

IMPINGEMENT OF ORGANISMS ON THE INTAKE SCREENS
AT PILGRIM NUCLEAR POWER STATION
JANUARY - JUNE 2014

Submitted to
Entergy Nuclear
Pilgrim Nuclear Power Station
Plymouth, Massachusetts

by
Normandeau Associates, Inc.
Falmouth, Massachusetts



October 2014

TABLE OF CONTENTS

| <u>SECTION</u> | <u>PAGE</u> |
|--|-------------|
| LIST OF FIGURES | ii |
| LIST OF TABLES | ii |
| SECTION I. SUMMARY | 1 |
| SECTION II. INTRODUCTION..... | 1 |
| SECTION III. METHODS AND MATERIALS | 3 |
| SECTION IV. RESULTS AND DISCUSSION..... | 3 |
| Fish..... | 3 |
| Invertebrates | 5 |

LIST OF FIGURES

| <u>FIGURE</u> | <u>PAGE</u> |
|---|-------------|
| Figure 1. Location of Pilgrim Nuclear Power Station. | 2 |
| Figure 2. Cross-section of intake structure at Pilgrim Nuclear Power Station. | 2 |
| Figure 3. Percent of total for numerically dominant species of fish impinged on the Pilgrim Nuclear Power Station intake screens, January to June 2014. | 4 |
| Figure 4. January to June extrapolated totals for all fish impinged on the Pilgrim Nuclear Power Station intake screens, 1980 to 2014. | 5 |
| Figure 5. Percent of total for numerically dominant species of invertebrates impinged on the Pilgrim Nuclear Power Station intake screens, January to June 2014. | 6 |
| Figure 6. January to June extrapolated totals for all fish impinged on the Pilgrim Nuclear Power Station intake screens, 1980 to 2014. | 6 |

LIST OF TABLES

| <u>TABLE</u> | <u>PAGE</u> |
|---|-------------|
| Table 1. Monthly extrapolated totals for all fish collected at Pilgrim Station from the intake screens, January - June, 2014. | 7 |
| Table 2. January to June extrapolated totals for fish found on the Pilgrim Station intake screens, 1980-2014. | 8 |
| Table 3. Monthly impingement rates (fish per hour) for all fish collected at Pilgrim Station from the Intake Screens, January - June, 1980-2014. | 14 |
| Table 4. Monthly extrapolated totals for all invertebrates collected at Pilgrim Station from the intake screens, January - June, 2014. | 15 |
| Table 5. Extrapolated totals for invertebrates collected at Pilgrim Station from the intake screens, January - June, 1980 - 2014. | 16 |

SECTION I. SUMMARY

This report describes the monitoring of impinged organisms at Pilgrim Station based on screen wash samples taken from January through June 2014. Three scheduled screen wash periods were monitored each week. A total of 22 fish species were impinged with an extrapolated 6-month total of 4,828 fish. Atlantic Silversides, Grubby, Blueback Herring, Cunner and Winter Flounder accounted for 85% of the 6-month total. The January – June 2014 extrapolated value for total fish (4,828) was below average, ranking 19th out of 35 years and in the 47th percentile. Fish impingement rates averaged 1.11 fish per hour from January to June 2014, a rate that was below the 1980-2013, 6-month mean of 1.72 fish per hour. Mean monthly impingement rates ranged from 0.21 fish per hour in February to 4.14 fish per hour in April. From January to June 2014, 285 invertebrates representing 10 taxa were collected from the PNPS intake screens. This produced a mean impingement rate of 1.75 animals per hour and an extrapolated total of 7,685 animals, more than two and half times the 1980-2013 mean of 2,710 animals.

SECTION II. INTRODUCTION

Pilgrim Nuclear Power Station (PNPS) is located on the northwestern shore of Cape Cod Bay (Figure 1) with a capacity of 711 megawatts electric (gross). The unit has two circulating water pumps with a capacity of approximately 345 cfs (cubic feet per second = 155,500 gallons per minute each) and five service water pumps (2,700 gallons per minute each) with a combined capacity of 30 cfs. Water is drawn under a skimmer wall, through vertical bar racks spaced approximately three inches on center, and finally through vertical traveling screens of ½ x ¼ inch mesh (Figure 2). There are four vertical screens, two for each circulating water pump.

This report provides documentation of environmental monitoring and reporting requirements of NPDES Permit No. MA0003557 (USEPA) and No. 359 (MA DEP) at PNPS. It describes the monitoring of impinged organisms at Pilgrim Station based on screen wash samples taken from January through June 2014. A more detailed discussion of the impingement values covering January – December 2014 will be provided in the annual report.

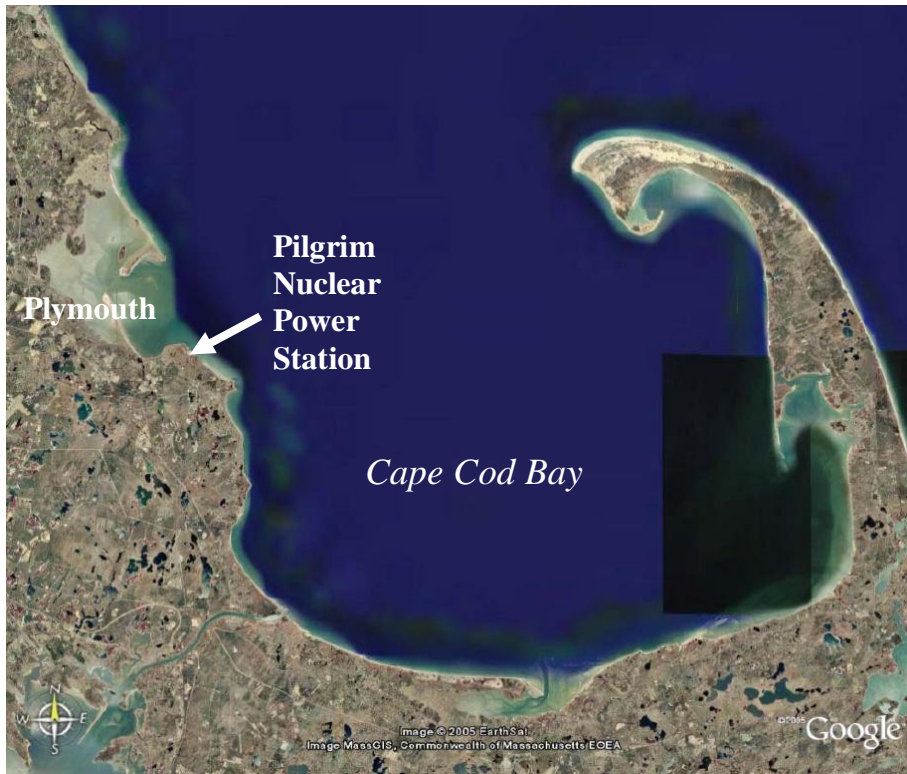


Figure 1. Location of Pilgrim Nuclear Power Station.

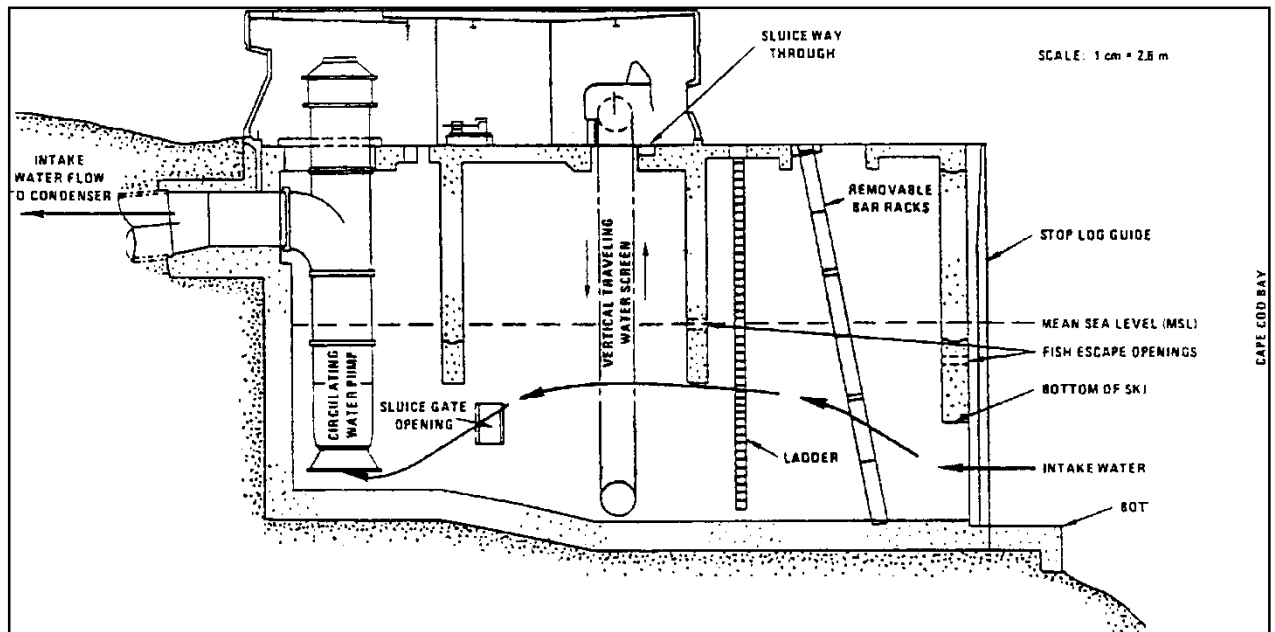


Figure 2. Cross-section of the intake structure at Pilgrim Nuclear Power Station.

SECTION III. METHODS AND MATERIALS

Three scheduled screen wash periods were monitored each week from January to June 2014. Monitored screen washes included the 0830 wash on Monday, the 1630 wash on Wednesday, and the 0030 wash on Saturday morning. Each sampling period thus represented a separate, distinct eight-hour period. Prior to each sampling period, the time of the previous screen wash was obtained from the control room log to permit the current sampling interval to be calculated. Whenever the screens were static upon arrival, a 30-minute sample was collected and, whenever the screens were operating continuously when a biologist arrived, a 60-minute sample was obtained.

Spray nozzles directed at the screens washed impinged organisms and debris into a sluiceway which was sampled by inserting a collection basket made of 1/4-inch stainless steel mesh. All fish were identified and noted as being alive, dead, or injured. Fish that were determined to be alive were measured for total length (mm), and then released. Those determined to be dead or injured were preserved and returned to the laboratory where weights (grams) and total lengths (mm) were recorded for up to 20 specimens of each species. Any impinged invertebrates were identified, measured, and representative specimens were returned to the laboratory where weights were recorded. The impingement rate for each sample was calculated by dividing the number of fish and invertebrates collected by the number of hours in the collection period. Extrapolated monthly totals were calculated by dividing the monthly total number of each species collected by the monthly total number of sample hours and multiplying that quotient (fish/hour) by the product (24 hours x number of days/month) which yielded the estimated number of fish impinged per month. Number of days per month was corrected for the outage days when no circulating water pumps were operating.

SECTION IV. RESULTS AND DISCUSSION

Fish

In the 171.69 sample collection hours from January through June 2014, 170 fish comprising 22 species were collected, yielding an extrapolated total of 4,828 fish (Table 1). Numerical dominants for the 6-month period consisted of Atlantic Silversides (*Menidia menidia*; 60.0%), Grubby (*Myoxocephalus aeneus*; 9.8%), Blueback Herring (*Alosa aestivalis*; 6.6%), Cunner (*Tautoglabrus adspersus*; 5.5%) and Winter Flounder (*Pseudopleuronectes americanus*; 3.4%; Figure 3). Atlantic Silversides were collected from January through April, with a 6-month extrapolated total of 2,895 fish. Grubby occurred from January through May at monthly totals ranging from 23 to 198 fish and a 6-month total of 473 fish. Blueback Herring ranked third with a 6-month extrapolated total of 318 fish, the majority (88%) of which were collected in April and the remainder in March. Cunner occurred in January, March, April, and June (ranging from 12 to 132 fish) with a 6-month extrapolated total of 267 fish. Winter Flounder were collected from January through March with a 6-month extrapolated total of 165 fish. The fourteen remaining species had a combined extrapolated total of 709 fish and comprised 14.7% of the total catch.

The January – June 2014 extrapolated value for total fish (4,828) was below average, ranked 19th out of 35 years, and was in the 47th percentile (Table 2, Figure 4). The mean 6-month total for 1980-2013 was 7,670 fish. The long-term dataset indicated that Atlantic Silversides, Winter Flounder, Grubby, Rainbow Smelt, and Atlantic Herring (*Clupea harengus*) have been the most numerous impinged species dating back to 1980. In the first half of 2014, each of these species was present and each was collected in numbers below their respective 1980-2013 semi-annual mean, except for Grubby (473 fish) which was collected in numbers above its semi-annual mean (mean = 330 fish).

Total fish were impinged at a mean rate of 1.11 fish per hour from January through June 2014, with a low rate of 0.21 fish per hour in February (Table 3). The highest impingement rate occurred in April (4.14 fish per hour), due primarily to Atlantic Silversides and secondarily to Blueback Herring (Table 1). March and May had the two next highest monthly impingement rates of 1.12 and 0.58 fish per hour, respectively. March’s screenwash samples were dominated by Atlantic Silversides and Grubby, while May represented a mix of seven species. The mean hourly impingement rate over the first half of 2014 was 64% of the 1980 to 2013 long term, 6-month mean of 1.72 fish per hour (Table 3).

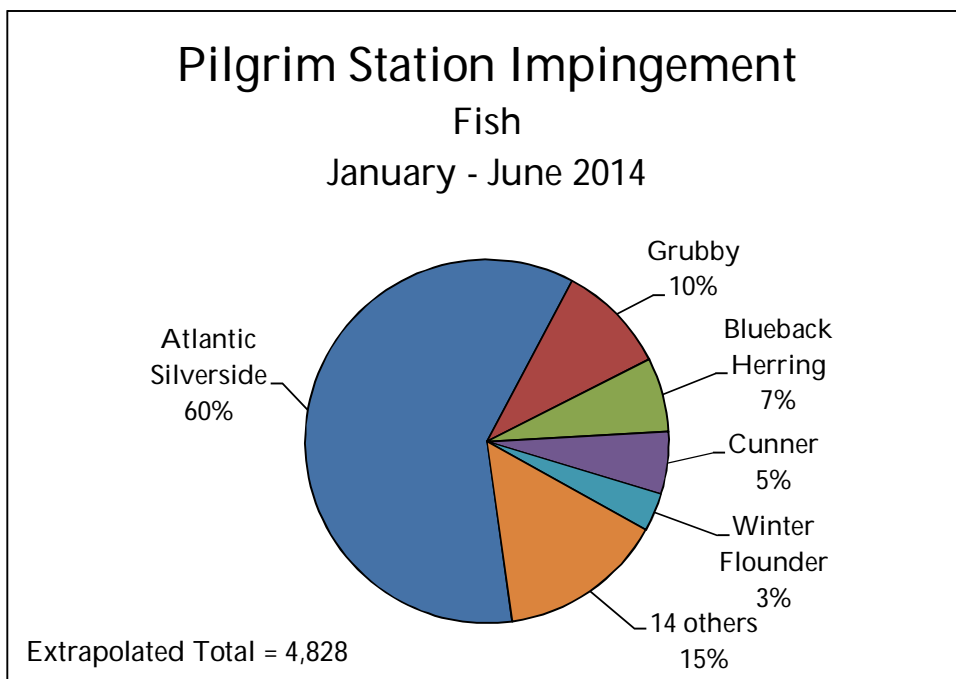


Figure 3. Percent of total for numerically dominant species of fish impinged on the Pilgrim Nuclear Power Station intake screens, January to June 2014.

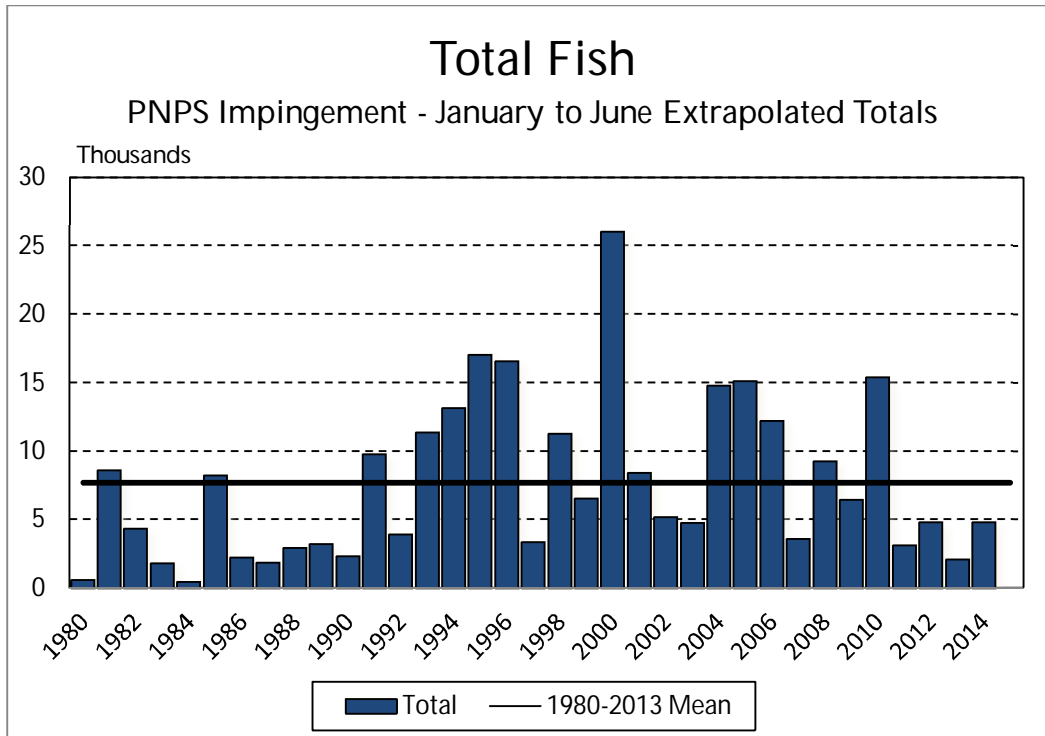


Figure 4. January to June extrapolated totals for all fish impinged on the Pilgrim Nuclear Power Station intake screens, 1980 to 2014.

Invertebrates

From January to June 2014, 285 invertebrates representing 10 taxa were collected from the PNPS intake screens. This produced a mean impingement rate of 1.75 animals per hour and an extrapolated total of 7,685 invertebrates (Table 4). Sevenspine bay shrimp (*Crangon septemspinosa*) accounted for 70.8% of the 6-month total. They were impinged from January through April with an extrapolated total of 5,439 shrimp. March and April showed high catches of sevenspine bay shrimp, with respective 6-month percent contribution values of 49.5% and 25.6%. Squid (*Loligo* spp.) were the second most abundant species, accounting for 9.9% of the total with an extrapolated total of 760 squids. Squid were only collected in June. Rock\Jonah crabs (*Cancer* spp.) were the third most abundant species, accounting for 6.6% of the total with an extrapolated total of 505 crabs. Cancer crabs were collected from January through April and in June, the highest abundance occurred in March (55% of the total). Green crabs (*Carcinus maenas*), an invasive species (Massachusetts Office of Coastal Zone Management 2002), were also fairly abundant with a 6-month extrapolated total of 412 crabs, contributing 5.4% to the total. Six remaining invertebrate species totaled 569 animals accounting for 7.4% of the total (Figure 5).

The estimated total for all the invertebrates impinged during the first half of 2014 (7,685 animals) was well above the 1980-2013 mean of 2,710 animals (Table 5, Figure 6). January to June 2014 was consistent with the 1980 – 2013 time series in that sevenspine bay shrimp, squid, and cancer and green crabs were the most commonly impinged invertebrate species.

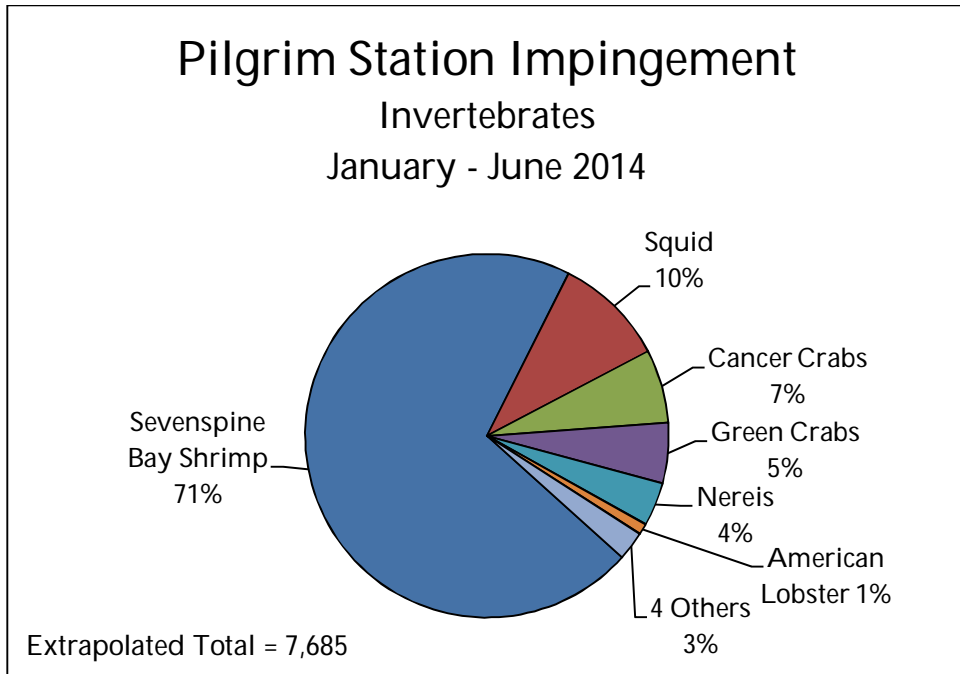


Figure 5. Percent of total for numerically dominant species of invertebrates impinged on the Pilgrim Nuclear Power Station intake screens, January to June 2014.

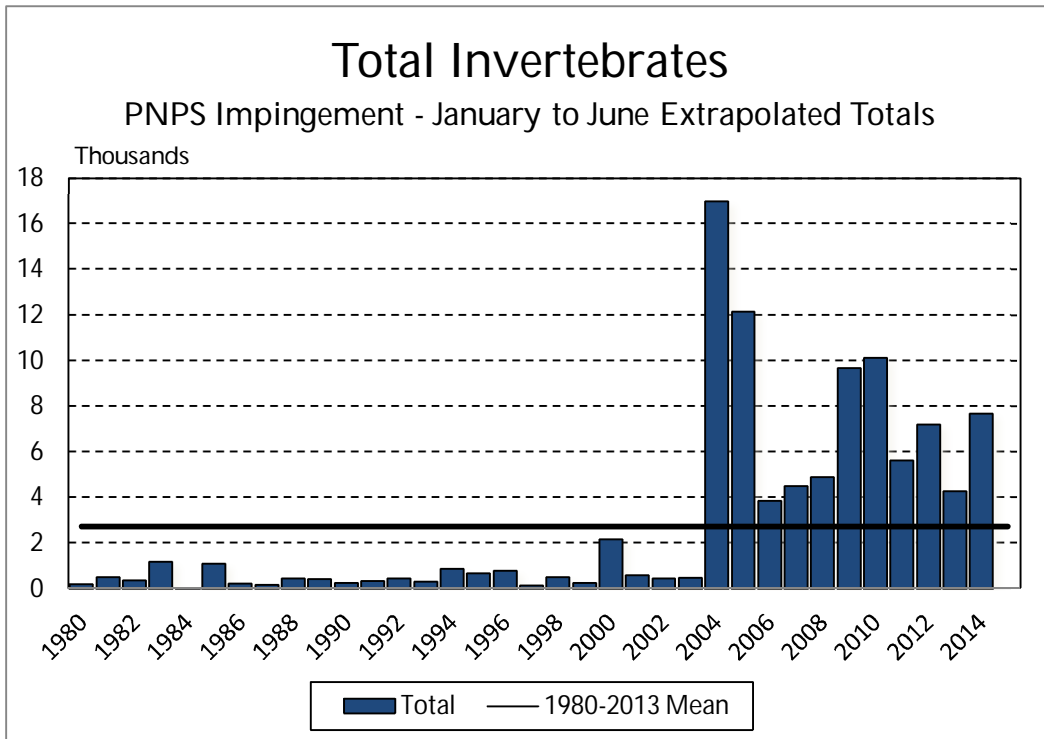


Figure 6. January to June extrapolated totals for all fish impinged on the Pilgrim Nuclear Power Station intake screens, 1980 to 2014.

Table 1. Monthly extrapolated totals for all fish collected at Pilgrim Station from the intake screens, January - June, 2014.

| Species | | Jan | Feb | Mar | Apr | May | Jun | Total | Percent |
|-----------------------------------|--------------------------------------|-------|-------|-------|-------|-------|-------|------------------|---------|
| Little Skate | <i>Leucoraja erinacea</i> | 0 | 0 | 0 | 0 | 62 | 0 | 62 | 1.3% |
| Blueback Herring | <i>Alosa aestivalis</i> | 0 | 0 | 40 | 279 | 0 | 0 | 318 | 6.6% |
| Alewife | <i>Alosa pseudoharengus</i> | 0 | 0 | 0 | 0 | 62 | 0 | 62 | 1.3% |
| Atlantic Herring | <i>Clupea harengus</i> | 0 | 0 | 0 | 28 | 0 | 0 | 28 | 0.6% |
| Rainbow Smelt | <i>Osmerus mordax</i> | 0 | 0 | 0 | 28 | 0 | 0 | 28 | 0.6% |
| Codfishes* | <i>Gadidae</i> | 0 | 0 | 0 | 0 | 62 | 0 | 62 | 1.3% |
| Pollock | <i>Pollachius virens</i> | 0 | 0 | 40 | 0 | 0 | 0 | 40 | 0.8% |
| Red Hake | <i>Urophycis chuss</i> | 0 | 0 | 40 | 28 | 0 | 0 | 67 | 1.4% |
| Striped Killifish | <i>Fundulus majalis</i> | 12 | 0 | 0 | 28 | 0 | 0 | 39 | 0.8% |
| Atlantic Silverside | <i>Menidia menidia</i> | 46 | 93 | 277 | 2,479 | 0 | 0 | 2,895 | 60.0% |
| Grubby | <i>Myoxocephalus aeneus</i> | 162 | 23 | 198 | 28 | 62 | 0 | 473 | 9.8% |
| White Perch | <i>Morone americana</i> | 0 | 0 | 0 | 0 | 62 | 0 | 62 | 1.3% |
| Cunner | <i>Tautoglabrus adspersus</i> | 12 | 0 | 40 | 84 | 0 | 132 | 267 | 5.5% |
| Rock Gunnel | <i>Pholis gunnellus</i> | 0 | 0 | 0 | 0 | 62 | 0 | 62 | 1.3% |
| Sand Lance | <i>Ammodytes sp.</i> | 12 | 0 | 40 | 0 | 0 | 0 | 51 | 1.1% |
| Smallmouth Flounder | <i>Etropus microstomus</i> | 0 | 0 | 40 | 0 | 0 | 0 | 40 | 0.8% |
| Windowpane | <i>Scophthalmus aquosus</i> | 12 | 0 | 0 | 0 | 62 | 0 | 74 | 1.5% |
| Winter Flounder | <i>Pseudopleuronectes americanus</i> | 23 | 23 | 119 | 0 | 0 | 0 | 165 | 3.4% |
| Northern Puffer | <i>Sphoeroides maculatus</i> | 0 | 0 | 0 | 0 | 0 | 33 | 33 | 0.7% |
| Extrapolated Total Number of Fish | | 278 | 139 | 831 | 2,980 | 434 | 165 | 4,828 | |
| Number of Fish Collected | | 24 | 6 | 21 | 107 | 7 | 5 | 170 | |
| Total Collection Hours | | 64.33 | 28.92 | 18.80 | 25.85 | 12.00 | 21.79 | 172 | |
| Impingement Rate | | 0.37 | 0.21 | 1.12 | 4.14 | 0.58 | 0.23 | mean rate = 1.11 | |

* Damaged, unable to identify to species.

Table 2. January to June extrapolated totals for fish found on the Pilgrim Station intake screens, 1980-2014.

| Species | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 |
|---------------------------|------|-------|-------|------|------|-------|------|------|------|-------|-------|-------|-------|-------|
| Smooth Dogfish | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 |
| Spiny Dogfish | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 |
| Little Skate | 0 | 7 | 12 | 12 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 69 | 34 | 60 |
| Winter Skate | 11 | 0 | 10 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| American Eel | 0 | 0 | 12 | 0 | 0 | 0 | 19 | 0 | 0 | 15 | 0 | 0 | 0 | 0 |
| Conger Eel | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| River Herrings | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Blueback Herring | 0 | 0 | 124 | 11 | 0 | 743 | 29 | 0 | 212 | 58 | 0 | 136 | 19 | 40 |
| Alewife | 0 | 27 | 142 | 51 | 0 | 131 | 19 | 0 | 102 | 94 | 42 | 127 | 112 | 783 |
| American Shad | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 212 | 0 | 0 | 0 | 0 | 0 |
| Atlantic Menhaden | 0 | 0 | 50 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 11 |
| Atlantic Herring | 10 | 53 | 47 | 22 | 0 | 20 | 554 | 0 | 41 | 138 | 232 | 5,936 | 51 | 101 |
| Gizzard Shad | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Bay Anchovy | 0 | 0 | 298 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rainbow Smelt | 0 | 142 | 54 | 113 | 0 | 50 | 23 | 372 | 165 | 65 | 91 | 92 | 186 | 836 |
| Atlantic Pearlside | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 23 |
| Fourbeard Rockling | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Codfishes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Atlantic Cod | 12 | 7 | 11 | 0 | 0 | 0 | 10 | 0 | 23 | 0 | 0 | 0 | 0 | 0 |
| Haddock | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Silver Hake | 0 | 20 | 0 | 10 | 0 | 0 | 49 | 0 | 0 | 0 | 0 | 6 | 9 | 0 |
| Atlantic Tomcod | 34 | 37 | 80 | 91 | 125 | 99 | 79 | 8 | 366 | 94 | 93 | 67 | 35 | 71 |
| Pollock | 0 | 0 | 46 | 34 | 0 | 18 | 0 | 8 | 0 | 0 | 14 | 23 | 17 | 96 |
| Hakes (Red and White) | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 48 |
| Red Hake | 0 | 39 | 34 | 0 | 0 | 18 | 0 | 0 | 23 | 0 | 0 | 55 | 0 | 0 |
| Spotted Hake | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| White Hake | 35 | 7 | 31 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Striped Cusk Eel | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 |
| Goosefish | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Killifishes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mummichog | 0 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Striped Killifish | 0 | 0 | 0 | 13 | 0 | 25 | 0 | 0 | 0 | 23 | 0 | 0 | 14 | 0 |
| Atlantic Silverside | 0 | 7,154 | 2,122 | 609 | 192 | 4,268 | 629 | 774 | 884 | 1,227 | 1,179 | 2,221 | 2,373 | 7,470 |
| Fourspine Stickleback | 0 | 207 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Threespine Stickleback | 11 | 31 | 382 | 21 | 0 | 50 | 0 | 372 | 72 | 114 | 30 | 10 | 26 | 14 |
| Black Spotted Stickleback | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |
| Northern Pipefish | 34 | 63 | 21 | 44 | 0 | 65 | 0 | 0 | 0 | 114 | 5 | 30 | 0 | 27 |

Table 2. January to June extrapolated totals for fish found on the Pilgrim Station intake screens, 1980-2014. (continued)

| Species | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
|---------------------------|-------|--------|--------|-------|-------|-------|--------|-------|-------|-------|--------|--------|-------|-------|
| Smooth Dogfish | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 0 | 0 |
| Spiny Dogfish | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Little Skate | 22 | 28 | 27 | 29 | 13 | 0 | 0 | 51 | 22 | 82 | 42 | 24 | 25 | 0 |
| Winter Skate | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| American Eel | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Conger Eel | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| River Herrings | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| Blueback Herring | 90 | 706 | 21 | 69 | 113 | 32 | 203 | 78 | 184 | 17 | 236 | 23 | 232 | 154 |
| Alewife | 27 | 125 | 0 | 96 | 97 | 0 | 78 | 279 | 253 | 0 | 41 | 24 | 65 | 44 |
| American Shad | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Atlantic Menhaden | 0 | 0 | 0 | 0 | 0 | 19 | 843 | 21 | 62 | 19 | 134 | 241 | 375 | 60 |
| Atlantic Herring | 18 | 108 | 0 | 13 | 66 | 149 | 77 | 48 | 254 | 41 | 120 | 549 | 169 | 0 |
| Gizzard Shad | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Bay Anchovy | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rainbow Smelt | 1,140 | 1,927 | 182 | 200 | 1,425 | 163 | 13 | 355 | 253 | 392 | 204 | 981 | 351 | 59 |
| Atlantic Pearlside | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 0 |
| Fourbeard Rockling | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Codfishes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Atlantic Cod | 32 | 58 | 0 | 0 | 53 | 0 | 0 | 0 | 0 | 51 | 84 | 118 | 961 | 14 |
| Haddock | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| Silver Hake | 27 | 11 | 0 | 0 | 0 | 0 | 0 | 29 | 0 | 67 | 0 | 0 | 0 | 0 |
| Atlantic Tomcod | 52 | 189 | 0 | 17 | 0 | 74 | 24 | 53 | 69 | 0 | 84 | 72 | 160 | 161 |
| Pollock | 9 | 39 | 0 | 0 | 0 | 74 | 52 | 0 | 0 | 0 | 11 | 788 | 0 | 0 |
| Hakes (Red and White) | 0 | 0 | 0 | 0 | 46 | 0 | 0 | 158 | 41 | 109 | 0 | 0 | 0 | 31 |
| Red Hake | 9 | 125 | 43 | 0 | 10 | 314 | 0 | 0 | 0 | 0 | 0 | 0 | 46 | 0 |
| Spotted Hake | 0 | 0 | 0 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| White Hake | 0 | 0 | 0 | 20 | 0 | 0 | 109 | 0 | 0 | 0 | 0 | 0 | 12 | 0 |
| Striped Cusk Eel | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 |
| Goosefish | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Killifishes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mummichog | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 0 |
| Striped Killifish | 0 | 38 | 29 | 0 | 0 | 0 | 220 | 35 | 65 | 399 | 14 | 0 | 41 | 0 |
| Atlantic Silverside | 9,524 | 11,835 | 14,386 | 1,841 | 6,752 | 4,097 | 22,223 | 4,902 | 2,447 | 2,311 | 11,932 | 10,025 | 7,355 | 2,410 |
| Fourspine Stickleback | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 72 | 0 | 0 |
| Threespine Stickleback | 228 | 124 | 48 | 0 | 91 | 19 | 27 | 64 | 13 | 19 | 158 | 128 | 265 | 15 |
| Black Spotted Stickleback | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | 0 | 0 |
| Northern Pipefish | 166 | 10 | 117 | 0 | 0 | 44 | 40 | 0 | 32 | 72 | 14 | 216 | 16 | 15 |

Table 2. January to June extrapolated totals for fish found on the Pilgrim Station intake screens, 1980-2014. (continued)

| Species | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 1980-2013 Mean | 2014 |
|---------------------------|-------|-------|--------|-------|-------|------|----------------|-------|
| Smooth Dogfish | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Spiny Dogfish | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Little Skate | 0 | 79 | 49 | 0 | 0 | 0 | 21 | 62 |
| Winter Skate | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| American Eel | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Conger Eel | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| River Herrings | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Blueback Herring | 141 | 0 | 35 | 31 | 1,333 | 180 | 154 | 318 |
| Alewife | 39 | 31 | 434 | 0 | 385 | 26 | 108 | 62 |
| American Shad | 0 | 0 | 120 | 16 | 0 | 22 | 11 | 0 |
| Atlantic Menhaden | 449 | 31 | 0 | 0 | 36 | 0 | 70 | 0 |
| Atlantic Herring | 23 | 0 | 162 | 0 | 45 | 0 | 266 | 28 |
| Gizzard Shad | 0 | 0 | 0 | 0 | 40 | 0 | 2 | 0 |
| Bay Anchovy | 23 | 0 | 0 | 62 | 0 | 0 | 12 | 0 |
| Rainbow Smelt | 262 | 75 | 356 | 36 | 191 | 137 | 320 | 28 |
| Atlantic Pearlside | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Fourbeard Rockling | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Codfishes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 62 |
| Atlantic Cod | 143 | 97 | 53 | 62 | 0 | 0 | 53 | 0 |
| Haddock | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Silver Hake | 0 | 0 | 0 | 0 | 40 | 0 | 8 | 0 |
| Atlantic Tomcod | 23 | 79 | 59 | 139 | 79 | 0 | 77 | 0 |
| Pollock | 67 | 0 | 0 | 248 | 40 | 56 | 48 | 40 |
| Hakes (Red and White) | 0 | 0 | 0 | 0 | 0 | 36 | 14 | 0 |
| Red Hake | 16 | 147 | 13 | 62 | 56 | 22 | 30 | 67 |
| Spotted Hake | 0 | 0 | 72 | 0 | 40 | 46 | 5 | 0 |
| White Hake | 81 | 0 | 0 | 62 | 0 | 0 | 11 | 0 |
| Striped Cusk Eel | 16 | 0 | 0 | 16 | 0 | 0 | 2 | 0 |
| Goosefish | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Killifishes | 0 | 0 | 0 | 21 | 0 | 0 | 1 | 0 |
| Mummichog | 0 | 0 | 0 | 72 | 0 | 0 | 4 | 0 |
| Striped Killifish | 52 | 60 | 22 | 0 | 0 | 46 | 32 | 39 |
| Atlantic Silverside | 5,745 | 4,831 | 12,323 | 1,581 | 1,413 | 882 | 4,998 | 2,895 |
| Fourspine Stickleback | 0 | 0 | 0 | 21 | 0 | 0 | 9 | 0 |
| Threespine Stickleback | 62 | 278 | 112 | 79 | 41 | 0 | 85 | 0 |
| Black Spotted Stickleback | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |
| Northern Pipefish | 18 | 31 | 22 | 0 | 40 | 0 | 37 | 0 |

Table 2. January to June extrapolated totals for fish found on the Pilgrim Station intake screens, 1980-2014. (continued)

| Species | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 |
|----------------------|------|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| Northern Seabroin | 12 | 7 | 0 | 29 | 0 | 38 | 0 | 0 | 0 | 20 | 0 | 23 | 0 | 48 |
| Striped Seabroins | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 |
| Seabroins | 0 | 0 | 54 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sea Raven | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grubby | 55 | 329 | 269 | 285 | 44 | 913 | 238 | 194 | 47 | 471 | 143 | 290 | 399 | 319 |
| Longhorn Sculpin | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Shorthorn Sculpin | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 0 |
| Lumpfish | 10 | 0 | 0 | 78 | 0 | 84 | 0 | 0 | 23 | 15 | 17 | 30 | 31 | 291 |
| Atlantic Seasnail | 0 | 53 | 0 | 13 | 10 | 0 | 0 | 0 | 0 | 0 | 37 | 0 | 9 | 0 |
| White Perch | 0 | 20 | 0 | 0 | 0 | 72 | 0 | 0 | 0 | 0 | 0 | 0 | 88 | 0 |
| Striped Bass | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Black Sea Bass | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Scup | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Weakfish | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Tautog | 0 | 53 | 10 | 0 | 0 | 83 | 16 | 0 | 26 | 20 | 5 | 11 | 0 | 27 |
| Cunner | 35 | 49 | 272 | 24 | 14 | 334 | 161 | 0 | 0 | 69 | 49 | 131 | 9 | 41 |
| Ocean Pout | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Radiated Shanny | 23 | 0 | 34 | 0 | 0 | 65 | 57 | 30 | 0 | 20 | 0 | 11 | 43 | 58 |
| Rock Gunnel | 11 | 17 | 0 | 44 | 0 | 426 | 11 | 8 | 425 | 32 | 42 | 62 | 14 | 187 |
| Sand Lance sp. | 66 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| American Sand Lance | 0 | 0 | 12 | 29 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 |
| Seaboard Goby | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Atlantic Mackerel | 0 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Butterfish | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | 0 | 0 | 0 |
| Gulf Stream Flounder | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Smallmouth Flounder | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 0 | 0 | 5 | 0 | 0 | 0 |
| Summer Flounder | 12 | 0 | 12 | 0 | 0 | 0 | 10 | 0 | 0 | 7 | 0 | 0 | 0 | 0 |
| Fourspot Flounder | 58 | 7 | 10 | 22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 69 | 0 | 12 |
| Windowpane | 0 | 61 | 23 | 74 | 10 | 44 | 11 | 0 | 0 | 87 | 77 | 103 | 9 | 42 |
| American Plaice | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Winter flounder | 121 | 204 | 149 | 122 | 39 | 622 | 243 | 60 | 326 | 507 | 195 | 220 | 454 | 677 |
| Yellowtail Flounder | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 27 |
| Smooth Flounder | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Northern Puffer | 0 | 7 | 12 | 20 | 0 | 56 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Totals | 577 | 8,614 | 4,367 | 1,804 | 441 | 8,244 | 2,216 | 1,854 | 2,949 | 3,198 | 2,310 | 9,775 | 3,930 | 11,358 |

Table 2. January to June extrapolated totals for fish found on the Pilgrim Station intake screens, 1980-2014. (continued)

| Species | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
|----------------------|--------|--------|--------|-------|--------|-------|--------|-------|-------|-------|--------|--------|--------|-------|
| Northern Seabroin | 80 | 47 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| Striped Seabroins | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Seabroins | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sea Raven | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 0 | 0 | 0 | 0 |
| Grubby | 598 | 421 | 704 | 306 | 272 | 195 | 908 | 461 | 615 | 370 | 353 | 393 | 220 | 242 |
| Longhorn Sculpin | 0 | 0 | 0 | 0 | 0 | 0 | 233 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Shorthorn Sculpin | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 0 | 0 | 0 | 0 |
| Lumpfish | 43 | 87 | 27 | 68 | 180 | 48 | 80 | 67 | 120 | 0 | 8 | 168 | 79 | 0 |
| Atlantic Seasnail | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 8 | 0 | 0 | 0 |
| White Perch | 0 | 0 | 86 | 34 | 0 | 86 | 24 | 21 | 19 | 0 | 0 | 12 | 25 | 0 |
| Striped Bass | 0 | 0 | 0 | 0 | 0 | 0 | 39 | 0 | 0 | 16 | 120 | 0 | 72 | 0 |
| Black Sea Bass | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 0 | 12 | 0 |
| Scup | 13 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| Weakfish | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 0 | 0 | 0 |
| Tautog | 25 | 23 | 0 | 89 | 68 | 26 | 0 | 64 | 19 | 0 | 0 | 0 | 0 | 14 |
| Cunner | 67 | 98 | 82 | 13 | 39 | 74 | 78 | 83 | 19 | 0 | 64 | 109 | 172 | 51 |
| Ocean Pout | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 14 | 0 | 0 | 0 |
| Radiated Shanny | 131 | 71 | 29 | 0 | 63 | 26 | 13 | 67 | 31 | 59 | 14 | 16 | 0 | 15 |
| Rock Gunnel | 72 | 107 | 155 | 0 | 21 | 16 | 100 | 75 | 50 | 0 | 24 | 216 | 55 | 29 |
| Sand Lance sp. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 | 0 | 0 | 0 | 11 | 252 | 0 |
| American Sand Lance | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 | 0 | 0 | 30 |
| Seaboard Goby | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 |
| Atlantic Mackerel | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| Butterfish | 27 | 0 | 0 | 51 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Gulf Stream Flounder | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Smallmouth Flounder | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 72 | 16 | 0 |
| Summer Flounder | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 11 | 0 | 16 | 41 | 0 | 0 | 0 |
| Fourspot Flounder | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 103 | 0 | 0 | 0 |
| Windowpane | 73 | 125 | 103 | 43 | 416 | 381 | 363 | 62 | 24 | 0 | 37 | 0 | 92 | 0 |
| American Plaice | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 0 | 0 | 0 | 0 |
| Winter flounder | 613 | 694 | 519 | 490 | 1,476 | 687 | 187 | 1,374 | 601 | 585 | 844 | 787 | 1,106 | 176 |
| Yellowtail Flounder | 0 | 0 | 0 | 0 | 0 | 32 | 0 | 0 | 0 | 16 | 0 | 24 | 0 | 0 |
| Smooth Flounder | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Northern Puffer | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Totals | 13,129 | 17,041 | 16,556 | 3,378 | 11,274 | 6,557 | 26,002 | 8,425 | 5,206 | 4,773 | 14,775 | 15,114 | 12,202 | 3,582 |

Table 2. January to June extrapolated totals for fish found on the Pilgrim Station intake screens, 1980-2014. (continued)

| Species | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 1980-2013 Mean | 2014 |
|----------------------|-------|-------|--------|-------|-------|-------|----------------|-------|
| Northern Seabrobin | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 |
| Striped Seabrobin | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Seabrobin | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Sea Raven | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Grubby | 312 | 215 | 169 | 83 | 207 | 181 | 330 | 473 |
| Longhorn Sculpin | 0 | 0 | 0 | 0 | 40 | 0 | 8 | 0 |
| Shorthorn Sculpin | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Lumpfish | 49 | 0 | 33 | 73 | 0 | 0 | 50 | 0 |
| Atlantic Seasnail | 16 | 0 | 0 | 0 | 0 | 0 | 5 | 0 |
| White Perch | 145 | 0 | 0 | 0 | 0 | 0 | 19 | 62 |
| Striped Bass | 31 | 0 | 0 | 0 | 0 | 0 | 8 | 0 |
| Black Sea Bass | 0 | 0 | 0 | 0 | 118 | 0 | 5 | 0 |
| Scup | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Weakfish | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Tautog | 0 | 0 | 13 | 0 | 0 | 0 | 17 | 0 |
| Cunner | 190 | 60 | 216 | 89 | 100 | 22 | 83 | 267 |
| Ocean Pout | 16 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Radiated Shanny | 31 | 31 | 62 | 18 | 30 | 44 | 32 | 0 |
| Rock Gunnel | 29 | 15 | 43 | 0 | 96 | 22 | 71 | 62 |
| Sand Lance sp. | 0 | 0 | 214 | 57 | 59 | 0 | 20 | 51 |
| American Sand Lance | 320 | 0 | 0 | 0 | 0 | 0 | 14 | 0 |
| Seaboard Goby | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Atlantic Mackerel | 0 | 0 | 0 | 0 | 18 | 0 | 1 | 0 |
| Butterfish | 0 | 0 | 0 | 0 | 33 | 36 | 5 | 0 |
| Gulf Stream Flounder | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Smallmouth Flounder | 0 | 0 | 76 | 0 | 130 | 182 | 15 | 40 |
| Summer Flounder | 23 | 0 | 0 | 0 | 0 | 0 | 4 | 0 |
| Fourspot Flounder | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 |
| Windowpane | 0 | 60 | 56 | 11 | 41 | 0 | 71 | 74 |
| American Plaice | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Winter flounder | 902 | 307 | 695 | 278 | 135 | 165 | 487 | 165 |
| Yellowtail Flounder | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 |
| Smooth Flounder | 23 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Northern Puffer | 0 | 0 | 0 | 0 | 33 | 0 | 4 | 33 |
| Totals | 9,247 | 6,427 | 15,409 | 3,117 | 4,819 | 2,105 | 7,670 | 4,828 |

Table 3. Monthly impingement rates (fish per hour) for all fish collected at Pilgrim Station from the Intake Screens, January - June, 1980-2014.

| Year | Jan | Feb | Mar | Apr | May | Jun | Mean |
|----------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 1980 | 0.00 | 0.14 | 0.57 | 0.13 | 0.14 | 0.21 | 0.20 |
| 1981 | 0.79 | 1.88 | 2.66 | 6.18 | 0.32 | 0.14 | 2.00 |
| 1982 | 0.25 | 0.25 | 2.41 | 0.74 | 1.15 | 1.15 | 0.99 |
| 1983 | 0.23 | 0.33 | 0.71 | 0.71 | 0.36 | 0.15 | 0.42 |
| 1984 | 0.21 | 0.18 | 0.12 | 0.04 | 0.06 | 0.01 | 0.10 |
| 1985 | 0.40 | 5.48 | 2.17 | 2.36 | 0.82 | 0.48 | 1.95 |
| 1986 | 0.10 | 0.80 | 0.63 | 0.29 | 0.30 | 0.97 | 0.52 |
| 1987 | 0.64 | 0.11 | 1.20 | 0.00 | 0.50 | 0.05 | 0.42 |
| 1988 | 0.33 | 0.11 | 1.13 | 0.27 | 0.13 | 0.04 | 0.34 |
| 1989 | 0.12 | 0.25 | 2.00 | 1.41 | 0.35 | 0.25 | 0.73 |
| 1990 | 0.61 | 1.11 | 0.44 | 0.47 | 0.48 | 0.10 | 0.54 |
| 1991 | 0.58 | 0.57 | 1.53 | 2.34 | 0.33 | 8.19 | 2.26 |
| 1992 | 1.30 | 1.13 | 1.69 | 0.75 | 0.49 | 0.05 | 0.90 |
| 1993 | 1.55 | 0.85 | 8.06 | 4.11 | 0.64 | 0.28 | 2.58 |
| 1994 | 1.93 | 0.73 | 3.35 | 10.63 | 1.00 | 0.43 | 3.01 |
| 1995 | 8.41 | 0.88 | 9.75 | 2.32 | 1.13 | 0.59 | 3.85 |
| 1996 | 1.19 | 0.58 | 7.00 | 11.15 | 2.51 | 0.22 | 3.78 |
| 1997 | 0.98 | 0.48 | 0.30 | 2.54 | 0.26 | 0.06 | 0.77 |
| 1998 | 2.42 | 3.24 | 5.22 | 4.19 | 0.44 | 0.10 | 2.60 |
| 1999 | 1.56 | 2.42 | 2.71 | 1.40 | 1.00 | 0.00 | 1.52 |
| 2000 | 3.01 | 1.98 | 9.06 | 17.58 | 0.47 | 0.12 | 5.37 |
| 2001 | 0.41 | 1.39 | 4.38 | 6.22 | 0.00 | 0.05 | 2.08 |
| 2002 | 1.05 | 2.05 | 2.36 | 1.78 | 0.09 | 0.05 | 1.23 |
| 2003 | 0.61 | 0.83 | 2.58 | 1.50 | 0.66 | 0.38 | 1.09 |
| 2004 | 0.68 | 0.91 | 4.57 | 11.91 | 2.14 | 0.04 | 3.37 |
| 2005 | 2.94 | 1.33 | 2.69 | 6.72 | 1.96 | 0.05 | 2.61 |
| 2006 | 3.54 | 1.04 | 5.38 | 4.50 | 1.73 | 0.43 | 2.77 |
| 2007 | 0.52 | 1.16 | 2.34 | 0.54 | 0.15 | 0.08 | 0.80 |
| 2008 | 1.76 | 1.32 | 3.92 | 5.17 | 0.56 | 0.11 | 2.14 |
| 2009 | 0.32 | 0.73 | 4.81 | 2.50 | 0.32 | 0.10 | 1.46 |
| 2010 | 1.84 | 1.16 | 5.57 | 11.99 | 0.53 | 0.06 | 3.53 |
| 2011 | 0.27 | 0.56 | 1.41 | 1.88 | 1.29 | 0.06 | 0.91 |
| 2012 | 0.67 | 0.82 | 2.94 | 1.80 | 0.20 | 0.13 | 1.09 |
| 2013 | 0.31 | 0.61 | 0.74 | 2.00 | 0.19 | 0.15 | 0.67 |
| average | 1.22 | 1.10 | 3.13 | 3.77 | 0.67 | 0.45 | 1.72 |
| 2014 | 0.37 | 0.21 | 1.12 | 4.14 | 0.58 | 0.23 | 1.11 |

Table 4. Monthly extrapolated totals for all invertebrates collected at Pilgrim Station from the intake screens, January - June, 2014.

| Species | | Jan | Feb | Mar | Apr | May | Jun | Total | Percent |
|--|------------------------------|-------|-------|-------|-------|-------|-------|------------------|---------|
| Ribbon Worm | <i>Nemertean</i> | 0 | 46 | 0 | 28 | 0 | 0 | 74 | 1.0% |
| Nereis | <i>Nereis</i> spp. | 12 | 209 | 79 | 0 | 0 | 0 | 300 | 3.9% |
| Squid | <i>Loligo</i> spp. | 0 | 0 | 0 | 0 | 0 | 760 | 760 | 9.9% |
| Horseshoe Crab | <i>Limulus polyphemus</i> | 0 | 0 | 0 | 0 | 0 | 66 | 66 | 0.9% |
| Sevenspine Bay Shrimp | <i>Crangon septemspinosa</i> | 798 | 558 | 2,691 | 1,393 | 0 | 0 | 5,439 | 70.8% |
| American Lobster | <i>Homarus americanus</i> | 0 | 0 | 40 | 0 | 0 | 33 | 73 | 0.9% |
| Cancer Crabs | <i>Cancer</i> spp. | 23 | 116 | 277 | 56 | 0 | 33 | 505 | 6.6% |
| Green Crabs | <i>Carcinus maenas</i> | 81 | 23 | 0 | 56 | 186 | 66 | 412 | 5.4% |
| Lady Crabs | <i>Ovalipes ocellatus</i> | 0 | 0 | 0 | 0 | 0 | 33 | 33 | 0.4% |
| Starfish | <i>Asterias</i> spp. | 23 | 0 | 0 | 0 | 0 | 0 | 23 | 0.3% |
| Extrapolated Total Number of Invertebrates | | 937 | 953 | 3,087 | 1,532 | 186 | 991 | 7,685 | |
| Number of Invertebrates Collected | | 79 | 41 | 78 | 55 | 3 | 29 | 285 | |
| Total Collection Hours | | 64.33 | 28.92 | 18.80 | 25.85 | 12.00 | 21.79 | 172 | |
| Impingement Rate | | 1.23 | 1.42 | 4.15 | 2.13 | 0.25 | 1.33 | mean rate = 1.75 | |

Table 5. Extrapolated totals for invertebrates collected at Pilgrim Station from the intake screens, January - June, 1980 - 2014.

| Species | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 |
|--|------|------|------|-------|------|-------|------|------|------|
| Ribbon worm <i>Nemertean</i> | 0 | 0 | 1 | 0 | 0 | 0 | 4 | 14 | 13 |
| Clam Worm <i>Nereis spp.</i> | 4 | 12 | 0 | 0 | 0 | 0 | 0 | 5 | 4 |
| Nephtys <i>Nephtys spp.</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Roundworm <i>Nematoda</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Bloodworm <i>Glycera spp.</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Twelve-scaled Worm <i>Lepidodontus spp.</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Oligochaete worm <i>Orbiniidae</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Polychaete worm <i>Polychaeta</i> | 0 | 0 | 0 | 3 | 0 | 0 | 1 | 35 | 144 |
| Isopod <i>Isopoda</i> | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 2 | 9 |
| Amphipod <i>Amphipoda</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| Barnacle <i>Cirripedia</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Softshell Clam <i>Mya arenaria</i> | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Common Periwinkle <i>Littorina littorea</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| Squid <i>Loligo spp.</i> | 5 | 0 | 9 | 11 | 0 | 45 | 9 | 0 | 0 |
| Horseshoe Crab <i>Limulus polyphemus</i> | 146 | 177 | 230 | 679 | 0 | 66 | 69 | 8 | 38 |
| Sevenspine Bay Shrimp <i>Crangon septemspinosa</i> | 7 | 281 | 57 | 464 | 36 | 831 | 103 | 42 | 141 |
| Gammarid Shrimp <i>Gammarus spp.</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mysid Shrimp <i>Mysidacea</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Caridean Shrimp <i>Caridea</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Glass Shrimp <i>Dichelopandulus leptocerus</i> | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Penaeid Shrimp <i>Penaeidae</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| American Lobster <i>Homarus americanus</i> | 1 | 4 | 16 | 0 | 0 | 7 | 6 | 0 | 1 |
| Hermit Crab <i>Paguridae</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Cancer Crab <i>Cancer spp.</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Japanese Shore Crab <i>Hemigrapsus sanguineus</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Blue Crab <i>Callinectes sapidus</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Green Crab <i>Carcinus maenas</i> | 5 | 3 | 19 | 1 | 5 | 7 | 3 | 13 | 2 |
| Lady Crab <i>Ovalipes ocellatus</i> | 0 | 0 | 1 | 4 | 0 | 3 | 1 | 0 | 0 |
| Rock Crab <i>Cancer quanbami</i> | 4 | 5 | 22 | 14 | 3 | 113 | 14 | 21 | 37 |
| Spider Crab <i>Libinia spp.</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Arctic Lyre Crab <i>Hyas coarctatus</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Nudibranch <i>Nudibranchia</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 41 |
| Tunicate <i>Tunicata</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sea Anenome <i>Actinaria</i> | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 |
| Sea Urchin <i>Echinoidea</i> | 4 | 4 | 3 | 2 | 1 | 11 | 2 | 7 | 7 |
| Brittle Star <i>Ophiuroidea</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Starfish <i>Asterias spp.</i> | 6 | 8 | 14 | 1 | 13 | 11 | 4 | 2 | 3 |
| Extrapolated Total Number of Invertebrates | 183 | 495 | 372 | 1,180 | 58 | 1,097 | 218 | 156 | 457 |

Table 5. Extrapolated totals for invertebrates collected at Pilgrim Station from the intake screens, January - June, 1980 - 2014. (continued)

| Species | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 |
|--|------|------|------|------|------|------|------|------|------|
| Ribbon worm <i>Nemertean</i> | 3 | 7 | 1 | 3 | 11 | 0 | 0 | 0 | 2 |
| Clam Worm <i>Nereis spp.</i> | 7 | 5 | 7 | 20 | 28 | 60 | 124 | 27 | 6 |
| Nephtys <i>Nephtys spp.</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Roundworm <i>Nematoda</i> | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 |
| Bloodworm <i>Glycera spp.</i> | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 1 | 0 |
| Twelve-scaled Worm <i>Lepidodontus spp.</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Oligochaete worm <i>Orbiniidae</i> | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 0 |
| Polychaete worm <i>Polychaeta</i> | 15 | 0 | 0 | 0 | 7 | 0 | 0 | 2 | 0 |
| Isopod <i>Isopoda</i> | 9 | 1 | 9 | 7 | 1 | 1 | 2 | 1 | 0 |
| Amphipod <i>Amphipoda</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Barnacle <i>Cirripedia</i> | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Softshell Clam <i>Mya arenaria</i> | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| Common Periwinkle <i>Littorina littorea</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Squid <i>Loligo spp.</i> | 8 | 27 | 0 | 16 | 8 | 46 | 23 | 2 | 3 |
| Horseshoe Crab <i>Limulus polyphemus</i> | 41 | 21 | 21 | 69 | 60 | 13 | 8 | 4 | 5 |
| Sevenspine Bay Shrimp <i>Crangon septemspinosa</i> | 44 | 128 | 137 | 262 | 105 | 614 | 398 | 725 | 52 |
| Gammarid Shrimp <i>Gammarus spp.</i> | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mysid Shrimp <i>Mysidacea</i> | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| Caridean Shrimp <i>Caridea</i> | 32 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Glass Shrimp <i>Dichelopandulus leptocerus</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Penaeid Shrimp <i>Penaeidae</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| American Lobster <i>Homarus americanus</i> | 9 | 16 | 21 | 45 | 41 | 69 | 15 | 3 | 10 |
| Hermit Crab <i>Paguridae</i> | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cancer Crab <i>Cancer spp.</i> | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Japanese Shore Crab <i>Hemigrapsus sanguineus</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Blue Crab <i>Callinectes sapidus</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Green Crab <i>Carcinus maenas</i> | 10 | 4 | 13 | 4 | 26 | 8 | 76 | 7 | 17 |
| Lady Crab <i>Ovalipes ocellatus</i> | 0 | 1 | 3 | 1 | 1 | 0 | 1 | 0 | 2 |
| Rock Crab <i>Cancer quanbami</i> | 34 | 16 | 36 | 9 | 9 | 22 | 17 | 10 | 12 |
| Spider Crab <i>Libinia spp.</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Arctic Lyre Crab <i>Hyas coarctatus</i> | 1 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Nudibranch <i>Nudibranchia</i> | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| Tunicate <i>Tunicata</i> | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sea Anenome <i>Actinaria</i> | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sea Urchin <i>Echinoidea</i> | 63 | 7 | 3 | 3 | 0 | 5 | 3 | 1 | 4 |
| Brittle Star <i>Ophiuroidea</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Starfish <i>Asterias spp.</i> | 145 | 6 | 86 | 3 | 4 | 13 | 4 | 2 | 17 |
| Extrapolated Total Number of Invertebrates | 416 | 244 | 341 | 442 | 304 | 861 | 672 | 786 | 143 |

Table 5. Extrapolated totals for invertebrates collected at Pilgrim Station from the intake screens, January - June, 1980 - 2014. (continued)

| Species | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|--|------|------|-------|------|------|------|--------|--------|-------|
| Ribbon worm <i>Nemertean</i> | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Clam Worm <i>Nereis</i> spp. | 3 | 17 | 84 | 18 | 2 | 25 | 392 | 1,055 | 53 |
| Nephtys <i>Nephtys</i> spp. | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 11 | 23 |
| Roundworm <i>Nematoda</i> | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 |
| Bloodworm <i>Glycera</i> spp. | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 16 | 15 |
| Twelve-scaled Worm <i>Lepidodontus</i> spp. | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Oligochaete worm <i>Orbiniidae</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Polychaete worm <i>Polychaeta</i> | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| Isopod <i>Isopoda</i> | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| Amphipod <i>Amphipoda</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Barnacle <i>Cirripedia</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Softshell Clam <i>Mya arenaria</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Common Periwinkle <i>Littorina littorea</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Squid <i>Loligo</i> spp. | 9 | 0 | 72 | 2 | 30 | 6 | 36 | 64 | 850 |
| Horseshoe Crab <i>Limulus polyphemus</i> | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 22 | 57 |
| Sevenspine Bay Shrimp <i>Crangon septemspinosa</i> | 459 | 229 | 1,849 | 429 | 364 | 371 | 15,622 | 9,283 | 1,728 |
| Gammarid Shrimp <i>Gammarus</i> spp. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mysid Shrimp <i>Mysidacea</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Caridean Shrimp <i>Caridea</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Glass Shrimp <i>Dichelopandulus leptocerus</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Penaeid Shrimp <i>Penaeidae</i> | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| American Lobster <i>Homarus americanus</i> | 8 | 4 | 8 | 0 | 4 | 9 | 140 | 1,025 | 278 |
| Hermit Crab <i>Paguridae</i> | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Cancer Crab <i>Cancer</i> spp. | 0 | 0 | 0 | 61 | 34 | 60 | 0 | 479 | 462 |
| Japanese Shore Crab <i>Hemigrapsus sanguineus</i> | 0 | 0 | 0 | 0 | 0 | 2 | 21 | 0 | 60 |
| Blue Crab <i>Callinectes sapidus</i> | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Green Crab <i>Carcinus maenas</i> | 12 | 2 | 45 | 30 | 10 | 13 | 111 | 68 | 265 |
| Lady Crab <i>Ovalipes ocellatus</i> | 1 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 |
| Rock Crab <i>Cancer quanbami</i> | 3 | 4 | 104 | 0 | 0 | 0 | 634 | 0 | 0 |
| Spider Crab <i>Libinia</i> spp. | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 72 | 0 |
| Arctic Lyre Crab <i>Hyas coarctatus</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Nudibranch <i>Nudibranchia</i> | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Tunicate <i>Tunicata</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sea Anenome <i>Actinaria</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sea Urchin <i>Echinoidea</i> | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Brittle Star <i>Ophiuroidea</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Starfish <i>Asterias</i> spp. | 4 | 2 | | 36 | 7 | 2 | 26 | 45 | 51 |
| Extrapolated Total Number of Invertebrates | 505 | 264 | 2,164 | 589 | 454 | 489 | 16,990 | 12,140 | 3,842 |

Table 5. Extrapolated totals for invertebrates collected at Pilgrim Station from the intake screens, January - June, 1980 - 2014. (continued)

| Species | | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 1980-2013 Mean | 2014 |
|--|-------------------------------|-------|-------|-------|--------|-------|-------|-------|----------------|-------|
| Ribbon worm | <i>Nemertean</i> | 0 | 123 | 93 | 33 | 0 | 78 | 266 | 19 | 74 |
| Clam Worm | <i>Nereis</i> spp. | 15 | 316 | 399 | 879 | 104 | 30 | 309 | 118 | 300 |
| Nephtys | <i>Nephtys</i> spp. | 667 | 0 | 0 | 325 | 0 | 18 | 0 | 31 | 0 |
| Roundworm | <i>Nematoda</i> | 0 | 0 | 0 | 0 | 0 | 0 | 91 | 3 | 0 |
| Bloodworm | <i>Glycera</i> spp. | 0 | 0 | 0 | 0 | 0 | 41 | 0 | 2 | 0 |
| Twelve-sided Worm | <i>Lepidodontus</i> spp. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Oligochaete worm | <i>Orbiniidae</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Polychaete worm | <i>Polychaeta</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 |
| Isopod | <i>Isopoda</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Amphipod | <i>Amphipoda</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Barnacle | <i>Cirripedia</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Softshell Clam | <i>Mya arenaria</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Common Periwinkle | <i>Littorina littorea</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Squid | <i>Loligo</i> spp. | 468 | 299 | 62 | 345 | 23 | 1,014 | 409 | 115 | 760 |
| Horseshoe Crab | <i>Limulus polyphemus</i> | 14 | 0 | 0 | 49 | 23 | 63 | 0 | 56 | 66 |
| Sevenspine Bay Shrimp | <i>Crangon septemspinosa</i> | 1,544 | 3,575 | 7,505 | 6,227 | 3,813 | 5,009 | 1,829 | 1,890 | 5,439 |
| Gammarid Shrimp | <i>Gammarus</i> spp. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mysid Shrimp | <i>Mysidacea</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Caridean Shrimp | <i>Caridea</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Glass Shrimp | <i>Dichelopandulus</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Penaeid Shrimp | <i>Penaeidae</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| American Lobster | <i>Homarus americanus</i> | 519 | 54 | 0 | 228 | 194 | 0 | 0 | 80 | 73 |
| Hermit Crab | <i>Paguridae</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cancer Crab | <i>Cancer</i> spp. | 858 | 258 | 1,170 | 1,252 | 940 | 762 | 720 | 208 | 505 |
| Japanese Shore Crab | <i>Hemigrapsus sanguineus</i> | 0 | 0 | 35 | 0 | 257 | 0 | 0 | 11 | 0 |
| Blue Crab | <i>Callinectes sapidus</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Green Crab | <i>Carcinus maenas</i> | 314 | 177 | 279 | 480 | 186 | 135 | 544 | 85 | 412 |
| Lady Crab | <i>Ovalipes ocellatus</i> | 14 | 0 | 0 | 120 | 15 | 0 | 0 | 5 | 33 |
| Rock Crab | <i>Cancer quambumi</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 | 0 |
| Spider Crab | <i>Libinia</i> spp. | 0 | 45 | 0 | 0 | 0 | 0 | 0 | 4 | 0 |
| Arctic Lyre Crab | <i>Hyas coarctatus</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Nudibranch | <i>Nudibranchia</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Tunicate | <i>Tunicata</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sea Anenome | <i>Actinaria</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sea Urchin | <i>Echinoidea</i> | 0 | 0 | 27 | 0 | 0 | 0 | 0 | 5 | 0 |
| Brittle Star | <i>Ophiuroidea</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Starfish | <i>Asterias</i> spp. | 76 | 36 | 97 | 193 | 57 | 51 | 110 | 34 | 23 |
| Extrapolated Total Number of Invertebrates | | 4,489 | 4,883 | 9,667 | 10,131 | 5,612 | 7,201 | 4,278 | 2,710 | 7,685 |