Silver perch-post-yolk sac larvae	0	0	0	0	0	0	0	0
Skilletfish-juvenile	0	0	0	0	0	0	0	0
Skilletfish-post-yolk sac larvae	0	14,353,143	3,836,399	0	920,350	579,789	19,689,681	23,282,614
Skilletfish-yolk-sac larvae	0	0	0	0	0	0	0	0
Spot-juvenile	0	0	0	0	0	0	0	0
Spot-post-yolk sac larvae	0	0	0	0	0	0	0	0
Weakfish-juvenile	0	0	0	0	0	0	0	0
Total	7,476,230	1,920,910,699	799,120,426	719,281,165	460,068,656	128,713,051	4,035,570,226	2,730,300,721

TABLE F-18. MONTHLY ENTRAINMENT ESTIMATE AT CALVERT CLIFFS NUCLEAR POWER PLANT FOR UNIT 1 AND UNIT 2 DURING NIGHTTIME AT BASELINE FLOWS, MARCH - DECEMBER 2006

Taxon-Lifestage	March	April	May	June	July	August	September	October	November	December	Estimated Total	80% Confidence Interval (+/-)
American eel-juvenile	0	150,346	65,078	0	0	0	0	0	0	0	215,425	159,840
Atherinopsidae sp.-fertilized egg	0	0	75,367	352,694	982,624	0	0	0	0	0	1,410,685	1,029,498
Atherinopsidae sp.-N/A	0	49,466	65,078	0	0	0	0	0	0	0	114,545	146,617
Atherinopsidae sp.-post-yolk sac larvae	0	0	266,941	0	0	0	0	0	0	0	266,941	197,716
Atlantic croaker-juvenile	0	0	0	0	0	0	1,190,097	3,181,175	4,603,042	1,198,804	10,173,118	5,655,441
Atlantic croaker-post-yolk sac larvae	0	0	0	0	0	475,081	535,555	0	0	0	1,010,636	908,186
Atlantic menhaden-fertilized egg	0	16,161,024	66,076,901	7,434,591	0	0	0	0	0	0	89,672,516	49,946,619
Atlantic menhaden-juvenile	7,433,183	8,543,875	257,289	0	0	0	0	0	0	0	16,234,346	11,649,133
Atlantic menhaden-post-yolk sac larvae	0	0	0	117,565	0	0	0	0	0	0	117,565	150,483
Atlantic menhaden-yolk-sac larvae	0	49,466	215,813	0	0	0	0	0	0	0	265,279	242,328
Atlantic silverside-fertilized egg	0	0	139,809	203,255	0	0	0	0	0	0	343,065	235,634
Atlantic silverside-juvenile	0	0	0	726,031	0	0	0	0	0	917,330	1,643,361	1,308,464
Atlantic silverside-post-yolk sac larvae	0	49,466	4,695,096	2,117,526	105,327	0	0	0	0	0	6,967,415	3,528,400
Atlantic silverside-unfertilized egg	0	0	508,529	0	0	0	0	0	0	0	508,529	650,917
Atlantic silverside-yolk-sac larvae	0	0	1,038,263	958,679	0	0	0	0	0	0	1,996,942	1,381,352
Bay anchovy-adult	0	104,380	150,735	0	152,819	0	0	0	0	0	407,934	305,515
Bay anchovy-fertilized egg	0	494,661	690,748,705	1,014,663,984	62,614,187	212,960,282	15,467,220	0	0	0	1,996,949,041	914,735,004
Bay anchovy-juvenile	0	1,387,820	280,892	3,480,404	48,548,349	13,566,770	36,695,981	5,062,610	2,468,269	635,009	112,126,105	60,906,877
Bay anchovy-N/A	0	0	0	0	315,982	0	0	0	0	0	315,982	404,457
Bay anchovy-post-yolk sac larvae	0	0	871,912	4,838,201	6,138,986	134,283,274	63,821,326	0	0	0	209,953,698	190,622,602
Bay anchovy-yolk-sac larvae	0	0	0	421,019	0	1,900,325	1,109,756	0	0	0	3,431,099	3,890,408
Damaged egg-fertilized egg	0	0	1,184,027	2,108,645	6,245,883	2,433,556	208,079	0	0	0	12,179,991	4,823,706
Damaged egg-N/A	0	105,160	0	0	0	0	0	0	0	0	105,160	134,604
Damaged fish-N/A	0	0	0	84,204	0	0	0	0	0	0	84,204	107,781
Damaged fish-post-yolk sac larvae	0	0	577,633	374,039	3,810,669	1,362,580	0	0	0	0	6,124,921	2,815,599
Feather blenny-juvenile	0	0	0	86,990	60,233	45,666	0	0	0	0	192,889	175,420
Feather blenny-post-yolk sac larvae	0	0	145,941	2,233,999	342,794	1,032,114	0	0	0	0	3,754,848	2,276,376
Feather blenny-yolk-sac larvae	0	0	0	116,265	0	356,311	208,079	0	0	0	680,655	737,589
Fundulus sp.-fertilized egg	0	0	0	0	514,692	0	0	0	0	0	514,692	392,037
Gizzard shad-fertilized egg	0	0	127,132	0	0	0	0	0	0	0	127,132	162,729
Goby sp.-post-yolk sac larvae	0	0	0	3,113,784	1,650,184	0	0	0	0	0	4,763,968	3,516,554
Green goby-juvenile	0	0	0	0	258,147	0	0	0	0	0	258,147	197,124
Green goby-post-yolk sac larvae	0	0	0	0	276,724	116,993	258,116	0	0	0	651,833	406,085
Hogchoker-fertilized egg	0	0	0	4,939,172	3,524,480	0	0	0	0	0	8,463,652	4,423,835
Hogchoker-post-yolk sac larvae	0	0	0	0	0	237,541	138,719	0	0	0	376,260	481,613
Naked goby-fertilized egg	0	0	0	235,129	0	0	0	0	0	0	235,129	300,966
Naked goby-juvenile	0	0	0	84,204	7,670,187	1,402,278	2,323,042	0	0	0	11,479,710	6,979,076
Naked goby-post-yolk sac larvae	0	0	1,021,588	26,570,599	16,684,829	7,172,172	2,658,450	0	0	0	54,107,638	25,712,256
Naked goby-yolk-sac larvae	0	0	0	519,990	0	233,987	0	0	0	0	753,976	529,056
Northern Kingfish-post-yolk sac larvae	0	0	0	0	0	0	224,622	38,446	0	0	263,068	336,727
Northern pipefish-juvenile	0	0	0	0	0	0	224,622	38,446	0	0	263,068	336,727
Northern pipefish-post-yolk sac larvae	0	0	475,573	174,122	0	0	0	0	0	0	649,695	391,403
Rough silverside-fertilized egg	0	0	139,809	232,530	0	0	0	0	0	0	372,340	347,295
Rough silverside-juvenile	0	0	0	116,265	0	0	0	0	0	0	116,265	148,819
Rough silverside-post-yolk sac larvae	0	0	0	203,255	105,327	0	0	0	0	0	308,583	204,143
Rough silverside-yolk-sac larvae	0	0	75,367	0	0	0	0	0	0	0	75,367	96,470
Sciaenidae sp.-fertilized egg	0	0	2,914,760	42,155,532	231,333,084	359,447,089	37,604,365	0	0	0	673,454,830	230,135,202
Sciaenidae sp.-N/A	0	0	0	0	3,897,110	0	0	0	0	0	3,897,110	4,988,301
Silver perch-post-yolk sac larvae	0	0	0	0	209,053	118,770	69,360	0	0	0	397,183	306,254
Skilletfish-juvenile	0	0	0	609,766	207,451	0	0	0	0	0	817,217	531,032
Skilletfish-post-yolk sac larvae	0	0	8,351,149	4,667,056	257,095	352,640	69,360	0	0	0	13,697,300	8,511,469
Skilletfish-yolk-sac larvae	0	0	127,132	813,856	0	0	0	0	0	0	940,989	1,054,370
Spot-juvenile	185,830	1,291,172	0	0	0	0	0	0	0	0	1,477,001	805,990
Spot-post-yolk sac larvae	371,659	146,614	0	0	0	0	0	0	0	0	518,273	663,389
Weakfish-juvenile	0	0	127,132	0	0	0	0	0	0	0	127,132	162,729
Total	7,990,671	28,533,450	780,723,655	1,124,753,353	395,906,016	737,497,428	162,806,748	8,320,677	7,071,311	2,751,143	3,256,354,452	1,009,609,448

TABLE F-19. MONTHLY ENTRAINMENT ESTIMATE AT CALVERT CLIFFS NUCLEAR POWER PLANT FOR UNIT 1 DURING DAYTIME AT BASELINE FLOWS, MARCH - SEPTEMBER 2007

Taxon-Lifestage	March	April	May	June	July	August	September	Estimated Total	80% Confidence Interval (+/-)
American eel-juvenile	0	305,488	0	0	0	0	0	305,488	391,024
Atherinopsidae sp.-fertilized egg	0	0	0	0	168,968	0	0	168,968	216,279
Atherinopsidae sp.-post-yolk sac larvae	0	0	0	0	0	0	0	0	0
Atlantic croaker-juvenile	0	0	0	0	0	0	0	0	0
Atlantic menhaden-fertilized egg	0	0	111,465,633	2,334,198	0	0	0	113,799,831	134,812,336
Atlantic menhaden-juvenile	0	305,488	0	171,194	0	0	0	476,682	448,238
Atlantic menhaden-post-yolk sac larvae	0	0	7,981,592	0	0	0	0	7,981,592	10,216,438
Atlantic menhaden-yolk-sac larvae	0	0	1,596,318	0	0	0	0	1,596,318	2,043,288
Atlantic silverside-fertilized egg	0	0	0	0	0	0	0	0	0
Atlantic silverside-juvenile	0	0	0	304,132	36,164	0	0	340,295	251,491
Atlantic silverside-post-yolk sac larvae	0	0	213,208	1,318,062	0	0	0	1,531,270	1,448,680
Atlantic silverside-yolk-sac larvae	0	0	0	0	0	0	0	0	0
Bay anchovy-adult	0	152,744	0	0	0	143,871	0	296,615	268,586
Bay anchovy-fertilized egg	0	0	204,879,574	352,677,232	68,918,072	80,827,147	2,318,769	709,620,795	89,923,323
Bay anchovy-juvenile	50,137	703,474	0	12,990,667	2,703,795	17,642,102	1,393,585	35,483,761	24,957,227
Bay anchovy-post-yolk sac larvae	0	0	5,223,604	239,080,199	6,474,268	40,028,768	5,704,850	296,511,690	296,528,666
Bay anchovy-yolk-sac larvae	0	0	0	0	675,873	0	0	675,873	865,118
Black drum-post-yolk sac larvae	0	0	106,604	59,851	0	0	0	166,455	213,063
Blackcheek tonguefish-post-yolk sac larvae	0	0	0	0	0	0	0	0	0
Damaged egg-fertilized egg	50,137	4,708,130	3,102,489	325,727	238,409	331,233	0	8,756,125	7,110,270
Damaged fish-juvenile	0	0	0	132,938	36,164	0	0	169,101	216,450
Damaged fish-N/A	0	0	0	0	0	0	0	0	0
Damaged fish-post-yolk sac larvae	0	0	8,196,630	851,153	1,044,200	23,285	0	10,115,267	8,302,762
Damaged fish-undetermined	0	0	0	0	0	0	0	0	0
Damaged fish-yolk-sac larvae	0	0	0	0	0	159,796	0	159,796	204,538
Feather blenny-juvenile	0	0	0	0	0	0	132,833	132,833	170,026
Feather blenny-post-yolk sac larvae	0	0	0	684,777	0	447,538	0	1,132,315	946,331
Feather blenny-yolk-sac larvae	0	0	0	0	0	0	0	0	0
Gizzard shad-fertilized egg	0	0	0	0	0	0	0	0	0
Gizzard shad-post-yolk sac larvae	0	0	0	0	0	0	0	0	0
Gizzard shad-yolk-sac larvae	0	0	0	0	0	0	0	0	0
Green goby-juvenile	0	0	0	0	0	0	0	0	0
Green goby-post-yolk sac larvae	0	0	0	0	0	0	0	0	0
Hogchoker-fertilized egg	0	0	0	1,196,439	19,768,573	11,865,747	811,569	33,642,329	22,796,817
Hogchoker-post-yolk sac larvae	0	0	0	0	0	0	0	0	0
Hogchoker-yolk-sac larvae	0	0	0	0	0	0	0	0	0
Inland silverside-fertilized egg	0	0	0	0	0	0	0	0	0
Inland silverside-post-yolk sac larvae	0	0	0	0	0	0	0	0	0
Naked goby-fertilized egg	0	0	0	171,194	0	0	0	171,194	219,129
Naked goby-juvenile	0	0	0	265,875	2,085,513	347,494	463,754	3,162,636	1,697,677
Naked goby-post-yolk sac larvae	0	0	0	6,618,227	5,583,553	11,594,963	1,275,323	25,072,067	8,511,196
Naked goby-yolk-sac larvae	0	0	0	171,194	672,986	203,810	115,938	1,163,929	617,038
Northern pipefish-juvenile	0	0	0	0	0	0	0	0	0
Northern pipefish-post-yolk sac larvae	0	0	0	171,194	0	0	0	171,194	219,129
River Herring-post-yolk sac larvae	0	0	213,208	119,702	0	0	0	332,911	426,126
Rough silverside-fertilized egg	0	0	0	475,326	36,164	0	0	511,490	419,141
Rough silverside-post-yolk sac larvae	0	0	0	513,582	0	0	0	513,582	657,386
Sciaenidae sp.-fertilized egg	0	0	426,417	27,439,048	22,356,594	208,428	579,692	51,010,178	42,919,079
Sciaenidae sp.-juvenile	0	0	0	0	0	0	0	0	0
Sciaenidae sp.-post-yolk sac larvae	0	0	0	0	0	143,871	0	143,871	184,155
Skilletfish-fertilized egg	0	0	0	0	0	0	0	0	0
Skilletfish-juvenile	0	0	0	342,388	0	143,871	0	486,260	475,376
Skilletfish-post-yolk sac larvae	0	0	5,436,813	5,924,457	706,263	3,124,175	115,938	15,307,646	10,329,599
Skilletfish-yolk-sac larvae	0	0	213,208	119,702	168,968	159,796	132,833	794,508	519,243
Spot-juvenile	1,414,837	1,535,960	0	0	0	0	0	2,950,796	1,525,579
Spot-post-yolk sac larvae	0	0	0	0	0	0	0	0	0
striped blenny-juvenile	0	0	0	0	0	0	0	0	0
striped blenny-yolk-sac larvae	0	0	0	0	0	0	0	0	0
Weakfish-juvenile	0	0	0	0	0	0	0	0	0
Weakfish-post-yolk sac larvae	0	0	0	132,938	36,164	447,538	0	616,640	417,273
White perch-fertilized egg	50,137	2,689,145	0	0	0	0	0	2,739,282	3,267,388
Total	1,565,247	10,400,429	349,055,299	654,591,398	131,710,691	167,843,434	13,045,085	1,328,211,583	330,136,496

TABLE F-20. MONTHLY ENTRAINMENT ESTIMATE AT CALVERT CLIFFS NUCLEAR POWER PLANT FOR UNIT 1 DURING NIGHTTIME AT BASELINE FLOWS, JANUARY - SEPTEMBER 2007

Taxon-Lifestage	January	February	March	April	May	June	July	August	September	Estimated Total	80% Confidence Interval (+/-)
American eel-juvenile	0	41,627	298,645	63,407	0	0	0	0	0	403,680	235,597
Atherinopsidae sp.-fertilized egg	0	0	0	0	0	0	154,744	0	0	154,744	198,073
Atherinopsidae sp.-post-yolk sac larvae	0	0	0	0	419,351	461,186	0	48,718	0	929,256	474,573
Atlantic croaker-juvenile	3,715,045	564,644	0	0	0	0	0	60,425	0	4,340,114	3,831,987
Atlantic menhaden-fertilized egg	0	0	0	0	26,294,465	570,713	0	0	0	26,865,178	18,643,651
Atlantic menhaden-juvenile	0	0	0	176,919	52,885	0	0	0	0	229,804	236,357
Atlantic menhaden-post-yolk sac larvae	0	136,773	0	185,071	2,954,214	0	0	0	0	3,276,058	3,610,497
Atlantic menhaden-yolk-sac larvae	0	0	0	0	263,745	0	0	0	0	263,745	337,593
Atlantic silverside-fertilized egg	0	0	0	0	0	0	51,581	0	0	51,581	66,024
Atlantic silverside-juvenile	0	0	0	0	0	50,576	0	0	0	50,576	64,737
Atlantic silverside-post-yolk sac larvae	0	0	0	0	663,301	1,404,915	0	108,913	0	2,177,129	865,025
Atlantic silverside-yolk-sac larvae	0	0	0	0	0	103,047	51,581	0	0	154,628	147,502
Bay anchovy-adult	631,207	567,907	621,439	58,973	0	0	176,778	147,083	138,653	2,342,040	1,013,396
Bay anchovy-fertilized egg	0	0	0	0	262,553,567	110,680,133	23,005,506	61,848,016	1,154,979	459,242,201	202,961,032
Bay anchovy-juvenile	2,682,629	472,761	412,802	90,592	0	6,061,633	10,517,742	8,627,021	5,351,060	34,216,239	10,658,666
Bay anchovy-post-yolk sac larvae	0	273,547	0	0	532,559	75,040,441	8,184,325	23,749,616	12,892,614	120,673,102	68,428,752
Bay anchovy-yolk-sac larvae	0	0	0	0	0	497,507	51,581	0	0	549,088	557,347
Black drum-post-yolk sac larvae	0	0	0	0	0	0	0	0	0	0	0
Blackcheek tonguefish-post-yolk sac larvae	0	0	0	60,832	0	0	0	0	0	60,832	77,865
Damaged egg-fertilized egg	0	0	0	917,016	655,060	301,416	51,581	0	0	1,925,074	1,730,240
Damaged fish-juvenile	0	0	0	0	0	0	0	0	0	0	0
Damaged fish-N/A	0	0	0	63,407	0	0	0	0	0	63,407	81,161
Damaged fish-post-yolk sac larvae	0	0	0	0	2,003,068	341,969	51,208	60,425	0	2,456,670	1,414,067
Damaged fish-undetermined	0	0	0	0	399,420	131,812	0	0	0	531,232	679,977
Damaged fish-yolk-sac larvae	0	0	0	0	0	0	0	0	0	0	0
Feather blenny-juvenile	0	0	0	0	0	0	22,780	38,693	0	61,473	78,685
Feather blenny-post-yolk sac larvae	0	0	0	0	44,380	426,832	200,303	479,362	0	1,150,878	640,196
Feather blenny-yolk-sac larvae	0	0	0	0	0	50,525	208,390	0	69,327	328,241	236,653
Gizzard shad-fertilized egg	0	0	0	0	52,749	0	0	0	0	52,749	67,519
Gizzard shad-post-yolk sac larvae	0	0	0	0	0	102,048	0	0	0	102,048	75,422
Gizzard shad-yolk-sac larvae	0	0	0	0	474,877	0	0	0	0	474,877	521,505
Green goby-juvenile	0	0	0	0	0	0	0	0	63,846	63,846	81,723
Green goby-post-yolk sac larvae	0	0	0	0	0	0	53,646	0	64,804	118,451	107,684
Hogchoker-fertilized egg	0	0	0	0	0	2,268,009	93,333,343	74,175,791	15,028,740	184,805,883	66,461,718
Hogchoker-post-yolk sac larvae	0	0	0	0	0	0	74,361	99,118	0	173,479	128,579
Hogchoker-yolk-sac larvae	0	0	0	0	0	0	51,208	0	0	51,208	65,547
Inland silverside-fertilized egg	0	0	0	0	55,943	0	0	0	0	55,943	71,607
Inland silverside-post-yolk sac larvae	0	0	0	0	44,380	14,646	0	0	0	59,026	75,553
Naked goby-fertilized egg	0	0	0	0	0	0	0	119,343	0	119,343	152,759
Naked goby-juvenile	0	0	0	0	0	198,636	1,019,413	643,849	194,518	2,056,415	658,751
Naked goby-post-yolk sac larvae	0	0	0	0	0	7,213,465	6,019,481	9,789,799	1,157,584	24,180,329	7,174,533
Naked goby-yolk-sac larvae	0	0	0	0	0	505,246	313,299	98,484	0	917,029	670,349
Northern pipefish-juvenile	0	0	0	0	0	152,675	0	0	0	152,675	124,179
Northern pipefish-post-yolk sac larvae	0	0	0	0	44,380	116,745	0	0	0	161,125	69,424
River Herring-post-yolk sac larvae	0	0	0	0	710,079	234,333	0	0	0	944,412	1,208,847
Rough silverside-fertilized egg	0	0	0	0	55,943	101,100	314,118	0	0	471,161	202,562
Rough silverside-post-yolk sac larvae	0	0	0	0	266,280	189,923	22,780	99,118	0	578,100	428,816
Sciaenidae sp.-fertilized egg	0	0	0	0	308,125	23,203,378	36,369,902	936,931	4,791,329	65,609,665	24,606,811
Sciaenidae sp.-juvenile	0	0	0	0	0	0	0	0	138,653	138,653	177,476
Sciaenidae sp.-post-yolk sac larvae	0	0	0	0	0	0	0	59,671	127,692	187,363	155,646
Skilletfish-fertilized egg	0	0	0	0	0	0	160,119	0	0	160,119	153,078
Skilletfish-juvenile	0	0	0	0	44,380	830,133	73,988	38,693	0	987,195	424,491
Skilletfish-post-yolk sac larvae	0	0	0	0	2,863,979	3,825,728	1,152,132	1,671,250	262,781	9,775,870	3,649,528
Skilletfish-yolk-sac larvae	0	0	0	0	0	252,623	574,870	0	0	827,493	537,450
Spot-juvenile	0	0	2,285,040	573,530	0	0	0	0	0	2,858,570	2,416,944
Spot-post-yolk sac larvae	0	20,814	81,967	63,407	0	0	0	0	0	166,188	154,580
striped blenny-juvenile	0	0	0	0	0	50,576	0	0	0	50,576	64,737
striped blenny-yolk-sac larvae	0	0	0	0	0	151,574	0	0	0	151,574	194,015
Weakfish-juvenile	0	0	0	0	0	49,659	0	0	69,327	118,985	109,155
Weakfish-post-yolk sac larvae	0	0	0	0	0	49,659	0	300,617	456,715	806,991	281,892
White perch-fertilized egg	0	0	183,731	2,611,254	196,518	0	0	0	0	2,991,503	819,836
Total	7,028,881	2,078,073	3,883,625	4,864,407	301,953,646	235,632,861	182,260,763	183,200,938	41,962,622	962,865,813	235,793,935

TABLE F-21. MONTHLY ENTRAINMENT ESTIMATE AT CALVERT CLIFFS NUCLEAR POWER PLANT FOR UNIT 2 DURING DAYTIME AT BASELINE FLOWS, MARCH - SEPTEMBER 2007

Taxon-Lifestage	March	April	May	June	July	August	September	Estimated Total	80% Confidence Interval (+/-)
American eel-juvenile	0	305,488	0	0	0	0	0	305,488	391,024
Atherinopsidae sp.-fertilized egg	0	0	0	0	168,968	0	0	168,968	216,279
Atherinopsidae sp.-post-yolk sac larvae	0	0	0	0	0	0	0	0	0
Atlantic croaker-juvenile	0	0	0	0	0	0	0	0	0
Atlantic menhaden-fertilized egg	0	0	111,465,633	2,334,198	0	0	0	113,799,831	134,812,336
Atlantic menhaden-juvenile	0	305,488	0	171,194	0	0	0	476,682	448,238
Atlantic menhaden-post-yolk sac larvae	0	0	7,981,592	0	0	0	0	7,981,592	10,216,438
Atlantic menhaden-yolk-sac larvae	0	0	1,596,318	0	0	0	0	1,596,318	2,043,288
Atlantic silverside-fertilized egg	0	0	0	0	0	0	0	0	0
Atlantic silverside-juvenile	0	0	0	304,132	36,164	0	0	340,295	251,491
Atlantic silverside-post-yolk sac larvae	0	0	213,208	1,318,062	0	0	0	1,531,270	1,448,680
Atlantic silverside-yolk-sac larvae	0	0	0	0	0	0	0	0	0
Bay anchovy-adult	0	152,744	0	0	0	143,871	0	296,615	268,586
Bay anchovy-fertilized egg	0	0	204,879,574	352,677,232	68,918,072	80,827,147	2,318,769	709,620,795	89,923,323
Bay anchovy-juvenile	50,137	703,474	0	12,990,667	2,703,795	17,642,102	1,393,585	35,483,761	24,957,227
Bay anchovy-post-yolk sac larvae	0	0	5,223,604	239,080,199	6,474,268	40,028,768	5,704,850	296,511,690	296,528,666
Bay anchovy-yolk-sac larvae	0	0	0	0	675,873	0	0	675,873	865,118
Black drum-post-yolk sac larvae	0	0	106,604	59,851	0	0	0	166,455	213,063
Blackcheek tonguefish-post-yolk sac larvae	0	0	0	0	0	0	0	0	0
Damaged egg-fertilized egg	50,137	4,708,130	3,102,489	325,727	238,409	331,233	0	8,756,125	7,110,270
Damaged fish-juvenile	0	0	0	132,938	36,164	0	0	169,101	216,450
Damaged fish-N/A	0	0	0	0	0	0	0	0	0
Damaged fish-post-yolk sac larvae	0	0	8,196,630	851,153	1,044,200	23,285	0	10,115,267	8,302,762
Damaged fish-undetermined	0	0	0	0	0	0	0	0	0
Damaged fish-yolk-sac larvae	0	0	0	0	0	159,796	0	159,796	204,538
Feather blenny-juvenile	0	0	0	0	0	0	132,833	132,833	170,026
Feather blenny-post-yolk sac larvae	0	0	0	684,777	0	447,538	0	1,132,315	946,331
Feather blenny-yolk-sac larvae	0	0	0	0	0	0	0	0	0
Gizzard shad-fertilized egg	0	0	0	0	0	0	0	0	0
Gizzard shad-post-yolk sac larvae	0	0	0	0	0	0	0	0	0
Gizzard shad-yolk-sac larvae	0	0	0	0	0	0	0	0	0
Green goby-juvenile	0	0	0	0	0	0	0	0	0
Green goby-post-yolk sac larvae	0	0	0	0	0	0	0	0	0
Hogchoker-fertilized egg	0	0	0	1,196,439	19,768,573	11,865,747	811,569	33,642,329	22,796,817
Hogchoker-post-yolk sac larvae	0	0	0	0	0	0	0	0	0
Hogchoker-yolk-sac larvae	0	0	0	0	0	0	0	0	0
Inland silverside-fertilized egg	0	0	0	0	0	0	0	0	0
Inland silverside-post-yolk sac larvae	0	0	0	0	0	0	0	0	0
Naked goby-fertilized egg	0	0	0	171,194	0	0	0	171,194	219,129
Naked goby-juvenile	0	0	0	265,875	2,085,513	347,494	463,754	3,162,636	1,697,677
Naked goby-post-yolk sac larvae	0	0	0	6,618,227	5,583,553	11,594,963	1,275,323	25,072,067	8,511,196
Naked goby-yolk-sac larvae	0	0	0	171,194	672,986	203,810	115,938	1,163,929	617,038
Northern pipefish-juvenile	0	0	0	0	0	0	0	0	0
Northern pipefish-post-yolk sac larvae	0	0	0	171,194	0	0	0	171,194	219,129
River Herring-post-yolk sac larvae	0	0	213,208	119,702	0	0	0	332,911	426,126
Rough silverside-fertilized egg	0	0	0	475,326	36,164	0	0	511,490	419,141
Rough silverside-post-yolk sac larvae	0	0	0	513,582	0	0	0	513,582	657,386
Sciaenidae sp.-fertilized egg	0	0	426,417	27,439,048	22,356,594	208,428	579,692	51,010,178	42,919,079
Sciaenidae sp.-juvenile	0	0	0	0	0	0	0	0	0
Sciaenidae sp.-post-yolk sac larvae	0	0	0	0	0	143,871	0	143,871	184,155
Skilletfish-fertilized egg	0	0	0	0	0	0	0	0	0
Skilletfish-juvenile	0	0	0	342,388	0	143,871	0	486,260	475,376
Skilletfish-post-yolk sac larvae	0	0	5,436,813	5,924,457	706,263	3,124,175	115,938	15,307,646	10,329,599
Skilletfish-yolk-sac larvae	0	0	213,208	119,702	168,968	159,796	132,833	794,508	519,243
Spot-juvenile	1,414,837	1,535,960	0	0	0	0	0	2,950,796	1,525,579
Spot-post-yolk sac larvae	0	0	0	0	0	0	0	0	0
striped blenny-juvenile	0	0	0	0	0	0	0	0	0
striped blenny-yolk-sac larvae	0	0	0	0	0	0	0	0	0
Weakfish-juvenile	0	0	0	0	0	0	0	0	0
Weakfish-post-yolk sac larvae	0	0	0	132,938	36,164	447,538	0	616,640	417,273
White perch-fertilized egg	50,137	2,689,145	0	0	0	0	0	2,739,282	3,267,388
Total	1,565,247	10,400,429	349,055,299	654,591,398	131,710,691	167,843,434	13,045,085	1,328,211,583	330,136,496

TABLE F-22. MONTHLY ENTRAINMENT ESTIMATE AT CALVERT CLIFFS NUCLEAR POWER PLANT FOR UNIT 2 DURING NIGHTTIME AT BASELINE FLOWS, JANUARY - SEPTEMBER 2007

Taxon-Lifestage	January	February	March	April	May	June	July	August	September	Estimated Total	80% Confidence Interval (+/-)
American eel-juvenile	0	41,627	298,645	63,407	0	0	0	0	0	403,680	235,597
Atherinopsidae sp.-fertilized egg	0	0	0	0	0	0	154,744	0	0	154,744	198,073
Atherinopsidae sp.-post-yolk sac larvae	0	0	0	0	419,351	461,186	0	48,718	0	929,256	474,573
Atlantic croaker-juvenile	3,715,045	564,644	0	0	0	0	0	60,425	0	4,340,114	3,831,987
Atlantic menhaden-fertilized egg	0	0	0	0	26,294,465	570,713	0	0	0	26,865,178	18,643,651
Atlantic menhaden-juvenile	0	0	0	176,919	52,885	0	0	0	0	229,804	236,357
Atlantic menhaden-post-yolk sac larvae	0	136,773	0	185,071	2,954,214	0	0	0	0	3,276,058	3,610,497
Atlantic menhaden-yolk-sac larvae	0	0	0	0	263,745	0	0	0	0	263,745	337,593
Atlantic silverside-fertilized egg	0	0	0	0	0	0	51,581	0	0	51,581	66,024
Atlantic silverside-juvenile	0	0	0	0	0	50,576	0	0	0	50,576	64,737
Atlantic silverside-post-yolk sac larvae	0	0	0	0	663,301	1,404,915	0	108,913	0	2,177,129	865,025
Atlantic silverside-yolk-sac larvae	0	0	0	0	0	103,047	51,581	0	0	154,628	147,502
Bay anchovy-adult	631,207	567,907	621,439	58,973	0	0	176,778	147,083	138,653	2,342,040	1,013,396
Bay anchovy-fertilized egg	0	0	0	0	262,553,567	110,680,133	23,005,506	61,848,016	1,154,979	459,242,201	202,961,032
Bay anchovy-juvenile	2,682,629	472,761	412,802	90,592	0	8,061,633	10,517,742	8,627,021	5,351,060	34,216,239	10,658,666
Bay anchovy-post-yolk sac larvae	0	273,547	0	0	532,559	75,040,441	8,184,325	23,749,616	12,892,614	120,673,102	68,428,752
Bay anchovy-yolk-sac larvae	0	0	0	0	0	497,507	51,581	0	0	549,088	557,347
Black drum-post-yolk sac larvae	0	0	0	0	0	0	0	0	0	0	0
Blackcheek tonguefish-post-yolk sac larvae	0	0	0	60,832	0	0	0	0	0	60,832	77,865
Damaged egg-fertilized egg	0	0	0	917,016	655,060	301,416	51,581	0	0	1,925,074	1,730,240
Damaged fish-juvenile	0	0	0	0	0	0	0	0	0	0	0
Damaged fish-N/A	0	0	0	63,407	0	0	0	0	0	63,407	81,161
Damaged fish-post-yolk sac larvae	0	0	0	0	2,003,068	341,969	51,208	60,425	0	2,456,670	1,414,067
Damaged fish-undetermined	0	0	0	0	399,420	131,812	0	0	0	531,232	679,977
Damaged fish-yolk-sac larvae	0	0	0	0	0	0	0	0	0	0	0
Feather blenny-juvenile	0	0	0	0	0	0	22,780	38,693	0	61,473	78,685
Feather blenny-post-yolk sac larvae	0	0	0	0	44,380	426,832	200,303	479,362	0	1,150,878	640,196
Feather blenny-yolk-sac larvae	0	0	0	0	0	50,525	208,390	0	69,327	328,241	236,653
Gizzard shad-fertilized egg	0	0	0	0	52,749	0	0	0	0	52,749	67,519
Gizzard shad-post-yolk sac larvae	0	0	0	0	0	102,048	0	0	0	102,048	75,422
Gizzard shad-yolk-sac larvae	0	0	0	0	474,877	0	0	0	0	474,877	521,505
Green goby-juvenile	0	0	0	0	0	0	0	0	63,846	63,846	81,723
Green goby-post-yolk sac larvae	0	0	0	0	0	0	53,646	0	64,804	118,451	107,684
Hogchoker-fertilized egg	0	0	0	0	0	2,268,009	93,333,343	74,175,791	15,028,740	184,805,883	66,461,718
Hogchoker-post-yolk sac larvae	0	0	0	0	0	0	74,361	99,118	0	173,479	128,579
Hogchoker-yolk-sac larvae	0	0	0	0	0	0	51,208	0	0	51,208	65,547
Inland silverside-fertilized egg	0	0	0	0	55,943	0	0	0	0	55,943	71,607
Inland silverside-post-yolk sac larvae	0	0	0	0	44,380	14,646	0	0	0	59,026	75,553
Naked goby-fertilized egg	0	0	0	0	0	0	0	119,343	0	119,343	152,759
Naked goby-juvenile	0	0	0	0	0	198,636	1,019,413	643,849	194,518	2,056,415	658,751
Naked goby-post-yolk sac larvae	0	0	0	0	0	7,213,465	6,019,481	9,789,799	1,157,584	24,180,329	7,174,533
Naked goby-yolk-sac larvae	0	0	0	0	0	505,246	313,299	98,484	0	917,029	670,349
Northern pipefish-juvenile	0	0	0	0	0	152,675	0	0	0	152,675	124,179
Northern pipefish-post-yolk sac larvae	0	0	0	0	44,380	116,745	0	0	0	161,125	69,424
River Herring-post-yolk sac larvae	0	0	0	0	710,079	234,333	0	0	0	944,412	1,208,847
Rough silverside-fertilized egg	0	0	0	0	55,943	101,100	314,118	0	0	471,161	202,562
Rough silverside-post-yolk sac larvae	0	0	0	0	266,280	189,923	22,780	99,118	0	578,100	428,816
Sciaenidae sp.-fertilized egg	0	0	0	0	308,125	23,203,378	38,389,902	936,931	4,791,329	65,609,665	24,606,811
Sciaenidae sp.-juvenile	0	0	0	0	0	0	0	0	138,653	138,653	177,476
Sciaenidae sp.-post-yolk sac larvae	0	0	0	0	0	0	0	59,671	127,692	187,363	155,646
Skilletfish-fertilized egg	0	0	0	0	0	0	160,119	0	0	160,119	153,078
Skilletfish-juvenile	0	0	0	0	44,380	830,133	73,988	38,693	0	987,195	424,491
Skilletfish-post-yolk sac larvae	0	0	0	0	2,863,979	3,825,728	1,152,132	1,671,250	262,781	9,775,870	3,649,528
Skilletfish-yolk-sac larvae	0	0	0	0	0	252,623	574,870	0	0	827,493	537,450
Spot-juvenile	0	0	2,285,040	573,530	0	0	0	0	0	2,858,570	2,416,944
Spot-post-yolk sac larvae	0	20,814	81,967	63,407	0	0	0	0	0	166,188	154,580
striped blenny-juvenile	0	0	0	0	0	50,576	0	0	0	50,576	64,737
striped blenny-yolk-sac larvae	0	0	0	0	0	151,574	0	0	0	151,574	194,015
Weakfish-juvenile	0	0	0	0	0	49,659	0	0	69,327	118,985	109,155
Weakfish-post-yolk sac larvae	0	0	0	0	0	49,659	0	300,617	456,715	806,991	281,892
White perch-fertilized egg	0	0	183,731	2,611,254	196,518	0	0	0	0	2,991,503	819,836
Total	7,028,881	2,078,073	3,883,625	4,864,407	301,953,646	235,632,861	182,260,763	183,200,936	41,962,622	962,865,813	235,793,935

TABLE F-23. MONTHLY ENTRAINMENT ESTIMATE AT CALVERT CLIFFS NUCLEAR POWER PLANT FOR UNIT 1 AND UNIT 2 DURING DAYTIME AT BASELINE FLOWS, MARCH - SEPTEMBER 2007

Taxon-Lifestage	March	April	May	June	July	August	September	Estimated Total	80% Confidence Interval (+/-)
American eel-juvenile	0	610,976	0	0	0	0	0	610,976	782,049
Atherinopsidae sp.-fertilized egg	0	0	0	0	337,937	0	0	337,937	432,559
Atherinopsidae sp.-post-yolk sac larvae	0	0	0	0	0	0	0	0	0
Atlantic croaker-juvenile	0	0	0	0	0	0	0	0	0
Atlantic menhaden-fertilized egg	0	0	222,931,266	4,668,397	0	0	0	227,599,663	269,624,673
Atlantic menhaden-juvenile	0	610,976	0	342,388	0	0	0	953,364	896,476
Atlantic menhaden-post-yolk sac larvae	0	0	15,963,184	0	0	0	0	15,963,184	20,432,876
Atlantic menhaden-yolk-sac larvae	0	0	3,192,637	0	0	0	0	3,192,637	4,086,575
Atlantic silverside-fertilized egg	0	0	0	0	0	0	0	0	0
Atlantic silverside-juvenile	0	0	0	608,264	72,327	0	0	680,591	502,981
Atlantic silverside-post-yolk sac larvae	0	0	426,417	2,636,123	0	0	0	3,062,540	2,897,361
Atlantic silverside-yolk-sac larvae	0	0	0	0	0	0	0	0	0
Bay anchovy-adult	0	305,488	0	0	0	287,743	0	593,231	537,171
Bay anchovy-fertilized egg	0	0	409,759,149	705,354,465	137,836,143	161,654,295	4,637,537	1,419,241,589	179,846,645
Bay anchovy-juvenile	100,273	1,406,948	0	25,981,335	5,407,591	35,284,205	2,787,170	70,967,522	49,914,455
Bay anchovy-post-yolk sac larvae	0	0	10,447,209	478,160,397	12,948,536	80,057,537	11,409,700	593,023,379	593,057,332
Bay anchovy-yolk-sac larvae	0	0	0	0	1,351,746	0	0	1,351,746	1,730,235
Black drum-post-yolk sac larvae	0	0	213,208	119,702	0	0	0	332,911	426,126
Blackcheek tonguefish-post-yolk sac larvae	0	0	0	0	0	0	0	0	0
Damaged egg-fertilized egg	100,273	9,416,261	6,204,977	651,453	476,817	662,467	0	17,512,249	14,220,539
Damaged fish-juvenile	0	0	0	265,875	72,327	0	0	338,202	432,899
Damaged fish-N/A	0	0	0	0	0	0	0	0	0
Damaged fish-post-yolk sac larvae	0	0	16,393,260	1,702,305	2,088,400	46,569	0	20,230,534	16,605,523
Damaged fish-undetermined	0	0	0	0	0	0	0	0	0
Damaged fish-yolk-sac larvae	0	0	0	0	0	319,591	0	319,591	409,077
Feather blenny-juvenile	0	0	0	0	0	0	265,666	265,666	340,053
Feather blenny-post-yolk sac larvae	0	0	0	1,369,553	0	895,077	0	2,264,630	1,892,663
Feather blenny-yolk-sac larvae	0	0	0	0	0	0	0	0	0
Gizzard shad-fertilized egg	0	0	0	0	0	0	0	0	0
Gizzard shad-post-yolk sac larvae	0	0	0	0	0	0	0	0	0
Gizzard shad-yolk-sac larvae	0	0	0	0	0	0	0	0	0
Green goby-juvenile	0	0	0	0	0	0	0	0	0
Green goby-post-yolk sac larvae	0	0	0	0	0	0	0	0	0
Hogchoker-fertilized egg	0	0	0	2,392,879	39,537,147	23,731,494	1,623,138	67,284,658	45,593,633
Hogchoker-post-yolk sac larvae	0	0	0	0	0	0	0	0	0
Hogchoker-yolk-sac larvae	0	0	0	0	0	0	0	0	0
Inland silverside-fertilized egg	0	0	0	0	0	0	0	0	0
Inland silverside-post-yolk sac larvae	0	0	0	0	0	0	0	0	0
Naked goby-fertilized egg	0	0	0	342,388	0	0	0	342,388	438,257
Naked goby-juvenile	0	0	0	531,751	4,171,027	694,987	927,507	6,325,272	3,395,354
Naked goby-post-yolk sac larvae	0	0	0	13,236,455	11,167,107	23,189,927	2,550,646	50,144,134	17,022,392
Naked goby-yolk-sac larvae	0	0	0	342,388	1,345,973	407,619	231,877	2,327,857	1,234,077
Northern pipefish-juvenile	0	0	0	0	0	0	0	0	0
Northern pipefish-post-yolk sac larvae	0	0	0	342,388	0	0	0	342,388	438,257
River Herring-post-yolk sac larvae	0	0	426,417	239,405	0	0	0	665,822	852,252
Rough silverside-fertilized egg	0	0	0	950,652	72,327	0	0	1,022,979	838,282
Rough silverside-post-yolk sac larvae	0	0	0	1,027,165	0	0	0	1,027,165	1,314,771
Sciaenidae sp.-fertilized egg	0	0	852,833	54,878,096	44,713,187	416,855	1,159,384	102,020,356	85,838,158
Sciaenidae sp.-juvenile	0	0	0	0	0	0	0	0	0
Sciaenidae sp.-post-yolk sac larvae	0	0	0	0	0	287,743	0	287,743	368,311
Skilletfish-fertilized egg	0	0	0	0	0	0	0	0	0
Skilletfish-juvenile	0	0	0	684,777	0	287,743	0	972,519	950,752
Skilletfish-post-yolk sac larvae	0	0	10,873,625	11,848,915	1,412,527	6,248,349	231,877	30,615,293	20,659,198
Skilletfish-yolk-sac larvae	0	0	426,417	239,405	337,937	319,591	265,666	1,589,016	1,038,486
Spot-juvenile	2,829,673	3,071,919	0	0	0	0	0	5,901,592	3,051,158
Spot-post-yolk sac larvae	0	0	0	0	0	0	0	0	0
striped blenny-juvenile	0	0	0	0	0	0	0	0	0
striped blenny-yolk-sac larvae	0	0	0	0	0	0	0	0	0
Weakfish-juvenile	0	0	0	0	0	0	0	0	0
Weakfish-post-yolk sac larvae	0	0	0	265,875	72,327	895,077	0	1,233,279	834,546
White perch-fertilized egg	100,273	5,378,291	0	0	0	0	0	5,478,564	6,534,775
Total	3,130,494	20,800,858	698,110,599	1,309,182,796	263,421,382	335,686,868	26,090,169	2,656,423,166	660,272,993

TABLE F-24. MONTHLY ENTRAINMENT ESTIMATE AT CALVERT CLIFFS NUCLEAR POWER PLANT FOR UNIT 1 AND UNIT 2 DURING NIGHTTIME AT BASELINE FLOWS, JANUARY - SEPTEMBER 2007

Taxon-Lifestage	January	February	March	April	May	June	July	August	September	Estimated Total	80% Confidence Interval (+/-)
American eel-juvenile	0	83,255	597,291	126,814	0	0	0	0	0	807,359	471,194
Atherinopsidae sp.-fertilized egg	0	0	0	0	0	0	309,488	0	0	309,488	396,145
Atherinopsidae sp.-post-yolk sac larvae	0	0	0	0	838,703	922,373	0	97,436	0	1,858,512	949,146
Atlantic croaker-juvenile	7,430,091	1,129,289	0	0	0	0	0	120,849	0	8,680,229	7,663,973
Atlantic menhaden-fertilized egg	0	0	0	0	52,588,929	1,141,426	0	0	0	53,730,356	37,287,301
Atlantic menhaden-juvenile	0	0	0	353,838	105,770	0	0	0	0	459,608	472,715
Atlantic menhaden-post-yolk sac larvae	0	273,547	0	370,141	5,908,429	0	0	0	0	6,552,117	7,220,995
Atlantic menhaden-yolk-sac larvae	0	0	0	0	527,490	0	0	0	0	527,490	675,187
Atlantic silverside-fertilized egg	0	0	0	0	0	0	103,163	0	0	103,163	132,048
Atlantic silverside-juvenile	0	0	0	0	0	101,152	0	0	0	101,152	129,474
Atlantic silverside-post-yolk sac larvae	0	0	0	0	1,326,601	2,809,829	0	217,827	0	4,354,257	1,730,049
Atlantic silverside-yolk-sac larvae	0	0	0	0	0	206,093	103,163	0	0	309,256	295,003
Bay anchovy-adult	1,262,413	1,135,814	1,242,878	117,946	0	0	353,556	294,166	277,306	4,684,079	2,026,792
Bay anchovy-fertilized egg	0	0	0	0	525,107,133	221,360,267	46,011,012	123,696,031	2,309,958	918,484,402	405,922,064
Bay anchovy-juvenile	5,365,257	945,522	825,603	181,185	0	12,123,267	21,035,483	17,254,042	10,702,119	68,432,479	21,317,331
Bay anchovy-post-yolk sac larvae	0	547,093	0	0	1,065,119	150,080,882	16,368,650	47,499,231	25,785,228	241,346,204	136,857,503
Bay anchovy-yolk-sac larvae	0	0	0	0	0	995,013	103,163	0	0	1,098,176	1,114,693
Black drum-post-yolk sac larvae	0	0	0	0	0	0	0	0	0	0	0
Blackcheek tonguefish-post-yolk sac larvae	0	0	0	121,664	0	0	0	0	0	121,664	155,730
Damaged egg-fertilized egg	0	0	0	1,834,032	1,310,120	602,833	103,163	0	0	3,850,148	3,460,479
Damaged fish-juvenile	0	0	0	0	0	0	0	0	0	0	0
Damaged fish-N/A	0	0	0	126,814	0	0	0	0	0	126,814	162,321
Damaged fish-post-yolk sac larvae	0	0	0	0	4,006,135	683,938	102,417	120,849	0	4,913,340	2,828,135
Damaged fish-undetermined	0	0	0	0	798,839	263,624	0	0	0	1,062,463	1,359,953
Damaged fish-yolk-sac larvae	0	0	0	0	0	0	0	0	0	0	0
Feather blenny-juvenile	0	0	0	0	0	0	45,559	77,387	0	122,946	157,371
Feather blenny-post-yolk sac larvae	0	0	0	0	88,760	853,665	400,607	958,724	0	2,301,756	1,280,392
Feather blenny-yolk-sac larvae	0	0	0	0	0	101,049	416,781	0	138,653	656,483	473,306
Gizzard shad-fertilized egg	0	0	0	0	105,498	0	0	0	0	105,498	135,037
Gizzard shad-post-yolk sac larvae	0	0	0	0	0	204,096	0	0	0	204,096	150,843
Gizzard shad-yolk-sac larvae	0	0	0	0	949,754	0	0	0	0	949,754	1,043,010
Green goby-juvenile	0	0	0	0	0	0	0	0	127,692	127,692	163,446
Green goby-post-yolk sac larvae	0	0	0	0	0	0	107,292	0	129,609	236,901	215,368
Hogchoker-fertilized egg	0	0	0	0	0	4,536,019	186,666,687	148,351,582	30,057,479	369,611,767	132,923,436
Hogchoker-post-yolk sac larvae	0	0	0	0	0	0	148,722	198,236	0	346,958	257,159
Hogchoker-yolk-sac larvae	0	0	0	0	0	0	102,417	0	0	102,417	131,094
Inland silverside-fertilized egg	0	0	0	0	111,886	0	0	0	0	111,886	143,214
Inland silverside-post-yolk sac larvae	0	0	0	0	88,760	29,292	0	0	0	118,051	151,106
Naked goby-fertilized egg	0	0	0	0	0	0	0	238,685	0	238,685	305,517
Naked goby-juvenile	0	0	0	0	0	397,272	2,038,825	1,287,698	389,035	4,112,831	1,317,503
Naked goby-post-yolk sac larvae	0	0	0	0	0	14,426,929	12,038,962	19,579,598	2,315,169	48,360,658	14,349,065
Naked goby-yolk-sac larvae	0	0	0	0	0	1,010,492	626,597	196,968	0	1,834,058	1,340,698
Northern pipefish-juvenile	0	0	0	0	0	305,350	0	0	0	305,350	248,358
Northern pipefish-post-yolk sac larvae	0	0	0	0	88,760	233,490	0	0	0	322,250	138,849
River Herring-post-yolk sac larvae	0	0	0	0	1,420,159	468,665	0	0	0	1,888,824	2,417,695
Rough silverside-fertilized egg	0	0	0	0	111,886	202,201	628,235	0	0	942,322	405,124
Rough silverside-post-yolk sac larvae	0	0	0	0	532,559	379,845	45,559	198,236	0	1,156,200	857,633
Sciaenidae sp.-fertilized egg	0	0	0	0	616,250	46,406,756	72,739,805	1,873,861	9,582,658	131,219,330	49,213,622
Sciaenidae sp.-juvenile	0	0	0	0	0	0	0	0	277,306	277,306	354,952
Sciaenidae sp.-post-yolk sac larvae	0	0	0	0	0	0	0	119,343	255,384	374,727	311,293
Skilletfish-fertilized egg	0	0	0	0	0	0	320,239	0	0	320,239	306,157
Skilletfish-juvenile	0	0	0	0	88,760	1,660,266	147,976	77,387	0	1,974,389	848,981
Skilletfish-post-yolk sac larvae	0	0	0	0	5,727,957	7,651,455	2,304,265	3,342,499	525,563	19,551,740	7,299,055
Skilletfish-yolk-sac larvae	0	0	0	0	0	505,246	1,149,739	0	0	1,654,985	1,074,901
Spot-juvenile	0	0	4,570,080	1,147,059	0	0	0	0	0	5,717,139	4,833,887
Spot-post-yolk sac larvae	0	41,627	163,935	126,814	0	0	0	0	0	332,376	309,160
striped blenny-juvenile	0	0	0	0	0	101,152	0	0	0	101,152	129,474
striped blenny-yolk-sac larvae	0	0	0	0	0	303,148	0	0	0	303,148	388,029
Weakfish-juvenile	0	0	0	0	0	99,318	0	0	138,653	237,971	218,309
Weakfish-post-yolk sac larvae	0	0	0	0	0	99,318	0	601,233	913,430	1,613,982	563,784
White perch-fertilized egg	0	0	367,462	5,222,509	393,036	0	0	0	0	5,983,007	1,639,672
Total	14,057,762	4,156,147	7,767,249	9,728,815	603,907,292	471,265,722	364,521,525	366,401,871	83,925,243	1,925,731,626	471,587,870