EPRI

Evaluating the Effects of Power Plant Operations on Aquatic Communities

Summary of Impingement Survival Studies

Technical Report

Evaluating the Effects of Power Plant Operations on Aquatic Communities

Summary of Impingement Survival Studies

1007821

Final Report, October 2003

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This report describes research sponsored by EPRI.

The report is a corporate document that should be cited in the literature in the following manner:

*Evaluating the Effects of Power Plant Operations on Aquatic Communities:
Summary of Impingement Survival Studies*, EPRI, Palo Alto, CA: 2003. 1007821.

REPORT SUMMARY

This report provides a summary of impingement survival studies conducted at steam-electric power plants since 1970, along with guidance for their interpretation and use. This information will be of value to permit applicants, risk assessors, and risk managers in estimating impingement effects, designing future impingement survival studies, and evaluating potential fish protection benefits of technologies, operational measures, and habitat restorations and enhancements. The report is a companion to EPRI report 1000757, which summarizes entrainment survival information, and complements EPRI reports TR-112013, 1005176, and 1005337, which describe the assessment framework and methods and depend, in part, on impingement survival inputs.

Background

The U. S. Environmental Protection Agency (USEPA) has recently proposed draft §316(b) regulations that effect existing power producing facilities. Facilities effected are subject to performance requirements based, in part, on reducing fish and shellfish impingement mortality at the cooling water intake structure (CWIS) by 80% to 95% relative to a baseline consisting of a shoreline intake with no impingement controls. Analyses of the potential for focal species to survive impingement for both existing and alternative intake design and operation will be important for demonstrating compliance with this requirement. A number of impingement survival studies have been conducted since the mid-1970s in response to the requirements of §316(b) of the Federal Water Pollution Control Act Amendments of 1972. The information provided by these studies provides valuable background for planning and conducting future studies and assessments to address the new regulatory requirements.

Objectives

To compile and summarize the coverage and content of impingement survival studies conducted at steam-electric power plants since 1970, to identify factors potentially influencing impingement survival rates, and to identify factors that should be considered in using impingement survival data in compliance assessments.

Approach

The project team identified and accessed available impingement survival study reports from several existing holdings, a search of the open literature, questionnaires soliciting impingement survival information sent by EPRI to its members, and direct requests to several companies thought to have completed impingement survival studies. All documents were reviewed and a database of relevant study descriptors and impingement survival estimates was compiled. Study descriptors included in the database provide information on important variables that may influence impingement survival or the interpretation of impingement survival data for each study. The team focused on the general methodology used in the impingement survival studies;

the coverage of species, waterbodies, and screen system characteristics provided by the studies; factors influencing impingement survival; and, factors to consider when using existing impingement survival data for §316(b) compliance planning and assessments.

Results

The review included 71 reports covering impingement survival studies at 35 steam-electric plants located in 15 states and the province of Ontario, covering all four of the major water body types for which USEPA has proposed §316(b) performance requirements. Study reports include survival data for three major types of traveling screens: angled, dual-flow, and single-flow. The majority of studies have tested some form of modification to screen design and/or operation to enhance impingement survival. These reports contain survival data for over 300 different taxa, most identified to the species level, although for many species sample size was small.

Various biological, CWIS, and water body factors have been shown to influence impingement survival rates, but no generally applicable mechanistic models have been developed for predicting impingement survival. Species type appears to be the primary biological factor influencing impingement survival, although growth transitions and seasonal changes in condition also may play important roles. Survival rates vary widely among species, but over 50% of the taxonomic families of fish and shellfish studied to date appear to have potential for impingement survival rates of 70% to 80% or higher with adequate screen design and operation.

Survival data indicate that the hardier species (for example, killifishes, perches, flounders, sculpins) tolerate impingement stresses so well that they exhibit high survival rates under virtually all screen design and operating conditions. For moderately tolerant (for example, silversides, drums, temperate basses) and sensitive (for example, anchovies, smelts, herrings) species, data suggest that modifying screenwash operation to a continuous mode may be one of the most effective means for enhancing impingement survival. Screen rotation speed and the addition of Ristroph-type modifications also generally improved survival of these species. Water temperature and, in the case of estuaries, salinity have been found to be important environmental variables influencing impingement survival.

EPRI Perspective

Energy producers, federal and state resource agencies and regulators, and the public will find this report a valuable reference. It will help in understanding and estimating impingement effects, evaluating potential fish protection benefits of technologies and potential methods to improve survival at existing screens, and designing future impingement survival monitoring studies.

Keywords

316(b)
Impingement mortality
Impingement survival
Cooling water intake structures
Environmental Impact Assessment
Fisheries

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INTRODUCTION

Background to Impingement Survival Studies

Steam-electric generating stations produce electricity by using steam created by a heat source (e.g., fossil fuel, nuclear) to drive a steam turbine and generator. As a result of natural energy transfer inefficiencies, however, more heat energy is produced at a station than can be converted to electrical energy. This excess heat needs to be removed from the facility as part of routine operations. One of the most efficient means of heat removal is through transfer to water, which then can be transported away from the station. Given the amounts of heat energy that need to be removed at typical generating stations, large quantities of water are needed for cooling purposes. For this reason, electric generating stations are commonly located along relatively large bodies of water such as rivers, lakes, estuaries, and oceans where the large quantities of water necessary for cooling can be made available efficiently and inexpensively to the station.

For many existing generating stations, water for cooling purposes is pumped from the adjacent waterbody, passed through the station's cooling water system, and returned to the waterbody at an elevated temperature. This process is known as once-through cooling. Under once-through cooling, a typical steam-electric generating station withdraws water from the source waterbody through an intake structure (Figure 1-1).

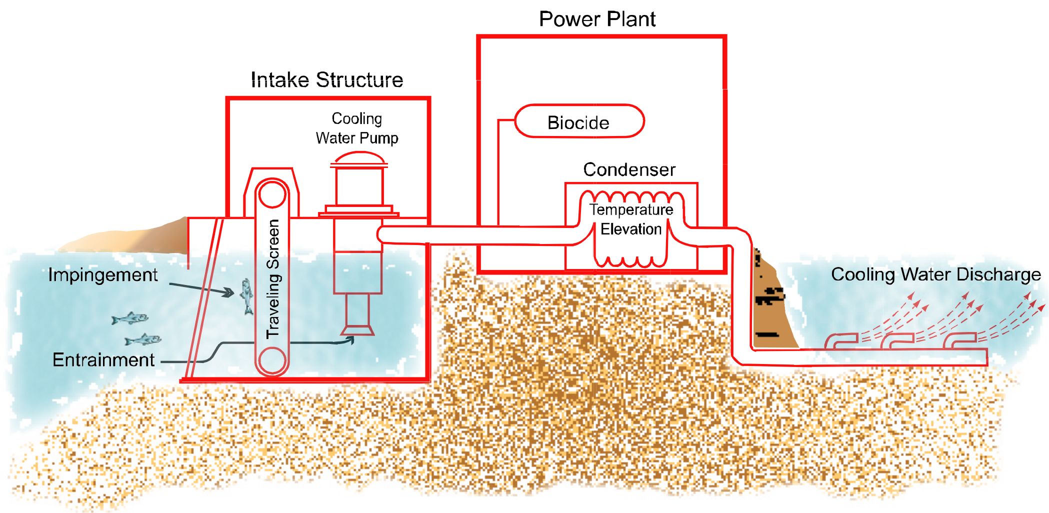

Figure 1-1
Schematic of a typical once-through cooling system showing entrainment and impingement processes

This intake structure includes a screening device that prevents larger aquatic organisms and debris from entering a station's cooling water system. Behind the intake screens are circulating water pumps that move the water from the intake to the condensers. Within these condenser banks, heat is transferred from the steam to the cooling water. From the condensers, the cooling water, now typically 10 – 20 °F warmer, is returned to the source water body by gravity flow.

Aquatic organisms within the source waterbody can be affected by the withdrawal of water for cooling purposes through one of two processes. First, larger aquatic organisms (typically fish and larger invertebrates) can be trapped against the intake screens by the water flowing into the station. This process is known as impingement. Impinged organisms are subject to physical stresses and/or suffocation that can result in the death of some organisms. Second, smaller aquatic organisms — those small enough to pass through the mesh of the intake screen (typically fish eggs and larvae and small invertebrates) — are carried through the cooling water system along with the cooling water flow. This process is known as entrainment. Entrained organisms are also subject to potential mortality as a result of exposure to mechanical stresses, elevated water temperatures, and/or biocide treatments (EPRI 2000a).

This report focuses on the impingement effect of cooling water withdrawals. More specifically, the report examines the likelihood that impingement will cause mortality of the exposed organisms (see Text Box 1-1 for definitions of key terms used in this and subsequent chapters). The probability of death from impingement, or impingement mortality rate, has been studied at a number of existing power plants. Typically, these studies use the proportion of organisms surviving as the measure of organism response to the impingement stress[1], and are therefore generally referred to as "impingement survival" studies. The purpose of this report is to:

- Summarize impingement survival studies conducted to date;
- Identify factors potentially influencing impingement survival; and
- Discuss important considerations for using impingement survival data in compliance assessments

As a result of concerns over the potential effects of entrainment and impingement resulting from the rapidly increasing electrical generation capacity in the late 1960s and early 1970s, Congress included Section 316(b) as part of the amendments to the Federal Water Pollution Control Act (commonly referred to as the "Clean Water Act") that were promulgated in 1972. Section 316(b) requires that "…the location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental impact." Compliance with §316(b), therefore, must address two basic issues: (1) whether or not a cooling water intake structure (CWIS) has the potential to cause an adverse environmental impact (AEI), and, if so, (2) what is the best technology available (BTA) to minimize any AEI. Cooling water withdrawals typically have been regulated by permitting authorities as part of the National or State Pollutant Discharge Elimination System (NPDES or SPDES). Historically, the two basic §316(b) issues have been addressed on a case-by-case basis as part of the permit application/renewal process.

[1] The impingement mortality rate is simply equal to (1-proportion surviving). See Chapter 2.

Text Box 1-1. Definitions of Key Terms

Impingement Mortality Rate—*A measure of the sensitivity of the organisms to impingement exposure (i.e., probability of dying as a result of impingement). Typically measured in site studies as the proportion of organisms surviving impingement, or impingement survival rate (i.e., Impingement Mortality Rate = (1 - Impingement Survival Rate).*

Impingement Mortality—*Impingement loss, or the number of organisms of each species killed by impingement. Impingement loss is a function of both the exposure (numbers impinged) and sensitivity (death rate as a result of impingement) of the organisms.*

Sensitivity—*An organism's tolerance or ability, when exposed to a stress, to resist effects or to maintain its physiological state within normal homeostatic bounds.*

Over the 30 years since enactment, there has been considerable discussion and debate among environmental scientists and managers regarding the definition of terms and implementation process for this section. In 1976, USEPA issued final regulations implementing §316(b).[2] However, these regulations were challenged on procedural grounds in 1977 and, subsequently, were formally withdrawn by USEPA in 1979.[3] Nevertheless, in the absence of formal regulations, permit applicants, scientists, and regulators continued to rely on two USEPA draft guidance publications[4,5] ("Draft Guidance") and also on administrative decisions in several permit proceedings, to define the §316(b) requirements for the discharge permitting process at numerous sites during the 1970s, 1980s, and 1990s. The impingement survival studies reviewed in this report were conducted during this period. The purpose of these studies was generally to: 1) document the actual impingement mortality rate at an existing intake so that estimates of impingement losses, and associated potential for AEI, could be more accurately assessed; and/or 2) evaluate the reduction in impingement mortality rate achieved by changes in screen design and operation[6].

In the early 1990s, a coalition of environmental groups sued USEPA for failing to repromulgate §316(b) regulations. In 1995, both parties entered into a Consent Decree directing USEPA to issue final regulations within seven years. The original schedule was renegotiated in November 2000, resulting in an amended consent decree that divided the rulemaking process into three

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[2] 41 Fed. Reg. 17,387 (Apr. 26, 1976).

[3] 44 Fed. Reg. 32,956 (June __ 1979).

[4] Guidelines to Determine Best Technology Available for the Location, Design, Construction, and Capacity of Cooling Water Intake Structures for Minimizing Adverse Environmental Impact: Section 316(b), P.L. 92-500 at 4, 52, 57 (draft Dec. 5, 1975).

[5] Permit Div., Office of Water Enforcement, U.S. EPA, Guidance for Evaluating the Adverse Impact of Cooling Water Intake Structures on the Aquatic Environment: Section 316(b), P.L. 92-500 at 15 (draft May 1, 1977, 1977 Guidance).

[6] The latter studies were often part of N(S)PDES permitting agreements to test alternative intake screen technology.

phases—new facilities, existing facilities greater than 50 mgd, and existing facilities of 50 mgd or less.[7] Final regulations for new facilities were published on 18 December 2001.[8] During the course of developing these regulations, USEPA determined that "[a]dverse environmental impacts occur when facilities impinge aquatic organisms on their CWISs' intake screens, entrain them within their cooling system, or otherwise negatively affect habitats that support aquatic species." (USEPA 2001). Based on this determination, the regulations for new facilities call for substantial restrictions on the amount of cooling water being withdrawn compared to traditional once-through cooling in an effort to minimize adverse environmental impact.

In April 2002, USEPA proposed regulations for existing utility and non-utility power producing facilities with cooling water flows greater than 50 million gallons per day (phase II for existing facilities). These proposed regulations would establish national performance standards for BTA requiring large reductions in impingement mortality and entrainment of aquatic organisms compared to a calculation baseline. These required reductions can be achieved through a combination of modifications to intake design, construction or operation, or through environmental enhancements or restoration. However, a facility may also qualify for a site-specific determination of BTA if it can be demonstrated that the costs to the specific facility are significantly greater than considered by USEPA in establishing the standard or if the costs to the facility of complying with the standard are significantly greater than the associated environmental benefits.

While not defining the level of loss that would constitute AEI, the USEPA approach implies that meeting the presumptive performance requirements for reductions in fish loss will effectively minimize AEI. However, since there is typically more than one means to achieve the target reductions, and because cost-benefit is a factor in determining BTA, a careful balancing of the risks and benefits of each is required to optimally meet the goals of §316(b). Thus, site-specific based options for determining BTA that are being considered by USEPA include the use of risk assessment[9]. The regulations for these existing facilities are scheduled to be finalized in February 2004. In the third phase, USEPA is scheduled to finalize regulations for existing facilities with cooling water withdrawals of 50 million gallons per day or less in June 2006.

The performance standard presently proposed by USEPA for impingement at all phase II existing facilities is a reduction in impingement mortality of all life stages of fish and shellfish by 80 to 95 percent from the calculation baseline. Since impingement mortality is related both to the number of organisms impinged and their mortality rate (Text Box 1-1), such reductions can be achieved through intake design and operational measures that lower impingement rate or impingement mortality rate, or both. Therefore, estimates of impingement mortality rates for the primary species impinged at existing facilities will be one of the important inputs required to support technology selection to meet the proposed standard or to assess the benefits versus costs of alternative fish protection measures. This document provides background information on

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[7] Cronin v. Browner, No. 93 Civ. 0314 (AGS)(S.D.N.Y.), Order of November 21, 2000.

[8] 66 Fed. Reg. 65,256 (Dec. 18, 2001).

[9] 67 Fed. Reg. 17,122 (Apr. 9, 2002) Proposed 40 C.F.R.§125.94 (c) (2) [USEPA also includes a section on risk assessment in the Case Study Analysis presented in Chapter A-1 of the supporting documents for the proposed rules]

impingement survival and summaries of impingement survival rate estimates that can be used to define applicable impingement mortality rates and/or to plan additional data collection efforts required for the compliance determination.

As part of its corporate objectives to provide scientifically sound information for development of cost-effective environmental policies and regulations, EPRI has supported a variety of studies that evaluated scientific methodologies and summarized potential environmental effects of cooling water withdrawals. These studies have done much to advance the current state-of-the-art for addressing issues related to §316(b). This document continues in this vein and provides a summary of impingement survival studies conducted since 1970, along with guidance for their interpretation and use. This information will be of value to permit applicants, risk assessors, and risk managers in estimating impingement effects, evaluating the potential fish protection benefits of technologies, operational measures, and habitat restorations/enhancements, and designing future impingement survival studies.

In addition to this document, other EPRI reports that provide information relevant to 316(b) include:

- Enhancement Strategies for Mitigating Potential Operational Impacts of Cooling Water Intake Structure: Approaches for Enhancing Environmental Resources (2003)
- Cooling System Retrofit Cost Analysis (2002)
- Evaluating the Effects of Power Plants on Aquatic Communities: Guidelines for Selection of Assessment Methods (2002)
- Evaluating the Effects of Power Plant Operations on Aquatic Communities: An Ecological Risk Assessment Framework for §316(b) Determinations (2002)
- Spawning and Nursery Habitat Assessment Methods (2001)
- Procedural Guideline for Evaluating Alternative Fish Protection Technologies to Meet Section 316(b) of the Clean Water Act (2000)
- Evaluation of Biocriteria as a Concept, Approach, and Tool for Assessing Impacts of Impingement and Entrainment under §316(b) of the Clean Water Act (2000)
- Technical Evaluation of the Utility of Intake Approach Velocity as an Indicator of Potential Adverse Environmental Impact under Clean Water Act Section 316 (2000)
- Review of Entrainment Survival Studies: 1970-2000 (2000)
- Catalog of Assessment Methods for Evaluating the Effects of Power Plant Operations on Aquatic Communities (1999)
- Fish Protection at Cooling Water Intakes: Status Report (1999)

Taken together these documents provide utility managers, regulators, and interested parties technically sound guidance for the §316(b) determination process. It is EPRI's intent that these documents be accepted as objective resources by a diversity of users involved in the regulatory process, including scientists, engineers, managers, and lawyers working for the utility industry, regulatory and resource management agencies, academic and private consultants, and environmental advocates.

Report Approach and Organization

Available impingement survival study reports were identified and accessed from several sources including: 1) the EPRI Intake Systems Database maintained by Alden Research Laboratories; 2) the library of ASA Analysis & Communication; 3) a search of the open literature using the DIALOG system; 4) questionnaires soliciting impingement survival information that were sent by EPRI to its members; and 5) direct requests to several companies thought to have completed impingement survival studies. All documents thus obtained were reviewed and a database of relevant study descriptors and impingement survival estimates was created in Microsoft Access. The study descriptors included in the database provide information on important variables that may influence impingement survival or the interpretation of impingement for each study. This database is available on a compact disc (CD).[10]

Chapter 2 of this report discusses the general methodology used in the impingement survival studies, describes the impingement survival study Microsoft Access database, and summarizes the coverage of the reviewed impingement survival studies in terms of the species, waterbodies, waterbody types, and intake screen characteristics represented. The chapter also provides a bibliographic listing of impingement survival study documents.

Chapter 3 discusses the factors influencing impingement survival, including species sensitivity, intake screen system design and operation, and waterbody characteristics. Finally, Chapter 4 discusses the use of existing impingement survival data in §316(b) permitting assessments and describes the listings of impingement survival rate estimates obtained from the source documents, which are contained in Appendices B-1 and B-2.

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[10] For availability of the database, contact EPRI project manager, D. Dixon, at the address given on the title page of this report. The database is not an “end-user information base.” Experienced Microsoft Access users/programmers may query the database to extract information of interest. Neither EPRI nor the authors of this report warrant the operation or use of the database for any specific end-user application.

2
SUMMARY OF IMPINGEMENT SURVIVAL STUDIES

Impingement survival studies have been conducted at numerous power plants with various screen designs located on a wide spectrum of waterbody types. This chapter has two major sections. This first major section reviews the general approach used to conduct these impingement survival studies and identifies several aspects of the methodology that may especially influence the survival rate estimates obtained. The second section summarizes the documents obtained for this review, the coverage of species, waterbody, and CWIS characteristics that they collectively provide, and the nature of the survival rate estimates they contain.

General Approach to Impingement Survival Studies

Debris and organisms in the cooling water drawn into steam-electric power plant intakes are usually filtered, first with fixed bar racks (typically about 8-10 cm spacing) and then with rotating traveling screens (typically 0.95 cm, but at some facilities as small as 0.5 mm spacing). A screen-wash spray system washes organisms and debris that impinge on the traveling screens into a sluiceway, which discharges the wash water to the source waterbody. Impingement survival studies monitor the post-impingement survival rate of fish and macroinvertebrates that are washed from the intake traveling screens. The detailed methods that have been used to conduct this monitoring vary somewhat among facilities and, sometimes, among years at a given facility. Variations in methods over time generally reflect attempts to refine and improve impingement survival estimates by reducing handling and holding stresses, or to accommodate testing of alternative intake screen technology (Muessig et al. 1988). Nevertheless, the large majority of studies have used similar methods that allow description of a general approach for monitoring impingement survival, which is provided below. Drawing on the collective experience gained through previous studies, EPRI plans to develop specific guidelines for designing and conducting future impingement survival studies that may be needed at existing facilities.

Data Collection

For impingement survival study, impinged organisms are collected from the screenwash water, generally by using a dip-net or basket type of device containing a mesh opening equal to, or slightly smaller than, that of the traveling screen panels. The collection location is either at a point along the sluiceway (often at a debris collection pit designed to allow removal of large pieces of debris before discharge to the waterbody) or at the point where the sluice water discharges to the waterbody (Figure 2-1). At some sites, modifications have been made to the sluiceway system itself to bypass impinged organisms to collection pools or tanks for use in the impingement survival studies (ECSI and LMS 1996; Davis et al. 1988). Sampling gear may consist of metal mesh baskets, with or without net liners, floating live-pens, or angled screen flumes[11]. Studies that collect fish from a point along the sluiceway prior to the point of discharge to the waterbody could underestimate the total effects of the impingement process if transit along the remainder of debris/fish return system caused significant further damage to the organisms. Few studies have examined the potential for additional mortality from transit along the screenwash sluiceway (EA 1976; Tatham et al. 1977), and mortality estimates specific to the sluiceway effects are generally not available. However, at the Bowline Point Generating Station, no significant difference was observed in impingement survival rates for a number of species between study years in which the sampling location was moved from the sluiceway pit near the screens to the sluiceway discharge point about 53 meters away (Muessig et al. 1988). In any case, impingement survival rates measured in the sluiceway prior to its point of discharge provide estimates of the potential for survival that are useful in evaluating alternatives, since proper design of fish return systems can likely minimize any additional damage during transit back into the waterbody (Strait et al. 2003).

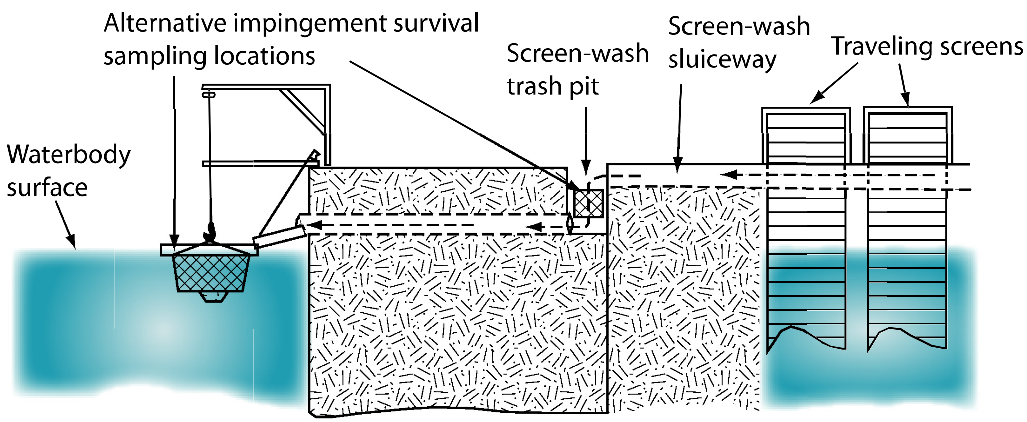


Figure 2-1
Typical impingement survival study collection locations along the screenwash sluiceway system.

The collection process itself can cause damage to the organisms resulting in increased mortality, especially where relatively small collection gear, such as debris pit collection baskets, are used. For example, studies conducted at the Bowline Point Generating Station in the late 1970s found that survival of white perch controls placed in the sluiceway collection basket for 15 or 30 minutes was significantly lower than that of holding controls and controls held in the basket for only one minute (EA 1979a; Figure 2-2). Therefore, many impingement survival studies have kept the duration of each sample brief (typically 15-30 minutes) to keep collection effects to a practical minimum. As a result, relatively few impinged organisms may be collected in each sample. To increase the numbers of organisms collected, sampling is generally conducted during peak periods of impingement, and thus impingement survival samples are usually quite

[11] Survival studies at screens outfitted with fine-mesh screen panels have used the larval collection flumes designed and used for entrainment survival studies (EPRI 2000a).

representative of the majority of the impingement occurring at a given facility. Individual samples are often combined for analysis to increase the precision of impingement survival estimates. An alternative sampling approach that has been used to minimize sampling effects is to continuously monitor the sluiceway or collection basket and remove impinged fish by dip-netting them as they enter (Tatham et al. 1977) or periodically removing them from the collection device (NUSC 1986).

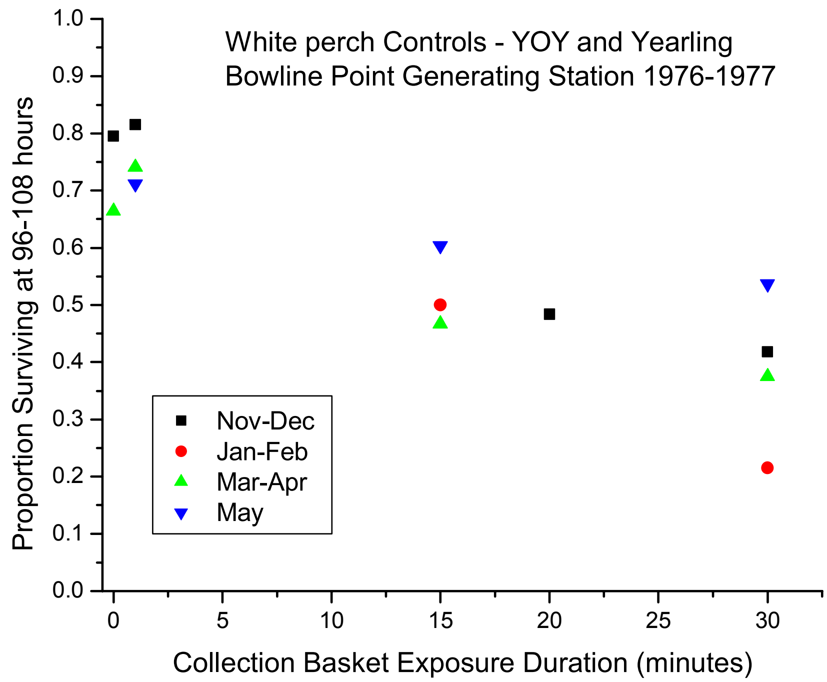


Figure 2-2
Survival (at 96-108 hrs) of white perch collection and holding controls in relation to duration of exposure to the collection net at the Bowline Point Generating Station (adapted from EA 1979a).

Immediately following collection, impinged organisms are categorized as live or dead, or as live, stunned,[12] or dead. Data on length or age classification is often also taken at the time of sample collection. These initial survival data have typically been taken on all fish species collected in the samples, as well as on important macroinvertebrate species. Impingement mortality rates estimated from these initial data are confounded by mortality that may be present from natural causes. Impingement mortality rates would be overestimated to the extent that fish are already dead when they encounter the traveling screens and no adjustment is made to account for the extraneous mortality. Such overestimation could be substantial in cases where large fish kills have occurred, such as from low winter temperatures or disease outbreaks. In such cases, the majority of impinged fish may be dead or moribund prior to their arrival on the power station

[12] In some studies, a "damaged" or "stressed" category was used instead. The distinction between these categories is apparently based on whether behavioral observation (e.g., non-equilibrium, struggling movements) or visual inspection for injuries was used to classify fish. This text uses the term "stunned" to mean any of these categories.

screens (LaJeone and Monzingo 2000). Distinguishing other sources of mortality by recording the physical condition of dead impinged fish (e.g., eye opacity and decomposition) and documenting local or regional fish kills may be an important consideration for design of future studies.

Most impingement survival studies have also collected data on delayed, or latent, mortality from impingement by transferring organisms initially alive to a holding facility and monitoring mortality (number dead) at pre-established intervals over an extended period of time. Typically, mortality observations are made at least once during each 24-hour period of the extended survival study to avoid data loss through decay, scavenging, etc.

To optimize the use of holding facilities and monitoring efforts, these "extended" survival studies have often been limited to focal species that are frequently impinged and/or are of commercial, recreational, or other importance in the waterbody. Holding facilities used for the extended survival studies have consisted either of land based flow-through tanks supplied with water by pumping from the source waterbody or floating live pens maintained in the source waterbody near the cooling water intake.

The duration of the impingement survival monitoring used in studies conducted to date is summarized in Figure 2-3. Extended survival observations have typically ranged from less than 24 hours up to 108 hours, although at least one study monitored mortality of impinged fish for up to 204 hours (EA 1979a).

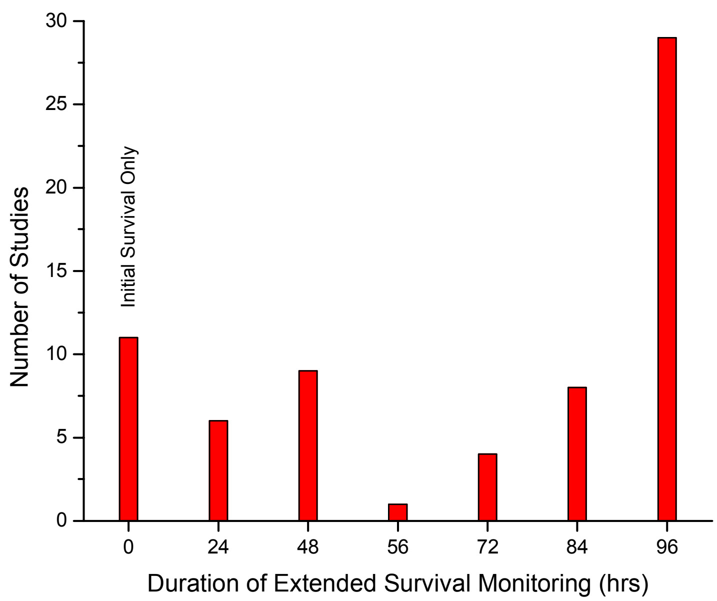


Figure 2-3
Duration of extended survival monitoring for impingement survival studies reviewed

As previously illustrated in Figure 2-2, mortality observed in the extended studies results not only from impingement itself, but also from the stresses of collection and holding. To distinguish impingement effects from the effects of sampling and holding, some studies have conducted survival tests on several fish species using controls collected by seining or box trapping in the source waterbody (Serven and Barbour 1981; Muessig et al. 1988; EA 1983). Field-collected fish were generally held for 1-3 days to allow recovery from collection stress prior to their use as controls, after which they were introduced to the collection device (collection controls) and/or directly into the holding facility (holding controls). By adjusting for control mortality (see 'Data Analysis' section), these studies can be used to evaluate the temporal pattern and duration of latent mortality due solely to the effects of impingement.

Control-adjusted mortality data from such studies indicate that a portion of fish that initially survive impingement later succumb to its effects (Figure 2-4). Latent mortality is therefore an important consideration, both for designing impingement survival studies and for appropriately using impingement mortality rates in §316(b) assessments. Latent mortality from effects caused by impingement appears to be greatest during the first 24 to 48 hours of monitoring, and then rapidly levels off (Figure 2-4).

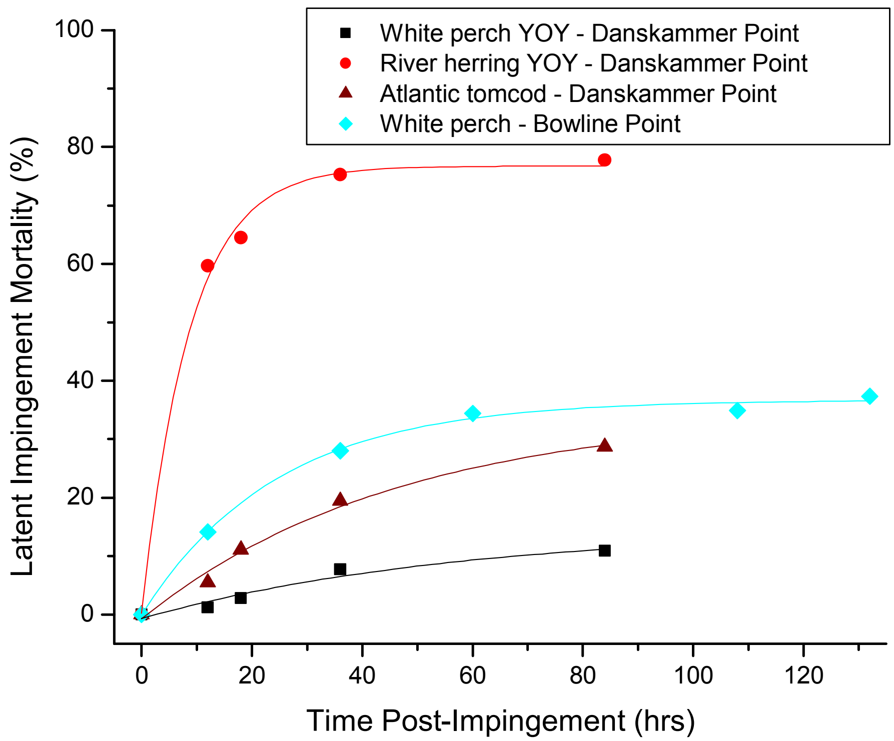


Figure 2-4
Control-adjusted mortality versus holding time for several species impinged at the Danskammer Point and Bowline Point Generating Stations (data from EA 1979a, EA 1982)

An exponential decay function of the following form was fitted (R^2 = 0.88 to 0.99) to control-adjusted latent mortality data covering a range of species sensitivity, age classes, and levels of impingement stress.

$$m_t = m_0 + A_1 e^{-\frac{t}{t_1}} \qquad \text{(Equation 2-1)}$$

where: m_t = latent mortality (proportion dead) as result of impingement

m_0 = y-intercept of the asymptote to the curve (=$m_{maximum}$)

$A_{1,} t_1$ = regression constants

t = time post-impingement

The fitted curves indicate that most of the latent effects of impingement are realized within about 96 hours following impingement (Figure 2-5). Others (Sprague 1969) have similarly found that the acute effects of pollutants are usually observed within 96 hours of exposure. The analysis suggests that for younger fish (YOY, yearling), which in many cases comprise the vast majority of impinged fish, and for more sensitive species (e.g., river herring), greater than 90 percent of potential latent effects are evident within 24 to 72 hours of impingement. While the temporal pattern of latent effects apparently varies depending on fish species and age and levels of stress imposed by the intake system, study durations of about 1-4 days have proven to be practical to implement and capture the large majority of potential latent effects. A limitation on the duration of extended survival monitoring is that the effects of holding stresses tend to become greater with holding time, increasing uncertainty about the causes of observed mortality (Taft et al. 1982).

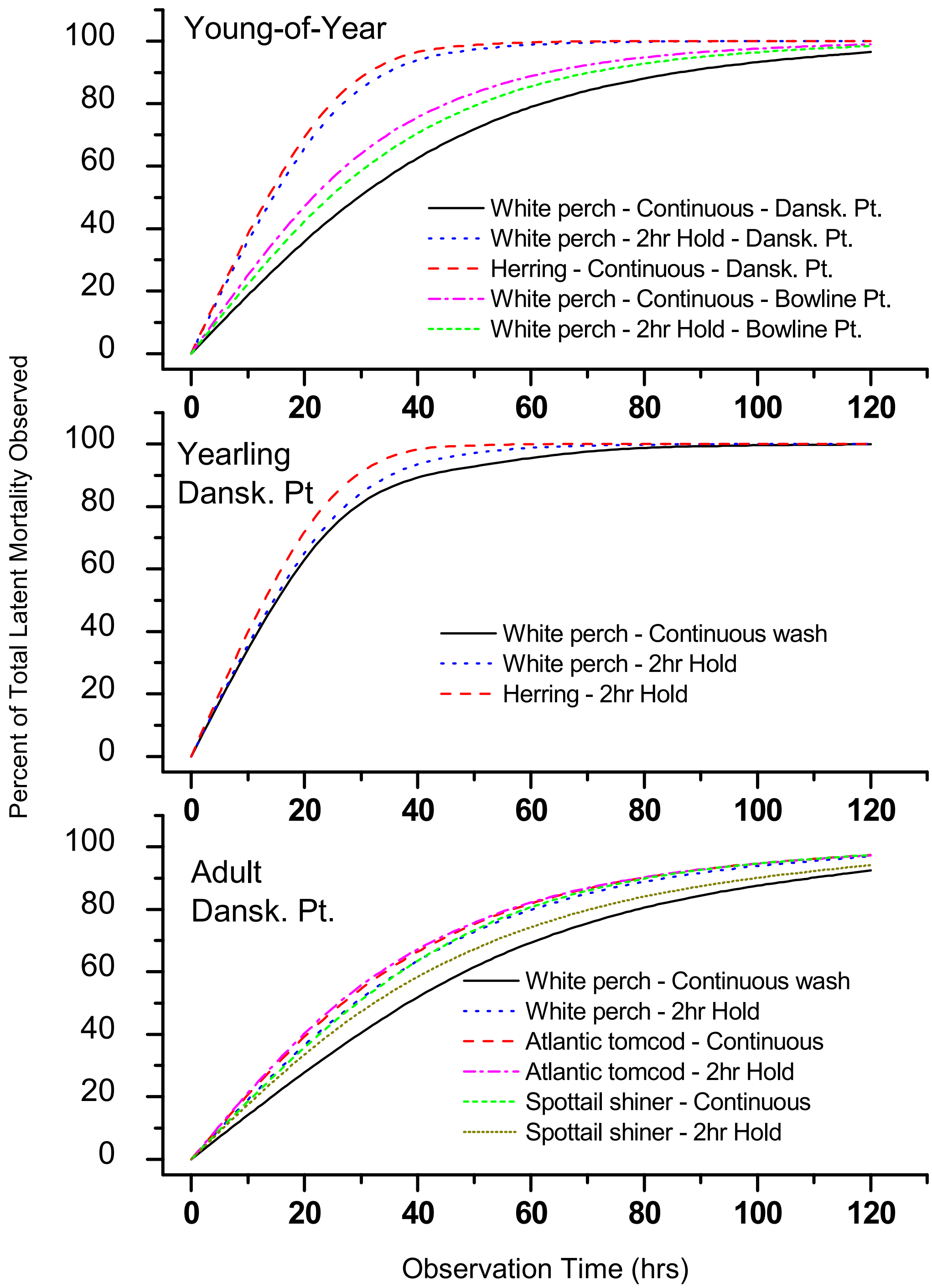


Figure 2-5
Temporal pattern of latent impingement mortality as described by regression analysis of control-adjusted data from impingement mortality studies at Bowline Pt. and Danskammer Pt. (expressed as percent of the mortality observed during latent effects holding)

Data Analysis

The majority of studies conducted to date have used the proportion of impinged organisms remaining alive as the principal statistic for survival analysis and the binomial distribution as the basis for calculating variance about the measured proportion surviving. The alternative approach has been to use failure analysis methods such as the Kaplan-Meier survivorship function (ECSI and LMS 1996). The definitions and formulae used to calculate impingement survival proportions and associated standard errors are shown in Table 2-1.

Table 2-1
Definitions of Impingement Survival and Formulae for Estimating Survival Proportions (adapted from Muessig et al. 1988)

Survival Rate Estimate	Calculation Formula	Definition of Terms
Initial Survival (t=0)	$P_i = \frac{A_i}{N_T} = \frac{L_i + St_i}{N_T}$	P_i=Initial fish survival proportion A_i=Initial number of fish alive L_i=Initial number of fish "live" St_i=Initial number of fish "stunned" N_T=Total number fish initially collected
Latent Effects Survival	$P_l = \frac{A_{L(t)}}{N_L}$	P_l=Latent effects survival proportion $A_{L(t)}$=Number of fish held for latent effects study that are alive at time (t) N_L=Number of initially alive fish held for latent effects study
Extended Survival (t=e; 24-108 hrs after collection)	$P_e = \frac{A_{(t)}}{N_T} = P_i \times P_l$	P_e=Extended fish survival proportion $A_{(t)}$=Number fish initially collected that are alive at time (t)
Standard error of survival estimate	$SE = \sqrt{\frac{P_x(1-P_x)}{N_T}}$	SE=Standard error of survival estimate P_x=Initial or extended survival
Control-adjusted Survival (initial or extended)	$P_{adj} = \frac{P_l}{P_C}$	P_{adj}=Control-adjusted survival proportion P_C=Proportion of control fish surviving
Standard error of control-adjusted survival estimate	$SE_{adj} = \frac{1}{P_C}\sqrt{\left[\frac{P_l(1-P_l)}{N_L} + P_{adj}^{\,2}\left(\frac{P_C(1-P_C)}{N_C}\right)\right]}$	SE_{adj}=S.E. of control-adjusted survival estimate N_C=Number of fish held for control study

Initial survival is calculated for each species and age group studied by dividing the counts of living organisms ("alive", or "live" plus "stunned") by the total numbers collected. The "stunned", "damaged", or "stressed" category used in many studies has generally had two purposes. First, it provided a basis for representatively subsampling both undamaged and damaged fish for use in extended survival studies when too many organisms were collected to allow them all to be transferred to the holding facilities. Second, if no extended survival studies were conducted, it provided an indicator of the potential for delayed mortality. In effect, initial survival estimates calculated using counts of "live", rather than "live" plus "stunned", in the numerator adjust survival for delayed mortality by assuming that all stunned organisms will die from damage caused by impingement.

Studies that recorded initial numbers stunned or damaged and conducted extended survival studies can be used to assess the extent to which initial observations of damage reflect the potential for delayed mortality. These studies generally indicate that organisms classified as "stunned" upon collection do in fact have higher mortality rates subsequent to impingement than those that initially appear normal (NYSEG et al. 1990; EA 1979a). Therefore, such classification is important for representatively subsampling organisms to be held for latent survival studies. However, since a portion of "live" organisms may die from impingement and a portion of "stunned" organisms generally recovers and survives (NYSEG et al. 1990; EA 1979a), the usefulness of the classification for predicting the extent of delayed mortality is unclear.

Survival of the "stunned" organisms following collection appears to vary widely and may depend, in part, on other environmental factors. This is illustrated by comparing initial survival that was calculated based on organisms classified as "live" only (i.e., $S_i = L_i/N_T$—assuming that all stunned or damaged organisms die as a result of impingement stresses) with control-adjusted extended survival, based on data reported for white perch in EA (1979a) (Figure 2-6). As shown in the figure, impingement survival estimates using initial "live" organisms only are very close to estimates based on the 96-108 hr data (i.e., close to the 45° line of equivalency) for early spring data, but for fall and winter data the two estimates of impingement survival vary widely. Basing the impingement survival estimates only on initial "live" consistently underestimates the extended survival actually observed during winter, when one might speculate that cold, but not lethal, temperatures contribute to the observed disequilibrium of the fish classified as "stunned". Although the "stunned" classification may have limited use for retrospectively interpreting the results of impingement survival studies that did not include latent effects observations, it does not appear to provide a reliable way of predicting extended impingement survival.

Extended survival is the conditional probability of surviving both initially and during the extended-survival observation period, and is calculated by multiplying the initial survival proportion by the proportion of initially living organisms that survive to each extended observation interval (Table 2-1). While some impingement survival studies reported extended survival estimates for each observation interval used in the study, many chose not to report extended survival for intermediate observation intervals, and instead presented estimates of initial survival and extended survival determined at the last observation interval (e.g., 96-hr extended survival).

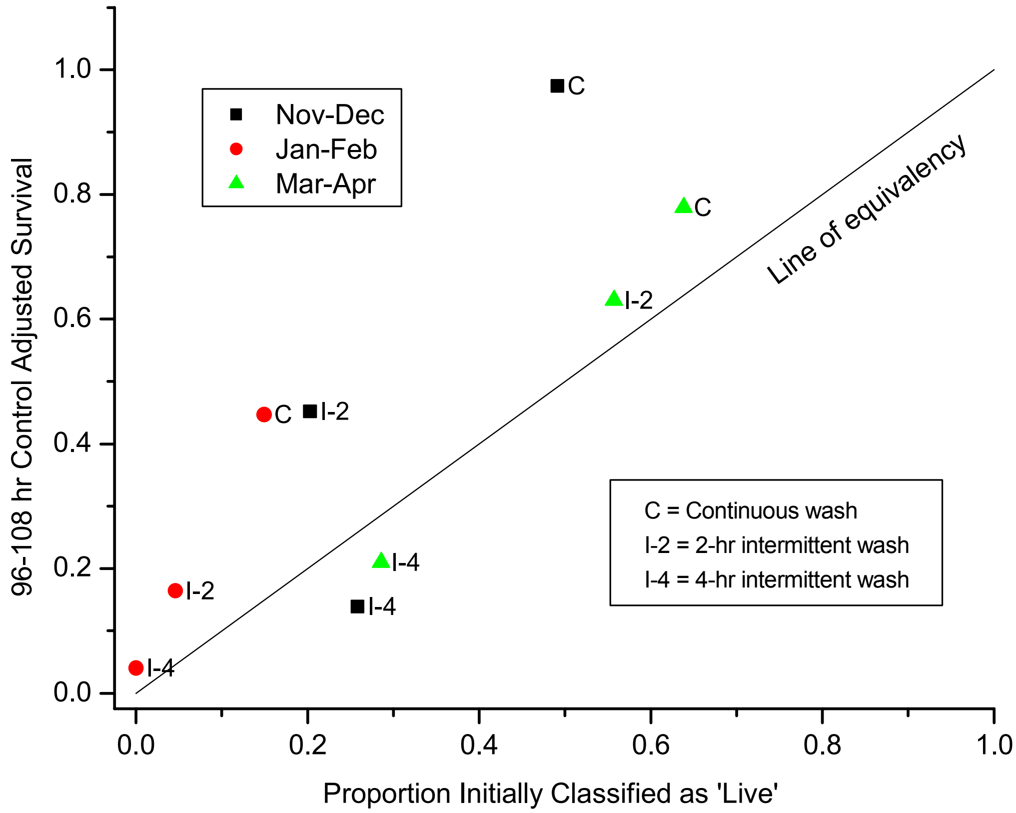


Figure 2-6
Comparison of 96-108 hr control-adjusted extended survival of white perch with initial survival estimates based on "live" category only (i.e., assuming that all "stunned" organisms ultimately die from impingement) (data from EA 1979a)

The observed survival as a result of impingement collection and holding can be adjusted for control survival (reflecting the effects of collection and holding) to obtain estimates of survival resulting from the effects of impingement alone. Control-adjusted impingement survival estimates are calculated by dividing the initial or extended survival proportion by the corresponding proportion of controls surviving. However, control-adjusted impingement survival estimates are available in relatively few studies and for only a few species, largely as a result of the difficulty of obtaining suitable control fish. Therefore, unadjusted extended survival is typically used as the best available estimate of impingement survival. To the extent that such estimates include mortality from collection and holding stresses, which they often do, they overestimate the mortality rate from impingement.

Impingement Survival Study Documents and Study Database

This report summarizes impingement survival information from 71 source documents. The majority of source documents are reports on studies funded or conducted by electric generating companies at steam-electric facilities. To our knowledge, there have been no previous comprehensive reviews of impingement survival, although several papers in peer-reviewed journals have provided overviews of the impingement process (Hansen et al. 1977) or summarized impingement survival studies on a waterbody-specific basis (King et al. 1978; Muessig et al. 1988). Information for some facilities, where impingement survival studies have been conducted over a period of years, is contained in several reports, usually representing distinct time periods of study. However, some overlap of reported information occurs among the documents reviewed, because some reports present summaries of data reported previously over the years at a given facility. The list of documents reviewed is shown in Table 2-2, organized by a “Report ID” number. The Report ID provides a cross-reference to other tables in this report and to the database.

This report establishes a database of key types of information for each document, so that the user can identify relevant source documents for supporting details. The structure of the database, created in Microsoft Access, is shown in Figure 2-7. The impingement survival database is available on a CD from the EPRI project manager identified on the title page of this report.

For purposes of discussion, a “study” in this report, as in the database, represents a specific combination of facility, unit, and screen for which impingement survival data are presented in each document. Users of the database who have a working knowledge of Microsoft Access may query the database to find studies of relevance to their specific CWIS application based on screen design and operation or fish species tested.

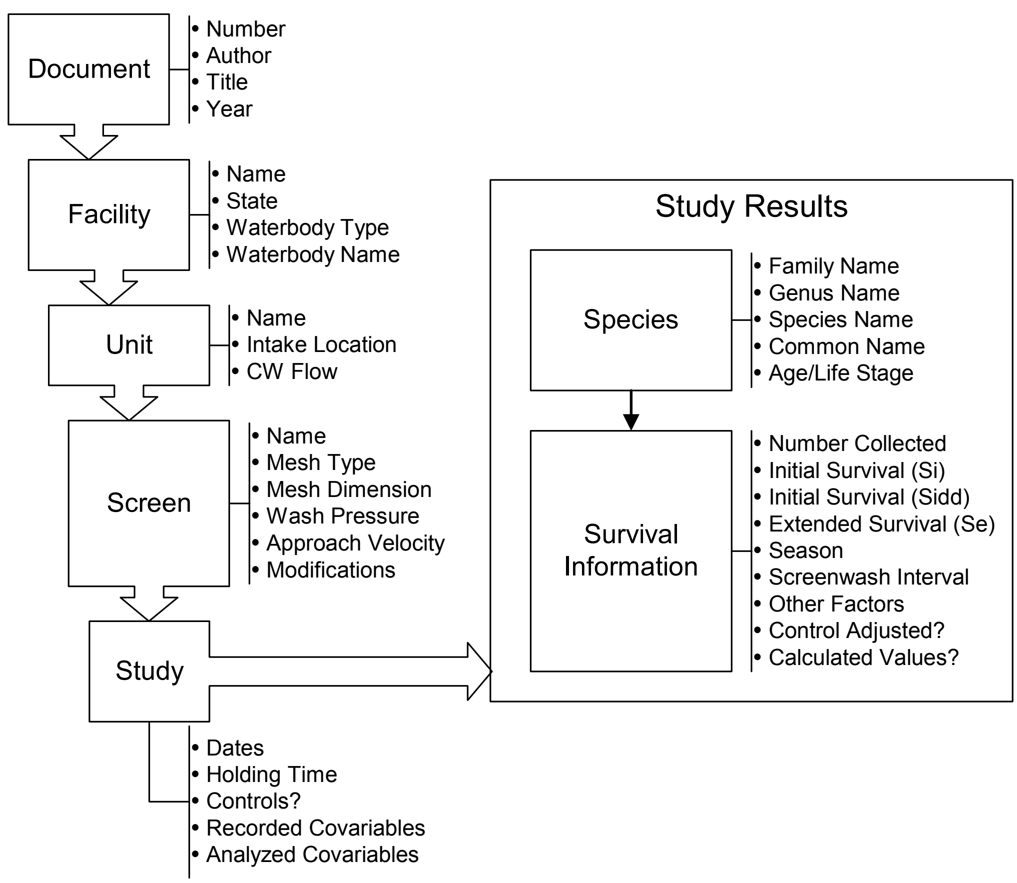


Figure 2-7
Structure of the impingement survival study descriptor database

To provide the broadest reasonable amount of survival information, impingement survival rate estimates provided in the reports have been included for each study in the database, if those estimates were based on ten or more organisms collected. These impingement survival estimates are also presented in tabular form (see Appendix B and C). In most cases these estimates were calculated and reported by the document's author(s). In a few cases, we calculated impingement survival estimates from data available in the report. The types of survival estimates and supporting information about the estimates included in the database are as follows:

Data description	Symbol
Number initially collected	No.
Initial survival total: total ("live" + "stunned") alive/total collected	S_i
Initial survival assuming damaged as dead: "live"/total collected	S_{idd}
Extended survival: Proportion of total collected remaining alive at last holding time	S_e
Calculated values?: Estimates reported by the study or calculated from report data?	Calc. Value?
Control Adjusted?: Estimates are adjusted for control survival	Contr. Adj.?

When available, data on "No.", "S_i", and "S_e" for control experiments were also included in the database. Data for angled screen studies includes survival estimates for "bypass" survival, as well as "screen" or impingement survival.

Table 2-2
Listing of Impingement Survival Documents Reviewed

Report ID	Author(s)	Title	Facility Name / Sponsoring Utility	Publication Year
12	Ecological Analysts, Inc.	Roseton Generating Station: Near-Field Effects of Once-Through Cooling System Operation on Hudson River Biota	Roseton / Central Hudson Gas & Electric Corporation	1977
18	Consolidated Edison Company of New York, Inc.	Arthur Kill Generating Station Diagnostic Study and Post-Impingement Viability Substudy Report	Arthur Kill / Consolidated Edison Company of New York, Inc.	1996
37	EA Engineering, Science, and Technology, Inc.	Entrainment and Impingement Studies at Oyster Creek Nuclear Generating Station	Oyster Creek / GPU Nuclear Corporation	1986
40	Tatham, T. R., Danila, D. J., Thomas, D. L.	Ecological Studies for the Oyster Creek Generating Station Progress Report for the Period September 1975-August 1976 Volume One	Oyster Creek / Jersey Central Power and Light Company	1977
61	Northeast Utilities Service Company	The Effectiveness of the Millstone Unit 3 Fish Return System	Millstone / Northeast Utilities Service Company	1987
62	Northeast Utilities Service Company	The Effectiveness of the Millstone Unit 1 Sluiceway in Returning Impinged Organisms to Long Island Sound	Millstone / Northeast Utilities Service Company	1986
70	Public Service Electric and Gas Company	1999 Annual Report	Salem / Public Service Electric and Gas Company	2000
71	Public Service Electric and Gas Company	1995 Annual Report	Salem / Public Service Electric and Gas Company	1996
72	Public Service Electric and Gas Company	1996 Annual Report	Salem / Public Service Electric and Gas Company	1997

Table 2-2 (continued)
Listing of Impingement Survival Documents Reviewed

Report ID	Author(s)	Title	Facility Name / Sponsoring Utility	Publication Year
73	Public Service Electric and Gas Company	1997 Annual Report	Salem / Public Service Electric and Gas Company	1998
74	Public Service Electric and Gas Company	1998 Annual Report	Salem / Public Service Electric and Gas Company	1999
75	Heimbuch, D.G.	Clean Water Act § 316 (b) Demonstration; Appendix F and Appendix G	Salem / Public Service Electric and Gas Company	1999
110	Ecological Analysts, Inc.	Bowline Point Generating Station Entrainment and Impingement Studies	Bowline / Orange and Rockland Utilities, Inc.	1976
115	Carolina Power & Light Company - Biology Unit	Brunswick Steam Electric Plant 1984 Biological Monitoring Report	Brunswick / Carolina Power & Light Company	1985
166	Serven, J. T. and Barbour, M. T.	C. P. Crane Power Plant: Impingement Abundance and Viability Studies Final Report January - December 1980	C.P. Crane / Baltimore Gas & Electric Company	1981
167	Horwitz, R. J.	Impingement Studies (Chapter 8) In: Lecture Notes on Coastal and Estuarine Studies. Ecological Studies in the Middle Reach of the Chesapeake Bay: Calvert Cliffs	Calvert Cliffs / Not Available	1987
170	Davis, R. W., J. A. Matousek, M. J. Skelly and M. R. Anderson	Biological Evaluation of Brayton Point Station Unit 4 Angled Screen Intake. In: Fish Protection at Steam and Hydroelectric Power Plants, San Francisco, CA, October 28-31, 1987	Brayton Point / Not Available	1988

Table 2-2 (continued)
Listing of Impingement Survival Documents Reviewed

Report ID	Author(s)	Title	Facility Name / Sponsoring Utility	Publication Year
172	Ecological Analysts, Inc.	A Biological Evaluation of Modified Vertical Traveling Screens	Danskammer Point / Central Hudson Gas and Electric Corporation	1982
173	Environmental Consulting Services, Inc and Lawler, Matusky, and Skelly, Inc	1995 Supplemental Impingement Studies with an Assessment of Intake-Related Losses at Salem Generating Station	Salem / Public Service Electric and Gas Company	1996
175	Foster, J. R. and T. J. Wheaton	Losses of Juvenile and Adult Fishes at the Nanticoke Thermal Generating Station due to Entrapment, Impingement and Entrainment	Nanticoke / Ontario Hydro	1981
177	King, L. R., J. B. Hutchison, Jr., and T. G. Huggins	Impingement Survival Studies on White Perch, Striped Bass and Atlantic Tomcod at Three Hudson River Power Plants, In: Fourth National Workshop on Entrainment and Impingement. Chicago, IL, December 5, 1977	Bowline Point, Danskammer Point, and Roseton / Orange and Rockland Utilities, Inc. and Central Hudson Gas and Electric Corporation	1978
178	Kuhl and Mueller	Annual Report on Fine Mesh Vertical Traveling Screens Impingement Survival Study	Prairie Island / Northern States Power Company	1988
180	Lawler, Matusky & Skelly Engineers	Intake Technology Review, Oswego Steam Station Units 1-6	Oswego / Niagara Mohawk Power Corporation	1992
181	New York State Electric and Gas Corporation, Stone & Webster Engineering Corporation, and Auld Environmental Associates.	Kintigh/Somerset Aquatic Monitoring Program 1989 Annual Report	Kintigh / New York State Electric and Gas Corporation	1990
182	Stone & Webster Engineering Corporation	Final Report Biological Evaluation of a Modified Traveling Screen Mystic Station - Unit No. 7	Mystic / Boston Edison Company	1981

Table 2-2 (continued)
Listing of Impingement Survival Documents Reviewed

Report ID	Author(s)	Title	Facility Name / Sponsoring Utility	Publication Year
184	Tatham, T. R., D. L. Thomas, and G. J. Miller	Survival of Fishes and Macroinvertebrates Impinged at Oyster Creek Generating Station. In: Fourth National Workshop on Entrainment and Impingement, Chicago, IL, December 5, 1977	Oyster Creek / Jersey Central Power and Light Company	1978
197	Muessig, P. H.; Hutchison, J. B. Jr.; King, L. R.; Ligotino, R. J., and Daley, M	Survival of fishes after impingement on traveling screens at Hudson River power plants. IN: Science, Law, and Hudson River Power Plants: A Case Study in Environmental Impact Assessment. American Fisheries Society	Bowline Point and Danskammer Point / Orange and Rockland Utilities, Inc. and Central Hudson Gas and Electric Corporation	1988
198	Ecological Analysts, Inc	Bowline Point Generating Station Entrainment Abundance and Impingement Survival Studies, 1981 Annual Report	Bowline Point / Orange and Rockland Utilities, Inc.	1982
199	Ecological Analysts, Inc.	Impingement Survival Studies at the Roseton and Danskammer Point Generating Stations: Progress Report, August 1978	Danskammer Point and Roseton / Central Hudson Gas and Electric Corporation	1978
202	Texas Instruments Incorporated Ecological Services	Collection Efficiency and Survival Estimates of Fish Impingement on a Fine Mesh Continuously Operating Traveling Screen at the Indian Point Generating Station for the Period 8 August to November 1978	Indian Point / Consolidated Edison Company of New York, Inc.	1979
203	Texas Instruments Incorporated Ecological Services	Initial and Extended Survival of Fish Collected from a Fine Mesh Continuously Operating Traveling Screen at the Indian Point Generating Station for the Period 15 June - 22 December 1977	Indian Point / Consolidated Edison Company of New York, Inc.	1978
206	Normandeau Associates, Inc.	Roseton Generating Station 1994 Evaluation of Post Impingement Survival and Impingement Abundance	Roseton / Central Hudson Gas and Electric Corporation	1995

Table 2-2 (continued)
Listing of Impingement Survival Documents Reviewed

Report ID	Author(s)	Title	Facility Name / Sponsoring Utility	Publication Year
208	Ecological Analysts, Inc.	Bowline Point Impingement Survival Studies 1975-1978 Overview Report	Bowline Point / Orange and Rockland Utilities, Inc.	1979
209	Ecological Analysts, Inc.	Comprehensive Study of the Survival of Fishes Commonly Impinged at the Bowline Point Electrical Generating Station Hudson River, New York	Bowline Point / Orange and Rockland Utilities, Inc.	1982
210	EA Science and Technology	Estimates of Impingement Mortality for Selected Fish Species at the Roseton Generating Station 1975-1977	Roseton / Central Hudson Gas and Electric Corporation	1985
211	Ecological Analysts, Inc.	Roseton Generating Station Impingement and Entrainment Survival Studies 1975 Annual Report	Roseton / Central Hudson Gas and Electric Corporation	1976
212	Ecological Analysts, Inc.	Impingement Survival Studies at Roseton and Danskammer Point Generating Station Progress Report December 1977	Danskammer Point and Roseton / Central Hudson Gas and Electric Corporation	1977
213	Ecological Analysts, Inc.	Estimates of Impingement Mortality for Selected Fish Species at the Danskammer Point Generating Station 1975-1980	Danskammer Point / Central Hudson Gas and Electric Corporation	1982
214	Ecological Analysts, Inc.	Danskammer Point Generating Station Impingement Survival Studies, 1976 Annual Report	Danskammer Point / Central Hudson Gas and Electric Corporation	1977
215	Ecological Analysts, Inc.	Danskammer Point Generating Station Impingement and Entrainment Survival Studies, 1975 Annual Report	Danskammer Point / Central Hudson Gas and Electric Corporation	1976
222	Goeman, T J	Fish survival at a cooling water intake designed to minimize mortality	J.P. Madgett / Dairyland Power Cooperative	1984

Table 2-2 (continued)
Listing of Impingement Survival Documents Reviewed

Report ID	Author(s)	Title	Facility Name / Sponsoring Utility	Publication Year
225	Northeast Utilities Service Company	Progress Report on the MNPS Fish Return Systems	Millstone / Northeast Utilities Service Company	1994
226	Stone & Webster Corp.	Larval Impingement Survival Study, Prairie Island Nuclear Generating Plant	Prairie Island / Northern States Power Company	1980
227	Beak Consultants, Inc.	Dunkirk Station Biological Studies, Final Report, January-December 1987	Dunkirk / Niagara Mohawk Power Corporation	1988
228	Ecological Analysts, Inc.	Impact of the Cooling Water Intake at the Indian River Power Plant: A 316 (b) Evaluation	Indian River / Delmarva Power and Light Company	1978
229	Dominion Nuclear Connecticut, Inc.	Millstone Power Station Survival Study Results for the Aquatic Organism Sluiceway at Unit 2	Millstone / Dominion Nuclear Connecticut, Inc.	2001
230	Taft, Edward P., Thomas J. Horst, and John K. Downing	Biological Evaluation of a Fine-Mesh Travelling Screen for Protecting Organisms	Big Bend / Tampa Electric Company	1982
231	Brueggermeyer, V., D. Cowdrick and K. Durrell	Full-Scale Operational Demonstration of Fine-Mesh Screens at Power Plant Intakes. In: Fish Protection at Steam and Hydroelectric Power Plants, San Francisco, CA, October 28-31, 1987	Big Bend / Tampa Electric Company	1988
232	Consolidated Edison Company of New York, Inc.	Biological Evaluation of a Ristroph Screen at Indian Point Unit 2	Indian Point / Consolidated Edison Company of New York, Inc.	1985
233	Consolidated Edison Company of New York, Inc.	Survival of Fish Impinged on a Ristroph-type Travelling Screen at the Indian Point Generating Station, Summer and Fall, 1985	Indian Point / Consolidated Edison Company of New York, Inc.	1986

Table 2-2 (continued)
Listing of Impingement Survival Documents Reviewed

Report ID	Author(s)	Title	Facility Name / Sponsoring Utility	Publication Year
234	Page, T.L., A. Neitzel, R.H. Gray	Comparative Fish Impingement at Two Adjacent Water Intakes on the Mid-Columbia River. In: Fourth National Workshop on Entrainment and Impingement, Chicago, IL, December 5, 1977.	Hanford / Not Available	1978
235	Ronafalvy, J.P., R.R. Cheesman, W.M. Matejek	Circulating Water Traveling Screen Modifications to Improve Impinged Fish Survival and Debris Handling at Salem Generating Station	Salem / Public Service Electric and Gas Company	1999
236	Ecological Analysts, Inc.	Evaluation of the Effectiveness of a Continuously Operating Fine Mesh Traveling Screen for Reducing Ichthyoplankton Entrainment at the Indian Point Generating Station	Indian Point / Consolidated Edison Company of New York, Inc.	1979
237	Lawler, Matusky & Skelly Engineers	Brayton Point Station Unit No. 4 Aquatic Biological Monitoring Program Angled Screen Intake Evaluation, First Annual Interim Report	Brayton Point / New England Power Service Company	1985
238	Freshwater Physicians, Inc.	Belle River Power Plant Fish Entrainment and Impingement Study, 1990-1991	Belle River / Detroit Edison Company	1991
239	Murray, L.S. and T.S. Jinnette	Survival of Dominant Estuarine Organisms Impinged on Fine Mesh Traveling Screens at the Barney M. Davis Power Station	Barney M. Davis / Central Power and Light Company	1978
240	McClaren, J.B. and L.R. Tuttle	Fish Survival on Fine Mesh Traveling Screens	Kintigh / New York State Electric and Gas Corporation	1999
241	White, J.C. and M.L. Brehmer	Eighteen-Month Evaluation of the Ristroph Traveling Fish Screens	Surrey / Virginia Electric and Power Company	1977

Table 2-2 (continued)
Listing of Impingement Survival Documents Reviewed

Report ID	Author(s)	Title	Facility Name / Sponsoring Utility	Publication Year
242	Ecological Analysts, Inc.	Moss Landing Power Plant Cooling Water Intake Structures 316(b) Demonstration	Moss Landing / Pacific Gas and Electric Company	1983
243	Love, M.S., M. Shandhu, J. Stein, K. Herbinson, R.H. Moore, M. Mullins, and J.S. Stephens	Analysis of Fish Diversion Efficiency and Survivorship in the Fish Return System at San Onofre Nuclear Generating Station	San Onofre / National Marine Fisheries Service	1989
244	Lawler, Matusky, & Skelly Engineers	Danskammer Point Angled Screen Facility: Evaluation	Danskammer Point / Central Hudson Gas and Electric Corporation	1986
245	Reider, R.H.	Alternative Screen Wash Survival Study at the Monroe Power Plant April-September, 1983	Monroe / Detroit Edison Company	1984
246	Anderson, R.D.	Impingement of Organisms at Pilgrim Nuclear Power Station	Pilgrim / Boston Edison Company	1985
247	Stone & Webster Engineering Corporation	Alternative Intake Designs for Reducing Fish Losses: Mystic Station - Unit 7	Mystic / Boston Edison Company	1979
248	Lawler, Matusky, & Skelly Engineers	Intake Debris Screen Postimpingement Survival Evaluation Study	Roseton / Central Hudson Gas and Electric Corporation	1991
249	D.L. Breitburg and D.A. Reiher	Finfish and Blue Crab Impingement and Survival at the H.A. Wager Generating Station for Baltimore Gas and Electric Company, Final Report	Wager / Baltimore Gas and Electric Company	1988
250	D.M. Chase	Survival Rates of Fishes and Macroinvertebrates Impinged on the Vertically Revolving Intake Screens of a Power Plant on Galveston Bay, Texas	Robison / Houston Lighting and Power Company	1978

Table 2-2 (continued)
Listing of Impingement Survival Documents Reviewed

Report ID	Author(s)	Title	Facility Name / Sponsoring Utility	Publication Year
251	Beak Consultants, Inc.	Post-impingement Fish Survival at Huntley Steam Station, Winter and Fall 1999, Final Report	Huntley / Niagara Mohawk Power Corporation	2000
252	Beak Consultants, Inc.	Post-impingement Fish Survival; Dunkirk Steam Station; Winter, Spring, Summer and Fall 1998-1999	Dunkirk / NRG Dunkirk Power LLC	2000
254	Environmental Science and Engineering, Inc.	An Assessment of the Fish Return System at the Jacksonville Electric Authority Northside Generating Station, Jacksonville, Florida	Northside / Jacksonville Electric Authority	1985
255	Golder Associates, Inc.	Fish Return System Optimization Study: Summary of Results and Discussion, Considerations, and Recommendations	Northside / Jacksonville Electric Authority	1999

Chronology of the Studies

The majority of the impingement survival studies were performed between the mid-1970s and mid-1980s (Figure 2-8), as part of the initial surge of activity in response to the requirements of §316(b) of the Federal Water Pollution Control Act Amendments of 1972. Permit conditions that required testing of intake system alternatives for reducing impingement mortality provided the impetus for many of the studies, particularly during the 1980s and 1990s.

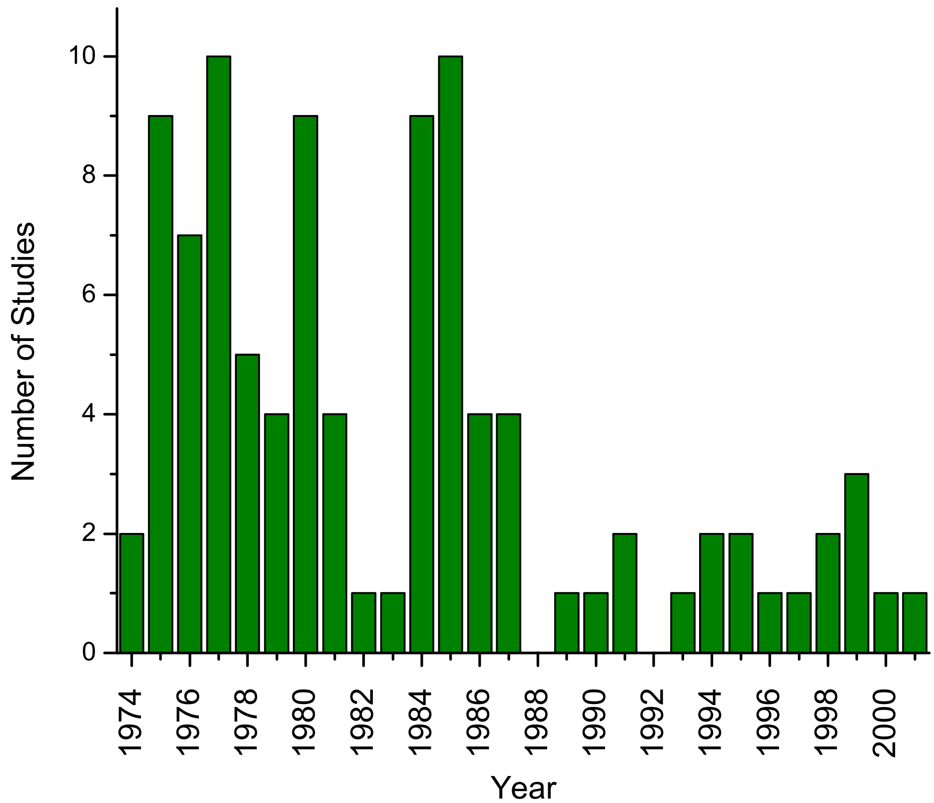


Figure 2-8
Chronology of Impingement Survival Studies

Geographic Distribution

Impingement survival studies have been conducted at power plants located near the Atlantic, Pacific, and Gulf coasts of the U.S., on the Great Lakes, and on the upper Mississippi River basin (Figure 2-9). More than half of the studies have been at steam-electric facilities located in the mid-Atlantic and southern New England states. Altogether, impingement survival has been studied for at least 35 steam-electric plants located in 15 states and the province of Ontario. Table 2-3 identifies the power facilities and study dates covered by each of the impingement survival documents reviewed in this report. The table provides a cross-reference for facility names, facility ID numbers, and report ID numbers.

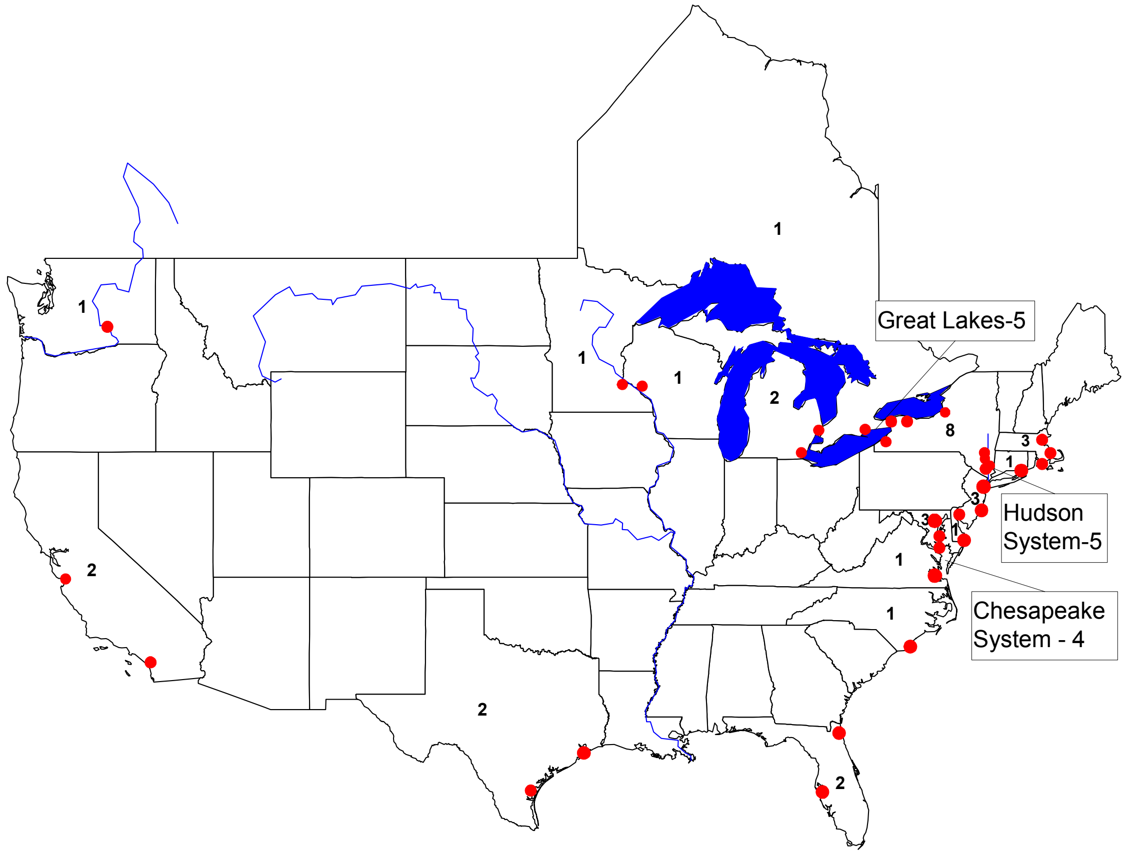


Figure 2-9
Locations of Impingement Survival Studies (numerals indicate number of facilities studied in each state/province)

Waterbodies

Impingement survival has been studied at steam-electric generating facilities located on 22 different waterbodies covering all four of the major waterbody types for which USEPA has proposed §316(b) performance requirements (USEPA 2002), as follows:

- Freshwater streams and rivers—5 facilities located on 4 waterbodies;
- Great Lakes—5 facilities located on 2 waterbodies;
- Tidal rivers and estuaries—20 facilities located on 16 waterbodies; and
- Oceans—4 facilities located on 4 waterbodies.

Table 2-4 provides a list of the waterbodies and facilities covered by each impingement survival report, organized by waterbody type. The table can be used to identify the reports that are relevant to specific waterbodies and waterbody types.

Screen Configurations

Three major types of traveling screens—angled, dual-flow, and single-flow—are represented in the impingement survival studies reviewed, as follows:

- Angled screens—5 reports covering studies at 4 facilities;[13]
- Dual-flow screens—8 reports covering studies at 5 facilities; and
- Single-flow screens—59 reports covering studies at 27 facilities.

Three facilities, Danskammer Point, Oswego, and Roseton, have studied survival using single-flow and either dual-flow or angled screens. The majority of studies have tested some form of modification to screen design and/or operation intended to enhance impingement survival. Table 2-5 provides a list of the screen configurations tested in each survival report. The table can be used to identify the reports that are relevant to specific screen types and modifications.

Taxa

The impingement survival documents report data for over 300 different taxa, most identified to the species level. Grouped by waterbody type there are 55 taxa represented from facilities on freshwater streams and rivers, 40 from facilities on the Great Lakes, 232 from facilities on tidal rivers and estuaries, and 110 from facilities located at coastal ocean sites, of course with some overlap of taxa among waterbody types. Note, however, that since relatively few of the species present in a waterbody are highly susceptible to impingement at any given facility, the majority of species were collected in very low numbers in these studies.

A complete listing of taxa included in the reports, including common name and family affiliation, is included in Appendix A. Appendix A includes a cross-reference to the Report ID number so that it can be used to identify the reports that are relevant to specific species or taxonomic groups of interest to the reader.

[13] Two of these reports include information on bypass survival, but not screen impingement survival. Bypass efficiency was high in these studies and the reports were included here since they provide an indication of the potential of angled screen systems for reducing impingement mortality. Reports of angled screen studies on bypass efficiency were not included in this review if they did not address fish survival.

Table 2-3
Facilities and Dates of Impingement Survival Studies Covered by Each Document

Report ID	Facility name	Facility state	Facility ID	Unit name	Screen name	Study Start date	Study End date
12	Roseton	NY	2	All	All	4/1975	10/1976
18	Arthur Kill	NJ	8	2	23	2/1994	7/1995
18	Arthur Kill	NJ	8	2	24	2/1994	7/1995
18	Arthur Kill	NJ	8	3	31	2/1994	7/1995
37	Oyster Creek	NJ	10	All	All	11/1984	12/1985
40	Oyster Creek	NJ	10	All	All	9/1975	8/1976
61	Millstone	CT	5	3	All	5/1986	4/1987
62	Millstone	CT	5	1	All	1/1984	7/1985
70	Salem	NJ	12	All	All	1/1999	12/1999
71	Salem	NJ	12	All	All	1/1995	12/1995
72	Salem	NJ	12	All	All	1/1996	12/1996
73	Salem	NJ	12	All	All	1/1997	12/1997
74	Salem	NJ	12	All	All	1/1998	12/1998
75	Salem	NJ	12	All	All	1/1978	9/1998
110	Bowline Point	NY	1	1 and 2	All	1/1976	12/1976
115	Brunswick	NC	13	All	All	4/1984	4/1985
166	C.P. Crane	MD	14	All	All	1/1980	12/1980
167	Calvert Cliffs	MD	15	All	All	1/1975	12/1981
170	Brayton Point	MA	16	4	All	10/1984	3/1986
172	Danskammer Point	NY	4	4	2 screens	9/1979	12/1980
172	Danskammer Point	NY	4	4	1 screen	9/1979	12/1980
173	Salem	NJ	12	1	All	6/1995	8/1995
173	Salem	NJ	12	2	All	6/1995	8/1995
175	Nanticoke	Ontario, Canada	17	All	All	4/1976	6/1977
177	Danskammer Point	NY	4	3 and 4	All	11/1976	5/1977
177	Bowline Point	NY	1	1 and 2	All	11/1976	2/1977
177	Roseton	NY	2	1 and 2	All	11/1976	5/1977
178	Prairie Island	MN	18	not given	not given	4/1984	8/1987
180	Oswego	NY	19	6	All	1/1991	12/1991
180	Oswego	NY	19	5	All	1/1991	12/1991
181	Kintigh	NY	20	All	All	5/1989	12/1989
182	Mystic River	MA	21	7	All	10/1980	4/1981
184	Oyster Creek	NJ	10	All	All	9/1975	8/1977
197	Bowline Point	NY	1	1 and 2	All	1/1975	7/1981
197	Danskammer Point	NY	4	3 and 4	All	1/1975	12/1980
197	Roseton	NY	2	All	All	4/1976	5/1977

Table 2-3 (continued)
Facilities and Dates of Impingement Survival Studies Covered by Each Document

Report ID	Facility name	Facility state	Facility ID	Unit name	Screen name	Study Start date	Study End date
198	Bowline Point	NY	1	All	All	1/1975	6/1980
199	Roseton	NY	2	All	All	10/1977	12/1977
199	Danskammer Point	NY	4	All	All	11/1977	12/1977
202	Indian Point	NY	3	1	11	8/1978	11/1978
203	Indian Point	NY	3	1	11	6/1977	12/1977
206	Roseton	NY	2	2	2C	5/1994	12/1994
208	Bowline Point	NY	1	1 and 2	All	12/1975	5/1978
209	Bowline Point	NY	1	1 and 2	All	1/1975	7/1981
210	Roseton	NY	2	1 and 2	All	9/1975	4/1977
211	Roseton	NY	2	1 and 2	All	8/1975	10/1975
212	Danskammer Point	NY	4	3 and 4	All	9/1975	6/1977
212	Roseton	NY	2	1 and 2	All	9/1975	3/1977
213	Danskammer Point	NY	4	3 and 4	All	9/1975	5/1980
214	Danskammer Point	NY	4	3 and 4	All	1/1976	12/1976
215	Danskammer Point	NY	4	3 and 4	All	8/1975	10/1975
222	J.P. Madgett	WI	23	All	All	5/1980	12/1980
225	Millstone	CT	5	3	All	1/1993	12/1993
226	Prairie Island	MN	18	laboratory studies	laboratory studies	5/1979	8/1979
227	Dunkirk	NY	6	All	All	1/1987	12/1987
228	Indian River	DE	7	1	All	7/1975	11/1976
228	Indian River	DE	7	2	All	7/1975	11/1976
228	Indian River	DE	7	3	All	7/1975	11/1976
229	Millstone	CT	5	2	All	7/2000	6/2001
230	Big Bend	FL	22	prototype	All	3/1980	8/1980
231	Big Bend	FL	22	4	All	3/1985	9/1985
232	Indian Point	NY	3	2	26	1/1985	4/1985
233	Indian Point	NY	3	2	26	8/1985	12/1985
234	Hanford	WA	24	All	All	5/1977	8/1977
235	Salem	NJ	12	All	All	6/1995	8/1995
236	Indian Point	NY	3	1	1-1	6/1978	7/1978
237	Brayton Point	MA	16	4	All	10/1984	12/1984
238	Belle River	MI	25	4	All	3/1990	2/1991
239	Barney M. Davis	TX	26	All	All	1/1977	12/1977
240	Kintigh	NY	20	All	All	3/1985	2/1989
241	Surrey	VA	27	All	All	5/1974	10/1975
242	Moss Landing	CA	28	6, 7	All	1/1979	3/1980

Table 2-3 (continued)
Facilities and Dates of Impingement Survival Studies Covered by Each Document

Report ID	Facility name	Facility state	Facility ID	Unit name	Screen name	Study Start date	Study End date
242	Moss Landing	CA	28	1-5	All	1/1979	3/1980
243	San Onofre	CA	29	2	All	1/1984	12/1985
243	San Onofre	CA	29	3	All	1/1984	12/1985
244	Danskammer Point	NY	4	All	Prototype Facility	10/1984	5/1985
245	Monroe	MI	31	3	3-1,3-2	4/1983	9/1983
246	Pilgrim	MA	30	1	All	1/1984	12/1984
247	Mystic River	MA	21	7	All	10/1977	12/1977
248	Roseton	NY	2	All	6 of 8	5/1990	11/1990
248	Roseton	NY	2	All	2 of 8	5/1990	11/1990
249	Wagner	MD	32	All	All	1/1987	1/1988
250	Robinson	TX	33	1 and 2	All	9/1974	9/1975
250	Robinson	TX	33	3 and 4	All	9/1974	9/1975
251	Huntley	NY	34	67 and 68	5 and 6	1/1999	10/1999
252	Dunkirk	NY	6	1 and 2	1	12/1998	11/1999
254	Northside	FL	35	1 and 3	All	8/1984	1/1985
255	Northside	FL	35	3	A and B	3/1998	1/1999
255	Northside	FL	35	3	C and D	3/1998	1/1999

Table 2-4
Waterbody Types and Locations Covered by the Impingement Survival Reports

Waterbody type	Waterbody name	Facility name	Facility ID	Report ID
Freshwater stream or river	Columbia River	Hanford	24	234
	Mississippi River	J.P. Madgett	23	222
	Mississippi River	Prairie Island	18	226
	Mississippi River	Prairie Island	18	178
	Niagara River	Huntley	34	251
	St. Clair River	Belle River	25	238
Great Lake	Lake Erie	Dunkirk	6	227
	Lake Erie	Dunkirk	6	252
	Lake Erie	Nanticoke	17	175
	Lake Ontario	Kintigh	20	181
	Lake Ontario	Kintigh	20	240
	Lake Ontario	Oswego	19	180
	Raisin River/Lake Erie	Monroe	31	245
Tidal river or estuary	Arthur Kill	Arthur Kill	8	18
	Barnegat Bay	Oyster Creek	10	184
	Barnegat Bay	Oyster Creek	10	40
	Barnegat Bay	Oyster Creek	10	37
	Cape Fear River	Brunswick	13	115
	Chesapeake Bay	C.P. Crane	14	166
	Chesapeake Bay	Calvert Cliffs	15	167
	Delaware River	Salem	12	173
	Delaware River	Salem	12	75
	Delaware River	Salem	12	74
	Delaware River	Salem	12	73
	Delaware River	Salem	12	72
	Delaware River	Salem	12	71
	Delaware River	Salem	12	70
	Delaware River	Salem	12	235
	Galveston Bay	Robinson	33	250
	Hudson River	Bowline Point	1	177
	Hudson River	Bowline Point	1	110
	Hudson River	Bowline Point	1	197
	Hudson River	Bowline Point	1	209
	Hudson River	Bowline Point	1	208
	Hudson River	Bowline Point	1	198
	Hudson River	Danskammer Point	4	172
	Hudson River	Danskammer Point	4	177
	Hudson River	Danskammer Point	4	244
	Hudson River	Danskammer Point	4	215
	Hudson River	Danskammer Point	4	199

Table 2-4 (continued)
Waterbody Types and Locations Covered by the Impingement Survival Reports

Waterbody type	Waterbody name	Facility name	Facility ID	Report ID
	Hudson River	Danskammer Point	4	213
	Hudson River	Danskammer Point	4	197
	Hudson River	Danskammer Point	4	212
	Hudson River	Danskammer Point	4	214
	Hudson River	Indian Point	3	203
	Hudson River	Indian Point	3	236
	Hudson River	Indian Point	3	233
	Hudson River	Indian Point	3	232
	Hudson River	Indian Point	3	202
	Hudson River	Roseton	2	177
	Hudson River	Roseton	2	212
	Hudson River	Roseton	2	211
	Hudson River	Roseton	2	210
	Hudson River	Roseton	2	206
	Hudson River	Roseton	2	12
	Hudson River	Roseton	2	199
	Hudson River	Roseton	2	197
	Hudson River	Roseton	2	248
	Indian River Bay	Indian River	7	228
	James River	Surrey	27	241
	Laguna Madre	Barney M. Davis	26	239
	Mystic River	Mystic River	21	182
	Mystic River	Mystic River	21	247
	Narragansett Bay	Brayton Point	16	237
	Narragansett Bay	Brayton Point	16	170
	Patapsco River	Wagner	32	249
	St. Johns River	Northside	35	254
	St. Johns River	Northside	35	255
	Tampa Bay	Big Bend	22	231
	Tampa Bay	Big Bend	22	230
Ocean	Cape Cod Bay	Pilgrim	30	246
	Elkhorn Slough, Monterey Bay	Moss Landing	28	242
	Niantic Bay, Long Island Sound	Millstone	5	229
	Niantic Bay, Long Island Sound	Millstone	5	61
	Niantic Bay, Long Island Sound	Millstone	5	62
	Niantic Bay, Long Island Sound	Millstone	5	225
	Southern California Bight	San Onofre	29	243

Table 2-5
Intake Screen System Characteristics Covered in Each Impingement Survival Report

Screen type	Mesh type	Mesh dimensions	Screen modifications	Facility ID	Report ID
Angled	Unreported	1/4 x 1/4	Bypass system, Fish return	4	244
Angled	Woven nylon	3/8 x 3/8	Buckets[14], Low-pressure wash, Fish return, Continuous operation, Ristroph[15]	16	237
Angled	Woven wire	3/8 x 3/8		19	180
Angled	Woven wire	3/8 x 3/8	Bypass system, Louvers, Fish return	29	243
Angled	Woven wire	3/8 x 3/8 and 1mm	Buckets, Low-pressure wash, Fish return, Fine mesh	16	170
Dual flow	Flat	1/4 x 1/2	Buckets, Low-pressure wash, Fish return, Continuous operation, Fish collection rails, Ristroph, Fish seals	8	18
Dual flow	Flat	1/8 x 1/2	Buckets, Low-pressure wash, Fish return, Continuous operation, Fish collection rails, Ristroph	8	18
Dual flow	Flat	1/8 x 1/2	Buckets, Low-pressure wash, Fish return	2	206
Dual flow	Flat	1/8 x 1/2	Buckets, Low-pressure wash, Fish return, Continuous operation, Ristroph	2	248
Dual flow	Flat	1/8 x 1/2	Buckets, Low-pressure wash, Fish return, Continuous operation, Fish seals, Ristroph	6	252
Dual flow	Unreported	0.5mm	Fish return, Continuous operation, Fine mesh, Buckets	26	239
Dual flow	Woven polyester monofilament	0.5mm	Buckets, Fish seals	22	230
Dual flow	Woven polyester monofilament	0.5mm	Buckets, Low-pressure wash, Fish return, Fine mesh	22	231

[14] "Buckets" are essentially troughs mounted along the bottom edge of each screen panel that hold a few inches of water. Their purpose is to reduce escape and reimpingement of impinged fish and keep them immersed as they are lifted from the waterbody.

[15] See Chapter 3 section on CWIS Factors Influencing Impingement Survival for more description of Ristroph modifications.

Table 2-5 (continued)
Intake Screen System Characteristics Covered in Each Impingement Survival Report

Screen type	Mesh type	Mesh dimensions	Screen modifications	Facility ID	Report ID
Dual flow	Woven wire	1/8 x 1/8	Continuous operation	8	18
Dual flow	Woven wire	1/8 x 1/8		6	227
Single flow	Flat	1/8 x 1/2	Continuous operation, Buckets, Low-pressure wash, Fish seals, Fish return, Ristroph	34	251
Single flow	Flat	1/4 x 1/2	Continuous operation, Buckets, Low-pressure wash, Fish seals, Fish return, Ristroph	12	70
Single flow	Flat	1/4 x 1/2	Fish collection rails, Continuous operation, Buckets, Low-pressure wash, Fish seals, Fish return, Ristroph	12	71
Single flow	Flat	1/4 x 1/2	Fish collection rails, Continuous operation, Buckets, Low-pressure wash, Fish seals, Fish return, Ristroph	12	72
Single flow	Flat	1/4 x 1/2	Continuous operation, Buckets, Low-pressure wash, Fish seals, , Fish return, Ristroph	12	73
Single flow	Flat	1/4 x 1/2	Continuous operation, Buckets, Low-pressure wash, Fish seals, Fish return, Ristroph	12	74
Single flow	Flat	1/4 x 1/2	Fish collection rails, Continuous operation, Buckets, Low-pressure wash, Fish seals, Fish return, Ristroph	12	173
Single flow	Flat	1/4 x 1/2	Buckets, Low-pressure wash, Fish return, Continuous operation, Ristroph, Fish seals	3	232
Single flow	Flat	1/4 x 1/2	Buckets, Low-pressure wash, Fish return, Continuous operation, Ristroph, Fish seals	3	233
Single flow	Flat	1/4 x 1/2	Fish collection rails, Continuous operation, Buckets, Low-pressure wash, Fish seals, , Fish return, Spray system, Ristroph	12	235
Single flow	Smooth nylon	1.0mm	Buckets, Low-pressure wash, Fish return, Fine mesh, Ristroph	20	240
Single flow	Unreported	Unreported	Ristroph	10	37
Single flow	Unreported	Unreported	Fish return	5	62
Single flow	Unreported	Unreported		17	175

Table 2-5 (continued)
Intake Screen System Characteristics Covered in Each Impingement Survival Report

Screen type	Mesh type	Mesh dimensions	Screen modifications	Facility ID	Report ID
Single flow	Woven nylon	0.5mm	Fine mesh	18	226
Single flow	Woven nylon	2.5mm	Buckets, Low-pressure wash, Fish return, Continuous operation, Fine mesh, Ristroph	3	202
Single flow	Woven nylon	2.5mm	Buckets, Low-pressure wash, Fish return, Continuous operation, Fine mesh, Ristroph	3	203
Single flow	Woven nylon	2.5mm	Buckets, Low-pressure wash, Fish return, Continuous operation, Fine mesh, Ristroph	3	236
Single flow	Woven PVC	3/8 x 3/8	Continuous operation	2	248
Single flow	Woven wire	1/8 x 1/8	Fish collection rails, Continuous operation, Buckets, Low-pressure wash, Fish seals, Fish return, Spray system, Ristroph	24	234
Single flow	Woven wire	2 screens with 3/8 x 3/8 and 2 screens with 1mm	Fish return, Fine mesh	13	115
Single flow	Woven wire	3/16 x 3/16	Buckets, Low-pressure wash, Fish return	5	61
Single flow	Woven wire	3/8 x 3/8		2	12
Single flow	Woven wire	3/8 x 3/8		10	40
Single flow	Woven wire	3/8 x 3/8	Buckets, Continuous operation, Fish return, Ristroph	12	75
Single flow	Woven wire	3/8 x 3/8	Low-pressure wash	1	110
Single flow	Woven wire	3/8 x 3/8		14	166
Single flow	Woven wire	3/8 x 3/8	Royce screens	15	167
Single flow	Woven wire	3/8 x 3/8		4	172
Single flow	Woven wire	3/8 x 3/8	Buckets, Low-pressure wash	4	172
Single flow	Woven wire	3/8 x 3/8	Ristroph	12	173
Single flow	Woven wire	3/8 x 3/8	Low-pressure wash	1	177
Single flow	Woven wire	3/8 x 3/8		2	177

Table 2-5 (continued)
Intake Screen System Characteristics Covered in Each Impingement Survival Report

Screen type	Mesh type	Mesh dimensions	Screen modifications	Facility ID	Report ID
Single flow	Woven wire	3/8 x 3/8		4	177
Single flow	Woven wire	3/8 x 3/8		19	180
Single flow	Woven wire	3/8 x 3/8		10	184
Single flow	Woven wire	3/8 x 3/8	Continuous operation	1	197
Single flow	Woven wire	3/8 x 3/8	Continuous operation	2	197
Single flow	Woven wire	3/8 x 3/8	Continuous operation	4	197
Single flow	Woven wire	3/8 x 3/8	Low-pressure wash, Continuous operation	1	198
Single flow	Woven wire	3/8 x 3/8	Continuous operation	2	199
Single flow	Woven wire	3/8 x 3/8	Continuous operation	4	199
Single flow	Woven wire	3/8 x 3/8	Low-pressure wash, Continuous operation	1	208
Single flow	Woven wire	3/8 x 3/8	Continuous operation	1	209
Single flow	Woven wire	3/8 x 3/8		2	210
Single flow	Woven wire	3/8 x 3/8		2	211
Single flow	Woven wire	3/8 x 3/8		2	212
Single flow	Woven wire	3/8 x 3/8		4	212
Single flow	Woven wire	3/8 x 3/8		4	213
Single flow	Woven wire	3/8 x 3/8		4	214
Single flow	Woven wire	3/8 x 3/8		4	215
Single flow	Woven wire	3/8 x 3/8	Buckets, Low-pressure wash, Fish return	5	225
Single flow	Woven wire	3/8 x 3/8		7	228
Single flow	Woven wire	3/8 x 3/8	Fish return	5	229
Single flow	Woven wire	3/8 x 3/8	Fish return	25	238
Single flow	Woven wire	3/8 x 3/8	Buckets, Low-pressure wash, Fish return, Continuous operation, Ristroph	27	241

Table 2-5 (continued)
Intake Screen System Characteristics Covered in Each Impingement Survival Report

Screen type	Mesh type	Mesh dimensions	Screen modifications	Facility ID	Report ID
Single flow	Woven wire	3/8 x 3/8		28	242
Single flow	Woven wire	3/8 x 3/8		31	245
Single flow	Woven wire	3/8 x 3/8		30	246
Single flow	Woven wire	3/8 x 3/8	Low-pressure wash	21	247
Single flow	Woven wire	3/8 x 3/8 and 1mm	Buckets, Low-pressure wash, Fish return, Fine mesh	20	181
Single flow	Woven wire	1/2 x 1/2		33	250
Single flow	Woven wire	1/2 x 1/2	Buckets, Low-pressure wash, Continuous operation, Ristroph, Fish return, Fish seals	35	254
Single flow	Woven wire	1/2 x 1/2	Buckets, Low-pressure wash, Continuous operation, Ristroph, Fish return, Fish seals	35	255
Single flow	Woven wire	Unreported	Buckets, Low-pressure wash, Fish return	21	182
Single flow	Woven wire	Unreported	Buckets, Low-pressure wash, Fish return	23	222
Single flow	Woven wire	Unreported	Fish return	32	249
Unreported	Unreported	0.5mm	Fine mesh	18	178

3
FACTORS INFLUENCING IMPINGEMENT SURVIVAL

The survival of impinged organisms depends on the stresses imposed on them during impingement and the tolerance of impinged organisms to those stresses. The nature and magnitude of impingement stresses vary depending on CWIS design and operation; while the sensitivities of impinged organisms vary depending on biological and waterbody characteristics. This chapter discusses the factors potentially affecting impingement survival and summarizes information on the influence of these factors reported in the literature.

Impingement Stresses and Receptor Sensitivity

Impingement involves both active and passive processes that, in some cases, may begin well before organisms actually make physical contact with the intake screens (Powers 1977). Fish and other species present in the vicinity of the intake may become impinged because: their maximum sustained swim speeds are too low (relative to screen approach velocity) to maintain their position and move away from the intake; they acquire an oxygen debt resulting in muscle fatigue while maintaining position in the cooling water flow; they become entrapped in vegetation or debris drawn into the intake structure; they actively approach the screens in response to velocity fields or to feed on impinged organisms and debris; or they are already disoriented, weakened or moribund from other environmental factors (e.g., extreme cold, disease outbreaks, spawning effort).

The force of the water flowing through the screen generally is powerful enough to prevent escape once a fish is impinged on the screen mesh. However, depending on fish species and size, many fish actively respond to becoming impinged by trying to free themselves. The resulting oscillatory motion of the fish combined with variations in flow direction and magnitude can result in lateral movement along the screen face. Such movements can result in de-scaling and possible injury to the eye, fins and other soft tissue when fish reside on the screens. In addition, the force of the water flowing through the screen may be powerful enough to restrict opercular movement and water exchange over the gills.

During rotation of the traveling screens impinged fish are potentially exposed to the air during the screen's transit from the water surface to the spray wash system, when drying of surface tissue and protective slimes and exposure to sudden temperature elevations or drops may occur. At this point in the impingement process, organisms may be exposed to physical abrasion as they are removed by the spray-wash system and carried away in the screenwash sluiceway. Also, screenwash systems at some power plants return organisms to a cooling water discharge canal or channel, rather than directly to the source waterbody. This can result in exposure to elevated temperatures that are determined by condenser system design, cooling water flow, and generating level at the station, as well as to any biocides that may be used to control biological fouling in the condensers.

Finally, the presence of debris or other organisms on the intake screens may result in additional physical stresses at any point in the process. For example, predatory activity and collision with the hard exoskeletons of impinged crabs and other shellfish may increase injury to the soft tissues of impinged fish.

As a result of the above processes, impingement can impose several distinct sources of stress, including:

- Physical injury from impacts and abrasion;
- Systemic stress, such as acidosis and neurological shock;
- Suffocation;
- Dessication; and
- Thermal shock.

Impingement can cause an acute exposure to these various stresses, the process occurring over a period of only minutes to hours. Acute mortality is, therefore, the expected response of fish and other aquatic organisms that are affected by impingement. A potential sublethal effect of impingement is an increased susceptibility to predation. The risks of mortality from increased susceptibility to predation depend on the condition and recovery rate of impinged organisms and, probably most importantly, on the design of fish return systems (see Chapter 4).

The acute mortality rate resulting from impingement is determined by organism sensitivity to the various sources of stress. The stress categories listed above can be used to conceptualize the factors influencing impingement survival, including the CWIS design and operating factors that have potential for reducing stress and increasing impingement survival. Biological, CWIS, and waterbody factors influencing survival, and their relation to the various sources of stress, are discussed in the following sections.

Biological Characteristics Influencing Impingement Survival

The biological variables that affect impingement survival include species type, developmental stage and size, and physiological condition.

Species type

Studies at operating power plants have shown that impingement survival is strongly influenced by the inherent sensitivity of species to impingement stresses. The morphological, physiological and behavioral characteristics of each species affect its sensitivity to impingement stress, although the relationships between these characteristics and impingement survival have not been quantitatively defined. In general, species types that are found to be hardy in terms of their resistance to collection and handling stress (e.g., crab, killifish, catfish) are also tolerant of impingement stresses, while those that are difficult to collect and keep alive (e.g., herring, anchovy, smelt) tend to be sensitive to impingement.

It may be helpful to qualitatively consider species characteristics in the context of each of the sources of impingement stress discussed above when evaluating the potential for species to survive impingement at a CWIS (e.g., for planning site studies). For example, species possessing heavier skeletal structure, thick scales or bony scutes, thick protective slimes, or hard exoskeletons would be more likely to resist physical injury and desiccation than would species that have light skeletons and thin scales that shed easily. Similarly, species that are better adapted to low oxygen conditions or are able to extract some oxygen directly from the air are less likely to experience suffocation. Behavioral characteristics of the species may also have important influences on impingement survival. Some species may be responsive to local hydraulic conditions and, in the case of pelagic species, may tend to maintain a position up in the water column in the intake flow upstream of the screens. Such prolonged swimming may lead to systemic stress from oxygen debt and acidosis (Powers 1977), and increased mortality when the fish become exhausted and are impinged. Prior studies provide little information on the specific relationship between various species characteristics and impingement survival. However, studies conducted at the Millstone Nuclear Power Station examined the aggregate effects of body type and habitat preference on impingement survival (NUSC 1986, 1987). Crustaceans and demersal fish species generally showed much higher impingement survival in these studies than either pelagic fish species or squid.

Studies that have been conducted at operating power plants indicate that impingement survival rates can vary by several-fold among species at a given site, with the reported extremes often approaching 0 percent for very sensitive types and 100 percent for very tolerant types (e.g., EA 1986; Reider 1984; EA 1983; McClaren and Tuttle 1999; CP&L 1985). To summarize the variation among species types reported in the studies reviewed, we calculated the mean and standard error of extended survival rate estimates for each taxonomic family, for unadjusted (Figures 3-1) and control-adjusted (Figure 3-2) values reported, respectively. Values for each screen-wash interval are presented separately in these figures since screenwash frequency has a significant influence on impingement survival (see “CWIS Characteristics Influencing Impingement Survival”).

Within family and screenwash frequency groups, survival rate estimates vary due to differences among facilities and among other study conditions such as length of the extended survival observation and season (Figures 3-1, 3-2). Survival rate estimates for about two-thirds of the taxonomic families exceed 50 percent when screenwash is continuous. Twenty-eight out of the forty-seven families for which data have been reported, or about 60 percent, appear to have the potential, given adequate screenwash frequency, for impingement survival rates greater than about 70 to 80 percent. The families of fish and macroinvertebrates can be grouped roughly into the following categories based on their overall apparent potential for surviving impingement shown in studies conducted to date.

High Survival Rate Potential (~71-100 percent)

- Percopsidae - trout-perches
- Homaridae - lobster
- Fundulidae - killifishes
- Ophidiidae - cusk eels and brotulas
- Cyprinodontidae - pupfishes
- Inachidae - spider crabs
- Catostomidae - suckers
- Bothidae - lefteye flounders
- Gasterosteidae - sticklebacks
- Pleuronectidae - righteye flounders
- Crangonidae - sand shrimps
- Triglidae - searobins
- Rajidae - skates
- Cancridae - rock crabs
- Cottidae - sculpins
- Labridae - wrasses
- Percidae - perches
- Portunidae - portunid crabs
- Ictaluridae - freshwater catfishes
- Cyprinidae - minnows and carps
- Mugilidae - mullets
- Syngnathidae - pipefishes and seahorses
- Xanthidae - mud crabs and stone crabs
- Soleidae - soles
- Centrarchidae - sunfishes
- Penaeidae - penaeid shrimps
- Batrachoididae - toadfishes
- Scorpaenidae - scorpionfishes

Intermediate Survival Rate Potential (~31-70 percent)

- Atherinidae - silversides
- Pinnotheridae - pea crabs
- Gadidae - codfishes
- Gobiidae - gobies
- Infraorder Caridea - caridea shrimp
- Sciaenidae - drums
- Percichthyidae - temperate basses
- Salmonidae - trouts
- Anguillidae - freshwater eels
- Scombridae - mackerals and tunas
- Embiotocidae - surfperches
- Cyclopteridae - lumpfishes and snailfishes

Low Survival Rate Potential (~0-30 percent)

- Osmeridae - smelts
- Clupeidae - herrings
- Engraulidae - anchovies
- Lutjanidae - snappers
- Pomatomidae - bluefishes
- Stromateidae - butterfishes
- Loliginidae - squids

Families included in the "high survival potential" group consist mostly of macroinvertebrates with hard exoskeletons; fish generally inhabiting shallow, turbid waters and known to be easily held in captivity such as killifishes and minnows; demersal species and species tolerant of low dissolved oxygen levels such as flounders, catfishes, and sunfishes; and species that are heavily scaled or armored such as pipefishes and sculpins. Families in the "low survival potential" group are mostly characterized by soft-bodied pelagic forage species such as anchovies, herrings and smelts. Thus, the survival rate estimates reflect the species' tolerance to impingement that would be expected based on the nature of the impingement stresses and the biological characteristics of the species.

Tolerance of a species type to impingement stresses may extend across family groups. The mean and standard deviation of extended survival rate estimates reported for individual species within various family groups are compared in Figure 3-3 for survival observed during frequent screenwash conditions (i.e., continuous up to 3-hour intermittent washes). With a few exceptions, mean survival rates among species of the same family are quite similar, especially considering the potential variation that may be introduced by differences among sites and screen designs. In view of the apparent association between species characteristics, tolerances to physical stress, and impingement survival rates discussed above, the use of closely related surrogate species may be a reasonable approach for estimating impingement survival rates when species-specific data are unavailable. However, this should be done with appropriate caution and recognition of the levels of uncertainty involved, since some physiological characteristics of closely related species may differ widely as an adaptation to environmental conditions.

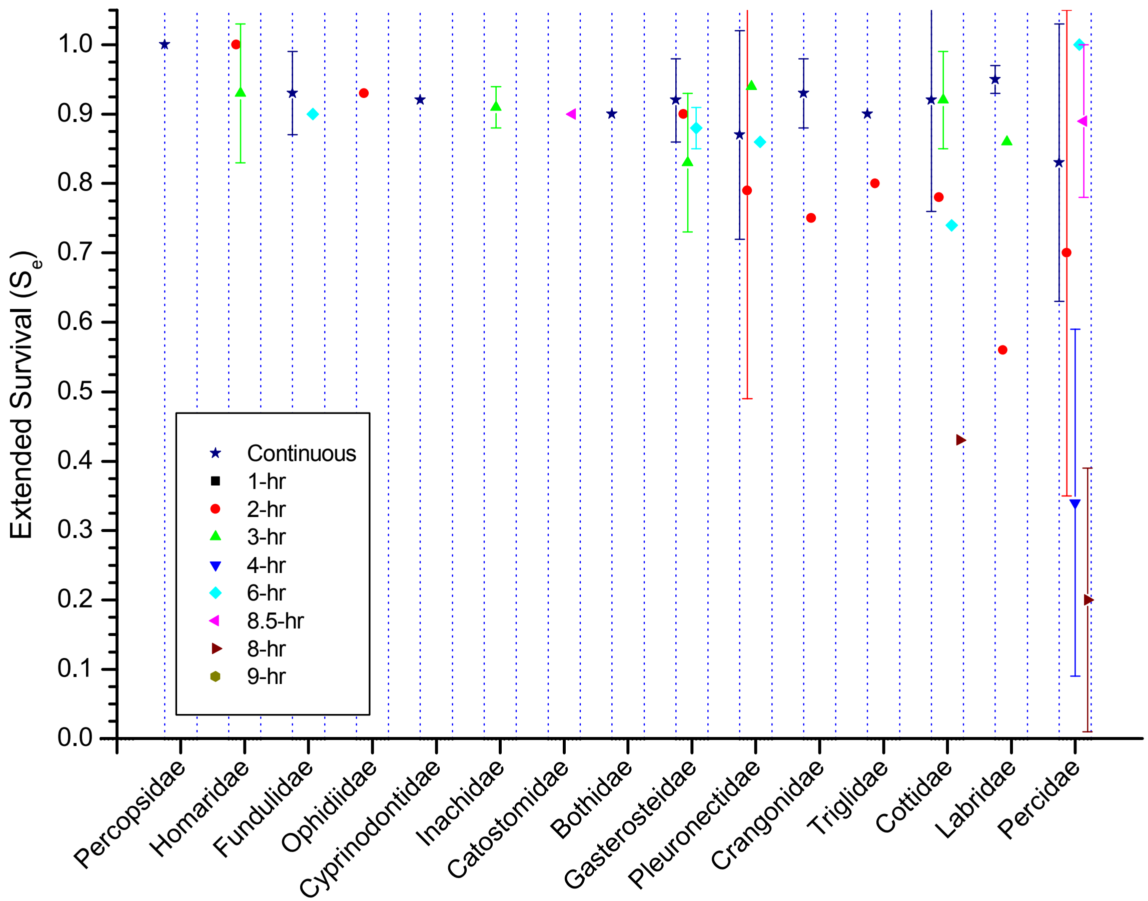


Figure 3-1
Mean and standard error of extended (24-108 hr) impingement survival rate estimates for screenwash intervals reported in the reviewed studies (no control adjustment for effects of collection/holding).

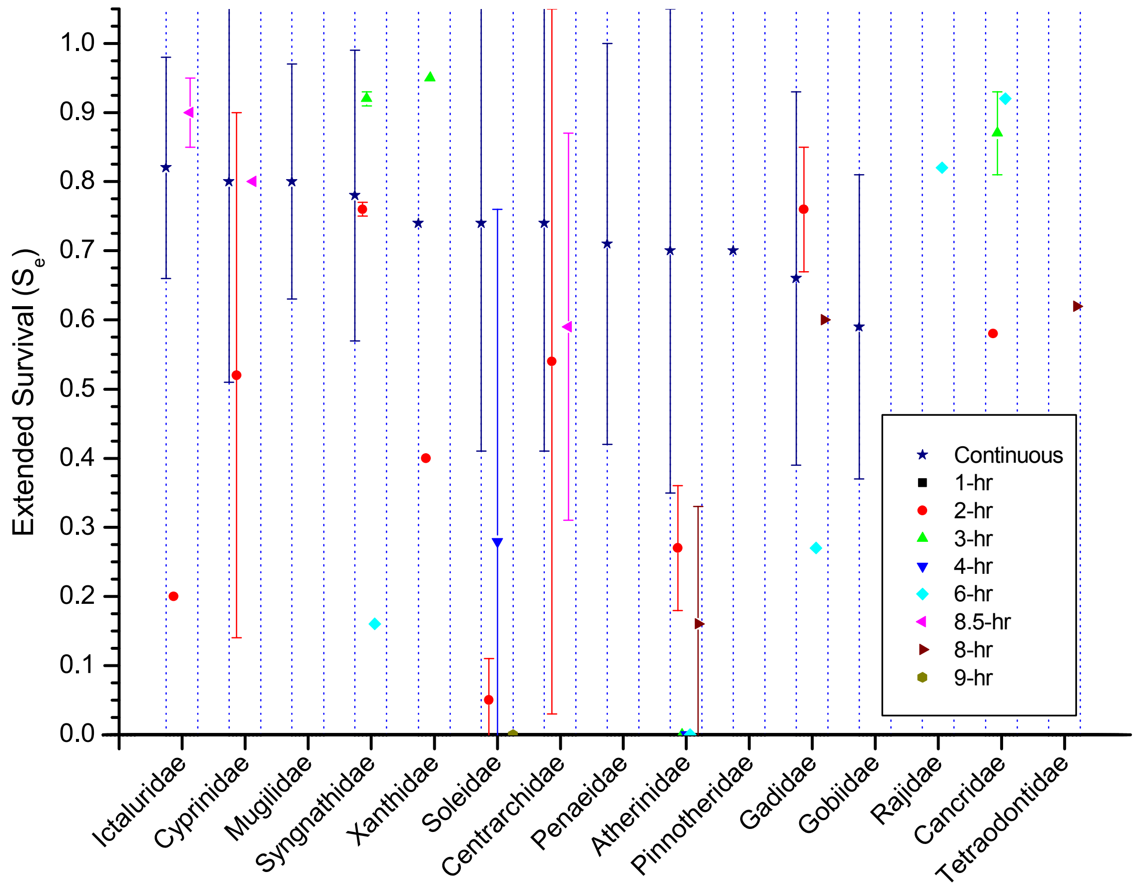


Figure 3-1 (Continued)
Mean and standard error of extended (24-108 hr) impingement survival rate estimates for screenwash intervals reported in the reviewed studies (no control adjustment for effects of collection/holding).

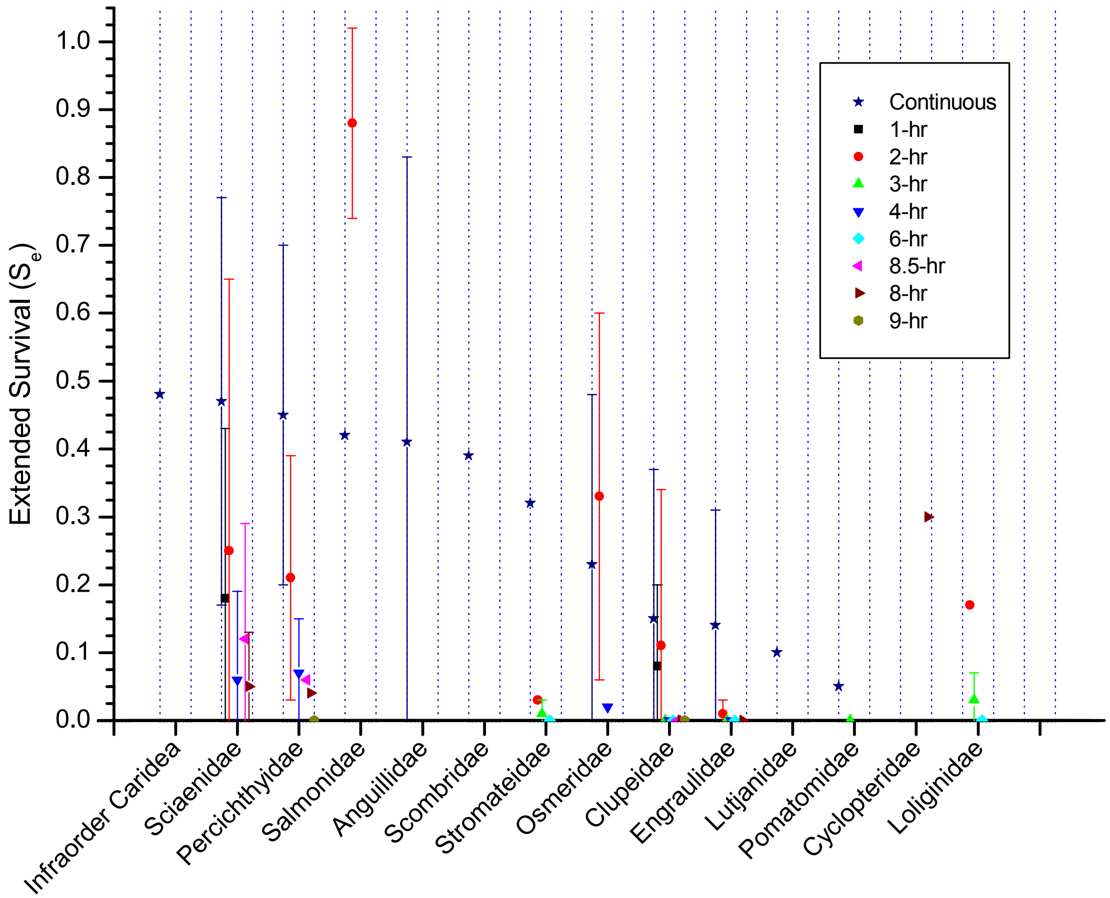


Figure 3-1 (Continued)
Mean and standard error of extended (24-108 hr) impingement survival rate estimates for screenwash intervals reported in the reviewed studies (no control adjustment for effects of collection/holding).

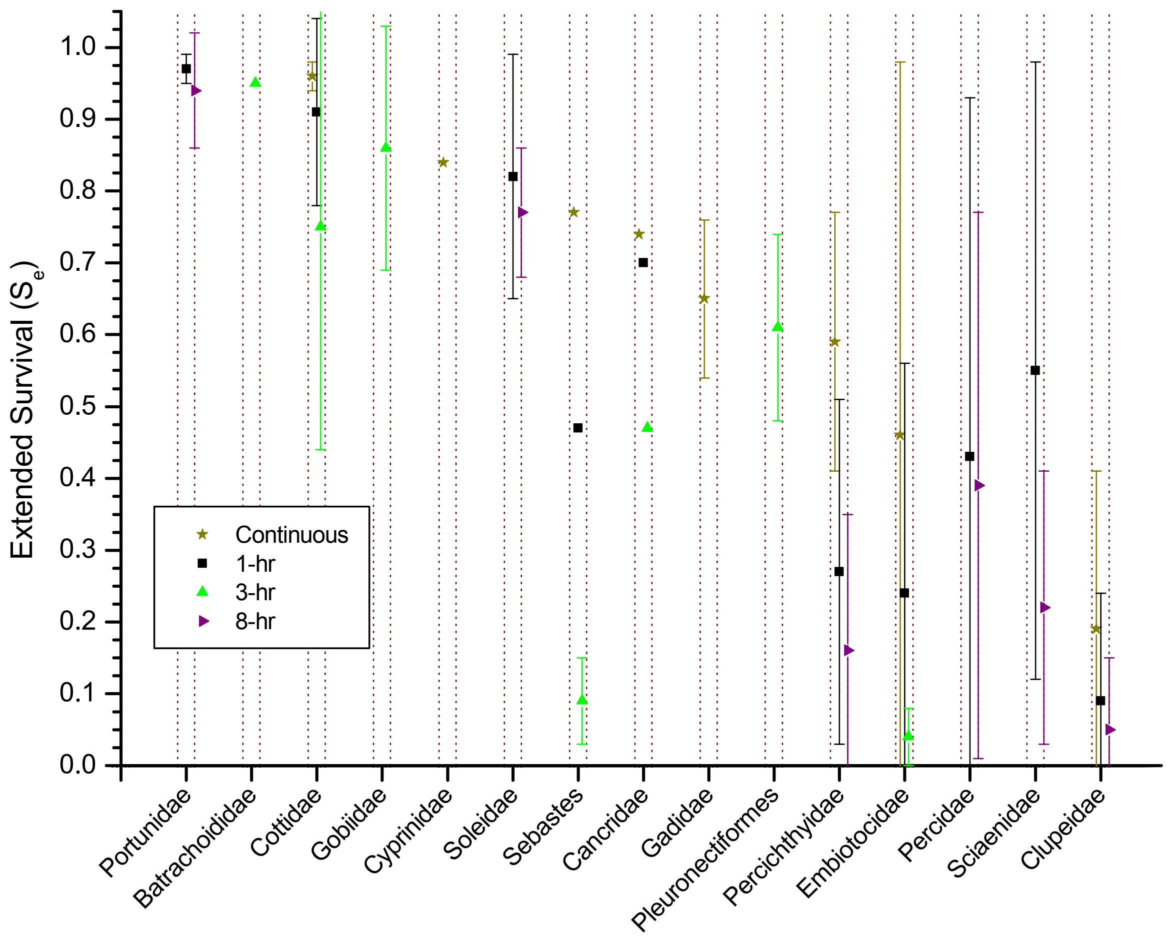


Figure 3-2
Mean and standard error of extended (24-108 hr) impingement survival rate estimates for screenwash intervals reported in the reviewed studies (estimates adjusted for effects of handling/holding observed in control studies).

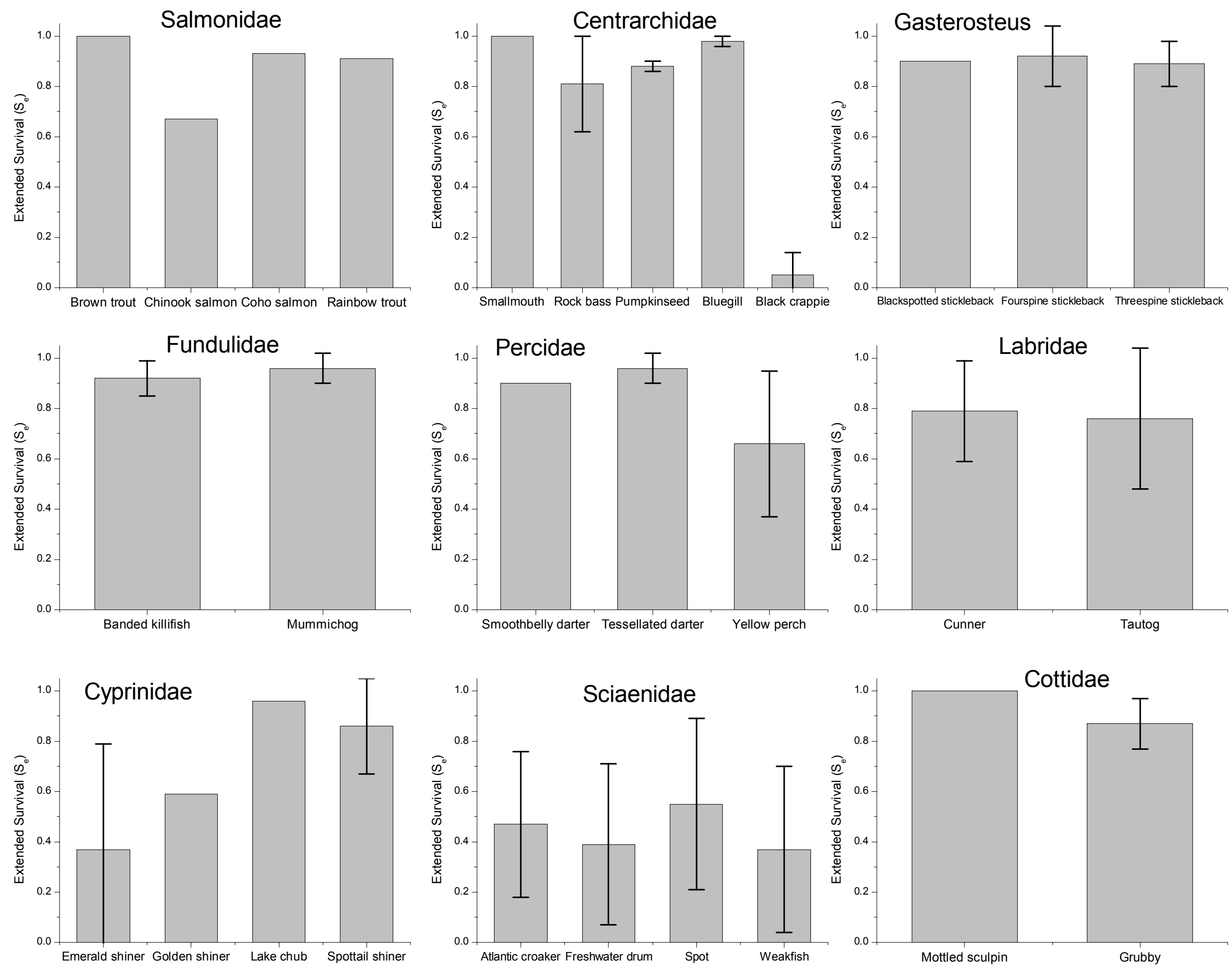


Figure 3-3
Comparison of the means and standard deviation of impingement survival rate for various species within each family based on reported estimates for frequent screenwash modes (continuous to 3-hr hold).

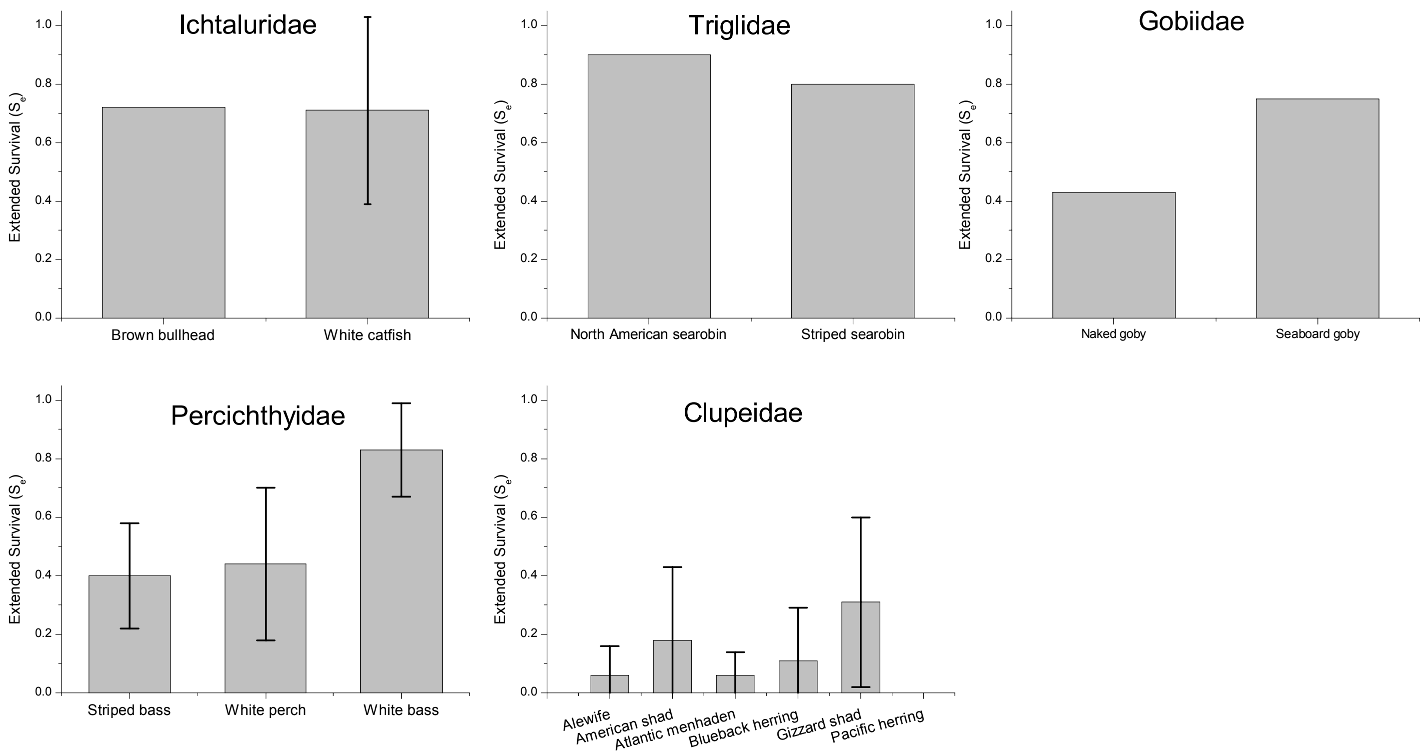


Figure 3-3 (Cont.)
Comparison of the means and standard deviation of impingement survival rate for various species within each family based on reported estimates for frequent screenwash modes (continuous to 3-hr hold).

Developmental Stage and Size

Sensitivity to the physical stresses of impingement may change as organisms grow and develop. Effects on impingement survival rate should be most evident during distinct developmental transitions that significantly alter physical strength and physiological mechanisms (e.g., osmoregulation). Studies of impingement survival on fine-mesh intake screens generally show that survival of fish increases sharply as larvae transition to the juvenile stage. Scale development at this stage in many species likely provides critical protection against the effects of impingement.

In an evaluation of 2.5 mm fine-mesh screen installed at the Indian Point Generating Station, no larvae of commonly impinged species, including striped bass, white perch, river herring, bay anchovy and rainbow smelt, survived impingement until the late post yolk-sac stage (EA 1979b). Impingement survival of striped bass increased from 0 percent for early larvae to an estimated 60-68 percent for late post-yolk-sac larvae and to 100 percent for juveniles. Survival of white perch increased from 0 percent for larvae to 71 percent for juveniles.

Extended survival rates of larvae of bay anchovy (0.3 to 10 percent), herring (0.5 percent), and seatrout/weakfish (2 to 40 percent) impinged on prototype and permanently installed 0.5 mm fine-mesh screens at the Big Bend Generating Station (Taft et al. 1982; Brueggermeyer et al. 1988) are less than the mean survival rates of juvenile and older life stages of the taxa observed across all other impingement survival studies. Although lower impingement survival of larvae might seem intuitively correct, it should also be noted that increased natural mortality during latent effects holding may contribute to the lower survival estimates since natural mortality of larvae is higher than it is for older life stages.

In contrast to fish, the early life stages of crustaceans have shown a high tolerance to impingement. Extended survival rates for zoea and megalops of several taxa of crab and shrimp are generally in the range of 80 to 100 percent (CP&L 1985; Taft et al. 1982; Brueggermeyer et al. 1988), comparable to those rates reported for juveniles and adults of these groups (NUSC 1987; CP&L 1985; Tatham et al. 1978; Serven and Barbour 1981). However, the absence of a hard exoskeleton during molting increases the sensitivity of decapod crustacea to impingement, resulting in more moderate survival rates of juveniles and adults during the molting season than at other times of the year (NUSC 1987; CP&L 1985; Tatham et al. 1978; Serven and Barbour 1981).

Prior studies have reported both increasing and decreasing trends in impingement survival rates with growth of fish. Studies at the Brunswick Generating Station reported that extended impingement survival rate increased with size of young croaker and spot (CP&L 1985). At the Salem Generating Station, extended survival of weakfish impinged on Unit 2 screens modified with new recurved fish buckets and smooth-mesh screens tended to increase with size in the range of about 20 to 87 mm, whereas survival tended to decrease on Unit 1 screens without these modifications (ECSI and LMS 1996). Studies at the C.P. Crane Generating Station reported little consistent trend in extended impingement survival rates among size classes of several species, including Atlantic menhaden, spot, hogchoker, white perch, and yellow perch when the screens were washed intermittently (Serven and Barbour 1981). Data collected during continuous screenwash conditions also showed no consistent relationship to length, with the exception of white perch, for which survival increased over the length range of 20 to 209 mm. Results from extensive studies of impingement survival at the Bowline Point and Roseton Generating Stations, summarized by Muessig et al. (1988), showed no consistent relationship of extended survival among annual age groups within study years for white perch, striped bass, alewife, blueback herring, gizzard shad, or minnows. Survival of impinged Atlantic tomcod and rainbow smelt at Bowline Point increased with age, but no such trend was observed for Atlantic tomcod at Roseton.

The ability to observe trends in survival due solely to size or age may be confounded by other factors influencing survival, including seasonal differences in debris loading or cooling system operation (e.g., cooling water flow rates), size-related differences in collection and holding mortality, and environmental variables influencing the physiological state of the organism prior to impingement.

Physiological Condition

Impingement survival is also likely to be influenced by environmental factors that affect the organism's physiology and thus condition it's sensitivity to impingement stresses, though relatively little information is available regarding these factors. Variations in biological factors, such as the nutritional state of the population, and environmental factors, such as water temperatures, likely contribute to interannual variations in impingement survival rate that have been observed at sites where studies have been conducted over several years. Variations in condition of the organisms during the year also may have an influence on seasonal variations in impingement survival. For example, impingement survival of Atlantic tomcod at the Indian Point Generating Station during October to December was higher than during January through April. One possible reason for this difference was the fact that pre-spawning fish collected in late fall and early winter are in better condition and more able to withstand stress than are post-spawning fish present later in the winter (Con Ed 1986). The influences of water temperature and salinity on impingement survival that have been found in prior impingement survival studies are discussed below in "Waterbody Characteristics Influencing Impingement Survival".

CWIS Characteristics Influencing Impingement Survival

The impingement survival realized by each species and life stage may be greatly influenced by intake screen design and operating conditions. Physical stresses present during impingement are influenced by screenwash frequency, screen travel time, and screen modifications intended to reduce stress associated with fish separation and handling. A review of the biological effectiveness, engineering practicability, and costs of fish protection systems, including active screening systems, has been presented in detail in three previous EPRI reports (EPRI 1986, 1994, 1999a).

Screenwash Frequency

For vertical traveling screens there is generally a substantial increase in organism survival associated with decreased time between screen washes, with continuous screen rotation providing the highest survival (King et al. 1978; Tatham et al. 1978). When screens are stationary for long periods of time, impinged organisms may become moribund in repeated attempts to free themselves and may suffocate against the screen. Conventional vertical traveling screens at existing power plants typically are engineered for intermittent washes, often automatically triggered by hydraulic head differential as debris builds up at the face of the screens. Continuous operation of these screens is possible, but they may require upgrading of mechanical components or complete replacement to assure reliable operation in a continuous mode.

In the studies that contained data for various screenwash frequencies, extended impingement survival rate for most species decreased, often very substantially, as time between screen washes increased for almost all species tested (Figures 3-4, 3-5). The survival rate for several hardier species (e.g., tessellated darter, threespine stickleback, hogchoker) was very high, regardless of the length of interval between screen washes.

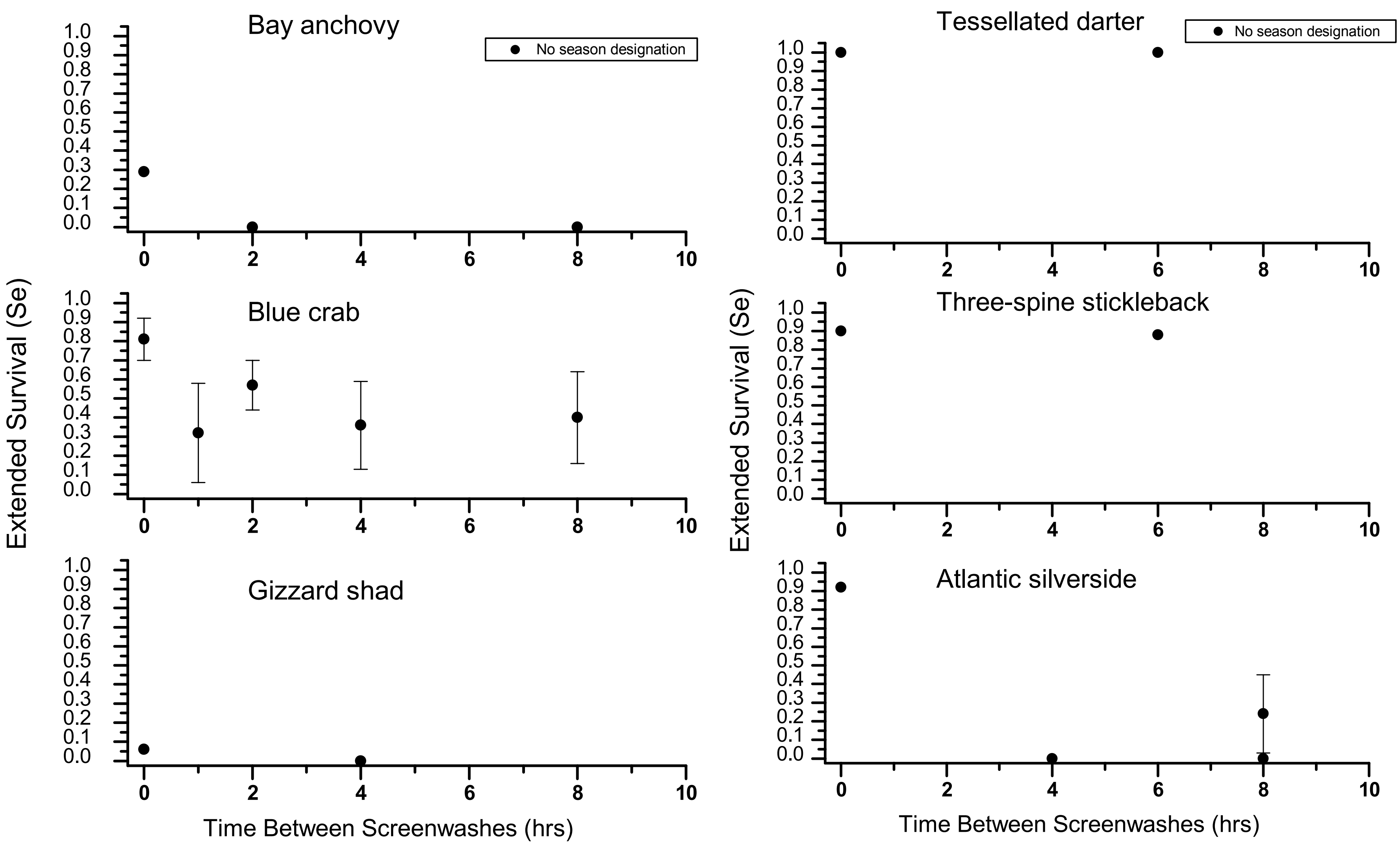


Figure 3-4
Extended survival rates reported for various screenwash frequencies (no control adjustment for effects of collection/holding; time 0 = continuous wash)

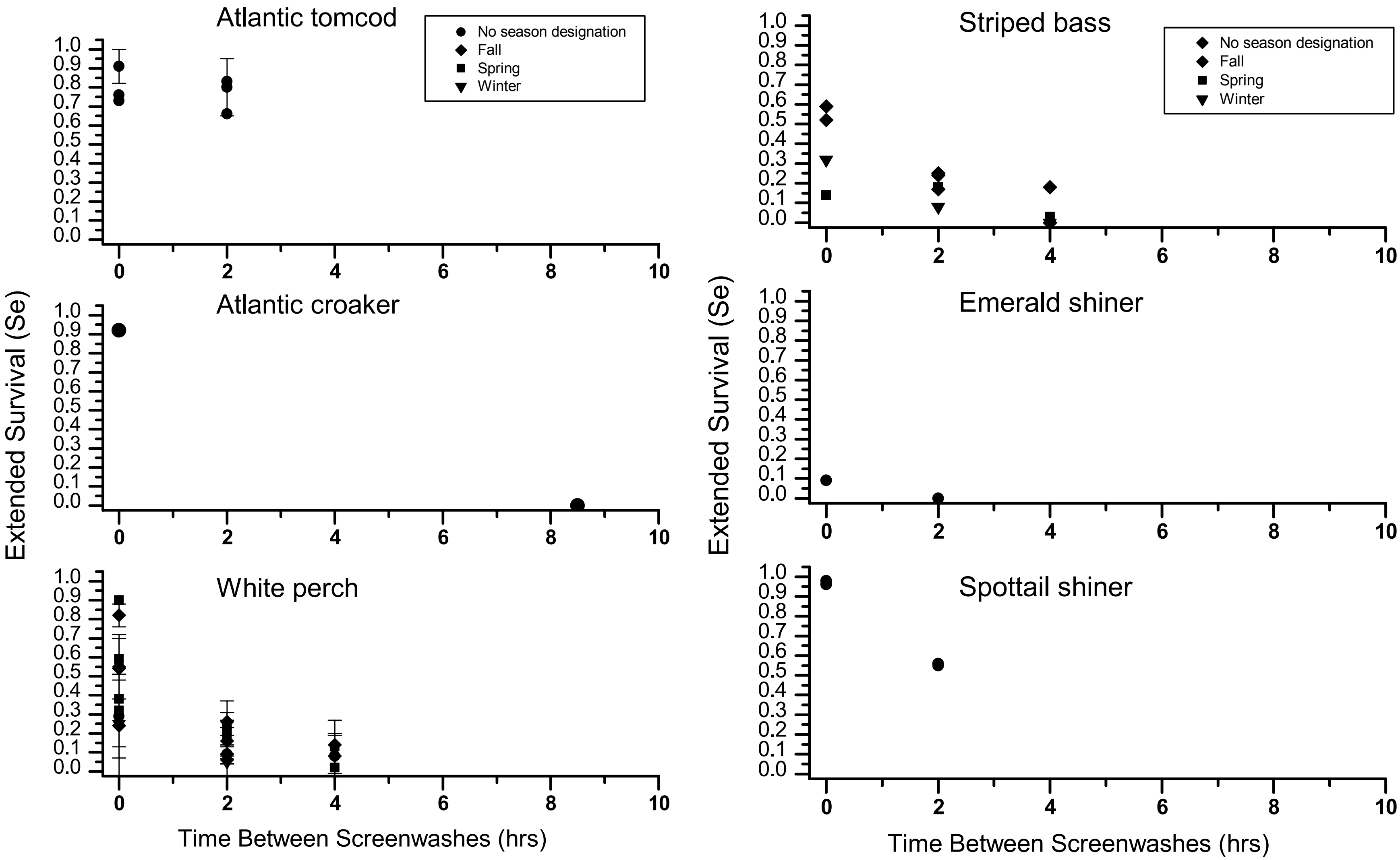


Figure 3-4 (Cont.)
Extended survival rates reported for various screenwash frequencies (no control adjustment for effects of collection/holding; time 0 = continuous wash)

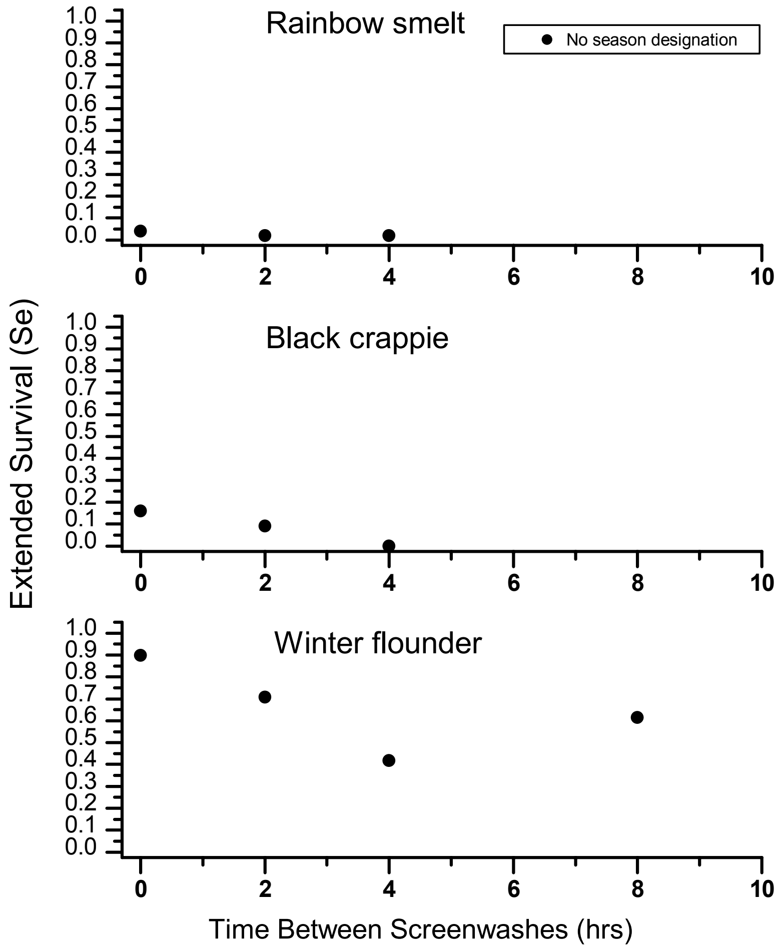


Figure 3-4 (Cont.)
Extended survival rates reported for various screenwash frequencies (no control adjustment for effects of collection/holding; time 0 = continuous wash)

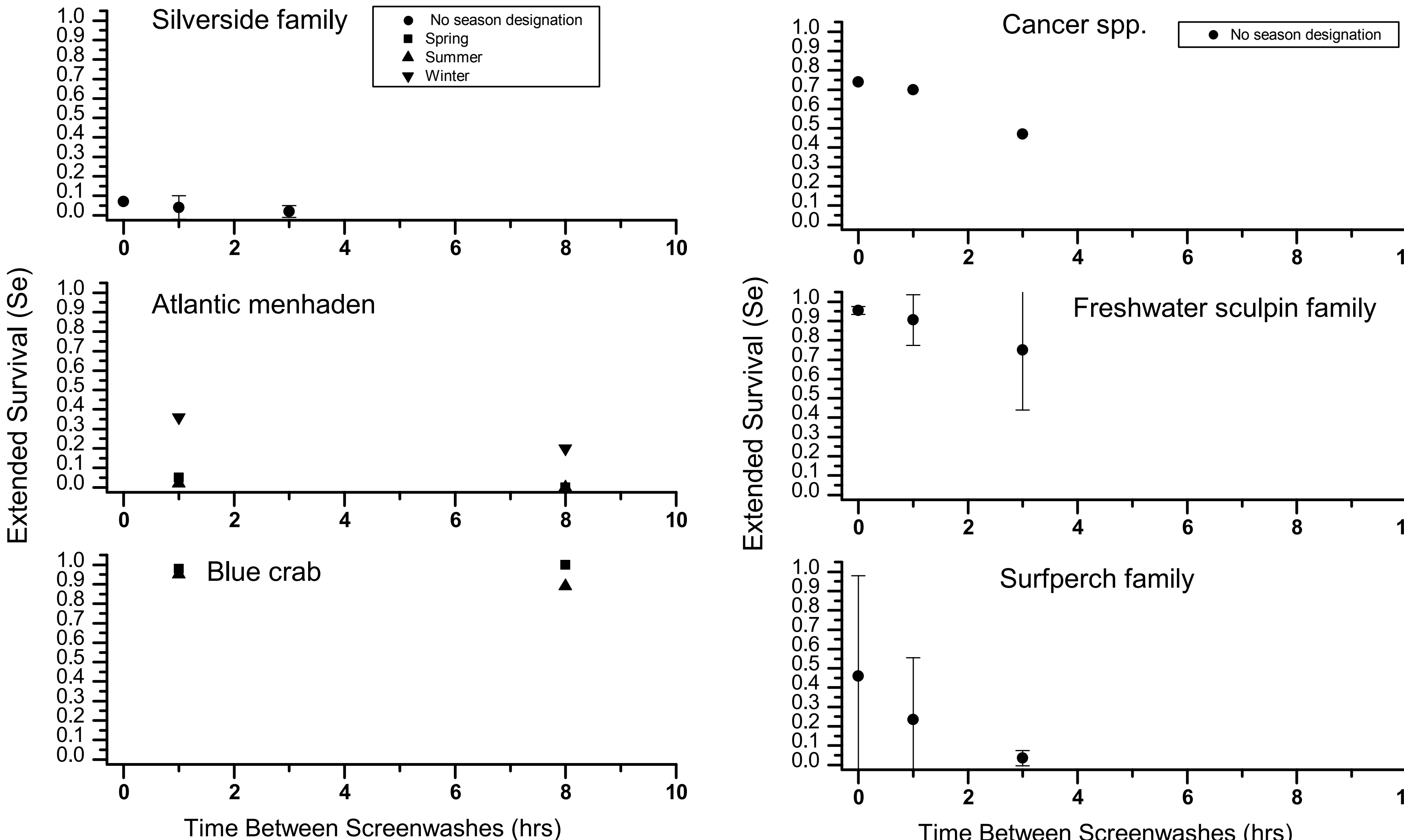


Figure 3-5
Extended survival rates reported for various screenwash frequencies (estimates adjusted for collection/holding control mortality; time 0 = continuous wash)

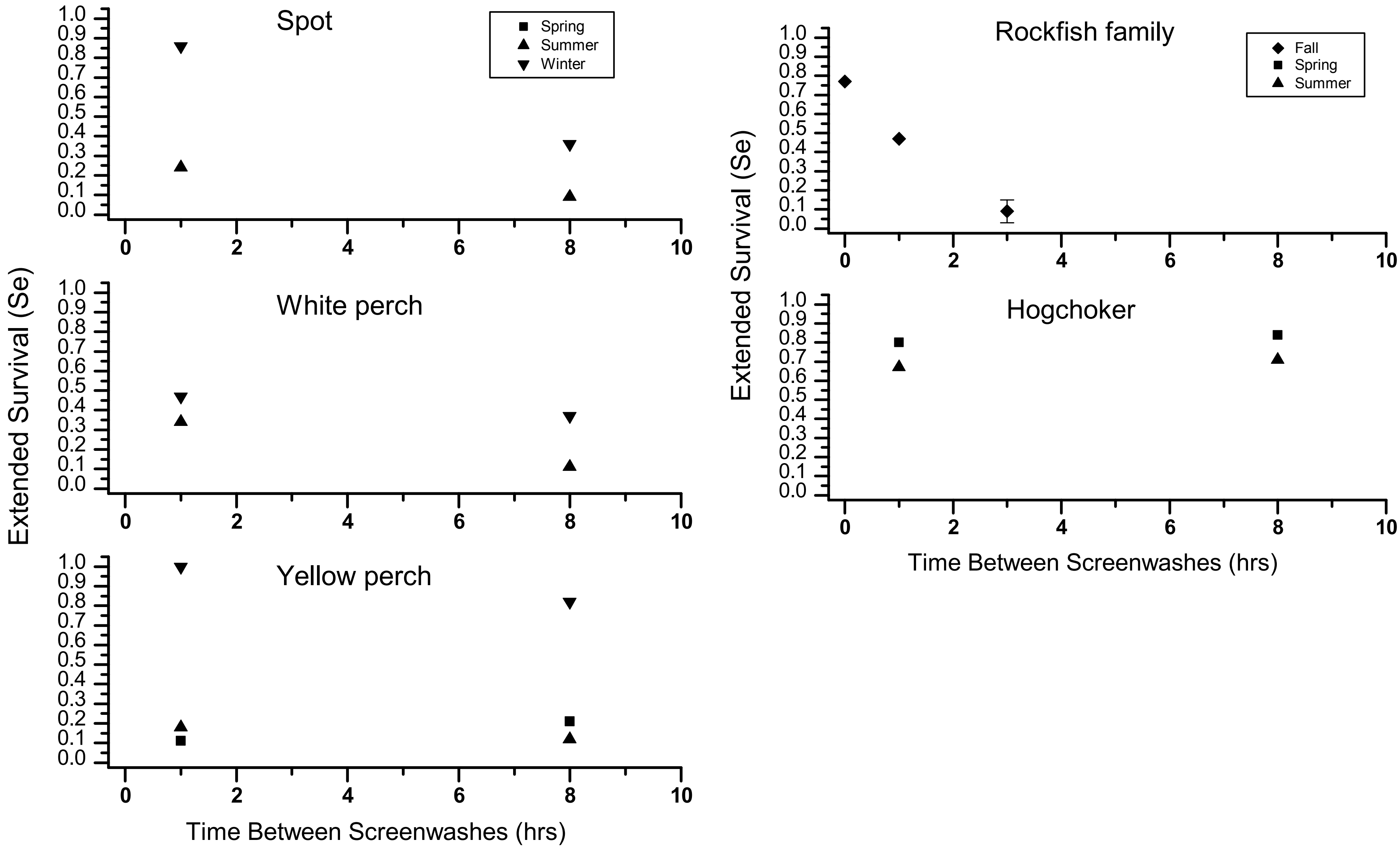


Figure 3-5 (Cont.)
Extended survival rates reported for various screenwash frequencies (estimates adjusted for collection/holding control mortality; time 0 = continuous wash)

Screen Travel Time

The duration of organism impingement on the traveling screens is also directly related to rotation time of the screen, or in other words, the time of travel required before impinged fish reach the screenwash headers. This travel time is determined both by the speed of screen rotation and the elevation or height of the screen. Faster rotation and/or shorter screens would be expected to decrease stress. Rotation speeds of conventional screens vary according to the screen design at a particular facility, and the design may include operation at more than one speed to help keep the screens clean when debris loads are high. Screen elevation above the intake decking may also affect the length of the drop that fish experience from the screen to the screenwash sluiceway, which could potentially also impact impingement survival.

Several studies have examined the relationship between the speed of screen rotation and impingement survival, and results from these studies are summarized in Table 3-1. Survival tests were conducted on dual-flow (Beaudrey) screens at the Dunkirk Generating Station at screen speeds of 54 ft/min and 18ft/min (Beak 1988). Two species, emerald shiner and rainbow smelt, were collected in sufficient numbers for analysis. Survival of juvenile emerald shiner at the fast speed was higher than at the slower speed in December (96% vs. 89%) and September (34% vs. 24%), although the difference was not statistically significant for September. Survival of adult rainbow smelt collected in December was significantly higher at the faster screen speed than at the slower speed (59% vs. 39%).

At the Mystic Generating Station, survival tests were conducted on a single flow screen modified with fish lifting buckets and a low pressure spray at high (15 ft/min), intermediate (7.5 to 10 ft/min), and low (3.3 ft/min) screen speeds (SWEC 1981). Results of the screen speed tests (Table 3-1) indicated that high extended survival of winter flounder was obtained at all screen speeds, but survival of more sensitive species was generally higher at the fastest rotation speed.

Table 3-1
Extended Survival of Fish by Screen Speed at the Dunkirk, Mystic, and Brunswick Generating Stations

			Mean Percent Survival (96 hr) During Period of Peak Abundance		
Power Plant (screen speeds)	**Species**	**Size/Stage**	**Low**	**Medium**	**High**
Dunkirk (18, 54 ft/min)	Emerald shiner	Juvenile	89		96
	Rainbow smelt	Adult	39		59
Mystic (2.5, 7.5-10, 15 ft/min)	Rainbow smelt	Large	11.0	31.3	40.0
		Small	22.5	58.3	66.7
	Alosa spp.	Large	0.8	0	0.5
		Small	6.7	23.4	47.1
	Winter flounder	All	96.8	100	98.6
Brunswick (2.5, 6.5-10 ft/min)	Atlantic croaker	<25 mm	9.6		28.9
		>25 mm	35.6		36.0
	Spot	<25 mm	7.6		31.0
	Bay anchovy	All	0		0

Studies of impingement survival on fine mesh (1-mm) screens installed at the Brunswick Generating Station indicated that survival of small (<25 mm) Atlantic croaker and spot was significantly higher in samples collected during fast (6.5 to 10 ft/min) screen operation than during slow (2.5 ft/min) screen operation (CP&L 1985). Survival of larger (>25 mm) croaker and of bay anchovy, various shrimp species, and blue crab was not significantly different for the two screen speeds.

Studies were conducted on Ristroph-modified dual-flow traveling screens at the Roseton Generating Station at screen speeds of 9.8 ft/min and 19.7 ft/min (Normandeau 1995). No definitive trend in survival between the two screen speeds was apparent. Six of ten fish species with 20 or more organisms collected had higher survival at the faster screen speeds, while 3 fish species and blue crab had higher survival at the slower screen speed.

Screen Modifications for Fish Separation and Handling

A number of physical modifications to screen systems have been developed specifically to protect fish and other aquatic organisms. Screen systems employing fish buckets, continuous operation, and low pressure washes with fish returns to the waterbody are typically referred to as Ristroph screens, after the original developer of the modified screen. Because fish protection measures evolved or were added over the years, later versions of the modified screens are sometimes referred to as modified Ristroph screens. The individual changes that may be incorporated in the modified screen are each designed to reduce some aspect of impingement stress (Table 3-2).

Table 3-2
Comparison of Major Components that may be Incorporated in Conventional and Modified (Ristroph and Descendants) Traveling Screen Systems

Conventional Screen Design	Modified Screen Design	Stress Reduction Target
Debris ledge on screen panel	Fish bucket/trough on screen panel	Desiccation, suffocation, thermal shock during screen elevation; all stresses from escape and reimpingement
	Recurved edges on screen panel fish buckets (after Fletcher, 1990)	Impact and abrasion from vortices in bucket; stresses from escape and reimpingement
Pressure differential operation	Continuous operation	All stresses by reducing impingement time
High pressure screen wash only	Low pressure fish wash added	Impact and abrasion during removal from screens
Wash water return trough empty at start of wash	Wash water trough maintains several inches of water depth	Impact and abrasion of transfer into and along trough
Debris collection basket in line with wash water return	Open return or fish bypass	No return to waterbody
	Separate debris trough and fish return (smooth surfaces)	Trapping or impact and abrasion from contact with debris
Wash water return trough open	Fish return enclosed	Predation
Wash water outfall placement convenient (may include drop from elevation)	Fish return placement subsurface and downstream	Physical injury from return; all stresses from reimpingement; predation

One of the last modifications to the Ristroph design was to add a recurved lip to the screen fish buckets. Fletcher (1990) showed in laboratory studies that, in selected species, struggling behavior resulted in a downward movement along the screen mesh that directed them to the fish-lifting bucket attached to each of his experimental screen panels. Redesigning the bucket with a recurved edge creates a calm zone, where fish were found to seek shelter and remain in the bucket as the screen's rotation carried them upward to the water surface and spraywash fish removal system.

The effectiveness of modified screen systems in reducing impingement mortality compared to conventional screens has been evaluated at the Oyster Creek, Salem, Arthur Kill, and Roseton generating stations. Both modified and unmodified screens were single-flow (or through-flow) at the first two stations, and dual-flow at Arthur Kill. The study at Roseton compared survival on dual-flow modified screens to that on single-flow conventional screens. At Oyster Creek, Arthur Kill, and Roseton, impingement survival rates measured on modified screens were compared to those from unmodified, conventional screens. Studies at Salem, evaluated the benefits of progressive improvements in the fish protection measures incorporated into existing Ristroph screens.

Oyster Creek Generating Station

During 1983-1984, all conventional vertical traveling screens at Oyster Creek were replaced with Ristroph screens designed to rotate continuously. The new screens were equipped with screen troughs (fish buckets) on the screen panels and low pressure fish removal sprays. Since it was not possible to conduct side-by-side comparisons of the screens, impingement survival rates obtained in studies conducted during 1985 were compared to survival observed on the conventional screens during studies conducted from October 1975 through August 1978 (EA 1986). Extended survival of bay anchovy from the Ristroph screens in 1985 was about three-fold higher than the weighted mean survival from the conventional screens observed in the prior studies (Table 3-3). Survival of Atlantic silverside, winter flounder[16], and sand shrimp was very high and similar for Ristroph and conventional screens. It is not possible to draw strong conclusions about these results, since the necessity of comparison across different years of study introduces many confounding variables. It is also not possible to distinguish the potential benefits associated with the fish buckets and low pressure spray removal from those associated with continuous operation of the modified screens, since the conventional screens were operated intermittently (up to 2-hr interval between screen washes).

Salem Generating Station

The original Ristroph screens ("Original Ristroph screens") installed at Salem were upgraded and improved between 1984 and 1993. Unit 2 screens were further modified by the summer of 1995 ("Modified Ristroph screens"). The latter modifications were also installed at Unit 1 prior to impingement survival studies conducted in 1997 and 1998. Upgrades during the 1984-1993 period consisted of installation of larger fish buckets and a custom-formed fish and debris trough

[16] Survival from the conventional screens was reported for winter flounder, but the authors considered sample size too small to make a valid comparison.

to provide rounded curves and a smooth surface to minimize abrasion and to increase water depth (ECSI and LMS 1996). Modifications in 1995 and 1996 included new fish buckets with a recurved front edge, smooth woven rectangular mesh on screen panels, changes in flap seals, spray nozzles, and other components designed to increase survival rates (ECSI and LMS 1996; Heimbuch 1999; Ronalfalvy et al. 2000). The effectiveness of the final (1995-1996) screen modifications in reducing mortality of weakfish was evaluated by comparing impingement survival rates obtained from the Modified Ristroph screens at Unit 2 with the improved Original Ristroph screens still in place at Unit 1 in studies conducted in 1995 (ECSI and LMS 1996; Heimbuch 1999; Ronalfalvy et al. 2000). The overall effectiveness of all modifications made to Salem's Original Ristroph screens since 1984 in reducing mortality of a variety of fish species was evaluated by comparing the impingement survival rates obtained on the modified screens at both units in 1997-1998 with survival rates obtained from studies in 1978-1982 (ECSI and LMS 1996). Based on these comparisons of extended survival rates (Table 3-3), the researchers concluded that the modifications to the Ristroph screens effectively reduced impingement mortality rates by an average of 23 percent for bay anchovy up to an average of 69 percent for Atlantic croaker, with an overall average reduction of over 50 percent for all species except bay anchovy.

Arthur Kill Generating Station

Two of eight dual-flow traveling screens at Arthur Kill were replaced with modified Ristroph dual-flow screens equipped with screen panel fish collection troughs with recurved edges, smooth woven rectangular mesh screen panels, low pressure spray wash systems, fish flap seals, and separate fish return sluices (Con Ed 1996). From February 1984 to September 1985, impingement survival studies were conducted on these two modified screens and one unmodified screen. Extended survival rates on the modified screens were substantially higher than on the unmodified screens for many of the species tested, including bay anchovy, several herring species, butterfish, weakfish, white perch and winter flounder (Table 3-3). Species very tolerant of impingement stresses, such as mummichog, searobin, striped killifish and threespine stickleback, had high and comparable survival on all screens tested (Con Ed 1996; Table 3-3).

Roseton Generating Station

Two of eight conventional through-flow traveling screens at Roseton were replaced with dual-flow modified Ristroph screens in March 1990 (LMS 1991). Screen modifications included screen troughs with recurved edges, separate fish and debris removal spray cleaning systems, and flattened woven wire mesh to smooth the surface of screen panels. Impingement survival studies conducted from May to November 1990 collected fish separately from the debris sluiceway of all conventional through-flow screens and from the fish return sluiceway of the modified Ristroph dual-flow screens. Extended survival on the modified screens was higher than it was on the conventional screens for nearly all species collected, with the exception of bay anchovy and alewife, for which 100 percent mortality was observed on both screen types (LMS 1991; Table 3-3).

Overall, the comparisons indicate that the Ristroph modifications are effective in improving the rates of fish survival. However, the incremental benefits above those attained through operation in the continuous wash mode may vary widely among species and power plant sites.

Table 3-3
Summary of Mean Extended Impingement Survival Observed in Studies Comparing Conventional and Modified Screens

Generating Station	Species	Extended Survival (Proportion) Conventional Screens	Ristroph Screens	Modified-Ristroph Screens
Oyster Creek	Atlantic silverside	.77	.80	
	Bay anchovy	.06	.19	
	Sand shrimp	.92	.95	
	Winter flounder	1.0	.93	
Salem	Alosa sp.		.40	.80
	Atlantic croaker		.51	.85
	Bay anchovy		.29	.45
	Spot		.81	.93
	Weakfish		.61	.82
	White perch		.87	.95
Arthur Kill	Alewife	.05		.95-.99[17]
	Atlantic herring	.00		.22-.40
	Atlantic silverside	.51		.98-.99
	Bay anchovy	.00		.41-.52
	Blueback herring	.15		.79-.96
	Butterfish	.18		.72-.76
	Menhaden	.05		.71-.76
	Mummichog	.95		.80-.92
	Northern searobin	.82		.90-.97
	Seahorse	1.0		1.0-1.0
	Striped killifish	.91		.87-.96
	Threespine stickleback	.99		1.0-1.0
	Weakfish	.42		.92-.97
	White perch	.63		.85-.90
	Winter flounder	.41		.97-.97
Roseton	Alewife	.00		.00
	American shad	.00		.01
	Atlantic tomcod	.08		.20
	Bay anchovy	.00		.00
	Blue crab	.96		.96
	Bluegill	.83		.98
	Brown bullhead	.65		.84
	Gizzard shad	.05		.10
	Hogchoker	.92		.97
	Pumpkinseed	.73		.94
	Spottail shiner	.49		.68
	Striped bass	.24		.43
	White catfish	.75		.84
	White perch	.28		.46

[17] Range for the two modified screens tested.

Other CWIS Factors

Various other CWIS factors may influence impingement survival rates, but to our knowledge their effect on survival rate has not been examined in any detail in impingement survival studies conducted to date. These factors include screen approach velocities and the proximity of the screenwash discharge and fish return to the cooling water intake. Screen approach velocity could affect the behavior and energy expenditures of fish prior to encountering the screen surface, as well as the damage incurred during impingement. The proximity of the fish return to the cooling water intake, together with the hydrodynamics of the waterbody in the vicinity of the station, influences the magnitude of fish reimpingement after return to the waterbody (EPRI 2000b, 2003). Multiple impingement exposures tend to reduce survival as a result of cumulative stress and injury.

At some facilities, impinged fish are returned to a cooling water discharge canal rather than directly to the source waterbody. In these cases, the exposure to temperature elevations in the cooling water discharge may kill fish, as a result of heat shock, that would otherwise have survived impingement. The tolerance of fish to short-term temperature elevations varies by species and also depends on prior temperature acclimation and exposure duration (Coutant 1970, 1972). Therefore, the mortality of impinged fish returned to a discharge canal depends on the physical configuration of the fish return and cooling water discharge, as well as behavioral responses of the fish, including thermal preference and avoidance responses. One impingement survival study (EA 1986) investigated the effect of returning impinged fish to the discharge by holding separate samples of impinged organisms for latent effects (48 hr) observations in ambient and discharge water. Discharge temperatures at which mortality of impinged fish increased were found to be generally consistent with upper temperature tolerance limits determined in laboratory studies.

Water Body Characteristics Influencing Impingement Survival

Many of the impingement survival studies report survival rates separately for various time periods or seasons during the year, though only a portion of those studies have attempted to explicitly address the relationship of survival to season or to seasonal changes in environmental conditions (Tatham et al. 1978; Muessig et al. 1988; Con Ed 1986; Beak 1988; NUSC 1987; ECSI and LMS 1996; LMS 1991; EA 1986; Normandeau 1995; Reider 1984). A variety of water body characteristics that vary seasonally or over shorter time periods in response to weather conditions could potentially affect the mortality of impinged organisms. Such factors include: loadings of debris and other organisms that may damage fish; water temperature; dissolved oxygen and turbidity; and, in the case of estuarine sites, salinity.

Concurrent Impingement of Debris and Other Organisms

Occurrence of debris and its blockage of intake screens, which is highly site-specific, can contribute to decreased impingement survival rates. Some researchers have noted lower survival of impinged fish species when large masses of jellyfish are present (NUSC 1987) or when the numbers and activity of crabs on the intake screens is high (Tatham et al. 1978). Organisms with hard exoskeletons, such as crabs, appear to cause an increase in injury and death that reduces survival of other impinged species (Landry and Strawn 1974). The potential for injury from physical contact with plant materials and man-made debris during impingement has prompted screen designs that include separate fish and debris spraywash removal troughs (see “Screen Modifications” above).

Ambient Water Temperature

A number of studies have examined the relationship between impingement survival and ambient water temperatures. Seasonal water temperatures near the upper or lower temperature tolerance limit of impinged species may increase their sensitivity to the subsequent stresses of impingement, thereby lowering impingement survival compared to that observed at other times of the year. The elevation of metabolic rate as temperatures increase to their summer maximums may exacerbate the physiological stresses of impingement, including increasing the rate of oxygen starvation of tissues and suffocation. Very low temperatures have been observed to increase mortality due to handling and rearing stress as a result of increased osmoregulatory dysfunction (Wedemeyer 1972; Miles et al. 1974). In temperate zones, many species are unable to fully adapt physiologically to the wide changes in water temperatures that occur seasonally. Although many of these species adapt behaviorally by seasonal migration to habitats with more favorable temperatures, some portion of their populations often reside in waters quite close to the limits of their thermal tolerance. As a result, these organisms may be more susceptible to impingement mortality or may even be susceptible to natural seasonal mortality, especially in particularly cold winters or hot summers. For example, Lankford (1997) has shown that Atlantic croaker, which uses bays and estuaries during summer and fall months, can become highly stressed and more susceptible to impingement when water temperatures are lowest. LaJeone and Monzingo (2000) reported that the vast majority of fish (gizzard shad and freshwater drum) were either dead or moribund prior to their arrival on the Quad Cities Generating Station’s intake screens. The inability of gizzard shad to avoid intake flows because of natural winter die-offs was also noted by Haines (2000).

One may expect that the affect of water temperatures on impingement survival will vary among ecosystems and species, depending on the adaptations of species to their thermal environments. Variation in temperature relationships observed in field studies can also result from covarying environmental factors that may affect survival. For example, in temperate ecosystems, water temperature increases that take place from winter to summer coincide with decreases in dissolved oxygen and also with increasing size of fish during their annual growth cycle. In estuaries, salinity concentrations and temperature are also often correlated, since freshwater discharge typically decreases from its highest levels in early spring through lows in summer or fall. It is therefore not surprising that reported temperature relationships vary considerably among the impingement survival studies. However, the general pattern of effects on fish that emerges when these data are examined collectively is one of highest impingement survival over some intermediate ambient temperature range, with the potential, depending upon species, for decreasing survival at temperatures above and below this range.[18] In general, ambient

[18] It should be noted that those studies that have explored the relationship between impingement survival and temperature have not found such a relationship for all species. This may be due to variation among species and/or to limitations of the data.

temperature appears to have little effect on impingement survival of crustaceans over the temperatures ranges studied (EA 1986; NUSC 1987).

Survival at cold temperatures

Impingement survival studies at the Bowline Point Generating Station indicated that extended impingement survival of white perch and striped bass increased linearly with ambient water temperatures up to 4.5°C (Muessig et al. 1988). Extended survival for these two temperate bass species ranged from about 0 to 20 percent at temperatures less than 1°C up to about 60 to 90 percent at 4.5°C. Extended survival of Atlantic silverside at the Oyster Creek Generating Station increased linearly with temperature from less than 15 percent survival at about 1-2°C to higher than 65 percent at 4.5°C and above (EA 1986). In the same study, bay anchovy extended survival was at or near 0 percent at temperatures below about 10°C, whereas survival varied between about 10 percent to over 80 percent at temperatures between 12 and 25°C. In contrast, extended survival of winter flounder remained high at ambient temperatures down to 1.5°C (EA 1986). Studies at the Roseton Generating Station found lower extended survival of catfish (white catfish and brown bullhead), gizzard shad, and spottail shiner at temperatures below 6°C than at more moderate temperatures (LMS 1991). At the Millstone Generating Station (NUSC 1987), extended survival of demersal fish species was lower (73%) at cold temperatures of 3.5 to 7.0°C than it was at cool temperatures of 10 to 15°C (88%) or warm temperatures of 17 to 22°C (85%).

The very low temperatures associated with most of the observations of reduced impingement survival suggest that the effect may be confined to temperatures near the low temperature tolerance limits of the species, with the increased impingement mortality caused by the thermally stressed condition of the organisms at the time of impingement. If so, it should be possible to predict the approximate temperature levels that are likely to cause reduced survival based on temperature preference and response data obtained in field and laboratory studies. However, impingement survival data currently available does not appear to be sufficient to adequately test this relationship.

Survival at intermediate temperatures

Impingement survival may be relatively unaffected by temperature over some intermediate range of "cool" ambient temperatures. Impingement survival within this range is characteristic of species' inherent sensitivity to impingement and may vary as a result of factors other than temperature that influence survival. The limited data available suggest that this temperature range may be relatively narrow for pelagic species more sensitive to impingement and relatively broad for demersal or littoral species more tolerant of impingement (EA 1986; NUSC 1987; Normandeau 1995; LMS 1991). For example, at the Roseton Generating Station, impingement survival of blueback herring, bay anchovy, and alewife steadily declined as temperature increased above about 16°C; from the 20 to 40 percent range below 16°C to near zero percent at 22 to 28°C (Normandeau 1995; LMS 1991). In contrast, impingement survival of brown bullhead decreased only slightly at temperatures up to 28°C. At Oyster Creek Generating Station, bay anchovy extended impingement survival varied widely (10 to 85 percent), but with no apparent relationship to temperature between about 11°C and 25°C (EA 1986). Atlantic silverside extended survival varied within a more narrow range (67 to 100 percent), also with no effect of temperature apparent between about 4.5°C and 25°C. Extended impingement survival of winter flounder was consistently high (above 90 percent) over the entire range of ambient temperatures, about 1.5°C to 26°C, at which the species was collected (EA 1986).

Survival at warm temperatures

The source documents indicate that impingement survival may decline at warmer ambient water temperatures, at least for some species and CWIS's. The decline may be gradual and begin at moderate temperatures, as discussed above, or occur only when temperature approaches maximum summer levels. For example, bay anchovy extended impingement survival at Oyster Creek (EA 1986) declined to near zero percent only when ambient temperatures reached about 25°C, whereas impingement survival of several species (e.g., alewife, blueback herring, bay anchovy) at Roseton (LMS 1991) appeared to decrease more gradually beginning at lower temperatures (14-16°C). For other species (e.g., winter flounder, catfish) examined in these studies, there was little or no temperature-related decrease in survival up to temperatures of 26-28°C.

Warmer water temperatures could theoretically reduce impingement survival indirectly by increasing the metabolic rate of fish. Higher metabolic rates enable greater activity and increase oxygen demand. This could result in additional mortality from fatigue induced by more sustained swimming against the intake flow prior to impingement and/or physical injury from more active struggling of fish impinged against the screens. Pelagic, soft-bodied species would be expected to be more sensitive to increases in stress from either of these mechanisms and therefore more likely to exhibit a trend of increasing mortality at warmer water temperatures.

Some impingement survival studies have not explicitly examined survival relationships to temperature, but have observed differences in extended impingement survival at various times of year (Tatham et al. 1978; Reider 1984; Beak 1988). Those observations that span warm and cold seasons, summarized below, are not inconsistent with the typical seasonal cycles of ambient water temperature in temperate zones of the U.S. and the temperature patterns discussed above.

Report ID	Station	Species	Seasonal Observation
184	Oyster Creek	Bay anchovy	Higher impingement mortality in summer months than in spring or fall
245	Monroe	Yellow perch	Impingement survival lower in July and August (42%) than April-June and September (82%-92%)
227	Dunkirk	Emerald shiner	Impingement survival: Jan.(72%); Sep.(42%); Oct.-Dec.(80 to 96%)
		White bass	Impingement survival: Jan. (81%); June-July (51%-54%); Nov. (98%)
		White perch	Impingement survival: Feb.(56%); Aug. (56%)
		Yellow perch	Impingement survival: June (86%); July (21%); Oct. (94%)

Dissolved Oxygen and Turbidity

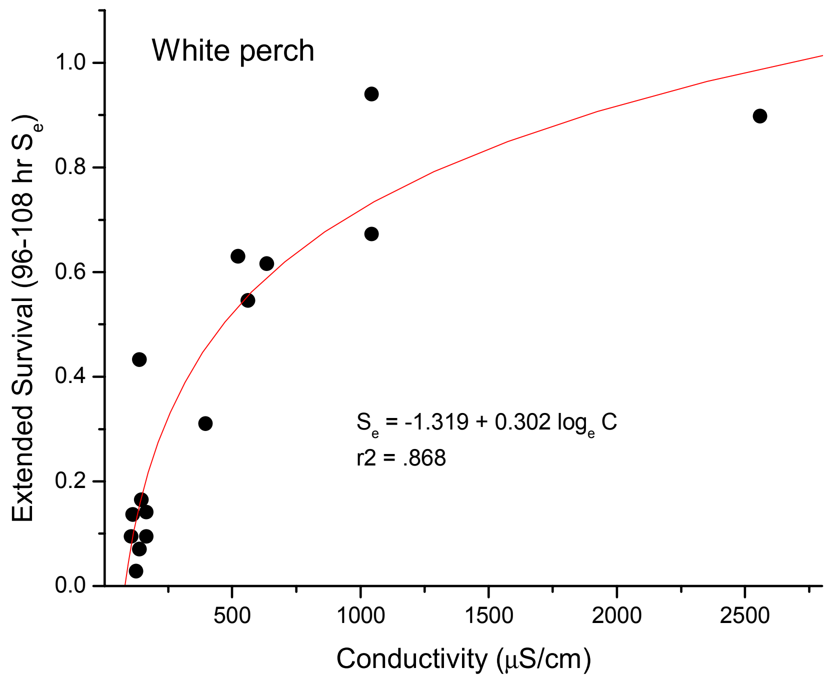
The reduced impingement survival rate at higher summer water temperatures that has been observed for some species may, in part, reflect the influence of seasonal changes in dissolved oxygen levels. The concentration of dissolved oxygen in water is determined by the interaction of several biological and physical processes. Some processes, including photosynthesis, respiration, microbial decomposition, chemical oxidation, and mixing of the water column act directly by increasing or decreasing the amount of oxygen produced or used in the water. Others—temperature, salinity, and atmospheric pressure—act indirectly by affecting the solubility of oxygen in water. The interaction among these factors typically results in a seasonal pattern of highest dissolved oxygen concentrations in the winter and lowest during the summer. The correlation of increasing water temperatures with decreasing dissolved oxygen levels makes it difficult to distinguishing the independent effects of dissolved oxygen on impingement survival rate. One study used discriminant analysis to examine the importance of temperature, dissolved oxygen, and other factors on impingement survival (Normandeau 1995). Dissolved oxygen was identified as a primary factor influencing the impingement survival of blueback herring and a secondary factor influencing the survival of alewife. For both of these species, impingement survival rate was significantly higher at dissolved oxygen concentrations of 10-12 mg/l than it was at 7-8 mg/l.

Turbidity is another water quality parameter that could theoretically influence impingement survival rate by direct (e.g., cause gill irritation) or indirect (e.g., alter dissolved oxygen levels) effects on organism sensitivity. However, the reviewed studies contained no data on the influence of turbidity on impingement survival.

Salinity

Water salinity may be an important factor influencing impingement survival in the brackish water regions of estuaries, where salinity varies seasonally in response to changes in freshwater discharge and tidal height. Low to moderate levels of salinity reduce the energy input required for osmoregulation, and thereby act as a general stress ameliorator. The addition of salt has been shown to reduce mortality of aquatic organisms from physical stresses (Bowser and Buttner 1991; Kane et al. 1990; Palawski et al. 1985).

Impingement survival studies in brackish water regions of the Hudson River suggest that the stress-reducing effects of salt result in higher impingement survival of some species when brackish water is present than during freshwater periods (ORU 1977). For example, white perch impingement survival was positively correlated with water salinity at the time of impingement. Survival at 96 hours after impingement ranged from 7 to 42 percent when the intake water was less than about 0.1 parts per thousand (ppt) mean salinity (essentially freshwater) and was generally greater than 60 percent when salinity exceeded about 0.3 ppt (ORU 1977). At the Bowline Point Generating Station, extended survival of white perch and striped bass at temperatures above 4.5°C increased in proportion to the logarithm of conductivity (Muessig et al. 1988; Figure 3-6). In studies at the Indian Point Generating Station, extended impingement survival of striped bass, white perch, weakfish, bay anchovy, and blueback herring was higher in August and September when water salinity was 6 to 8 ppt than it was later in the year, when salinity decreased to less than 1 ppt (Con Ed 1986).



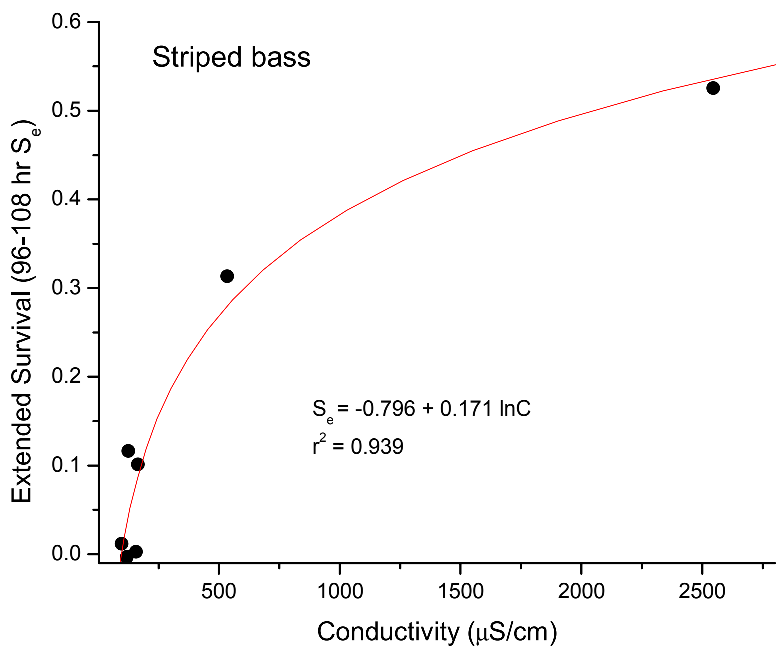


Figure 3-6
Extended survival of white perch and striped bass impinged at Bowline Point Generating Station in relation to specific conductance (adapted from Muessig et al. 1988)

4

IMPINGEMENT SURVIVAL AND §316(b) COMPLIANCE

Compliance with the §316(b) regulations soon to be established for existing power plants will likely require NPDES permit applicants to assess the level of fish and shellfish protection provided by existing and alternative intake technologies and operational measures, and in some cases, may also compel applicants to assess the ecological significance of entrainment and impingement at their generating facilities as part of a cost-benefit analysis (Chapter 1). This chapter discusses the application of impingement survival data to §316(b) assessments, and summarizes impingement survival rate estimates presented in the reviewed impingement survival study reports.

Uses for Impingement Survival Data

As discussed in Chapter 1, estimates of impingement mortality rates for focal species impinged at existing facilities will be one of the important inputs required to assess compliance with the newly proposed §316(b) regulations. These regulations provide several methods, summarized below, for demonstrating compliance with the §316(b) standard of "best technology available for minimizing adverse environmental impact", or "BTA". All of these methods require analysis of total impingement mortality; that is, direct impingement losses (Text Box 1-1).

The analysis of direct impingement losses is fundamental to all of these assessments because it provides the foundation for all prospective measures of impingement effects on fish populations, from the individual level to the population level (EPRI 1999b, 2002a, 2002b). Impingement losses are the product of the numbers of organisms of a particular species impinged (impingement abundance) and their tolerance of the impingement stresses, as reflected in impingement mortality rates (Text Box 1-1). Although this discussion focuses on the application of impingement mortality rates, §316(b) assessments must consider the effect of CWIS alternatives on both abundance and survival, since some design changes intended to decrease mortality rates, such as changes in screen mesh or screen type, might also change the rate of fish impingement.

Compliance with Performance Requirements for Reducing Impingement Mortality

Applicants may comply with §316(b) regulations by demonstrating that the existing intake, or feasible technology or operating alternatives which the applicant proposes to employ, will reduce fish and shellfish impingement mortality by 80 percent to 95 percent relative to a baseline case consisting of a shoreline intake with no impingement controls (USEPA 2002). Although USEPA does not specify the impingement mortality rate that should be used to characterize impingement losses for the baseline case, there are at least three reasons for assuming that the baseline intake has a 100 percent mortality rate.

- Intake screen systems at existing facilities are designed for debris removal, not fish return to the waterbody. To maximize screen performance in the absence of fish protection controls, debris may be collected from the screenwash sluiceways for disposal before return of the wash water to the waterbody, thus resulting in complete mortality of impinged fish. In fact, the emphasis of regulators in the past was often focused on removal of debris by water intake screens as a mechanism for improving water quality.
- In the absence of fish protection controls, intake screens would typically be washed only as frequently as necessary to avoid damage to the screens from accumulating debris and hydraulic head pressure differential across the screen face. As discussed in Chapter 3, impingement mortality rates increase as the time interval between screen washes lengthens. For all but very hardy species, high impingement mortality rates would be expected at many sites when no fish protection controls are factored into screenwash operation.
- Given the scientifically based management objective of ensuring the sustainability of fish populations (EPRI 2002a, 2002b; Van Winkle et al. 2003), a baseline case that assumes 100 percent mortality provides perspective both on the relative levels of risk of adverse impact posed by the existing intake and on the relative risk-reduction value of alternative intake technologies and operations. These perspectives are especially important for balancing benefits of alternatives that vary among the focal species or for balancing costs and benefits of intake alternatives (EPRI 2002b).

The compliance assessment compares annual impingement losses of focal species caused by the existing intake or by proposed intake alternatives with losses for the baseline case. Adequate characterization of impingement mortality rates for focal species impinged at the existing and alternative intakes is vital to the compliance assessment since the historical impingement survival data show that over 50 percent of the taxonomic families of fish and shellfish studied to date have the potential for impingement survival rates of 70-80 percent or higher depending on screen design and operation (Chapter 3). Survival rates of this magnitude would provide a reduction in losses, compared to a baseline of 100 percent mortality, approaching the range of mortality reduction specified in USEPA's performance requirement.

Inputs required for the compliance analysis may include field data on impingement rates, impingement collection efficiency, cooling water flows throughout the year, expected rates of re-impingement, and age-based natural and fishing mortality rates. The loss estimates for baseline CWIS, existing CWIS, and CWIS alternatives may be based on historical or modeled operation of the facility during the course of the year, and the operating regime used for the baseline case may differ from that used for the alternatives[19]. In addition, assessors must select from several different measures that are available for estimating impingement losses, including direct losses, age-equivalent losses, and fractional losses (EPRI 1999b, 2002a, 2002b). Age-equivalent losses are especially useful for demonstrating compliance with the performance requirements, since they may be estimated directly from impingement abundance data collected at the facility without the need for waterbody wide studies, and they provide a means for integrating the direct losses across multiple life stages (EPRI 2002b).

[19] For example, the baseline case may assume full design cooling water flow whenever the facility is online, whereas a CWIS alternative may include optimizing cooling water flow according to variations in generating load.

It should be noted that the loss estimates for alternative technologies and operations can also be used as input to evaluations of the nature and magnitude of restoration that would be ecologically comparable to the benefits achieved from the CWIS alternatives (EPRI 2002b). USEPA's proposed regulations for existing facilities provide a mechanism for applicants to propose restoration and enhancement measures as an alternative for meeting the performance requirements (USEPA 2002).

Cost-benefit Analysis and Risk (Significance) Assessment

In lieu of complying with the above performance requirements, a facility may qualify for a site-specific determination of BTA if the applicant can demonstrate that the costs to the specific facility are significantly greater than considered by USEPA in establishing the performance requirement or if the costs to the facility are "significantly greater" than the associated environmental benefits (USEPA 2002). The test of "significance" has not been specified by USEPA, but such demonstrations may require, and risk management decisions would undoubtedly benefit from, evaluation of the ecological significance (i.e., adversity) of the impingement and entrainment impacts. A risk assessment framework specific to §316(b) regulations has been proposed as perhaps the best approach for performing such evaluations (Dey et al. 2000; EPRI 2002b; Van Winkle et al. 2003).

Impingement mortality rates are needed to provide realistic estimates of direct impingement losses as the starting point for quantitative assessment, whether the purpose of the assessment is to compare reductions in impingement mortality to the performance reduction requirements or to conduct a risk assessment to evaluate the potential for adverse environmental impact. However, impingement mortality rates may also be used as one of the important inputs to qualitative evaluations that may be conducted in a flexible, tiered approach to risk assessment, such as has been recommended by USEPA and others (USEPA 1998; EPRI 2002b). For example, impingement mortality rates may be used in combination with other factors to help identify facilities that pose little risk of AEI, determine the level of regulatory concern and appropriate scope and complexity of the risk assessment, or focus information gathering, assessment and management efforts (EPRI 2002b).

Estimates of impingement mortality rates for use in the compliance demonstration may be obtained from site-specific studies conducted at the facility or from published reports on impingement survival studies previously conducted elsewhere. Existing impingement survival data may be useful in a variety of ways in the BTA determination, including:

- Screening of intake alternatives—a screening study of all available management options is often conducted to identify and prioritize intake alternatives for detailed evaluation. As part of this screening, existing impingement survival studies can be used to identify intake alternatives that would be beneficial and to qualitatively evaluate their potential for reducing impingement losses. The potential fish protection benefits are integrated with screening evaluations of each alternative's technical and engineering feasibility at the site, potential for causing other environmental impacts, and costs.
- Selection of focal (critical or representative) species—for most waterbodies, study and assessment of the full complement of species present is highly impractical, and uncertainty in the assessment is more effectively reduced by focusing study resources on selected

susceptible species than by diluting effort among all species. Guidelines and assumptions for selection of representative species (EPRI 2002a; USEPA 1977) are intended to assure that potential consequences of entrainment and impingement losses to the aquatic community of the source waterbody as a whole are addressed in the assessment. Therefore, one criteria for selection is that the focal species be susceptible to effects of the intake. Existing impingement survival data can be used to help assure that the focal species selected for assessment adequately represent a range of species' sensitivities to impingement.

- Detailed evaluations of fish protection benefits—the use of existing impingement survival data is necessary for evaluating the potential reductions in impingement mortality that may be achieved by installation of technology or operating alternatives. Implementing intake alternatives at existing power plants is generally costly and analysis of potential benefits prior to selection and installation of alternatives is important for assuring that economically justifiable and environmentally beneficial actions are taken. Prospective assessments of potential loss reductions for alternatives that do not yet exist at a facility must necessarily derive impingement mortality rate estimates from prior survival studies at other facilities.

  Where site-specific survival data for the existing intake technology and operation is not available, it may still be desirable to conduct evaluations of impingement losses for the existing intake using survival estimates appropriately selected from studies at other sites. Such evaluations help to identify facilities or species with low potential for impact and to evaluate whether feasible alternatives are likely to provide appreciable additional fish protection benefits. At sites where impact potential and regulatory concern is high, later verification of the assumptions used in the evaluations, including impingement mortality rates, can still be required.

- Defining additional data needs—the impingement survival information available from prior studies identifies important factors that affect impingement survival. Such background information is valuable for selecting impingement mortality rate estimates appropriate for the species, CWIS and waterbody characteristics present at a facility and helps to identify additional information needed for adequately demonstrating compliance with the BTA requirements.

Planning to Use Impingement Survival Data

During the planning stage of the §316(b) assessment, available impingement survival information should be compiled and evaluated as part of the development of an analysis plan. This process may identify additional data needed for the assessment, and should result in an analysis plan that includes approaches for addressing identified uncertainties. The data evaluation should address the relevance of the survival data to the site and alternatives under consideration, and identify uncertainties and potential biases resulting from the nature of the impingement survival data used and the study methods employed. Rarely will data be available to address all of the species, CWIS configurations, and environmental conditions desired for analysis. However, the analysis plan can include approaches for dealing with uncertainties arising from data gaps.

Relevance of Mortality Rate Estimates to Site Conditions

Impingement mortality rate estimates used in the assessment should be based on survival data that is representative of the:

- Sensitivity of the focal (e.g., "representative" or "critical") species;
- Design and operation of the existing CWIS and any alternatives under consideration;
- Waterbody/biological conditions during primary periods of impingement.

Considerations for selecting existing data or for designing new data collection efforts to generate impingement mortality rate estimates are discussed below for each of these categories.

Sensitivity of the Focal Species

The inherent stress tolerance of different species types is one of the greatest influences on impingement survival rate (Chapter 3). When available, impingement mortality rates for the specific focal species at issue should be used. Since closely related species may have quite similar sensitivities to impingement, the level of uncertainty associated with using mortality rate estimates for congeneric species, or in some cases even species of the same taxonomic family, may be acceptable. In some cases, it may be preferable to group data for closely related species to improve the precision of the mortality rate estimate.

Design and Operation of the Existing and Alternative CWISs

Screenwash frequency

The data reported to date indicate that screenwash frequency is one of the most important CWIS factors affecting impingement survival (Chapter 3). Mortality rate estimates for the existing intake should be consistent with the screenwash regime normally used at the facility. Similarly, evaluation of the benefits of alternatives involving continuous traveling screen operation should use mortality rate estimates for that operating mode. Impingement survival data allowing comparison of the effect of different screenwash modes is available for a number of species and has been summarized in Chapter 3. In addition, site-specific studies of the potential benefits of continuous operation are perhaps the most economically practicable to conduct, since conventional screens can often be operated continuously for a short time without high risk of damage.

Screen rotation speed

Limited data on the effects of screen rotation speed suggest higher impingement mortality at low speeds for sensitive and moderately tolerant species, particularly when screen speed is only 2 or 3 ft/min (Table 3-2). Impingement survival data allowing comparison of the effect of different screenwash modes is available only for a limited number of species and has been summarized in Chapter 3. The potential benefits of higher screen speed are logically only incremental to the benefits of increasing screenwash frequency (i.e., for intermittent modes screen speed equals zero for the period between washes). They should, therefore, not be a major consideration for assessing losses from intermittent modes of operation.

Ristroph modifications

Ristroph modifications appear to increase impingement survival rates for sensitive and moderately tolerant species. These improvements in observed survival are due to the combined effects of a number of mechanical and operational modifications incorporated into the Ristroph designs, including continuous screenwash frequency, high screen rotation speeds, smooth mesh panels, fish buckets, low pressure washes, and improved fish returns. Studies conducted to date have not been sufficient to clearly distinguish the benefits of each modification. However, in comparing Ristroph screens to conventional screen alternatives, assessors should take care to use mortality rates that reasonably represent the incremental improvement of each alternative. For example, the incremental benefit of Ristroph screens over conventional screens operated intermittently at very slow rotation speeds ought to be greater than their incremental benefit over conventional screens operated continuously and at relatively high rotation speeds.

Conditions During Primary Impingement Periods

Many of the impingement survival studies report variations in survival at different times of year. The most substantial changes seem to be associated with high summer ambient temperatures, or very cold winter temperatures, which result in higher mortality rates. In estuaries, survival rates appear to be substantially higher when water is brackish than when it is fresh. Since prevailing environmental conditions may vary from year to year, interannual variation in survival rate may also be expected.

No generally applicable mechanistic models have been developed for predicting changes in impingement survival rate based on environmental conditions. Therefore, assessors must select or collect data that are reasonably representative of conditions that occur during the primary periods of impingement of the focal species. Some studies have reported survival rate estimates by season or month; others provide average estimates for the entire study period. Where multiple years of survival data are available, they may be used to characterize interannual variations in mortality rates. The fish collected for impingement survival study are generally representative of the majority of impingement, because the studies are scheduled to coincide with the peak periods of impingement to help assure that sample size is sufficient for data analysis. For many species quantifying variations in impingement survival rates during all seasons or over all environmental conditions is impractical and unnecessary, since the large majority of impingement occurs during only a portion of the year.

Uncertainty in Impingement Survival Study Methods

The methods used to collect impingement survival data and calculate mortality rates may introduce uncertainties in the assessment of impingement losses. Some of these uncertainties reflect inherent practical limitations that are not easily addressed by study design, and may either overestimate or underestimate actual impingement mortality rates, including:

- No correction for collection/holding mortality—relatively few studies have conducted control tests on the mortality due to stress of collection, handling, and holding for latent effects. As opposed to laboratory bioassays where standard test organisms are readily available for use in testing, obtaining control organisms from the wild for testing is difficult and often impractical for many species. For many species, the holding stresses alone are sufficient to cause mortality, even when holding protocols conform to standard bioassay practice. As a result, mortality rate estimates that are unadjusted for control mortality may overestimate the actual mortality rate from impingement.
- No interaction of collection/holding and impingement stresses—studies that adjust mortality rate estimates for control survival assume that the probability of mortality from impingement and collection/holding are independent stresses that do not interact. To the extent that these stresses are interactive, this assumption overestimates the impingement mortality rate.
- No accounting for fish mortality from stresses prior to impingement—impingement survival studies generally assume that all dead fish that are collected have been killed by impingement. To the extent that some portion of the impinged fish may have died from natural causes or other anthropogenic stresses, this assumption overestimates the impingement mortality rate (LaJeone and Monzingo 2000). Some studies have examined the physical condition (e.g., rigidity, decomposition, fungal growth) of dead impinged fish as a method of distinguishing other causes of mortality (Con Ed 1985). However, this has not generally been done in survival studies and survival rate estimates have not been adjusted using such observations.
- Screenwash efficiency— impingement survival studies should assure that all fish are being representatively sampled. Impingement mortality may be underestimated to the extent that fish are carried over the screen or are trapped within the return system. Proper design and maintenance of the screenwash system and monitoring of the fish transport pathways can minimize biases from low screenwash and collection efficiency.
- Potential for predation—increased susceptibility to predation is a potential source of impingement mortality that has not been measured by impingement survival studies. To the extent that predation effects occur, impingement mortality rates would be underestimated by these studies. However, the potential for predation may be reduced by screenwash system designs that limit the attraction and immediate access of predators, such as fish and birds (e.g., enclosed fish sluice, return near bottom vs. surface). Other factors to consider are that at some sites predatory fish may only be present in significant numbers during part of the year, and metabolic rates and predatory consumption may be low in winter.

Two methods that have sometimes been used for calculating impingement mortality rate also have the potential to bias the assessment:

- Using initial survival data to estimate mortality rate—since delayed mortality can be significant (Chapter 3), at least for those species that are sensitive or have intermediate tolerance to impingement, survival data taken immediately following impingement may underestimate the actual impingement mortality rate. However, it should be noted that most of the survival studies conducted to date have included latent effects observations.
- Treating “stunned” or “damaged” fish as dead—studies that have monitored the post-impingement survival of fish initially classified as “stunned” or “damaged” have found that

some of these fish survive for the duration of the latent effects study (EA 1979a; Con Ed 1985), many apparently recovering from the 'stunned' condition in one study within a few hours of impingement (Con Ed 1985). Therefore, in calculating an extended impingement survival rate, treating "stunned" or "damaged" fish as if they were dead overestimates the impingement mortality rate (Con Ed 1985).

EPRI is currently developing detailed guidance for conducting impingement survival studies intended to help foster application of consistent and sound study methodologies within the industry.

Summaries of Impingement Survival Rates

Impingement survival rates obtained from the impingement survival studies reviewed are listed by taxon in Appendix B and by screen characteristics in Appendix C. Entries in both listings are cross-referenced to the identification number of the impingement survival study report. The following notes will assist the reader in using these tables and the Access database.

Definitions

No. → Total number of organisms initially collected.

S_i → Initial survival rate (proportion of organisms alive immediately following collection)

S_e → Extended survival rate (proportion of total collected remaining alive at time T_e)

T_e → Time post-impingement (hours) of extended survival rate observation

S_{idd} → Initial survival rate assuming the damaged organisms are dead.

Contr. Adj.? → Checked box indicates that the reported survival rates are control adjusted.

Calc. Value? → Checked box indicates that reported survival rate has been calculated from data included in the report. All other rates are as given in the report.

Notes

The listings include survival rate estimates based on at least ten individuals of each taxon collected. The reports contain additional survival data for taxa for which fewer than ten individuals were collected. The reader should refer to Appendix A to identify the complete list of taxa collected in each study.

Screenwash frequency is listed as 'continuous' or as the duration of hold time in hours between intermittent washes. For some studies hold time between washes was monitored as part of the testing protocol, in others hold time represents the maximum hold time between manual washes specified by the report as the normal plant operating procedure at the time of the studies. Since screen wash systems may operate automatically based on head differential, hold time in the latter case may have been less than the listed time, depending on debris loadings.

Missing information for screen characteristics means that the report, or report sections available, did not contain such information. Missing age/length information means that the report did not group survival data by age or length, however a general description of age/length distributions is available in many of these reports.

Additional information associated with the rate estimates, such as waterbody, time of year, control survival rates, and other factors, is available in the Access database.

5
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A

APPENDIX A: TAXA COLLECTED IN THE IMPINGEMENT SURVIVAL STUDIES

Scientific name	Waterbody name	Facility name	Report ID
Acetes americanus	Galveston Bay	Robinson	250
Achirus lineatus	Galveston Bay	Robinson	250
Aequorea sp.	Barnegat Bay	Oyster Creek	40
Alectis ciliaris	Barnegat Bay	Oyster Creek	40
Alosa aestivalis	Arthur Kill	Arthur Kill	18
Alosa aestivalis	Barnegat Bay	Oyster Creek	40
Alosa aestivalis	Barnegat Bay	Oyster Creek	184
Alosa aestivalis	Cape Cod Bay	Pilgrim	246
Alosa aestivalis	Chesapeake Bay	Calvert Cliffs	167
Alosa aestivalis	Delaware River	Salem	70
Alosa aestivalis	Delaware River	Salem	71
Alosa aestivalis	Delaware River	Salem	72
Alosa aestivalis	Delaware River	Salem	73
Alosa aestivalis	Delaware River	Salem	74
Alosa aestivalis	Hudson River	Bowline Point	197
Alosa aestivalis	Hudson River	Bowline Point	198
Alosa aestivalis	Hudson River	Bowline Point	208
Alosa aestivalis	Hudson River	Bowline Point	209
Alosa aestivalis	Hudson River	Danskammer Point	197
Alosa aestivalis	Hudson River	Danskammer Point	199
Alosa aestivalis	Hudson River	Danskammer Point	212
Alosa aestivalis	Hudson River	Danskammer Point	213
Alosa aestivalis	Hudson River	Danskammer Point	215
Alosa aestivalis	Hudson River	Danskammer Point	244
Alosa aestivalis	Hudson River	Indian Point	202
Alosa aestivalis	Hudson River	Indian Point	203
Alosa aestivalis	Hudson River	Indian Point	233
Alosa aestivalis	Hudson River	Indian Point	236
Alosa aestivalis	Hudson River	Roseton	12
Alosa aestivalis	Hudson River	Roseton	199
Alosa aestivalis	Hudson River	Roseton	206
Alosa aestivalis	Hudson River	Roseton	210
Alosa aestivalis	Hudson River	Roseton	211
Alosa aestivalis	Hudson River	Roseton	212
Alosa aestivalis	Hudson River	Roseton	248
Alosa aestivalis	James River	Surrey	241
Alosa aestivalis	Niantic Bay, Long Island Sound	Millstone	62

Scientific name	Waterbody name	Facility name	Report ID
Alosa aestivalis	Niantic Bay, Long Island Sound	Millstone	225
Alosa aestivalis	Patapsco River	Wagner	249
Alosa mediocris	James River	Surrey	241
Alosa mediocris	Mystic River	Mystic River	182
Alosa pseudoharengus	Arthur Kill	Arthur Kill	18
Alosa pseudoharengus	Barnegat Bay	Oyster Creek	40
Alosa pseudoharengus	Barnegat Bay	Oyster Creek	184
Alosa pseudoharengus	Cape Cod Bay	Pilgrim	246
Alosa pseudoharengus	Chesapeake Bay	Calvert Cliffs	167
Alosa pseudoharengus	Delaware River	Salem	70
Alosa pseudoharengus	Delaware River	Salem	71
Alosa pseudoharengus	Delaware River	Salem	72
Alosa pseudoharengus	Delaware River	Salem	73
Alosa pseudoharengus	Delaware River	Salem	74
Alosa pseudoharengus	Hudson River	Bowline Point	197
Alosa pseudoharengus	Hudson River	Bowline Point	198
Alosa pseudoharengus	Hudson River	Bowline Point	208
Alosa pseudoharengus	Hudson River	Bowline Point	209
Alosa pseudoharengus	Hudson River	Danskammer Point	197
Alosa pseudoharengus	Hudson River	Danskammer Point	199
Alosa pseudoharengus	Hudson River	Danskammer Point	212
Alosa pseudoharengus	Hudson River	Danskammer Point	213
Alosa pseudoharengus	Hudson River	Danskammer Point	215
Alosa pseudoharengus	Hudson River	Danskammer Point	244
Alosa pseudoharengus	Hudson River	Indian Point	202
Alosa pseudoharengus	Hudson River	Indian Point	203
Alosa pseudoharengus	Hudson River	Indian Point	232
Alosa pseudoharengus	Hudson River	Indian Point	233
Alosa pseudoharengus	Hudson River	Indian Point	236
Alosa pseudoharengus	Hudson River	Roseton	12
Alosa pseudoharengus	Hudson River	Roseton	199
Alosa pseudoharengus	Hudson River	Roseton	206
Alosa pseudoharengus	Hudson River	Roseton	210
Alosa pseudoharengus	Hudson River	Roseton	211
Alosa pseudoharengus	Hudson River	Roseton	212
Alosa pseudoharengus	Hudson River	Roseton	248
Alosa pseudoharengus	James River	Surrey	241
Alosa pseudoharengus	Lake Erie	Dunkirk	227
Alosa pseudoharengus	Lake Erie	Dunkirk	252
Alosa pseudoharengus	Lake Erie	Nanticoke	175
Alosa pseudoharengus	Lake Ontario	Kintigh	181
Alosa pseudoharengus	Lake Ontario	Kintigh	240
Alosa pseudoharengus	Lake Ontario	Oswego	180
Alosa pseudoharengus	Niagara River	Huntley	251
Alosa pseudoharengus	Niantic Bay, Long Island Sound	Millstone	61
Alosa pseudoharengus	Niantic Bay, Long Island Sound	Millstone	62

Scientific name	Waterbody name	Facility name	Report ID
Alosa pseudoharengus	Niantic Bay, Long Island Sound	Millstone	225
Alosa pseudoharengus	Patapsco River	Wagner	249
Alosa pseudoharengus	St. Clair River	Belle River	238
Alosa sapidissima	Arthur Kill	Arthur Kill	18
Alosa sapidissima	Barnegat Bay	Oyster Creek	40
Alosa sapidissima	Delaware River	Salem	70
Alosa sapidissima	Delaware River	Salem	71
Alosa sapidissima	Delaware River	Salem	72
Alosa sapidissima	Delaware River	Salem	73
Alosa sapidissima	Delaware River	Salem	74
Alosa sapidissima	Hudson River	Danskammer Point	197
Alosa sapidissima	Hudson River	Danskammer Point	212
Alosa sapidissima	Hudson River	Danskammer Point	213
Alosa sapidissima	Hudson River	Danskammer Point	215
Alosa sapidissima	Hudson River	Indian Point	203
Alosa sapidissima	Hudson River	Indian Point	233
Alosa sapidissima	Hudson River	Indian Point	236
Alosa sapidissima	Hudson River	Roseton	199
Alosa sapidissima	Hudson River	Roseton	206
Alosa sapidissima	Hudson River	Roseton	210
Alosa sapidissima	Hudson River	Roseton	248
Alosa sapidissima	James River	Surrey	241
Alosa sp.	Delaware River	Salem	72
Alosa sp.	Delaware River	Salem	75
Alosa sp.	Hudson River	Bowline Point	110
Alosa sp.	Hudson River	Bowline Point	198
Alosa sp.	Hudson River	Bowline Point	209
Alosa sp.	Hudson River	Danskammer Point	172
Alosa sp.	Hudson River	Danskammer Point	244
Alosa sp.	Hudson River	Indian Point	203
Alosa sp.	Hudson River	Roseton	199
Alosa sp.	Mystic River	Mystic River	182
Alpheidae	St. Johns River	Northside	255
Alpheus heterochaelis	Laguna Madre	Barney M. Davis	239
Aluterus schoepfi	Arthur Kill	Arthur Kill	18
Aluterus schoepfi	Barnegat Bay	Oyster Creek	40
Aluterus schoepfi	Niantic Bay, Long Island Sound	Millstone	61
Ambloplites rupestris	Hudson River	Danskammer Point	244
Ambloplites rupestris	Hudson River	Roseton	206
Ambloplites rupestris	Lake Erie	Dunkirk	227
Ambloplites rupestris	Lake Erie	Dunkirk	252
Ambloplites rupestris	Lake Erie	Nanticoke	175
Ambloplites rupestris	Lake Ontario	Kintigh	181
Ambloplites rupestris	Lake Ontario	Kintigh	240
Ambloplites rupestris	Mississippi River	J.P. Madgett	222
Ambloplites rupestris	Niagara River	Huntley	251

Scientific name	Waterbody name	Facility name	Report ID
Ambloplites rupestris	St. Clair River	Belle River	238
Ameiurus catus	Delaware River	Salem	70
Ameiurus catus	Delaware River	Salem	73
Ameiurus catus	Hudson River	Bowline Point	208
Ameiurus catus	Hudson River	Danskammer Point	199
Ameiurus catus	Hudson River	Danskammer Point	212
Ameiurus catus	Hudson River	Danskammer Point	213
Ameiurus catus	Hudson River	Danskammer Point	215
Ameiurus catus	Hudson River	Danskammer Point	244
Ameiurus catus	Hudson River	Indian Point	202
Ameiurus catus	Hudson River	Indian Point	203
Ameiurus catus	Hudson River	Indian Point	232
Ameiurus catus	Hudson River	Indian Point	233
Ameiurus catus	Hudson River	Roseton	12
Ameiurus catus	Hudson River	Roseton	199
Ameiurus catus	Hudson River	Roseton	206
Ameiurus catus	Hudson River	Roseton	210
Ameiurus catus	Hudson River	Roseton	212
Ameiurus catus	Hudson River	Roseton	248
Ameiurus catus	James River	Surrey	241
Ameiurus nebulosus	Delaware River	Salem	70
Ameiurus nebulosus	Delaware River	Salem	71
Ameiurus nebulosus	Delaware River	Salem	72
Ameiurus nebulosus	Delaware River	Salem	73
Ameiurus nebulosus	Delaware River	Salem	74
Ameiurus nebulosus	Hudson River	Danskammer Point	199
Ameiurus nebulosus	Hudson River	Danskammer Point	212
Ameiurus nebulosus	Hudson River	Danskammer Point	244
Ameiurus nebulosus	Hudson River	Roseton	199
Ameiurus nebulosus	Hudson River	Roseton	206
Ameiurus nebulosus	Hudson River	Roseton	212
Ameiurus nebulosus	Hudson River	Roseton	248
Ameiurus nebulosus	James River	Surrey	241
Ameiurus nebulosus	Lake Ontario	Kintigh	240
Ameiurus nebulosus	St. Clair River	Belle River	238
Amia calva	James River	Surrey	241
Ammocrypta asprella	Mississippi River	J.P. Madgett	222
Ammodytes americanus	Arthur Kill	Arthur Kill	18
Ammodytes americanus	Mystic River	Mystic River	182
Ammodytes sp.	Barnegat Bay	Oyster Creek	40
Ammodytes sp.	Niantic Bay, Long Island Sound	Millstone	61
Ammodytes sp.	Niantic Bay, Long Island Sound	Millstone	62
Anchoa compressa	Southern California Bight	San Onofre	243
Anchoa delicatissima	Southern California Bight	San Onofre	243
Anchoa hepsetus	Arthur Kill	Arthur Kill	18
Anchoa hepsetus	Barnegat Bay	Oyster Creek	40

Scientific name	Waterbody name	Facility name	Report ID
Anchoa hepsetus	Chesapeake Bay	Calvert Cliffs	167
Anchoa hepsetus	Delaware River	Salem	70
Anchoa hepsetus	Delaware River	Salem	74
Anchoa hepsetus	Galveston Bay	Robinson	250
Anchoa hepsetus	Laguna Madre	Barney M. Davis	239
Anchoa lyolepis	Laguna Madre	Barney M. Davis	239
Anchoa mitchilli	Arthur Kill	Arthur Kill	18
Anchoa mitchilli	Barnegat Bay	Oyster Creek	37
Anchoa mitchilli	Barnegat Bay	Oyster Creek	40
Anchoa mitchilli	Barnegat Bay	Oyster Creek	184
Anchoa mitchilli	Cape Fear River	Brunswick	115
Anchoa mitchilli	Chesapeake Bay	Calvert Cliffs	167
Anchoa mitchilli	Delaware River	Salem	70
Anchoa mitchilli	Delaware River	Salem	71
Anchoa mitchilli	Delaware River	Salem	72
Anchoa mitchilli	Delaware River	Salem	73
Anchoa mitchilli	Delaware River	Salem	74
Anchoa mitchilli	Delaware River	Salem	75
Anchoa mitchilli	Galveston Bay	Robinson	250
Anchoa mitchilli	Hudson River	Bowline Point	197
Anchoa mitchilli	Hudson River	Bowline Point	198
Anchoa mitchilli	Hudson River	Bowline Point	209
Anchoa mitchilli	Hudson River	Danskammer Point	197
Anchoa mitchilli	Hudson River	Danskammer Point	212
Anchoa mitchilli	Hudson River	Danskammer Point	213
Anchoa mitchilli	Hudson River	Danskammer Point	244
Anchoa mitchilli	Hudson River	Indian Point	202
Anchoa mitchilli	Hudson River	Indian Point	203
Anchoa mitchilli	Hudson River	Indian Point	233
Anchoa mitchilli	Hudson River	Indian Point	236
Anchoa mitchilli	Hudson River	Roseton	206
Anchoa mitchilli	Hudson River	Roseton	210
Anchoa mitchilli	Hudson River	Roseton	248
Anchoa mitchilli	Indian River Bay	Indian River	228
Anchoa mitchilli	James River	Surrey	241
Anchoa mitchilli	Laguna Madre	Barney M. Davis	239
Anchoa mitchilli	Mount Hope Bay	Brayton Point	237
Anchoa mitchilli	Narragansett Bay	Brayton Point	170
Anchoa mitchilli	Niantic Bay, Long Island Sound	Millstone	61
Anchoa mitchilli	Niantic Bay, Long Island Sound	Millstone	62
Anchoa mitchilli	Niantic Bay, Long Island Sound	Millstone	225
Anchoa mitchilli	Niantic Bay, Long Island Sound	Millstone	229
Anchoa mitchilli	Patapsco River	Wagner	249
Anchoa mitchilli	St. Johns River	Northside	255
Anchoa mitchilli	Tampa Bay	Big Bend	230
Anchoa mitchilli	Tampa Bay	Big Bend	231

Scientific name	Waterbody name	Facility name	Report ID
Anchoa sp.	Barnegat Bay	Oyster Creek	40
Anguilla rostrata	Arthur Kill	Arthur Kill	18
Anguilla rostrata	Barnegat Bay	Oyster Creek	40
Anguilla rostrata	Chesapeake Bay	Calvert Cliffs	167
Anguilla rostrata	Delaware River	Salem	70
Anguilla rostrata	Delaware River	Salem	71
Anguilla rostrata	Delaware River	Salem	72
Anguilla rostrata	Delaware River	Salem	73
Anguilla rostrata	Delaware River	Salem	74
Anguilla rostrata	Hudson River	Bowline Point	197
Anguilla rostrata	Hudson River	Bowline Point	198
Anguilla rostrata	Hudson River	Bowline Point	208
Anguilla rostrata	Hudson River	Bowline Point	209
Anguilla rostrata	Hudson River	Danskammer Point	199
Anguilla rostrata	Hudson River	Danskammer Point	212
Anguilla rostrata	Hudson River	Danskammer Point	244
Anguilla rostrata	Hudson River	Indian Point	203
Anguilla rostrata	Hudson River	Indian Point	233
Anguilla rostrata	Hudson River	Roseton	199
Anguilla rostrata	Hudson River	Roseton	206
Anguilla rostrata	Hudson River	Roseton	212
Anguilla rostrata	Hudson River	Roseton	248
Anguilla rostrata	James River	Surrey	241
Anguilla rostrata	Lake Ontario	Kintigh	240
Anguilla rostrata	Mystic River	Mystic River	182
Anguilla rostrata	Narragansett Bay	Brayton Point	170
Anguilla rostrata	Niantic Bay, Long Island Sound	Millstone	62
Anguilla rostrata	Niantic Bay, Long Island Sound	Millstone	229
Anisotremus davidsonii	Southern California Bight	San Onofre	243
Apeltes quadracus	Barnegat Bay	Oyster Creek	40
Apeltes quadracus	Barnegat Bay	Oyster Creek	184
Apeltes quadracus	Chesapeake Bay	Calvert Cliffs	167
Apeltes quadracus	Delaware River	Salem	72
Apeltes quadracus	Delaware River	Salem	73
Apeltes quadracus	Hudson River	Danskammer Point	244
Apeltes quadracus	Hudson River	Roseton	206
Apeltes quadracus	Hudson River	Roseton	212
Apeltes quadracus	Narragansett Bay	Brayton Point	170
Apeltes quadracus	Niantic Bay, Long Island Sound	Millstone	61
Aplodinotus grunniens	Hudson River	Roseton	206
Aplodinotus grunniens	Lake Erie	Dunkirk	227
Aplodinotus grunniens	Lake Erie	Nanticoke	175
Aplodinotus grunniens	Lake Ontario	Kintigh	240
Aplodinotus grunniens	Mississippi River	J.P. Madgett	222
Aplodinotus grunniens	Mississippi River	Prairie Island	178
Aplodinotus grunniens	Raisin River/Lake Erie	Monroe	245

Scientific name	Waterbody name	Facility name	Report ID
Archosargus probatocephalus	Laguna Madre	Barney M. Davis	239
Arius felis	Galveston Bay	Robinson	250
Arius felis	Laguna Madre	Barney M. Davis	239
Arius felis	St. Johns River	Northside	254
Arius felis	St. Johns River	Northside	255
Astroscopus guttatus	Arthur Kill	Arthur Kill	18
Astroscopus guttatus	Barnegat Bay	Oyster Creek	40
Astroscopus guttatus	Chesapeake Bay	Calvert Cliffs	167
Astroscopus guttatus	Delaware River	Salem	70
Astroscopus guttatus	Delaware River	Salem	71
Astroscopus guttatus	Delaware River	Salem	73
Astroscopus guttatus	Niantic Bay, Long Island Sound	Millstone	62
Atherinidae	Elkhorn Slough, Monterey Bay	Moss Landing	242
Atherinidae	Patapsco River	Wagner	249
Atherinopsis californiensis	Southern California Bight	San Onofre	243
Bairdiella chrysoura	Arthur Kill	Arthur Kill	18
Bairdiella chrysoura	Barnegat Bay	Oyster Creek	40
Bairdiella chrysoura	Delaware River	Salem	70
Bairdiella chrysoura	Delaware River	Salem	71
Bairdiella chrysoura	Delaware River	Salem	72
Bairdiella chrysoura	Delaware River	Salem	73
Bairdiella chrysoura	Delaware River	Salem	74
Bairdiella chrysoura	Galveston Bay	Robinson	250
Bairdiella chrysoura	James River	Surrey	241
Bairdiella chrysoura	Laguna Madre	Barney M. Davis	239
Bairdiella chrysoura	St. Johns River	Northside	255
Bairdiella chrysoura	Tampa Bay	Big Bend	230
Bothidae	Cape Fear River	Brunswick	115
Brachyura	Tampa Bay	Big Bend	230
Brevoortia patronus	Galveston Bay	Robinson	250
Brevoortia patronus	Laguna Madre	Barney M. Davis	239
Brevoortia tyrannus	Arthur Kill	Arthur Kill	18
Brevoortia tyrannus	Barnegat Bay	Oyster Creek	40
Brevoortia tyrannus	Barnegat Bay	Oyster Creek	184
Brevoortia tyrannus	Cape Cod Bay	Pilgrim	246
Brevoortia tyrannus	Cape Fear River	Brunswick	115
Brevoortia tyrannus	Chesapeake Bay	C.P. Crane	166
Brevoortia tyrannus	Chesapeake Bay	Calvert Cliffs	167
Brevoortia tyrannus	Delaware River	Salem	71
Brevoortia tyrannus	Delaware River	Salem	72
Brevoortia tyrannus	Delaware River	Salem	73
Brevoortia tyrannus	Delaware River	Salem	74
Brevoortia tyrannus	Hudson River	Danskammer Point	244
Brevoortia tyrannus	Hudson River	Indian Point	203
Brevoortia tyrannus	Hudson River	Roseton	206
Brevoortia tyrannus	Hudson River	Roseton	248

Scientific name	Waterbody name	Facility name	Report ID
Brevoortia tyrannus	Indian River Bay	Indian River	228
Brevoortia tyrannus	James River	Surrey	241
Brevoortia tyrannus	Mystic River	Mystic River	182
Brevoortia tyrannus	Narragansett Bay	Brayton Point	170
Brevoortia tyrannus	Niantic Bay, Long Island Sound	Millstone	61
Brevoortia tyrannus	Niantic Bay, Long Island Sound	Millstone	62
Brevoortia tyrannus	Niantic Bay, Long Island Sound	Millstone	225
Brevoortia tyrannus	Niantic Bay, Long Island Sound	Millstone	229
Brevoortia tyrannus	Patapsco River	Wagner	249
Brevoortia tyrannus	St. Johns River	Northside	254
Brevoortia tyrannus	St. Johns River	Northside	255
Callinectes sapidus	Barnegat Bay	Oyster Creek	40
Callinectes sapidus	Barnegat Bay	Oyster Creek	184
Callinectes sapidus	Chesapeake Bay	C.P. Crane	166
Callinectes sapidus	Chesapeake Bay	Calvert Cliffs	167
Callinectes sapidus	Delaware River	Salem	70
Callinectes sapidus	Delaware River	Salem	71
Callinectes sapidus	Delaware River	Salem	72
Callinectes sapidus	Delaware River	Salem	73
Callinectes sapidus	Delaware River	Salem	74
Callinectes sapidus	Galveston Bay	Robinson	250
Callinectes sapidus	Hudson River	Bowline Point	208
Callinectes sapidus	Hudson River	Danskammer Point	244
Callinectes sapidus	Hudson River	Roseton	206
Callinectes sapidus	Indian River Bay	Indian River	228
Callinectes sapidus	Laguna Madre	Barney M. Davis	239
Callinectes sapidus	Niantic Bay, Long Island Sound	Millstone	61
Callinectes sapidus	Niantic Bay, Long Island Sound	Millstone	62
Callinectes sapidus	Niantic Bay, Long Island Sound	Millstone	225
Callinectes sapidus	Niantic Bay, Long Island Sound	Millstone	229
Callinectes sapidus	Patapsco River	Wagner	249
Callinectes sapidus	St. Johns River	Northside	255
Callinectes similis	Barnegat Bay	Oyster Creek	40
Callinectes similis	Galveston Bay	Robinson	250
Callinectes similis	Laguna Madre	Barney M. Davis	239
Callinectes sp.	Cape Fear River	Brunswick	115
Cambaridae	Hudson River	Danskammer Point	244
Cambaridae	Hudson River	Roseton	206
Cancer irroratus	Barnegat Bay	Oyster Creek	40
Cancer irroratus	Niantic Bay, Long Island Sound	Millstone	61
Cancer irroratus	Niantic Bay, Long Island Sound	Millstone	62
Cancer irroratus	Niantic Bay, Long Island Sound	Millstone	225
Cancer irroratus	Niantic Bay, Long Island Sound	Millstone	229
Cancer spp.	Elkhorn Slough, Monterey Bay	Moss Landing	242
Caranx crysos	Barnegat Bay	Oyster Creek	40
Caranx hippos	Arthur Kill	Arthur Kill	18

Scientific name	Waterbody name	Facility name	Report ID
Caranx hippos	Barnegat Bay	Oyster Creek	40
Caranx hippos	Delaware River	Salem	70
Caranx hippos	Delaware River	Salem	74
Caranx hippos	Galveston Bay	Robinson	250
Caranx hippos	Hudson River	Danskammer Point	244
Caranx hippos	James River	Surrey	241
Caranx hippos	Niantic Bay, Long Island Sound	Millstone	62
Caranx hippos	Niantic Bay, Long Island Sound	Millstone	229
Carassius auratus	Hudson River	Bowline Point	208
Carassius auratus	Hudson River	Danskammer Point	199
Carassius auratus	Hudson River	Danskammer Point	212
Carassius auratus	Hudson River	Danskammer Point	244
Carassius auratus	Hudson River	Roseton	199
Carassius auratus	Hudson River	Roseton	206
Carassius auratus	Hudson River	Roseton	212
Carcinus maenus	Niantic Bay, Long Island Sound	Millstone	61
Carcinus maenus	Niantic Bay, Long Island Sound	Millstone	62
Carcinus maenus	Niantic Bay, Long Island Sound	Millstone	225
Carcinus maenus	Niantic Bay, Long Island Sound	Millstone	229
Caridea	Tampa Bay	Big Bend	230
Caridea	Tampa Bay	Big Bend	231
Catostomidae	Mississippi River	Prairie Island	178
Catostomus commersoni	Delaware River	Salem	73
Catostomus commersoni	Hudson River	Danskammer Point	244
Catostomus commersoni	Niagara River	Huntley	251
Catostomus commersoni	St. Clair River	Belle River	238
Catostomus sp.	Columbia River	Hanford	234
Centrarchidae	Hudson River	Bowline Point	197
Centrarchidae	Hudson River	Bowline Point	198
Centrarchidae	Hudson River	Bowline Point	209
Centrarchidae	Hudson River	Indian Point	203
Centrarchidae	Hudson River	Roseton	12
Centrarchidae	Hudson River	Roseton	206
Centrarchidae	Hudson River	Roseton	211
Centrarchidae	Hudson River	Roseton	212
Centrarchidae	Lake Erie	Nanticoke	175
Centrarchidae	Lake Ontario	Kintigh	240
Centrarchus macropterus	James River	Surrey	241
Centropristis striata	Arthur Kill	Arthur Kill	18
Centropristis striata	Barnegat Bay	Oyster Creek	40
Centropristis striata	Barnegat Bay	Oyster Creek	184
Centropristis striata	Chesapeake Bay	Calvert Cliffs	167
Centropristis striata	Delaware River	Salem	70
Centropristis striata	Delaware River	Salem	71
Centropristis striata	Delaware River	Salem	73
Centropristis striata	Niantic Bay, Long Island Sound	Millstone	61

Scientific name	Waterbody name	Facility name	Report ID
Centropristis striata	Niantic Bay, Long Island Sound	Millstone	62
Chaetodipterus faber	Chesapeake Bay	Calvert Cliffs	167
Chaetodipterus faber	Delaware River	Salem	71
Chaetodipterus faber	Galveston Bay	Robinson	250
Chaetodon ocellatus	Delaware River	Salem	70
Chaetodon ocellatus	Delaware River	Salem	72
Chaetodon ocellatus	Delaware River	Salem	74
Chasmodes bosquianus	Barnegat Bay	Oyster Creek	40
Chasmodes bosquianus	Chesapeake Bay	Calvert Cliffs	167
Chloroscombrus chrysurus	Galveston Bay	Robinson	250
Chloroscombrus chrysurus	Laguna Madre	Barney M. Davis	239
Chromis punctipinnis	Southern California Bight	San Onofre	243
Citharichthys spilopterus	Galveston Bay	Robinson	250
Class Polychaeta	Barnegat Bay	Oyster Creek	40
Clupea harengus	Arthur Kill	Arthur Kill	18
Clupea harengus	Barnegat Bay	Oyster Creek	40
Clupea harengus	Delaware River	Salem	71
Clupea harengus	Delaware River	Salem	73
Clupea harengus	Delaware River	Salem	74
Clupea harengus	Mystic River	Mystic River	182
Clupea harengus	Niantic Bay, Long Island Sound	Millstone	61
Clupea harengus	Niantic Bay, Long Island Sound	Millstone	62
Clupea harengus	Niantic Bay, Long Island Sound	Millstone	225
Clupea harengus pallasi	Elkhorn Slough, Monterey Bay	Moss Landing	242
Clupeidae	Hudson River	Roseton	206
Clupeidae	Tampa Bay	Big Bend	230
Conger oceanicus	Arthur Kill	Arthur Kill	18
Conger oceanicus	Barnegat Bay	Oyster Creek	40
Conger oceanicus	Delaware River	Salem	70
Conger oceanicus	Delaware River	Salem	73
Conger oceanicus	Delaware River	Salem	74
Conger oceanicus	Hudson River	Indian Point	236
Conger oceanicus	Niantic Bay, Long Island Sound	Millstone	61
Cottidae	Elkhorn Slough, Monterey Bay	Moss Landing	242
Cottidae	Lake Ontario	Kintigh	240
Cottus bairdi	Lake Erie	Dunkirk	227
Cottus bairdi	Lake Ontario	Kintigh	181
Cottus bairdi	Lake Ontario	Kintigh	240
Cottus bairdi	Lake Ontario	Oswego	180
Cottus bairdi	St. Clair River	Belle River	238
Cottus sp.	Columbia River	Hanford	234
Couesius plumbeus	Lake Ontario	Kintigh	240
Crangon septemspinosus	Barnegat Bay	Oyster Creek	37
Crangon septemspinosus	Barnegat Bay	Oyster Creek	40
Crangon septemspinosus	Barnegat Bay	Oyster Creek	184
Crangon septemspinosus	Indian River Bay	Indian River	228

Scientific name	Waterbody name	Facility name	Report ID
Cyanea capillata	Barnegat Bay	Oyster Creek	40
Cyclopterus lumpus	Cape Cod Bay	Pilgrim	246
Cyclopterus lumpus	Mystic River	Mystic River	182
Cyclopterus lumpus	Niantic Bay, Long Island Sound	Millstone	61
Cyclopterus lumpus	Niantic Bay, Long Island Sound	Millstone	62
Cyclopterus lumpus	Niantic Bay, Long Island Sound	Millstone	225
Cyclopterus lumpus	Niantic Bay, Long Island Sound	Millstone	229
Cymatogaster aggregata	Southern California Bight	San Onofre	243
Cynoscion arenarius	Galveston Bay	Robinson	250
Cynoscion arenarius	Laguna Madre	Barney M. Davis	239
Cynoscion nebulosus	Chesapeake Bay	Calvert Cliffs	167
Cynoscion nebulosus	Galveston Bay	Robinson	250
Cynoscion nebulosus	James River	Surrey	241
Cynoscion nebulosus	Laguna Madre	Barney M. Davis	239
Cynoscion nebulosus	St. Johns River	Northside	254
Cynoscion regalis	Arthur Kill	Arthur Kill	18
Cynoscion regalis	Barnegat Bay	Oyster Creek	40
Cynoscion regalis	Barnegat Bay	Oyster Creek	184
Cynoscion regalis	Cape Fear River	Brunswick	115
Cynoscion regalis	Chesapeake Bay	Calvert Cliffs	167
Cynoscion regalis	Delaware River	Salem	70
Cynoscion regalis	Delaware River	Salem	71
Cynoscion regalis	Delaware River	Salem	72
Cynoscion regalis	Delaware River	Salem	73
Cynoscion regalis	Delaware River	Salem	74
Cynoscion regalis	Delaware River	Salem	75
Cynoscion regalis	Delaware River	Salem	173
Cynoscion regalis	Delaware River	Salem	235
Cynoscion regalis	Hudson River	Danskammer Point	244
Cynoscion regalis	Hudson River	Indian Point	202
Cynoscion regalis	Hudson River	Indian Point	203
Cynoscion regalis	Hudson River	Indian Point	233
Cynoscion regalis	Hudson River	Indian Point	236
Cynoscion regalis	Hudson River	Roseton	206
Cynoscion regalis	Indian River Bay	Indian River	228
Cynoscion regalis	James River	Surrey	241
Cynoscion regalis	Niantic Bay, Long Island Sound	Millstone	61
Cynoscion regalis	Niantic Bay, Long Island Sound	Millstone	229
Cynoscion regalis	St. Johns River	Northside	255
Cynoscion sp.	Tampa Bay	Big Bend	230
Cyprinella spiloptera	Mississippi River	J.P. Madgett	222
Cyprinidae	Hudson River	Danskammer Point	197
Cyprinidae	Mississippi River	Prairie Island	178
Cyprinodon variegatus	Barnegat Bay	Oyster Creek	40
Cyprinodon variegatus	Chesapeake Bay	Calvert Cliffs	167
Cyprinodon variegatus	Delaware River	Salem	71

Scientific name	Waterbody name	Facility name	Report ID
Cyprinodon variegatus	James River	Surrey	241
Cyprinodon variegatus	Laguna Madre	Barney M. Davis	239
Cyprinodon variegatus	Patapsco River	Wagner	249
Cyprinodontidae	Hudson River	Bowline Point	197
Cyprinus carpio	Delaware River	Salem	70
Cyprinus carpio	Delaware River	Salem	74
Cyprinus carpio	Hudson River	Danskammer Point	244
Cyprinus carpio	Hudson River	Roseton	206
Cyprinus carpio	James River	Surrey	241
Cyprinus carpio	Mississippi River	J.P. Madgett	222
Cyprinus carpio	Mississippi River	Prairie Island	178
Dactylopterus volitans	Niantic Bay, Long Island Sound	Millstone	229
Dasyatis say	Barnegat Bay	Oyster Creek	40
Dasyatis say	Chesapeake Bay	Calvert Cliffs	167
Decapoda	St. Johns River	Northside	255
Dorosoma cepedianum	Arthur Kill	Arthur Kill	18
Dorosoma cepedianum	Chesapeake Bay	C.P. Crane	166
Dorosoma cepedianum	Chesapeake Bay	Calvert Cliffs	167
Dorosoma cepedianum	Delaware River	Salem	70
Dorosoma cepedianum	Delaware River	Salem	71
Dorosoma cepedianum	Delaware River	Salem	72
Dorosoma cepedianum	Delaware River	Salem	73
Dorosoma cepedianum	Delaware River	Salem	74
Dorosoma cepedianum	Galveston Bay	Robinson	250
Dorosoma cepedianum	Hudson River	Bowline Point	110
Dorosoma cepedianum	Hudson River	Bowline Point	208
Dorosoma cepedianum	Hudson River	Danskammer Point	197
Dorosoma cepedianum	Hudson River	Danskammer Point	199
Dorosoma cepedianum	Hudson River	Danskammer Point	212
Dorosoma cepedianum	Hudson River	Danskammer Point	213
Dorosoma cepedianum	Hudson River	Danskammer Point	215
Dorosoma cepedianum	Hudson River	Danskammer Point	244
Dorosoma cepedianum	Hudson River	Indian Point	203
Dorosoma cepedianum	Hudson River	Indian Point	233
Dorosoma cepedianum	Hudson River	Roseton	199
Dorosoma cepedianum	Hudson River	Roseton	206
Dorosoma cepedianum	Hudson River	Roseton	210
Dorosoma cepedianum	Hudson River	Roseton	212
Dorosoma cepedianum	Hudson River	Roseton	248
Dorosoma cepedianum	James River	Surrey	241
Dorosoma cepedianum	Lake Erie	Dunkirk	227
Dorosoma cepedianum	Lake Erie	Dunkirk	252
Dorosoma cepedianum	Lake Erie	Nanticoke	175
Dorosoma cepedianum	Lake Ontario	Kintigh	240
Dorosoma cepedianum	Lake Ontario	Oswego	180
Dorosoma cepedianum	Mississippi River	J.P. Madgett	222

Scientific name	Waterbody name	Facility name	Report ID
Dorosoma cepedianum	Mississippi River	Prairie Island	178
Dorosoma cepedianum	Niagara River	Huntley	251
Dorosoma cepedianum	Niantic Bay, Long Island Sound	Millstone	62
Dorosoma cepedianum	Niantic Bay, Long Island Sound	Millstone	229
Dorosoma cepedianum	Patapsco River	Wagner	249
Dorosoma cepedianum	Raisin River/Lake Erie	Monroe	245
Dorosoma cepedianum	St. Clair River	Belle River	238
Dorosoma petenense	Galveston Bay	Robinson	250
Dorosoma petenense	James River	Surrey	241
Elops saurus	James River	Surrey	241
Elops saurus	Laguna Madre	Barney M. Davis	239
Embiotocidae	Elkhorn Slough, Monterey Bay	Moss Landing	242
Enchelyopus cimbrius	Niantic Bay, Long Island Sound	Millstone	61
Enchelyopus cimbrius	Niantic Bay, Long Island Sound	Millstone	62
Engraulis eurystole	Niantic Bay, Long Island Sound	Millstone	61
Engraulis mordax	Elkhorn Slough, Monterey Bay	Moss Landing	242
Engraulis mordax	Southern California Bight	San Onofre	243
Enneacanthus gloriosus	James River	Surrey	241
Enneacanthus obesus	Chesapeake Bay	Calvert Cliffs	167
Esox lucius	Lake Erie	Dunkirk	227
Etheostoma asprigene	Mississippi River	J.P. Madgett	222
Etheostoma caeruleum	St. Clair River	Belle River	238
Etheostoma nigrum	St. Clair River	Belle River	238
Etheostoma olmstedi	Hudson River	Bowline Point	208
Etheostoma olmstedi	Hudson River	Danskammer Point	212
Etheostoma olmstedi	Hudson River	Danskammer Point	244
Etheostoma olmstedi	Hudson River	Indian Point	232
Etheostoma olmstedi	Hudson River	Indian Point	236
Etheostoma olmstedi	Hudson River	Roseton	199
Etheostoma olmstedi	Hudson River	Roseton	206
Etheostoma olmstedi	Hudson River	Roseton	248
Etheostoma olmstedi	James River	Surrey	241
Etheostoma olmstedi	Lake Ontario	Kintigh	181
Etheostoma sp.	Lake Ontario	Kintigh	240
Etropus crossotus	Laguna Madre	Barney M. Davis	239
Etropus microstomus	Arthur Kill	Arthur Kill	18
Etropus microstomus	Barnegat Bay	Oyster Creek	40
Etropus microstomus	Barnegat Bay	Oyster Creek	184
Etropus microstomus	Delaware River	Salem	70
Etropus microstomus	Delaware River	Salem	72
Etropus microstomus	Delaware River	Salem	73
Etropus microstomus	Delaware River	Salem	74
Etropus microstomus	Niantic Bay, Long Island Sound	Millstone	62
Etropus microstomus	Niantic Bay, Long Island Sound	Millstone	225
Etropus microstomus	Niantic Bay, Long Island Sound	Millstone	229
Etrumeus teres	Niantic Bay, Long Island Sound	Millstone	61

Scientific name	Waterbody name	Facility name	Report ID
Eucinostomus argenteus	Delaware River	Salem	70
Eurypanopeus depressus	Barnegat Bay	Oyster Creek	40
Fundulus confluentus	James River	Surrey	241
Fundulus diaphanus	Arthur Kill	Arthur Kill	18
Fundulus diaphanus	Chesapeake Bay	Calvert Cliffs	167
Fundulus diaphanus	Delaware River	Salem	72
Fundulus diaphanus	Delaware River	Salem	73
Fundulus diaphanus	Delaware River	Salem	74
Fundulus diaphanus	Hudson River	Bowline Point	198
Fundulus diaphanus	Hudson River	Bowline Point	208
Fundulus diaphanus	Hudson River	Danskammer Point	212
Fundulus diaphanus	Hudson River	Danskammer Point	244
Fundulus diaphanus	Hudson River	Indian Point	203
Fundulus diaphanus	Hudson River	Indian Point	233
Fundulus diaphanus	Hudson River	Roseton	199
Fundulus diaphanus	Hudson River	Roseton	206
Fundulus diaphanus	Hudson River	Roseton	212
Fundulus diaphanus	Hudson River	Roseton	248
Fundulus diaphanus	James River	Surrey	241
Fundulus heteroclitus	Arthur Kill	Arthur Kill	18
Fundulus heteroclitus	Barnegat Bay	Oyster Creek	40
Fundulus heteroclitus	Chesapeake Bay	Calvert Cliffs	167
Fundulus heteroclitus	Delaware River	Salem	70
Fundulus heteroclitus	Delaware River	Salem	71
Fundulus heteroclitus	Delaware River	Salem	72
Fundulus heteroclitus	Delaware River	Salem	73
Fundulus heteroclitus	Delaware River	Salem	74
Fundulus heteroclitus	Hudson River	Bowline Point	198
Fundulus heteroclitus	Hudson River	Bowline Point	208
Fundulus heteroclitus	Hudson River	Roseton	206
Fundulus heteroclitus	James River	Surrey	241
Fundulus heteroclitus	Mystic River	Mystic River	182
Fundulus heteroclitus	Niantic Bay, Long Island Sound	Millstone	62
Fundulus heteroclitus	Patapsco River	Wagner	249
Fundulus luciae	Delaware River	Salem	70
Fundulus majalis	Arthur Kill	Arthur Kill	18
Fundulus majalis	Barnegat Bay	Oyster Creek	40
Fundulus majalis	Chesapeake Bay	Calvert Cliffs	167
Fundulus majalis	Delaware River	Salem	70
Fundulus majalis	Delaware River	Salem	71
Fundulus majalis	Delaware River	Salem	72
Fundulus majalis	Delaware River	Salem	73
Fundulus majalis	Delaware River	Salem	74
Fundulus majalis	James River	Surrey	241
Fundulus majalis	Niantic Bay, Long Island Sound	Millstone	229
Fundulus majalis	Patapsco River	Wagner	249

Scientific name	Waterbody name	Facility name	Report ID
Gadidae	Niantic Bay, Long Island Sound	Millstone	61
Gadus morhua	Niantic Bay, Long Island Sound	Millstone	61
Gasterosteidae	Hudson River	Bowline Point	197
Gasterosteidae	Hudson River	Bowline Point	198
Gasterosteidae	Hudson River	Bowline Point	209
Gasterosteus aculeatus	Arthur Kill	Arthur Kill	18
Gasterosteus aculeatus	Barnegat Bay	Oyster Creek	40
Gasterosteus aculeatus	Cape Cod Bay	Pilgrim	246
Gasterosteus aculeatus	Chesapeake Bay	Calvert Cliffs	167
Gasterosteus aculeatus	Columbia River	Hanford	234
Gasterosteus aculeatus	Delaware River	Salem	70
Gasterosteus aculeatus	Delaware River	Salem	71
Gasterosteus aculeatus	Delaware River	Salem	72
Gasterosteus aculeatus	Delaware River	Salem	73
Gasterosteus aculeatus	Delaware River	Salem	74
Gasterosteus aculeatus	Hudson River	Bowline Point	208
Gasterosteus aculeatus	Hudson River	Danskammer Point	212
Gasterosteus aculeatus	Hudson River	Danskammer Point	244
Gasterosteus aculeatus	Hudson River	Roseton	206
Gasterosteus aculeatus	Hudson River	Roseton	212
Gasterosteus aculeatus	James River	Surrey	241
Gasterosteus aculeatus	Lake Ontario	Kintigh	181
Gasterosteus aculeatus	Lake Ontario	Kintigh	240
Gasterosteus aculeatus	Lake Ontario	Oswego	180
Gasterosteus aculeatus	Mystic River	Mystic River	182
Gasterosteus aculeatus	Narragansett Bay	Brayton Point	170
Gasterosteus aculeatus	Niantic Bay, Long Island Sound	Millstone	61
Gasterosteus aculeatus	Niantic Bay, Long Island Sound	Millstone	62
Gasterosteus aculeatus	Niantic Bay, Long Island Sound	Millstone	225
Gasterosteus aculeatus	Niantic Bay, Long Island Sound	Millstone	229
Gasterosteus aculeatus	Patapsco River	Wagner	249
Gasterosteus aculeatus	St. Clair River	Belle River	238
Gasterosteus wheatlandi	Niantic Bay, Long Island Sound	Millstone	61
Gasterosteus wheatlandi	Niantic Bay, Long Island Sound	Millstone	62
Gasterosteus wheatlandi	Niantic Bay, Long Island Sound	Millstone	225
Gasterosteus wheatlandi	Niantic Bay, Long Island Sound	Millstone	229
Genyonemus lineatus	Southern California Bight	San Onofre	243
Gobiesox strumosus	Chesapeake Bay	Calvert Cliffs	167
Gobiesox strumosus	Delaware River	Salem	70
Gobiesox strumosus	Patapsco River	Wagner	249
Gobiidae	Elkhorn Slough, Monterey Bay	Moss Landing	242
Gobionellus oceanicus	Hudson River	Roseton	206
Gobiosoma bosc	Arthur Kill	Arthur Kill	18
Gobiosoma bosc	Barnegat Bay	Oyster Creek	40
Gobiosoma bosc	Chesapeake Bay	Calvert Cliffs	167
Gobiosoma bosc	Delaware River	Salem	70

Scientific name	Waterbody name	Facility name	Report ID
Gobiosoma bosc	Delaware River	Salem	71
Gobiosoma bosc	Delaware River	Salem	72
Gobiosoma bosc	Delaware River	Salem	73
Gobiosoma bosc	Delaware River	Salem	74
Gobiosoma bosc	Hudson River	Indian Point	233
Gobiosoma bosc	James River	Surrey	241
Gobiosoma bosc	Laguna Madre	Barney M. Davis	239
Gobiosoma ginsburgi	Arthur Kill	Arthur Kill	18
Gobiosoma ginsburgi	Barnegat Bay	Oyster Creek	40
Gobiosoma ginsburgi	James River	Surrey	241
Gobiosoma ginsburgi	Mount Hope Bay	Brayton Point	237
Gobiosoma ginsburgi	Narragansett Bay	Brayton Point	170
Gobiosoma robustum	Laguna Madre	Barney M. Davis	239
Gobiosoma sp.	Barnegat Bay	Oyster Creek	40
Grapsizoea	Tampa Bay	Big Bend	230
Harengula jaguana	Tampa Bay	Big Bend	230
Harengula pensacolae	Laguna Madre	Barney M. Davis	239
Hemicaranx amblyrhynchus	Galveston Bay	Robinson	250
Hemigrapsus sanguinea	Niantic Bay, Long Island Sound	Millstone	229
Hermosilla azurea	Southern California Bight	San Onofre	243
Heterostichus rostratus	Southern California Bight	San Onofre	243
Hiodon tergisus	Mississippi River	Prairie Island	178
Hippocampus erectus	Arthur Kill	Arthur Kill	18
Hippocampus erectus	Barnegat Bay	Oyster Creek	40
Hippocampus erectus	Chesapeake Bay	Calvert Cliffs	167
Hippocampus erectus	Delaware River	Salem	70
Hippocampus erectus	Delaware River	Salem	71
Hippocampus erectus	Delaware River	Salem	73
Hippocampus zosterae	Laguna Madre	Barney M. Davis	239
Hippolyte pleuracantha	Laguna Madre	Barney M. Davis	239
Homarus americanus	Niantic Bay, Long Island Sound	Millstone	61
Homarus americanus	Niantic Bay, Long Island Sound	Millstone	62
Homarus americanus	Niantic Bay, Long Island Sound	Millstone	225
Homarus americanus	Niantic Bay, Long Island Sound	Millstone	229
Hybognathus nuchalis	James River	Surrey	241
Hybognathus regius	Chesapeake Bay	Calvert Cliffs	167
Hybognathus regius	Delaware River	Salem	71
Hybognathus regius	Delaware River	Salem	72
Hybognathus regius	Delaware River	Salem	73
Hybognathus regius	Delaware River	Salem	74
Hyperprosopon argenteum	Southern California Bight	San Onofre	243
Hyporhamphus unifasciatus	Laguna Madre	Barney M. Davis	239
Hypsoblennius hentz	Arthur Kill	Arthur Kill	18
Hypsoblennius hentz	Barnegat Bay	Oyster Creek	40
Hypsoblennius hentz	Chesapeake Bay	Calvert Cliffs	167
Hypsoblennius hentz	Delaware River	Salem	70

Scientific name	Waterbody name	Facility name	Report ID
Hypsoblennius hentz	Delaware River	Salem	73
Ictalurus punctatus	Delaware River	Salem	70
Ictalurus punctatus	Delaware River	Salem	72
Ictalurus punctatus	Delaware River	Salem	73
Ictalurus punctatus	Delaware River	Salem	74
Ictalurus punctatus	Hudson River	Danskammer Point	244
Ictalurus punctatus	Hudson River	Roseton	206
Ictalurus punctatus	James River	Surrey	241
Ictalurus punctatus	Lake Erie	Dunkirk	227
Ictalurus punctatus	Lake Erie	Nanticoke	175
Ictalurus punctatus	Mississippi River	J.P. Madgett	222
Ictalurus punctatus	Mississippi River	Prairie Island	178
Ictalurus punctatus	Mississippi River	Prairie Island	226
Ictalurus sp.	Hudson River	Danskammer Point	244
Lactophrys sp.	Niantic Bay, Long Island Sound	Millstone	62
Lactophrys triqueter	Barnegat Bay	Oyster Creek	40
Lagodon rhomboides	Arthur Kill	Arthur Kill	18
Lagodon rhomboides	Galveston Bay	Robinson	250
Lagodon rhomboides	Laguna Madre	Barney M. Davis	239
Lampetra tridentata	Columbia River	Hanford	234
Leiostomus xanthurus	Arthur Kill	Arthur Kill	18
Leiostomus xanthurus	Barnegat Bay	Oyster Creek	40
Leiostomus xanthurus	Barnegat Bay	Oyster Creek	184
Leiostomus xanthurus	Cape Fear River	Brunswick	115
Leiostomus xanthurus	Chesapeake Bay	C.P. Crane	166
Leiostomus xanthurus	Chesapeake Bay	Calvert Cliffs	167
Leiostomus xanthurus	Delaware River	Salem	70
Leiostomus xanthurus	Delaware River	Salem	71
Leiostomus xanthurus	Delaware River	Salem	72
Leiostomus xanthurus	Delaware River	Salem	73
Leiostomus xanthurus	Delaware River	Salem	74
Leiostomus xanthurus	Delaware River	Salem	75
Leiostomus xanthurus	Galveston Bay	Robinson	250
Leiostomus xanthurus	Indian River Bay	Indian River	228
Leiostomus xanthurus	James River	Surrey	241
Leiostomus xanthurus	Laguna Madre	Barney M. Davis	239
Leiostomus xanthurus	Patapsco River	Wagner	249
Lepisosteus osseus	Lake Erie	Dunkirk	227
Lepomis auritus	Hudson River	Bowline Point	208
Lepomis auritus	Hudson River	Danskammer Point	212
Lepomis auritus	Hudson River	Danskammer Point	244
Lepomis auritus	Hudson River	Roseton	206
Lepomis auritus	James River	Surrey	241
Lepomis cyanellus	St. Clair River	Belle River	238
Lepomis gibbosus	Chesapeake Bay	Calvert Cliffs	167
Lepomis gibbosus	Delaware River	Salem	71

Scientific name	Waterbody name	Facility name	Report ID
Lepomis gibbosus	Delaware River	Salem	73
Lepomis gibbosus	Delaware River	Salem	74
Lepomis gibbosus	Hudson River	Danskammer Point	199
Lepomis gibbosus	Hudson River	Danskammer Point	212
Lepomis gibbosus	Hudson River	Danskammer Point	213
Lepomis gibbosus	Hudson River	Danskammer Point	244
Lepomis gibbosus	Hudson River	Indian Point	232
Lepomis gibbosus	Hudson River	Indian Point	233
Lepomis gibbosus	Hudson River	Roseton	199
Lepomis gibbosus	Hudson River	Roseton	206
Lepomis gibbosus	Hudson River	Roseton	210
Lepomis gibbosus	Hudson River	Roseton	212
Lepomis gibbosus	Hudson River	Roseton	248
Lepomis gibbosus	James River	Surrey	241
Lepomis gibbosus	Lake Erie	Dunkirk	227
Lepomis gibbosus	Lake Erie	Dunkirk	252
Lepomis gibbosus	St. Clair River	Belle River	238
Lepomis macrochirus	Chesapeake Bay	Calvert Cliffs	167
Lepomis macrochirus	Delaware River	Salem	70
Lepomis macrochirus	Delaware River	Salem	71
Lepomis macrochirus	Delaware River	Salem	72
Lepomis macrochirus	Delaware River	Salem	73
Lepomis macrochirus	Delaware River	Salem	74
Lepomis macrochirus	Hudson River	Bowline Point	208
Lepomis macrochirus	Hudson River	Danskammer Point	199
Lepomis macrochirus	Hudson River	Danskammer Point	212
Lepomis macrochirus	Hudson River	Danskammer Point	244
Lepomis macrochirus	Hudson River	Indian Point	233
Lepomis macrochirus	Hudson River	Roseton	199
Lepomis macrochirus	Hudson River	Roseton	206
Lepomis macrochirus	Hudson River	Roseton	212
Lepomis macrochirus	Hudson River	Roseton	248
Lepomis macrochirus	James River	Surrey	241
Lepomis macrochirus	Lake Erie	Dunkirk	227
Lepomis macrochirus	Lake Erie	Dunkirk	252
Lepomis macrochirus	Mississippi River	J.P. Madgett	222
Lepomis macrochirus	Mississippi River	Prairie Island	226
Lepomis macrochirus	St. Clair River	Belle River	238
Lepomis sp.	James River	Surrey	241
Lepomis sp.	Mississippi River	Prairie Island	178
Lepophidium brevibarbe	Laguna Madre	Barney M. Davis	239
Libinia dubia	Barnegat Bay	Oyster Creek	40
Libinia emarginata	Barnegat Bay	Oyster Creek	40
Libinia emarginata	Niantic Bay, Long Island Sound	Millstone	225
Libinia emarginata	Niantic Bay, Long Island Sound	Millstone	229
Libinia sp.	Niantic Bay, Long Island Sound	Millstone	61

Scientific name	Waterbody name	Facility name	Report ID
Libinia sp.	Niantic Bay, Long Island Sound	Millstone	62
Limulus polyphemus	Barnegat Bay	Oyster Creek	40
Limulus polyphemus	Niantic Bay, Long Island Sound	Millstone	229
Liparis sp.	Cape Cod Bay	Pilgrim	246
Liparis sp.	Niantic Bay, Long Island Sound	Millstone	62
Loligo pealei	Niantic Bay, Long Island Sound	Millstone	61
Loligo pealei	Niantic Bay, Long Island Sound	Millstone	62
Loligo pealei	Niantic Bay, Long Island Sound	Millstone	225
Loligo pealei	Niantic Bay, Long Island Sound	Millstone	229
Lolliguncula brevis	Barnegat Bay	Oyster Creek	40
Lolliguncula brevis	Galveston Bay	Robinson	250
Lolliguncula brevis	Laguna Madre	Barney M. Davis	239
Lophius americanus	Arthur Kill	Arthur Kill	18
Lophius americanus	Niantic Bay, Long Island Sound	Millstone	62
Lophius americanus	Niantic Bay, Long Island Sound	Millstone	225
Lophius americanus	Niantic Bay, Long Island Sound	Millstone	229
Lucania parva	Chesapeake Bay	Calvert Cliffs	167
Lucania parva	Laguna Madre	Barney M. Davis	239
Lutjanus griseus	Arthur Kill	Arthur Kill	18
Lutjanus griseus	Barnegat Bay	Oyster Creek	40
Lutjanus griseus	Hudson River	Indian Point	233
Lutjanus griseus	James River	Surrey	241
Macrobrachium ohione	Galveston Bay	Robinson	250
Medialuna californiensis	Southern California Bight	San Onofre	243
Membras martinica	Chesapeake Bay	Calvert Cliffs	167
Membras martinica	Delaware River	Salem	73
Membras martinica	James River	Surrey	241
Menidia beryllina	Barnegat Bay	Oyster Creek	40
Menidia beryllina	Chesapeake Bay	Calvert Cliffs	167
Menidia beryllina	Delaware River	Salem	73
Menidia beryllina	James River	Surrey	241
Menidia beryllina	Laguna Madre	Barney M. Davis	239
Menidia menidia	Arthur Kill	Arthur Kill	18
Menidia menidia	Barnegat Bay	Oyster Creek	37
Menidia menidia	Barnegat Bay	Oyster Creek	40
Menidia menidia	Barnegat Bay	Oyster Creek	184
Menidia menidia	Cape Cod Bay	Pilgrim	246
Menidia menidia	Chesapeake Bay	Calvert Cliffs	167
Menidia menidia	Delaware River	Salem	70
Menidia menidia	Delaware River	Salem	71
Menidia menidia	Delaware River	Salem	72
Menidia menidia	Delaware River	Salem	73
Menidia menidia	Delaware River	Salem	74
Menidia menidia	Hudson River	Danskammer Point	212
Menidia menidia	Hudson River	Danskammer Point	215
Menidia menidia	Hudson River	Danskammer Point	244

Scientific name	Waterbody name	Facility name	Report ID
Menidia menidia	Indian River Bay	Indian River	228
Menidia menidia	James River	Surrey	241
Menidia menidia	Mount Hope Bay	Brayton Point	237
Menidia menidia	Mystic River	Mystic River	182
Menidia menidia	Narragansett Bay	Brayton Point	170
Menidia menidia	Niantic Bay, Long Island Sound	Millstone	61
Menidia menidia	Niantic Bay, Long Island Sound	Millstone	62
Menidia menidia	Niantic Bay, Long Island Sound	Millstone	225
Menidia menidia	Niantic Bay, Long Island Sound	Millstone	229
Menippe mercenaria	Galveston Bay	Robinson	250
Menippe mercenaria	Laguna Madre	Barney M. Davis	239
Menippe mercenaria	Tampa Bay	Big Bend	230
Menticirrhus saxatilis	Arthur Kill	Arthur Kill	18
Menticirrhus saxatilis	Delaware River	Salem	70
Menticirrhus saxatilis	Delaware River	Salem	71
Menticirrhus saxatilis	Delaware River	Salem	72
Menticirrhus saxatilis	Delaware River	Salem	73
Menticirrhus saxatilis	Delaware River	Salem	74
Menticirrhus sp.	Tampa Bay	Big Bend	230
Menticirrhus undulatus	Southern California Bight	San Onofre	243
Merluccius bilinearis	Arthur Kill	Arthur Kill	18
Merluccius bilinearis	Barnegat Bay	Oyster Creek	40
Merluccius bilinearis	Chesapeake Bay	Calvert Cliffs	167
Merluccius bilinearis	Delaware River	Salem	70
Merluccius bilinearis	Delaware River	Salem	71
Merluccius bilinearis	Delaware River	Salem	73
Merluccius bilinearis	Delaware River	Salem	74
Merluccius bilinearis	Mystic River	Mystic River	182
Merluccius bilinearis	Niantic Bay, Long Island Sound	Millstone	61
Merluccius bilinearis	Niantic Bay, Long Island Sound	Millstone	62
Merluccius bilinearis	Niantic Bay, Long Island Sound	Millstone	225
Merluccius bilinearis	Niantic Bay, Long Island Sound	Millstone	229
Microgadus tomcod	Arthur Kill	Arthur Kill	18
Microgadus tomcod	Cape Cod Bay	Pilgrim	246
Microgadus tomcod	Hudson River	Bowline Point	110
Microgadus tomcod	Hudson River	Bowline Point	197
Microgadus tomcod	Hudson River	Bowline Point	198
Microgadus tomcod	Hudson River	Bowline Point	208
Microgadus tomcod	Hudson River	Bowline Point	209
Microgadus tomcod	Hudson River	Danskammer Point	172
Microgadus tomcod	Hudson River	Danskammer Point	177
Microgadus tomcod	Hudson River	Danskammer Point	197
Microgadus tomcod	Hudson River	Danskammer Point	199
Microgadus tomcod	Hudson River	Danskammer Point	212
Microgadus tomcod	Hudson River	Danskammer Point	213
Microgadus tomcod	Hudson River	Danskammer Point	214

Scientific name	Waterbody name	Facility name	Report ID
Microgadus tomcod	Hudson River	Danskammer Point	215
Microgadus tomcod	Hudson River	Danskammer Point	244
Microgadus tomcod	Hudson River	Indian Point	203
Microgadus tomcod	Hudson River	Indian Point	232
Microgadus tomcod	Hudson River	Indian Point	233
Microgadus tomcod	Hudson River	Indian Point	236
Microgadus tomcod	Hudson River	Roseton	12
Microgadus tomcod	Hudson River	Roseton	177
Microgadus tomcod	Hudson River	Roseton	197
Microgadus tomcod	Hudson River	Roseton	199
Microgadus tomcod	Hudson River	Roseton	206
Microgadus tomcod	Hudson River	Roseton	210
Microgadus tomcod	Hudson River	Roseton	211
Microgadus tomcod	Hudson River	Roseton	212
Microgadus tomcod	Hudson River	Roseton	248
Microgadus tomcod	Mystic River	Mystic River	182
Microgadus tomcod	Niantic Bay, Long Island Sound	Millstone	61
Microgadus tomcod	Niantic Bay, Long Island Sound	Millstone	62
Microgadus tomcod	Niantic Bay, Long Island Sound	Millstone	229
Micropogonias undulatus	Arthur Kill	Arthur Kill	18
Micropogonias undulatus	Barnegat Bay	Oyster Creek	40
Micropogonias undulatus	Cape Fear River	Brunswick	115
Micropogonias undulatus	Chesapeake Bay	Calvert Cliffs	167
Micropogonias undulatus	Delaware River	Salem	70
Micropogonias undulatus	Delaware River	Salem	71
Micropogonias undulatus	Delaware River	Salem	72
Micropogonias undulatus	Delaware River	Salem	73
Micropogonias undulatus	Delaware River	Salem	74
Micropogonias undulatus	Delaware River	Salem	75
Micropogonias undulatus	Galveston Bay	Robinson	250
Micropogonias undulatus	Indian River Bay	Indian River	228
Micropogonias undulatus	James River	Surrey	241
Micropogonias undulatus	Laguna Madre	Barney M. Davis	239
Micropogonias undulatus	Patapsco River	Wagner	249
Micropogonias undulatus	St. Johns River	Northside	255
Micropterus dolomieu	Hudson River	Roseton	206
Micropterus dolomieu	Lake Erie	Dunkirk	227
Micropterus dolomieu	Lake Erie	Dunkirk	252
Micropterus dolomieu	Lake Erie	Nanticoke	175
Micropterus dolomieu	Lake Ontario	Kintigh	181
Micropterus dolomieu	Mississippi River	J.P. Madgett	222
Micropterus dolomieu	St. Clair River	Belle River	238
Micropterus salmoides	Hudson River	Bowline Point	208
Micropterus salmoides	Hudson River	Danskammer Point	212
Micropterus salmoides	Hudson River	Danskammer Point	244
Micropterus salmoides	Hudson River	Indian Point	203

Scientific name	Waterbody name	Facility name	Report ID
Micropterus salmoides	Hudson River	Roseton	206
Micropterus salmoides	Lake Erie	Dunkirk	227
Micropterus salmoides	Mississippi River	J.P. Madgett	222
Monacanthus hispidus	Barnegat Bay	Oyster Creek	40
Monacanthus hispidus	Niantic Bay, Long Island Sound	Millstone	61
Monacanthus hispidus	Niantic Bay, Long Island Sound	Millstone	225
Morone americana	Arthur Kill	Arthur Kill	18
Morone americana	Barnegat Bay	Oyster Creek	40
Morone americana	Cape Cod Bay	Pilgrim	246
Morone americana	Chesapeake Bay	C.P. Crane	166
Morone americana	Chesapeake Bay	Calvert Cliffs	167
Morone americana	Delaware River	Salem	70
Morone americana	Delaware River	Salem	71
Morone americana	Delaware River	Salem	72
Morone americana	Delaware River	Salem	73
Morone americana	Delaware River	Salem	74
Morone americana	Delaware River	Salem	75
Morone americana	Hudson River	Bowline Point	110
Morone americana	Hudson River	Bowline Point	177
Morone americana	Hudson River	Bowline Point	197
Morone americana	Hudson River	Bowline Point	198
Morone americana	Hudson River	Bowline Point	208
Morone americana	Hudson River	Bowline Point	209
Morone americana	Hudson River	Danskammer Point	172
Morone americana	Hudson River	Danskammer Point	177
Morone americana	Hudson River	Danskammer Point	197
Morone americana	Hudson River	Danskammer Point	199
Morone americana	Hudson River	Danskammer Point	212
Morone americana	Hudson River	Danskammer Point	213
Morone americana	Hudson River	Danskammer Point	214
Morone americana	Hudson River	Danskammer Point	215
Morone americana	Hudson River	Danskammer Point	244
Morone americana	Hudson River	Indian Point	202
Morone americana	Hudson River	Indian Point	203
Morone americana	Hudson River	Indian Point	232
Morone americana	Hudson River	Indian Point	233
Morone americana	Hudson River	Indian Point	236
Morone americana	Hudson River	Roseton	12
Morone americana	Hudson River	Roseton	177
Morone americana	Hudson River	Roseton	197
Morone americana	Hudson River	Roseton	199
Morone americana	Hudson River	Roseton	206
Morone americana	Hudson River	Roseton	210
Morone americana	Hudson River	Roseton	211
Morone americana	Hudson River	Roseton	212
Morone americana	Hudson River	Roseton	248

Scientific name	Waterbody name	Facility name	Report ID
Morone americana	James River	Surrey	241
Morone americana	Lake Erie	Dunkirk	227
Morone americana	Lake Erie	Dunkirk	252
Morone americana	Lake Ontario	Kintigh	181
Morone americana	Lake Ontario	Kintigh	240
Morone americana	Lake Ontario	Oswego	180
Morone americana	Mystic River	Mystic River	182
Morone americana	Niantic Bay, Long Island Sound	Millstone	62
Morone americana	Niantic Bay, Long Island Sound	Millstone	225
Morone americana	Niantic Bay, Long Island Sound	Millstone	229
Morone americana	Patapsco River	Wagner	249
Morone americana	Raisin River/Lake Erie	Monroe	245
Morone chrysops	Lake Erie	Dunkirk	227
Morone chrysops	Lake Erie	Dunkirk	252
Morone chrysops	Lake Erie	Nanticoke	175
Morone chrysops	Lake Ontario	Kintigh	240
Morone chrysops	Mississippi River	J.P. Madgett	222
Morone chrysops	Mississippi River	Prairie Island	178
Morone chrysops	Niagara River	Huntley	251
Morone saxatilis	Arthur Kill	Arthur Kill	18
Morone saxatilis	Chesapeake Bay	Calvert Cliffs	167
Morone saxatilis	Delaware River	Salem	70
Morone saxatilis	Delaware River	Salem	71
Morone saxatilis	Delaware River	Salem	72
Morone saxatilis	Delaware River	Salem	73
Morone saxatilis	Delaware River	Salem	74
Morone saxatilis	Hudson River	Bowline Point	110
Morone saxatilis	Hudson River	Bowline Point	177
Morone saxatilis	Hudson River	Bowline Point	197
Morone saxatilis	Hudson River	Bowline Point	198
Morone saxatilis	Hudson River	Bowline Point	208
Morone saxatilis	Hudson River	Bowline Point	209
Morone saxatilis	Hudson River	Danskammer Point	197
Morone saxatilis	Hudson River	Danskammer Point	199
Morone saxatilis	Hudson River	Danskammer Point	212
Morone saxatilis	Hudson River	Danskammer Point	213
Morone saxatilis	Hudson River	Danskammer Point	215
Morone saxatilis	Hudson River	Danskammer Point	244
Morone saxatilis	Hudson River	Indian Point	202
Morone saxatilis	Hudson River	Indian Point	203
Morone saxatilis	Hudson River	Indian Point	232
Morone saxatilis	Hudson River	Indian Point	233
Morone saxatilis	Hudson River	Indian Point	236
Morone saxatilis	Hudson River	Roseton	12
Morone saxatilis	Hudson River	Roseton	199
Morone saxatilis	Hudson River	Roseton	206

Scientific name	Waterbody name	Facility name	Report ID
Morone saxatilis	Hudson River	Roseton	210
Morone saxatilis	Hudson River	Roseton	211
Morone saxatilis	Hudson River	Roseton	212
Morone saxatilis	Hudson River	Roseton	248
Morone saxatilis	James River	Surrey	241
Morone sp.	Delaware River	Salem	72
Morone sp.	Hudson River	Roseton	206
Morone sp.	Hudson River	Roseton	248
Moxostoma anisurum	Mississippi River	J.P. Madgett	222
Moxostoma macrolepidotum	Mississippi River	J.P. Madgett	222
Mugil cephalus	Barnegat Bay	Oyster Creek	40
Mugil cephalus	Cape Fear River	Brunswick	115
Mugil cephalus	Delaware River	Salem	70
Mugil cephalus	Galveston Bay	Robinson	250
Mugil cephalus	Hudson River	Roseton	206
Mugil cephalus	James River	Surrey	241
Mugil cephalus	Laguna Madre	Barney M. Davis	239
Mugil cephalus	Niantic Bay, Long Island Sound	Millstone	62
Mugil curema	Barnegat Bay	Oyster Creek	40
Mugil curema	Chesapeake Bay	Calvert Cliffs	167
Mugil curema	Delaware River	Salem	70
Mugil curema	Galveston Bay	Robinson	250
Mugil curema	Laguna Madre	Barney M. Davis	239
Mugil sp.	Barnegat Bay	Oyster Creek	40
Mustelus canis	Delaware River	Salem	73
Myoxocephalus aenaeus	Arthur Kill	Arthur Kill	18
Myoxocephalus aenaeus	Barnegat Bay	Oyster Creek	40
Myoxocephalus aenaeus	Cape Cod Bay	Pilgrim	246
Myoxocephalus aenaeus	Niantic Bay, Long Island Sound	Millstone	61
Myoxocephalus aenaeus	Niantic Bay, Long Island Sound	Millstone	62
Myoxocephalus aenaeus	Niantic Bay, Long Island Sound	Millstone	225
Myoxocephalus aenaeus	Niantic Bay, Long Island Sound	Millstone	229
Myoxocephalus sp.	Mystic River	Mystic River	182
Neogobius melanostomus	Lake Erie	Dunkirk	252
Neogobius melanostomus	St. Clair River	Belle River	238
Neopanope texana	Barnegat Bay	Oyster Creek	40
Neopanope texana	Laguna Madre	Barney M. Davis	239
Neopanope texana	Niantic Bay, Long Island Sound	Millstone	61
Neopanope texana	Niantic Bay, Long Island Sound	Millstone	62
Neopanope texana	Niantic Bay, Long Island Sound	Millstone	225
Neopanope texana	Niantic Bay, Long Island Sound	Millstone	229
Notemigonus crysoleucas	Chesapeake Bay	Calvert Cliffs	167
Notemigonus crysoleucas	Delaware River	Salem	70
Notemigonus crysoleucas	Delaware River	Salem	73
Notemigonus crysoleucas	Hudson River	Danskammer Point	199
Notemigonus crysoleucas	Hudson River	Danskammer Point	212

Scientific name	Waterbody name	Facility name	Report ID
Notemigonus crysoleucas	Hudson River	Danskammer Point	244
Notemigonus crysoleucas	Hudson River	Roseton	199
Notemigonus crysoleucas	Hudson River	Roseton	206
Notemigonus crysoleucas	Hudson River	Roseton	212
Notemigonus crysoleucas	Hudson River	Roseton	248
Notemigonus crysoleucas	James River	Surrey	241
Notropis atherinoides	Lake Erie	Dunkirk	227
Notropis atherinoides	Lake Erie	Dunkirk	252
Notropis atherinoides	Lake Erie	Nanticoke	175
Notropis atherinoides	Lake Ontario	Kintigh	181
Notropis atherinoides	Lake Ontario	Kintigh	240
Notropis atherinoides	Lake Ontario	Oswego	180
Notropis atherinoides	Mississippi River	J.P. Madgett	222
Notropis atherinoides	Niagara River	Huntley	251
Notropis atherinoides	St. Clair River	Belle River	238
Notropis hudsonius	Chesapeake Bay	Calvert Cliffs	167
Notropis hudsonius	Delaware River	Salem	70
Notropis hudsonius	Hudson River	Bowline Point	208
Notropis hudsonius	Hudson River	Danskammer Point	172
Notropis hudsonius	Hudson River	Danskammer Point	199
Notropis hudsonius	Hudson River	Danskammer Point	212
Notropis hudsonius	Hudson River	Danskammer Point	213
Notropis hudsonius	Hudson River	Danskammer Point	244
Notropis hudsonius	Hudson River	Indian Point	203
Notropis hudsonius	Hudson River	Indian Point	232
Notropis hudsonius	Hudson River	Indian Point	233
Notropis hudsonius	Hudson River	Roseton	12
Notropis hudsonius	Hudson River	Roseton	199
Notropis hudsonius	Hudson River	Roseton	206
Notropis hudsonius	Hudson River	Roseton	210
Notropis hudsonius	Hudson River	Roseton	212
Notropis hudsonius	Hudson River	Roseton	248
Notropis hudsonius	James River	Surrey	241
Notropis hudsonius	Lake Erie	Dunkirk	227
Notropis hudsonius	Lake Erie	Dunkirk	252
Notropis hudsonius	Lake Ontario	Kintigh	181
Notropis hudsonius	Lake Ontario	Kintigh	240
Notropis hudsonius	Lake Ontario	Oswego	180
Notropis hudsonius	Mississippi River	J.P. Madgett	222
Notropis hudsonius	Niagara River	Huntley	251
Notropis hudsonius	St. Clair River	Belle River	238
Notropis stramineus	St. Clair River	Belle River	238
Noturus flavus	Lake Erie	Dunkirk	227
Noturus flavus	Lake Erie	Nanticoke	175
Noturus flavus	Mississippi River	J.P. Madgett	222
Noturus stigmosus	St. Clair River	Belle River	238

Scientific name	Waterbody name	Facility name	Report ID
Oligoplites saurus	Laguna Madre	Barney M. Davis	239
Oncorhynchus kisutch	Lake Erie	Dunkirk	227
Oncorhynchus mykiss	James River	Surrey	241
Oncorhynchus mykiss	Lake Erie	Dunkirk	227
Oncorhynchus tshawytscha	Columbia River	Hanford	234
Oncorhynchus tshawytscha	Lake Erie	Dunkirk	227
Ophichthus gomesi	Laguna Madre	Barney M. Davis	239
Ophidion marginatum	Arthur Kill	Arthur Kill	18
Ophidion marginatum	Barnegat Bay	Oyster Creek	40
Ophidion marginatum	Barnegat Bay	Oyster Creek	184
Ophidion marginatum	Chesapeake Bay	Calvert Cliffs	167
Ophidion marginatum	Delaware River	Salem	70
Ophidion marginatum	Delaware River	Salem	71
Ophidion marginatum	Delaware River	Salem	72
Ophidion marginatum	Delaware River	Salem	73
Ophidion marginatum	Delaware River	Salem	74
Ophidion marginatum	Niantic Bay, Long Island Sound	Millstone	61
Ophidion marginatum	Niantic Bay, Long Island Sound	Millstone	62
Ophidion marginatum	Niantic Bay, Long Island Sound	Millstone	225
Ophidion marginatum	Niantic Bay, Long Island Sound	Millstone	229
Opisthonema oglinum	Delaware River	Salem	70
Opisthonema oglinum	Galveston Bay	Robinson	250
Opsanus beta	Laguna Madre	Barney M. Davis	239
Opsanus tau	Barnegat Bay	Oyster Creek	40
Opsanus tau	Barnegat Bay	Oyster Creek	184
Opsanus tau	Chesapeake Bay	Calvert Cliffs	167
Opsanus tau	Delaware River	Salem	70
Opsanus tau	Delaware River	Salem	71
Opsanus tau	Delaware River	Salem	72
Opsanus tau	Delaware River	Salem	73
Opsanus tau	Delaware River	Salem	74
Opsanus tau	Niantic Bay, Long Island Sound	Millstone	62
Opsanus tau	Niantic Bay, Long Island Sound	Millstone	225
Order Actiniaria	Barnegat Bay	Oyster Creek	40
Order Stomatopoda	Barnegat Bay	Oyster Creek	40
Orthopristis chrysoptera	Delaware River	Salem	72
Osmeridae	Elkhorn Slough, Monterey Bay	Moss Landing	242
Osmerus mordax	Arthur Kill	Arthur Kill	18
Osmerus mordax	Cape Cod Bay	Pilgrim	246
Osmerus mordax	Delaware River	Salem	73
Osmerus mordax	Hudson River	Bowline Point	197
Osmerus mordax	Hudson River	Bowline Point	198
Osmerus mordax	Hudson River	Bowline Point	208
Osmerus mordax	Hudson River	Bowline Point	209
Osmerus mordax	Hudson River	Danskammer Point	212
Osmerus mordax	Hudson River	Danskammer Point	244

Scientific name	Waterbody name	Facility name	Report ID
Osmerus mordax	Hudson River	Indian Point	202
Osmerus mordax	Hudson River	Indian Point	203
Osmerus mordax	Hudson River	Indian Point	232
Osmerus mordax	Hudson River	Indian Point	233
Osmerus mordax	Hudson River	Indian Point	236
Osmerus mordax	Hudson River	Roseton	206
Osmerus mordax	Hudson River	Roseton	210
Osmerus mordax	Hudson River	Roseton	212
Osmerus mordax	Hudson River	Roseton	248
Osmerus mordax	Lake Erie	Dunkirk	227
Osmerus mordax	Lake Erie	Dunkirk	252
Osmerus mordax	Lake Erie	Nanticoke	175
Osmerus mordax	Lake Ontario	Kintigh	181
Osmerus mordax	Lake Ontario	Kintigh	240
Osmerus mordax	Lake Ontario	Oswego	180
Osmerus mordax	Mystic River	Mystic River	182
Osmerus mordax	Niagara River	Huntley	251
Osmerus mordax	Niantic Bay, Long Island Sound	Millstone	61
Osmerus mordax	Niantic Bay, Long Island Sound	Millstone	62
Osmerus mordax	Niantic Bay, Long Island Sound	Millstone	225
Osmerus mordax	St. Clair River	Belle River	238
Ovalipes ocellatus	Barnegat Bay	Oyster Creek	40
Ovalipes ocellatus	Niantic Bay, Long Island Sound	Millstone	61
Ovalipes ocellatus	Niantic Bay, Long Island Sound	Millstone	62
Ovalipes ocellatus	Niantic Bay, Long Island Sound	Millstone	225
Ovalipes ocellatus	Niantic Bay, Long Island Sound	Millstone	229
Paguridae	Tampa Bay	Big Bend	230
Pagurus longicarpus	Barnegat Bay	Oyster Creek	40
Pagurus longicarpus	Niantic Bay, Long Island Sound	Millstone	61
Pagurus longicarpus	Niantic Bay, Long Island Sound	Millstone	225
Pagurus pollicaris	Niantic Bay, Long Island Sound	Millstone	61
Pagurus pollicaris	Niantic Bay, Long Island Sound	Millstone	62
Palaemonetes intermedius	Laguna Madre	Barney M. Davis	239
Palaemonetes pugio	Barnegat Bay	Oyster Creek	40
Palaemonetes pugio	Laguna Madre	Barney M. Davis	239
Palaemonetes sp.	Barnegat Bay	Oyster Creek	40
Palaemonetes vulgaris	Barnegat Bay	Oyster Creek	40
Palaemonetes vulgaris	Barnegat Bay	Oyster Creek	184
Palaemonetes vulgaris	Galveston Bay	Robinson	250
Panopeus herbstii	Laguna Madre	Barney M. Davis	239
Paralabrax clathratus	Southern California Bight	San Onofre	243
Paralabrax nebulifer	Southern California Bight	San Onofre	243
Paralichthys dentatus	Arthur Kill	Arthur Kill	18
Paralichthys dentatus	Barnegat Bay	Oyster Creek	40
Paralichthys dentatus	Barnegat Bay	Oyster Creek	184
Paralichthys dentatus	Chesapeake Bay	Calvert Cliffs	167

Scientific name	Waterbody name	Facility name	Report ID
Paralichthys dentatus	Delaware River	Salem	70
Paralichthys dentatus	Delaware River	Salem	71
Paralichthys dentatus	Delaware River	Salem	72
Paralichthys dentatus	Delaware River	Salem	73
Paralichthys dentatus	Delaware River	Salem	74
Paralichthys dentatus	James River	Surrey	241
Paralichthys dentatus	Niantic Bay, Long Island Sound	Millstone	61
Paralichthys dentatus	Niantic Bay, Long Island Sound	Millstone	229
Paralichthys lethostigma	Galveston Bay	Robinson	250
Penaeidae	Cape Fear River	Brunswick	115
Penaeidae	Galveston Bay	Robinson	250
Penaeidae	St. Johns River	Northside	254
Penaeidae	St. Johns River	Northside	255
Penaeus aztecus	Barnegat Bay	Oyster Creek	40
Penaeus aztecus	Cape Fear River	Brunswick	115
Penaeus aztecus	Galveston Bay	Robinson	250
Penaeus aztecus	Laguna Madre	Barney M. Davis	239
Penaeus aztecus	Niantic Bay, Long Island Sound	Millstone	61
Penaeus aztecus	Niantic Bay, Long Island Sound	Millstone	225
Penaeus duorarum	Laguna Madre	Barney M. Davis	239
Penaeus setiferus	Barnegat Bay	Oyster Creek	40
Penaeus setiferus	Galveston Bay	Robinson	250
Penaeus setiferus	Laguna Madre	Barney M. Davis	239
Penaeus sp.	Cape Fear River	Brunswick	115
Peprilus alepidotus	Chesapeake Bay	Calvert Cliffs	167
Peprilus alepidotus	Delaware River	Salem	71
Peprilus alepidotus	Delaware River	Salem	74
Peprilus alepidotus	Galveston Bay	Robinson	250
Peprilus alepidotus	James River	Surrey	241
Peprilus simillimus	Southern California Bight	San Onofre	243
Peprilus triacanthus	Arthur Kill	Arthur Kill	18
Peprilus triacanthus	Barnegat Bay	Oyster Creek	40
Peprilus triacanthus	Cape Cod Bay	Pilgrim	246
Peprilus triacanthus	Chesapeake Bay	Calvert Cliffs	167
Peprilus triacanthus	Delaware River	Salem	70
Peprilus triacanthus	Delaware River	Salem	71
Peprilus triacanthus	Delaware River	Salem	72
Peprilus triacanthus	Delaware River	Salem	73
Peprilus triacanthus	Delaware River	Salem	74
Peprilus triacanthus	Mystic River	Mystic River	182
Peprilus triacanthus	Narragansett Bay	Brayton Point	170
Peprilus triacanthus	Niantic Bay, Long Island Sound	Millstone	61
Peprilus triacanthus	Niantic Bay, Long Island Sound	Millstone	62
Peprilus triacanthus	Niantic Bay, Long Island Sound	Millstone	225
Peprilus triacanthus	Niantic Bay, Long Island Sound	Millstone	229
Perca flavescens	Chesapeake Bay	C.P. Crane	166

Scientific name	Waterbody name	Facility name	Report ID
Perca flavescens	Chesapeake Bay	Calvert Cliffs	167
Perca flavescens	Columbia River	Hanford	234
Perca flavescens	Delaware River	Salem	70
Perca flavescens	Delaware River	Salem	71
Perca flavescens	Delaware River	Salem	72
Perca flavescens	Delaware River	Salem	73
Perca flavescens	Delaware River	Salem	74
Perca flavescens	Hudson River	Bowline Point	208
Perca flavescens	Hudson River	Danskammer Point	199
Perca flavescens	Hudson River	Danskammer Point	212
Perca flavescens	Hudson River	Danskammer Point	244
Perca flavescens	Hudson River	Indian Point	203
Perca flavescens	Hudson River	Roseton	199
Perca flavescens	Hudson River	Roseton	212
Perca flavescens	James River	Surrey	241
Perca flavescens	Lake Erie	Dunkirk	227
Perca flavescens	Lake Erie	Dunkirk	252
Perca flavescens	Lake Erie	Nanticoke	175
Perca flavescens	Lake Ontario	Kintigh	181
Perca flavescens	Lake Ontario	Kintigh	240
Perca flavescens	Mississippi River	J.P. Madgett	222
Perca flavescens	Niagara River	Huntley	251
Perca flavescens	Raisin River/Lake Erie	Monroe	245
Perca flavescens	St. Clair River	Belle River	238
Percidae	Hudson River	Bowline Point	197
Percidae	Hudson River	Bowline Point	198
Percidae	Hudson River	Bowline Point	209
Percidae	Lake Ontario	Kintigh	240
Percidae	Mississippi River	Prairie Island	178
Percina caprodes	Lake Erie	Dunkirk	227
Percina caprodes	Lake Erie	Dunkirk	252
Percina caprodes	Mississippi River	J.P. Madgett	222
Percina caprodes	St. Clair River	Belle River	238
Percina shumardi	Mississippi River	J.P. Madgett	222
Percopsis omiscomaycus	Lake Erie	Dunkirk	227
Percopsis omiscomaycus	Lake Erie	Dunkirk	252
Percopsis omiscomaycus	Lake Erie	Nanticoke	175
Percopsis omiscomaycus	Lake Ontario	Kintigh	240
Percopsis omiscomaycus	Mississippi River	J.P. Madgett	222
Percopsis omiscomaycus	Mississippi River	Prairie Island	178
Percopsis omiscomaycus	Niagara River	Huntley	251
Percopsis omiscomaycus	St. Clair River	Belle River	238
Petromyzon marinus	Delaware River	Salem	70
Petromyzon marinus	Delaware River	Salem	71
Petromyzon marinus	Delaware River	Salem	72
Petromyzon marinus	Delaware River	Salem	74

Scientific name	Waterbody name	Facility name	Report ID
Petromyzon marinus	Hudson River	Indian Point	203
Petromyzon marinus	Hudson River	Roseton	212
Petromyzon marinus	James River	Surrey	241
Phanerodon furcatus	Southern California Bight	San Onofre	243
Pholis gunnellus	Arthur Kill	Arthur Kill	18
Pholis gunnellus	Cape Cod Bay	Pilgrim	246
Pholis gunnellus	Niantic Bay, Long Island Sound	Millstone	61
Pholis gunnellus	Niantic Bay, Long Island Sound	Millstone	62
Pholis gunnellus	Niantic Bay, Long Island Sound	Millstone	225
Pholis gunnellus	Niantic Bay, Long Island Sound	Millstone	229
Phylum Nemertea	Barnegat Bay	Oyster Creek	40
Pimephales notatus	St. Clair River	Belle River	238
Pimephales promelas	Hudson River	Roseton	206
Pimephales vigilax	Mississippi River	J.P. Madgett	222
Pinnotheres maculatus	Niantic Bay, Long Island Sound	Millstone	61
Pinnotheridae	Tampa Bay	Big Bend	230
Pinnotheridae	Tampa Bay	Big Bend	231
Pleuronectes americanus	Arthur Kill	Arthur Kill	18
Pleuronectes americanus	Barnegat Bay	Oyster Creek	37
Pleuronectes americanus	Barnegat Bay	Oyster Creek	40
Pleuronectes americanus	Barnegat Bay	Oyster Creek	184
Pleuronectes americanus	Cape Cod Bay	Pilgrim	246
Pleuronectes americanus	Chesapeake Bay	Calvert Cliffs	167
Pleuronectes americanus	Delaware River	Salem	70
Pleuronectes americanus	Delaware River	Salem	71
Pleuronectes americanus	Delaware River	Salem	72
Pleuronectes americanus	Delaware River	Salem	73
Pleuronectes americanus	Delaware River	Salem	74
Pleuronectes americanus	Hudson River	Roseton	206
Pleuronectes americanus	Mount Hope Bay	Brayton Point	237
Pleuronectes americanus	Mystic River	Mystic River	182
Pleuronectes americanus	Mystic River	Mystic River	247
Pleuronectes americanus	Narragansett Bay	Brayton Point	170
Pleuronectes americanus	Niantic Bay, Long Island Sound	Millstone	61
Pleuronectes americanus	Niantic Bay, Long Island Sound	Millstone	62
Pleuronectes americanus	Niantic Bay, Long Island Sound	Millstone	225
Pleuronectes americanus	Niantic Bay, Long Island Sound	Millstone	229
Pleuronectiformes	Elkhorn Slough, Monterey Bay	Moss Landing	242
Pogonias cromis	Barnegat Bay	Oyster Creek	40
Pogonias cromis	Delaware River	Salem	70
Pogonias cromis	Delaware River	Salem	73
Pogonias cromis	Delaware River	Salem	74
Pogonias cromis	Galveston Bay	Robinson	250
Pogonias cromis	Tampa Bay	Big Bend	230
Pollachius virens	Cape Cod Bay	Pilgrim	246
Pollachius virens	Mystic River	Mystic River	182

Scientific name	Waterbody name	Facility name	Report ID
Pollachius virens	Niantic Bay, Long Island Sound	Millstone	61
Pollachius virens	Niantic Bay, Long Island Sound	Millstone	62
Polydactylus octonemus	Galveston Bay	Robinson	250
Polydactylus octonemus	Laguna Madre	Barney M. Davis	239
Pomatomus saltatrix	Arthur Kill	Arthur Kill	18
Pomatomus saltatrix	Barnegat Bay	Oyster Creek	40
Pomatomus saltatrix	Barnegat Bay	Oyster Creek	184
Pomatomus saltatrix	Chesapeake Bay	Calvert Cliffs	167
Pomatomus saltatrix	Delaware River	Salem	70
Pomatomus saltatrix	Delaware River	Salem	71
Pomatomus saltatrix	Delaware River	Salem	72
Pomatomus saltatrix	Delaware River	Salem	73
Pomatomus saltatrix	Delaware River	Salem	74
Pomatomus saltatrix	Hudson River	Bowline Point	198
Pomatomus saltatrix	Hudson River	Bowline Point	209
Pomatomus saltatrix	Hudson River	Indian Point	203
Pomatomus saltatrix	James River	Surrey	241
Pomatomus saltatrix	Niantic Bay, Long Island Sound	Millstone	61
Pomatomus saltatrix	Niantic Bay, Long Island Sound	Millstone	62
Pomatomus saltatrix	Niantic Bay, Long Island Sound	Millstone	225
Pomatomus saltatrix	Niantic Bay, Long Island Sound	Millstone	229
Pomoxis annularis	Delaware River	Salem	70
Pomoxis nigromaculatus	Delaware River	Salem	71
Pomoxis nigromaculatus	Delaware River	Salem	73
Pomoxis nigromaculatus	Delaware River	Salem	74
Pomoxis nigromaculatus	Hudson River	Danskammer Point	199
Pomoxis nigromaculatus	Hudson River	Danskammer Point	212
Pomoxis nigromaculatus	Hudson River	Indian Point	233
Pomoxis nigromaculatus	Hudson River	Roseton	199
Pomoxis nigromaculatus	James River	Surrey	241
Pomoxis nigromaculatus	Lake Erie	Dunkirk	227
Pomoxis nigromaculatus	Mississippi River	J.P. Madgett	222
Pomoxis nigromaculatus	St. Clair River	Belle River	238
Pomoxis sp.	Lake Erie	Nanticoke	175
Pomoxis sp.	Mississippi River	Prairie Island	178
Porichthys notatus	Elkhorn Slough, Monterey Bay	Moss Landing	242
Porichthys porosissimus	Galveston Bay	Robinson	250
Portunus gibbesi	Barnegat Bay	Oyster Creek	40
Portunus gibbesi	Laguna Madre	Barney M. Davis	239
Prionotus carolinus	Arthur Kill	Arthur Kill	18
Prionotus carolinus	Barnegat Bay	Oyster Creek	40
Prionotus carolinus	Cape Cod Bay	Pilgrim	246
Prionotus carolinus	Chesapeake Bay	Calvert Cliffs	167
Prionotus carolinus	Delaware River	Salem	70
Prionotus carolinus	Delaware River	Salem	71
Prionotus carolinus	Delaware River	Salem	72

Scientific name	Waterbody name	Facility name	Report ID
Prionotus carolinus	Delaware River	Salem	73
Prionotus carolinus	Delaware River	Salem	74
Prionotus carolinus	Mystic River	Mystic River	182
Prionotus carolinus	Niantic Bay, Long Island Sound	Millstone	61
Prionotus carolinus	Niantic Bay, Long Island Sound	Millstone	62
Prionotus evolans	Arthur Kill	Arthur Kill	18
Prionotus evolans	Barnegat Bay	Oyster Creek	40
Prionotus evolans	Barnegat Bay	Oyster Creek	184
Prionotus evolans	Cape Cod Bay	Pilgrim	246
Prionotus evolans	Chesapeake Bay	Calvert Cliffs	167
Prionotus evolans	Niantic Bay, Long Island Sound	Millstone	61
Prionotus evolans	Niantic Bay, Long Island Sound	Millstone	62
Prionotus evolans	Niantic Bay, Long Island Sound	Millstone	225
Prionotus evolans	Niantic Bay, Long Island Sound	Millstone	229
Prionotus sp.	Cape Fear River	Brunswick	115
Prionotus tribulus	Galveston Bay	Robinson	250
Prosopium williamsoni	Columbia River	Hanford	234
Proterorhinus marmoratus	St. Clair River	Belle River	238
Ptychocheilus oregonenis	Columbia River	Hanford	234
Pungitius pungitius	Arthur Kill	Arthur Kill	18
Pungitius pungitius	Niantic Bay, Long Island Sound	Millstone	62
Pylodictis olivaris	Mississippi River	J.P. Madgett	222
Raja erinacea	Cape Cod Bay	Pilgrim	246
Raja sp.	Niantic Bay, Long Island Sound	Millstone	62
Raja sp.	Niantic Bay, Long Island Sound	Millstone	229
Rhinichthys cataractae	Columbia River	Hanford	234
Rhithropanopeus harrisii	Galveston Bay	Robinson	250
Richardsonius balteatus	Columbia River	Hanford	234
Salmo trutta	Lake Erie	Dunkirk	227
Salmonidae	Lake Ontario	Kintigh	240
Salvelinus namaycush	Lake Erie	Dunkirk	227
Sciaenidae	Hudson River	Bowline Point	197
Sciaenidae	Hudson River	Bowline Point	198
Sciaenidae	Hudson River	Bowline Point	209
Sciaenidae	St. Johns River	Northside	254
Sciaenidae	Tampa Bay	Big Bend	230
Sciaenidae	Tampa Bay	Big Bend	231
Sciaenops ocellatus	Galveston Bay	Robinson	250
Sciaenops ocellatus	Laguna Madre	Barney M. Davis	239
Scolecolepides viridis	Barnegat Bay	Oyster Creek	40
Scomber japonicus	Mystic River	Mystic River	182
Scomber scombrus	Arthur Kill	Arthur Kill	18
Scomberomorus maculatus	Arthur Kill	Arthur Kill	18
Scomberomorus maculatus	Delaware River	Salem	74
Scomberomorus maculatus	Galveston Bay	Robinson	250
Scomberomorus maculatus	James River	Surrey	241

Scientific name	Waterbody name	Facility name	Report ID
Scophthalmus aquosus	Arthur Kill	Arthur Kill	18
Scophthalmus aquosus	Barnegat Bay	Oyster Creek	40
Scophthalmus aquosus	Cape Cod Bay	Pilgrim	246
Scophthalmus aquosus	Chesapeake Bay	Calvert Cliffs	167
Scophthalmus aquosus	Delaware River	Salem	70
Scophthalmus aquosus	Delaware River	Salem	71
Scophthalmus aquosus	Delaware River	Salem	73
Scophthalmus aquosus	Delaware River	Salem	74
Scophthalmus aquosus	Mystic River	Mystic River	182
Scophthalmus aquosus	Niantic Bay, Long Island Sound	Millstone	61
Scophthalmus aquosus	Niantic Bay, Long Island Sound	Millstone	62
Scophthalmus aquosus	Niantic Bay, Long Island Sound	Millstone	225
Scophthalmus aquosus	Niantic Bay, Long Island Sound	Millstone	229
Sebastes	Elkhorn Slough, Monterey Bay	Moss Landing	242
Sebastes paucispinis	Southern California Bight	San Onofre	243
Selar crumenophthalmus	Barnegat Bay	Oyster Creek	40
Selene setapinnis	Barnegat Bay	Oyster Creek	40
Selene setapinnis	Cape Cod Bay	Pilgrim	246
Selene setapinnis	Galveston Bay	Robinson	250
Selene vomer	Arthur Kill	Arthur Kill	18
Selene vomer	Barnegat Bay	Oyster Creek	40
Selene vomer	Galveston Bay	Robinson	250
Selene vomer	Niantic Bay, Long Island Sound	Millstone	62
Selene vomer	Niantic Bay, Long Island Sound	Millstone	225
Selene vomer	Niantic Bay, Long Island Sound	Millstone	229
Semotilus atromaculatus	James River	Surrey	241
Seriphus politus	Southern California Bight	San Onofre	243
Sphoeroides maculatus	Arthur Kill	Arthur Kill	18
Sphoeroides maculatus	Barnegat Bay	Oyster Creek	40
Sphoeroides maculatus	Cape Cod Bay	Pilgrim	246
Sphoeroides maculatus	Delaware River	Salem	70
Sphoeroides maculatus	Delaware River	Salem	73
Sphoeroides maculatus	Delaware River	Salem	74
Sphoeroides maculatus	Niantic Bay, Long Island Sound	Millstone	61
Sphoeroides maculatus	Niantic Bay, Long Island Sound	Millstone	62
Sphoeroides maculatus	Niantic Bay, Long Island Sound	Millstone	225
Sphoeroides parvus	Galveston Bay	Robinson	250
Sphoeroides parvus	Laguna Madre	Barney M. Davis	239
Sphyraena borealis	Niantic Bay, Long Island Sound	Millstone	62
Squilla empusa	Barnegat Bay	Oyster Creek	40
Stellifer lanceolatus	St. Johns River	Northside	254
Stellifer lanceolatus	St. Johns River	Northside	255
Stenotomus chrysops	Niantic Bay, Long Island Sound	Millstone	229
Stizostedion canadense	Mississippi River	J.P. Madgett	222
Stizostedion canadense	Mississippi River	Prairie Island	178
Stizostedion vitreum	Lake Erie	Dunkirk	227

Scientific name	Waterbody name	Facility name	Report ID
Stizostedion vitreum	Mississippi River	J.P. Madgett	222
Stizostedion vitreum	Mississippi River	Prairie Island	178
Stizostedion vitreum	Mississippi River	Prairie Island	226
Strongylura marina	Barnegat Bay	Oyster Creek	40
Strongylura marina	Delaware River	Salem	71
Strongylura marina	Delaware River	Salem	73
Strongylura marina	Delaware River	Salem	74
Strongylura marina	Laguna Madre	Barney M. Davis	239
Syllidae	Barnegat Bay	Oyster Creek	40
Symphurus plagiusa	Barnegat Bay	Oyster Creek	40
Symphurus plagiusa	Cape Fear River	Brunswick	115
Symphurus plagiusa	Chesapeake Bay	Calvert Cliffs	167
Symphurus plagiusa	Delaware River	Salem	70
Symphurus plagiusa	Galveston Bay	Robinson	250
Symphurus plagiusa	James River	Surrey	241
Symphurus plagiusa	St. Johns River	Northside	255
Syngnathue scovelli	Laguna Madre	Barney M. Davis	239
Syngnathus fuscus	Arthur Kill	Arthur Kill	18
Syngnathus fuscus	Barnegat Bay	Oyster Creek	40
Syngnathus fuscus	Barnegat Bay	Oyster Creek	184
Syngnathus fuscus	Cape Cod Bay	Pilgrim	246
Syngnathus fuscus	Chesapeake Bay	Calvert Cliffs	167
Syngnathus fuscus	Delaware River	Salem	70
Syngnathus fuscus	Delaware River	Salem	71
Syngnathus fuscus	Delaware River	Salem	72
Syngnathus fuscus	Delaware River	Salem	73
Syngnathus fuscus	Delaware River	Salem	74
Syngnathus fuscus	Hudson River	Bowline Point	197
Syngnathus fuscus	Hudson River	Bowline Point	198
Syngnathus fuscus	Hudson River	Bowline Point	208
Syngnathus fuscus	Hudson River	Bowline Point	209
Syngnathus fuscus	Hudson River	Indian Point	203
Syngnathus fuscus	Hudson River	Indian Point	236
Syngnathus fuscus	Hudson River	Roseton	206
Syngnathus fuscus	Mount Hope Bay	Brayton Point	237
Syngnathus fuscus	Mystic River	Mystic River	182
Syngnathus fuscus	Narragansett Bay	Brayton Point	170
Syngnathus fuscus	Niantic Bay, Long Island Sound	Millstone	61
Syngnathus fuscus	Niantic Bay, Long Island Sound	Millstone	62
Syngnathus fuscus	Niantic Bay, Long Island Sound	Millstone	225
Syngnathus fuscus	Niantic Bay, Long Island Sound	Millstone	229
Syngnathus fuscus	Patapsco River	Wagner	249
Syngnathus louisinae	Laguna Madre	Barney M. Davis	239
Synodus foetens	Barnegat Bay	Oyster Creek	40
Synodus foetens	Chesapeake Bay	Calvert Cliffs	167
Tautoga onitis	Arthur Kill	Arthur Kill	18

Scientific name	Waterbody name	Facility name	Report ID
Tautoga onitis	Barnegat Bay	Oyster Creek	40
Tautoga onitis	Cape Cod Bay	Pilgrim	246
Tautoga onitis	Mount Hope Bay	Brayton Point	237
Tautoga onitis	Mystic River	Mystic River	182
Tautoga onitis	Narragansett Bay	Brayton Point	170
Tautoga onitis	Niantic Bay, Long Island Sound	Millstone	61
Tautoga onitis	Niantic Bay, Long Island Sound	Millstone	225
Tautoga onitis	Niantic Bay, Long Island Sound	Millstone	229
Tautogolabrus adspersus	Arthur Kill	Arthur Kill	18
Tautogolabrus adspersus	Cape Cod Bay	Pilgrim	246
Tautogolabrus adspersus	Mystic River	Mystic River	182
Tautogolabrus adspersus	Niantic Bay, Long Island Sound	Millstone	61
Tautogolabrus adspersus	Niantic Bay, Long Island Sound	Millstone	62
Tautogolabrus adspersus	Niantic Bay, Long Island Sound	Millstone	225
Tautogolabrus adspersus	Niantic Bay, Long Island Sound	Millstone	229
Tozeuma carolinensis	Laguna Madre	Barney M. Davis	239
Trachinotus carolinus	Delaware River	Salem	70
Trachinotus carolinus	Delaware River	Salem	74
Trachinotus falcatus	Delaware River	Salem	72
Trachurus lathami	Niantic Bay, Long Island Sound	Millstone	61
Trachypeneus constrictus	Cape Fear River	Brunswick	115
Trichiurus lepturus	Galveston Bay	Robinson	250
Trichiurus lepturus	James River	Surrey	241
Trichiurus lepturus	Laguna Madre	Barney M. Davis	239
Trinectes maculatus	Barnegat Bay	Oyster Creek	40
Trinectes maculatus	Chesapeake Bay	C.P. Crane	166
Trinectes maculatus	Chesapeake Bay	Calvert Cliffs	167
Trinectes maculatus	Delaware River	Salem	70
Trinectes maculatus	Delaware River	Salem	71
Trinectes maculatus	Delaware River	Salem	72
Trinectes maculatus	Delaware River	Salem	73
Trinectes maculatus	Delaware River	Salem	74
Trinectes maculatus	Hudson River	Bowline Point	197
Trinectes maculatus	Hudson River	Bowline Point	198
Trinectes maculatus	Hudson River	Bowline Point	208
Trinectes maculatus	Hudson River	Bowline Point	209
Trinectes maculatus	Hudson River	Danskammer Point	212
Trinectes maculatus	Hudson River	Danskammer Point	244
Trinectes maculatus	Hudson River	Indian Point	202
Trinectes maculatus	Hudson River	Indian Point	203
Trinectes maculatus	Hudson River	Indian Point	233
Trinectes maculatus	Hudson River	Roseton	199
Trinectes maculatus	Hudson River	Roseton	206
Trinectes maculatus	Hudson River	Roseton	248
Trinectes maculatus	James River	Surrey	241
Trinectes maculatus	Narragansett Bay	Brayton Point	170

Scientific name	Waterbody name	Facility name	Report ID
Trinectes maculatus	Patapsco River	Wagner	249
Trinectes maculatus	St. Johns River	Northside	255
Umbrina roncador	Southern California Bight	San Onofre	243
Upogebia affinis	Tampa Bay	Big Bend	230
Urophycis chuss	Arthur Kill	Arthur Kill	18
Urophycis chuss	Barnegat Bay	Oyster Creek	40
Urophycis chuss	Delaware River	Salem	71
Urophycis chuss	Delaware River	Salem	73
Urophycis chuss	Hudson River	Indian Point	232
Urophycis chuss	Niantic Bay, Long Island Sound	Millstone	225
Urophycis chuss	Niantic Bay, Long Island Sound	Millstone	229
Urophycis floridana	Laguna Madre	Barney M. Davis	239
Urophycis regia	Arthur Kill	Arthur Kill	18
Urophycis regia	Barnegat Bay	Oyster Creek	40
Urophycis regia	Chesapeake Bay	Calvert Cliffs	167
Urophycis regia	Delaware River	Salem	70
Urophycis regia	Delaware River	Salem	71
Urophycis regia	Delaware River	Salem	72
Urophycis regia	Delaware River	Salem	73
Urophycis regia	Delaware River	Salem	74
Urophycis regia	Mystic River	Mystic River	182
Urophycis regia	Niantic Bay, Long Island Sound	Millstone	61
Urophycis regia	Niantic Bay, Long Island Sound	Millstone	225
Urophycis tenuis	Barnegat Bay	Oyster Creek	40
Urophycis tenuis	Cape Cod Bay	Pilgrim	246
Urophycis tenuis	Niantic Bay, Long Island Sound	Millstone	61
Urophycis tenuis	Niantic Bay, Long Island Sound	Millstone	62
Xanthidae	Barnegat Bay	Oyster Creek	40
Xanthidae	Hudson River	Danskammer Point	244
Xanthidae	Hudson River	Roseton	206
Xanthidae	Tampa Bay	Big Bend	230
Xanthidae	Tampa Bay	Big Bend	231
Xenistius californiensis	Southern California Bight	San Onofre	243
Xiphopenaeus kroyeri	Galveston Bay	Robinson	250

B

APPENDIX B: TAXONOMIC LISTING OF IMPINGEMENT SURVIVAL RATE ESTIMATES

Taxonomic Listing of Impingement Survival Rate Estimates

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Achiridae	Achirus lineatus	Lined sole		17	0.941				☐	☐	Single flow	N	Continuous	250
	Achirus lineatus	Lined sole		12	1.000				☐	☐	Single flow	N	Continuous	250
	Achirus lineatus	Lined sole		20	0.900				☐	☐	Single flow	N	Intermittant	250
	Achirus lineatus	Lined sole		29	0.828				☐	☐	Single flow	N	Intermittant	250
	Trinectes maculatus	Hogchoker		123		0.668	48		✔	☐	Single flow	N	1-hour	166
	Trinectes maculatus	Hogchoker		12		1.000	48		✔	☐	Single flow	N	1-hour	166
	Trinectes maculatus	Hogchoker		246		0.802	48		✔	☐	Single flow	N	1-hour	166
	Trinectes maculatus	Hogchoker		29	1.000			0.862	☐	☐	Single flow	N	2-hour	40
	Trinectes maculatus	Hogchoker		25		0.711	48		✔	☐	Single flow	N	8-hour	166
	Trinectes maculatus	Hogchoker		133		0.836	48		✔	☐	Single flow	N	8-hour	166
	Trinectes maculatus	Hogchoker	Adult	12	1.000				☐	☐	Single flow	N	Continuous	212
	Trinectes maculatus	Hogchoker		835				0.990	☐	☐	Single flow	Y	1-hour	167
	Trinectes maculatus	Hogchoker	Yearling	667	0.600	0.010	96		☐	☐	Single flow	Y	2-hour	197
	Trinectes maculatus	Hogchoker		124	0.960				☐	☐	Single flow	Y	2-hour	255
	Trinectes maculatus	Hogchoker	YOY	96	0.820	0.090	96		☐	☐	Single flow	Y	2-hour	197
	Trinectes maculatus	Hogchoker	Yearling	239	0.220	0.000	96		☐	☐	Single flow	Y	4-hour	197
	Trinectes maculatus	Hogchoker	Yearling	124	1.000	0.831	96		☐	☐	Single flow	Y	4-hour	208
	Trinectes maculatus	Hogchoker		132	1.000				☐	☐	Single flow	Y	4-hour	255
	Trinectes maculatus	Hogchoker	YOY	66	0.560	0.000	96		☐	☐	Single flow	Y	4-hour	197
	Trinectes maculatus	Hogchoker	Yearling	684	0.250	0.000	96		☐	☐	Single flow	Y	9-hour	197
	Trinectes maculatus	Hogchoker		60		0.720	96		☐	☐	Single flow	Y	Combined int	249
	Trinectes maculatus	Hogchoker		238		0.880	24		☐	☐	Single flow	Y	Combined int	249
	Trinectes maculatus	Hogchoker		60		0.750	24		☐	☐	Single flow	Y	Combined int	249
	Trinectes maculatus	Hogchoker	YOY	275	0.950	0.160	96		☐	☐	Single flow	Y	Continuous	197
	Trinectes maculatus	Hogchoker	YOY	227	0.990	0.920	96		☐	☐	Single flow	Y	Continuous	198
	Trinectes maculatus	Hogchoker	Yearling	201	0.830	0.080	96		☐	☐	Single flow	Y	Continuous	197
	Trinectes maculatus	Hogchoker	Yearling	189	0.980	0.900	96		☐	☐	Single flow	Y	Continuous	198

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Achiridae	Trinectes maculatus	Hogchoker	Yearling	189		0.895	102		☐	☐	Single flow	Y	Continuous	197
	Trinectes maculatus	Hogchoker		3523	1.000			1.000	☐	☐	Single flow	Y	Continuous	71
	Trinectes maculatus	Hogchoker	YOY	227		0.905	102		☐	☐	Single flow	Y	Continuous	197
	Trinectes maculatus	Hogchoker		88	1.000				☐	☐	Single flow	Y	Continuous	255
	Trinectes maculatus	Hogchoker			0.965				☐	☐	Single flow	Y	Continuous	241
	Trinectes maculatus	Hogchoker		60	0.967	0.904	96		☐	☐	Single flow	Y	Continuous	248
	Trinectes maculatus	Hogchoker		1023	0.980			0.960	☐	☐	Single flow	Y	Continuous	73
	Trinectes maculatus	Hogchoker		61	1.000				☐	☐	Single flow	Y	Continuous	255
	Trinectes maculatus	Hogchoker		2954	1.000			0.990	☐	☐	Single flow	Y	Continuous	74
	Trinectes maculatus	Hogchoker		185		0.887	96		☐	☐	Single flow	Y	Continuous	233
	Trinectes maculatus	Hogchoker		2890	1.000			0.990	☐	☐	Single flow	Y	Continuous	70
	Trinectes maculatus	Hogchoker		266	0.989	0.914	96		☐	☐	Single flow	Y	Continuous	248
	Trinectes maculatus	Hogchoker		468	1.000			1.000	☐	☐	Single flow	Y	Continuous	72
	Trinectes maculatus	Hogchoker		259	1.000	0.931			☐	☐	Dual flow	Y	Continuous	206
	Trinectes maculatus	Hogchoker		112	1.000	0.982	96		☐	☐	Dual flow	Y	Continuous	248
	Trinectes maculatus	Hogchoker		232	0.996	0.957	96		☐	☐	Dual flow	Y	Continuous	248
	Trinectes maculatus	Hogchoker		117	0.991	0.956	48		☐	☐	Angled	Y	Continuous	170

Summary for 'Family' = Achiridae (44 detail records)

	Si	Se	Si(dd)
Avg	0.897	0.655	0.970
Min	0.220	0.000	0.862
Max	1.000	1.000	1.000
S.D.	0.205	0.376	0.050

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Alpheidae	Alpheidae	Snapping shrimp family		12	0.920				☐	☐	Single flow	Y	2-hour	255
	Alpheidae	Snapping shrimp family		11	0.900				☐	☐	Single flow	Y	Continuous	255

Summary for 'Family' = Alpheidae (2 detail records)

	Si
Avg	0.910
Min	0.900
Max	0.920
S.D.	0.014

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Anguillidae	Anguilla rostrata	American eel		34	0.560			0.147	☐	☐	Single flow	N	2-hour	40
	Anguilla rostrata	American eel	Adult	13	0.920				☐	☐	Single flow	N	Continuous	212
	Anguilla rostrata	American eel		62				0.520	☐	☐	Single flow	Y	1-hour	167
	Anguilla rostrata	American eel		51	1.000			0.880	☐	☐	Single flow	Y	Continuous	70
	Anguilla rostrata	American eel	Adult	21	0.900	0.050	96		☐	☐	Single flow	Y	Continuous	198
	Anguilla rostrata	American eel	Adult	21		0.075	102		☐	☐	Single flow	Y	Continuous	197
	Anguilla rostrata	American eel		136	0.990			0.930	☐	☐	Single flow	Y	Continuous	74
	Anguilla rostrata	American eel		41	1.000			0.880	☐	☐	Single flow	Y	Continuous	71
	Anguilla rostrata	American eel			0.989				☐	☐	Single flow	Y	Continuous	241
	Anguilla rostrata	American eel		40		0.626	96		☐	☐	Single flow	Y	Continuous	233
	Anguilla rostrata	American eel		38	0.950			0.840	☐	☐	Single flow	Y	Continuous	73
	Anguilla rostrata	American eel		17	1.000			0.880	☐	☐	Single flow	Y	Continuous	72
	Anguilla rostrata	American eel		33	0.788	0.721	96		☐	☐	Dual flow	Y	Continuous	248
	Anguilla rostrata	American eel		114	0.965	0.904	96		☐	☐	Dual flow	Y	Continuous	206

Summary for 'Family' = Anguillidae (14 detail records)

	Si	Se	Si(dd)
Avg	0.915	0.475	0.725
Min	0.560	0.050	0.147
Max	1.000	0.904	0.930
S.D.	0.134	0.390	0.290

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Arridae	Arius felis	Hardhead sea catfish		30		0.433	120		☐	☐	Single flow	N	Continuous	250
	Arius felis	Hardhead sea catfish		552	0.277				☐	☐	Single flow	N	Continuous	250
	Arius felis	Hardhead sea catfish		85		0.506	120		☐	☐	Single flow	N	Continuous	250
	Arius felis	Hardhead sea catfish		90	0.567				☐	☐	Single flow	N	Continuous	250
	Arius felis	Hardhead sea catfish		446	0.204				☐	☐	Single flow	N	Intermittant	250
	Arius felis	Hardhead sea catfish		195	0.262				☐	☐	Single flow	N	Intermittant	250
	Arius felis	Hardhead sea catfish		10		1.000	48		☐	☐	Single flow	Y	Continuous	254
	Arius felis	Hardhead sea catfish		10		0.900	96		☐	☐	Single flow	Y	Continuous	254
	Arius felis	Hardhead sea catfish		21	0.860				☐	☐	Single flow	Y	Continuous	255

Summary for 'Family' = Arridae (9 detail records)

	Si	Se
Avg	0.434	0.710
Min	0.204	0.433
Max	0.860	1.000
S.D.	0.277	0.282

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Atherinidae	Atherinidae	Silverside family	72-270 mm	11	0.640	0.000	96		☑	☐	Single flow	N	1-hour	242
	Atherinidae	Silverside family	61-229 mm	74	0.510	0.080	96		☑	☐	Single flow	N	1-hour	242
	Atherinidae	Silverside family	72-270 mm	15	0.530	0.000	96		☑	☐	Single flow	N	3-hour	242
	Atherinidae	Silverside family	61-229 mm	227	0.330	0.040	96		☑	☐	Single flow	N	3-hour	242
	Atherinidae	Silverside family	61-229 mm	36	0.780	0.070	96		☑	☐	Single flow	N	Continuous	242
	Atherinidae	Silverside family		29		0.030	96		☐	☐	Single flow	Y	Combined int	249
	Atherinidae	Silverside family		29		0.240	24		☐	☐	Single flow	Y	Combined int	249
	Atherinidae	Silverside family		127		0.140	24		☐	☐	Single flow	Y	Combined int	249
	Membras martinica	Rough silverside			0.817				☐	☐	Single flow	Y	Continuous	241
	Menidia beryllina	Inland silverside		47				0.890	☐	☐	Single flow	Y	1-hour	167
	Menidia beryllina	Inland silverside			0.946				☐	☐	Single flow	Y	Continuous	241
	Menidia menidia	Atlantic silverside		568	0.570				☐	☐	Single flow	N	2-hour	184
	Menidia menidia	Atlantic silverside		87	0.655	0.372	48	0.575	☐	☑	Single flow	N	2-hour	40
	Menidia menidia	Atlantic silverside		5133	0.620	0.217	48		☐	☑	Single flow	N	2-hour	184
	Menidia menidia	Atlantic silverside		3432	0.600			0.348	☐	☐	Single flow	N	2-hour	40
	Menidia menidia	Atlantic silverside		28	0.179	0.000	96		☐	☐	Single flow	N	4-hour	228
	Menidia menidia	Atlantic silverside		124	0.202	0.097	96		☐	☐	Single flow	N	8-hour	228
	Menidia menidia	Atlantic silverside		29	0.034	0.000	96		☐	☐	Single flow	N	8-hour	228
	Menidia menidia	Atlantic silverside		23	0.652	0.391	96		☐	☐	Single flow	N	8-hour	228
	Menidia menidia	Atlantic silverside	40-145 mm	20	0.300	0.150	56		☐	☐	Single flow	N	8-hour	246
	Menidia menidia	Atlantic silverside		49	0.860				☐	☐	Single flow	N	Continuous	184
	Menidia menidia	Atlantic silverside		24	1.000	0.916	96		☐	☐	Single flow	N	Continuous	228
	Menidia menidia	Atlantic silverside		2039				0.540	☐	☐	Single flow	Y	1-hour	167
	Menidia menidia	Atlantic silverside		13	0.700	0.230	72		☐	☐	Single flow	Y	2-hour	229
	Menidia menidia	Atlantic silverside		68	0.221	0.000	72		☐	☐	Single flow	Y	3-hour	61
	Menidia menidia	Atlantic silverside		160	0.630	0.000	72		☐	☐	Single flow	Y	3-hour	225
	Menidia menidia	Atlantic silverside		13	0.540	0.000	72		☐	☐	Single flow	Y	6-hour	62
	Menidia menidia	Atlantic silverside		167	0.960			0.930	☐	☐	Single flow	Y	Continuous	71
	Menidia menidia	Atlantic silverside		182	0.980			0.950	☐	☐	Single flow	Y	Continuous	73
	Menidia menidia	Atlantic silverside		118	1.000	0.890	96		☐	☐	Single flow	Y	Continuous	37

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Atherinidae	Menidia menidia	Atlantic silverside		721	0.960			0.950	☐	☐	Single flow	Y	Continuous	74
	Menidia menidia	Atlantic silverside		1479	0.970			0.960	☐	☐	Single flow	Y	Continuous	70
	Menidia menidia	Atlantic silverside		1911	0.960	0.820	96		☐	☐	Single flow	Y	Continuous	37
	Menidia menidia	Atlantic silverside		35	0.940			0.890	☐	☐	Single flow	Y	Continuous	72
	Menidia menidia	Atlantic silverside			0.940				☐	☐	Single flow	Y	Continuous	241
	Menidia menidia	Atlantic silverside		46	0.500	0.432	48		☐	☐	Angled	Y		237
	Menidia menidia	Atlantic silverside		745	0.821	0.182	48		☐	☐	Angled	Y	Continuous	170
Summary for 'Family' = Atherinidae (37 detail records)														
Avg					0.667	0.221		0.781						
Min					0.034	0.000		0.348						
Max					1.000	0.916		0.960						
S.D.					0.278	0.285		0.230						
Balistidae	Monacanthus hispidus	Planehead filefish		25	0.840			0.600	☐	☐	Single flow	N	2-hour	40
Summary for 'Family' = Balistidae (1 detail record)														
Avg					0.840			0.600						
Min					0.840			0.600						
Max					0.840			0.600						
S.D.														

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Batrachoididae	Opsanus tau	Oyster toadfish		149	0.930			0.866	☐	☐	Single flow	N	2-hour	40
	Opsanus tau	Oyster toadfish		186	0.940				☐	☐	Single flow	N	2-hour	184
	Opsanus tau	Oyster toadfish		1031				0.870	☐	☐	Single flow	Y	1-hour	167
	Opsanus tau	Oyster toadfish		34	1.000			1.000	☐	☐	Single flow	Y	Continuous	70
	Opsanus tau	Oyster toadfish		98	0.990			0.990	☐	☐	Single flow	Y	Continuous	74
	Opsanus tau	Oyster toadfish		14	1.000			1.000	☐	☐	Single flow	Y	Continuous	73
	Opsanus tau	Oyster toadfish		22	1.000			1.000	☐	☐	Single flow	Y	Continuous	72
	Opsanus tau	Oyster toadfish		24	0.960			0.960	☐	☐	Single flow	Y	Continuous	71
	Porichthys notatus	Plainfin midshipman	45-290 mm	64	0.950	0.950	96		✔	☐	Single flow	N	3-hour	242
	Porichthys porosissimus	Atlantic midshipman		12		0.833	120		☐	☐	Single flow	N	Continuous	250
	Porichthys porosissimus	Atlantic midshipman		18	0.944				☐	☐	Single flow	N	Continuous	250
	Porichthys porosissimus	Atlantic midshipman		19		0.526	120		☐	☐	Single flow	N	Continuous	250
	Porichthys porosissimus	Atlantic midshipman		26	0.885				☐	☐	Single flow	N	Continuous	250
	Porichthys porosissimus	Atlantic midshipman		13	0.462				☐	☐	Single flow	N	Intermittant	250
	Porichthys porosissimus	Atlantic midshipman		32	0.781				☐	☐	Single flow	N	Intermittant	250

Summary for 'Family' = Batrachoididae (15 detail records)

	Si	Se	Si(dd)
Avg	0.904	0.770	0.955
Min	0.462	0.526	0.866
Max	1.000	0.950	1.000
S.D.	0.152	0.219	0.061

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Blenniidae	Chasmodes bosquianus	Striped blenny		23				1.000	☐	☐	Single flow	Y	1-hour	167
	Hypsoblennius hentz	Feather blenny		111				0.990	☐	☐	Single flow	Y	1-hour	167

Summary for 'Family' = Blenniidae (2 detail records)

	Si(dd)
Avg	0.995
Min	0.990
Max	1.000
S.D.	0.007

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Callianassidae	Upogebia affinis	Coastal mud shrimp	Zoea		0.913	0.768	48		☐	☐	Dual flow	Y	Continuous	230
	Upogebia affinis	Coastal mud shrimp	Megalop		1.000	0.977	48		☐	☐	Dual flow	Y	Continuous	230
Summary for 'Family' = Callianassidae (2 detail records)														
Avg					0.956	0.873								
Min					0.913	0.768								
Max					1.000	0.977								
S.D.					0.062	0.148								
Cancridae	Cancer irroratus	Rock crab		17	0.940			0.765	☐	☐	Single flow	N	2-hour	40
	Cancer irroratus	Rock crab		12	0.580	0.580	72		☐	☐	Single flow	Y	2-hour	229
	Cancer irroratus	Rock crab		72	1.000	0.910	72		☐	☐	Single flow	Y	3-hour	225
	Cancer irroratus	Rock crab		246	0.870	0.829	72		☐	☐	Single flow	Y	3-hour	61
	Cancer irroratus	Rock crab		12	0.920	0.920	72		☐	☐	Single flow	Y	6-hour	62
	Cancer spp.	Cancer crabs	15-114 mm	23	0.830	0.700	96		☑	☐	Single flow	N	1-hour	242
	Cancer spp.	Cancer crabs	15-114 mm	19	0.530	0.470	96		☑	☐	Single flow	N	3-hour	242
	Cancer spp.	Cancer crabs	15-114 mm	51	0.820	0.740	96		☑	☐	Single flow	N	Continuous	242
Summary for 'Family' = Cancridae (8 detail records)														
Avg					0.811	0.736		0.765						
Min					0.530	0.470		0.765						
Max					1.000	0.920		0.765						
S.D.					0.169	0.168								

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Carangidae	Caranx hippos	Crevalle jack		18	0.220			0.000	☐	☐	Single flow	N	2-hour	40
	Caranx hippos	Crevalle jack		54	0.722				☐	☐	Single flow	N	Continuous	250
	Caranx hippos	Crevalle jack		50	0.260				☐	☐	Single flow	N	Continuous	250
	Caranx hippos	Crevalle jack		20		0.700	120		☐	☐	Single flow	N	Continuous	250
	Caranx hippos	Crevalle jack		48	0.229				☐	☐	Single flow	N	Intermittant	250
	Caranx hippos	Crevalle jack		32	0.156				☐	☐	Single flow	N	Intermittant	250
	Caranx hippos	Crevalle jack			0.857				☐	☐	Single flow	Y	Continuous	241
	Chloroscombrus chrysurus	Atlantic bumper		475	0.027				☐	☐	Single flow	N	Continuous	250
	Chloroscombrus chrysurus	Atlantic bumper		13	0.308				☐	☐	Single flow	N	Continuous	250
	Chloroscombrus chrysurus	Atlantic bumper		13	0.077				☐	☐	Single flow	N	Intermittant	250
	Chloroscombrus chrysurus	Atlantic bumper		36	0.000				☐	☐	Single flow	N	Intermittant	250
	Hemicaranx amblyrhynchus	Bluntnose jack		59	0.322				☐	☐	Single flow	N	Continuous	250
	Hemicaranx amblyrhynchus	Bluntnose jack		51	0.373				☐	☐	Single flow	N	Continuous	250
	Hemicaranx amblyrhynchus	Bluntnose jack		14		0.429	120		☐	☐	Single flow	N	Continuous	250
	Hemicaranx amblyrhynchus	Bluntnose jack		14		0.500	120		☐	☐	Single flow	N	Continuous	250
	Hemicaranx amblyrhynchus	Bluntnose jack		24	0.292				☐	☐	Single flow	N	Intermittant	250
	Hemicaranx amblyrhynchus	Bluntnose jack		27	0.370				☐	☐	Single flow	N	Intermittant	250
	Selene setapinnis	Atlantic moonfish		11	0.182				☐	☐	Single flow	N	Continuous	250
	Selene vomer	Lookdown		47	0.570			0.128	☐	☐	Single flow	N	2-hour	40
	Selene vomer	Lookdown		11	0.364				☐	☐	Single flow	N	Continuous	250
	Selene vomer	Lookdown		18	0.167				☐	☐	Single flow	N	Intermittant	250

Summary for 'Family' = Carangidae (21 detail records)

	Si	Se	Si(dd)
Avg	0.305	0.543	0.064
Min	0.000	0.429	0.000
Max	0.857	0.700	0.128
S.D.	0.224	0.141	0.091

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Catostomidae	Catostomidae	Sucker family	Juvenile	34	0.735	0.645			☐	☐		Y		178
	Catostomidae	Sucker family	Postlarvae	249	0.414	0.358			☐	☐		Y		178
	Catostomidae	Sucker family	Prolarvae	2023	0.538	0.436			☐	☐		Y		178
	Catostomus commersoni	White sucker		52	0.540				☐	☐	Single flow	Y	8-hour	238
	Catostomus commersoni	White sucker		11	1.000	1.000	24		☐	☐	Single flow	Y	Continuous	251
	Moxostoma macrolepidotu	Shorthead redhorse		20		0.900	96		☐	☐	Single flow	Y	8.5-hour	222

Summary for 'Family' = Catostomidae (6 detail records)

	Si	Se
Avg	0.645	0.668
Min	0.414	0.358
Max	1.000	1.000
S.D.	0.229	0.280

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Centrarchidae	Centrarchidae	Sunfish family	YOY	52		0.555	102		☐	☐	Single flow	Y	Continuous	197
	Centrarchidae	Sunfish family		143	0.993	0.937	96		☐	☐	Single flow	Y	Continuous	240
	Centrarchidae	Sunfish family		52	0.940	0.650	96		☐	☐	Single flow	Y	Continuous	198
	Centrarchidae	Sunfish family		10	1.000	1.000	96		☐	☐	Dual flow	Y	Continuous	206
	Ambloplites rupestris	Rock bass		13				0.615	☐	☐	Single flow	N	Continuous	175
	Ambloplites rupestris	Rock bass		78	0.580				☐	☐	Single flow	Y	8-hour	238
	Ambloplites rupestris	Rock bass		19	0.895	0.895	24		☐	☐	Single flow	Y	Continuous	251
	Ambloplites rupestris	Rock bass		180	0.989	0.989	24		☐	☐	Single flow	Y	Continuous	251
	Ambloplites rupestris	Rock bass		56	1.000	0.946	96		☐	☐	Single flow	Y	Continuous	240
	Ambloplites rupestris	Rock bass	Adult	25	1.000	0.680	24		☐	☐	Dual flow	N	2-hour	227
	Ambloplites rupestris	Rock bass	Juvenile	112	1.000				☐	☐	Dual flow	N	2-hour	227
	Ambloplites rupestris	Rock bass	Juvenile	29	1.000				☐	☐	Dual flow	N	Continuous	227
	Ambloplites rupestris	Rock bass		157	1.000	1.000	24		☐	☐	Dual flow	Y	Continuous	252
	Ambloplites rupestris	Rock bass		24	0.917	0.917	24		☐	☐	Dual flow	Y	Continuous	252
	Ambloplites rupestris	Rock bass		300	0.997	0.993	24		☐	☐	Dual flow	Y	Continuous	252
	Enneacanthus gloriosus	Bluespotted sunfish			1.000				☐	☐	Single flow	Y	Continuous	241
	Lepomis sp.	Common sunfishes, Eared sunfish	Juvenile	32	0.938	0.554			☐	☐		Y		178
	Lepomis sp.	Common sunfishes, Eared sunfish	Postlarvae	225	0.044	0.010			☐	☐		Y		178
	Lepomis gibbosus	Pumpkinseed	Adult	10	1.000				☐	☐	Single flow	N	2-hour	212
	Lepomis gibbosus	Pumpkinseed	Adult	13	1.000				☐	☐	Single flow	N	2-hour	212
	Lepomis gibbosus	Pumpkinseed	Adult	11	0.910				☐	☐	Single flow	N	2-hour	212
	Lepomis gibbosus	Pumpkinseed	Adult	18	0.830				☐	☐	Single flow	N	4-hour	212
	Lepomis gibbosus	Pumpkinseed	Adult	16	0.880				☐	☐	Single flow	N	Continuous	212
	Lepomis gibbosus	Pumpkinseed		15		0.866	96		☐	☐	Single flow	Y	Continuous	233
	Lepomis gibbosus	Pumpkinseed		77	0.766	0.727	96		☐	☐	Single flow	Y	Continuous	248
	Lepomis gibbosus	Pumpkinseed		17		0.873	96		☐	☐	Single flow	Y	Continuous	232
	Lepomis gibbosus	Pumpkinseed			0.995				☐	☐	Single flow	Y	Continuous	241
	Lepomis gibbosus	Pumpkinseed		158	0.994	0.899	96		☐	☐	Dual flow	Y	Continuous	206
	Lepomis gibbosus	Pumpkinseed		14	1.000	1.000	24		☐	☐	Dual flow	Y	Continuous	252
	Lepomis macrochirus	Bluegill		159		0.790	96		☐	☐	Single flow	Y	8.5-hour	222

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Centrarchidae	Lepomis macrochirus	Bluegill		12	0.500				☐	☐	Single flow	Y	8-hour	238
	Lepomis macrochirus	Bluegill		52	0.846	0.827	96		☐	☐	Single flow	Y	Continuous	248
	Lepomis macrochirus	Bluegill		130		0.953	96		☐	☐	Single flow	Y	Continuous	233
	Lepomis macrochirus	Bluegill			1.000				☐	☐	Single flow	Y	Continuous	241
	Lepomis macrochirus	Bluegill		28	1.000			1.000	☐	☐	Single flow	Y	Continuous	73
	Lepomis macrochirus	Bluegill	Juvenile	20	1.000	1.000	24		☐	☐	Dual flow	N	2-hour	227
	Lepomis macrochirus	Bluegill		84	0.988	0.988	96		☐	☐	Dual flow	Y	Continuous	206
	Lepomis macrochirus	Bluegill		25	1.000	1.000	24		☐	☐	Dual flow	Y	Continuous	252
	Micropterus dolomieu	Smallmouth bass	PYS larvae	12	1.000	1.000	24		☐	☐	Dual flow	N	2-hour	227
	Micropterus dolomieu	Smallmouth bass	PYS larvae	14	0.000				☐	☐	Dual flow	N	2-hour	227
	Micropterus dolomieu	Smallmouth bass	Juvenile	74	0.027				☐	☐	Dual flow	N	2-hour	227
	Micropterus dolomieu	Smallmouth bass	Juvenile	10	1.000	1.000	24		☐	☐	Dual flow	N	2-hour	227
	Micropterus dolomieu	Smallmouth bass		18	0.944	0.944	24		☐	☐	Dual flow	Y	Continuous	252
	Micropterus salmoides	Largemouth bass	Juvenile	22	1.000				☐	☐	Dual flow	N	2-hour	227
	Micropterus salmoides	Largemouth bass	Juvenile	12	0.833				☐	☐	Dual flow	N	2-hour	227
	Micropterus salmoides	Largemouth bass	Juvenile	17	0.875				☐	☐	Dual flow	N	Continuous	227
	Pomoxis sp.	Crappies	Juvenile	32	0.938	0.554			☐	☐		Y		178
	Pomoxis sp.	Crappies	Postlarvae	186	0.048	0.025			☐	☐		Y		178
	Pomoxis nigromaculatus	Black crappie		18		0.390	96		☐	☐	Single flow	Y	8.5-hour	222
	Pomoxis nigromaculatus	Black crappie	Juvenile	264	0.216	0.002	84		☐	☑	Dual flow	N	2-hour	227
	Pomoxis nigromaculatus	Black crappie	Juvenile	117	0.265	0.000	84		☐	☑	Dual flow	N	2-hour	227
	Pomoxis nigromaculatus	Black crappie	Juvenile	53	0.868	0.187	84		☐	☑	Dual flow	N	Continuous	227
	Pomoxis nigromaculatus	Black crappie	Juvenile	103	0.748	0.014	84		☐	☑	Dual flow	N	Continuous	227

Summary for 'Family' = Centrarchidae (53 detail records)

	Si	Se	Si(dd)
Avg	0.821	0.711	0.808
Min	0.000	0.000	0.615
Max	1.000	1.000	1.000
S.D.	0.304	0.354	0.272

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Class Polychaeta	Class Polychaeta	Polychaete worms		88	0.930			0.693	☐	☐	Single flow	N	2-hour	40
Summary for 'Family' = Class Polychaeta (1 detail record)														
Avg					0.930			0.693						
Min					0.930			0.693						
Max					0.930			0.693						
S.D.														

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Clupeidae	Clupeidae	Herring family		46	1.000	0.000	96		☐	☐	Dual flow	Y	Continuous	206
	Clupeidae	Herring family	Eggs			0.810			☐	☐	Dual flow	Y	Continuous	230
	Clupeidae	Herring family	Larvae	278	0.015	0.005	96		☐	☐	Dual flow	Y	Continuous	230
	Alosa sp.	Alosa species	Adult	65	0.890	0.010	96		☐	☐	Single flow	Y	Continuous	198
	Alosa sp.	Alosa species		51	0.549	0.000	96		☐	☑	Single flow	Y	Continuous	110
	Alosa sp.	Alosa species	YOY	296	0.750	0.110	96		☐	☐	Single flow	Y	Continuous	198
	Alosa sp.	Alosa species	YOY	219	0.750	0.020	96		☐	☐	Single flow	Y	Continuous	198
	Alosa sp.	Alosa species	YOY	50	0.840	0.000	84		☐	☐	Single flow	Y	Continuous	199
	Alosa sp.	Alosa species	Yearling	63	0.940	0.020	96		☐	☐	Single flow	Y	Continuous	198
	Alosa sp.	Alosa species	Small	4273	0.988	0.481	96		☐	☐	Single flow	Y	Continuous	182
	Alosa sp.	Alosa species	Small	347	0.919	0.234	96		☐	☐	Single flow	Y	Continuous	182
	Alosa sp.	Alosa species		217	0.848	0.000	96		☐	☐	Single flow	Y	Continuous	182
	Alosa sp.	Alosa species		189	0.873	0.530	96		☐	☐	Single flow	Y	Continuous	182
	Alosa sp.	Alosa species		140		0.791	48		☐	☑	Single flow	Y	Continuous	75
	Alosa sp.	Alosa species		89	0.708	0.101	96		☐	☑	Single flow	Y	Continuous	110
	Alosa sp.	Alosa species		306		0.212	48		☐	☑	Single flow	Y	Continuous	75
	Alosa sp.	Alosa species		129	0.837	0.780	96		☐	☐	Single flow	Y	Continuous	182
	Alosa sp.	Alosa species		22	0.273	0.000	96		☐	☑	Single flow	Y	Intermittant	110
	Alosa sp.	Alosa species		28	0.143	0.000	96		☑	☑	Single flow	Y	Intermittant	110
	Alosa aestivalis	Blueback herring		55	0.160	0.000	96		☐	☐	Single flow	N	2-hour	215
	Alosa aestivalis	Blueback herring		2445	0.580				☐	☐	Single flow	N	2-hour	184
	Alosa aestivalis	Blueback herring	Yearling	35	0.060				☐	☐	Single flow	N	2-hour	12
	Alosa aestivalis	Blueback herring		911	0.560			0.207	☐	☐	Single flow	N	2-hour	40
	Alosa aestivalis	Blueback herring		40	0.130	0.000	96		☐	☐	Single flow	N	4-hour	215
	Alosa aestivalis	Blueback herring		2346	0.040	0.000	96		☐	☐	Single flow	N	9-hour	215
	Alosa aestivalis	Blueback herring		4903				0.470	☐	☐	Single flow	Y	1-hour	167
	Alosa aestivalis	Blueback herring	YOY	30	0.367	0.000	96		☐	☐	Single flow	Y	4-hour	208
	Alosa aestivalis	Blueback herring		27		0.040	24		☐	☐	Single flow	Y	Combined int	249
	Alosa aestivalis	Blueback herring	YOY	50	0.440	0.060	96		☐	☐	Single flow	Y	Continuous	202
	Alosa aestivalis	Blueback herring	YOY	84		0.000	102		☐	☐	Single flow	Y	Continuous	197

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Clupeidae	Alosa aestivalis	Blueback herring	YOY	127	0.795	0.000	96		☐	☐	Single flow	Y	Continuous	208
	Alosa aestivalis	Blueback herring	YOY	156		0.050	102		☑	☐	Single flow	Y	Continuous	197
	Alosa aestivalis	Blueback herring	YOY	158		0.000	102		☑	☐	Single flow	Y	Continuous	197
	Alosa aestivalis	Blueback herring	YOY	158	0.710	0.000	96		☐	☐	Single flow	Y	Continuous	198
	Alosa aestivalis	Blueback herring	Juvenile	234	0.770	0.001	96		☐	☑	Single flow	Y	Continuous	236
	Alosa aestivalis	Blueback herring	YOY	244	0.770	0.110	96		☐	☐	Single flow	Y	Continuous	198
	Alosa aestivalis	Blueback herring	YOY	479	0.930	0.233	84		☐	☑	Single flow	Y	Continuous	203
	Alosa aestivalis	Blueback herring	YOY	244		0.240	102		☑	☐	Single flow	Y	Continuous	197
	Alosa aestivalis	Blueback herring		1473	0.940			0.910	☐	☐	Single flow	Y	Continuous	70
	Alosa aestivalis	Blueback herring		20	0.900			0.850	☐	☐	Single flow	Y	Continuous	72
	Alosa aestivalis	Blueback herring		155	0.980			0.940	☐	☐	Single flow	Y	Continuous	71
	Alosa aestivalis	Blueback herring		1103	0.980			0.940	☐	☐	Single flow	Y	Continuous	73
	Alosa aestivalis	Blueback herring			0.904				☐	☐	Single flow	Y	Continuous	241
	Alosa aestivalis	Blueback herring		1566	0.970			0.950	☐	☐	Single flow	Y	Continuous	74
	Alosa aestivalis	Blueback herring		2880	0.023	0.000	96		☐	☐	Single flow	Y	Continuous	248
	Alosa aestivalis	Blueback herring		3426	0.233	0.000	96		☐	☐	Single flow	Y	Continuous	248
	Alosa aestivalis	Blueback herring		288		0.579	96		☐	☐	Single flow	Y	Continuous	233
	Alosa aestivalis	Blueback herring		8973	0.753	0.071	96		☐	☐	Dual flow	Y	Continuous	206
	Alosa aestivalis	Blueback herring		10625	0.240	0.001	96		☐	☐	Dual flow	Y	Continuous	248
	Alosa aestivalis	Blueback herring		17719	0.038	0.000	96		☐	☐	Dual flow	Y	Continuous	248
	Alosa pseudoharengus	Alewife		3090	0.467	0.008	24	0.054	☐	☐	Single flow	N		180
	Alosa pseudoharengus	Alewife		107	0.300	0.000	96		☐	☐	Single flow	N	2-hour	215
	Alosa pseudoharengus	Alewife		162	0.160	0.000	96		☐	☐	Single flow	N	2-hour	12
	Alosa pseudoharengus	Alewife		329	0.620				☐	☐	Single flow	N	2-hour	184
	Alosa pseudoharengus	Alewife		256	0.020	0.000	96		☐	☐	Single flow	N	4-hour	215
	Alosa pseudoharengus	Alewife	Adult	18	0.440				☐	☐	Single flow	N	4-hour	212
	Alosa pseudoharengus	Alewife		54	0.000	0.000	96		☐	☐	Single flow	N	4-hour	12
	Alosa pseudoharengus	Alewife	60-164 mm	12	0.000	0.000	56		☐	☐	Single flow	N	8-hour	246
	Alosa pseudoharengus	Alewife		169	0.060	0.000	96		☐	☐	Single flow	N	9-hour	12
	Alosa pseudoharengus	Alewife		85	0.060	0.000	96		☐	☐	Single flow	N	9-hour	215

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Clupeidae	Alosa pseudoharengus	Alewife		35				0.486	☐	☐	Single flow	N	Continuous	175
	Alosa pseudoharengus	Alewife		91	0.500	0.000	96		☐	☐	Single flow	N	Continuous	215
	Alosa pseudoharengus	Alewife	Adult	20	0.850				☐	☐	Single flow	N	Continuous	212
	Alosa pseudoharengus	Alewife		1033				0.610	☐	☐	Single flow	Y	1-hour	167
	Alosa pseudoharengus	Alewife		19	0.470	0.000	72		☐	☐	Single flow	Y	3-hour	225
	Alosa pseudoharengus	Alewife		44	0.727	0.000	96		☐	☐	Single flow	Y	6-hour	208
	Alosa pseudoharengus	Alewife		83	0.000				☐	☐	Single flow	Y	8-hour	238
	Alosa pseudoharengus	Alewife		15		0.000	24		☐	☐	Single flow	Y	Combined int	249
	Alosa pseudoharengus	Alewife		15	0.930			0.930	☐	☐	Single flow	Y	Continuous	71
	Alosa pseudoharengus	Alewife		18	0.940			0.830	☐	☐	Single flow	Y	Continuous	72
	Alosa pseudoharengus	Alewife	YOY	32		0.120	102		☐	☐	Single flow	Y	Continuous	197
	Alosa pseudoharengus	Alewife		1144	0.981	0.154	96		☐	☐	Single flow	Y	Continuous	240
	Alosa pseudoharengus	Alewife	YOY	89		0.000	102		☐	☐	Single flow	Y	Continuous	197
	Alosa pseudoharengus	Alewife	YOY	33	0.730	0.030	96		☐	☐	Single flow	Y	Continuous	198
	Alosa pseudoharengus	Alewife		637	0.016	0.001	96		☐	☐	Single flow	Y	Continuous	248
	Alosa pseudoharengus	Alewife		15		0.185	96		☐	☐	Single flow	Y	Continuous	233
	Alosa pseudoharengus	Alewife		905	0.977	0.190	96		☐	☐	Single flow	Y	Continuous	240
	Alosa pseudoharengus	Alewife	Adult	17		0.000	102		☐	☐	Single flow	Y	Continuous	197
	Alosa pseudoharengus	Alewife	YOY	32	0.720	0.090	96		☐	☐	Single flow	Y	Continuous	198
	Alosa pseudoharengus	Alewife	Yearling	20		0.000	102		☐	☐	Single flow	Y	Continuous	197
	Alosa pseudoharengus	Alewife	Yearling	20	0.850	0.000	96		☐	☐	Single flow	Y	Continuous	198
	Alosa pseudoharengus	Alewife	YOY	13	0.690				☐	☐	Single flow	Y	Continuous	199
	Alosa pseudoharengus	Alewife	YOY	33		0.110	102		☑	☐	Single flow	Y	Continuous	197
	Alosa pseudoharengus	Alewife		30	0.000	0.000	24		☐	☐	Single flow	Y	Continuous	251
	Alosa pseudoharengus	Alewife		85	0.960			0.960	☐	☐	Single flow	Y	Continuous	73
	Alosa pseudoharengus	Alewife		99	0.364	0.000	96		☐	☐	Single flow	Y	Continuous	248
	Alosa pseudoharengus	Alewife			0.907				☐	☐	Single flow	Y	Continuous	241
	Alosa pseudoharengus	Alewife	YOY	132		0.020	102		☐	☐	Single flow	Y	Continuous	197
	Alosa pseudoharengus	Alewife		1068	0.995	0.445	96	0.646	☐	☐	Single flow	Y	Continuous	181
	Alosa pseudoharengus	Alewife		41	0.756	0.000	96		☐	☐	Single flow	Y	Continuous	208

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Clupeidae	Alosa pseudoharengus	Alewife		339	0.631	0.009	96		☐	☐	Single flow	Y	Continuous	240
	Alosa pseudoharengus	Alewife		171	0.439	0.029	96		☐	☐	Single flow	Y	Continuous	240
	Alosa pseudoharengus	Alewife		183	0.989	0.224	24		☐	☐	Single flow	Y	Continuous	251
	Alosa pseudoharengus	Alewife		184	1.000	0.000	96		☐	☐	Single flow	Y	Continuous	240
	Alosa pseudoharengus	Alewife		187	0.960			0.890	☐	☐	Single flow	Y	Continuous	74
	Alosa pseudoharengus	Alewife		202	0.990	0.010	96		☐	☐	Single flow	Y	Continuous	240
	Alosa pseudoharengus	Alewife		210	0.960			0.930	☐	☐	Single flow	Y	Continuous	70
	Alosa pseudoharengus	Alewife		26	0.962	0.000	96	0.000	☐	☐	Single flow	Y	Continuous	181
	Alosa pseudoharengus	Alewife	YOY	102	0.690	0.062	84		☐	☑	Single flow	Y	Continuous	203
	Alosa pseudoharengus	Alewife		25		0.126	96		☐	☐	Single flow	Y	Continuous	232
	Alosa pseudoharengus	Alewife	Juvenile	13	0.390	0.080	96		☐	☐	Dual flow	N	2-hour	227
	Alosa pseudoharengus	Alewife	Juvenile	78	1.000	0.039	24		☐	☐	Dual flow	N	2-hour	227
	Alosa pseudoharengus	Alewife	PYS larvae	25	0.400	0.120	96		☐	☐	Dual flow	N	2-hour	227
	Alosa pseudoharengus	Alewife	PYS larvae	50	0.980	0.000	24		☐	☐	Dual flow	N	2-hour	227
	Alosa pseudoharengus	Alewife	Adult	14	0.929	0.000	24		☐	☐	Dual flow	N	2-hour	227
	Alosa pseudoharengus	Alewife		12	0.250	0.000	24		☐	☐	Dual flow	Y	Continuous	252
	Alosa pseudoharengus	Alewife		2402	0.065	0.003	96		☐	☐	Dual flow	Y	Continuous	248
	Alosa pseudoharengus	Alewife		1839	0.662	0.060	96		☐	☐	Dual flow	Y	Continuous	206
	Alosa pseudoharengus	Alewife		260	0.835	0.300	24		☐	☐	Dual flow	Y	Continuous	252
	Alosa pseudoharengus	Alewife		118	0.576	0.000	96		☐	☐	Dual flow	Y	Continuous	248
	Alosa pseudoharengus	Alewife		3850	0.447	0.000	24	0.009	☐	☐	Angled	N		180
	Alosa sapidissima	American shad		66	0.364	0.000	96		☐	☐	Single flow	Y	Continuous	248
	Alosa sapidissima	American shad	Juvenile	23	0.870	0.000	96		☐	☑	Single flow	Y	Continuous	236
	Alosa sapidissima	American shad		193	0.970			0.900	☐	☐	Single flow	Y	Continuous	70
	Alosa sapidissima	American shad		546	0.026	0.002	96		☐	☐	Single flow	Y	Continuous	248
	Alosa sapidissima	American shad	YOY	28		0.000	102		☑	☐	Single flow	Y	Continuous	197
	Alosa sapidissima	American shad		17	0.940			0.940	☐	☐	Single flow	Y	Continuous	71
	Alosa sapidissima	American shad		14		0.464	96		☐	☐	Single flow	Y	Continuous	233
	Alosa sapidissima	American shad		10	1.000			0.800	☐	☐	Single flow	Y	Continuous	72
	Alosa sapidissima	American shad			0.935				☐	☐	Single flow	Y	Continuous	241

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Clupeidae	Alosa sapidissima	American shad		38	0.950			0.890	☐	☐	Single flow	Y	Continuous	74
	Alosa sapidissima	American shad		70	0.414	0.000	96		☐	☐	Dual flow	Y	Continuous	248
	Alosa sapidissima	American shad		2460	0.080	0.005	96		☐	☐	Dual flow	Y	Continuous	248
	Alosa sapidissima	American shad		575	0.689	0.068	96		☐	☐	Dual flow	Y	Continuous	206
	Brevoortia patronus	Gulf menhaden		17		0.176	120		☐	☐	Single flow	N	Continuous	250
	Brevoortia patronus	Gulf menhaden		3627	0.281				☐	☐	Single flow	N	Continuous	250
	Brevoortia patronus	Gulf menhaden		659	0.347				☐	☐	Single flow	N	Continuous	250
	Brevoortia patronus	Gulf menhaden		116		0.095	120		☐	☐	Single flow	N	Continuous	250
	Brevoortia patronus	Gulf menhaden		3457	0.221				☐	☐	Single flow	N	Intermittant	250
	Brevoortia patronus	Gulf menhaden		645	0.146				☐	☐	Single flow	N	Intermittant	250
	Brevoortia tyrannus	Atlantic menhaden		474		0.054	48		☑	☐	Single flow	N	1-hour	166
	Brevoortia tyrannus	Atlantic menhaden		78	0.654	0.254	96		☐	☐	Single flow	N	1-hour	228
	Brevoortia tyrannus	Atlantic menhaden		78	0.654	0.166	96		☐	☐	Single flow	N	1-hour	228
	Brevoortia tyrannus	Atlantic menhaden		1493		0.016	48		☑	☐	Single flow	N	1-hour	166
	Brevoortia tyrannus	Atlantic menhaden		241		0.362	48		☑	☐	Single flow	N	1-hour	166
	Brevoortia tyrannus	Atlantic menhaden		13	0.000	0.000	96		☐	☐	Single flow	N	1-hour	228
	Brevoortia tyrannus	Atlantic menhaden		29	0.897	0.090	48	0.690	☐	☑	Single flow	N	2-hour	40
	Brevoortia tyrannus	Atlantic menhaden		31	0.290	0.000	96		☐	☐	Single flow	N	2-hour	228
	Brevoortia tyrannus	Atlantic menhaden		3165	0.720	0.036	48		☐	☑	Single flow	N	2-hour	184
	Brevoortia tyrannus	Atlantic menhaden		777	0.690			0.069	☐	☐	Single flow	N	2-hour	40
	Brevoortia tyrannus	Atlantic menhaden		1249	0.770				☐	☐	Single flow	N	2-hour	184
	Brevoortia tyrannus	Atlantic menhaden		116	0.095	0.000	96		☐	☐	Single flow	N	4-hour	228
	Brevoortia tyrannus	Atlantic menhaden		10	0.100	0.000	96		☐	☐	Single flow	N	4-hour	228
	Brevoortia tyrannus	Atlantic menhaden		48	0.000	0.000	96		☐	☐	Single flow	N	8-hour	228
	Brevoortia tyrannus	Atlantic menhaden		610		0.000	48		☑	☐	Single flow	N	8-hour	166
	Brevoortia tyrannus	Atlantic menhaden		1115		0.000	48		☑	☐	Single flow	N	8-hour	166
	Brevoortia tyrannus	Atlantic menhaden		162		0.202	48		☑	☐	Single flow	N	8-hour	166
	Brevoortia tyrannus	Atlantic menhaden		55	0.910				☐	☐	Single flow	N	Continuous	184
	Brevoortia tyrannus	Atlantic menhaden		62	0.000	0.000	96		☐	☑	Single flow	N	Continuous	228
	Brevoortia tyrannus	Atlantic menhaden		5631				0.520	☐	☐	Single flow	Y	1-hour	167

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Clupeidae	Brevoortia tyrannus	Atlantic menhaden		915	0.140	0.030	72		☐	☐	Single flow	Y	2-hour	229
	Brevoortia tyrannus	Atlantic menhaden		16	0.500	0.000	72		☐	☐	Single flow	Y	3-hour	225
	Brevoortia tyrannus	Atlantic menhaden		54	0.000	0.000	72		☐	☐	Single flow	Y	3-hour	61
	Brevoortia tyrannus	Atlantic menhaden		143		0.060	24		☐	☐	Single flow	Y	Combined int	249
	Brevoortia tyrannus	Atlantic menhaden		1876		0.030	24		☐	☐	Single flow	Y	Combined int	249
	Brevoortia tyrannus	Atlantic menhaden		143		0.000	96		☐	☐	Single flow	Y	Combined int	249
	Brevoortia tyrannus	Atlantic menhaden			0.949				☐	☐	Single flow	Y	Continuous	241
	Brevoortia tyrannus	Atlantic menhaden		10		0.000	96		☐	☐	Single flow	Y	Continuous	254
	Brevoortia tyrannus	Atlantic menhaden		51	0.780			0.650	☐	☐	Single flow	Y	Continuous	71
	Brevoortia tyrannus	Atlantic menhaden		26	1.000			0.810	☐	☐	Single flow	Y	Continuous	72
	Brevoortia tyrannus	Atlantic menhaden		940	0.840			0.720	☐	☐	Single flow	Y	Continuous	74
	Brevoortia tyrannus	Atlantic menhaden		32	0.937	0.156	96		☐	☐	Single flow	Y	Continuous	115
	Brevoortia tyrannus	Atlantic menhaden		35	0.940				☐	☐	Single flow	Y	Continuous	255
	Brevoortia tyrannus	Atlantic menhaden		307	0.790			0.740	☐	☐	Single flow	Y	Continuous	73
	Brevoortia tyrannus	Atlantic menhaden		10		0.100	96		☐	☐	Single flow	Y	Continuous	254
	Brevoortia tyrannus	Atlantic menhaden		39	0.154	0.026	96		☐	☐	Dual flow	Y	Continuous	248
	Brevoortia tyrannus	Atlantic menhaden		126	0.381	0.032	48		☐	☐	Angled	Y	Continuous	170
	Clupea harengus	Atlantic herring		41	0.410			0.098	☐	☐	Single flow	N	2-hour	40
	Clupea harengus	Atlantic herring		49	0.000	0.000	72		☐	☐	Single flow	Y	3-hour	225
	Clupea harengus	Atlantic herring		61	0.970			0.970	☐	☐	Single flow	Y	Continuous	71
	Clupea harengus	Atlantic herring		17	0.940			0.880	☐	☐	Single flow	Y	Continuous	74
	Clupea harengus	Atlantic herring		35	0.970			0.970	☐	☐	Single flow	Y	Continuous	73
	Clupea harengus pallasi	Pacific herring	80-125 mm	10	0.600	0.000	96		☐	☐	Single flow	N	1-hour	242
	Clupea harengus pallasi	Pacific herring	65-115 mm	94	0.140	0.000	96		☐	☐	Single flow	N	1-hour	242
	Clupea harengus pallasi	Pacific herring	65-115 mm	163	0.040	0.000	96		☐	☐	Single flow	N	3-hour	242
	Clupea harengus pallasi	Pacific herring	80-125 mm	24	0.130	0.000	96		☐	☐	Single flow	N	3-hour	242
	Clupea harengus pallasi	Pacific herring	65-115 mm	19	0.420	0.000	96		☐	☐	Single flow	N	Continuous	242
	Dorosoma cepedianum	Gizzard shad	Juvenile	25	0.320	0.023			☐	☐		Y		178
	Dorosoma cepedianum	Gizzard shad	Postlarvae	2922	0.008	0.001			☐	☐		Y		178
	Dorosoma cepedianum	Gizzard shad		51	0.627	0.000	24	0.118	☐	☐	Single flow	N		180

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Clupeidae	Dorosoma cepedianum	Gizzard shad		390		0.019	48		☑	☐	Single flow	N	1-hour	166
	Dorosoma cepedianum	Gizzard shad		72		0.000	48		☑	☐	Single flow	N	1-hour	166
	Dorosoma cepedianum	Gizzard shad	Yearling	13	0.540				☐	☐	Single flow	N	2-hour	212
	Dorosoma cepedianum	Gizzard shad		224	0.737	0.076	24		☐	☐	Single flow	N	2-hour	245
	Dorosoma cepedianum	Gizzard shad		413	0.685	0.014	24		☐	☐	Single flow	N	4-hour	245
	Dorosoma cepedianum	Gizzard shad		18	0.110	0.000	96		☐	☐	Single flow	N	4-hour	215
	Dorosoma cepedianum	Gizzard shad		173		0.000	48		☑	☐	Single flow	N	8-hour	166
	Dorosoma cepedianum	Gizzard shad		190	0.058	0.000	24		☐	☐	Single flow	N	8-hour	245
	Dorosoma cepedianum	Gizzard shad		10	1.000				☐	☐	Single flow	N	Continuous	245
	Dorosoma cepedianum	Gizzard shad	Adult	30	0.670				☐	☐	Single flow	N	Continuous	212
	Dorosoma cepedianum	Gizzard shad	YOY	11	0.910				☐	☐	Single flow	N	Continuous	212
	Dorosoma cepedianum	Gizzard shad		275	0.862	0.196	24		☐	☐	Single flow	N	Continuous	245
	Dorosoma cepedianum	Gizzard shad		14	0.429				☐	☐	Single flow	N	Continuous	250
	Dorosoma cepedianum	Gizzard shad		16	0.560	0.060	96		☐	☐	Single flow	N	Continuous	215
	Dorosoma cepedianum	Gizzard shad		87				0.828	☐	☐	Single flow	N	Continuous	175
	Dorosoma cepedianum	Gizzard shad		10	0.300				☐	☐	Single flow	N	Intermittant	250
	Dorosoma cepedianum	Gizzard shad		12	0.250				☐	☐	Single flow	N	Intermittant	250
	Dorosoma cepedianum	Gizzard shad		2245				0.730	☐	☐	Single flow	Y	1-hour	167
	Dorosoma cepedianum	Gizzard shad	YOY	18	0.890				☐	☐	Single flow	Y	2-hour	199
	Dorosoma cepedianum	Gizzard shad	YOY	73	0.930				☐	☐	Single flow	Y	2-hour	199
	Dorosoma cepedianum	Gizzard shad		2175		0.000	96		☐	☐	Single flow	Y	8.5-hour	222
	Dorosoma cepedianum	Gizzard shad		17	0.000				☐	☐	Single flow	Y	8-hour	238
	Dorosoma cepedianum	Gizzard shad		29		0.070	24		☐	☐	Single flow	Y	Combined int	249
	Dorosoma cepedianum	Gizzard shad			0.931				☐	☐	Single flow	Y	Continuous	241
	Dorosoma cepedianum	Gizzard shad	YOY	75	0.880				☐	☐	Single flow	Y	Continuous	199
	Dorosoma cepedianum	Gizzard shad	Yearling	32		0.310	102		☑	☐	Single flow	Y	Continuous	197
	Dorosoma cepedianum	Gizzard shad		23	0.130	0.000	96		☐	☐	Single flow	Y	Continuous	248
	Dorosoma cepedianum	Gizzard shad	Adult	10		0.600	102		☑	☐	Single flow	Y	Continuous	197
	Dorosoma cepedianum	Gizzard shad	YOY	14	1.000				☐	☐	Single flow	Y	Continuous	199
	Dorosoma cepedianum	Gizzard shad	YOY	15		0.000	102		☐	☐	Single flow	Y	Continuous	197

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Clupeidae	Dorosoma cepedianum	Gizzard shad	YOY	41	0.930				☐	☐	Single flow	Y	Continuous	199
	Dorosoma cepedianum	Gizzard shad		695	0.996	0.653	96		☐	☐	Single flow	Y	Continuous	240
	Dorosoma cepedianum	Gizzard shad		18	1.000			0.440	☐	☐	Single flow	Y	Continuous	72
	Dorosoma cepedianum	Gizzard shad		108	1.000	0.537	96		☐	☐	Single flow	Y	Continuous	240
	Dorosoma cepedianum	Gizzard shad		78	0.974	0.000	96		☐	☑	Single flow	Y	Continuous	110
	Dorosoma cepedianum	Gizzard shad		899	0.990			0.810	☐	☐	Single flow	Y	Continuous	73
	Dorosoma cepedianum	Gizzard shad		216	0.667	0.054	96		☐	☐	Single flow	Y	Continuous	248
	Dorosoma cepedianum	Gizzard shad		93	0.990			0.510	☐	☐	Single flow	Y	Continuous	71
	Dorosoma cepedianum	Gizzard shad		65	1.000	0.969	24		☐	☐	Single flow	Y	Continuous	251
	Dorosoma cepedianum	Gizzard shad	YOY	65		0.515	102		☐	☐	Single flow	Y	Continuous	197
	Dorosoma cepedianum	Gizzard shad		24		0.116	96		☐	☐	Single flow	Y	Continuous	233
	Dorosoma cepedianum	Gizzard shad		55	0.836	0.491	96		☐	☐	Single flow	Y	Continuous	240
	Dorosoma cepedianum	Gizzard shad		149	0.960			0.770	☐	☐	Single flow	Y	Continuous	74
	Dorosoma cepedianum	Gizzard shad		420	0.980			0.900	☐	☐	Single flow	Y	Continuous	70
	Dorosoma cepedianum	Gizzard shad	Juvenile	315	0.149	0.051	24		☐	☐	Single flow	Y	Continuous	251
	Dorosoma cepedianum	Gizzard shad	PYS larvae	47	0.745	0.000	24		☐	☐	Dual flow	N	2-hour	227
	Dorosoma cepedianum	Gizzard shad	PYS larvae	12	1.000				☐	☐	Dual flow	N	2-hour	227
	Dorosoma cepedianum	Gizzard shad	Juvenile	502	0.964	0.474	24		☐	☐	Dual flow	N	2-hour	227
	Dorosoma cepedianum	Gizzard shad	Juvenile	44	0.818				☐	☐	Dual flow	N	2-hour	227
	Dorosoma cepedianum	Gizzard shad	Juvenile	10	0.900				☐	☐	Dual flow	N	2-hour	227
	Dorosoma cepedianum	Gizzard shad	Adult	23	1.000	0.783	24		☐	☐	Dual flow	N	2-hour	227
	Dorosoma cepedianum	Gizzard shad	PYS larvae	11	1.000				☐	☐	Dual flow	N	Continuous	227
	Dorosoma cepedianum	Gizzard shad		276	0.888	0.236	96		☐	☐	Dual flow	Y	Continuous	248
	Dorosoma cepedianum	Gizzard shad		40	0.925	0.700	96		☐	☐	Dual flow	Y	Continuous	206
	Dorosoma cepedianum	Gizzard shad		338	0.864	0.707	24		☐	☐	Dual flow	Y	Continuous	252
	Dorosoma cepedianum	Gizzard shad		470	0.202	0.121	96		☐	☐	Dual flow	Y	Continuous	248
	Dorosoma cepedianum	Gizzard shad	Adult	12	0.917	0.917	24		☐	☐	Dual flow	Y	Continuous	252
	Dorosoma cepedianum	Gizzard shad	Juvenile	211	0.948	0.649	24		☐	☐	Dual flow	Y	Continuous	252
	Dorosoma cepedianum	Gizzard shad	Juvenile	1927	0.972	0.947	24		☐	☐	Dual flow	Y	Continuous	252
	Dorosoma cepedianum	Gizzard shad	Juvenile	1477	0.997	0.986	24		☐	☐	Dual flow	Y	Continuous	252

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Clupeidae	Dorosoma cepedianum	Gizzard shad	Adult	93	0.968	0.925	24		☐	☐	Dual flow	Y	Continuous	252
	Dorosoma cepedianum	Gizzard shad		5833	0.060	0.000	96		☐	☐	Angled	N	2-hour	180
	Dorosoma cepedianum	Gizzard shad		327	0.030	0.000	96		☐	☐	Angled	N	4-hour	180
	Dorosoma cepedianum	Gizzard shad		4476	0.060	0.000	96		☐	☐	Angled	N	9-hour	180
	Dorosoma cepedianum	Gizzard shad		16	0.250	0.000	96		☐	☐	Angled	N	Continuous	180
	Dorosoma petenense	Threadfin shad		131	0.153				☐	☐	Single flow	N	Continuous	250
	Dorosoma petenense	Threadfin shad		15	0.333				☐	☐	Single flow	N	Continuous	250
	Dorosoma petenense	Threadfin shad		16	0.063				☐	☐	Single flow	N	Intermittant	250
	Dorosoma petenense	Threadfin shad		80	0.138				☐	☐	Single flow	N	Intermittant	250
	Dorosoma petenense	Threadfin shad			0.936				☐	☐	Single flow	Y	Continuous	241
	Harengula jaguana	Scaled sardine	Eggs			0.929			☐	☐	Dual flow	Y	Continuous	230
	Harengula jaguana	Scaled sardine	Larvae	15	0.000				☐	☐	Dual flow	Y	Continuous	230
	Opisthonema oglinum	Atlantic thread herring		25	0.480				☐	☐	Single flow	N	Continuous	250

Summary for 'Family' = Clupeidae (253 detail records)

	Si	Se	Si(dd)
Avg	0.597	0.134	0.667
Min	0.000	0.000	0.000
Max	1.000	0.986	0.970
S.D.	0.359	0.244	0.309

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Cottidae	Cottidae	Sculpin family	110-175 mm	18	1.000	1.000	96		☑	☐	Single flow	N	1-hour	242
	Cottidae	Sculpin family	73-162 mm	17	1.000	0.810	96		☑	☐	Single flow	N	1-hour	242
	Cottidae	Sculpin family	73-162 mm	20	0.750	0.530	96		☑	☐	Single flow	N	3-hour	242
	Cottidae	Sculpin family	110-175 mm	29	1.000	0.970	96		☑	☐	Single flow	N	3-hour	242
	Cottidae	Sculpin family	110-175 mm	24	1.000	0.970	96		☑	☐	Single flow	N	Continuous	242
	Cottidae	Sculpin family	73-162 mm	17	1.000	0.940	96		☑	☐	Single flow	N	Continuous	242
	Cottidae	Sculpin family		196	0.852	0.679	96		☐	☐	Single flow	Y	Continuous	240
	Cottus sp.	Freshwater sculpins		66	0.985				☐	☐	Single flow	Y	Continuous	234
	Cottus bairdi	Mottled sculpin		162	0.920	0.869	24	0.870	☐	☐	Single flow	N		180
	Cottus bairdi	Mottled sculpin		117	0.850				☐	☐	Single flow	Y	8-hour	238
	Cottus bairdi	Mottled sculpin		34	1.000	1.000	96		☐	☐	Single flow	Y	Continuous	240
	Cottus bairdi	Mottled sculpin		28	0.821	0.821	24	0.821	☐	☐	Angled	N		180
	Myoxocephalus aenaeus	Grubby	45-125 mm	14	0.571	0.429	56		☐	☐	Single flow	N	8-hour	246
	Myoxocephalus aenaeus	Grubby		49	0.940	0.780	72		☐	☐	Single flow	Y	2-hour	229
	Myoxocephalus aenaeus	Grubby		34	1.000	0.971	72		☐	☐	Single flow	Y	3-hour	61
	Myoxocephalus aenaeus	Grubby		42	1.000	0.866	72		☐	☐	Single flow	Y	3-hour	225
	Myoxocephalus aenaeus	Grubby		74	0.870	0.740	72		☐	☐	Single flow	Y	6-hour	62
	Myoxocephalus sp.	Myoxocephalus species		16	1.000	1.000	96		☐	☐	Single flow	Y	Continuous	182
	Myoxocephalus sp.	Myoxocephalus species		17	1.000	1.000	96		☐	☐	Single flow	Y	Continuous	182

Summary for 'Family' = Cottidae (19 detail records)

	Si	Se	Si(dd)
Avg	0.924	0.846	0.845
Min	0.571	0.429	0.821
Max	1.000	1.000	0.870
S.D.	0.116	0.171	0.035

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Crangonidae	Crangon septemspinosus	Sand shrimp		11792	0.870			0.782	☐	☐	Single flow	N	2-hour	40
	Crangon septemspinosus	Sand shrimp		17234	0.860	0.748	48		☐	☑	Single flow	N	2-hour	184
	Crangon septemspinosus	Sand shrimp		2210	0.830				☐	☐	Single flow	N	2-hour	184
	Crangon septemspinosus	Sand shrimp		264	0.810				☐	☐	Single flow	N	Continuous	184
	Crangon septemspinosus	Sand shrimp		113	1.000	0.890	96		☐	☐	Single flow	Y	Continuous	37
	Crangon septemspinosus	Sand shrimp		3715	0.990	0.960	96		☐	☐	Single flow	Y	Continuous	37
Summary for 'Family' = Crangonidae (6 detail records)														
Avg					0.893	0.866		0.782						
Min					0.810	0.748		0.782						
Max					1.000	0.960		0.782						
S.D.					0.082	0.108								
Cyclopteridae	Cyclopterus lumpus	Lumpfish	37-85 mm	10	0.500	0.300	56		☐	☐	Single flow	N	8-hour	246
Summary for 'Family' = Cyclopteridae (1 detail record)														
Avg					0.500	0.300								
Min					0.500	0.300								
Max					0.500	0.300								
S.D.														
Cynoglossidae	Symphurus plagiusa	Blackcheek tonguefish		31	0.645				☐	☐	Single flow	N	Continuous	250
	Symphurus plagiusa	Blackcheek tonguefish		18	0.889				☐	☐	Single flow	N	Continuous	250
	Symphurus plagiusa	Blackcheek tonguefish		13	0.538				☐	☐	Single flow	N	Intermittant	250
	Symphurus plagiusa	Blackcheek tonguefish		20	0.650				☐	☐	Single flow	N	Intermittant	250
	Symphurus plagiusa	Blackcheek tonguefish		21	1.000				☐	☐	Single flow	Y	Continuous	255
	Symphurus plagiusa	Blackcheek tonguefish		110	0.945	0.796	96		☐	☐	Single flow	Y	Continuous	115
Summary for 'Family' = Cynoglossidae (6 detail records)														
Avg					0.778	0.796								
Min					0.538	0.796								
Max					1.000	0.796								
S.D.					0.190									

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Cyprinidae	Cyprinidae	Carp and minnow family	Juvenile	1760	0.742	0.461			☐	☐		Y		178
	Cyprinidae	Carp and minnow family	Postlarvae	14081	0.028	0.015			☐	☐		Y		178
	Cyprinidae	Carp and minnow family	Prolarvae	2630	0.003	0.001			☐	☐		Y		178
	Cyprinidae	Carp and minnow family	Adult	38		0.840	102		✔	☐	Single flow	Y	Continuous	197
	Cyprinidae	Carp and minnow family	Yearling	35		0.835	102		✔	☐	Single flow	Y	Continuous	197
	Carassius auratus	Goldfish	Adult	23	0.960				☐	☐	Single flow	N	2-hour	212
	Carassius auratus	Goldfish	Adult	10	1.000				☐	☐	Single flow	N	2-hour	212
	Carassius auratus	Goldfish	Adult	15	1.000				☐	☐	Single flow	N	2-hour	212
	Couesius plumbeus	Lake chub		25	0.960	0.960	96		☐	☐	Single flow	Y	Continuous	240
	Cyprinus carpio	Common carp	Juvenile	99	0.960	0.707			☐	☐		Y		178
	Cyprinus carpio	Common carp	Postlarvae	1866	0.159	0.132			☐	☐		Y		178
	Cyprinus carpio	Common carp	Prolarvae	2659	0.331	0.237			☐	☐		Y		178
	Cyprinus carpio	Common carp		46		0.800	96		☐	☐	Single flow	Y	8.5-hour	222
	Cyprinus carpio	Common carp			0.929				☐	☐	Single flow	Y	Continuous	241
	Hybognathus regius	Eastern silvery minnow		25	0.960			0.880	☐	☐	Single flow	Y	Continuous	73
	Notemigonus crysoleucas	Golden shiner	Adult	12	1.000				☐	☐	Single flow	N	2-hour	212
	Notemigonus crysoleucas	Golden shiner	Adult	19	0.840				☐	☐	Single flow	N	2-hour	212
	Notemigonus crysoleucas	Golden shiner	Adult	15	0.670				☐	☐	Single flow	N	Continuous	212
	Notemigonus crysoleucas	Golden shiner		15	0.667	0.467	96		☐	☐	Single flow	Y	Continuous	248
	Notemigonus crysoleucas	Golden shiner			1.000				☐	☐	Single flow	Y	Continuous	241
	Notemigonus crysoleucas	Golden shiner		53	0.981	0.585	96		☐	☐	Dual flow	Y	Continuous	206
	Notropis atherinoides	Emerald shiner		29	0.276	0.207	24	0.172	☐	☐	Single flow	N		180
	Notropis atherinoides	Emerald shiner		25	0.160				☐	☐	Single flow	Y	8-hour	238
	Notropis atherinoides	Emerald shiner		628	0.989	0.973	24		☐	☐	Single flow	Y	Continuous	251
	Notropis atherinoides	Emerald shiner		2201	0.985	0.975	24		☐	☐	Single flow	Y	Continuous	251
	Notropis atherinoides	Emerald shiner		3445	0.992	0.789	96		☐	☐	Single flow	Y	Continuous	240
	Notropis atherinoides	Emerald shiner	Juvenile	67	0.552	0.000	84		☐	✔	Dual flow	N	2-hour	227
	Notropis atherinoides	Emerald shiner	Adult	11	1.000	0.818	24		☐	☐	Dual flow	N	2-hour	227
	Notropis atherinoides	Emerald shiner	PYS larvae	60	0.917	0.333	24		☐	☐	Dual flow	N	2-hour	227
	Notropis atherinoides	Emerald shiner	Juvenile	436	0.995	0.837	24		☐	☐	Dual flow	N	2-hour	227

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Cyprinidae	Notropis atherinoides	Emerald shiner	Juvenile	276	0.192	0.001	84		☐	☑	Dual flow	N	2-hour	227
	Notropis atherinoides	Emerald shiner	Juvenile	64	0.922	0.018	84		☐	☑	Dual flow	N	Continuous	227
	Notropis atherinoides	Emerald shiner	PYS larvae	14	0.857				☐	☐	Dual flow	N	Continuous	227
	Notropis atherinoides	Emerald shiner	Juvenile	68	0.735	0.158	84		☐	☑	Dual flow	N	Continuous	227
	Notropis atherinoides	Emerald shiner		3738	0.988	0.982	24		☐	☐	Dual flow	Y	Continuous	252
	Notropis atherinoides	Emerald shiner		2564	0.985	0.950	24		☐	☐	Dual flow	Y	Continuous	252
	Notropis atherinoides	Emerald shiner		46	0.913	0.674	24		☐	☐	Dual flow	Y	Continuous	252
	Notropis atherinoides	Emerald shiner		6072	0.988	0.980	24		☐	☐	Dual flow	Y	Continuous	252
	Notropis atherinoides	Emerald shiner		13	0.077	0.077	24	0.000	☐	☐	Angled	N		180
	Notropis hudsonius	Spottail shiner		144	0.479	0.344	24	0.250	☐	☐	Single flow	N		180
	Notropis hudsonius	Spottail shiner	Adult	12	0.917				☐	☐	Single flow	N	2-hour	172
	Notropis hudsonius	Spottail shiner	Yearling	10	0.600				☐	☐	Single flow	N	2-hour	212
	Notropis hudsonius	Spottail shiner	Yearling	10	0.900				☐	☐	Single flow	N	2-hour	212
	Notropis hudsonius	Spottail shiner	Yearling	13	0.540				☐	☐	Single flow	N	2-hour	212
	Notropis hudsonius	Spottail shiner	Adult	30	0.900				☐	☐	Single flow	N	2-hour	212
	Notropis hudsonius	Spottail shiner	Adult	10	0.900				☐	☐	Single flow	N	2-hour	172
	Notropis hudsonius	Spottail shiner	Yearling	23	0.870				☐	☐	Single flow	N	2-hour	212
	Notropis hudsonius	Spottail shiner	Adult	148	0.950				☐	☐	Single flow	N	2-hour	212
	Notropis hudsonius	Spottail shiner	Adult	78	0.960				☐	☐	Single flow	N	2-hour	212
	Notropis hudsonius	Spottail shiner	Yearling	19	0.840				☐	☐	Single flow	N	2-hour	212
	Notropis hudsonius	Spottail shiner	Adult	34	0.880				☐	☐	Single flow	N	2-hour	212
	Notropis hudsonius	Spottail shiner	Adult	71	0.958	0.556	84		☐	☑	Single flow	N	2-hour	172
	Notropis hudsonius	Spottail shiner	Adult	12	0.830				☐	☐	Single flow	N	2-hour	212
	Notropis hudsonius	Spottail shiner	Adult	71	0.440				☐	☐	Single flow	N	4-hour	212
	Notropis hudsonius	Spottail shiner	Yearling	16	0.560				☐	☐	Single flow	N	4-hour	212
	Notropis hudsonius	Spottail shiner	Adult	32	1.000				☐	☐	Single flow	N	Continuous	212
	Notropis hudsonius	Spottail shiner	Adult	23	0.790				☐	☐	Single flow	N	Continuous	212
	Notropis hudsonius	Spottail shiner	Adult	16	0.880				☐	☐	Single flow	N	Continuous	212
	Notropis hudsonius	Spottail shiner	Adult	37	0.950				☐	☐	Single flow	N	Continuous	212
	Notropis hudsonius	Spottail shiner	YOY	23	0.910				☐	☐	Single flow	N	Continuous	212

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Cyprinidae	Notropis hudsonius	Spottail shiner	Adult	27	0.963	0.963	84		☐	☑	Single flow	N	Continuous	172
	Notropis hudsonius	Spottail shiner	Adult	60	0.920				☐	☐	Single flow	N	Continuous	212
	Notropis hudsonius	Spottail shiner	Adult	75	1.000				☐	☐	Single flow	N	Continuous	212
	Notropis hudsonius	Spottail shiner	Adult	183	0.900				☐	☐	Single flow	N	Continuous	212
	Notropis hudsonius	Spottail shiner	Yearling	13	0.850				☐	☐	Single flow	N	Continuous	212
	Notropis hudsonius	Spottail shiner	Yearling	20	0.700				☐	☐	Single flow	N	Continuous	212
	Notropis hudsonius	Spottail shiner	Yearling	32	0.810				☐	☐	Single flow	N	Continuous	212
	Notropis hudsonius	Spottail shiner	Yearling	51	0.960				☐	☐	Single flow	N	Continuous	212
	Notropis hudsonius	Spottail shiner	Yearling	43	0.810				☐	☐	Single flow	N	Continuous	212
	Notropis hudsonius	Spottail shiner	Adult	24	0.960				☐	☐	Single flow	Y	2-hour	199
	Notropis hudsonius	Spottail shiner	Adult	22	1.000	0.545	84		☐	☑	Single flow	Y	2-hour	172
	Notropis hudsonius	Spottail shiner	Adult	53	1.000	0.981	84		☐	☑	Single flow	Y	Continuous	172
	Notropis hudsonius	Spottail shiner	Yearling	15	0.800				☐	☐	Single flow	Y	Continuous	199
	Notropis hudsonius	Spottail shiner		39		1.000	96		☐	☐	Single flow	Y	Continuous	232
	Notropis hudsonius	Spottail shiner		21	1.000	0.429	96	1.000	☐	☐	Single flow	Y	Continuous	181
	Notropis hudsonius	Spottail shiner		90	1.000	0.956	96		☐	☐	Single flow	Y	Continuous	240
	Notropis hudsonius	Spottail shiner		74	1.000	1.000	96		☐	☐	Single flow	Y	Continuous	240
	Notropis hudsonius	Spottail shiner		72	1.000	1.000	96		☐	☐	Single flow	Y	Continuous	240
	Notropis hudsonius	Spottail shiner			0.966				☐	☐	Single flow	Y	Continuous	241
	Notropis hudsonius	Spottail shiner		113	1.000	1.000	96		☐	☐	Single flow	Y	Continuous	240
	Notropis hudsonius	Spottail shiner		56	1.000	0.839	96		☐	☐	Single flow	Y	Continuous	240
	Notropis hudsonius	Spottail shiner		150	0.653	0.518	96		☐	☐	Single flow	Y	Continuous	248
	Notropis hudsonius	Spottail shiner		62	1.000	0.952	96		☐	☐	Single flow	Y	Continuous	240
	Notropis hudsonius	Spottail shiner		107	1.000	1.000	96		☐	☐	Single flow	Y	Continuous	240
	Notropis hudsonius	Spottail shiner		27	0.370	0.135	96		☐	☐	Single flow	Y	Continuous	248
	Notropis hudsonius	Spottail shiner		18	0.944	0.944	24		☐	☐	Single flow	Y	Continuous	251
	Notropis hudsonius	Spottail shiner		337	0.994	0.831	96		☐	☐	Single flow	Y	Continuous	240
	Notropis hudsonius	Spottail shiner		10	1.000	1.000	96	1.000	☐	☐	Single flow	Y	Continuous	181
	Notropis hudsonius	Spottail shiner		10	1.000	0.600	96	1.000	☐	☐	Single flow	Y	Continuous	181
	Notropis hudsonius	Spottail shiner		408	1.000	1.000	96		☐	☐	Single flow	Y	Continuous	240

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Cyprinidae	Notropis hudsonius	Spottail shiner	Adult	10	1.000				☐	☐	Single flow	Y	Continuous	199
	Notropis hudsonius	Spottail shiner	Adult	12	0.500				☐	☐	Single flow	Y	Continuous	199
	Notropis hudsonius	Spottail shiner	Adult	16	0.940				☐	☐	Single flow	Y	Continuous	199
	Notropis hudsonius	Spottail shiner	Adult	18	1.000				☐	☐	Single flow	Y	Continuous	172
	Notropis hudsonius	Spottail shiner		231	0.983	0.978	24		☐	☐	Single flow	Y	Continuous	251
	Notropis hudsonius	Spottail shiner	Juvenile	46	0.326				☐	☐	Dual flow	N	2-hour	227
	Notropis hudsonius	Spottail shiner	Adult	18	1.000	0.889	24		☐	☐	Dual flow	N	2-hour	227
	Notropis hudsonius	Spottail shiner	PYS larvae	22	1.000	0.864	24		☐	☐	Dual flow	N	2-hour	227
	Notropis hudsonius	Spottail shiner	PYS larvae	29	0.759				☐	☐	Dual flow	N	2-hour	227
	Notropis hudsonius	Spottail shiner	Juvenile	27	0.778				☐	☐	Dual flow	N	Continuous	227
	Notropis hudsonius	Spottail shiner	PYS larvae	21	1.000				☐	☐	Dual flow	N	Continuous	227
	Notropis hudsonius	Spottail shiner		263	0.989	0.985	24		☐	☐	Dual flow	Y	Continuous	252
	Notropis hudsonius	Spottail shiner		404	0.963	0.742	96		☐	☐	Dual flow	Y	Continuous	248
	Notropis hudsonius	Spottail shiner		393	0.964	0.908	24		☐	☐	Dual flow	Y	Continuous	252
	Notropis hudsonius	Spottail shiner		331	0.958	0.831	96		☐	☐	Dual flow	Y	Continuous	206
	Notropis hudsonius	Spottail shiner		297	1.000	0.997	24		☐	☐	Dual flow	Y	Continuous	252
	Notropis hudsonius	Spottail shiner		157	0.682	0.459	96		☐	☐	Dual flow	Y	Continuous	248
	Notropis hudsonius	Spottail shiner		132	0.992	0.985	24		☐	☐	Dual flow	Y	Continuous	252
	Notropis hudsonius	Spottail shiner		30	0.400	0.291	24	0.100	☐	☐	Angled	N		180
	Pimephales notatus	Bluntnose minnow		25	0.720				☐	☐	Single flow	Y	8-hour	238
	Ptychocheilus oregonensis	Northern squawfish		99	0.990				☐	☐	Single flow	Y	Continuous	234
	Richardsonius balteatus	Redside shiner		32	1.000				☐	☐	Single flow	Y	Continuous	234

Summary for 'Family' = Cyprinidae (112 detail records)

	Si	Se	Si(dd)
Avg	0.827	0.672	0.550
Min	0.003	0.000	0.000
Max	1.000	1.000	1.000
S.D.	0.250	0.342	0.456

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Cyprinodontidae	Cyprinodontidae	Pupfish family	YOY	37		0.920	102		☐	☐	Single flow	Y	Continuous	197
	Cyprinodon variegatus	Sheepshead minnow		38				0.970	☐	☐	Single flow	Y	1-hour	167
	Cyprinodon variegatus	Sheepshead minnow		17		0.880	24		☐	☐	Single flow	Y	Combined int	249
	Cyprinodon variegatus	Sheepshead minnow			1.000				☐	☐	Single flow	Y	Continuous	241
Summary for 'Family' = Cyprinodontidae (4 detail records)														
Avg					1.000	0.900		0.970						
Min					1.000	0.880		0.970						
Max					1.000	0.920		0.970						
S.D.						0.028								
Decapoda	Decapoda	Small shrimp		50	0.900				☐	☐	Single flow	Y	2-hour	255
	Decapoda	Small shrimp		22	0.410				☐	☐	Single flow	Y	4-hour	255
	Decapoda	Small shrimp		20	0.900				☐	☐	Single flow	Y	Continuous	255
	Decapoda	Small shrimp		45	0.930				☐	☐	Single flow	Y	Continuous	255
Summary for 'Family' = Decapoda (4 detail records)														
Avg					0.785									
Min					0.410									
Max					0.930									
S.D.					0.250									
Embiotocidae	Embiotocidae	Surfperch family	40-130 mm	27	0.810	0.460	96		☑	☐	Single flow	N	1-hour	242
	Embiotocidae	Surfperch family	35-255 mm	163	0.230	0.010	96		☑	☐	Single flow	N	1-hour	242
	Embiotocidae	Surfperch family	40-130 mm	19	0.370	0.060	96		☑	☐	Single flow	N	3-hour	242
	Embiotocidae	Surfperch family	35-255 mm	310	0.090	0.010	96		☑	☐	Single flow	N	3-hour	242
	Embiotocidae	Surfperch family	35-255 mm	46	0.430	0.090	96		☑	☐	Single flow	N	Continuous	242
	Embiotocidae	Surfperch family	40-130 mm	12	0.920	0.830	96		☑	☐	Single flow	N	Continuous	242
Summary for 'Family' = Embiotocidae (6 detail records)														
Avg					0.475	0.243								
Min					0.090	0.010								
Max					0.920	0.830								
S.D.					0.326	0.334								

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Engraulidae	Anchoa hepsetus	Striped anchovy		23	0.043				☐	☐	Single flow	N	Continuous	250
	Anchoa hepsetus	Striped anchovy		159				0.670	☐	☐	Single flow	Y	1-hour	167
	Anchoa mitchilli	Bay anchovy		10394	0.330			0.081	☐	☐	Single flow	N	2-hour	40
	Anchoa mitchilli	Bay anchovy		20	0.000	0.000	96		☐	☐	Single flow	N	2-hour	228
	Anchoa mitchilli	Bay anchovy		13854	0.220	0.020	48		☐	☑	Single flow	N	2-hour	184
	Anchoa mitchilli	Bay anchovy		700	0.276	0.030	48	0.034	☐	☑	Single flow	N	2-hour	40
	Anchoa mitchilli	Bay anchovy		51	0.000	0.000	96		☐	☐	Single flow	N	2-hour	228
	Anchoa mitchilli	Bay anchovy		228	0.018	0.000	96		☐	☐	Single flow	N	4-hour	228
	Anchoa mitchilli	Bay anchovy		314	0.048	0.000	96		☐	☐	Single flow	N	8-hour	228
	Anchoa mitchilli	Bay anchovy		2165	0.054	0.000	96		☐	☐	Single flow	N	8-hour	228
	Anchoa mitchilli	Bay anchovy		15	0.000	0.000	96		☐	☐	Single flow	N	8-hour	228
	Anchoa mitchilli	Bay anchovy		11	0.000	0.000	96		☐	☐	Single flow	N	8-hour	228
	Anchoa mitchilli	Bay anchovy		720	0.000	0.000	96		☐	☐	Single flow	N	8-hour	228
	Anchoa mitchilli	Bay anchovy		7	1.000	0.285	96		☐	☐	Single flow	N	Continuous	228
	Anchoa mitchilli	Bay anchovy		424	0.078				☐	☐	Single flow	N	Continuous	250
	Anchoa mitchilli	Bay anchovy		131	0.176				☐	☐	Single flow	N	Continuous	250
	Anchoa mitchilli	Bay anchovy		526	0.091				☐	☐	Single flow	N	Intermittant	250
	Anchoa mitchilli	Bay anchovy		215	0.051				☐	☐	Single flow	N	Intermittant	250
	Anchoa mitchilli	Bay anchovy		59212				0.680	☐	☐	Single flow	Y	1-hour	167
	Anchoa mitchilli	Bay anchovy		18	0.280				☐	☐	Single flow	Y	2-hour	255
	Anchoa mitchilli	Bay anchovy		11	0.180				☐	☐	Single flow	Y	2-hour	255
	Anchoa mitchilli	Bay anchovy		15	0.000	0.000	72		☐	☐	Single flow	Y	3-hour	225
	Anchoa mitchilli	Bay anchovy		32	0.190				☐	☐	Single flow	Y	4-hour	255
	Anchoa mitchilli	Bay anchovy		28	0.000	0.000	72		☐	☐	Single flow	Y	6-hour	62
	Anchoa mitchilli	Bay anchovy		891		0.250	24		☐	☐	Single flow	Y	Combined int	249
	Anchoa mitchilli	Bay anchovy		28		0.000	96		☐	☐	Single flow	Y	Combined int	249
	Anchoa mitchilli	Bay anchovy		28		0.000	24		☐	☐	Single flow	Y	Combined int	249
	Anchoa mitchilli	Bay anchovy		1369	0.810	0.370	96		☐	☐	Single flow	Y	Continuous	37
	Anchoa mitchilli	Bay anchovy	PYS larvae	65	0.000	0.000	96		☐	☑	Single flow	Y	Continuous	236
	Anchoa mitchilli	Bay anchovy	YOY	18		0.000	102		☐	☐	Single flow	Y	Continuous	197

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Engraulidae	Anchoa mitchilli	Bay anchovy			0.820				☐	☐	Single flow	Y	Continuous	241
	Anchoa mitchilli	Bay anchovy		10	0.200				☐	☐	Single flow	Y	Continuous	255
	Anchoa mitchilli	Bay anchovy		5023	0.740			0.580	☐	☐	Single flow	Y	Continuous	74
	Anchoa mitchilli	Bay anchovy	YOY	62		0.050	102		☐	☐	Single flow	Y	Continuous	197
	Anchoa mitchilli	Bay anchovy		2999		0.180	48		☐	☑	Single flow	Y	Continuous	75
	Anchoa mitchilli	Bay anchovy		23	0.430				☐	☐	Single flow	Y	Continuous	255
	Anchoa mitchilli	Bay anchovy	YOY	2415	0.250	0.010	84		☐	☑	Single flow	Y	Continuous	203
	Anchoa mitchilli	Bay anchovy		1805	0.820			0.800	☐	☐	Single flow	Y	Continuous	73
	Anchoa mitchilli	Bay anchovy		1667	0.001	0.000	96		☐	☐	Single flow	Y	Continuous	248
	Anchoa mitchilli	Bay anchovy	Adult	65	0.550	0.132	84		☐	☑	Single flow	Y	Continuous	203
	Anchoa mitchilli	Bay anchovy		1236		0.493	48		☐	☑	Single flow	Y	Continuous	75
	Anchoa mitchilli	Bay anchovy		44	0.610				☐	☐	Single flow	Y	Continuous	255
	Anchoa mitchilli	Bay anchovy		62	0.640	0.050	96		☐	☐	Single flow	Y	Continuous	198
	Anchoa mitchilli	Bay anchovy		596	0.099	0.000	96		☐	☐	Single flow	Y	Continuous	115
	Anchoa mitchilli	Bay anchovy		569	0.910			0.900	☐	☐	Single flow	Y	Continuous	71
	Anchoa mitchilli	Bay anchovy		73		0.368	96		☐	☐	Single flow	Y	Continuous	233
	Anchoa mitchilli	Bay anchovy		249	0.458	0.000	96	60.000	☐	☐	Single flow	Y	Continuous	115
	Anchoa mitchilli	Bay anchovy		409	0.000	0.000	96		☐	☐	Single flow	Y	Continuous	248
	Anchoa mitchilli	Bay anchovy		178	0.900			0.750	☐	☐	Single flow	Y	Continuous	72
	Anchoa mitchilli	Bay anchovy		1701	0.860			0.820	☐	☐	Single flow	Y	Continuous	70
	Anchoa mitchilli	Bay anchovy	Larvae		0.160	0.109	48		☐	☐	Dual flow	Y	Continuous	231
	Anchoa mitchilli	Bay anchovy	Larvae	274	0.015	0.003	96		☐	☐	Dual flow	Y	Continuous	230
	Anchoa mitchilli	Bay anchovy	Eggs			0.740			☐	☐	Dual flow	Y	Continuous	231
	Anchoa mitchilli	Bay anchovy		1093	0.282	0.004	96		☐	☐	Dual flow	Y	Continuous	206
	Anchoa mitchilli	Bay anchovy		3098	0.010	0.000	96		☐	☐	Dual flow	Y	Continuous	248
	Anchoa mitchilli	Bay anchovy		2063	0.015	0.000	96		☐	☐	Dual flow	Y	Continuous	248
	Anchoa mitchilli	Bay anchovy	Eggs			0.800			☐	☐	Dual flow	Y	Continuous	230
	Anchoa mitchilli	Bay anchovy		113	0.150	0.000	48		☐	☐	Angled	Y		237
	Anchoa mitchilli	Bay anchovy		13987	0.017	0.000	48		☐	☐	Angled	Y	Continuous	170
	Engraulis mordax	Northern anchovy	70-135 mm	239	0.270	0.000	96		☑	☐	Single flow	N	1-hour	242

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Engraulidae	Engraulis mordax	Northern anchovy	63-135 mm	490	0.230	0.000	96		☑	☐	Single flow	N	1-hour	242
	Engraulis mordax	Northern anchovy	70-135 mm	2690	0.160	0.010	96		☑	☐	Single flow	N	3-hour	242
	Engraulis mordax	Northern anchovy	63-135 mm	2414	0.180	0.000	96		☑	☐	Single flow	N	3-hour	242
	Engraulis mordax	Northern anchovy	63-135 mm	319	0.320	0.000	96		☑	☐	Single flow	N	Continuous	242
	Engraulis mordax	Northern anchovy	70-135 mm	108	0.180	0.000	96		☑	☐	Single flow	N	Continuous	242
Summary for 'Family' = Engraulidae (65 detail records)														
Avg					0.266	0.087		6.531						
Min					0.000	0.000		0.034						
Max					1.000	0.800		60.000						
S.D.					0.299	0.189		18.789						
Ephippidae	Chaetodipterus faber	Atlantic spadefish		47		0.787	120		☐	☐	Single flow	N	Continuous	250
	Chaetodipterus faber	Atlantic spadefish		57		0.509	120		☐	☐	Single flow	N	Continuous	250
	Chaetodipterus faber	Atlantic spadefish		126	0.516				☐	☐	Single flow	N	Continuous	250
	Chaetodipterus faber	Atlantic spadefish		270	0.285				☐	☐	Single flow	N	Continuous	250
	Chaetodipterus faber	Atlantic spadefish		185	0.200				☐	☐	Single flow	N	Intermittant	250
	Chaetodipterus faber	Atlantic spadefish		210	0.138				☐	☐	Single flow	N	Intermittant	250
Summary for 'Family' = Ephippidae (6 detail records)														
Avg					0.285	0.648								
Min					0.138	0.509								
Max					0.516	0.787								
S.D.					0.166	0.197								
Exocoetidae	Hyporhamphus unifasciatus	Silverstripe halfbeak		11	0.545				☐	☐	Dual flow	Y	Continuous	239
Summary for 'Family' = Exocoetidae (1 detail record)														
Avg					0.545									
Min					0.545									
Max					0.545									
S.D.														

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Fundulidae	Fundulus diaphanus	Banded killifish		14				0.860	☐	☐	Single flow	Y	1-hour	167
	Fundulus diaphanus	Banded killifish		47		0.888	96		☐	☐	Single flow	Y	Continuous	233
	Fundulus diaphanus	Banded killifish		13	1.000	1.000	96		☐	☐	Single flow	Y	Continuous	198
	Fundulus diaphanus	Banded killifish			1.000				☐	☐	Single flow	Y	Continuous	241
	Fundulus diaphanus	Banded killifish		42	1.000	0.952	96		☐	☐	Dual flow	Y	Continuous	248
	Fundulus diaphanus	Banded killifish		269	0.985	0.859	96		☐	☐	Dual flow	Y	Continuous	206
	Fundulus heteroclitus	Mummichog		15	0.930			0.733	☐	☐	Single flow	N	2-hour	40
	Fundulus heteroclitus	Mummichog		33	0.970	0.970	96		☐	☐	Single flow	Y		182
	Fundulus heteroclitus	Mummichog		40				0.950	☐	☐	Single flow	Y	1-hour	167
	Fundulus heteroclitus	Mummichog		10	1.000	0.900	96		☐	☐	Single flow	Y	6-hour	208
	Fundulus heteroclitus	Mummichog		44		0.950	24		☐	☐	Single flow	Y	Combined int	249
	Fundulus heteroclitus	Mummichog		12		0.830	96		☐	☐	Single flow	Y	Combined int	249
	Fundulus heteroclitus	Mummichog		12		0.830	24		☐	☐	Single flow	Y	Combined int	249
	Fundulus heteroclitus	Mummichog		24	0.960	0.920	96		☐	☐	Single flow	Y	Continuous	198
	Fundulus heteroclitus	Mummichog		43	0.980			0.980	☐	☐	Single flow	Y	Continuous	73
	Fundulus heteroclitus	Mummichog			1.000				☐	☐	Single flow	Y	Continuous	241
	Fundulus heteroclitus	Mummichog		19	0.950			0.950	☐	☐	Single flow	Y	Continuous	72
	Fundulus heteroclitus	Mummichog		14	1.000			0.930	☐	☐	Single flow	Y	Continuous	74
	Fundulus heteroclitus	Mummichog		12	1.000			1.000	☐	☐	Single flow	Y	Continuous	70
	Fundulus heteroclitus	Mummichog		14	1.000	1.000	96		☐	☐	Dual flow	Y	Continuous	206
	Fundulus majalis	Striped killifish		14				1.000	☐	☐	Single flow	Y	1-hour	167
	Fundulus majalis	Striped killifish		237		0.150	24		☐	☐	Single flow	Y	Combined int	249
	Lucania parva	Rainwater killifish		808	0.694				☐	☐	Dual flow	Y	Continuous	239

Summary for 'Family' = Fundulidae (23 detail records)

	Si	Se	Si(dd)
Avg	0.965	0.854	0.925
Min	0.694	0.150	0.733
Max	1.000	1.000	1.000
S.D.	0.078	0.229	0.090

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Gadidae	Merluccius bilinearis	Silver hake		11				0.640	☐	☐	Single flow	Y	1-hour	167
	Microgadus tomcod	Atlantic tomcod	YOY	29	1.000	0.720	84		☐	☐	Single flow	N	2-hour	214
	Microgadus tomcod	Atlantic tomcod	Adult	111	0.927	0.700	84		☐	☐	Single flow	N	2-hour	212
	Microgadus tomcod	Atlantic tomcod	Adult	73	0.890	0.662	84		☐	☐	Single flow	N	2-hour	212
	Microgadus tomcod	Atlantic tomcod	Adult	50	0.840	0.800	84		☐	☑	Single flow	N	2-hour	172
	Microgadus tomcod	Atlantic tomcod	YOY	20	1.000	0.900	84		☐	☐	Single flow	N	2-hour	12
	Microgadus tomcod	Atlantic tomcod	Adult	217	0.930	0.660	84		☐	☑	Single flow	N	2-hour	177
	Microgadus tomcod	Atlantic tomcod	Adult	716	0.961	0.869	84		☐	☐	Single flow	N	2-hour	212
	Microgadus tomcod	Atlantic tomcod	Adult	745	0.960	0.826	84		☐	☑	Single flow	N	2-hour	177
	Microgadus tomcod	Atlantic tomcod	YOY	13	1.000	0.690	84		☐	☐	Single flow	N	2-hour	12
	Microgadus tomcod	Atlantic tomcod	YOY	37	0.780				☐	☐	Single flow	N	2-hour	12
	Microgadus tomcod	Atlantic tomcod	YOY	35	0.290				☐	☐	Single flow	N	4-hour	12
	Microgadus tomcod	Atlantic tomcod	118-262 mm	10	0.700	0.600	56		☐	☐	Single flow	N	8-hour	246
	Microgadus tomcod	Atlantic tomcod	Adult	242	0.884	0.827	84		☐	☐	Single flow	N	Continuous	212
	Microgadus tomcod	Atlantic tomcod	Adult	120	0.933	0.635	84		☐	☐	Single flow	N	Continuous	212
	Microgadus tomcod	Atlantic tomcod	YOY	19	0.900	0.840	84		☐	☐	Single flow	N	Continuous	12
	Microgadus tomcod	Atlantic tomcod	YOY	67	1.000	0.970	84		☐	☐	Single flow	N	Continuous	12
	Microgadus tomcod	Atlantic tomcod	Adult	52	0.827	0.500	84		☐	☑	Single flow	N	Continuous	172
	Microgadus tomcod	Atlantic tomcod	YOY	36	0.940	0.750	84		☐	☐	Single flow	N	Continuous	214
	Microgadus tomcod	Atlantic tomcod	Adult	314	0.960	0.758	84		☐	☑	Single flow	N	Continuous	177
	Microgadus tomcod	Atlantic tomcod	Adult	278	0.890	0.730	84		☐	☑	Single flow	N	Continuous	177
	Microgadus tomcod	Atlantic tomcod	Adult	108	0.963	0.827	84		☐	☐	Single flow	N	Continuous	212
	Microgadus tomcod	Atlantic tomcod	YOY	20	0.950				☐	☐	Single flow	Y	2-hour	199
	Microgadus tomcod	Atlantic tomcod	Adult	19	0.900				☐	☐	Single flow	Y	2-hour	199
	Microgadus tomcod	Atlantic tomcod	Adult	11	1.000				☐	☐	Single flow	Y	2-hour	172
	Microgadus tomcod	Atlantic tomcod		26	0.350	0.270	72		☐	☐	Single flow	Y	6-hour	62
	Microgadus tomcod	Atlantic tomcod	YOY	37		0.730	102		☑	☐	Single flow	Y	Continuous	197
	Microgadus tomcod	Atlantic tomcod	YOY	63	0.860	0.590	96		☐	☐	Single flow	Y	Continuous	198
	Microgadus tomcod	Atlantic tomcod	Yearling	144		0.895	102		☐	☐	Single flow	Y	Continuous	197
	Microgadus tomcod	Atlantic tomcod	YOY	63		0.595	102		☐	☐	Single flow	Y	Continuous	197

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Gadidae	Microgadus tomcod	Atlantic tomcod		61	0.328	0.082	96		[ ]	[ ]	Single flow	Y	Continuous	248
	Microgadus tomcod	Atlantic tomcod	Yearling	57		0.525	102		[x]	[ ]	Single flow	Y	Continuous	197
	Microgadus tomcod	Atlantic tomcod		15	1.000	0.867	96		[ ]	[ ]	Single flow	Y	Continuous	182
	Microgadus tomcod	Atlantic tomcod		15	1.000	0.917	96		[ ]	[ ]	Single flow	Y	Continuous	182
	Microgadus tomcod	Atlantic tomcod		40		0.799	96		[ ]	[ ]	Single flow	Y	Continuous	232
	Microgadus tomcod	Atlantic tomcod		46	1.000	1.000	96		[ ]	[x]	Single flow	Y	Continuous	110
	Microgadus tomcod	Atlantic tomcod	YOY	78	0.920	0.570	84		[ ]	[x]	Single flow	Y	Continuous	203
	Microgadus tomcod	Atlantic tomcod		295		0.650	96		[ ]	[ ]	Single flow	Y	Continuous	233
	Microgadus tomcod	Atlantic tomcod	Adult	30	0.967	0.834	84		[ ]	[x]	Single flow	Y	Continuous	172
	Microgadus tomcod	Atlantic tomcod	Adult	114	0.970	0.880	96		[ ]	[ ]	Single flow	Y	Continuous	198
	Microgadus tomcod	Atlantic tomcod	Adult	116	0.980	0.901	96		[ ]	[ ]	Single flow	Y	Continuous	208
	Microgadus tomcod	Atlantic tomcod	Adult	243		0.685	102		[x]	[ ]	Single flow	Y	Continuous	197
	Microgadus tomcod	Atlantic tomcod	Juvenile	10	0.900	0.000	96		[ ]	[x]	Single flow	Y	Continuous	236
	Microgadus tomcod	Atlantic tomcod		35	0.943	0.429	96		[ ]	[ ]	Dual flow	Y	Continuous	206
	Microgadus tomcod	Atlantic tomcod		79	0.595	0.203	96		[ ]	[ ]	Dual flow	Y	Continuous	248
	Pollachius virens	Pollock	Small	47	0.979	0.280	96		[ ]	[ ]	Single flow	Y	Continuous	182
	Pollachius virens	Pollock		19	1.000	0.158	96		[ ]	[ ]	Single flow	Y	Continuous	182
	Pollachius virens	Pollock	Small	11	1.000	0.158	96		[ ]	[ ]	Single flow	Y	Continuous	182
	Urophycis chuss	Red hake		25		0.365	96		[ ]	[ ]	Single flow	Y	Continuous	232
	Urophycis regia	Spotted codling		21	0.710			0.520	[ ]	[ ]	Single flow	N	2-hour	40
	Urophycis regia	Spotted codling		120				0.720	[ ]	[ ]	Single flow	Y	1-hour	167
	Urophycis regia	Spotted codling		44	1.000			1.000	[ ]	[ ]	Single flow	Y	Continuous	72
	Urophycis regia	Spotted codling		743	0.970			0.950	[ ]	[ ]	Single flow	Y	Continuous	70
	Urophycis regia	Spotted codling		1045	1.000			0.990	[ ]	[ ]	Single flow	Y	Continuous	71
	Urophycis regia	Spotted codling		1126	0.990			0.980	[ ]	[ ]	Single flow	Y	Continuous	73
	Urophycis regia	Spotted codling		1616	0.990			0.980	[ ]	[ ]	Single flow	Y	Continuous	74

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Summary for 'Family' = Gadidae (56 detail records)														
Avg					0.889	0.643		0.848						
Min					0.290	0.000		0.520						
Max					1.000	1.000		1.000						
S.D.					0.175	0.257		0.191						

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Gasterosteidae	Gasterosteidae	Stickleback family		33	0.940	0.880	96				Single flow	Y	Continuous	198
	Gasterosteidae	Stickleback family	Yearling	33		0.900	102				Single flow	Y	Continuous	197
	Apeltes quadracus	Fourspine stickleback		92	0.950						Single flow	N	2-hour	184
	Apeltes quadracus	Fourspine stickleback		82	0.940			0.841			Single flow	N	2-hour	40
	Apeltes quadracus	Fourspine stickleback		11	1.000	1.000	96				Dual flow	Y	Continuous	206
	Apeltes quadracus	Fourspine stickleback		183	0.869	0.835	48				Angled	Y	Continuous	170
	Gasterosteus aculeatus	Threespine stickleback		52	0.596	0.327	24	0.442			Single flow	N		180
	Gasterosteus aculeatus	Threespine stickleback		14	1.000			1.000			Single flow	N	2-hour	40
	Gasterosteus aculeatus	Threespine stickleback		192				0.910			Single flow	Y	1-hour	167
	Gasterosteus aculeatus	Threespine stickleback		61	0.970	0.900	72				Single flow	Y	2-hour	229
	Gasterosteus aculeatus	Threespine stickleback		74	0.730	0.716	72				Single flow	Y	3-hour	61
	Gasterosteus aculeatus	Threespine stickleback		41	0.860	0.860	72				Single flow	Y	3-hour	225
	Gasterosteus aculeatus	Threespine stickleback		217	0.950	0.910	72				Single flow	Y	6-hour	62
	Gasterosteus aculeatus	Threespine stickleback		18	0.889	0.875	96				Single flow	Y	6-hour	208
	Gasterosteus aculeatus	Threespine stickleback		22		1.000	24				Single flow	Y	Combined int	249
	Gasterosteus aculeatus	Threespine stickleback		1647	1.000			1.000			Single flow	Y	Continuous	73
	Gasterosteus aculeatus	Threespine stickleback		540	1.000			1.000			Single flow	Y	Continuous	71
	Gasterosteus aculeatus	Threespine stickleback		116	0.980			0.980			Single flow	Y	Continuous	70
	Gasterosteus aculeatus	Threespine stickleback		75	1.000			1.000			Single flow	Y	Continuous	72
	Gasterosteus aculeatus	Threespine stickleback		63	1.000			1.000			Single flow	Y	Continuous	74
	Gasterosteus aculeatus	Threespine stickleback		18	1.000						Single flow	Y	Continuous	234
	Gasterosteus aculeatus	Threespine stickleback		13	1.000	1.000	96				Single flow	Y	Continuous	182
	Gasterosteus aculeatus	Threespine stickleback		12	0.917	0.917	96				Single flow	Y	Continuous	182
	Gasterosteus aculeatus	Threespine stickleback		11	0.909	0.900	96				Single flow	Y	Continuous	208
	Gasterosteus aculeatus	Threespine stickleback		10	0.200	0.000	24	0.100			Angled	N		180
	Gasterosteus aculeatus	Threespine stickleback		113	0.938	0.902	48				Angled	Y	Continuous	170
	Gasterosteus wheatlandi	Blackspotted stickleback		10	0.900	0.900	72				Single flow	Y	3-hour	225
	Gasterosteus wheatlandi	Blackspotted stickleback		184	0.910	0.860	72				Single flow	Y	6-hour	62

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Summary for 'Family' = Gasterosteidae (28 detail records)														
Avg					0.898	0.816		0.827						
Min					0.200	0.000		0.100						
Max					1.000	1.000		1.000						
S.D.					0.173	0.252		0.309						
Gobiesocidae	Gobiesox strumosus	Skilletfish		928				0.930	☐	☐	Single flow	Y	1-hour	167
	Gobiesox strumosus	Skilletfish		56		0.730	24		☐	☐	Single flow	Y	Combined int	249
Summary for 'Family' = Gobiesocidae (2 detail records)														
Avg						0.730		0.930						
Min						0.730		0.930						
Max						0.730		0.930						
S.D.														

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Gobiidae	Gobiidae	Goby family	75-165 mm	13	1.000	0.980	96		☑	☐	Single flow	N	3-hour	242
	Gobiidae	Goby family	80-111 mm	10	0.700	0.740	96		☑	☐	Single flow	N	3-hour	242
	Gobiosoma bosc	Naked goby		66	0.210			0.182	☐	☐	Single flow	N	2-hour	40
	Gobiosoma bosc	Naked goby		81				1.000	☐	☐	Single flow	Y	1-hour	167
	Gobiosoma bosc	Naked goby		37	0.970			0.970	☐	☐	Single flow	Y	Continuous	70
	Gobiosoma bosc	Naked goby		19	1.000			1.000	☐	☐	Single flow	Y	Continuous	71
	Gobiosoma bosc	Naked goby		13		0.428	96		☐	☐	Single flow	Y	Continuous	233
	Gobiosoma bosc	Naked goby			0.997				☐	☐	Single flow	Y	Continuous	241
	Gobiosoma bosc	Naked goby		35	0.970			0.970	☐	☐	Single flow	Y	Continuous	73
	Gobiosoma bosc	Naked goby		65	0.970			0.970	☐	☐	Single flow	Y	Continuous	74
	Gobiosoma ginsburgi	Seaboard goby			1.000				☐	☐	Single flow	Y	Continuous	241
	Gobiosoma ginsburgi	Seaboard goby		10	1.000	1.000	48		☐	☐	Angled	Y		237
	Gobiosoma ginsburgi	Seaboard goby		126	0.873	0.745	48		☐	☐	Angled	Y	Continuous	170
	Neogobius melanostomus	Round goby		10	1.000	1.000	24		☐	☐	Dual flow	Y	Continuous	252
Summary for 'Family' = Gobiidae (14 detail records)														
Avg					0.891	0.816		0.849						
Min					0.210	0.428		0.182						
Max					1.000	1.000		1.000						
S.D.					0.232	0.226		0.327						
Hippolytidae	Tozeuma carolinensis	Arrow shrimp		16	1.000				☐	☐	Dual flow	Y	Continuous	239
Summary for 'Family' = Hippolytidae (1 detail record)														
Avg					1.000									
Min					1.000									
Max					1.000									
S.D.														

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Hisodontidae	Hiodon tergisus	Mooneye	Prolarvae	51	0.235	0.003			☐	☐		Y		178

Summary for 'Family' = Hisodontidae (1 detail record)

	Si	Se
Avg	0.235	0.003
Min	0.235	0.003
Max	0.235	0.003
S.D.		

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Homaridae	Homarus americanus	American lobster		10	1.000	1.000	72		☐	☐	Single flow	Y	2-hour	229
	Homarus americanus	American lobster		14	0.929	0.857	72		☐	☐	Single flow	Y	3-hour	61
	Homarus americanus	American lobster		26	1.000	1.000	72		☐	☐	Single flow	Y	3-hour	225

Summary for 'Family' = Homaridae (3 detail records)

	Si	Se
Avg	0.976	0.952
Min	0.929	0.857
Max	1.000	1.000
S.D.	0.041	0.083

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Ictaluridae	Ameiurus catus	White catfish	YOY	12	1.000						Single flow	N	2-hour	12
	Ameiurus catus	White catfish		15	1.000	0.200	96				Single flow	N	2-hour	215
	Ameiurus catus	White catfish	YOY	13	0.920						Single flow	N	2-hour	212
	Ameiurus catus	White catfish	YOY	12	0.830						Single flow	N	2-hour	212
	Ameiurus catus	White catfish	YOY	10	0.900						Single flow	N	4-hour	212
	Ameiurus catus	White catfish	YOY	20	1.000						Single flow	N	Continuous	212
	Ameiurus catus	White catfish	YOY	11	0.910						Single flow	N	Continuous	212
	Ameiurus catus	White catfish	YOY	16	1.000						Single flow	Y	2-hour	199
	Ameiurus catus	White catfish	YOY	29	1.000	1.000	84			✓	Single flow	Y	Continuous	203
	Ameiurus catus	White catfish		25		0.779	96				Single flow	Y	Continuous	233
	Ameiurus catus	White catfish	YOY	17	1.000						Single flow	Y	Continuous	199
	Ameiurus catus	White catfish	YOY	31	1.000						Single flow	Y	Continuous	199
	Ameiurus catus	White catfish	YOY	11	1.000						Single flow	Y	Continuous	199
	Ameiurus catus	White catfish		110		0.950	96				Single flow	Y	Continuous	232
	Ameiurus catus	White catfish		55	0.818	0.745	96				Single flow	Y	Continuous	248
	Ameiurus catus	White catfish			0.992						Single flow	Y	Continuous	241
	Ameiurus catus	White catfish		83	0.988	0.627	96				Dual flow	Y	Continuous	206
	Ameiurus catus	White catfish		82	0.841	0.841	96				Dual flow	Y	Continuous	248
	Ameiurus nebulosus	Brown bullhead			0.968						Single flow	Y	Continuous	241
	Ameiurus nebulosus	Brown bullhead		158	0.911	0.611	96				Single flow	Y	Continuous	248
	Ameiurus nebulosus	Brown bullhead		10	1.000			0.900			Single flow	Y	Continuous	70
	Ameiurus nebulosus	Brown bullhead		12	1.000			1.000			Single flow	Y	Continuous	74
	Ameiurus nebulosus	Brown bullhead		28	0.964	0.896	96				Dual flow	Y	Continuous	248
	Ameiurus nebulosus	Brown bullhead		332	0.985	0.828	96				Dual flow	Y	Continuous	248
	Ameiurus nebulosus	Brown bullhead		1102	0.988	0.720	96				Dual flow	Y	Continuous	206
	Ictalurus punctatus	Channel catfish	Juvenile	8300	0.695	0.574						Y		178
	Ictalurus punctatus	Channel catfish	Prolarvae	305	0.734	0.588						Y		178
	Ictalurus punctatus	Channel catfish		33		0.930	96				Single flow	Y	8.5-hour	222
	Ictalurus punctatus	Channel catfish		10	0.800			0.700			Single flow	Y	Continuous	74
	Ictalurus punctatus	Channel catfish			0.988						Single flow	Y	Continuous	241

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Ictaluridae	Ictalurus punctatus	Channel catfish		13	1.000			0.850	☐	☐	Single flow	Y	Continuous	73
	Noturus stigmosus	Northern madtom		10	0.600				☐	☐	Single flow	Y	8-hour	238
	Pylodictis olivaris	Flathead catfish		84		0.860	96		☐	☐	Single flow	Y	8.5-hour	222
Summary for 'Family' = Ictaluridae (33 detail records)														
Avg					0.925	0.743		0.862						
Min					0.600	0.200		0.700						
Max					1.000	1.000		1.000						
S.D.					0.108	0.203		0.125						
Inachidae	Libinia sp.	Spider crabs		47	0.979	0.936	72		☐	☐	Single flow	Y	3-hour	61
	Libinia dubia	Longnose spider crab		16	1.000			0.875	☐	☐	Single flow	N	2-hour	40
	Libinia emarginata	Spider crab		43	1.000	0.890	72		☐	☐	Single flow	Y	3-hour	225
Summary for 'Family' = Inachidae (3 detail records)														
Avg					0.993	0.913		0.875						
Min					0.979	0.890		0.875						
Max					1.000	0.936		0.875						
S.D.					0.012	0.033								
Infraorder Caridea	Caridea	Caridea shrimp	Zoea		0.943	0.801	48		☐	☐	Dual flow	Y	Continuous	230
	Caridea	Caridea shrimp			0.720	0.482	48		☐	☐	Dual flow	Y	Continuous	231
	Caridea	Caridea shrimp	Megalop		1.000	1.000	48		☐	☐	Dual flow	Y	Continuous	230
Summary for 'Family' = Infraorder Caridea (3 detail records)														
Avg					0.888	0.761								
Min					0.720	0.482								
Max					1.000	1.000								
S.D.					0.148	0.261								

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Infrorder Brachyura	Brachyura	Brachyura crabs	Megalop		0.651	0.467	48		☐	☐	Dual flow	Y	Continuous	230
	Brachyura	Brachyura crabs	Zoea		0.955	0.800	48		☐	☐	Dual flow	Y	Continuous	230
Summary for 'Family' = Infrorder Brachyura (2 detail records)														
Avg					0.803	0.634								
Min					0.651	0.467								
Max					0.955	0.800								
S.D.					0.215	0.235								
Labridae	Tautoga onitis	Tautog		15	1.000			0.800	☐	☐	Single flow	N	2-hour	40
	Tautoga onitis	Tautog		16	0.940	0.560	72		☐	☐	Single flow	Y	2-hour	229
	Tautoga onitis	Tautog		19	0.947	0.947	48		☐	☐	Angled	Y		237
	Tautoga onitis	Tautog		329	0.979	0.963	48		☐	☐	Angled	Y	Continuous	170
	Tautogolabrus adspersus	Cunner		32	0.690	0.560	72		☐	☐	Single flow	Y	2-hour	229
	Tautogolabrus adspersus	Cunner		28	0.929	0.857	72		☐	☐	Single flow	Y	3-hour	61
	Tautogolabrus adspersus	Cunner		16	1.000	0.938	96		☐	☐	Single flow	Y	Continuous	182
Summary for 'Family' = Labridae (7 detail records)														
Avg					0.926	0.804		0.800						
Min					0.690	0.560		0.800						
Max					1.000	0.963		0.800						
S.D.					0.108	0.193								
Limulidae	Limulus polyphemus	Horseshoe crab		39	1.000			0.846	☐	☐	Single flow	N	2-hour	40
Summary for 'Family' = Limulidae (1 detail record)														
Avg					1.000			0.846						
Min					1.000			0.846						
Max					1.000			0.846						
S.D.														

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Loliginidae	Loligo pealei	Atlantic long-finned squid		89	0.350	0.170	72		☐	☐	Single flow	Y	2-hour	229
	Loligo pealei	Atlantic long-finned squid		222	0.410	0.060	72		☐	☐	Single flow	Y	3-hour	225
	Loligo pealei	Atlantic long-finned squid		135	0.089	0.000	72		☐	☐	Single flow	Y	3-hour	61
	Loligo pealei	Atlantic long-finned squid		416	0.000	0.000	72		☐	☐	Single flow	Y	6-hour	62
Summary for 'Family' = Loliginidae (4 detail records)														
Avg					0.212	0.058								
Min					0.000	0.000								
Max					0.410	0.170								
S.D.					0.199	0.080								
Lolliginidae	Lolliguncula brevis	Atlantic brief squid		83	0.660			0.289	☐	☐	Single flow	N	2-hour	40
	Lolliguncula brevis	Atlantic brief squid		55	0.345				☐	☐	Single flow	N	Continuous	250
	Lolliguncula brevis	Atlantic brief squid		21	0.286				☐	☐	Single flow	N	Intermittant	250
Summary for 'Family' = Lolliginidae (3 detail records)														
Avg					0.430			0.289						
Min					0.286			0.289						
Max					0.660			0.289						
S.D.					0.201									
Lutjanidae	Lutjanus griseus	Gray snapper		9		0.103	96		☐	☐	Single flow	Y	Continuous	233
Summary for 'Family' = Lutjanidae (1 detail record)														
Avg						0.103								
Min						0.103								
Max						0.103								
S.D.														

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Mugilidae	Mugil cephalus	Striped mullet		12		0.000	120		☐	☐	Single flow	N	Continuous	250
	Mugil cephalus	Striped mullet		28	0.607				☐	☐	Single flow	N	Continuous	250
	Mugil cephalus	Striped mullet		44		0.114	120		☐	☐	Single flow	N	Continuous	250
	Mugil cephalus	Striped mullet		113	0.540				☐	☐	Single flow	N	Continuous	250
	Mugil cephalus	Striped mullet		72	0.250				☐	☐	Single flow	N	Intermittant	250
	Mugil cephalus	Striped mullet		73	0.356				☐	☐	Single flow	N	Intermittant	250
	Mugil cephalus	Striped mullet	Juv/Adult	37	1.000	0.919	96		☐	☐	Single flow	Y	Continuous	115
	Mugil cephalus	Striped mullet	YOY	62	0.839	0.677	96		☐	☐	Single flow	Y	Continuous	115
	Mugil curema	White mullet		18	0.000				☐	☐	Single flow	N	Continuous	250
	Mugil curema	White mullet		185	0.989				☐	☐	Dual flow	Y	Continuous	239

Summary for 'Family' = Mugilidae (10 detail records)

	Si	Se
Avg	0.573	0.428
Min	0.000	0.000
Max	1.000	0.919
S.D.	0.360	0.442

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Ophichthidae	Ophichthus gomesi	Shrimp eel		43	1.000				☐	☐	Dual flow	Y	Continuous	239

Summary for 'Family' = Ophichthidae (1 detail record)

	Si
Avg	1.000
Min	1.000
Max	1.000
S.D.	

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Ophidiidae	Ophidion marginatum	Striped cusk-eel		633	0.880				☐	☐	Single flow	N	2-hour	184
	Ophidion marginatum	Striped cusk-eel		15	0.930	0.930	72		☐	☐	Single flow	Y	2-hour	229
	Ophidion marginatum	Striped cusk-eel		37	1.000			0.950	☐	☐	Single flow	Y	Continuous	72
	Ophidion marginatum	Striped cusk-eel		130	0.990			0.950	☐	☐	Single flow	Y	Continuous	70
	Ophidion marginatum	Striped cusk-eel		617	1.000			0.990	☐	☐	Single flow	Y	Continuous	73
	Ophidion marginatum	Striped cusk-eel		681	0.990			0.980	☐	☐	Single flow	Y	Continuous	74
	Ophidion marginatum	Striped cusk-eel		12	0.920			0.830	☐	☐	Single flow	Y	Continuous	71
Summary for 'Family' = Ophidiidae (7 detail records)														
Avg					0.959	0.930		0.940						
Min					0.880	0.930		0.830						
Max					1.000	0.930		0.990						
S.D.					0.048			0.064						
Order Pleuronectiformes	Pleuronectiformes	Flatfishes, Soles	59-365 mm	11	0.820	0.700	96		☑	☐	Single flow	N	3-hour	242
	Pleuronectiformes	Flatfishes, Soles	59-365 mm	42	0.710	0.520	96		☑	☐	Single flow	N	3-hour	242
Summary for 'Family' = Order Pleuronectiformes (2 detail records)														
Avg					0.765	0.610								
Min					0.710	0.520								
Max					0.820	0.700								
S.D.					0.078	0.127								

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Osmeridae	Osmeridae	Smelt family	100-150 mm		0.000						Single flow	N	3-hour	242
	Osmerus mordax	Rainbow smelt		1189	0.148	0.073	24	0.056			Single flow	N		180
	Osmerus mordax	Rainbow smelt	YOY	32	0.690						Single flow	N	2-hour	212
	Osmerus mordax	Rainbow smelt	YOY	20	0.250						Single flow	N	2-hour	212
	Osmerus mordax	Rainbow smelt		221				0.706			Single flow	N	Continuous	175
	Osmerus mordax	Rainbow smelt	YOY	82	0.570						Single flow	N	Continuous	212
	Osmerus mordax	Rainbow smelt	YOY	51	0.450						Single flow	N	Continuous	212
	Osmerus mordax	Rainbow smelt	Yearling	200	0.680	0.015	96				Single flow	Y	2-hour	208
	Osmerus mordax	Rainbow smelt	Yearling	141	0.664	0.020	96				Single flow	Y	4-hour	208
	Osmerus mordax	Rainbow smelt		33	0.030						Single flow	Y	8-hour	238
	Osmerus mordax	Rainbow smelt	Small	60	1.000	0.583	96				Single flow	Y	Continuous	182
	Osmerus mordax	Rainbow smelt		1824	0.801	0.480	24				Single flow	Y	Continuous	251
	Osmerus mordax	Rainbow smelt		3461	0.929	0.494	96				Single flow	Y	Continuous	240
	Osmerus mordax	Rainbow smelt		5496	0.802	0.266	96				Single flow	Y	Continuous	240
	Osmerus mordax	Rainbow smelt	< 100 mm	1733	0.970	0.744	24				Single flow	Y	Continuous	251
	Osmerus mordax	Rainbow smelt	> 100 mm	1685	0.995	0.943	24				Single flow	Y	Continuous	251
	Osmerus mordax	Rainbow smelt	Adult	35		0.175	102				Single flow	Y	Continuous	197
	Osmerus mordax	Rainbow smelt	Juvenile	120	0.280	0.000	96			✓	Single flow	Y	Continuous	236
	Osmerus mordax	Rainbow smelt	YOY	42		0.045	102				Single flow	Y	Continuous	197
	Osmerus mordax	Rainbow smelt	Small	182	0.951	0.225	96				Single flow	Y	Continuous	182
	Osmerus mordax	Rainbow smelt	Small	274	0.978	0.667	96				Single flow	Y	Continuous	182
	Osmerus mordax	Rainbow smelt	Yearling	562	0.943	0.038	96				Single flow	Y	Continuous	208
	Osmerus mordax	Rainbow smelt		1491	0.836	0.068	96				Single flow	Y	Continuous	240
	Osmerus mordax	Rainbow smelt	Yearling	695	0.950	0.110	96				Single flow	Y	Continuous	198
	Osmerus mordax	Rainbow smelt	YOY	20	0.100						Single flow	Y	Continuous	203
	Osmerus mordax	Rainbow smelt	YOY	42	0.900	0.020	96				Single flow	Y	Continuous	198
	Osmerus mordax	Rainbow smelt	Adult	35	0.860	0.170	96				Single flow	Y	Continuous	198
	Osmerus mordax	Rainbow smelt		65	0.631	0.015	96				Single flow	Y	Continuous	240
	Osmerus mordax	Rainbow smelt		13	1.000	0.077	96				Single flow	Y	Continuous	182
	Osmerus mordax	Rainbow smelt		16	0.000	0.000	96				Single flow	Y	Continuous	248

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Osmeridae	Osmerus mordax	Rainbow smelt		27	0.667	0.037	96		☐	☐	Single flow	Y	Continuous	182
	Osmerus mordax	Rainbow smelt		29	0.900	0.000	24		☐	☐	Single flow	Y	Continuous	182
	Osmerus mordax	Rainbow smelt		29	0.966	0.036	96		☐	☐	Single flow	Y	Continuous	182
	Osmerus mordax	Rainbow smelt		31	0.840	0.060	24		☐	☐	Single flow	Y	Continuous	182
	Osmerus mordax	Rainbow smelt		32	0.969	0.313	96		☐	☐	Single flow	Y	Continuous	182
	Osmerus mordax	Rainbow smelt		1459	0.994	0.949	96		☐	☐	Single flow	Y	Continuous	240
	Osmerus mordax	Rainbow smelt		49	0.939	0.041	96		☐	☐	Single flow	Y	Continuous	182
	Osmerus mordax	Rainbow smelt	Yearling	695		0.120	102		☐	☐	Single flow	Y	Continuous	197
	Osmerus mordax	Rainbow smelt		109	0.899	0.147	96		☐	☐	Single flow	Y	Continuous	240
	Osmerus mordax	Rainbow smelt		135		0.877	96		☐	☐	Single flow	Y	Continuous	232
	Osmerus mordax	Rainbow smelt		135	0.978	0.400	96		☐	☐	Single flow	Y	Continuous	182
	Osmerus mordax	Rainbow smelt		978	0.978	0.355	96		☐	☐	Single flow	Y	Continuous	240
	Osmerus mordax	Rainbow smelt		155	0.974	0.110	96		☐	☐	Single flow	Y	Continuous	182
	Osmerus mordax	Rainbow smelt		174	1.000	0.408	96	0.063	☐	☐	Single flow	Y	Continuous	181
	Osmerus mordax	Rainbow smelt		248	0.984	0.218	96		☐	☐	Single flow	Y	Continuous	240
	Osmerus mordax	Rainbow smelt		248	0.984	0.218	96		☐	☐	Single flow	Y	Continuous	240
	Osmerus mordax	Rainbow smelt	PYS larvae	187	0.947				☐	☐	Dual flow	N	2-hour	227
	Osmerus mordax	Rainbow smelt	PYS larvae	475	0.817	0.008	24		☐	☐	Dual flow	N	2-hour	227
	Osmerus mordax	Rainbow smelt	Juvenile	122	0.943	0.434	24		☐	☐	Dual flow	N	2-hour	227
	Osmerus mordax	Rainbow smelt	Juvenile	11	0.909				☐	☐	Dual flow	N	2-hour	227
	Osmerus mordax	Rainbow smelt	Adult	511	0.988	0.530	24		☐	☐	Dual flow	N	2-hour	227
	Osmerus mordax	Rainbow smelt	PYS larvae	63	0.984				☐	☐	Dual flow	N	Continuous	227
	Osmerus mordax	Rainbow smelt		48	0.792	0.188	24		☐	☐	Dual flow	Y	Continuous	252
	Osmerus mordax	Rainbow smelt		473	0.968	0.759	24		☐	☐	Dual flow	Y	Continuous	252
	Osmerus mordax	Rainbow smelt	< 100 mm	188	0.904	0.710	24		☐	☐	Dual flow	Y	Continuous	252
	Osmerus mordax	Rainbow smelt	> 100 mm	426	0.974	0.886	24		☐	☐	Dual flow	Y	Continuous	252
	Osmerus mordax	Rainbow smelt		80	0.150	0.033	96		☐	☐	Dual flow	Y	Continuous	248
	Osmerus mordax	Rainbow smelt		318	0.893	0.632	24		☐	☐	Dual flow	Y	Continuous	252
	Osmerus mordax	Rainbow smelt		761	0.130	0.028	24	0.013	☐	☐	Angled	N		180

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Summary for 'Family' = Osmeridae (59 detail records)														
Avg					0.757	0.286		0.209						
Min					0.000	0.000		0.013						
Max					1.000	0.949		0.706						
S.D.					0.314	0.297		0.332						
Paguridae	Paguridae	Hermit crab family	Megalop		1.000	0.900	48		☐	☐	Dual flow	Y	Continuous	230
	Paguridae	Hermit crab family	Zoea		0.947	0.915	48		☐	☐	Dual flow	Y	Continuous	230
Summary for 'Family' = Paguridae (2 detail records)														
Avg					0.974	0.907								
Min					0.947	0.900								
Max					1.000	0.915								
S.D.					0.037	0.011								
Palaemonidae	Macrobrachium ohione	Ohio River shrimp		10	0.500				☐	☐	Single flow	N	Continuous	250
	Palaemonetes sp.	Palaemonetes shrimp		52	0.750			0.500	☐	☐	Single flow	N	2-hour	40
	Palaemonetes intermedius	Brackish grass shrimp		716	0.997				☐	☐	Dual flow	Y	Continuous	239
	Palaemonetes pugio	Daggerblade grass shrimp		12	0.920			0.833	☐	☐	Single flow	N	2-hour	40
	Palaemonetes vulgaris	Grass shrimp		1794	0.930			0.882	☐	☐	Single flow	N	2-hour	40
	Palaemonetes vulgaris	Grass shrimp		2259	0.920				☐	☐	Single flow	N	2-hour	184
	Palaemonetes vulgaris	Grass shrimp		53	0.887				☐	☐	Single flow	N	Continuous	250
	Palaemonetes vulgaris	Grass shrimp		93	0.989				☐	☐	Single flow	N	Continuous	250
	Palaemonetes vulgaris	Grass shrimp		23	0.609				☐	☐	Single flow	N	Intermittant	250
	Palaemonetes vulgaris	Grass shrimp		17	0.882				☐	☐	Single flow	N	Intermittant	250
Summary for 'Family' = Palaemonidae (10 detail records)														
Avg					0.838			0.738						
Min					0.500			0.500						
Max					0.997			0.882						
S.D.					0.166			0.208						

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Paralichthyidae	Paralichthyidae	Lefteye flounder family		91	0.911	0.900	96				Single flow	Y	Continuous	115
	Citharichthys spilopterus	Bay whiff		30	0.833						Single flow	N	Continuous	250
	Citharichthys spilopterus	Bay whiff		107	0.514						Single flow	N	Continuous	250
	Citharichthys spilopterus	Bay whiff		13		0.231	120				Single flow	N	Continuous	250
	Citharichthys spilopterus	Bay whiff		51	0.176						Single flow	N	Intermittant	250
	Citharichthys spilopterus	Bay whiff		15	0.400						Single flow	N	Intermittant	250
	Etropus microstomus	Smallmouth flounder		558	0.820			0.563			Single flow	N	2-hour	40
	Etropus microstomus	Smallmouth flounder		1626	0.820						Single flow	N	2-hour	184
	Etropus microstomus	Smallmouth flounder		2213	0.740						Single flow	N	2-hour	184
	Etropus microstomus	Smallmouth flounder		115	0.840						Single flow	N	Continuous	184
	Paralichthys dentatus	Summer flounder		130	0.890			0.569			Single flow	N	2-hour	40
	Paralichthys dentatus	Summer flounder		259	0.910						Single flow	N	2-hour	184
	Paralichthys dentatus	Summer flounder		1054				0.900			Single flow	Y	1-hour	167
	Paralichthys dentatus	Summer flounder		62	0.980			0.980			Single flow	Y	Continuous	71
	Paralichthys dentatus	Summer flounder		87	0.990			0.980			Single flow	Y	Continuous	70
	Paralichthys dentatus	Summer flounder			0.972						Single flow	Y	Continuous	241
	Paralichthys dentatus	Summer flounder		18	1.000			0.890			Single flow	Y	Continuous	73
	Paralichthys dentatus	Summer flounder		40	1.000			1.000			Single flow	Y	Continuous	74
	Paralichthys lethostigma	Southern flounder		14	0.500						Single flow	N	Continuous	250
	Paralichthys lethostigma	Southern flounder		11	0.545						Single flow	N	Intermittant	250
	Paralichthys lethostigma	Southern flounder		13	0.538						Single flow	N	Intermittant	250

Summary for 'Family' = Paralichthyidae (21 detail records)

	Si	Se	Si(dd)
Avg	0.757	0.565	0.840
Min	0.176	0.231	0.563
Max	1.000	0.900	1.000
S.D.	0.240	0.473	0.192

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Penaeidae	Penaeidae	Penaeid family		83		0.000	120		☐	☐	Single flow	N	Continuous	250
	Penaeidae	Penaeid family		31		0.000	120		☐	☐	Single flow	N	Continuous	250
	Penaeidae	Penaeid family		33	1.000				☐	☐	Single flow	N	Continuous	250
	Penaeidae	Penaeid family		94	1.000				☐	☐	Single flow	N	Continuous	250
	Penaeidae	Penaeid family		29	0.790				☐	☐	Single flow	Y	2-hour	255
	Penaeidae	Penaeid family		10		0.800	96		☐	☐	Single flow	Y	2-hour	255
	Penaeidae	Penaeid family		24	0.790				☐	☐	Single flow	Y	2-hour	255
	Penaeidae	Penaeid family		42	0.950				☐	☐	Single flow	Y	2-hour	255
	Penaeidae	Penaeid family		50	0.940				☐	☐	Single flow	Y	2-hour	255
	Penaeidae	Penaeid family		13	0.920				☐	☐	Single flow	Y	2-hour	255
	Penaeidae	Penaeid family		10		1.000	96		☐	☐	Single flow	Y	2-hour	255
	Penaeidae	Penaeid family		10		1.000	96		☐	☐	Single flow	Y	2-hour	255
	Penaeidae	Penaeid family		357	0.950				☐	☐	Single flow	Y	2-hour	255
	Penaeidae	Penaeid family		10		1.000	96		☐	☐	Single flow	Y	2-hour	255
	Penaeidae	Penaeid family		34	0.790				☐	☐	Single flow	Y	4-hour	255
	Penaeidae	Penaeid family		332	0.990				☐	☐	Single flow	Y	Continuous	255
	Penaeidae	Penaeid family		344	0.970				☐	☐	Single flow	Y	Continuous	255
	Penaeidae	Penaeid family		46	0.980				☐	☐	Single flow	Y	Continuous	255
	Penaeidae	Penaeid family	Postlarvae	188	0.957	0.902	96		☐	☐	Single flow	Y	Continuous	115
	Penaeidae	Penaeid family	Postlarvae	131	0.908	0.771	96		☐	☐	Single flow	Y	Continuous	115
	Penaeidae	Penaeid family		42	1.000				☐	☐	Single flow	Y	Continuous	255
	Penaeidae	Penaeid family		38	1.000				☐	☐	Single flow	Y	Continuous	255
	Penaeidae	Penaeid family		28	0.960				☐	☐	Single flow	Y	Continuous	255
	Penaeidae	Penaeid family		14	0.790				☐	☐	Single flow	Y	Continuous	255
	Penaeidae	Penaeid family		13		0.390	96		☐	☐	Single flow	Y	Continuous	255
	Penaeidae	Penaeid family		10		1.000	96		☐	☐	Single flow	Y	Continuous	255
	Penaeidae	Penaeid family		10		0.900	96		☐	☐	Single flow	Y	Continuous	255
	Penaeidae	Penaeid family		10		0.900	96		☐	☐	Single flow	Y	Continuous	254
	Penaeidae	Penaeid family		11		0.360	96		☐	☐	Single flow	Y	Continuous	255
	Penaeus sp.	Penaeid shrimps		264	0.986	0.927	96		☐	☐	Single flow	Y	Continuous	115

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Penaeidae	Penaeus sp.	Penaeid shrimps		48	0.917	0.812	96		☐	☐	Single flow	Y	Continuous	115
	Penaeus aztecus	Brown shrimp		58	0.970			0.910	☐	☐	Single flow	N	2-hour	40
	Penaeus aztecus	Brown shrimp		249		0.928	120		☐	☐	Single flow	N	Continuous	250
	Penaeus aztecus	Brown shrimp		584		0.808	120		☐	☐	Single flow	N	Continuous	250
	Penaeus aztecus	Brown shrimp		2086	0.907				☐	☐	Single flow	N	Continuous	250
	Penaeus aztecus	Brown shrimp		6119	0.567				☐	☐	Single flow	N	Continuous	250
	Penaeus aztecus	Brown shrimp		827	0.803				☐	☐	Single flow	N	Intermittant	250
	Penaeus aztecus	Brown shrimp		2520	0.571				☐	☐	Single flow	N	Intermittant	250
	Penaeus aztecus	Brown shrimp		87	0.921	0.690	96		☐	☐	Single flow	Y	Continuous	115
	Penaeus aztecus	Brown shrimp		249	0.968	0.892	96		☐	☐	Single flow	Y	Continuous	115
	Penaeus duorarum	Pink shrimp		287	0.986				☐	☐	Dual flow	Y	Continuous	239
	Penaeus setiferus	White shrimp		8688	0.562				☐	☐	Single flow	N	Continuous	250
	Penaeus setiferus	White shrimp		1579	0.740				☐	☐	Single flow	N	Continuous	250
	Penaeus setiferus	White shrimp		782		0.838	120		☐	☐	Single flow	N	Continuous	250
	Penaeus setiferus	White shrimp		150		0.773	120		☐	☐	Single flow	N	Continuous	250
	Penaeus setiferus	White shrimp		786	0.706				☐	☐	Single flow	N	Intermittant	250
	Penaeus setiferus	White shrimp		3353	0.493				☐	☐	Single flow	N	Intermittant	250
	Penaeus setiferus	White shrimp		55	0.945				☐	☐	Dual flow	Y	Continuous	239
	Trachypeneus constrictus	Hardback shrimp		123	0.333	0.220	96		☐	☐	Single flow	Y	Continuous	115
	Xiphopenaeus kroyeri	Atlantic seabob		12	0.417				☐	☐	Single flow	N	Continuous	250

Summary for 'Family' = Penaeidae (50 detail records)

	Si	Se	Si(dd)
Avg	0.842	0.723	0.910
Min	0.333	0.000	0.910
Max	1.000	1.000	0.910
S.D.	0.185	0.316	

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Percichthyidae	Morone sp.	Striped basses		13	1.000	0.185	96		☐	☐	Dual flow	Y	Continuous	248
	Morone sp.	Striped basses		21	1.000	0.000	96		☐	☐	Dual flow	Y	Continuous	206
	Morone americana	White perch		202		0.000	48		✔	☐	Single flow	N	1-hour	166
	Morone americana	White perch		17		0.471	48		✔	☐	Single flow	N	1-hour	166
	Morone americana	White perch		48		0.336	48		✔	☐	Single flow	N	1-hour	166
	Morone americana	White perch	YOY	346	0.951	0.315	84		☐	✔	Single flow	N	2-hour	172
	Morone americana	White perch		236	0.710	0.030	96		☐	☐	Single flow	N	2-hour	215
	Morone americana	White perch	Adult	321	0.984	0.248	84		☐	✔	Single flow	N	2-hour	172
	Morone americana	White perch	Adult	223	0.991	0.281	84		☐	☐	Single flow	N	2-hour	212
	Morone americana	White perch	Adult	135	0.941				☐	☐	Single flow	N	2-hour	172
	Morone americana	White perch	YOY	556	0.860	0.011	84		☐	✔	Single flow	N	2-hour	172
	Morone americana	White perch	Adult	56	0.964	0.111	84		☐	☐	Single flow	N	2-hour	212
	Morone americana	White perch	YOY	389	0.960	0.080	84		☐	☐	Single flow	N	2-hour	12
	Morone americana	White perch	YOY	389	0.960	0.077	84		☐	✔	Single flow	N	2-hour	177
	Morone americana	White perch	Adult	10	1.000				☐	☐	Single flow	N	2-hour	212
	Morone americana	White perch	Adult	20	1.000	0.150	84		☐	☐	Single flow	N	2-hour	212
	Morone americana	White perch	YOY	344	0.920	0.050	84		☐	☐	Single flow	N	2-hour	12
	Morone americana	White perch	YOY	344	0.920	0.046	84		☐	✔	Single flow	N	2-hour	177
	Morone americana	White perch	YOY	29	0.970	0.243	84		☐	✔	Single flow	N	2-hour	177
	Morone americana	White perch	Adult	27	0.960				☐	☐	Single flow	N	2-hour	212
	Morone americana	White perch	Adult	21	0.952				☐	☐	Single flow	N	2-hour	172
	Morone americana	White perch	YOY	258	0.620	0.093	84		☐	✔	Single flow	N	2-hour	177
	Morone americana	White perch	Yearling	20	0.800	0.050	84		☐	✔	Single flow	N	2-hour	172
	Morone americana	White perch	Yearling	87	0.908	0.118	84		☐	✔	Single flow	N	2-hour	172
	Morone americana	White perch	Yearling	74	0.986	0.042	84		☐	☐	Single flow	N	2-hour	212
	Morone americana	White perch		13	0.846				☐	☐	Single flow	N	2-hour	245
	Morone americana	White perch	Yearling	162	0.988	0.400	84		☐	☐	Single flow	N	2-hour	212
	Morone americana	White perch		20	0.850	0.400	24		☐	☐	Single flow	N	2-hour	245
	Morone americana	White perch	Yearling	46	0.978	0.222	84		☐	☐	Single flow	N	2-hour	212
	Morone americana	White perch	Yearling	29	1.000				☐	☐	Single flow	N	2-hour	172

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Percichthyidae	Morone americana	White perch	Yearling	22	1.000	0.140	84		☐	☐	Single flow	N	2-hour	12
	Morone americana	White perch	YOY	68	0.970	0.223	84		☐	☑	Single flow	N	2-hour	177
	Morone americana	White perch	Adult	14	1.000				☐	☐	Single flow	N	2-hour	212
	Morone americana	White perch	YOY	74	1.000	0.200	84		☐	☑	Single flow	N	2-hour	177
	Morone americana	White perch	Yearling	95	0.958				☐	☐	Single flow	N	2-hour	172
	Morone americana	White perch	Yearling	17	0.710	0.060	84		☐	☐	Single flow	N	2-hour	214
	Morone americana	White perch	Yearling	10	0.500				☐	☐	Single flow	N	2-hour	212
	Morone americana	White perch		145	0.930			0.579	☐	☐	Single flow	N	2-hour	40
	Morone americana	White perch	Yearling	20	0.950				☐	☐	Single flow	N	2-hour	212
	Morone americana	White perch	YOY	70	0.710	0.000	84		☐	☑	Single flow	N	4-hour	177
	Morone americana	White perch	Yearling	26	0.885	0.043	84		☐	☐	Single flow	N	4-hour	212
	Morone americana	White perch	Adult	137	0.942	0.031	84		☐	☐	Single flow	N	4-hour	212
	Morone americana	White perch	YOY	231	0.390	0.039	84		☐	☑	Single flow	N	4-hour	177
	Morone americana	White perch	YOY	70	0.710	0.000	84		☐	☐	Single flow	N	4-hour	12
	Morone americana	White perch	YOY	158	0.390	0.023	84		☐	☐	Single flow	N	4-hour	177
	Morone americana	White perch	Yearling	62	0.710	0.000	84		☐	☐	Single flow	N	4-hour	212
	Morone americana	White perch	YOY	144	0.920	0.230	84		☐	☑	Single flow	N	4-hour	177
	Morone americana	White perch	YOY	25	0.960	0.160	84		☐	☐	Single flow	N	4-hour	12
	Morone americana	White perch	YOY	25	0.960	0.163	84		☐	☑	Single flow	N	4-hour	177
	Morone americana	White perch		127	0.701	0.080	24		☐	☐	Single flow	N	4-hour	245
	Morone americana	White perch		924	0.310	0.000	96		☐	☐	Single flow	N	4-hour	215
	Morone americana	White perch	Adult	15	0.733	0.181	84		☐	☐	Single flow	N	4-hour	212
	Morone americana	White perch		112		0.000	48		☑	☐	Single flow	N	8-hour	166
	Morone americana	White perch		150	0.600	0.040	24		☐	☐	Single flow	N	8-hour	245
	Morone americana	White perch		26		0.111	48		☑	☐	Single flow	N	8-hour	166
	Morone americana	White perch		27		0.367	48		☑	☐	Single flow	N	8-hour	166
	Morone americana	White perch		137	0.120	0.000	96		☐	☐	Single flow	N	9-hour	215
	Morone americana	White perch	YOY	122	0.880	0.378	84		☐	☑	Single flow	N	Continuous	177
	Morone americana	White perch	YOY	229	0.950	0.190	84		☐	☑	Single flow	N	Continuous	177
	Morone americana	White perch	Adult	347	0.988	0.449	84		☐	☐	Single flow	N	Continuous	212

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Percichthyidae	Morone americana	White perch	YOY	201	0.820	0.238	84		☐	☑	Single flow	N	Continuous	177
	Morone americana	White perch	YOY	187	0.952	0.781	84		☐	☑	Single flow	N	Continuous	172
	Morone americana	White perch	Adult	213	0.991	0.897	84		☐	☑	Single flow	N	Continuous	172
	Morone americana	White perch	Adult	13	1.000				☐	☐	Single flow	N	Continuous	172
	Morone americana	White perch	Yearling	171	0.988	0.023	84		☐	☐	Single flow	N	Continuous	212
	Morone americana	White perch	Yearling	10	1.000	0.400	84		☐	☐	Single flow	N	Continuous	12
	Morone americana	White perch		118	0.890	0.220	24		☐	☐	Single flow	N	Continuous	245
	Morone americana	White perch	Yearling	17	1.000	0.530	84		☐	☐	Single flow	N	Continuous	214
	Morone americana	White perch	Yearling	22	1.000				☐	☐	Single flow	N	Continuous	212
	Morone americana	White perch		17	1.000				☐	☐	Single flow	N	Continuous	245
	Morone americana	White perch	Yearling	153	0.987	0.060	84		☐	☐	Single flow	N	Continuous	212
	Morone americana	White perch	Adult	16	1.000				☐	☐	Single flow	N	Continuous	212
	Morone americana	White perch	Adult	41	1.000				☐	☐	Single flow	N	Continuous	172
	Morone americana	White perch	YOY	280	0.961	0.861	84		☐	☑	Single flow	N	Continuous	172
	Morone americana	White perch	Adult	26	0.960				☐	☐	Single flow	N	Continuous	212
	Morone americana	White perch	YOY	285	0.980	0.431	84		☐	☑	Single flow	N	Continuous	177
	Morone americana	White perch	YOY	285	0.980	0.440	84		☐	☐	Single flow	N	Continuous	12
	Morone americana	White perch	Yearling	160	0.988	0.894	84		☐	☑	Single flow	N	Continuous	172
	Morone americana	White perch	Yearling	53	1.000				☐	☐	Single flow	N	Continuous	172
	Morone americana	White perch	YOY	378	0.890	0.454	84		☐	☑	Single flow	N	Continuous	177
	Morone americana	White perch		268	0.920	0.030	96		☐	☐	Single flow	N	Continuous	215
	Morone americana	White perch	Adult	53	0.981	0.076	84		☐	☐	Single flow	N	Continuous	212
	Morone americana	White perch	Yearling	36	0.889	0.250	84		☐	☑	Single flow	N	Continuous	172
	Morone americana	White perch	Yearling	30	1.000				☐	☐	Single flow	N	Continuous	172
	Morone americana	White perch	Adult	89	0.989	0.113	84		☐	☐	Single flow	N	Continuous	212
	Morone americana	White perch	Yearling	248	0.935	0.327	84		☐	☐	Single flow	N	Continuous	212
	Morone americana	White perch	YOY	707	0.790	0.040	84		☐	☐	Single flow	N	Continuous	12
	Morone americana	White perch	YOY	707	0.790	0.047	84		☐	☑	Single flow	N	Continuous	177
	Morone americana	White perch		55				0.530	☐	☐	Single flow	Y	1-hour	167
	Morone americana	White perch	Yearling	26	1.000				☐	☐	Single flow	Y	2-hour	172

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Percichthyidae	Morone americana	White perch	Yearling	32	0.969				☐	☐	Single flow	Y	2-hour	172
	Morone americana	White perch	YOY	2970	0.914	0.253	96		☐	☐	Single flow	Y	2-hour	208
	Morone americana	White perch	Yearling	25	1.000	0.160	84		☐	☑	Single flow	Y	2-hour	172
	Morone americana	White perch	YOY	22	0.773	0.000	84		☐	☐	Single flow	Y	2-hour	199
	Morone americana	White perch	YOY	2383	0.900	0.261	96		☐	☑	Single flow	Y	2-hour	177
	Morone americana	White perch	Adult	11	1.000				☐	☐	Single flow	Y	2-hour	172
	Morone americana	White perch	YOY	211	0.900	0.052	84		☐	☑	Single flow	Y	2-hour	172
	Morone americana	White perch	Yearling	279	0.978	0.091	96		☐	☐	Single flow	Y	2-hour	208
	Morone americana	White perch	Yearling	325	0.914	0.377	96		☐	☐	Single flow	Y	2-hour	208
	Morone americana	White perch	Adult	84	0.940	0.286	84		☐	☑	Single flow	Y	2-hour	172
	Morone americana	White perch	Adult	72	0.931				☐	☐	Single flow	Y	2-hour	172
	Morone americana	White perch	YOY	71	0.930	0.182	84		☐	☐	Single flow	Y	2-hour	199
	Morone americana	White perch	YOY	254	0.937	0.129	84		☐	☑	Single flow	Y	2-hour	172
	Morone americana	White perch	YOY	123	0.992	0.090	84		☐	☐	Single flow	Y	2-hour	199
	Morone americana	White perch	Yearling	528	0.869	0.133	96		☐	☐	Single flow	Y	4-hour	208
	Morone americana	White perch	YOY	254	0.710	0.135	96		☐	☑	Single flow	Y	4-hour	177
	Morone americana	White perch	YOY	840	0.900	0.119	96		☐	☐	Single flow	Y	4-hour	208
	Morone americana	White perch	Yearling	226	0.911	0.024	96		☐	☐	Single flow	Y	4-hour	208
	Morone americana	White perch		29		0.620	24		☐	☐	Single flow	Y	Combined int	249
	Morone americana	White perch	Yearling&Older	37	0.410	0.164	84		☐	☑	Single flow	Y	Continuous	203
	Morone americana	White perch	YOY	271	0.930	0.630	96		☐	☐	Single flow	Y	Continuous	198
	Morone americana	White perch	Yearling	3196	0.890	0.310	96		☐	☐	Single flow	Y	Continuous	198
	Morone americana	White perch	YOY	33	0.939	0.032	84		☐	☐	Single flow	Y	Continuous	199
	Morone americana	White perch	YOY	271		0.650	102		☑	☐	Single flow	Y	Continuous	197
	Morone americana	White perch	Yearling	3196		0.670	102		☑	☐	Single flow	Y	Continuous	197
	Morone americana	White perch	YOY	6485	0.974	0.534	96		☐	☐	Single flow	Y	Continuous	208
	Morone americana	White perch	YOY	5891	0.970	0.543	96		☐	☑	Single flow	Y	Continuous	177
	Morone americana	White perch	YOY	2764	0.970	0.540	96		☐	☐	Single flow	Y	Continuous	198
	Morone americana	White perch	YOY	1057	0.800	0.168	108		☐	☑	Single flow	Y	Continuous	177
	Morone americana	White perch	YOY	467		0.850	102		☑	☐	Single flow	Y	Continuous	197

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Percichthyidae	Morone americana	White perch	YOY	260		0.000	102		☐	☐	Single flow	Y	Continuous	197
	Morone americana	White perch	YOY	317	0.981	0.423	84		☐	☑	Single flow	Y	Continuous	172
	Morone americana	White perch	YOY	33	1.000	1.000	96		☐	☐	Single flow	Y	Continuous	202
	Morone americana	White perch	YOY	238	0.910	0.720	96		☐	☐	Single flow	Y	Continuous	198
	Morone americana	White perch	YOY	238		0.765	102		☑	☐	Single flow	Y	Continuous	197
	Morone americana	White perch	YOY	228	0.450	0.257	84		☐	☑	Single flow	Y	Continuous	203
	Morone americana	White perch	YOY	98	0.980	0.073	84		☐	☐	Single flow	Y	Continuous	199
	Morone americana	White perch	YOY	48	0.917	0.667	84		☐	☑	Single flow	Y	Continuous	172
	Morone americana	White perch	YOY	37	0.946	0.629	84		☐	☐	Single flow	Y	Continuous	199
	Morone americana	White perch	YOY	369		0.315	102		☑	☐	Single flow	Y	Continuous	197
	Morone americana	White perch		3942	0.990			0.940	☐	☐	Single flow	Y	Continuous	74
	Morone americana	White perch	Adult	216	0.981	0.666	84		☐	☑	Single flow	Y	Continuous	172
	Morone americana	White perch	Adult	47	0.940	0.680	96		☐	☐	Single flow	Y	Continuous	198
	Morone americana	White perch	Yearling	2145	0.857	0.286	96		☐	☐	Single flow	Y	Continuous	208
	Morone americana	White perch	Adult	46		0.680	102		☑	☐	Single flow	Y	Continuous	197
	Morone americana	White perch			0.997				☐	☐	Single flow	Y	Continuous	241
	Morone americana	White perch	Adult	36	0.920	0.500	96		☐	☐	Single flow	Y	Continuous	198
	Morone americana	White perch	Adult	40	0.925				☐	☐	Single flow	Y	Continuous	172
	Morone americana	White perch	Adult	36		0.495	102		☑	☐	Single flow	Y	Continuous	197
	Morone americana	White perch		11424	0.990			0.950	☐	☐	Single flow	Y	Continuous	73
	Morone americana	White perch	Adult	279		0.800	102		☑	☐	Single flow	Y	Continuous	197
	Morone americana	White perch		5114	0.970			0.940	☐	☐	Single flow	Y	Continuous	70
	Morone americana	White perch	Adult	102		0.270	102		☑	☐	Single flow	Y	Continuous	197
	Morone americana	White perch		3701	0.976	0.493	96		☐	☑	Single flow	Y	Continuous	110
	Morone americana	White perch		3568		0.610	96		☐	☐	Single flow	Y	Continuous	233
	Morone americana	White perch		2905		0.871	48		☐	☑	Single flow	Y	Continuous	75
	Morone americana	White perch		2483	0.952	0.608	96		☐	☑	Single flow	Y	Continuous	110
	Morone americana	White perch		1960	0.970			0.730	☐	☐	Single flow	Y	Continuous	71
	Morone americana	White perch		1438	0.687	0.333	96		☐	☐	Single flow	Y	Continuous	248
	Morone americana	White perch		1036		0.947	48		☐	☑	Single flow	Y	Continuous	75

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Percichthyidae	Morone americana	White perch		925	0.491	0.088	96		☐	☐	Single flow	Y	Continuous	248
	Morone americana	White perch		207	0.990			0.930	☐	☐	Single flow	Y	Continuous	72
	Morone americana	White perch		78	1.000	0.720	96		☐	☐	Single flow	Y	Continuous	240
	Morone americana	White perch		6278		0.728	96		☐	☐	Single flow	Y	Continuous	232
	Morone americana	White perch	Yearling	49	0.980	0.167	84		☐	☐	Single flow	Y	Continuous	199
	Morone americana	White perch	Yearling	2003	0.920	0.530	96		☐	☐	Single flow	Y	Continuous	198
	Morone americana	White perch	Yearling	2003		0.560	102		☑	☐	Single flow	Y	Continuous	197
	Morone americana	White perch	Yearling	1047	0.940	0.361	96		☐	☐	Single flow	Y	Continuous	208
	Morone americana	White perch	Yearling	747	0.930	0.510	96		☐	☐	Single flow	Y	Continuous	198
	Morone americana	White perch	Yearling	747		0.515	102		☑	☐	Single flow	Y	Continuous	197
	Morone americana	White perch	Yearling	283		0.370	102		☑	☐	Single flow	Y	Continuous	197
	Morone americana	White perch	Yearling	270		0.880	102		☑	☐	Single flow	Y	Continuous	197
	Morone americana	White perch	Yearling	61	0.984	0.509	84		☐	☑	Single flow	Y	Continuous	172
	Morone americana	White perch	Adult	364		0.515	102		☑	☐	Single flow	Y	Continuous	197
	Morone americana	White perch	Yearling	18	0.944	0.555	84		☐	☑	Single flow	Y	Continuous	172
	Morone americana	White perch	Yearling	13	1.000	0.615	84		☐	☐	Single flow	Y	Continuous	199
	Morone americana	White perch	Adult	499		0.415	102		☑	☐	Single flow	Y	Continuous	197
	Morone americana	White perch	Adult	499	0.890	0.330	96		☐	☐	Single flow	Y	Continuous	198
	Morone americana	White perch	Juvenile	14	0.790	0.561	96		☐	☑	Single flow	Y	Continuous	236
	Morone americana	White perch	PYS larvae	13	0.000	0.000	96		☐	☑	Single flow	Y	Continuous	236
	Morone americana	White perch	Yearling	76	0.974				☐	☐	Single flow	Y	Continuous	172
	Morone americana	White perch		1339	0.883	0.258	96		☐	☑	Single flow	Y	Intermittant	110
	Morone americana	White perch		1281	0.882	0.236	96		☐	☑	Single flow	Y	Intermittant	110
	Morone americana	White perch	Juvenile	110	0.991	0.546	24		☐	☐	Dual flow	N	2-hour	227
	Morone americana	White perch	PYS larvae	165	0.188	0.000	84		☐	☑	Dual flow	N	2-hour	227
	Morone americana	White perch	PYS larvae	10	1.000	0.600	24		☐	☐	Dual flow	N	2-hour	227
	Morone americana	White perch	Adult	61	0.951	0.557	24		☐	☐	Dual flow	N	2-hour	227
	Morone americana	White perch	PYS larvae	56	0.286	0.000	84		☐	☑	Dual flow	N	2-hour	227
	Morone americana	White perch	PYS larvae	21	0.429	0.000	84		☐	☑	Dual flow	N	Continuous	227
	Morone americana	White perch	PYS larvae	21	0.810	0.068	84		☐	☑	Dual flow	N	Continuous	227

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Percichthyidae	Morone americana	White perch	Juvenile	15	0.867				☐	☐	Dual flow	N	Continuous	227
	Morone americana	White perch		2539	0.799	0.476	96		☐	☐	Dual flow	Y	Continuous	248
	Morone americana	White perch		2691	0.749	0.327	96		☐	☐	Dual flow	Y	Continuous	248
	Morone americana	White perch		22	1.000	1.000	24		☐	☐	Dual flow	Y	Continuous	252
	Morone americana	White perch		899	0.950	0.583	96		☐	☐	Dual flow	Y	Continuous	206
	Morone americana	White perch		45	1.000	1.000	24		☐	☐	Dual flow	Y	Continuous	252
	Morone americana	White perch		10	0.200	0.000	24	0.100	☐	☐	Angled	N		180
	Morone chrysops	White bass	Juvenile	93	0.720	0.307			☐	☐		Y		178
	Morone chrysops	White bass	Postlarvae	1382	0.112	0.022			☐	☐		Y		178
	Morone chrysops	White bass	Prolarvae	76	0.000	0.000			☐	☐		Y		178
	Morone chrysops	White bass		17		0.060	96		☐	☐	Single flow	Y	8.5-hour	222
	Morone chrysops	White bass		127	0.984	0.976	24		☐	☐	Single flow	Y	Continuous	251
	Morone chrysops	White bass		461	1.000	0.959	96		☐	☐	Single flow	Y	Continuous	240
	Morone chrysops	White bass	PYS larvae	190	0.984	0.316	24		☐	☐	Dual flow	N	2-hour	227
	Morone chrysops	White bass	Adult	144	0.979	0.646	24		☐	☐	Dual flow	N	2-hour	227
	Morone chrysops	White bass	Juvenile	23	1.000				☐	☐	Dual flow	N	2-hour	227
	Morone chrysops	White bass	Juvenile	119	0.983	0.874	24		☐	☐	Dual flow	N	2-hour	227
	Morone chrysops	White bass	PYS larvae	10	1.000				☐	☐	Dual flow	N	2-hour	227
	Morone chrysops	White bass		147	0.986	0.986	24		☐	☐	Dual flow	Y	Continuous	252
	Morone saxatilis	Striped bass		12	0.670	0.170	96		☐	☐	Single flow	N	2-hour	215
	Morone saxatilis	Striped bass		26	0.310	0.000	96		☐	☐	Single flow	N	4-hour	215
	Morone saxatilis	Striped bass		22				0.500	☐	☐	Single flow	Y	1-hour	167
	Morone saxatilis	Striped bass	Yearling	13	0.846	0.077	96		☐	☐	Single flow	Y	2-hour	208
	Morone saxatilis	Striped bass	Yearling	56	0.893	0.180	96		☐	☐	Single flow	Y	2-hour	208
	Morone saxatilis	Striped bass	YOY	284	0.930	0.237	96		☐	☐	Single flow	Y	2-hour	208
	Morone saxatilis	Striped bass	YOY	256	0.920	0.250	96		☐	☑	Single flow	Y	2-hour	177
	Morone saxatilis	Striped bass	YOY	17	1.000	0.176	96		☐	☐	Single flow	Y	4-hour	208
	Morone saxatilis	Striped bass	Yearling	14	0.929	0.000	96		☐	☐	Single flow	Y	4-hour	208
	Morone saxatilis	Striped bass	Yearling	175	0.897	0.032	96		☐	☐	Single flow	Y	4-hour	208
	Morone saxatilis	Striped bass	Yearling	14	0.930	0.360	96		☐	☐	Single flow	Y	Continuous	198

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Percichthyidae	Morone saxatilis	Striped bass	Yearling	173	0.936	0.136	96		☐	☐	Single flow	Y	Continuous	208
	Morone saxatilis	Striped bass	Yearling	628	0.900	0.319	96		☐	☐	Single flow	Y	Continuous	208
	Morone saxatilis	Striped bass	Yearling	648		0.470	102		☑	☐	Single flow	Y	Continuous	197
	Morone saxatilis	Striped bass	Yearling	648	0.910	0.420	96		☐	☐	Single flow	Y	Continuous	198
	Morone saxatilis	Striped bass	Yearling	843		0.605	102		☑	☐	Single flow	Y	Continuous	197
	Morone saxatilis	Striped bass	Yearling	843	0.910	0.250	96		☐	☐	Single flow	Y	Continuous	198
	Morone saxatilis	Striped bass	YOY	10		0.500	102		☑	☐	Single flow	Y	Continuous	197
	Morone saxatilis	Striped bass	YOY	10	0.800	0.500	96		☐	☐	Single flow	Y	Continuous	198
	Morone saxatilis	Striped bass	YOY	11	0.910				☐	☐	Single flow	Y	Continuous	199
	Morone saxatilis	Striped bass	YOY	21		0.810	102		☑	☐	Single flow	Y	Continuous	197
	Morone saxatilis	Striped bass		456	0.980			0.950	☐	☐	Single flow	Y	Continuous	73
	Morone saxatilis	Striped bass	YOY	208		0.535	102		☐	☐	Single flow	Y	Continuous	197
	Morone saxatilis	Striped bass	YOY	208	0.990	0.540	96		☐	☐	Single flow	Y	Continuous	198
	Morone saxatilis	Striped bass	YOY	13	0.850	0.748	84		☐	☑	Single flow	Y	Continuous	203
	Morone saxatilis	Striped bass		268	0.642	0.238	96		☐	☐	Single flow	Y	Continuous	248
	Morone saxatilis	Striped bass		39	0.590	0.169	96		☐	☐	Single flow	Y	Continuous	248
	Morone saxatilis	Striped bass		73		0.598	96		☐	☐	Single flow	Y	Continuous	233
	Morone saxatilis	Striped bass	YOY	445	0.953	0.521	96		☐	☐	Single flow	Y	Continuous	208
	Morone saxatilis	Striped bass	YOY	617	0.900	0.288	108		☐	☑	Single flow	Y	Continuous	177
	Morone saxatilis	Striped bass		181	0.961	0.619	96		☐	☑	Single flow	Y	Continuous	110
	Morone saxatilis	Striped bass	YOY	412	0.950	0.589	96		☐	☑	Single flow	Y	Continuous	177
	Morone saxatilis	Striped bass		253	1.000			0.980	☐	☐	Single flow	Y	Continuous	72
	Morone saxatilis	Striped bass	Yearling	14		0.540	102		☐	☐	Single flow	Y	Continuous	197
	Morone saxatilis	Striped bass		282	0.943	0.482	96		☐	☑	Single flow	Y	Continuous	110
	Morone saxatilis	Striped bass		300	0.970			0.930	☐	☐	Single flow	Y	Continuous	74
	Morone saxatilis	Striped bass		703	0.980			0.960	☐	☐	Single flow	Y	Continuous	70
	Morone saxatilis	Striped bass		1124		0.687	96		☐	☐	Single flow	Y	Continuous	232
	Morone saxatilis	Striped bass	Adult	11		0.275	102		☐	☐	Single flow	Y	Continuous	197
	Morone saxatilis	Striped bass	Adult	11	0.910	0.270	96		☐	☐	Single flow	Y	Continuous	198
	Morone saxatilis	Striped bass	Juvenile	35	0.770	0.462	96		☐	☑	Single flow	Y	Continuous	236

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Percichthyidae	Morone saxatilis	Striped bass		205	0.980			0.940	☐	☐	Single flow	Y	Continuous	71
	Morone saxatilis	Striped bass		105	0.895	0.305	96		☐	☑	Single flow	Y	Intermittant	110
	Morone saxatilis	Striped bass		164	0.945	0.134	96		☐	☑	Single flow	Y	Intermittant	110
	Morone saxatilis	Striped bass		899	0.889	0.345	96		☐	☐	Dual flow	Y	Continuous	206
	Morone saxatilis	Striped bass		77	0.805	0.311	96		☐	☐	Dual flow	Y	Continuous	248
	Morone saxatilis	Striped bass		2073	0.816	0.429	96		☐	☐	Dual flow	Y	Continuous	248

Summary for 'Family' = Percichthyidae (246 detail records)

	Si	Se	Si(dd)
Avg	0.871	0.341	0.783
Min	0.000	0.000	0.100
Max	1.000	1.000	0.980
S.D.	0.196	0.273	0.263

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Percidae	Percidae	Perch family	Juvenile	59	0.678	0.526			☐	☐		Y		178
	Percidae	Perch family	Postlarvae	311	0.122	0.003			☐	☐		Y		178
	Percidae	Perch family	Prolarvae	395	0.084	0.049			☐	☐		Y		178
	Percidae	Perch family		23	1.000	0.960	96		☐	☐	Single flow	Y	Continuous	198
	Percidae	Perch family		94	1.000	0.840	96		☐	☐	Single flow	Y	Continuous	240
	Percidae	Perch family	YOY	23		0.940	102		☐	☐	Single flow	Y	Continuous	197
	Etheostoma sp.	Smoothbelly darters		434	0.975	0.896	96		☐	☐	Single flow	Y	Continuous	240
	Etheostoma caeruleum	Rainbow darter		13	0.620				☐	☐	Single flow	Y	8-hour	238
	Etheostoma nigrum	Johnny darter		11	0.640				☐	☐	Single flow	Y	8-hour	238
	Etheostoma olmstedi	Tessellated darter		18	0.944	1.000	96		☐	☐	Single flow	Y	6-hour	208
	Etheostoma olmstedi	Tessellated darter		26		1.000	96		☐	☐	Single flow	Y	Continuous	232
	Etheostoma olmstedi	Tessellated darter		12	1.000	1.000	96		☐	☐	Single flow	Y	Continuous	208
	Etheostoma olmstedi	Tessellated darter		26	1.000	0.922	96		☐	☐	Dual flow	Y	Continuous	248
	Etheostoma olmstedi	Tessellated darter		89	0.978	0.888	96		☐	☐	Dual flow	Y	Continuous	206
	Perca flavescens	Yellow perch		10		1.000	48		☑	☐	Single flow	N	1-hour	166
	Perca flavescens	Yellow perch		113		0.105	48		☑	☐	Single flow	N	1-hour	166
	Perca flavescens	Yellow perch		58		0.176	48		☑	☐	Single flow	N	1-hour	166
	Perca flavescens	Yellow perch		42	0.333				☐	☐	Single flow	N	2-hour	245
	Perca flavescens	Yellow perch		109	0.936	0.211	48		☐	☐	Single flow	N	2-hour	245
	Perca flavescens	Yellow perch		253	0.957	0.672	24		☐	☐	Single flow	N	2-hour	245
	Perca flavescens	Yellow perch		200	0.885	0.160	48		☐	☐	Single flow	N	4-hour	245
	Perca flavescens	Yellow perch		527	0.890	0.512	24		☐	☐	Single flow	N	4-hour	245
	Perca flavescens	Yellow perch		271	0.849	0.063	48		☐	☐	Single flow	N	8-hour	245
	Perca flavescens	Yellow perch		26		0.214	48		☑	☐	Single flow	N	8-hour	166
	Perca flavescens	Yellow perch		25		0.122	48		☑	☐	Single flow	N	8-hour	166
	Perca flavescens	Yellow perch		571	0.799	0.331	24		☐	☐	Single flow	N	8-hour	245
	Perca flavescens	Yellow perch		17		0.819	48		☑	☐	Single flow	N	8-hour	166
	Perca flavescens	Yellow perch		321	0.984	0.685	24		☐	☐	Single flow	N	Continuous	245
	Perca flavescens	Yellow perch		118	0.983	0.322	48		☐	☐	Single flow	N	Continuous	245
	Perca flavescens	Yellow perch		19	0.895				☐	☐	Single flow	N	Continuous	245

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Percidae	Perca flavescens	Yellow perch		53				0.566	☐	☐	Single flow	N	Continuous	175
	Perca flavescens	Yellow perch		31		0.810	96		☐	☐	Single flow	Y	8.5-hour	222
	Perca flavescens	Yellow perch		266	0.990			0.970	☐	☐	Single flow	Y	Continuous	73
	Perca flavescens	Yellow perch		753	0.944				☐	☐	Single flow	Y	Continuous	234
	Perca flavescens	Yellow perch		72	0.990			0.960	☐	☐	Single flow	Y	Continuous	72
	Perca flavescens	Yellow perch		53	1.000			0.960	☐	☐	Single flow	Y	Continuous	74
	Perca flavescens	Yellow perch		55	1.000			1.000	☐	☐	Single flow	Y	Continuous	71
	Perca flavescens	Yellow perch		47	1.000	0.809	96		☐	☐	Single flow	Y	Continuous	240
	Perca flavescens	Yellow perch		47	1.000			0.980	☐	☐	Single flow	Y	Continuous	70
	Perca flavescens	Yellow perch		20	1.000	1.000	24		☐	☐	Single flow	Y	Continuous	251
	Perca flavescens	Yellow perch	PYS larvae	48	0.438	0.000	84		☐	☑	Dual flow	N	2-hour	227
	Perca flavescens	Yellow perch	PYS larvae	174	0.190	0.000	84		☐	☑	Dual flow	N	2-hour	227
	Perca flavescens	Yellow perch	PYS larvae	96	0.990	0.615	24		☐	☐	Dual flow	N	2-hour	227
	Perca flavescens	Yellow perch	Juvenile	86	1.000	0.954	24		☐	☐	Dual flow	N	2-hour	227
	Perca flavescens	Yellow perch	Adult	21	1.000	0.952	24		☐	☐	Dual flow	N	2-hour	227
	Perca flavescens	Yellow perch	PYS larvae	33	0.818	0.000	84		☐	☑	Dual flow	N	Continuous	227
	Perca flavescens	Yellow perch	PYS larvae	77	0.675	0.057	84		☐	☑	Dual flow	N	Continuous	227
	Perca flavescens	Yellow perch		178	0.989	0.989	24		☐	☐	Dual flow	Y	Continuous	252
	Perca flavescens	Yellow perch		14	0.929	0.929	24		☐	☐	Dual flow	Y	Continuous	252
	Perca flavescens	Yellow perch		66	1.000	1.000	24		☐	☐	Dual flow	Y	Continuous	252
	Percina caprodes	Logperch		104		0.960	96		☐	☐	Single flow	Y	8.5-hour	222
	Percina caprodes	Logperch		126	0.640				☐	☐	Single flow	Y	8-hour	238
	Percina caprodes	Logperch	PYS larvae	25	0.800				☐	☐	Dual flow	N	2-hour	227
	Percina caprodes	Logperch	PYS larvae	24	0.958				☐	☐	Dual flow	N	Continuous	227
	Percina caprodes	Logperch	PYS larvae	12	1.000				☐	☐	Dual flow	N	Continuous	227
	Percina caprodes	Logperch		10	1.000	1.000	24		☐	☐	Dual flow	Y	Continuous	252
	Stizostedion canadense	Sauger	Postlarvae	61	0.279	0.132			☐	☐		Y		178
	Stizostedion canadense	Sauger	Prolarvae	68	0.250	0.185			☐	☐		Y		178
	Stizostedion vitreum	Walleye	Prolarvae	119	0.874	0.688			☐	☐		Y		178

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Summary for 'Family' = Percidae (59 detail records)														
Avg					0.819	0.579		0.906						
Min					0.084	0.000		0.566						
Max					1.000	1.000		1.000						
S.D.					0.267	0.389		0.167						
Percopsidae	Percopsis omiscomaycus	Trout-perch	Juvenile	37	0.919	0.573			☐	☐		Y		178
	Percopsis omiscomaycus	Trout-perch		67	1.000	1.000	24		☐	☐	Single flow	Y	Continuous	251
	Percopsis omiscomaycus	Trout-perch		22	1.000	1.000	96		☐	☐	Single flow	Y	Continuous	240
	Percopsis omiscomaycus	Trout-perch	Juvenile	29	0.931				☐	☐	Dual flow	N	2-hour	227
	Percopsis omiscomaycus	Trout-perch		51	1.000	0.941	24		☐	☐	Dual flow	Y	Continuous	252
Summary for 'Family' = Percopsidae (5 detail records)														
Avg					0.970	0.878								
Min					0.919	0.573								
Max					1.000	1.000								
S.D.					0.041	0.206								
Petromyzontidae	Petromyzon marinus	Sea lamprey		11	1.000			1.000	☐	☐	Single flow	Y	Continuous	70
Summary for 'Family' = Petromyzontidae (1 detail record)														
Avg					1.000			1.000						
Min					1.000			1.000						
Max					1.000			1.000						
S.D.														
Phylum Nemertea	Phylum Nemertea	Proboscis worms, ribbon worms		14	1.000			0.857	☐	☐	Single flow	N	2-hour	40
Summary for 'Family' = Phylum Nemertea (1 detail record)														
Avg					1.000			0.857						
Min					1.000			0.857						
Max					1.000			0.857						
S.D.														

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Pinnotheridae	Pinnotheridae	Pea crabs			0.990	0.700	48		☐	☐	Dual flow	Y	Continuous	231
	Pinnotheridae	Pea crabs	Megalop		1.000	1.000	48		☐	☐	Dual flow	Y	Continuous	230
	Pinnotheridae	Pea crabs	Zoea		1.000	0.922	48		☐	☐	Dual flow	Y	Continuous	230

Summary for 'Family' = Pinnotheridae (3 detail records)

	Si	Se
Avg	0.997	0.874
Min	0.990	0.700
Max	1.000	1.000
S.D.	0.006	0.156

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Pleuronectidae	Pleuronectes americanus	Winter flounder		69	0.880			0.580	☐	☐	Single flow	N	2-hour	40
	Pleuronectes americanus	Winter flounder		384	0.860				☐	☐	Single flow	N	2-hour	184
	Pleuronectes americanus	Winter flounder			0.777	0.707	96		☐	☐	Single flow	N	2-hour	247
	Pleuronectes americanus	Winter flounder		686	0.850	0.570	48		☐	☑	Single flow	N	2-hour	184
	Pleuronectes americanus	Winter flounder			0.586	0.418	96		☐	☐	Single flow	N	4-hour	247
	Pleuronectes americanus	Winter flounder			0.644	0.614	96		☐	☐	Single flow	N	8-hour	247
	Pleuronectes americanus	Winter flounder		51	0.980				☐	☐	Single flow	N	Continuous	184
	Pleuronectes americanus	Winter flounder			0.974	0.897	96		☐	☐	Single flow	N	Continuous	247
	Pleuronectes americanus	Winter flounder		2554				0.930	☐	☐	Single flow	Y	1-hour	167
	Pleuronectes americanus	Winter flounder		16	1.000	1.000	72		☐	☐	Single flow	Y	2-hour	229
	Pleuronectes americanus	Winter flounder			0.777	0.707	96		☐	☐	Single flow	Y	2-hour	247
	Pleuronectes americanus	Winter flounder		43	0.970	0.940	72		☐	☐	Single flow	Y	3-hour	225
	Pleuronectes americanus	Winter flounder			0.586	0.418	96		☐	☐	Single flow	Y	4-hour	247
	Pleuronectes americanus	Winter flounder		44	0.930	0.860	72		☐	☐	Single flow	Y	6-hour	62
	Pleuronectes americanus	Winter flounder			0.644	0.614	96		☐	☐	Single flow	Y	8-hour	247
	Pleuronectes americanus	Winter flounder	Small	25	0.960	0.576	96		☐	☐	Single flow	Y	Continuous	182
	Pleuronectes americanus	Winter flounder	Small	21	1.000	0.857	96		☐	☐	Single flow	Y	Continuous	182
	Pleuronectes americanus	Winter flounder		355	0.980	0.970	96		☐	☐	Single flow	Y	Continuous	37
	Pleuronectes americanus	Winter flounder		301	1.000	1.000	96		☐	☐	Single flow	Y	Continuous	182
	Pleuronectes americanus	Winter flounder		193	0.990			0.990	☐	☐	Single flow	Y	Continuous	70
	Pleuronectes americanus	Winter flounder		145	0.993	0.986	96		☐	☐	Single flow	Y	Continuous	182
	Pleuronectes americanus	Winter flounder	Small	46	0.913	0.846	96		☐	☐	Single flow	Y	Continuous	182
	Pleuronectes americanus	Winter flounder		17	1.000			1.000	☐	☐	Single flow	Y	Continuous	72
	Pleuronectes americanus	Winter flounder		11	0.910	0.910	24		☐	☐	Single flow	Y	Continuous	182
	Pleuronectes americanus	Winter flounder		127	0.992	0.968	96		☐	☐	Single flow	Y	Continuous	182
	Pleuronectes americanus	Winter flounder		15	1.000			1.000	☐	☐	Single flow	Y	Continuous	74
	Pleuronectes americanus	Winter flounder		26	1.000	0.923	96		☐	☐	Single flow	Y	Continuous	182
	Pleuronectes americanus	Winter flounder		42	1.000	0.561	96		☐	☐	Single flow	Y	Continuous	182
	Pleuronectes americanus	Winter flounder		28	1.000	1.000	24		☐	☐	Single flow	Y	Continuous	182
	Pleuronectes americanus	Winter flounder			0.974	0.897	96		☐	☐	Single flow	Y	Continuous	247

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Pleuronectidae	Pleuronectes americanus	Winter flounder		46	0.913	0.846	96		☐	☐	Single flow	Y	Continuous	182
	Pleuronectes americanus	Winter flounder		12	1.000			1.000	☐	☐	Single flow	Y	Continuous	71
	Pleuronectes americanus	Winter flounder		1025	0.956	0.910	48		☐	☐	Angled	Y	Continuous	170
Summary for 'Family' = Pleuronectidae (33 detail records)														
Avg					0.907	0.800		0.917						
Min					0.586	0.418		0.580						
Max					1.000	1.000		1.000						
S.D.					0.129	0.187		0.167						
Polynemidae	Polydactylus octonemus	Atlantic threadfin		108	0.148				☐	☐	Single flow	N	Continuous	250
	Polydactylus octonemus	Atlantic threadfin		25	0.040				☐	☐	Single flow	N	Intermittant	250
	Polydactylus octonemus	Atlantic threadfin		37	0.081				☐	☐	Single flow	N	Intermittant	250
Summary for 'Family' = Polynemidae (3 detail records)														
Avg					0.090									
Min					0.040									
Max					0.148									
S.D.					0.055									

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Pomatomidae	Pomatomus saltatrix	Bluefish		284	0.390			0.264	☐	☐	Single flow	N	2-hour	40
	Pomatomus saltatrix	Bluefish		433	0.410				☐	☐	Single flow	N	2-hour	184
	Pomatomus saltatrix	Bluefish		24				0.500	☐	☐	Single flow	Y	1-hour	167
	Pomatomus saltatrix	Bluefish		14	0.429	0.000	72		☐	☐	Single flow	Y	3-hour	61
	Pomatomus saltatrix	Bluefish		34	0.910			0.880	☐	☐	Single flow	Y	Continuous	70
	Pomatomus saltatrix	Bluefish		57	0.910			0.860	☐	☐	Single flow	Y	Continuous	73
	Pomatomus saltatrix	Bluefish		10	0.900			0.900	☐	☐	Single flow	Y	Continuous	71
	Pomatomus saltatrix	Bluefish			0.853				☐	☐	Single flow	Y	Continuous	241
	Pomatomus saltatrix	Bluefish	YOY	20	0.700	0.050	96		☐	☐	Single flow	Y	Continuous	198
	Pomatomus saltatrix	Bluefish		83	0.880			0.800	☐	☐	Single flow	Y	Continuous	74

Summary for 'Family' = Pomatomidae (10 detail records)

	Si	Se	Si(dd)
Avg	0.709	0.025	0.701
Min	0.390	0.000	0.264
Max	0.910	0.050	0.900
S.D.	0.234	0.035	0.260

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Portunidae	Callinectes sapidus	Blue crab		2381		0.951	48		☑	☐	Single flow	N	1-hour	166
	Callinectes sapidus	Blue crab		45	0.444	0.222	96		☐	☐	Single flow	N	1-hour	228
	Callinectes sapidus	Blue crab		20	1.000	0.700	96		☐	☐	Single flow	N	1-hour	228
	Callinectes sapidus	Blue crab		115		0.983	48		☑	☐	Single flow	N	1-hour	166
	Callinectes sapidus	Blue crab		56	0.446	0.142	96		☐	☐	Single flow	N	1-hour	228
	Callinectes sapidus	Blue crab		50	0.740	0.220	96		☐	☐	Single flow	N	1-hour	228
	Callinectes sapidus	Blue crab		1	0.921	0.710	96		☐	☐	Single flow	N	2-hour	228
	Callinectes sapidus	Blue crab		21669	0.930	0.735	48		☐	☑	Single flow	N	2-hour	184
	Callinectes sapidus	Blue crab		165	1.000	0.960	48	0.836	☐	☑	Single flow	N	2-hour	40
	Callinectes sapidus	Blue crab		16	0.687	0.562	96		☐	☐	Single flow	N	2-hour	228
	Callinectes sapidus	Blue crab		120	0.875	0.450	96		☐	☐	Single flow	N	2-hour	228
	Callinectes sapidus	Blue crab		16726	0.920			0.629	☐	☐	Single flow	N	2-hour	40
	Callinectes sapidus	Blue crab		276	0.587	0.195	96		☐	☐	Single flow	N	4-hour	228
	Callinectes sapidus	Blue crab		111	0.739	0.522	96		☐	☐	Single flow	N	4-hour	228
	Callinectes sapidus	Blue crab		163	0.245	0.104	96		☐	☐	Single flow	N	8-hour	228
	Callinectes sapidus	Blue crab		102	0.804	0.657	96		☐	☐	Single flow	N	8-hour	228
	Callinectes sapidus	Blue crab		78	0.513	0.218	96		☐	☐	Single flow	N	8-hour	228
	Callinectes sapidus	Blue crab		659		0.885	48		☑	☐	Single flow	N	8-hour	166
	Callinectes sapidus	Blue crab		206	0.694	0.433	96		☐	☐	Single flow	N	8-hour	228
	Callinectes sapidus	Blue crab		31		1.000	48		☑	☐	Single flow	N	8-hour	166
	Callinectes sapidus	Blue crab		103	0.709	0.582	96		☐	☐	Single flow	N	8-hour	228
	Callinectes sapidus	Blue crab		30	1.000	0.900	96		☐	☐	Single flow	N	Continuous	228
	Callinectes sapidus	Blue crab		30	1.000	0.833	96		☐	☐	Single flow	N	Continuous	228
	Callinectes sapidus	Blue crab		25	1.000	0.640	96		☐	☐	Single flow	N	Continuous	228
	Callinectes sapidus	Blue crab		1421	0.737				☐	☐	Single flow	N	Continuous	250
	Callinectes sapidus	Blue crab		20	1.000	0.850	96		☐	☐	Single flow	N	Continuous	228
	Callinectes sapidus	Blue crab		2672	0.954				☐	☐	Single flow	N	Continuous	250
	Callinectes sapidus	Blue crab		210		0.814	120		☐	☐	Single flow	N	Continuous	250
	Callinectes sapidus	Blue crab		181		0.746	120		☐	☐	Single flow	N	Continuous	250
	Callinectes sapidus	Blue crab		1428	0.888				☐	☐	Single flow	N	Intermittant	250

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Portunidae	Callinectes sapidus	Blue crab		915	0.816				☐	☐	Single flow	N	Intermittant	250
	Callinectes sapidus	Blue crab		1001				0.990	☐	☐	Single flow	Y	1-hour	167
	Callinectes sapidus	Blue crab		15	1.000	0.870	72		☐	☐	Single flow	Y	2-hour	229
	Callinectes sapidus	Blue crab		22	1.000				☐	☐	Single flow	Y	2-hour	255
	Callinectes sapidus	Blue crab		15	1.000				☐	☐	Single flow	Y	2-hour	255
	Callinectes sapidus	Blue crab		17	1.000				☐	☐	Single flow	Y	4-hour	255
	Callinectes sapidus	Blue crab				1.000	24		☐	☐	Single flow	Y	Combined int	249
	Callinectes sapidus	Blue crab				1.000	24		☐	☐	Single flow	Y	Combined int	249
	Callinectes sapidus	Blue crab				0.914	24		☐	☐	Single flow	Y	Combined int	249
	Callinectes sapidus	Blue crab				0.250	24		☐	☐	Single flow	Y	Combined int	249
	Callinectes sapidus	Blue crab		8474	0.990			0.990	☐	☐	Single flow	Y	Continuous	70
	Callinectes sapidus	Blue crab		7974	1.000			1.000	☐	☐	Single flow	Y	Continuous	71
	Callinectes sapidus	Blue crab		17184	0.990			0.980	☐	☐	Single flow	Y	Continuous	73
	Callinectes sapidus	Blue crab		32	1.000				☐	☐	Single flow	Y	Continuous	255
	Callinectes sapidus	Blue crab		10	0.900				☐	☐	Single flow	Y	Continuous	255
	Callinectes sapidus	Blue crab		1836	0.990			0.990	☐	☐	Single flow	Y	Continuous	72
	Callinectes sapidus	Blue crab		11	0.910				☐	☐	Single flow	Y	Continuous	255
	Callinectes sapidus	Blue crab		18	0.890				☐	☐	Single flow	Y	Continuous	255
	Callinectes sapidus	Blue crab		19	1.000				☐	☐	Single flow	Y	Continuous	255
	Callinectes sapidus	Blue crab		13008	0.990			0.990	☐	☐	Single flow	Y	Continuous	74
	Callinectes sapidus	Blue crab		140	0.979	0.956	96		☐	☐	Single flow	Y	Intermittant	208
	Callinectes sapidus	Blue crab		2855	0.993	0.916	96		☐	☐	Dual flow	Y	Continuous	206
	Callinectes similis	Lesser blue crab		96	0.950			0.635	☐	☐	Single flow	N	2-hour	40
	Callinectes similis	Lesser blue crab		128	0.961				☐	☐	Single flow	N	Continuous	250
	Callinectes similis	Lesser blue crab		10		0.900	120		☐	☐	Single flow	N	Continuous	250
	Callinectes similis	Lesser blue crab		174	0.925				☐	☐	Single flow	N	Continuous	250
	Callinectes similis	Lesser blue crab		14		0.857	120		☐	☐	Single flow	N	Continuous	250
	Callinectes similis	Lesser blue crab		103	0.971				☐	☐	Single flow	N	Intermittant	250
	Callinectes similis	Lesser blue crab		136	0.890				☐	☐	Single flow	N	Intermittant	250
	Callinectes sp.	Callinectes species	Megalop	203	0.970	0.863	96		☐	☐	Single flow	Y	Continuous	115

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Portunidae	Callinectes sp.	Callinectes species	Megalop	159	0.981	0.889	96		☐	☐	Single flow	Y	Continuous	115
	Callinectes sp.	Callinectes species		26	0.923	0.923	96		☐	☐	Single flow	Y	Continuous	115
	Callinectes sp.	Callinectes species		170	0.976	0.927	96		☐	☐	Single flow	Y	Continuous	115
	Carcinus maenus	Green crab		25	0.840	0.760	72		☐	☐	Single flow	Y	2-hour	229
	Carcinus maenus	Green crab		12	0.820	0.820	72		☐	☐	Single flow	Y	3-hour	225
	Carcinus maenus	Green crab		35	0.800	0.771	72		☐	☐	Single flow	Y	3-hour	61
	Carcinus maenus	Green crab		39	0.820	0.620	72		☐	☐	Single flow	Y	6-hour	62
	Ovalipes ocellatus	Lady crab		133	0.930			0.692	☐	☐	Single flow	N	2-hour	40
	Ovalipes ocellatus	Lady crab		10	1.000	1.000	72		☐	☐	Single flow	Y	2-hour	229
	Ovalipes ocellatus	Lady crab		31	1.000	0.710	72		☐	☐	Single flow	Y	3-hour	225
	Ovalipes ocellatus	Lady crab		113	0.965	0.903	72		☐	☐	Single flow	Y	3-hour	61
	Ovalipes ocellatus	Lady crab		21	0.950	0.810	72		☐	☐	Single flow	Y	6-hour	62
	Portunus gibbesi	Portunus gibbesi		11	0.820			0.454	☐	☐	Single flow	N	2-hour	40

Summary for 'Family' = Portunidae (73 detail records)

	Si	Se	Si(dd)
Avg	0.880	0.716	0.835
Min	0.245	0.104	0.454
Max	1.000	1.000	1.000
S.D.	0.162	0.264	0.198

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Rajidae	Raja sp.	Skates		11	1.000	0.820	72		☐	☐	Single flow	Y	6-hour	62

Summary for 'Family' = Rajidae (1 detail record)

	Si	Se
Avg	1.000	0.820
Min	1.000	0.820
Max	1.000	0.820
S.D.		

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Salmonidae	Salmonidae	Salmon family		33	0.939	0.424	96		☐	☐	Single flow	Y	Continuous	240
	Oncorhynchus kisutch	Coho salmon	Juvenile	41	1.000	0.927	24		☐	☐	Dual flow	N	2-hour	227
	Oncorhynchus kisutch	Coho salmon	Adult	10	1.000				☐	☐	Dual flow	N	Continuous	227
	Oncorhynchus mykiss	Rainbow trout	Adult	11	1.000	0.909	24		☐	☐	Dual flow	N	2-hour	227
	Oncorhynchus mykiss	Rainbow trout	Juvenile	36	0.917				☐	☐	Dual flow	N	2-hour	227
	Oncorhynchus tshawytscha	Chinook salmon		781	0.981				☐	☐	Single flow	Y	Continuous	234
	Oncorhynchus tshawytscha	Chinook salmon	Juvenile	33	1.000	0.667	24		☐	☐	Dual flow	N	2-hour	227
	Salmo trutta	Brown trout	Adult	15	1.000	1.000	24		☐	☐	Dual flow	N	2-hour	227

Summary for 'Family' = Salmonidae (8 detail records)

	Si	Se
Avg	0.980	0.785
Min	0.917	0.424
Max	1.000	1.000
S.D.	0.033	0.238

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Sciaenidae	Sciaenidae	Drum family	YOY	11	0.560	0.000	96		☐	☐	Single flow	Y	2-hour	197
	Sciaenidae	Drum family		10		0.700	96		☐	☐	Single flow	Y	Continuous	254
	Sciaenidae	Drum family		10		0.900	96		☐	☐	Single flow	Y	Continuous	254
	Sciaenidae	Drum family		95	0.880	0.180	96		☐	☐	Single flow	Y	Continuous	198
	Sciaenidae	Drum family	YOY	95		0.175	102		☐	☐	Single flow	Y	Continuous	197
	Sciaenidae	Drum family	Eggs			0.800			☐	☐	Dual flow	Y	Continuous	231
	Sciaenidae	Drum family	Larvae	108	0.186	0.020	96		☐	☐	Dual flow	Y	Continuous	230
	Sciaenidae	Drum family	Eggs			0.948			☐	☐	Dual flow	Y	Continuous	230
	Sciaenidae	Drum family	Larvae		0.630	0.397	48		☐	☐	Dual flow	Y	Continuous	231
	Aplodinotus grunniens	Freshwater drum	Prolarvae	20544	0.020	0.004			☐	☐		Y		178
	Aplodinotus grunniens	Freshwater drum	Postlarvae	4033	0.172	0.048			☐	☐		Y		178
	Aplodinotus grunniens	Freshwater drum	Juvenile	623	0.695	0.339			☐	☐		Y		178
	Aplodinotus grunniens	Freshwater drum		36	0.528	0.167	24		☐	☐	Single flow	N	2-hour	245
	Aplodinotus grunniens	Freshwater drum		129	0.550	0.256	24		☐	☐	Single flow	N	4-hour	245
	Aplodinotus grunniens	Freshwater drum		188	0.431	0.138	24		☐	☐	Single flow	N	8-hour	245
	Aplodinotus grunniens	Freshwater drum		121	0.876	0.620	24		☐	☐	Single flow	N	Continuous	245
	Aplodinotus grunniens	Freshwater drum		10	1.000				☐	☐	Single flow	N	Continuous	245
	Aplodinotus grunniens	Freshwater drum		12				0.583	☐	☐	Single flow	N	Continuous	175
	Aplodinotus grunniens	Freshwater drum		58		0.240	96		☐	☐	Single flow	Y	8.5-hour	222
	Aplodinotus grunniens	Freshwater drum	PYS larvae	26	0.500				☐	☐	Dual flow	N	2-hour	227
	Aplodinotus grunniens	Freshwater drum	PYS larvae	236	0.314				☐	☐	Dual flow	N	2-hour	227
	Aplodinotus grunniens	Freshwater drum	PYS larvae	21	0.905				☐	☐	Dual flow	N	Continuous	227
	Bairdiella chrysoura	Silver perch		106	0.640			0.358	☐	☐	Single flow	N	2-hour	40
	Bairdiella chrysoura	Silver perch		11		0.000	120		☐	☐	Single flow	N	Continuous	250
	Bairdiella chrysoura	Silver perch		63	0.270				☐	☐	Single flow	N	Continuous	250
	Bairdiella chrysoura	Silver perch		45	0.222				☐	☐	Single flow	N	Intermittant	250
	Bairdiella chrysoura	Silver perch		65	0.750				☐	☐	Single flow	Y	2-hour	255
	Bairdiella chrysoura	Silver perch		17		0.410	96		☐	☐	Single flow	Y	2-hour	255
	Bairdiella chrysoura	Silver perch		14		0.500	96		☐	☐	Single flow	Y	2-hour	255
	Bairdiella chrysoura	Silver perch		21	0.810				☐	☐	Single flow	Y	2-hour	255

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Sciaenidae	Bairdiella chrysoura	Silver perch		23	0.950			0.910	☐	☐	Single flow	Y	Continuous	70
	Bairdiella chrysoura	Silver perch		41	1.000			0.930	☐	☐	Single flow	Y	Continuous	72
	Bairdiella chrysoura	Silver perch		42	1.000			0.930	☐	☐	Single flow	Y	Continuous	74
	Bairdiella chrysoura	Silver perch		57	1.000			0.980	☐	☐	Single flow	Y	Continuous	73
	Bairdiella chrysoura	Silver perch		15	0.930				☐	☐	Single flow	Y	Continuous	255
	Bairdiella chrysoura	Silver perch		12		0.670	96		☐	☐	Single flow	Y	Continuous	255
	Bairdiella chrysoura	Silver perch		109	0.970				☐	☐	Single flow	Y	Continuous	255
	Bairdiella chrysoura	Silver perch	Larvae	39	0.192				☐	☐	Dual flow	Y	Continuous	230
	Bairdiella chrysoura	Silver perch	Eggs			1.000			☐	☐	Dual flow	Y	Continuous	230
	Cynoscion sp.	Sea trouts, Weakfishes	Eggs			1.000			☐	☐	Dual flow	Y	Continuous	230
	Cynoscion sp.	Sea trouts, Weakfishes	Larvae	51	0.157	0.157	96		☐	☐	Dual flow	Y	Continuous	230
	Cynoscion arenarius	Sand weakfish		61		0.393	120		☐	☐	Single flow	N	Continuous	250
	Cynoscion arenarius	Sand weakfish		125		0.136	120		☐	☐	Single flow	N	Continuous	250
	Cynoscion arenarius	Sand weakfish		282	0.418				☐	☐	Single flow	N	Continuous	250
	Cynoscion arenarius	Sand weakfish		1026	0.226				☐	☐	Single flow	N	Continuous	250
	Cynoscion arenarius	Sand weakfish		186	0.151				☐	☐	Single flow	N	Intermittant	250
	Cynoscion arenarius	Sand weakfish		478	0.161				☐	☐	Single flow	N	Intermittant	250
	Cynoscion nebulosus	Spotted seatrout		10	0.400				☐	☐	Single flow	N	Continuous	250
	Cynoscion nebulosus	Spotted seatrout		14	0.357				☐	☐	Single flow	N	Intermittant	250
	Cynoscion nebulosus	Spotted seatrout		13				0.380	☐	☐	Single flow	Y	1-hour	167
	Cynoscion nebulosus	Spotted seatrout		9		0.000	96		☐	☐	Single flow	Y	Continuous	254
	Cynoscion nebulosus	Spotted seatrout		10		0.000	96		☐	☐	Single flow	Y	Continuous	254
	Cynoscion nebulosus	Spotted seatrout		64	0.875				☐	☐	Dual flow	Y	Continuous	239
	Cynoscion regalis	Weakfish		27	0.000	0.000	96		☐	☐	Single flow	N	1-hour	228
	Cynoscion regalis	Weakfish		517	0.410			0.175	☐	☐	Single flow	N	2-hour	40
	Cynoscion regalis	Weakfish		1351	0.410				☐	☐	Single flow	N	2-hour	184
	Cynoscion regalis	Weakfish		16	0.000	0.000	96		☐	☐	Single flow	N	2-hour	228
	Cynoscion regalis	Weakfish		20	0.050	0.000	96		☐	☐	Single flow	N	4-hour	228
	Cynoscion regalis	Weakfish		88	0.000	0.000	96		☐	☐	Single flow	N	8-hour	228
	Cynoscion regalis	Weakfish		16	0.000	0.000	96		☐	☐	Single flow	N	Continuous	228

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Sciaenidae	Cynoscion regalis	Weakfish		223				0.380	☐	☐	Single flow	Y	1-hour	167
	Cynoscion regalis	Weakfish		85	0.550				☐	☐	Single flow	Y	2-hour	255
	Cynoscion regalis	Weakfish		10		0.000	96		☐	☐	Single flow	Y	2-hour	255
	Cynoscion regalis	Weakfish		28	0.750				☐	☐	Single flow	Y	2-hour	255
	Cynoscion regalis	Weakfish		17	0.530				☐	☐	Single flow	Y	4-hour	255
	Cynoscion regalis	Weakfish	Juvenile	1082		0.578	48		☐	☐	Single flow	Y	Continuous	235
	Cynoscion regalis	Weakfish		8244	0.850			0.830	☐	☐	Single flow	Y	Continuous	74
	Cynoscion regalis	Weakfish		3372		0.380	48		☐	☑	Single flow	Y	Continuous	75
	Cynoscion regalis	Weakfish	Juvenile	1559		0.793	48		☐	☐	Single flow	Y	Continuous	235
	Cynoscion regalis	Weakfish		7910	0.940			0.940	☐	☐	Single flow	Y	Continuous	73
	Cynoscion regalis	Weakfish		3460	0.970			0.960	☐	☐	Single flow	Y	Continuous	71
	Cynoscion regalis	Weakfish		3034	0.930			0.920	☐	☐	Single flow	Y	Continuous	70
	Cynoscion regalis	Weakfish		3006	0.746	0.459	48		☐	☐	Single flow	Y	Continuous	173
	Cynoscion regalis	Weakfish		16	0.750				☐	☐	Single flow	Y	Continuous	255
	Cynoscion regalis	Weakfish		1015	0.990			0.980	☐	☐	Single flow	Y	Continuous	72
	Cynoscion regalis	Weakfish		3783		0.509	48		☐	☑	Single flow	Y	Continuous	75
	Cynoscion regalis	Weakfish		10		0.300	96		☐	☐	Single flow	Y	Continuous	255
	Cynoscion regalis	Weakfish		19	1.000				☐	☐	Single flow	Y	Continuous	255
	Cynoscion regalis	Weakfish		130	0.970				☐	☐	Single flow	Y	Continuous	255
	Cynoscion regalis	Weakfish		282	0.806	0.126	96		☐	☐	Single flow	Y	Continuous	115
	Cynoscion regalis	Weakfish		456		0.886	96		☐	☐	Single flow	Y	Continuous	233
	Cynoscion regalis	Weakfish		10		0.200	96		☐	☐	Single flow	Y	Continuous	255
	Leiostomus xanthurus	Spot		31	0.774	0.354	96		☐	☐	Single flow	N	1-hour	228
	Leiostomus xanthurus	Spot		16		0.856	48		☑	☐	Single flow	N	1-hour	166
	Leiostomus xanthurus	Spot		430		0.243	48		☑	☐	Single flow	N	1-hour	166
	Leiostomus xanthurus	Spot		2367	0.520				☐	☐	Single flow	N	2-hour	184
	Leiostomus xanthurus	Spot		19	1.000	0.830	48	0.947	☐	☑	Single flow	N	2-hour	40
	Leiostomus xanthurus	Spot		1077	0.310			0.259	☐	☐	Single flow	N	2-hour	40
	Leiostomus xanthurus	Spot		103	0.097	0.000	96		☐	☐	Single flow	N	4-hour	228
	Leiostomus xanthurus	Spot		29	0.000	0.000	96		☐	☐	Single flow	N	4-hour	228

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Sciaenidae	Leiostomus xanthurus	Spot		36		0.361	48		☑	☐	Single flow	N	8-hour	166
	Leiostomus xanthurus	Spot		16	0.062	0.000	96		☐	☐	Single flow	N	8-hour	228
	Leiostomus xanthurus	Spot		238		0.086	48		☑	☐	Single flow	N	8-hour	166
	Leiostomus xanthurus	Spot		40	1.000	0.950	96		☐	☐	Single flow	N	Continuous	228
	Leiostomus xanthurus	Spot		460	0.472				☐	☐	Single flow	N	Continuous	250
	Leiostomus xanthurus	Spot		54		0.167	120		☐	☐	Single flow	N	Continuous	250
	Leiostomus xanthurus	Spot		168	0.714				☐	☐	Single flow	N	Continuous	250
	Leiostomus xanthurus	Spot		22		0.773	120		☐	☐	Single flow	N	Continuous	250
	Leiostomus xanthurus	Spot		242	0.314				☐	☐	Single flow	N	Intermittant	250
	Leiostomus xanthurus	Spot		364	0.250				☐	☐	Single flow	N	Intermittant	250
	Leiostomus xanthurus	Spot		46238				0.840	☐	☐	Single flow	Y	1-hour	167
	Leiostomus xanthurus	Spot		48		24.000			☐	☐	Single flow	Y	Combined int	249
	Leiostomus xanthurus	Spot	< 25 mm	1806	0.609	0.076	96		☐	☐	Single flow	Y	Continuous	115
	Leiostomus xanthurus	Spot	< 25 mm	1349	0.810	0.310	96		☐	☐	Single flow	Y	Continuous	115
	Leiostomus xanthurus	Spot	>= 25 mm	333	0.721	0.280	96		☐	☐	Single flow	Y	Continuous	115
	Leiostomus xanthurus	Spot		33	0.970			0.520	☐	☐	Single flow	Y	Continuous	74
	Leiostomus xanthurus	Spot			0.967				☐	☐	Single flow	Y	Continuous	241
	Leiostomus xanthurus	Spot		39	0.970			0.670	☐	☐	Single flow	Y	Continuous	71
	Leiostomus xanthurus	Spot		663	0.920			0.890	☐	☐	Single flow	Y	Continuous	73
	Leiostomus xanthurus	Spot		576		0.657	48		☐	☑	Single flow	Y	Continuous	75
	Leiostomus xanthurus	Spot		91		0.930	48		☐	☑	Single flow	Y	Continuous	75
	Leiostomus xanthurus	Spot		220	0.954				☐	☐	Dual flow	Y	Continuous	239
	Menticirrhus sp.	Kingfishes	Larvae	15	0.000		96		☐	☐	Dual flow	Y	Continuous	230
	Menticirrhus sp.	Kingfishes	Eggs			1.000			☐	☐	Dual flow	Y	Continuous	230
	Menticirrhus saxatilis	Northern kingfish		12	1.000			0.920	☐	☐	Single flow	Y	Continuous	71
	Menticirrhus saxatilis	Northern kingfish		40	0.950			0.950	☐	☐	Single flow	Y	Continuous	74
	Micropogonias undulatus	Atlantic croaker		15	0.267	0.000	96		☐	☐	Single flow	N	8.5-hour	228
	Micropogonias undulatus	Atlantic croaker		537	0.436				☐	☐	Single flow	N	Continuous	250
	Micropogonias undulatus	Atlantic croaker		76	1.000	0.921	96		☐	☐	Single flow	N	Continuous	228
	Micropogonias undulatus	Atlantic croaker		163	0.301				☐	☐	Single flow	N	Continuous	250

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Sciaenidae	Micropogonias undulatus	Atlantic croaker		108		0.222	120		☐	☐	Single flow	N	Continuous	250
	Micropogonias undulatus	Atlantic croaker		80	0.510				☐	☐	Single flow	N	Continuous	228
	Micropogonias undulatus	Atlantic croaker		14		0.357	120		☐	☐	Single flow	N	Continuous	250
	Micropogonias undulatus	Atlantic croaker		439	0.264				☐	☐	Single flow	N	Intermittant	250
	Micropogonias undulatus	Atlantic croaker		407	0.147				☐	☐	Single flow	N	Intermittant	250
	Micropogonias undulatus	Atlantic croaker		1218				0.190	☐	☐	Single flow	Y	1-hour	167
	Micropogonias undulatus	Atlantic croaker		141	0.870				☐	☐	Single flow	Y	2-hour	255
	Micropogonias undulatus	Atlantic croaker		10		0.800	96		☐	☐	Single flow	Y	4-hour	255
	Micropogonias undulatus	Atlantic croaker		251	0.390				☐	☐	Single flow	Y	4-hour	255
	Micropogonias undulatus	Atlantic croaker		10		0.900	96		☐	☐	Single flow	Y	4-hour	255
	Micropogonias undulatus	Atlantic croaker		106		0.010	96		☐	☐	Single flow	Y	Combined int	249
	Micropogonias undulatus	Atlantic croaker		106		0.030	24		☐	☐	Single flow	Y	Combined int	249
	Micropogonias undulatus	Atlantic croaker		473		0.030	24		☐	☐	Single flow	Y	Combined int	249
	Micropogonias undulatus	Atlantic croaker	>= 25 mm	597	0.846	0.356	96		☐	☐	Single flow	Y	Continuous	115
	Micropogonias undulatus	Atlantic croaker	>= 25 mm	584	0.640	0.360	96		☐	☐	Single flow	Y	Continuous	115
	Micropogonias undulatus	Atlantic croaker	< 25 mm	2903	0.604	0.289	96		☐	☐	Single flow	Y	Continuous	115
	Micropogonias undulatus	Atlantic croaker		16742	0.900			0.690	☐	☐	Single flow	Y	Continuous	74
	Micropogonias undulatus	Atlantic croaker		4769	0.950			0.810	☐	☐	Single flow	Y	Continuous	73
	Micropogonias undulatus	Atlantic croaker	< 25 mm	2105	0.399	0.096	96		☐	☐	Single flow	Y	Continuous	115
	Micropogonias undulatus	Atlantic croaker		8329	0.910			0.820	☐	☐	Single flow	Y	Continuous	70
	Micropogonias undulatus	Atlantic croaker		2916	0.890			0.740	☐	☐	Single flow	Y	Continuous	71
	Micropogonias undulatus	Atlantic croaker		245	0.960				☐	☐	Single flow	Y	Continuous	255
	Micropogonias undulatus	Atlantic croaker		175		0.510	48		☐	☑	Single flow	Y	Continuous	75
	Micropogonias undulatus	Atlantic croaker		139	0.970				☐	☐	Single flow	Y	Continuous	255
	Micropogonias undulatus	Atlantic croaker		12		1.000	96		☐	☐	Single flow	Y	Continuous	255
	Micropogonias undulatus	Atlantic croaker			0.827				☐	☐	Single flow	Y	Continuous	241
	Micropogonias undulatus	Atlantic croaker		380	0.970			0.960	☐	☐	Single flow	Y	Continuous	72
	Micropogonias undulatus	Atlantic croaker		3044		0.768	48		☐	☑	Single flow	Y	Continuous	75
	Pogonias cromis	Black drum		22		0.136	120		☐	☐	Single flow	N	Continuous	250
	Pogonias cromis	Black drum		35	0.743				☐	☐	Single flow	N	Continuous	250

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Sciaenidae	Pogonias cromis	Black drum		40	0.425				☐	☐	Single flow	N	Intermittant	250
	Pogonias cromis	Black drum		35	0.970			0.710	☐	☐	Single flow	Y	Continuous	70
	Pogonias cromis	Black drum		13	1.000			0.770	☐	☐	Single flow	Y	Continuous	73
	Pogonias cromis	Black drum		45	0.890			0.530	☐	☐	Single flow	Y	Continuous	74
	Pogonias cromis	Black drum	Eggs			1.000			☐	☐	Dual flow	Y	Continuous	230
	Sciaenops ocellatus	Red drum		10	0.200				☐	☐	Single flow	N	Intermittant	250
	Stellifer lanceolatus	Star drum		35	0.660				☐	☐	Single flow	Y	2-hour	255
	Stellifer lanceolatus	Star drum		10		0.100	72		☐	☐	Single flow	Y	2-hour	255
	Stellifer lanceolatus	Star drum		68	0.240				☐	☐	Single flow	Y	2-hour	255
	Stellifer lanceolatus	Star drum		14	0.140				☐	☐	Single flow	Y	2-hour	255
	Stellifer lanceolatus	Star drum		158	0.150				☐	☐	Single flow	Y	4-hour	255
	Stellifer lanceolatus	Star drum		152	0.930				☐	☐	Single flow	Y	Continuous	255
	Stellifer lanceolatus	Star drum		10		0.300	72		☐	☐	Single flow	Y	Continuous	255
	Stellifer lanceolatus	Star drum		223	0.560				☐	☐	Single flow	Y	Continuous	255
	Stellifer lanceolatus	Star drum		14	0.430				☐	☐	Single flow	Y	Continuous	255
	Stellifer lanceolatus	Star drum		10		0.700	96		☐	☐	Single flow	Y	Continuous	254
	Stellifer lanceolatus	Star drum		10		0.100	96		☐	☐	Single flow	Y	Continuous	254
	Stellifer lanceolatus	Star drum		10		0.100	72		☐	☐	Single flow	Y	Continuous	255
	Stellifer lanceolatus	Star drum		27	0.670				☐	☐	Single flow	Y	Continuous	255
	Stellifer lanceolatus	Star drum		10		0.900	96		☐	☐	Single flow	Y	Continuous	254

Summary for 'Family' = Sciaenidae (170 detail records)

	Si	Se	Si(dd)
Avg	0.600	0.655	0.725
Min	0.000	0.000	0.175
Max	1.000	24.000	0.980
S.D.	0.331	2.570	0.254

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Scombridae	Scomber japonicus	Chub mackerel		13	0.769	0.385	96		☐	☐	Single flow	Y	Continuous	182
	Scomberomorus maculatus	Spanish mackerel		11	0.000				☐	☐	Single flow	N	Continuous	250

Summary for 'Family' = Scombridae (2 detail records)

	Si	Se	Si(dd)
Avg	0.384	0.385	
Min	0.000	0.385	
Max	0.769	0.385	
S.D.	0.544		

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Scophthalmidae	Scophthalmus aquosus	Windowpane		45	0.870			0.733	☐	☐	Single flow	N	2-hour	40
	Scophthalmus aquosus	Windowpane		10	0.800			0.800	☐	☐	Single flow	Y	Continuous	70
	Scophthalmus aquosus	Windowpane		29	1.000			1.000	☐	☐	Single flow	Y	Continuous	71
	Scophthalmus aquosus	Windowpane		40	1.000			1.000	☐	☐	Single flow	Y	Continuous	73

Summary for 'Family' = Scophthalmidae (4 detail records)

	Si	Se	Si(dd)
Avg	0.918		0.883
Min	0.800		0.733
Max	1.000		1.000
S.D.	0.099		0.138

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Sebastes	Sebastes	Rockfish family	62-185 mm	13	0.850	0.470	96		☑	☐	Single flow	N	1-hour	242
	Sebastes	Rockfish family	62-185 mm	23	0.390	0.130	96		☑	☐	Single flow	N	3-hour	242
	Sebastes	Rockfish family	50-190 mm	22	0.270	0.050	96		☑	☐	Single flow	N	3-hour	242
	Sebastes	Rockfish family	62-185 mm	12	0.830	0.770	96		☑	☐	Single flow	N	Continuous	242

Summary for 'Family' = Sebastes (4 detail records)

	Si	Se	Si(dd)
Avg	0.585	0.355	
Min	0.270	0.050	
Max	0.850	0.770	
S.D.	0.299	0.331	

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Sergestidae	Acetes americanus	Aviu shrimp		12	0.000				☐	☐	Single flow	N	Continuous	250
	Acetes americanus	Aviu shrimp		11	0.636				☐	☐	Single flow	N	Intermittant	250
Summary for 'Family' = Sergestidae (2 detail records)														
Avg					0.318									
Min					0.000									
Max					0.636									
S.D.					0.450									
Serranidae	Centropristis striata	Black sea bass		310	0.700				☐	☐	Single flow	N	2-hour	184
	Centropristis striata	Black sea bass		31	0.970			0.940	☐	☐	Single flow	Y	Continuous	73
Summary for 'Family' = Serranidae (2 detail records)														
Avg					0.835			0.940						
Min					0.700			0.940						
Max					0.970			0.940						
S.D.					0.191									
Sparidae	Lagodon rhomboides	Pinfish		25	0.560				☐	☐	Single flow	N	Continuous	250
	Lagodon rhomboides	Pinfish		19	0.632				☐	☐	Single flow	N	Intermittant	250
	Lagodon rhomboides	Pinfish		28	0.286				☐	☐	Single flow	N	Intermittant	250
	Lagodon rhomboides	Pinfish		26	1.000				☐	☐	Dual flow	Y	Continuous	239
Summary for 'Family' = Sparidae (4 detail records)														
Avg					0.620									
Min					0.286									
Max					1.000									
S.D.					0.294									
Squillidae	Squilla empusa	Mantis shrimp		11	0.910			0.818	☐	☐	Single flow	N	2-hour	40
Summary for 'Family' = Squillidae (1 detail record)														
Avg					0.910			0.818						
Min					0.910			0.818						
Max					0.910			0.818						
S.D.														

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Stromateidae	Peprilus alepidotus	Harvestfish		32	0.406				☐	☐	Single flow	N	Continuous	250
	Peprilus alepidotus	Harvestfish		134	0.179				☐	☐	Single flow	N	Continuous	250
	Peprilus alepidotus	Harvestfish		45	0.111				☐	☐	Single flow	N	Intermittant	250
	Peprilus alepidotus	Harvestfish		29	0.172				☐	☐	Single flow	N	Intermittant	250
	Peprilus alepidotus	Harvestfish		230				0.900	☐	☐	Single flow	Y	1-hour	167
	Peprilus alepidotus	Harvestfish		43	0.980				☐	☐	Single flow	Y	Continuous	74
	Peprilus triacanthus	Butterfish		32				0.500	☐	☐	Single flow	Y	1-hour	167
	Peprilus triacanthus	Butterfish		147	0.080	0.030	72		☐	☐	Single flow	Y	2-hour	229
	Peprilus triacanthus	Butterfish		26	0.150	0.000	72		☐	☐	Single flow	Y	3-hour	225
	Peprilus triacanthus	Butterfish		87	0.161	0.023	72		☐	☐	Single flow	Y	3-hour	61
	Peprilus triacanthus	Butterfish		104	0.010	0.000	72		☐	☐	Single flow	Y	6-hour	62
	Peprilus triacanthus	Butterfish		10	1.000			1.000	☐	☐	Single flow	Y	Continuous	73
	Peprilus triacanthus	Butterfish		42	0.900			0.830	☐	☐	Single flow	Y	Continuous	74
	Peprilus triacanthus	Butterfish		37	0.568	0.324	48		☐	☐	Angled	Y	Continuous	170
Summary for 'Family' = Stromateidae (14 detail records)														
Avg					0.393	0.075		0.807						
Min					0.010	0.000		0.500						
Max					1.000	0.324		1.000						
S.D.					0.373	0.140		0.217						
Superfamily Grapsoidea	Grapsizoea	Grapsoidea crabs	Megalop		1.000	0.981	48		☐	☐	Dual flow	Y	Continuous	230
	Grapsizoea	Grapsoidea crabs	Zoea		1.000	0.951	48		☐	☐	Dual flow	Y	Continuous	230
Summary for 'Family' = Superfamily Grapsoidea (2 detail records)														
Avg					1.000	0.966								
Min					1.000	0.951								
Max					1.000	0.981								
S.D.					0.000	0.021								

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Syngnathidae	Hippocampus erectus	Lined seahorse		87	0.970			0.908	☐	☐	Single flow	N	2-hour	40
	Hippocampus erectus	Lined seahorse		11				1.000	☐	☐	Single flow	Y	1-hour	167
	Syngnathus fuscus	Northern pipefish		2417	0.950	0.751	48		☐	☑	Single flow	N	2-hour	184
	Syngnathus fuscus	Northern pipefish		1940	0.960			0.915	☐	☐	Single flow	N	2-hour	40
	Syngnathus fuscus	Northern pipefish		32	0.969	0.761	48	0.969	☐	☑	Single flow	N	2-hour	40
	Syngnathus fuscus	Northern pipefish		129				0.850	☐	☐	Single flow	Y	1-hour	167
	Syngnathus fuscus	Northern pipefish		12	0.920	0.920	72		☐	☐	Single flow	Y	3-hour	225
	Syngnathus fuscus	Northern pipefish		210	0.952	0.910	72		☐	☐	Single flow	Y	3-hour	61
	Syngnathus fuscus	Northern pipefish		49	0.550	0.160	72		☐	☐	Single flow	Y	6-hour	62
	Syngnathus fuscus	Northern pipefish		33		0.250	24		☐	☐	Single flow	Y	Combined int	249
	Syngnathus fuscus	Northern pipefish		91	0.990			0.990	☐	☐	Single flow	Y	Continuous	73
	Syngnathus fuscus	Northern pipefish	YOY	15		0.600	102		☐	☐	Single flow	Y	Continuous	197
	Syngnathus fuscus	Northern pipefish		41	1.000			1.000	☐	☐	Single flow	Y	Continuous	71
	Syngnathus fuscus	Northern pipefish		17	1.000			1.000	☐	☐	Single flow	Y	Continuous	70
	Syngnathus fuscus	Northern pipefish		15	0.870	0.600	96		☐	☐	Single flow	Y	Continuous	198
	Syngnathus fuscus	Northern pipefish		12	1.000			1.000	☐	☐	Single flow	Y	Continuous	72
	Syngnathus fuscus	Northern pipefish		11	1.000	1.000	24		☐	☐	Single flow	Y	Continuous	182
	Syngnathus fuscus	Northern pipefish		65	0.980			0.980	☐	☐	Single flow	Y	Continuous	74
	Syngnathus fuscus	Northern pipefish		50	0.940	0.940	48		☐	☐	Angled	Y		237
	Syngnathus fuscus	Northern pipefish		1551	0.981	0.933	48		☐	☐	Angled	Y	Continuous	170

Summary for 'Family' = Syngnathidae (20 detail records)

	Si	Se	Si(dd)
Avg	0.940	0.711	0.961
Min	0.550	0.160	0.850
Max	1.000	1.000	1.000
S.D.	0.110	0.285	0.052

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Synodontidae	Synodus foetens	Inshore lizardfish		16				0.750	☐	☐	Single flow	Y	1-hour	167
Summary for 'Family' = Synodontidae (1 detail record)														
Avg								0.750						
Min								0.750						
Max								0.750						
S.D.														
Tetraodontidae	Sphoeroides maculatus	Northern puffer		59	0.900			0.898	☐	☐	Single flow	N	2-hour	40
	Sphoeroides maculatus	Northern puffer	63-128 mm	13	0.615	0.615	56		☐	☐	Single flow	N	8-hour	246
	Sphoeroides parvus	Least puffer		114	0.886				☐	☐	Single flow	N	Continuous	250
	Sphoeroides parvus	Least puffer		204	0.657				☐	☐	Single flow	N	Continuous	250
	Sphoeroides parvus	Least puffer		121		0.587	120		☐	☐	Single flow	N	Continuous	250
	Sphoeroides parvus	Least puffer		79		0.633	120		☐	☐	Single flow	N	Continuous	250
	Sphoeroides parvus	Least puffer		185	0.800				☐	☐	Single flow	N	Intermittant	250
	Sphoeroides parvus	Least puffer		102	0.608				☐	☐	Single flow	N	Intermittant	250
Summary for 'Family' = Tetraodontidae (8 detail records)														
Avg					0.744	0.612		0.898						
Min					0.608	0.587		0.898						
Max					0.900	0.633		0.898						
S.D.					0.134	0.023								
Trichiuridae	Trichiurus lepturus	Largehead hairtail		17		0.000	120		☐	☐	Single flow	N	Continuous	250
	Trichiurus lepturus	Largehead hairtail		164	0.311				☐	☐	Single flow	N	Continuous	250
	Trichiurus lepturus	Largehead hairtail		934	0.091				☐	☐	Single flow	N	Continuous	250
	Trichiurus lepturus	Largehead hairtail		239	0.021				☐	☐	Single flow	N	Intermittant	250
	Trichiurus lepturus	Largehead hairtail		319	0.031				☐	☐	Single flow	N	Intermittant	250
Summary for 'Family' = Trichiuridae (5 detail records)														
Avg					0.113	0.000								
Min					0.021	0.000								
Max					0.311	0.000								
S.D.					0.135									

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Triglidae	Prionotus sp.	North American searobins		132	0.977	0.898	96		☐	☐	Single flow	Y	Continuous	115
	Prionotus carolinus	Northern searobin		14	0.640			0.286	☐	☐	Single flow	N	2-hour	40
	Prionotus carolinus	Northern searobin		88				0.500	☐	☐	Single flow	Y	1-hour	167
	Prionotus carolinus	Northern searobin		433	0.970			0.950	☐	☐	Single flow	Y	Continuous	73
	Prionotus carolinus	Northern searobin		177	0.930			0.920	☐	☐	Single flow	Y	Continuous	70
	Prionotus carolinus	Northern searobin		112	0.920			0.920	☐	☐	Single flow	Y	Continuous	74
	Prionotus carolinus	Northern searobin		55	0.960			0.930	☐	☐	Single flow	Y	Continuous	71
	Prionotus evolans	Striped searobin		448	0.730			0.538	☐	☐	Single flow	N	2-hour	40
	Prionotus evolans	Striped searobin		1335	0.820	0.804	48		☐	☑	Single flow	N	2-hour	184
	Prionotus tribulus	Bighead searobin		12	0.833				☐	☐	Single flow	N	Continuous	250
	Prionotus tribulus	Bighead searobin		17	0.647				☐	☐	Single flow	N	Continuous	250
	Prionotus tribulus	Bighead searobin		12	0.583				☐	☐	Single flow	N	Intermittant	250
	Prionotus tribulus	Bighead searobin		19	0.526				☐	☐	Single flow	N	Intermittant	250

Summary for 'Family' = Triglidae (13 detail records)

	Si	Se	Si(dd)
Avg	0.795	0.851	0.721
Min	0.526	0.804	0.286
Max	0.977	0.898	0.950
S.D.	0.164	0.066	0.273

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Uranoscopidae	Astroscopus guttatus	Northern stargazer		18	0.940			0.444	☐	☐	Single flow	N	2-hour	40

Summary for 'Family' = Uranoscopidae (1 detail record)

	Si	Se	Si(dd)
Avg	0.940		0.444
Min	0.940		0.444
Max	0.940		0.444
S.D.			

Family	Scientific Name	Common Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Calc. Value?	Screen Type	Screen Mods?	Wash Frequency	Report ID
Xanthidae	Xanthidae	Mud crab family		24	0.870			0.833	☐	☐	Single flow	N	2-hour	40
	Xanthidae	Mud crab family	Megalop		1.000	0.983	48		☐	☐	Dual flow	Y	Continuous	230
	Xanthidae	Mud crab family	Zoea		0.991	0.950	48		☐	☐	Dual flow	Y	Continuous	230
	Xanthidae	Mud crab family			0.930	0.744	48		☐	☐	Dual flow	Y	Continuous	231
	Menippe mercenaria	Stone crab		11	0.909				☐	☐	Single flow	N	Continuous	250
	Menippe mercenaria	Stone crab	Megalop		1.000	0.983	48		☐	☐	Dual flow	Y	Continuous	230
	Menippe mercenaria	Stone crab	Zoea		0.979	0.896	48		☐	☐	Dual flow	Y	Continuous	230
	Neopanope texana	Mud crab		54	1.000			0.815	☐	☐	Single flow	N	2-hour	40
	Neopanope texana	Mud crab		22	0.864	0.864	72		☐	☐	Single flow	Y		61
	Neopanope texana	Mud crab		10	0.700	0.400	72		☐	☐	Single flow	Y	2-hour	229
	Neopanope texana	Mud crab		21	1.000	0.950	72		☐	☐	Single flow	Y	3-hour	225
	Rhithropanopeus harrisii	Harris mud crab		160	0.944				☐	☐	Single flow	N	Continuous	250
	Rhithropanopeus harrisii	Harris mud crab		86	0.802				☐	☐	Single flow	N	Continuous	250
	Rhithropanopeus harrisii	Harris mud crab		98	0.939				☐	☐	Single flow	N	Intermittant	250
	Rhithropanopeus harrisii	Harris mud crab		135	0.896				☐	☐	Single flow	N	Intermittant	250

Summary for 'Family' = Xanthidae (15 detail records)

	Si	Se	Si(dd)
Avg	0.922	0.846	0.824
Min	0.700	0.400	0.815
Max	1.000	0.983	0.833
S.D.	0.086	0.197	0.013

C
APPENDIX C: SCREEN CHARACTERISTICS LISTING OF IMPINGEMENT SURVIVAL RATE ESTIMATES

Screen Char. Listing of Impingement Survival Estimates

Screen Type - Single Flow

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
N		3/8 x 3/8	Woven wire	80		Alosa pseudoharengus		3090	0.467	0.008	24	0.054	☐	180
		3/8 x 3/8	Woven wire	80		Cottus bairdi		162	0.920	0.869	24	0.870	☐	180
		3/8 x 3/8	Woven wire	80		Dorosoma cepedianum		51	0.627	0.000	24	0.118	☐	180
		3/8 x 3/8	Woven wire	80		Gasterosteus aculeatus		52	0.596	0.327	24	0.442	☐	180
		3/8 x 3/8	Woven wire	80		Notropis atherinoides		29	0.276	0.207	24	0.172	☐	180
		3/8 x 3/8	Woven wire	80		Notropis hudsonius		144	0.479	0.344	24	0.250	☐	180
		3/8 x 3/8	Woven wire	80		Osmerus mordax		1189	0.148	0.073	24	0.056	☐	180
	1-hour	3/8 x 3/8	Woven wire			Atherinidae	72-270 mm	11	0.640	0.000	96		☑	242
		3/8 x 3/8	Woven wire			Atherinidae	61-229 mm	74	0.510	0.080	96		☑	242
		3/8 x 3/8	Woven wire	100	80	Brevoortia tyrannus		13	0.000	0.000	96		☐	228
		3/8 x 3/8	Woven wire	90		Brevoortia tyrannus		1493		0.016	48		☑	166
		3/8 x 3/8	Woven wire	90		Brevoortia tyrannus		474		0.054	48		☑	166
		3/8 x 3/8	Woven wire	90		Brevoortia tyrannus		241		0.362	48		☑	166
		3/8 x 3/8	Woven wire	100	80	Brevoortia tyrannus		78	0.654	0.254	96		☐	228
		3/8 x 3/8	Woven wire	100	80	Brevoortia tyrannus		78	0.654	0.166	96		☐	228
		3/8 x 3/8	Woven wire	90		Callinectes sapidus		2381		0.951	48		☑	166
		3/8 x 3/8	Woven wire	100	80	Callinectes sapidus		45	0.444	0.222	96		☐	228
		3/8 x 3/8	Woven wire	100	80	Callinectes sapidus		20	1.000	0.700	96		☐	228
		3/8 x 3/8	Woven wire	90		Callinectes sapidus		115		0.983	48		☑	166
		3/8 x 3/8	Woven wire	100	80	Callinectes sapidus		56	0.446	0.142	96		☐	228
		3/8 x 3/8	Woven wire	100	80	Callinectes sapidus		50	0.740	0.220	96		☐	228
		3/8 x 3/8	Woven wire			Cancer spp.	15-114 mm	23	0.830	0.700	96		☑	242
		3/8 x 3/8	Woven wire			Clupea harengus pallasi	65-115 mm	94	0.140	0.000	96		☐	242
		3/8 x 3/8	Woven wire			Clupea harengus pallasi	80-125 mm	10	0.600	0.000	96		☐	242
		3/8 x 3/8	Woven wire			Cottidae	110-175 mm	18	1.000	1.000	96		☑	242

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
N	1-hour	3/8 x 3/8	Woven wire			Cottidae	73-162 mm	17	1.000	0.810	96		✔	242
		3/8 x 3/8	Woven wire	100	80	Cynoscion regalis		27	0.000	0.000	96		☐	228
		3/8 x 3/8	Woven wire	90		Dorosoma cepedianum		72		0.000	48		✔	166
		3/8 x 3/8	Woven wire	90		Dorosoma cepedianum		390		0.019	48		✔	166
		3/8 x 3/8	Woven wire			Embiotocidae	40-130 mm	27	0.810	0.460	96		✔	242
		3/8 x 3/8	Woven wire			Embiotocidae	35-255 mm	163	0.230	0.010	96		✔	242
		3/8 x 3/8	Woven wire			Engraulis mordax	70-135 mm	239	0.270	0.000	96		✔	242
		3/8 x 3/8	Woven wire			Engraulis mordax	63-135 mm	490	0.230	0.000	96		✔	242
		3/8 x 3/8	Woven wire	90		Leiostomus xanthurus		16		0.856	48		✔	166
		3/8 x 3/8	Woven wire	90		Leiostomus xanthurus		430		0.243	48		✔	166
		3/8 x 3/8	Woven wire	100	80	Leiostomus xanthurus		31	0.774	0.354	96		☐	228
		3/8 x 3/8	Woven wire	90		Morone americana		202		0.000	48		✔	166
		3/8 x 3/8	Woven wire	90		Morone americana		48		0.336	48		✔	166
		3/8 x 3/8	Woven wire	90		Morone americana		17		0.471	48		✔	166
		3/8 x 3/8	Woven wire	90		Perca flavescens		10		1.000	48		✔	166
		3/8 x 3/8	Woven wire	90		Perca flavescens		113		0.105	48		✔	166
		3/8 x 3/8	Woven wire	90		Perca flavescens		58		0.176	48		✔	166
		3/8 x 3/8	Woven wire			Sebastes	62-185 mm	13	0.850	0.470	96		✔	242
		3/8 x 3/8	Woven wire	90		Trinectes maculatus		123		0.668	48		✔	166
		3/8 x 3/8	Woven wire	90		Trinectes maculatus		246		0.802	48		✔	166
		3/8 x 3/8	Woven wire	90		Trinectes maculatus		12		1.000	48		✔	166
	2-hour	3/8 x 3/8	Woven wire	100	50	Alosa aestivalis	Yearling	35	0.060				☐	12
		3/8 x 3/8	Woven wire			Alosa aestivalis		55	0.160	0.000	96		☐	215
		3/8 x 3/8	Woven wire			Alosa aestivalis		911	0.560			0.207	☐	40
		3/8 x 3/8	Woven wire			Alosa aestivalis		2445	0.580				☐	184
		3/8 x 3/8	Woven wire			Alosa pseudoharengus		107	0.300	0.000	96		☐	215
		3/8 x 3/8	Woven wire	100	50	Alosa pseudoharengus		162	0.160	0.000	96		☐	12
		3/8 x 3/8	Woven wire			Alosa pseudoharengus		329	0.620				☐	184
		3/8 x 3/8	Woven wire			Ameiurus catus	YOY	13	0.920				☐	212

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
N	2-hour	3/8 x 3/8	Woven wire			Ameiurus catus		15	1.000	0.200	96		☐	215
		3/8 x 3/8	Woven wire	100	50	Ameiurus catus	YOY	12	1.000				☐	12
		3/8 x 3/8	Woven wire			Ameiurus catus	YOY	12	0.830				☐	212
		3/8 x 3/8	Woven wire			Anchoa mitchilli		13854	0.220	0.020	48		☐	184
		3/8 x 3/8	Woven wire	100	80	Anchoa mitchilli		20	0.000	0.000	96		☐	228
		3/8 x 3/8	Woven wire	100	80	Anchoa mitchilli		51	0.000	0.000	96		☐	228
		3/8 x 3/8	Woven wire			Anchoa mitchilli		10394	0.330			0.081	☐	40
		3/8 x 3/8	Woven wire			Anchoa mitchilli		700	0.276	0.030	48	0.034	☐	40
		3/8 x 3/8	Woven wire			Anguilla rostrata		34	0.560			0.147	☐	40
		3/8 x 3/8	Woven wire			Apeltes quadracus		82	0.940			0.841	☐	40
		3/8 x 3/8	Woven wire			Apeltes quadracus		92	0.950				☐	184
		3/8 x 3/8	Woven wire			Aplodinotus grunniens		36	0.528	0.167	24		☐	245
		3/8 x 3/8	Woven wire			Astroscopus guttatus		18	0.940			0.444	☐	40
		3/8 x 3/8	Woven wire			Bairdiella chrysoura		106	0.640			0.358	☐	40
		3/8 x 3/8	Woven wire	100	80	Brevoortia tyrannus		31	0.290	0.000	96		☐	228
		3/8 x 3/8	Woven wire			Brevoortia tyrannus		29	0.897	0.090	48	0.690	☐	40
		3/8 x 3/8	Woven wire			Brevoortia tyrannus		777	0.690			0.069	☐	40
		3/8 x 3/8	Woven wire			Brevoortia tyrannus		1249	0.770				☐	184
		3/8 x 3/8	Woven wire			Brevoortia tyrannus		3165	0.720	0.036	48		☐	184
		3/8 x 3/8	Woven wire	100	80	Callinectes sapidus		1	0.921	0.710	96		☐	228
		3/8 x 3/8	Woven wire			Callinectes sapidus		165	1.000	0.960	48	0.836	☐	40
		3/8 x 3/8	Woven wire			Callinectes sapidus		21669	0.930	0.735	48		☐	184
		3/8 x 3/8	Woven wire	100	80	Callinectes sapidus		120	0.875	0.450	96		☐	228
		3/8 x 3/8	Woven wire			Callinectes sapidus		16726	0.920			0.629	☐	40
		3/8 x 3/8	Woven wire	100	80	Callinectes sapidus		16	0.687	0.562	96		☐	228
		3/8 x 3/8	Woven wire			Callinectes similis		96	0.950			0.635	☐	40
		3/8 x 3/8	Woven wire			Cancer irroratus		17	0.940			0.765	☐	40
		3/8 x 3/8	Woven wire			Caranx hippos		18	0.220			0.000	☐	40
		3/8 x 3/8	Woven wire			Carassius auratus	Adult	15	1.000				☐	212

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
N	2-hour	3/8 x 3/8	Woven wire			Carassius auratus	Adult	10	1.000				☐	212
		3/8 x 3/8	Woven wire			Carassius auratus	Adult	23	0.960				☐	212
		3/8 x 3/8	Woven wire			Centropristis striata		310	0.700				☐	184
		3/8 x 3/8	Woven wire			Class Polychaeta		88	0.930			0.693	☐	40
		3/8 x 3/8	Woven wire			Clupea harengus		41	0.410			0.098	☐	40
		3/8 x 3/8	Woven wire			Crangon septemspinosus		11792	0.870			0.782	☐	40
		3/8 x 3/8	Woven wire			Crangon septemspinosus		2210	0.830				☐	184
		3/8 x 3/8	Woven wire			Crangon septemspinosus		17234	0.860	0.748	48		☐	184
		3/8 x 3/8	Woven wire			Cynoscion regalis		517	0.410			0.175	☐	40
		3/8 x 3/8	Woven wire			Cynoscion regalis		1351	0.410				☐	184
		3/8 x 3/8	Woven wire	100	80	Cynoscion regalis		16	0.000	0.000	96		☐	228
		3/8 x 3/8	Woven wire			Dorosoma cepedianum	Yearling	13	0.540				☐	212
		3/8 x 3/8	Woven wire			Dorosoma cepedianum		224	0.737	0.076	24		☐	245
		3/8 x 3/8	Woven wire			Etropus microstomus		558	0.820			0.563	☐	40
		3/8 x 3/8	Woven wire			Etropus microstomus		1626	0.820				☐	184
		3/8 x 3/8	Woven wire			Etropus microstomus		2213	0.740				☐	184
		3/8 x 3/8	Woven wire			Fundulus heteroclitus		15	0.930			0.733	☐	40
		3/8 x 3/8	Woven wire			Gasterosteus aculeatus		14	1.000			1.000	☐	40
		3/8 x 3/8	Woven wire			Gobiosoma bosc		66	0.210			0.182	☐	40
		3/8 x 3/8	Woven wire			Hippocampus erectus		87	0.970			0.908	☐	40
		3/8 x 3/8	Woven wire			Leiostomus xanthurus		19	1.000	0.830	48	0.947	☐	40
		3/8 x 3/8	Woven wire			Leiostomus xanthurus		2367	0.520				☐	184
		3/8 x 3/8	Woven wire			Leiostomus xanthurus		1077	0.310			0.259	☐	40
		3/8 x 3/8	Woven wire			Lepomis gibbosus	Adult	11	0.910				☐	212
		3/8 x 3/8	Woven wire			Lepomis gibbosus	Adult	13	1.000				☐	212
		3/8 x 3/8	Woven wire			Lepomis gibbosus	Adult	10	1.000				☐	212
		3/8 x 3/8	Woven wire			Libinia dubia		16	1.000			0.875	☐	40
		3/8 x 3/8	Woven wire			Limulus polyphemus		39	1.000			0.846	☐	40
		3/8 x 3/8	Woven wire			Lolliguncula brevis		83	0.660			0.289	☐	40

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
N	2-hour	3/8 x 3/8	Woven wire			Menidia menidia		5133	0.620	0.217	48		☐	184
		3/8 x 3/8	Woven wire			Menidia menidia		3432	0.600			0.348	☐	40
		3/8 x 3/8	Woven wire			Menidia menidia		87	0.655	0.372	48	0.575	☐	40
		3/8 x 3/8	Woven wire			Menidia menidia		568	0.570				☐	184
		3/8 x 3/8	Woven wire			Microgadus tomcod	YOY	29	1.000	0.720	84		☐	214
		3/8 x 3/8	Woven wire			Microgadus tomcod	Adult	111	0.927	0.700	84		☐	212
		3/8 x 3/8	Woven wire	100	50	Microgadus tomcod	YOY	37	0.780				☐	12
		3/8 x 3/8	Woven wire	100	50	Microgadus tomcod	YOY	13	1.000	0.690	84		☐	12
		3/8 x 3/8	Woven wire			Microgadus tomcod	Adult	745	0.960	0.826	84		☐	177
		3/8 x 3/8	Woven wire	100	50	Microgadus tomcod	Adult	217	0.930	0.660	84		☐	177
		3/8 x 3/8	Woven wire			Microgadus tomcod	Adult	73	0.890	0.662	84		☐	212
		3/8 x 3/8	Woven wire	90	60	Microgadus tomcod	Adult	50	0.840	0.800	84		☐	172
		3/8 x 3/8	Woven wire			Microgadus tomcod	Adult	716	0.961	0.869	84		☐	212
		3/8 x 3/8	Woven wire	100	50	Microgadus tomcod	YOY	20	1.000	0.900	84		☐	12
		3/8 x 3/8	Woven wire			Monacanthus hispidus		25	0.840			0.600	☐	40
		3/8 x 3/8	Woven wire			Morone americana	Adult	20	1.000	0.150	84		☐	212
		3/8 x 3/8	Woven wire			Morone americana	Yearling	20	0.950				☐	212
		3/8 x 3/8	Woven wire	90	60	Morone americana	Yearling	20	0.800	0.050	84		☐	172
		3/8 x 3/8	Woven wire			Morone americana	Yearling	10	0.500				☐	212
		3/8 x 3/8	Woven wire			Morone americana	Adult	223	0.991	0.281	84		☐	212
		3/8 x 3/8	Woven wire	90	60	Morone americana	Adult	135	0.941				☐	172
		3/8 x 3/8	Woven wire			Morone americana	Adult	56	0.964	0.111	84		☐	212
		3/8 x 3/8	Woven wire	100	50	Morone americana	Yearling	22	1.000	0.140	84		☐	12
		3/8 x 3/8	Woven wire	90	60	Morone americana	Adult	21	0.952				☐	172
		3/8 x 3/8	Woven wire	90	60	Morone americana	Yearling	95	0.958				☐	172
		3/8 x 3/8	Woven wire			Morone americana	Adult	14	1.000				☐	212
		3/8 x 3/8	Woven wire			Morone americana	Adult	10	1.000				☐	212
		3/8 x 3/8	Woven wire			Morone americana		236	0.710	0.030	96		☐	215
		3/8 x 3/8	Woven wire			Morone americana	Adult	27	0.960				☐	212

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
N	2-hour	3/8 x 3/8	Woven wire	100	50	Morone americana	YOY	68	0.970	0.223	84		☐	177
		3/8 x 3/8	Woven wire	90	60	Morone americana	YOY	556	0.860	0.011	84		☐	172
		3/8 x 3/8	Woven wire	100	50	Morone americana	YOY	389	0.960	0.080	84		☐	12
		3/8 x 3/8	Woven wire	100	50	Morone americana	YOY	389	0.960	0.077	84		☐	177
		3/8 x 3/8	Woven wire	90	60	Morone americana	YOY	346	0.951	0.315	84		☐	172
		3/8 x 3/8	Woven wire	100	50	Morone americana	YOY	344	0.920	0.050	84		☐	12
		3/8 x 3/8	Woven wire	100	50	Morone americana	YOY	344	0.920	0.046	84		☐	177
		3/8 x 3/8	Woven wire			Morone americana	Yearling	74	0.986	0.042	84		☐	212
		3/8 x 3/8	Woven wire	100	50	Morone americana	YOY	74	1.000	0.200	84		☐	177
		3/8 x 3/8	Woven wire	90	60	Morone americana	Yearling	29	1.000				☐	172
		3/8 x 3/8	Woven wire			Morone americana	YOY	29	0.970	0.243	84		☐	177
		3/8 x 3/8	Woven wire			Morone americana	Yearling	162	0.988	0.400	84		☐	212
		3/8 x 3/8	Woven wire	90	60	Morone americana	Adult	321	0.984	0.248	84		☐	172
		3/8 x 3/8	Woven wire	90	60	Morone americana	Yearling	87	0.908	0.118	84		☐	172
		3/8 x 3/8	Woven wire			Morone americana		145	0.930			0.579	☐	40
		3/8 x 3/8	Woven wire			Morone americana	Yearling	46	0.978	0.222	84		☐	212
		3/8 x 3/8	Woven wire			Morone americana	YOY	258	0.620	0.093	84		☐	177
		3/8 x 3/8	Woven wire			Morone americana		13	0.846				☐	245
		3/8 x 3/8	Woven wire			Morone americana	Yearling	17	0.710	0.060	84		☐	214
		3/8 x 3/8	Woven wire			Morone americana		20	0.850	0.400	24		☐	245
		3/8 x 3/8	Woven wire			Morone saxatilis		12	0.670	0.170	96		☐	215
		3/8 x 3/8	Woven wire			Neopanope texana		54	1.000			0.815	☐	40
		3/8 x 3/8	Woven wire			Notemigonus crysoleucas	Adult	19	0.840				☐	212
		3/8 x 3/8	Woven wire			Notemigonus crysoleucas	Adult	12	1.000				☐	212
		3/8 x 3/8	Woven wire			Notropis hudsonius	Yearling	13	0.540				☐	212
		3/8 x 3/8	Woven wire			Notropis hudsonius	Yearling	19	0.840				☐	212
		3/8 x 3/8	Woven wire			Notropis hudsonius	Yearling	23	0.870				☐	212
		3/8 x 3/8	Woven wire			Notropis hudsonius	Yearling	10	0.900				☐	212
		3/8 x 3/8	Woven wire			Notropis hudsonius	Yearling	10	0.600				☐	212

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
N	2-hour	3/8 x 3/8	Woven wire			Notropis hudsonius	Adult	148	0.950				☐	212
		3/8 x 3/8	Woven wire			Notropis hudsonius	Adult	78	0.960				☐	212
		3/8 x 3/8	Woven wire	90	60	Notropis hudsonius	Adult	10	0.900				☐	172
		3/8 x 3/8	Woven wire			Notropis hudsonius	Adult	34	0.880				☐	212
		3/8 x 3/8	Woven wire			Notropis hudsonius	Adult	30	0.900				☐	212
		3/8 x 3/8	Woven wire			Notropis hudsonius	Adult	12	0.830				☐	212
		3/8 x 3/8	Woven wire	90	60	Notropis hudsonius	Adult	71	0.958	0.556	84		☐	172
		3/8 x 3/8	Woven wire	90	60	Notropis hudsonius	Adult	12	0.917				☐	172
		3/8 x 3/8	Woven wire			Ophidion marginatum		633	0.880				☐	184
		3/8 x 3/8	Woven wire			Opsanus tau		149	0.930			0.866	☐	40
		3/8 x 3/8	Woven wire			Opsanus tau		186	0.940				☐	184
		3/8 x 3/8	Woven wire			Osmerus mordax	YOY	32	0.690				☐	212
		3/8 x 3/8	Woven wire			Osmerus mordax	YOY	20	0.250				☐	212
		3/8 x 3/8	Woven wire			Ovalipes ocellatus		133	0.930			0.692	☐	40
		3/8 x 3/8	Woven wire			Palaemonetes pugio		12	0.920			0.833	☐	40
		3/8 x 3/8	Woven wire			Palaemonetes sp.		52	0.750			0.500	☐	40
		3/8 x 3/8	Woven wire			Palaemonetes vulgaris		2259	0.920				☐	184
		3/8 x 3/8	Woven wire			Palaemonetes vulgaris		1794	0.930			0.882	☐	40
		3/8 x 3/8	Woven wire			Paralichthys dentatus		130	0.890			0.569	☐	40
		3/8 x 3/8	Woven wire			Paralichthys dentatus		259	0.910				☐	184
		3/8 x 3/8	Woven wire			Penaeus aztecus		58	0.970			0.910	☐	40
		3/8 x 3/8	Woven wire			Perca flavescens		253	0.957	0.672	24		☐	245
		3/8 x 3/8	Woven wire			Perca flavescens		109	0.936	0.211	48		☐	245
		3/8 x 3/8	Woven wire			Perca flavescens		42	0.333				☐	245
		3/8 x 3/8	Woven wire			Phylum Nemertea		14	1.000			0.857	☐	40
		3/8 x 3/8	Woven wire			Pleuronectes americanus		686	0.850	0.570	48		☐	184
		3/8 x 3/8	Woven wire			Pleuronectes americanus		384	0.860				☐	184
		3/8 x 3/8	Woven wire			Pleuronectes americanus		69	0.880			0.580	☐	40
		3/8 x 3/8	Woven wire	90	30	Pleuronectes americanus			0.777	0.707	96		☐	247

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
N	2-hour	3/8 x 3/8	Woven wire			Pomatomus saltatrix		433	0.410				☐	184
		3/8 x 3/8	Woven wire			Pomatomus saltatrix		284	0.390			0.264	☐	40
		3/8 x 3/8	Woven wire			Portunus gibbesi		11	0.820			0.454	☐	40
		3/8 x 3/8	Woven wire			Prionotus carolinus		14	0.640			0.286	☐	40
		3/8 x 3/8	Woven wire			Prionotus evolans		448	0.730			0.538	☐	40
		3/8 x 3/8	Woven wire			Prionotus evolans		1335	0.820	0.804	48		☐	184
		3/8 x 3/8	Woven wire			Scophthalmus aquosus		45	0.870			0.733	☐	40
		3/8 x 3/8	Woven wire			Selene vomer		47	0.570			0.128	☐	40
		3/8 x 3/8	Woven wire			Sphoeroides maculatus		59	0.900			0.898	☐	40
		3/8 x 3/8	Woven wire			Squilla empusa		11	0.910			0.818	☐	40
		3/8 x 3/8	Woven wire			Syngnathus fuscus		32	0.969	0.761	48	0.969	☐	40
		3/8 x 3/8	Woven wire			Syngnathus fuscus		2417	0.950	0.751	48		☐	184
		3/8 x 3/8	Woven wire			Syngnathus fuscus		1940	0.960			0.915	☐	40
		3/8 x 3/8	Woven wire			Tautoga onitis		15	1.000			0.800	☐	40
		3/8 x 3/8	Woven wire			Trinectes maculatus		29	1.000			0.862	☐	40
		3/8 x 3/8	Woven wire			Urophycis regia		21	0.710			0.520	☐	40
		3/8 x 3/8	Woven wire			Xanthidae		24	0.870			0.833	☐	40
	3-hour	3/8 x 3/8	Woven wire			Atherinidae	61-229 mm	227	0.330	0.040	96		☑	242
		3/8 x 3/8	Woven wire			Atherinidae	72-270 mm	15	0.530	0.000	96		☑	242
		3/8 x 3/8	Woven wire			Cancer spp.	15-114 mm	19	0.530	0.470	96		☑	242
		3/8 x 3/8	Woven wire			Clupea harengus pallasi	65-115 mm	163	0.040	0.000	96		☐	242
		3/8 x 3/8	Woven wire			Clupea harengus pallasi	80-125 mm	24	0.130	0.000	96		☐	242
		3/8 x 3/8	Woven wire			Cottidae	110-175 mm	29	1.000	0.970	96		☑	242
		3/8 x 3/8	Woven wire			Cottidae	73-162 mm	20	0.750	0.530	96		☑	242
		3/8 x 3/8	Woven wire			Embiotocidae	40-130 mm	19	0.370	0.060	96		☑	242
		3/8 x 3/8	Woven wire			Embiotocidae	35-255 mm	310	0.090	0.010	96		☑	242
		3/8 x 3/8	Woven wire			Engraulis mordax	63-135 mm	2414	0.180	0.000	96		☑	242
		3/8 x 3/8	Woven wire			Engraulis mordax	70-135 mm	2690	0.160	0.010	96		☑	242
		3/8 x 3/8	Woven wire			Gobiidae	75-165 mm	13	1.000	0.980	96		☑	242

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
N	3-hour	3/8 x 3/8	Woven wire			Gobiidae	80-111 mm	10	0.700	0.740	96		✓	242
		3/8 x 3/8	Woven wire			Osmeridae	100-150 mm		0.000				☐	242
		3/8 x 3/8	Woven wire			Pleuronectiformes	59-365 mm	42	0.710	0.520	96		✓	242
		3/8 x 3/8	Woven wire			Pleuronectiformes	59-365 mm	11	0.820	0.700	96		✓	242
		3/8 x 3/8	Woven wire			Porichthys notatus	45-290 mm	64	0.950	0.950	96		✓	242
		3/8 x 3/8	Woven wire			Sebastes	50-190 mm	22	0.270	0.050	96		✓	242
		3/8 x 3/8	Woven wire			Sebastes	62-185 mm	23	0.390	0.130	96		✓	242
	4-hour	3/8 x 3/8	Woven wire			Alosa aestivalis		40	0.130	0.000	96		☐	215
		3/8 x 3/8	Woven wire			Alosa pseudoharengus		256	0.020	0.000	96		☐	215
		3/8 x 3/8	Woven wire	100	50	Alosa pseudoharengus		54	0.000	0.000	96		☐	12
		3/8 x 3/8	Woven wire			Alosa pseudoharengus	Adult	18	0.440				☐	212
		3/8 x 3/8	Woven wire			Ameiurus catus	YOY	10	0.900				☐	212
		3/8 x 3/8	Woven wire	100	80	Anchoa mitchilli		228	0.018	0.000	96		☐	228
		3/8 x 3/8	Woven wire			Aplodinotus grunniens		129	0.550	0.256	24		☐	245
		3/8 x 3/8	Woven wire	100	80	Brevoortia tyrannus		116	0.095	0.000	96		☐	228
		3/8 x 3/8	Woven wire	100	80	Brevoortia tyrannus		10	0.100	0.000	96		☐	228
		3/8 x 3/8	Woven wire	100	80	Callinectes sapidus		276	0.587	0.195	96		☐	228
		3/8 x 3/8	Woven wire	100	80	Callinectes sapidus		111	0.739	0.522	96		☐	228
		3/8 x 3/8	Woven wire	100	80	Cynoscion regalis		20	0.050	0.000	96		☐	228
		3/8 x 3/8	Woven wire			Dorosoma cepedianum		18	0.110	0.000	96		☐	215
		3/8 x 3/8	Woven wire			Dorosoma cepedianum		413	0.685	0.014	24		☐	245
		3/8 x 3/8	Woven wire	100	80	Leiostomus xanthurus		29	0.000	0.000	96		☐	228
		3/8 x 3/8	Woven wire	100	80	Leiostomus xanthurus		103	0.097	0.000	96		☐	228
		3/8 x 3/8	Woven wire			Lepomis gibbosus	Adult	18	0.830				☐	212
		3/8 x 3/8	Woven wire	100	80	Menidia menidia		28	0.179	0.000	96		☐	228
		3/8 x 3/8	Woven wire	100	50	Microgadus tomcod	YOY	35	0.290				☐	12
		3/8 x 3/8	Woven wire	100	50	Morone americana	YOY	231	0.390	0.039	84		☐	177
		3/8 x 3/8	Woven wire			Morone americana	Yearling	26	0.885	0.043	84		☐	212
		3/8 x 3/8	Woven wire			Morone americana	YOY	158	0.390	0.023	84		☐	177

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
N	4-hour	3/8 x 3/8	Woven wire	100	50	Morone americana	YOY	144	0.920	0.230	84		☐	177
		3/8 x 3/8	Woven wire	100	50	Morone americana	YOY	70	0.710	0.000	84		☐	12
		3/8 x 3/8	Woven wire	100	50	Morone americana	YOY	70	0.710	0.000	84		☐	177
		3/8 x 3/8	Woven wire	100	50	Morone americana	YOY	25	0.960	0.163	84		☐	177
		3/8 x 3/8	Woven wire			Morone americana	Yearling	62	0.710	0.000	84		☐	212
		3/8 x 3/8	Woven wire			Morone americana	Adult	137	0.942	0.031	84		☐	212
		3/8 x 3/8	Woven wire			Morone americana	Adult	15	0.733	0.181	84		☐	212
		3/8 x 3/8	Woven wire			Morone americana		924	0.310	0.000	96		☐	215
		3/8 x 3/8	Woven wire			Morone americana		127	0.701	0.080	24		☐	245
		3/8 x 3/8	Woven wire	100	50	Morone americana	YOY	25	0.960	0.160	84		☐	12
		3/8 x 3/8	Woven wire			Morone saxatilis		26	0.310	0.000	96		☐	215
		3/8 x 3/8	Woven wire			Notropis hudsonius	Adult	71	0.440				☐	212
		3/8 x 3/8	Woven wire			Notropis hudsonius	Yearling	16	0.560				☐	212
		3/8 x 3/8	Woven wire			Perca flavescens		527	0.890	0.512	24		☐	245
		3/8 x 3/8	Woven wire			Perca flavescens		200	0.885	0.160	48		☐	245
		3/8 x 3/8	Woven wire	90	30	Pleuronectes americanus			0.586	0.418	96		☐	247
	8.5-hour	3/8 x 3/8	Woven wire	100	80	Micropogonias undulatus		15	0.267	0.000	96		☐	228
	8-hour	3/8 x 3/8	Woven wire			Alosa pseudoharengus	60-164 mm	12	0.000	0.000	56		☐	246
		3/8 x 3/8	Woven wire	100	80	Anchoa mitchilli		15	0.000	0.000	96		☐	228
		3/8 x 3/8	Woven wire	100	80	Anchoa mitchilli		11	0.000	0.000	96		☐	228
		3/8 x 3/8	Woven wire	100	80	Anchoa mitchilli		2165	0.054	0.000	96		☐	228
		3/8 x 3/8	Woven wire	100	80	Anchoa mitchilli		720	0.000	0.000	96		☐	228
		3/8 x 3/8	Woven wire	100	80	Anchoa mitchilli		314	0.048	0.000	96		☐	228
		3/8 x 3/8	Woven wire			Aplodinotus grunniens		188	0.431	0.138	24		☐	245
		3/8 x 3/8	Woven wire	100	80	Brevoortia tyrannus		48	0.000	0.000	96		☐	228
		3/8 x 3/8	Woven wire	90		Brevoortia tyrannus		1115		0.000	48		☑	166
		3/8 x 3/8	Woven wire	90		Brevoortia tyrannus		162		0.202	48		☑	166
		3/8 x 3/8	Woven wire	90		Brevoortia tyrannus		610		0.000	48		☑	166
		3/8 x 3/8	Woven wire	100	80	Callinectes sapidus		163	0.245	0.104	96		☐	228

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
N	8-hour	3/8 x 3/8	Woven wire	90		Callinectes sapidus		659		0.885	48		✔	166
		3/8 x 3/8	Woven wire	100	80	Callinectes sapidus		103	0.709	0.582	96		☐	228
		3/8 x 3/8	Woven wire	100	80	Callinectes sapidus		206	0.694	0.433	96		☐	228
		3/8 x 3/8	Woven wire	90		Callinectes sapidus		31		1.000	48		✔	166
		3/8 x 3/8	Woven wire	100	80	Callinectes sapidus		78	0.513	0.218	96		☐	228
		3/8 x 3/8	Woven wire	100	80	Callinectes sapidus		102	0.804	0.657	96		☐	228
		3/8 x 3/8	Woven wire			Cyclopterus lumpus	37-85 mm	10	0.500	0.300	56		☐	246
		3/8 x 3/8	Woven wire	100	80	Cynoscion regalis		88	0.000	0.000	96		☐	228
		3/8 x 3/8	Woven wire	90		Dorosoma cepedianum		173		0.000	48		✔	166
		3/8 x 3/8	Woven wire			Dorosoma cepedianum		190	0.058	0.000	24		☐	245
		3/8 x 3/8	Woven wire	90		Leiostomus xanthurus		36		0.361	48		✔	166
		3/8 x 3/8	Woven wire	90		Leiostomus xanthurus		238		0.086	48		✔	166
		3/8 x 3/8	Woven wire	100	80	Leiostomus xanthurus		16	0.062	0.000	96		☐	228
		3/8 x 3/8	Woven wire			Menidia menidia	40-145 mm	20	0.300	0.150	56		☐	246
		3/8 x 3/8	Woven wire	100	80	Menidia menidia		29	0.034	0.000	96		☐	228
		3/8 x 3/8	Woven wire	100	80	Menidia menidia		23	0.652	0.391	96		☐	228
		3/8 x 3/8	Woven wire	100	80	Menidia menidia		124	0.202	0.097	96		☐	228
		3/8 x 3/8	Woven wire			Microgadus tomcod	118-262 mm	10	0.700	0.600	56		☐	246
		3/8 x 3/8	Woven wire	90		Morone americana		26		0.111	48		✔	166
		3/8 x 3/8	Woven wire	90		Morone americana		112		0.000	48		✔	166
		3/8 x 3/8	Woven wire			Morone americana		150	0.600	0.040	24		☐	245
		3/8 x 3/8	Woven wire	90		Morone americana		27		0.367	48		✔	166
		3/8 x 3/8	Woven wire			Myoxocephalus aenaeus	45-125 mm	14	0.571	0.429	56		☐	246
		3/8 x 3/8	Woven wire			Perca flavescens		571	0.799	0.331	24		☐	245
		3/8 x 3/8	Woven wire			Perca flavescens		271	0.849	0.063	48		☐	245
		3/8 x 3/8	Woven wire	90		Perca flavescens		26		0.214	48		✔	166
		3/8 x 3/8	Woven wire	90		Perca flavescens		25		0.122	48		✔	166
		3/8 x 3/8	Woven wire	90		Perca flavescens		17		0.819	48		✔	166
		3/8 x 3/8	Woven wire	90	30	Pleuronectes americanus			0.644	0.614	96		☐	247

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
N	8-hour	3/8 x 3/8	Woven wire			Sphoeroides maculatus	63-128 mm	13	0.615	0.615	56		☐	246
		3/8 x 3/8	Woven wire	90		Trinectes maculatus		25		0.711	48		☑	166
		3/8 x 3/8	Woven wire	90		Trinectes maculatus		133		0.836	48		☑	166
	9-hour	3/8 x 3/8	Woven wire			Alosa aestivalis		2346	0.040	0.000	96		☐	215
		3/8 x 3/8	Woven wire	100	50	Alosa pseudoharengus		169	0.060	0.000	96		☐	12
		3/8 x 3/8	Woven wire			Alosa pseudoharengus		85	0.060	0.000	96		☐	215
		3/8 x 3/8	Woven wire			Morone americana		137	0.120	0.000	96		☐	215
	Continuous					Alosa pseudoharengus		35				0.486	☐	175
						Ambloplites rupestris		13				0.615	☐	175
						Aplodinotus grunniens		12				0.583	☐	175
						Dorosoma cepedianum		87				0.828	☐	175
						Osmerus mordax		221				0.706	☐	175
						Perca flavescens		53				0.566	☐	175
		1/2 x 1/2	Woven wire	90		Acetes americanus		12	0.000				☐	250
		1/2 x 1/2	Woven wire	90		Achirus lineatus		17	0.941				☐	250
		1/2 x 1/2	Woven wire	90		Achirus lineatus		12	1.000				☐	250
		1/2 x 1/2	Woven wire	90		Anchoa hepsetus		23	0.043				☐	250
		1/2 x 1/2	Woven wire	90		Anchoa mitchilli		424	0.078				☐	250
		1/2 x 1/2	Woven wire	90		Anchoa mitchilli		131	0.176				☐	250
		1/2 x 1/2	Woven wire	90		Arius felis		552	0.277				☐	250
		1/2 x 1/2	Woven wire	90		Arius felis		90	0.567				☐	250
		1/2 x 1/2	Woven wire	90		Arius felis		85		0.506	120		☐	250
		1/2 x 1/2	Woven wire	90		Arius felis		30		0.433	120		☐	250
		1/2 x 1/2	Woven wire	90		Bairdiella chrysoura		11		0.000	120		☐	250
		1/2 x 1/2	Woven wire	90		Bairdiella chrysoura		63	0.270				☐	250
		1/2 x 1/2	Woven wire	90		Brevoortia patronus		3627	0.281				☐	250
		1/2 x 1/2	Woven wire	90		Brevoortia patronus		659	0.347				☐	250
		1/2 x 1/2	Woven wire	90		Brevoortia patronus		17		0.176	120		☐	250
		1/2 x 1/2	Woven wire	90		Brevoortia patronus		116		0.095	120		☐	250

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
N	Continuous	1/2 x 1/2	Woven wire	90		Callinectes sapidus		210		0.814	120		☐	250
		1/2 x 1/2	Woven wire	90		Callinectes sapidus		181		0.746	120		☐	250
		1/2 x 1/2	Woven wire	90		Callinectes sapidus		2672	0.954				☐	250
		1/2 x 1/2	Woven wire	90		Callinectes sapidus		1421	0.737				☐	250
		1/2 x 1/2	Woven wire	90		Callinectes similis		128	0.961				☐	250
		1/2 x 1/2	Woven wire	90		Callinectes similis		10		0.900	120		☐	250
		1/2 x 1/2	Woven wire	90		Callinectes similis		14		0.857	120		☐	250
		1/2 x 1/2	Woven wire	90		Callinectes similis		174	0.925				☐	250
		1/2 x 1/2	Woven wire	90		Caranx hippos		20		0.700	120		☐	250
		1/2 x 1/2	Woven wire	90		Caranx hippos		50	0.260				☐	250
		1/2 x 1/2	Woven wire	90		Caranx hippos		54	0.722				☐	250
		1/2 x 1/2	Woven wire	90		Chaetodipterus faber		47		0.787	120		☐	250
		1/2 x 1/2	Woven wire	90		Chaetodipterus faber		126	0.516				☐	250
		1/2 x 1/2	Woven wire	90		Chaetodipterus faber		270	0.285				☐	250
		1/2 x 1/2	Woven wire	90		Chaetodipterus faber		57		0.509	120		☐	250
		1/2 x 1/2	Woven wire	90		Chloroscombrus chrysurus		13	0.308				☐	250
		1/2 x 1/2	Woven wire	90		Chloroscombrus chrysurus		475	0.027				☐	250
		1/2 x 1/2	Woven wire	90		Citharichthys spilopterus		13		0.231	120		☐	250
		1/2 x 1/2	Woven wire	90		Citharichthys spilopterus		107	0.514				☐	250
		1/2 x 1/2	Woven wire	90		Citharichthys spilopterus		30	0.833				☐	250
		1/2 x 1/2	Woven wire	90		Cynoscion arenarius		125		0.136	120		☐	250
		1/2 x 1/2	Woven wire	90		Cynoscion arenarius		1026	0.226				☐	250
		1/2 x 1/2	Woven wire	90		Cynoscion arenarius		61		0.393	120		☐	250
		1/2 x 1/2	Woven wire	90		Cynoscion arenarius		282	0.418				☐	250
		1/2 x 1/2	Woven wire	90		Cynoscion nebulosus		10	0.400				☐	250
		1/2 x 1/2	Woven wire	90		Dorosoma cepedianum		14	0.429				☐	250
		1/2 x 1/2	Woven wire	90		Dorosoma petenense		131	0.153				☐	250
		1/2 x 1/2	Woven wire	90		Dorosoma petenense		15	0.333				☐	250
		1/2 x 1/2	Woven wire	90		Hemicaranx amblyrhynchus		14		0.500	120		☐	250

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
N	Continuous	1/2 x 1/2	Woven wire	90		Hemicaranx amblyrhynchus		59	0.322				☐	250
		1/2 x 1/2	Woven wire	90		Hemicaranx amblyrhynchus		51	0.373				☐	250
		1/2 x 1/2	Woven wire	90		Hemicaranx amblyrhynchus		14		0.429	120		☐	250
		1/2 x 1/2	Woven wire	90		Lagodon rhomboides		25	0.560				☐	250
		1/2 x 1/2	Woven wire	90		Leiostomus xanthurus		22		0.773	120		☐	250
		1/2 x 1/2	Woven wire	90		Leiostomus xanthurus		168	0.714				☐	250
		1/2 x 1/2	Woven wire	90		Leiostomus xanthurus		460	0.472				☐	250
		1/2 x 1/2	Woven wire	90		Leiostomus xanthurus		54		0.167	120		☐	250
		1/2 x 1/2	Woven wire	90		Lolliguncula brevis		55	0.345				☐	250
		1/2 x 1/2	Woven wire	90		Macrobrachium ohione		10	0.500				☐	250
		1/2 x 1/2	Woven wire	90		Menippe mercenaria		11	0.909				☐	250
		1/2 x 1/2	Woven wire	90		Micropogonias undulatus		108		0.222	120		☐	250
		1/2 x 1/2	Woven wire	90		Micropogonias undulatus		163	0.301				☐	250
		1/2 x 1/2	Woven wire	90		Micropogonias undulatus		537	0.436				☐	250
		1/2 x 1/2	Woven wire	90		Micropogonias undulatus		14		0.357	120		☐	250
		1/2 x 1/2	Woven wire	90		Mugil cephalus		12		0.000	120		☐	250
		1/2 x 1/2	Woven wire	90		Mugil cephalus		28	0.607				☐	250
		1/2 x 1/2	Woven wire	90		Mugil cephalus		113	0.540				☐	250
		1/2 x 1/2	Woven wire	90		Mugil cephalus		44		0.114	120		☐	250
		1/2 x 1/2	Woven wire	90		Mugil curema		18	0.000				☐	250
		1/2 x 1/2	Woven wire	90		Opisthonema oglinum		25	0.480				☐	250
		1/2 x 1/2	Woven wire	90		Palaemonetes vulgaris		53	0.887				☐	250
		1/2 x 1/2	Woven wire	90		Palaemonetes vulgaris		93	0.989				☐	250
		1/2 x 1/2	Woven wire	90		Paralichthys lethostigma		14	0.500				☐	250
		1/2 x 1/2	Woven wire	90		Penaeidae		31		0.000	120		☐	250
		1/2 x 1/2	Woven wire	90		Penaeidae		33	1.000				☐	250
		1/2 x 1/2	Woven wire	90		Penaeidae		94	1.000				☐	250
		1/2 x 1/2	Woven wire	90		Penaeidae		83		0.000	120		☐	250
		1/2 x 1/2	Woven wire	90		Penaeus aztecus		584		0.808	120		☐	250

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
N	Continuous	1/2 x 1/2	Woven wire	90		Penaeus aztecus		6119	0.567				☐	250
		1/2 x 1/2	Woven wire	90		Penaeus aztecus		249		0.928	120		☐	250
		1/2 x 1/2	Woven wire	90		Penaeus aztecus		2086	0.907				☐	250
		1/2 x 1/2	Woven wire	90		Penaeus setiferus		782		0.838	120		☐	250
		1/2 x 1/2	Woven wire	90		Penaeus setiferus		1579	0.740				☐	250
		1/2 x 1/2	Woven wire	90		Penaeus setiferus		150		0.773	120		☐	250
		1/2 x 1/2	Woven wire	90		Penaeus setiferus		8688	0.562				☐	250
		1/2 x 1/2	Woven wire	90		Peprilus alepidotus		32	0.406				☐	250
		1/2 x 1/2	Woven wire	90		Peprilus alepidotus		134	0.179				☐	250
		1/2 x 1/2	Woven wire	90		Pogonias cromis		22		0.136	120		☐	250
		1/2 x 1/2	Woven wire	90		Pogonias cromis		35	0.743				☐	250
		1/2 x 1/2	Woven wire	90		Polydactylus octonemus		108	0.148				☐	250
		1/2 x 1/2	Woven wire	90		Porichthys porosissimus		19		0.526	120		☐	250
		1/2 x 1/2	Woven wire	90		Porichthys porosissimus		18	0.944				☐	250
		1/2 x 1/2	Woven wire	90		Porichthys porosissimus		26	0.885				☐	250
		1/2 x 1/2	Woven wire	90		Porichthys porosissimus		12		0.833	120		☐	250
		1/2 x 1/2	Woven wire	90		Prionotus tribulus		17	0.647				☐	250
		1/2 x 1/2	Woven wire	90		Prionotus tribulus		12	0.833				☐	250
		1/2 x 1/2	Woven wire	90		Rhithropanopeus harrisii		160	0.944				☐	250
		1/2 x 1/2	Woven wire	90		Rhithropanopeus harrisii		86	0.802				☐	250
		1/2 x 1/2	Woven wire	90		Scomberomorus maculatus		11	0.000				☐	250
		1/2 x 1/2	Woven wire	90		Selene setapinnis		11	0.182				☐	250
		1/2 x 1/2	Woven wire	90		Selene vomer		11	0.364				☐	250
		1/2 x 1/2	Woven wire	90		Sphoeroides parvus		121		0.587	120		☐	250
		1/2 x 1/2	Woven wire	90		Sphoeroides parvus		204	0.657				☐	250
		1/2 x 1/2	Woven wire	90		Sphoeroides parvus		79		0.633	120		☐	250
		1/2 x 1/2	Woven wire	90		Sphoeroides parvus		114	0.886				☐	250
		1/2 x 1/2	Woven wire	90		Symphurus plagiusa		18	0.889				☐	250
		1/2 x 1/2	Woven wire	90		Symphurus plagiusa		31	0.645				☐	250

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
N	Continuous	1/2 x 1/2	Woven wire	90		Trichiurus lepturus		164	0.311				☐	250
		1/2 x 1/2	Woven wire	90		Trichiurus lepturus		17		0.000	120		☐	250
		1/2 x 1/2	Woven wire	90		Trichiurus lepturus		934	0.091				☐	250
		1/2 x 1/2	Woven wire	90		Xiphopenaeus kroyeri		12	0.417				☐	250
		3/8 x 3/8	Woven wire			Alosa pseudoharengus		91	0.500	0.000	96		☐	215
		3/8 x 3/8	Woven wire			Alosa pseudoharengus	Adult	20	0.850				☐	212
		3/8 x 3/8	Woven wire			Ameiurus catus	YOY	20	1.000				☐	212
		3/8 x 3/8	Woven wire			Ameiurus catus	YOY	11	0.910				☐	212
		3/8 x 3/8	Woven wire	100	80	Anchoa mitchilli		7	1.000	0.285	96		☐	228
		3/8 x 3/8	Woven wire			Anguilla rostrata	Adult	13	0.920				☐	212
		3/8 x 3/8	Woven wire			Aplodinotus grunniens		121	0.876	0.620	24		☐	245
		3/8 x 3/8	Woven wire			Aplodinotus grunniens		10	1.000				☐	245
		3/8 x 3/8	Woven wire			Atherinidae	61-229 mm	36	0.780	0.070	96		☑	242
		3/8 x 3/8	Woven wire	100	80	Brevoortia tyrannus		62	0.000	0.000	96		☐	228
		3/8 x 3/8	Woven wire			Brevoortia tyrannus		55	0.910				☐	184
		3/8 x 3/8	Woven wire	100	80	Callinectes sapidus		25	1.000	0.640	96		☐	228
		3/8 x 3/8	Woven wire	100	80	Callinectes sapidus		20	1.000	0.850	96		☐	228
		3/8 x 3/8	Woven wire	100	80	Callinectes sapidus		30	1.000	0.833	96		☐	228
		3/8 x 3/8	Woven wire	100	80	Callinectes sapidus		30	1.000	0.900	96		☐	228
		3/8 x 3/8	Woven wire			Cancer spp.	15-114 mm	51	0.820	0.740	96		☑	242
		3/8 x 3/8	Woven wire			Clupea harengus pallasi	65-115 mm	19	0.420	0.000	96		☐	242
		3/8 x 3/8	Woven wire			Cottidae	73-162 mm	17	1.000	0.940	96		☑	242
		3/8 x 3/8	Woven wire			Cottidae	110-175 mm	24	1.000	0.970	96		☑	242
		3/8 x 3/8	Woven wire			Crangon septemspinosus		264	0.810				☐	184
		3/8 x 3/8	Woven wire	100	80	Cynoscion regalis		16	0.000	0.000	96		☐	228
		3/8 x 3/8	Woven wire			Dorosoma cepedianum	YOY	11	0.910				☐	212
		3/8 x 3/8	Woven wire			Dorosoma cepedianum		275	0.862	0.196	24		☐	245
		3/8 x 3/8	Woven wire			Dorosoma cepedianum	Adult	30	0.670				☐	212
		3/8 x 3/8	Woven wire			Dorosoma cepedianum		10	1.000				☐	245

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
N	Continuous	3/8 x 3/8	Woven wire			Dorosoma cepedianum		16	0.560	0.060	96		☐	215
		3/8 x 3/8	Woven wire			Embiotocidae	35-255 mm	46	0.430	0.090	96		☑	242
		3/8 x 3/8	Woven wire			Embiotocidae	40-130 mm	12	0.920	0.830	96		☑	242
		3/8 x 3/8	Woven wire			Engraulis mordax	63-135 mm	319	0.320	0.000	96		☑	242
		3/8 x 3/8	Woven wire			Engraulis mordax	70-135 mm	108	0.180	0.000	96		☑	242
		3/8 x 3/8	Woven wire			Etropus microstomus		115	0.840				☐	184
		3/8 x 3/8	Woven wire	100	80	Leiostomus xanthurus		40	1.000	0.950	96		☐	228
		3/8 x 3/8	Woven wire			Lepomis gibbosus	Adult	16	0.880				☐	212
		3/8 x 3/8	Woven wire			Menidia menidia		49	0.860				☐	184
		3/8 x 3/8	Woven wire	100	80	Menidia menidia		24	1.000	0.916	96		☐	228
		3/8 x 3/8	Woven wire			Microgadus tomcod	Adult	108	0.963	0.827	84		☐	212
		3/8 x 3/8	Woven wire			Microgadus tomcod	YOY	36	0.940	0.750	84		☐	214
		3/8 x 3/8	Woven wire	100	50	Microgadus tomcod	YOY	19	0.900	0.840	84		☐	12
		3/8 x 3/8	Woven wire			Microgadus tomcod	Adult	278	0.890	0.730	84		☐	177
		3/8 x 3/8	Woven wire	90	60	Microgadus tomcod	Adult	52	0.827	0.500	84		☐	172
		3/8 x 3/8	Woven wire			Microgadus tomcod	Adult	120	0.933	0.635	84		☐	212
		3/8 x 3/8	Woven wire			Microgadus tomcod	Adult	242	0.884	0.827	84		☐	212
		3/8 x 3/8	Woven wire	100	50	Microgadus tomcod	Adult	314	0.960	0.758	84		☐	177
		3/8 x 3/8	Woven wire	100	50	Microgadus tomcod	YOY	67	1.000	0.970	84		☐	12
		3/8 x 3/8	Woven wire	100	80	Micropogonias undulatus		76	1.000	0.921	96		☐	228
		3/8 x 3/8	Woven wire	100	80	Micropogonias undulatus		80	0.510				☐	228
		3/8 x 3/8	Woven wire			Morone americana	Yearling	22	1.000				☐	212
		3/8 x 3/8	Woven wire	90	60	Morone americana	Yearling	53	1.000				☐	172
		3/8 x 3/8	Woven wire	100	50	Morone americana	Yearling	10	1.000	0.400	84		☐	12
		3/8 x 3/8	Woven wire			Morone americana	Yearling	153	0.987	0.060	84		☐	212
		3/8 x 3/8	Woven wire			Morone americana	Yearling	17	1.000	0.530	84		☐	214
		3/8 x 3/8	Woven wire			Morone americana		268	0.920	0.030	96		☐	215
		3/8 x 3/8	Woven wire	90	60	Morone americana	Yearling	160	0.988	0.894	84		☐	172
		3/8 x 3/8	Woven wire	90	60	Morone americana	Yearling	36	0.889	0.250	84		☐	172

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
N	Continuous	3/8 x 3/8	Woven wire			Morone americana		17	1.000				☐	245
		3/8 x 3/8	Woven wire			Morone americana		118	0.890	0.220	24		☐	245
		3/8 x 3/8	Woven wire	90	60	Morone americana	Adult	213	0.991	0.897	84		☐	172
		3/8 x 3/8	Woven wire			Morone americana	Yearling	171	0.988	0.023	84		☐	212
		3/8 x 3/8	Woven wire			Morone americana	Yearling	248	0.935	0.327	84		☐	212
		3/8 x 3/8	Woven wire	90	60	Morone americana	Yearling	30	1.000				☐	172
		3/8 x 3/8	Woven wire			Morone americana	Adult	347	0.988	0.449	84		☐	212
		3/8 x 3/8	Woven wire			Morone americana	YOY	122	0.880	0.378	84		☐	177
		3/8 x 3/8	Woven wire			Morone americana	Adult	26	0.960				☐	212
		3/8 x 3/8	Woven wire	100	50	Morone americana	YOY	229	0.950	0.190	84		☐	177
		3/8 x 3/8	Woven wire	90	60	Morone americana	YOY	280	0.961	0.861	84		☐	172
		3/8 x 3/8	Woven wire	100	50	Morone americana	YOY	378	0.890	0.454	84		☐	177
		3/8 x 3/8	Woven wire			Morone americana	YOY	201	0.820	0.238	84		☐	177
		3/8 x 3/8	Woven wire			Morone americana	Adult	89	0.989	0.113	84		☐	212
		3/8 x 3/8	Woven wire			Morone americana	Adult	53	0.981	0.076	84		☐	212
		3/8 x 3/8	Woven wire	100	50	Morone americana	YOY	707	0.790	0.040	84		☐	12
		3/8 x 3/8	Woven wire	100	50	Morone americana	YOY	707	0.790	0.047	84		☐	177
		3/8 x 3/8	Woven wire	90	60	Morone americana	Adult	13	1.000				☐	172
		3/8 x 3/8	Woven wire	90	60	Morone americana	Adult	41	1.000				☐	172
		3/8 x 3/8	Woven wire	100	50	Morone americana	YOY	285	0.980	0.431	84		☐	177
		3/8 x 3/8	Woven wire	100	50	Morone americana	YOY	285	0.980	0.440	84		☐	12
		3/8 x 3/8	Woven wire			Morone americana	Adult	16	1.000				☐	212
		3/8 x 3/8	Woven wire	90	60	Morone americana	YOY	187	0.952	0.781	84		☐	172
		3/8 x 3/8	Woven wire			Notemigonus crysoleucas	Adult	15	0.670				☐	212
		3/8 x 3/8	Woven wire			Notropis hudsonius	Yearling	32	0.810				☐	212
		3/8 x 3/8	Woven wire			Notropis hudsonius	Yearling	43	0.810				☐	212
		3/8 x 3/8	Woven wire			Notropis hudsonius	Adult	183	0.900				☐	212
		3/8 x 3/8	Woven wire			Notropis hudsonius	Adult	37	0.950				☐	212
		3/8 x 3/8	Woven wire			Notropis hudsonius	Adult	60	0.920				☐	212

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
N	Continuous	3/8 x 3/8	Woven wire			Notropis hudsonius	Yearling	13	0.850				☐	212
		3/8 x 3/8	Woven wire			Notropis hudsonius	Yearling	51	0.960				☐	212
		3/8 x 3/8	Woven wire	90	60	Notropis hudsonius	Adult	27	0.963	0.963	84		☐	172
		3/8 x 3/8	Woven wire			Notropis hudsonius	Adult	75	1.000				☐	212
		3/8 x 3/8	Woven wire			Notropis hudsonius	Yearling	20	0.700				☐	212
		3/8 x 3/8	Woven wire			Notropis hudsonius	Adult	23	0.790				☐	212
		3/8 x 3/8	Woven wire			Notropis hudsonius	YOY	23	0.910				☐	212
		3/8 x 3/8	Woven wire			Notropis hudsonius	Adult	16	0.880				☐	212
		3/8 x 3/8	Woven wire			Notropis hudsonius	Adult	32	1.000				☐	212
		3/8 x 3/8	Woven wire			Osmerus mordax	YOY	51	0.450				☐	212
		3/8 x 3/8	Woven wire			Osmerus mordax	YOY	82	0.570				☐	212
		3/8 x 3/8	Woven wire			Perca flavescens		19	0.895				☐	245
		3/8 x 3/8	Woven wire			Perca flavescens		321	0.984	0.685	24		☐	245
		3/8 x 3/8	Woven wire			Perca flavescens		118	0.983	0.322	48		☐	245
		3/8 x 3/8	Woven wire	90	30	Pleuronectes americanus			0.974	0.897	96		☐	247
		3/8 x 3/8	Woven wire			Pleuronectes americanus		51	0.980				☐	184
		3/8 x 3/8	Woven wire			Sebastes	62-185 mm	12	0.830	0.770	96		☑	242
		3/8 x 3/8	Woven wire			Trinectes maculatus	Adult	12	1.000				☐	212
	Intermittant	1/2 x 1/2	Woven wire	90		Acetes americanus		11	0.636				☐	250
		1/2 x 1/2	Woven wire	90		Achirus lineatus		20	0.900				☐	250
		1/2 x 1/2	Woven wire	90		Achirus lineatus		29	0.828				☐	250
		1/2 x 1/2	Woven wire	90		Anchoa mitchilli		215	0.051				☐	250
		1/2 x 1/2	Woven wire	90		Anchoa mitchilli		526	0.091				☐	250
		1/2 x 1/2	Woven wire	90		Arius felis		446	0.204				☐	250
		1/2 x 1/2	Woven wire	90		Arius felis		195	0.262				☐	250
		1/2 x 1/2	Woven wire	90		Bairdiella chrysoura		45	0.222				☐	250
		1/2 x 1/2	Woven wire	90		Brevoortia patronus		645	0.146				☐	250
		1/2 x 1/2	Woven wire	90		Brevoortia patronus		3457	0.221				☐	250
		1/2 x 1/2	Woven wire	90		Callinectes sapidus		1428	0.888				☐	250

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
N	Intermittant	1/2 x 1/2	Woven wire	90		Callinectes sapidus		915	0.816				☐	250
		1/2 x 1/2	Woven wire	90		Callinectes similis		103	0.971				☐	250
		1/2 x 1/2	Woven wire	90		Callinectes similis		136	0.890				☐	250
		1/2 x 1/2	Woven wire	90		Caranx hippos		48	0.229				☐	250
		1/2 x 1/2	Woven wire	90		Caranx hippos		32	0.156				☐	250
		1/2 x 1/2	Woven wire	90		Chaetodipterus faber		185	0.200				☐	250
		1/2 x 1/2	Woven wire	90		Chaetodipterus faber		210	0.138				☐	250
		1/2 x 1/2	Woven wire	90		Chloroscombrus chrysurus		36	0.000				☐	250
		1/2 x 1/2	Woven wire	90		Chloroscombrus chrysurus		13	0.077				☐	250
		1/2 x 1/2	Woven wire	90		Citharichthys spilopterus		15	0.400				☐	250
		1/2 x 1/2	Woven wire	90		Citharichthys spilopterus		51	0.176				☐	250
		1/2 x 1/2	Woven wire	90		Cynoscion arenarius		186	0.151				☐	250
		1/2 x 1/2	Woven wire	90		Cynoscion arenarius		478	0.161				☐	250
		1/2 x 1/2	Woven wire	90		Cynoscion nebulosus		14	0.357				☐	250
		1/2 x 1/2	Woven wire	90		Dorosoma cepedianum		10	0.300				☐	250
		1/2 x 1/2	Woven wire	90		Dorosoma cepedianum		12	0.250				☐	250
		1/2 x 1/2	Woven wire	90		Dorosoma petenense		80	0.138				☐	250
		1/2 x 1/2	Woven wire	90		Dorosoma petenense		16	0.063				☐	250
		1/2 x 1/2	Woven wire	90		Hemicaranx amblyrhynchus		27	0.370				☐	250
		1/2 x 1/2	Woven wire	90		Hemicaranx amblyrhynchus		24	0.292				☐	250
		1/2 x 1/2	Woven wire	90		Lagodon rhomboides		19	0.632				☐	250
		1/2 x 1/2	Woven wire	90		Lagodon rhomboides		28	0.286				☐	250
		1/2 x 1/2	Woven wire	90		Leiostomus xanthurus		364	0.250				☐	250
		1/2 x 1/2	Woven wire	90		Leiostomus xanthurus		242	0.314				☐	250
		1/2 x 1/2	Woven wire	90		Lolliguncula brevis		21	0.286				☐	250
		1/2 x 1/2	Woven wire	90		Micropogonias undulatus		439	0.264				☐	250
		1/2 x 1/2	Woven wire	90		Micropogonias undulatus		407	0.147				☐	250
		1/2 x 1/2	Woven wire	90		Mugil cephalus		73	0.356				☐	250
		1/2 x 1/2	Woven wire	90		Mugil cephalus		72	0.250				☐	250

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
N	Intermittant	1/2 x 1/2	Woven wire	90		Palaemonetes vulgaris		17	0.882				☐	250
		1/2 x 1/2	Woven wire	90		Palaemonetes vulgaris		23	0.609				☐	250
		1/2 x 1/2	Woven wire	90		Paralichthys lethostigma		13	0.538				☐	250
		1/2 x 1/2	Woven wire	90		Paralichthys lethostigma		11	0.545				☐	250
		1/2 x 1/2	Woven wire	90		Penaeus aztecus		827	0.803				☐	250
		1/2 x 1/2	Woven wire	90		Penaeus aztecus		2520	0.571				☐	250
		1/2 x 1/2	Woven wire	90		Penaeus setiferus		786	0.706				☐	250
		1/2 x 1/2	Woven wire	90		Penaeus setiferus		3353	0.493				☐	250
		1/2 x 1/2	Woven wire	90		Peprilus alepidotus		45	0.111				☐	250
		1/2 x 1/2	Woven wire	90		Peprilus alepidotus		29	0.172				☐	250
		1/2 x 1/2	Woven wire	90		Pogonias cromis		40	0.425				☐	250
		1/2 x 1/2	Woven wire	90		Polydactylus octonemus		37	0.081				☐	250
		1/2 x 1/2	Woven wire	90		Polydactylus octonemus		25	0.040				☐	250
		1/2 x 1/2	Woven wire	90		Porichthys porosissimus		32	0.781				☐	250
		1/2 x 1/2	Woven wire	90		Porichthys porosissimus		13	0.462				☐	250
		1/2 x 1/2	Woven wire	90		Prionotus tribulus		19	0.526				☐	250
		1/2 x 1/2	Woven wire	90		Prionotus tribulus		12	0.583				☐	250
		1/2 x 1/2	Woven wire	90		Rhithropanopeus harrisii		135	0.896				☐	250
		1/2 x 1/2	Woven wire	90		Rhithropanopeus harrisii		98	0.939				☐	250
		1/2 x 1/2	Woven wire	90		Sciaenops ocellatus		10	0.200				☐	250
		1/2 x 1/2	Woven wire	90		Selene vomer		18	0.167				☐	250
		1/2 x 1/2	Woven wire	90		Sphoeroides parvus		102	0.608				☐	250
		1/2 x 1/2	Woven wire	90		Sphoeroides parvus		185	0.800				☐	250
		1/2 x 1/2	Woven wire	90		Symphurus plagiusa		20	0.650				☐	250
		1/2 x 1/2	Woven wire	90		Symphurus plagiusa		13	0.538				☐	250
		1/2 x 1/2	Woven wire	90		Trichiurus lepturus		239	0.021				☐	250
		1/2 x 1/2	Woven wire	90		Trichiurus lepturus		319	0.031				☐	250
Y			Woven wire			Fundulus heteroclitus		33	0.970	0.970	96		☐	182
		3/16 x 3/16	Woven wire	85	10	Neopanope texana		22	0.864	0.864	72		☐	61

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
Y	1-hour	3/8 x 3/8	Woven wire			Alosa aestivalis		4903				0.470	☐	167
		3/8 x 3/8	Woven wire			Alosa pseudoharengus		1033				0.610	☐	167
		3/8 x 3/8	Woven wire			Anchoa hepsetus		159				0.670	☐	167
		3/8 x 3/8	Woven wire			Anchoa mitchilli		59212				0.680	☐	167
		3/8 x 3/8	Woven wire			Anguilla rostrata		62				0.520	☐	167
		3/8 x 3/8	Woven wire			Brevoortia tyrannus		5631				0.520	☐	167
		3/8 x 3/8	Woven wire			Callinectes sapidus		1001				0.990	☐	167
		3/8 x 3/8	Woven wire			Chasmodes bosquianus		23				1.000	☐	167
		3/8 x 3/8	Woven wire			Cynoscion nebulosus		13				0.380	☐	167
		3/8 x 3/8	Woven wire			Cynoscion regalis		223				0.380	☐	167
		3/8 x 3/8	Woven wire			Cyprinodon variegatus		38				0.970	☐	167
		3/8 x 3/8	Woven wire			Dorosoma cepedianum		2245				0.730	☐	167
		3/8 x 3/8	Woven wire			Fundulus diaphanus		14				0.860	☐	167
		3/8 x 3/8	Woven wire			Fundulus heteroclitus		40				0.950	☐	167
		3/8 x 3/8	Woven wire			Fundulus majalis		14				1.000	☐	167
		3/8 x 3/8	Woven wire			Gasterosteus aculeatus		192				0.910	☐	167
		3/8 x 3/8	Woven wire			Gobiesox strumosus		928				0.930	☐	167
		3/8 x 3/8	Woven wire			Gobiosoma bosc		81				1.000	☐	167
		3/8 x 3/8	Woven wire			Hippocampus erectus		11				1.000	☐	167
		3/8 x 3/8	Woven wire			Hypsoblennius hentz		111				0.990	☐	167
		3/8 x 3/8	Woven wire			Leiostomus xanthurus		46238				0.840	☐	167
		3/8 x 3/8	Woven wire			Menidia beryllina		47				0.890	☐	167
		3/8 x 3/8	Woven wire			Menidia menidia		2039				0.540	☐	167
		3/8 x 3/8	Woven wire			Merluccius bilinearis		11				0.640	☐	167
		3/8 x 3/8	Woven wire			Micropogonias undulatus		1218				0.190	☐	167
		3/8 x 3/8	Woven wire			Morone americana		55				0.530	☐	167
		3/8 x 3/8	Woven wire			Morone saxatilis		22				0.500	☐	167
		3/8 x 3/8	Woven wire			Opsanus tau		1031				0.870	☐	167
		3/8 x 3/8	Woven wire			Paralichthys dentatus		1054				0.900	☐	167

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
Y	1-hour	3/8 x 3/8	Woven wire			Peprilus alepidotus		230				0.900	☐	167
		3/8 x 3/8	Woven wire			Peprilus triacanthus		32				0.500	☐	167
		3/8 x 3/8	Woven wire			Pleuronectes americanus		2554				0.930	☐	167
		3/8 x 3/8	Woven wire			Pomatomus saltatrix		24				0.500	☐	167
		3/8 x 3/8	Woven wire			Prionotus carolinus		88				0.500	☐	167
		3/8 x 3/8	Woven wire			Syngnathus fuscus		129				0.850	☐	167
		3/8 x 3/8	Woven wire			Synodus foetens		16				0.750	☐	167
		3/8 x 3/8	Woven wire			Trinectes maculatus		835				0.990	☐	167
		3/8 x 3/8	Woven wire			Urophycis regia		120				0.720	☐	167
	2-hour	1/2 x 1/2	Woven wire			Alpheidae		12	0.920				☐	255
		1/2 x 1/2	Woven wire			Anchoa mitchilli		11	0.180				☐	255
		1/2 x 1/2	Woven wire			Anchoa mitchilli		18	0.280				☐	255
		1/2 x 1/2	Woven wire			Bairdiella chrysoura		14		0.500	96		☐	255
		1/2 x 1/2	Woven wire			Bairdiella chrysoura		17		0.410	96		☐	255
		1/2 x 1/2	Woven wire			Bairdiella chrysoura		21	0.810				☐	255
		1/2 x 1/2	Woven wire			Bairdiella chrysoura		65	0.750				☐	255
		1/2 x 1/2	Woven wire			Callinectes sapidus		22	1.000				☐	255
		1/2 x 1/2	Woven wire			Callinectes sapidus		15	1.000				☐	255
		1/2 x 1/2	Woven wire			Cynoscion regalis		10		0.000	96		☐	255
		1/2 x 1/2	Woven wire			Cynoscion regalis		28	0.750				☐	255
		1/2 x 1/2	Woven wire			Cynoscion regalis		85	0.550				☐	255
		1/2 x 1/2	Woven wire			Decapoda		50	0.900				☐	255
		1/2 x 1/2	Woven wire			Micropogonias undulatus		141	0.870				☐	255
		1/2 x 1/2	Woven wire			Penaeidae		50	0.940				☐	255
		1/2 x 1/2	Woven wire			Penaeidae		24	0.790				☐	255
		1/2 x 1/2	Woven wire			Penaeidae		10		0.800	96		☐	255
		1/2 x 1/2	Woven wire			Penaeidae		357	0.950				☐	255
		1/2 x 1/2	Woven wire			Penaeidae		42	0.950				☐	255
		1/2 x 1/2	Woven wire			Penaeidae		10		1.000	96		☐	255

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
Y	2-hour	1/2 x 1/2	Woven wire			Penaeidae		13	0.920				☐	255
		1/2 x 1/2	Woven wire			Penaeidae		29	0.790				☐	255
		1/2 x 1/2	Woven wire			Stellifer lanceolatus		35	0.660				☐	255
		1/2 x 1/2	Woven wire			Stellifer lanceolatus		68	0.240				☐	255
		1/2 x 1/2	Woven wire			Stellifer lanceolatus		14	0.140				☐	255
		1/2 x 1/2	Woven wire			Stellifer lanceolatus		10		0.100	72		☐	255
		1/2 x 1/2	Woven wire			Trinectes maculatus		124	0.960				☐	255
		3/8 x 3/8	Woven wire	100	50	Ameiurus catus	YOY	16	1.000				☐	199
		3/8 x 3/8	Woven wire	85		Brevoortia tyrannus		915	0.140	0.030	72		☐	229
		3/8 x 3/8	Woven wire	85		Callinectes sapidus		15	1.000	0.870	72		☐	229
		3/8 x 3/8	Woven wire	85		Cancer irroratus		12	0.580	0.580	72		☐	229
		3/8 x 3/8	Woven wire	85		Carcinus maenus		25	0.840	0.760	72		☐	229
		3/8 x 3/8	Woven wire	100	50	Dorosoma cepedianum	YOY	18	0.890				☐	199
		3/8 x 3/8	Woven wire			Dorosoma cepedianum	YOY	73	0.930				☐	199
		3/8 x 3/8	Woven wire	85		Gasterosteus aculeatus		61	0.970	0.900	72		☐	229
		3/8 x 3/8	Woven wire	85		Homarus americanus		10	1.000	1.000	72		☐	229
		3/8 x 3/8	Woven wire	85		Loligo pealei		89	0.350	0.170	72		☐	229
		3/8 x 3/8	Woven wire	85		Menidia menidia		13	0.700	0.230	72		☐	229
		3/8 x 3/8	Woven wire			Microgadus tomcod	Adult	19	0.900				☐	199
		3/8 x 3/8	Woven wire	90	10	Microgadus tomcod	Adult	11	1.000				☐	172
		3/8 x 3/8	Woven wire	100	50	Microgadus tomcod	YOY	20	0.950				☐	199
		3/8 x 3/8	Woven wire	90	10	Morone americana	YOY	254	0.937	0.129	84		☐	172
		3/8 x 3/8	Woven wire	90	10	Morone americana	Yearling	25	1.000	0.160	84		☐	172
		3/8 x 3/8	Woven wire	90	10	Morone americana	Yearling	26	1.000				☐	172
		3/8 x 3/8	Woven wire	90	10	Morone americana	Yearling	32	0.969				☐	172
		3/8 x 3/8	Woven wire	60	10	Morone americana	Yearling	279	0.978	0.091	96		☐	208
		3/8 x 3/8	Woven wire	90	10	Morone americana	Adult	84	0.940	0.286	84		☐	172
		3/8 x 3/8	Woven wire	60	10	Morone americana	Yearling	325	0.914	0.377	96		☐	208
		3/8 x 3/8	Woven wire	100	50	Morone americana	YOY	22	0.773	0.000	84		☐	199

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
Y	2-hour	3/8 x 3/8	Woven wire	90	10	Morone americana	Adult	11	1.000				☐	172
		3/8 x 3/8	Woven wire			Morone americana	YOY	71	0.930	0.182	84		☐	199
		3/8 x 3/8	Woven wire	90	10	Morone americana	YOY	211	0.900	0.052	84		☐	172
		3/8 x 3/8	Woven wire	100	50	Morone americana	YOY	123	0.992	0.090	84		☐	199
		3/8 x 3/8	Woven wire	60	10	Morone americana	YOY	2970	0.914	0.253	96		☐	208
		3/8 x 3/8	Woven wire	50	10	Morone americana	YOY	2383	0.900	0.261	96		☐	177
		3/8 x 3/8	Woven wire	90	10	Morone americana	Adult	72	0.931				☐	172
		3/8 x 3/8	Woven wire	60	10	Morone saxatilis	Yearling	56	0.893	0.180	96		☐	208
		3/8 x 3/8	Woven wire	60	10	Morone saxatilis	YOY	284	0.930	0.237	96		☐	208
		3/8 x 3/8	Woven wire	50	10	Morone saxatilis	YOY	256	0.920	0.250	96		☐	177
		3/8 x 3/8	Woven wire	60	10	Morone saxatilis	Yearling	13	0.846	0.077	96		☐	208
		3/8 x 3/8	Woven wire	85		Myoxocephalus aenaeus		49	0.940	0.780	72		☐	229
		3/8 x 3/8	Woven wire	85		Neopanope texana		10	0.700	0.400	72		☐	229
		3/8 x 3/8	Woven wire	90	10	Notropis hudsonius	Adult	22	1.000	0.545	84		☐	172
		3/8 x 3/8	Woven wire			Notropis hudsonius	Adult	24	0.960				☐	199
		3/8 x 3/8	Woven wire	85		Ophidion marginatum		15	0.930	0.930	72		☐	229
		3/8 x 3/8	Woven wire	60	10	Osmerus mordax	Yearling	200	0.680	0.015	96		☐	208
		3/8 x 3/8	Woven wire	85		Ovalipes ocellatus		10	1.000	1.000	72		☐	229
		3/8 x 3/8	Woven wire	85		Peprilus triacanthus		147	0.080	0.030	72		☐	229
		3/8 x 3/8	Woven wire	90	30	Pleuronectes americanus			0.777	0.707	96		☐	247
		3/8 x 3/8	Woven wire	85		Pleuronectes americanus		16	1.000	1.000	72		☐	229
		3/8 x 3/8	Woven wire			Sciaenidae	YOY	11	0.560	0.000	96		☐	197
		3/8 x 3/8	Woven wire	85		Tautoga onitis		16	0.940	0.560	72		☐	229
		3/8 x 3/8	Woven wire	85		Tautogolabrus adspersus		32	0.690	0.560	72		☐	229
		3/8 x 3/8	Woven wire			Trinectes maculatus	Yearling	667	0.600	0.010	96		☐	197
		3/8 x 3/8	Woven wire			Trinectes maculatus	YOY	96	0.820	0.090	96		☐	197
	3-hour	3/16 x 3/16	Woven wire	85	10	Brevoortia tyrannus		54	0.000	0.000	72		☐	61
		3/16 x 3/16	Woven wire	85	10	Cancer irroratus		246	0.870	0.829	72		☐	61
		3/16 x 3/16	Woven wire	85	10	Carcinus maenus		35	0.800	0.771	72		☐	61

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
Y	3-hour	3/16 x 3/16	Woven wire	85	10	Gasterosteus aculeatus		74	0.730	0.716	72		☐	61
		3/16 x 3/16	Woven wire	85	10	Homarus americanus		14	0.929	0.857	72		☐	61
		3/16 x 3/16	Woven wire	85	10	Libinia sp.		47	0.979	0.936	72		☐	61
		3/16 x 3/16	Woven wire	85	10	Loligo pealei		135	0.089	0.000	72		☐	61
		3/16 x 3/16	Woven wire	85	10	Menidia menidia		68	0.221	0.000	72		☐	61
		3/16 x 3/16	Woven wire	85	10	Myoxocephalus aenaeus		34	1.000	0.971	72		☐	61
		3/16 x 3/16	Woven wire	85	10	Ovalipes ocellatus		113	0.965	0.903	72		☐	61
		3/16 x 3/16	Woven wire	85	10	Peprilus triacanthus		87	0.161	0.023	72		☐	61
		3/16 x 3/16	Woven wire	85	10	Pomatomus saltatrix		14	0.429	0.000	72		☐	61
		3/16 x 3/16	Woven wire	85	10	Syngnathus fuscus		210	0.952	0.910	72		☐	61
		3/16 x 3/16	Woven wire	85	10	Tautogolabrus adspersus		28	0.929	0.857	72		☐	61
		3/8 x 3/8	Woven wire	85	10	Alosa pseudoharengus		19	0.470	0.000	72		☐	225
		3/8 x 3/8	Woven wire	85	10	Anchoa mitchilli		15	0.000	0.000	72		☐	225
		3/8 x 3/8	Woven wire	85	10	Brevoortia tyrannus		16	0.500	0.000	72		☐	225
		3/8 x 3/8	Woven wire	85	10	Cancer irroratus		72	1.000	0.910	72		☐	225
		3/8 x 3/8	Woven wire	85	10	Carcinus maenus		12	0.820	0.820	72		☐	225
		3/8 x 3/8	Woven wire	85	10	Clupea harengus		49	0.000	0.000	72		☐	225
		3/8 x 3/8	Woven wire	85	10	Gasterosteus aculeatus		41	0.860	0.860	72		☐	225
		3/8 x 3/8	Woven wire	85	10	Gasterosteus wheatlandi		10	0.900	0.900	72		☐	225
		3/8 x 3/8	Woven wire	85	10	Homarus americanus		26	1.000	1.000	72		☐	225
		3/8 x 3/8	Woven wire	85	10	Libinia emarginata		43	1.000	0.890	72		☐	225
		3/8 x 3/8	Woven wire	85	10	Loligo pealei		222	0.410	0.060	72		☐	225
		3/8 x 3/8	Woven wire	85	10	Menidia menidia		160	0.630	0.000	72		☐	225
		3/8 x 3/8	Woven wire	85	10	Myoxocephalus aenaeus		42	1.000	0.866	72		☐	225
		3/8 x 3/8	Woven wire	85	10	Neopanope texana		21	1.000	0.950	72		☐	225
		3/8 x 3/8	Woven wire	85	10	Ovalipes ocellatus		31	1.000	0.710	72		☐	225
		3/8 x 3/8	Woven wire	85	10	Peprilus triacanthus		26	0.150	0.000	72		☐	225
		3/8 x 3/8	Woven wire	85	10	Pleuronectes americanus		43	0.970	0.940	72		☐	225
		3/8 x 3/8	Woven wire	85	10	Syngnathus fuscus		12	0.920	0.920	72		☐	225

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
Y	4-hour	1/2 x 1/2	Woven wire			Anchoa mitchilli		32	0.190				☐	255
		1/2 x 1/2	Woven wire			Callinectes sapidus		17	1.000				☐	255
		1/2 x 1/2	Woven wire			Cynoscion regalis		17	0.530				☐	255
		1/2 x 1/2	Woven wire			Decapoda		22	0.410				☐	255
		1/2 x 1/2	Woven wire			Micropogonias undulatus		251	0.390				☐	255
		1/2 x 1/2	Woven wire			Micropogonias undulatus		10		0.900	96		☐	255
		1/2 x 1/2	Woven wire			Micropogonias undulatus		10		0.800	96		☐	255
		1/2 x 1/2	Woven wire			Penaeidae		34	0.790				☐	255
		1/2 x 1/2	Woven wire			Stellifer lanceolatus		158	0.150				☐	255
		1/2 x 1/2	Woven wire			Trinectes maculatus		132	1.000				☐	255
		3/8 x 3/8	Woven wire	60	10	Alosa aestivalis	YOY	30	0.367	0.000	96		☐	208
		3/8 x 3/8	Woven wire	60	10	Morone americana	Yearling	226	0.911	0.024	96		☐	208
		3/8 x 3/8	Woven wire	60	10	Morone americana	Yearling	528	0.869	0.133	96		☐	208
		3/8 x 3/8	Woven wire	50	10	Morone americana	YOY	254	0.710	0.135	96		☐	177
		3/8 x 3/8	Woven wire	60	10	Morone americana	YOY	840	0.900	0.119	96		☐	208
		3/8 x 3/8	Woven wire	60	10	Morone saxatilis	Yearling	175	0.897	0.032	96		☐	208
		3/8 x 3/8	Woven wire	60	10	Morone saxatilis	YOY	17	1.000	0.176	96		☐	208
		3/8 x 3/8	Woven wire	60	10	Morone saxatilis	Yearling	14	0.929	0.000	96		☐	208
		3/8 x 3/8	Woven wire	60	10	Osmerus mordax	Yearling	141	0.664	0.020	96		☐	208
		3/8 x 3/8	Woven wire	90	30	Pleuronectes americanus			0.586	0.418	96		☐	247
		3/8 x 3/8	Woven wire			Trinectes maculatus	Yearling	239	0.220	0.000	96		☐	197
		3/8 x 3/8	Woven wire	60	10	Trinectes maculatus	Yearling	124	1.000	0.831	96		☐	208
		3/8 x 3/8	Woven wire			Trinectes maculatus	YOY	66	0.560	0.000	96		☐	197
	6-hour					Anchoa mitchilli		28	0.000	0.000	72		☐	62
						Cancer irroratus		12	0.920	0.920	72		☐	62
						Carcinus maenus		39	0.820	0.620	72		☐	62
						Gasterosteus aculeatus		217	0.950	0.910	72		☐	62
						Gasterosteus wheatlandi		184	0.910	0.860	72		☐	62
						Loligo pealei		416	0.000	0.000	72		☐	62

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
Y	6-hour					Menidia menidia		13	0.540	0.000	72		☐	62
						Microgadus tomcod		26	0.350	0.270	72		☐	62
						Myoxocephalus aenaeus		74	0.870	0.740	72		☐	62
						Ovalipes ocellatus		21	0.950	0.810	72		☐	62
						Peprilus triacanthus		104	0.010	0.000	72		☐	62
						Pleuronectes americanus		44	0.930	0.860	72		☐	62
						Raja sp.		11	1.000	0.820	72		☐	62
						Syngnathus fuscus		49	0.550	0.160	72		☐	62
		3/8 x 3/8	Woven wire	60	10	Alosa pseudoharengus		44	0.727	0.000	96		☐	208
		3/8 x 3/8	Woven wire	60	10	Etheostoma olmstedi		18	0.944	1.000	96		☐	208
		3/8 x 3/8	Woven wire	60	10	Fundulus heteroclitus		10	1.000	0.900	96		☐	208
		3/8 x 3/8	Woven wire	60	10	Gasterosteus aculeatus		18	0.889	0.875	96		☐	208
	8.5-hour		Woven wire	85	25	Aplodinotus grunniens		58		0.240	96		☐	222
			Woven wire	85	25	Cyprinus carpio		46		0.800	96		☐	222
			Woven wire	85	25	Dorosoma cepedianum		2175		0.000	96		☐	222
			Woven wire	85	25	Ictalurus punctatus		33		0.930	96		☐	222
			Woven wire	85	25	Lepomis macrochirus		159		0.790	96		☐	222
			Woven wire	85	25	Morone chrysops		17		0.060	96		☐	222
			Woven wire	85	25	Moxostoma macrolepidotum		20		0.900	96		☐	222
			Woven wire	85	25	Perca flavescens		31		0.810	96		☐	222
			Woven wire	85	25	Percina caprodes		104		0.960	96		☐	222
			Woven wire	85	25	Pomoxis nigromaculatus		18		0.390	96		☐	222
			Woven wire	85	25	Pylodictis olivaris		84		0.860	96		☐	222
	8-hour	3/8 x 3/8	Woven wire			Alosa pseudoharengus		83	0.000				☐	238
		3/8 x 3/8	Woven wire			Ambloplites rupestris		78	0.580				☐	238
		3/8 x 3/8	Woven wire			Catostomus commersoni		52	0.540				☐	238
		3/8 x 3/8	Woven wire			Cottus bairdi		117	0.850				☐	238
		3/8 x 3/8	Woven wire			Dorosoma cepedianum		17	0.000				☐	238
		3/8 x 3/8	Woven wire			Etheostoma caeruleum		13	0.620				☐	238

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
Y	8-hour	3/8 x 3/8	Woven wire			Etheostoma nigrum		11	0.640				☐	238
		3/8 x 3/8	Woven wire			Lepomis macrochirus		12	0.500				☐	238
		3/8 x 3/8	Woven wire			Notropis atherinoides		25	0.160				☐	238
		3/8 x 3/8	Woven wire			Noturus stigmosus		10	0.600				☐	238
		3/8 x 3/8	Woven wire			Osmerus mordax		33	0.030				☐	238
		3/8 x 3/8	Woven wire			Percina caprodes		126	0.640				☐	238
		3/8 x 3/8	Woven wire			Pimephales notatus		25	0.720				☐	238
		3/8 x 3/8	Woven wire	90	30	Pleuronectes americanus			0.644	0.614	96		☐	247
	9-hour	3/8 x 3/8	Woven wire			Trinectes maculatus	Yearling	684	0.250	0.000	96		☐	197
	Combined int		Woven wire			Alosa aestivalis		27		0.040	24		☐	249
			Woven wire			Alosa pseudoharengus		15		0.000	24		☐	249
			Woven wire			Anchoa mitchilli		891		0.250	24		☐	249
			Woven wire			Anchoa mitchilli		28		0.000	96		☐	249
			Woven wire			Anchoa mitchilli		28		0.000	24		☐	249
			Woven wire			Atherinidae		29		0.240	24		☐	249
			Woven wire			Atherinidae		127		0.140	24		☐	249
			Woven wire			Atherinidae		29		0.030	96		☐	249
			Woven wire			Brevoortia tyrannus		143		0.060	24		☐	249
			Woven wire			Brevoortia tyrannus		1876		0.030	24		☐	249
			Woven wire			Brevoortia tyrannus		143		0.000	96		☐	249
			Woven wire			Callinectes sapidus				0.250	24		☐	249
			Woven wire			Callinectes sapidus				0.914	24		☐	249
			Woven wire			Callinectes sapidus				1.000	24		☐	249
			Woven wire			Callinectes sapidus				1.000	24		☐	249
			Woven wire			Cyprinodon variegatus		17		0.880	24		☐	249
			Woven wire			Dorosoma cepedianum		29		0.070	24		☐	249
			Woven wire			Fundulus heteroclitus		44		0.950	24		☐	249
			Woven wire			Fundulus heteroclitus		12		0.830	24		☐	249
			Woven wire			Fundulus heteroclitus		12		0.830	96		☐	249

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
Y	Combined int		Woven wire			Fundulus majalis		237		0.150	24		☐	249
			Woven wire			Gasterosteus aculeatus		22		1.000	24		☐	249
			Woven wire			Gobiesox strumosus		56		0.730	24		☐	249
			Woven wire			Leiostomus xanthurus		48		24.000			☐	249
			Woven wire			Micropogonias undulatus		106		0.030	24		☐	249
			Woven wire			Micropogonias undulatus		106		0.010	96		☐	249
			Woven wire			Micropogonias undulatus		473		0.030	24		☐	249
			Woven wire			Morone americana		29		0.620	24		☐	249
			Woven wire			Syngnathus fuscus		33		0.250	24		☐	249
			Woven wire			Trinectes maculatus		60		0.720	96		☐	249
			Woven wire			Trinectes maculatus		60		0.750	24		☐	249
			Woven wire			Trinectes maculatus		238		0.880	24		☐	249
	Continuous		Woven wire			Alosa sp.	Small	347	0.919	0.234	96		☐	182
			Woven wire			Alosa sp.		217	0.848	0.000	96		☐	182
			Woven wire			Alosa sp.	Small	4273	0.988	0.481	96		☐	182
			Woven wire			Alosa sp.		129	0.837	0.780	96		☐	182
			Woven wire			Alosa sp.		189	0.873	0.530	96		☐	182
						Anchoa mitchilli		1369	0.810	0.370	96		☐	37
						Crangon septemspinosus		3715	0.990	0.960	96		☐	37
						Crangon septemspinosus		113	1.000	0.890	96		☐	37
			Woven wire			Gasterosteus aculeatus		12	0.917	0.917	96		☐	182
			Woven wire			Gasterosteus aculeatus		13	1.000	1.000	96		☐	182
						Menidia menidia		1911	0.960	0.820	96		☐	37
						Menidia menidia		118	1.000	0.890	96		☐	37
			Woven wire			Microgadus tomcod		15	1.000	0.867	96		☐	182
			Woven wire			Microgadus tomcod		15	1.000	0.917	96		☐	182
			Woven wire			Myoxocephalus sp.		17	1.000	1.000	96		☐	182
			Woven wire			Myoxocephalus sp.		16	1.000	1.000	96		☐	182
			Woven wire			Osmerus mordax		32	0.969	0.313	96		☐	182

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
Y	Continuous		Woven wire			Osmerus mordax	Small	274	0.978	0.667	96		☐	182
			Woven wire			Osmerus mordax	Small	182	0.951	0.225	96		☐	182
			Woven wire			Osmerus mordax	Small	60	1.000	0.583	96		☐	182
			Woven wire			Osmerus mordax		135	0.978	0.400	96		☐	182
			Woven wire			Osmerus mordax		31	0.840	0.060	24		☐	182
			Woven wire			Osmerus mordax		29	0.966	0.036	96		☐	182
			Woven wire			Osmerus mordax		29	0.900	0.000	24		☐	182
			Woven wire			Osmerus mordax		27	0.667	0.037	96		☐	182
			Woven wire			Osmerus mordax		13	1.000	0.077	96		☐	182
			Woven wire			Osmerus mordax		49	0.939	0.041	96		☐	182
			Woven wire			Osmerus mordax		155	0.974	0.110	96		☐	182
			Woven wire			Pleuronectes americanus		42	1.000	0.561	96		☐	182
			Woven wire			Pleuronectes americanus	Small	25	0.960	0.576	96		☐	182
			Woven wire			Pleuronectes americanus		26	1.000	0.923	96		☐	182
			Woven wire			Pleuronectes americanus		11	0.910	0.910	24		☐	182
			Woven wire			Pleuronectes americanus		28	1.000	1.000	24		☐	182
			Woven wire			Pleuronectes americanus	Small	46	0.913	0.846	96		☐	182
			Woven wire			Pleuronectes americanus		127	0.992	0.968	96		☐	182
			Woven wire			Pleuronectes americanus		145	0.993	0.986	96		☐	182
			Woven wire			Pleuronectes americanus		301	1.000	1.000	96		☐	182
			Woven wire			Pleuronectes americanus	Small	21	1.000	0.857	96		☐	182
			Woven wire			Pleuronectes americanus		46	0.913	0.846	96		☐	182
						Pleuronectes americanus		355	0.980	0.970	96		☐	37
			Woven wire			Pollachius virens	Small	11	1.000	0.158	96		☐	182
			Woven wire			Pollachius virens		19	1.000	0.158	96		☐	182
			Woven wire			Pollachius virens	Small	47	0.979	0.280	96		☐	182
			Woven wire			Scomber japonicus		13	0.769	0.385	96		☐	182
			Woven wire			Syngnathus fuscus		11	1.000	1.000	24		☐	182
			Woven wire			Tautogolabrus adspersus		16	1.000	0.938	96		☐	182

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
Y	Continuous	1.0mm	Smooth nylon	60	14	Alosa pseudoharengus		171	0.439	0.029	96		☐	240
		1.0mm	Smooth nylon	60	14	Alosa pseudoharengus		905	0.977	0.190	96		☐	240
		1.0mm	Smooth nylon	60	14	Alosa pseudoharengus		339	0.631	0.009	96		☐	240
		1.0mm	Smooth nylon	60	14	Alosa pseudoharengus		202	0.990	0.010	96		☐	240
		1.0mm	Smooth nylon	60	14	Alosa pseudoharengus		184	1.000	0.000	96		☐	240
		1.0mm	Smooth nylon	60	14	Alosa pseudoharengus		1144	0.981	0.154	96		☐	240
		1.0mm	Smooth nylon	60	14	Ambloplites rupestris		56	1.000	0.946	96		☐	240
		1.0mm	Smooth nylon	60	14	Centrarchidae		143	0.993	0.937	96		☐	240
		1.0mm	Smooth nylon	60	14	Cottidae		196	0.852	0.679	96		☐	240
		1.0mm	Smooth nylon	60	14	Cottus bairdi		34	1.000	1.000	96		☐	240
		1.0mm	Smooth nylon	60	14	Couesius plumbeus		25	0.960	0.960	96		☐	240
		1.0mm	Smooth nylon	60	14	Dorosoma cepedianum		695	0.996	0.653	96		☐	240
		1.0mm	Smooth nylon	60	14	Dorosoma cepedianum		108	1.000	0.537	96		☐	240
		1.0mm	Smooth nylon	60	14	Dorosoma cepedianum		55	0.836	0.491	96		☐	240
		1.0mm	Smooth nylon	60	14	Etheostoma sp.		434	0.975	0.896	96		☐	240
		1.0mm	Smooth nylon	60	14	Morone americana		78	1.000	0.720	96		☐	240
		1.0mm	Smooth nylon	60	14	Morone chrysops		461	1.000	0.959	96		☐	240
		1.0mm	Smooth nylon	60	14	Notropis atherinoides		3445	0.992	0.789	96		☐	240
		1.0mm	Smooth nylon	60	14	Notropis hudsonius		62	1.000	0.952	96		☐	240
		1.0mm	Smooth nylon	60	14	Notropis hudsonius		72	1.000	1.000	96		☐	240
		1.0mm	Smooth nylon	60	14	Notropis hudsonius		74	1.000	1.000	96		☐	240
		1.0mm	Smooth nylon	60	14	Notropis hudsonius		90	1.000	0.956	96		☐	240
		1.0mm	Smooth nylon	60	14	Notropis hudsonius		107	1.000	1.000	96		☐	240
		1.0mm	Smooth nylon	60	14	Notropis hudsonius		113	1.000	1.000	96		☐	240
		1.0mm	Smooth nylon	60	14	Notropis hudsonius		337	0.994	0.831	96		☐	240
		1.0mm	Smooth nylon	60	14	Notropis hudsonius		408	1.000	1.000	96		☐	240
		1.0mm	Smooth nylon	60	14	Notropis hudsonius		56	1.000	0.839	96		☐	240
		1.0mm	Smooth nylon	60	14	Osmerus mordax		1459	0.994	0.949	96		☐	240
		1.0mm	Smooth nylon	60	14	Osmerus mordax		65	0.631	0.015	96		☐	240

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
Y	Continuous	1.0mm	Smooth nylon	60	14	Osmerus mordax		5496	0.802	0.266	96			240
		1.0mm	Smooth nylon	60	14	Osmerus mordax		3461	0.929	0.494	96			240
		1.0mm	Smooth nylon	60	14	Osmerus mordax		1491	0.836	0.068	96			240
		1.0mm	Smooth nylon	60	14	Osmerus mordax		978	0.978	0.355	96			240
		1.0mm	Smooth nylon	60	14	Osmerus mordax		248	0.984	0.218	96			240
		1.0mm	Smooth nylon	60	14	Osmerus mordax		109	0.899	0.147	96			240
		1.0mm	Smooth nylon	60	14	Osmerus mordax		248	0.984	0.218	96			240
		1.0mm	Smooth nylon	60	14	Perca flavescens		47	1.000	0.809	96			240
		1.0mm	Smooth nylon	60	14	Percidae		94	1.000	0.840	96			240
		1.0mm	Smooth nylon	60	14	Percopsis omiscomaycus		22	1.000	1.000	96			240
		1.0mm	Smooth nylon	60	14	Salmonidae		33	0.939	0.424	96			240
		1/2 x 1/2	Woven wire			Alpheidae		11	0.900					255
		1/2 x 1/2	Woven wire			Anchoa mitchilli		23	0.430					255
		1/2 x 1/2	Woven wire			Anchoa mitchilli		44	0.610					255
		1/2 x 1/2	Woven wire			Anchoa mitchilli		10	0.200					255
		1/2 x 1/2	Woven wire			Arius felis		21	0.860					255
		1/2 x 1/2	Woven wire			Arius felis		10		1.000	48			254
		1/2 x 1/2	Woven wire			Arius felis		10		0.900	96			254
		1/2 x 1/2	Woven wire			Bairdiella chrysoura		15	0.930					255
		1/2 x 1/2	Woven wire			Bairdiella chrysoura		12		0.670	96			255
		1/2 x 1/2	Woven wire			Bairdiella chrysoura		109	0.970					255
		1/2 x 1/2	Woven wire			Brevoortia tyrannus		35	0.940					255
		1/2 x 1/2	Woven wire			Brevoortia tyrannus		10		0.100	96			254
		1/2 x 1/2	Woven wire			Brevoortia tyrannus		10		0.000	96			254
		1/2 x 1/2	Woven wire			Callinectes sapidus		32	1.000					255
		1/2 x 1/2	Woven wire			Callinectes sapidus		10	0.900					255
		1/2 x 1/2	Woven wire			Callinectes sapidus		18	0.890					255
		1/2 x 1/2	Woven wire			Callinectes sapidus		11	0.910					255
		1/2 x 1/2	Woven wire			Callinectes sapidus		19	1.000					255

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
Y	Continuous	1/2 x 1/2	Woven wire			Cynoscion nebulosus		10		0.000	96		☐	254
		1/2 x 1/2	Woven wire			Cynoscion nebulosus		9		0.000	96		☐	254
		1/2 x 1/2	Woven wire			Cynoscion regalis		10		0.200	96		☐	255
		1/2 x 1/2	Woven wire			Cynoscion regalis		130	0.970				☐	255
		1/2 x 1/2	Woven wire			Cynoscion regalis		19	1.000				☐	255
		1/2 x 1/2	Woven wire			Cynoscion regalis		10		0.300	96		☐	255
		1/2 x 1/2	Woven wire			Cynoscion regalis		16	0.750				☐	255
		1/2 x 1/2	Woven wire			Decapoda		20	0.900				☐	255
		1/2 x 1/2	Woven wire			Decapoda		45	0.930				☐	255
		1/2 x 1/2	Woven wire			Micropogonias undulatus		12		1.000	96		☐	255
		1/2 x 1/2	Woven wire			Micropogonias undulatus		139	0.970				☐	255
		1/2 x 1/2	Woven wire			Micropogonias undulatus		245	0.960				☐	255
		1/2 x 1/2	Woven wire			Penaeidae		10		0.900	96		☐	254
		1/2 x 1/2	Woven wire			Penaeidae		10		0.900	96		☐	255
		1/2 x 1/2	Woven wire			Penaeidae		10		1.000	96		☐	255
		1/2 x 1/2	Woven wire			Penaeidae		11		0.360	96		☐	255
		1/2 x 1/2	Woven wire			Penaeidae		14	0.790				☐	255
		1/2 x 1/2	Woven wire			Penaeidae		38	1.000				☐	255
		1/2 x 1/2	Woven wire			Penaeidae		28	0.960				☐	255
		1/2 x 1/2	Woven wire			Penaeidae		42	1.000				☐	255
		1/2 x 1/2	Woven wire			Penaeidae		46	0.980				☐	255
		1/2 x 1/2	Woven wire			Penaeidae		332	0.990				☐	255
		1/2 x 1/2	Woven wire			Penaeidae		344	0.970				☐	255
		1/2 x 1/2	Woven wire			Penaeidae		13		0.390	96		☐	255
		1/2 x 1/2	Woven wire			Sciaenidae		10		0.900	96		☐	254
		1/2 x 1/2	Woven wire			Sciaenidae		10		0.700	96		☐	254
		1/2 x 1/2	Woven wire			Stellifer lanceolatus		10		0.700	96		☐	254
		1/2 x 1/2	Woven wire			Stellifer lanceolatus		27	0.670				☐	255
		1/2 x 1/2	Woven wire			Stellifer lanceolatus		14	0.430				☐	255

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
Y	Continuous	1/2 x 1/2	Woven wire			Stellifer lanceolatus		10		0.300	72			255
		1/2 x 1/2	Woven wire			Stellifer lanceolatus		152	0.930					255
		1/2 x 1/2	Woven wire			Stellifer lanceolatus		10		0.100	96			254
		1/2 x 1/2	Woven wire			Stellifer lanceolatus		10		0.900	96			254
		1/2 x 1/2	Woven wire			Stellifer lanceolatus		223	0.560					255
		1/2 x 1/2	Woven wire			Stellifer lanceolatus		10		0.100	72			255
		1/2 x 1/2	Woven wire			Symphurus plagiusa		21	1.000					255
		1/2 x 1/2	Woven wire			Trinectes maculatus		88	1.000					255
		1/2 x 1/2	Woven wire			Trinectes maculatus		61	1.000					255
		1/4 x 1/2	Flat	15	5	Alosa aestivalis		288		0.579	96			233
		1/4 x 1/2	Flat			Alosa aestivalis		1103	0.980			0.940		73
		1/4 x 1/2	Flat			Alosa aestivalis		1566	0.970			0.950		74
		1/4 x 1/2	Flat			Alosa aestivalis		155	0.980			0.940		71
		1/4 x 1/2	Flat			Alosa aestivalis		20	0.900			0.850		72
		1/4 x 1/2	Flat			Alosa aestivalis		1473	0.940			0.910		70
		1/4 x 1/2	Flat	15	5	Alosa pseudoharengus		25		0.126	96			232
		1/4 x 1/2	Flat			Alosa pseudoharengus		18	0.940			0.830		72
		1/4 x 1/2	Flat			Alosa pseudoharengus		85	0.960			0.960		73
		1/4 x 1/2	Flat			Alosa pseudoharengus		15	0.930			0.930		71
		1/4 x 1/2	Flat	15	5	Alosa pseudoharengus		15		0.185	96			233
		1/4 x 1/2	Flat			Alosa pseudoharengus		210	0.960			0.930		70
		1/4 x 1/2	Flat			Alosa pseudoharengus		187	0.960			0.890		74
		1/4 x 1/2	Flat			Alosa sapidissima		17	0.940			0.940		71
		1/4 x 1/2	Flat			Alosa sapidissima		38	0.950			0.890		74
		1/4 x 1/2	Flat			Alosa sapidissima		193	0.970			0.900		70
		1/4 x 1/2	Flat			Alosa sapidissima		10	1.000			0.800		72
		1/4 x 1/2	Flat	15	5	Alosa sapidissima		14		0.464	96			233
		1/4 x 1/2	Flat	15	5	Ameiurus catus		110		0.950	96			232
		1/4 x 1/2	Flat	15	5	Ameiurus catus		25		0.779	96			233

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
Y	Continuous	1/4 x 1/2	Flat			Ameiurus nebulosus		12	1.000			1.000	☐	74
		1/4 x 1/2	Flat			Ameiurus nebulosus		10	1.000			0.900	☐	70
		1/4 x 1/2	Flat	15	5	Anchoa mitchilli		73		0.368	96		☐	233
		1/4 x 1/2	Flat			Anchoa mitchilli		178	0.900			0.750	☐	72
		1/4 x 1/2	Flat			Anchoa mitchilli		5023	0.740			0.580	☐	74
		1/4 x 1/2	Flat			Anchoa mitchilli		569	0.910			0.900	☐	71
		1/4 x 1/2	Flat			Anchoa mitchilli		1805	0.820			0.800	☐	73
		1/4 x 1/2	Flat			Anchoa mitchilli		1701	0.860			0.820	☐	70
		1/4 x 1/2	Flat			Anguilla rostrata		17	1.000			0.880	☐	72
		1/4 x 1/2	Flat			Anguilla rostrata		38	0.950			0.840	☐	73
		1/4 x 1/2	Flat	15	5	Anguilla rostrata		40		0.626	96		☐	233
		1/4 x 1/2	Flat			Anguilla rostrata		51	1.000			0.880	☐	70
		1/4 x 1/2	Flat			Anguilla rostrata		136	0.990			0.930	☐	74
		1/4 x 1/2	Flat			Anguilla rostrata		41	1.000			0.880	☐	71
		1/4 x 1/2	Flat			Bairdiella chrysoura		57	1.000			0.980	☐	73
		1/4 x 1/2	Flat			Bairdiella chrysoura		42	1.000			0.930	☐	74
		1/4 x 1/2	Flat			Bairdiella chrysoura		41	1.000			0.930	☐	72
		1/4 x 1/2	Flat			Bairdiella chrysoura		23	0.950			0.910	☐	70
		1/4 x 1/2	Flat			Brevoortia tyrannus		307	0.790			0.740	☐	73
		1/4 x 1/2	Flat			Brevoortia tyrannus		26	1.000			0.810	☐	72
		1/4 x 1/2	Flat			Brevoortia tyrannus		51	0.780			0.650	☐	71
		1/4 x 1/2	Flat			Brevoortia tyrannus		940	0.840			0.720	☐	74
		1/4 x 1/2	Flat			Callinectes sapidus		13008	0.990			0.990	☐	74
		1/4 x 1/2	Flat			Callinectes sapidus		17184	0.990			0.980	☐	73
		1/4 x 1/2	Flat			Callinectes sapidus		8474	0.990			0.990	☐	70
		1/4 x 1/2	Flat			Callinectes sapidus		1836	0.990			0.990	☐	72
		1/4 x 1/2	Flat			Callinectes sapidus		7974	1.000			1.000	☐	71
		1/4 x 1/2	Flat			Centropristis striata		31	0.970			0.940	☐	73
		1/4 x 1/2	Flat			Clupea harengus		35	0.970			0.970	☐	73

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
Y	Continuous	1/4 x 1/2	Flat			Clupea harengus		17	0.940			0.880	☐	74
		1/4 x 1/2	Flat			Clupea harengus		61	0.970			0.970	☐	71
		1/4 x 1/2	Flat			Cynoscion regalis		1015	0.990			0.980	☐	72
		1/4 x 1/2	Flat			Cynoscion regalis		3034	0.930			0.920	☐	70
		1/4 x 1/2	Flat			Cynoscion regalis		8244	0.850			0.830	☐	74
		1/4 x 1/2	Flat	90	15	Cynoscion regalis	Juvenile	1559		0.793	48		☐	235
		1/4 x 1/2	Flat	15	5	Cynoscion regalis		456		0.886	96		☐	233
		1/4 x 1/2	Flat	90	15	Cynoscion regalis	Juvenile	1082		0.578	48		☐	235
		1/4 x 1/2	Flat			Cynoscion regalis		7910	0.940			0.940	☐	73
		1/4 x 1/2	Flat			Cynoscion regalis		3460	0.970			0.960	☐	71
		1/4 x 1/2	Flat			Dorosoma cepedianum		899	0.990			0.810	☐	73
		1/4 x 1/2	Flat			Dorosoma cepedianum		420	0.980			0.900	☐	70
		1/4 x 1/2	Flat			Dorosoma cepedianum		93	0.990			0.510	☐	71
		1/4 x 1/2	Flat	15	5	Dorosoma cepedianum		24		0.116	96		☐	233
		1/4 x 1/2	Flat			Dorosoma cepedianum		18	1.000			0.440	☐	72
		1/4 x 1/2	Flat			Dorosoma cepedianum		149	0.960			0.770	☐	74
		1/4 x 1/2	Flat	15	5	Etheostoma olmstedi		26		1.000	96		☐	232
		1/4 x 1/2	Flat	15	5	Fundulus diaphanus		47		0.888	96		☐	233
		1/4 x 1/2	Flat			Fundulus heteroclitus		19	0.950			0.950	☐	72
		1/4 x 1/2	Flat			Fundulus heteroclitus		43	0.980			0.980	☐	73
		1/4 x 1/2	Flat			Fundulus heteroclitus		14	1.000			0.930	☐	74
		1/4 x 1/2	Flat			Fundulus heteroclitus		12	1.000			1.000	☐	70
		1/4 x 1/2	Flat			Gasterosteus aculeatus		63	1.000			1.000	☐	74
		1/4 x 1/2	Flat			Gasterosteus aculeatus		116	0.980			0.980	☐	70
		1/4 x 1/2	Flat			Gasterosteus aculeatus		540	1.000			1.000	☐	71
		1/4 x 1/2	Flat			Gasterosteus aculeatus		1647	1.000			1.000	☐	73
		1/4 x 1/2	Flat			Gasterosteus aculeatus		75	1.000			1.000	☐	72
		1/4 x 1/2	Flat			Gobiosoma bosc		37	0.970			0.970	☐	70
		1/4 x 1/2	Flat	15	5	Gobiosoma bosc		13		0.428	96		☐	233

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
Y	Continuous	1/4 x 1/2	Flat			Gobiosoma bosc		19	1.000			1.000	☐	71
		1/4 x 1/2	Flat			Gobiosoma bosc		35	0.970			0.970	☐	73
		1/4 x 1/2	Flat			Gobiosoma bosc		65	0.970			0.970	☐	74
		1/4 x 1/2	Flat			Hybognathus regius		25	0.960			0.880	☐	73
		1/4 x 1/2	Flat			Ictalurus punctatus		10	0.800			0.700	☐	74
		1/4 x 1/2	Flat			Ictalurus punctatus		13	1.000			0.850	☐	73
		1/4 x 1/2	Flat			Leiostomus xanthurus		663	0.920			0.890	☐	73
		1/4 x 1/2	Flat			Leiostomus xanthurus		33	0.970			0.520	☐	74
		1/4 x 1/2	Flat			Leiostomus xanthurus		39	0.970			0.670	☐	71
		1/4 x 1/2	Flat	15	5	Lepomis gibbosus		17		0.873	96		☐	232
		1/4 x 1/2	Flat	15	5	Lepomis gibbosus		15		0.866	96		☐	233
		1/4 x 1/2	Flat			Lepomis macrochirus		28	1.000			1.000	☐	73
		1/4 x 1/2	Flat	15	5	Lepomis macrochirus		130		0.953	96		☐	233
		1/4 x 1/2	Flat	15	5	Lutjanus griseus		9		0.103	96		☐	233
		1/4 x 1/2	Flat			Menidia menidia		182	0.980			0.950	☐	73
		1/4 x 1/2	Flat			Menidia menidia		721	0.960			0.950	☐	74
		1/4 x 1/2	Flat			Menidia menidia		167	0.960			0.930	☐	71
		1/4 x 1/2	Flat			Menidia menidia		1479	0.970			0.960	☐	70
		1/4 x 1/2	Flat			Menidia menidia		35	0.940			0.890	☐	72
		1/4 x 1/2	Flat			Menticirrhus saxatilis		12	1.000			0.920	☐	71
		1/4 x 1/2	Flat			Menticirrhus saxatilis		40	0.950			0.950	☐	74
		1/4 x 1/2	Flat	15	5	Microgadus tomcod		40		0.799	96		☐	232
		1/4 x 1/2	Flat	15	5	Microgadus tomcod		295		0.650	96		☐	233
		1/4 x 1/2	Flat			Micropogonias undulatus		4769	0.950			0.810	☐	73
		1/4 x 1/2	Flat			Micropogonias undulatus		16742	0.900			0.690	☐	74
		1/4 x 1/2	Flat			Micropogonias undulatus		380	0.970			0.960	☐	72
		1/4 x 1/2	Flat			Micropogonias undulatus		8329	0.910			0.820	☐	70
		1/4 x 1/2	Flat			Micropogonias undulatus		2916	0.890			0.740	☐	71
		1/4 x 1/2	Flat	15	5	Morone americana		3568		0.610	96		☐	233

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
Y	Continuous	1/4 x 1/2	Flat			Morone americana		11424	0.990			0.950		73
		1/4 x 1/2	Flat	15	5	Morone americana		6278		0.728	96			232
		1/4 x 1/2	Flat			Morone americana		5114	0.970			0.940		70
		1/4 x 1/2	Flat			Morone americana		3942	0.990			0.940		74
		1/4 x 1/2	Flat			Morone americana		207	0.990			0.930		72
		1/4 x 1/2	Flat			Morone americana		1960	0.970			0.730		71
		1/4 x 1/2	Flat	15	5	Morone saxatilis		73		0.598	96			233
		1/4 x 1/2	Flat			Morone saxatilis		205	0.980			0.940		71
		1/4 x 1/2	Flat			Morone saxatilis		253	1.000			0.980		72
		1/4 x 1/2	Flat			Morone saxatilis		703	0.980			0.960		70
		1/4 x 1/2	Flat	15	5	Morone saxatilis		1124		0.687	96			232
		1/4 x 1/2	Flat			Morone saxatilis		456	0.980			0.950		73
		1/4 x 1/2	Flat			Morone saxatilis		300	0.970			0.930		74
		1/4 x 1/2	Flat	15	5	Notropis hudsonius		39		1.000	96			232
		1/4 x 1/2	Flat			Ophidion marginatum		37	1.000			0.950		72
		1/4 x 1/2	Flat			Ophidion marginatum		130	0.990			0.950		70
		1/4 x 1/2	Flat			Ophidion marginatum		617	1.000			0.990		73
		1/4 x 1/2	Flat			Ophidion marginatum		12	0.920			0.830		71
		1/4 x 1/2	Flat			Ophidion marginatum		681	0.990			0.980		74
		1/4 x 1/2	Flat			Opsanus tau		14	1.000			1.000		73
		1/4 x 1/2	Flat			Opsanus tau		24	0.960			0.960		71
		1/4 x 1/2	Flat			Opsanus tau		34	1.000			1.000		70
		1/4 x 1/2	Flat			Opsanus tau		22	1.000			1.000		72
		1/4 x 1/2	Flat			Opsanus tau		98	0.990			0.990		74
		1/4 x 1/2	Flat	15	5	Osmerus mordax		135		0.877	96			232
		1/4 x 1/2	Flat			Paralichthys dentatus		18	1.000			0.890		73
		1/4 x 1/2	Flat			Paralichthys dentatus		40	1.000			1.000		74
		1/4 x 1/2	Flat			Paralichthys dentatus		62	0.980			0.980		71
		1/4 x 1/2	Flat			Paralichthys dentatus		87	0.990			0.980		70

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
Y	Continuous	1/4 x 1/2	Flat			Peprilus alepidotus		43	0.980				☐	74
		1/4 x 1/2	Flat			Peprilus triacanthus		10	1.000			1.000	☐	73
		1/4 x 1/2	Flat			Peprilus triacanthus		42	0.900			0.830	☐	74
		1/4 x 1/2	Flat			Perca flavescens		72	0.990			0.960	☐	72
		1/4 x 1/2	Flat			Perca flavescens		55	1.000			1.000	☐	71
		1/4 x 1/2	Flat			Perca flavescens		53	1.000			0.960	☐	74
		1/4 x 1/2	Flat			Perca flavescens		47	1.000			0.980	☐	70
		1/4 x 1/2	Flat			Perca flavescens		266	0.990			0.970	☐	73
		1/4 x 1/2	Flat			Petromyzon marinus		11	1.000			1.000	☐	70
		1/4 x 1/2	Flat			Pleuronectes americanus		12	1.000			1.000	☐	71
		1/4 x 1/2	Flat			Pleuronectes americanus		193	0.990			0.990	☐	70
		1/4 x 1/2	Flat			Pleuronectes americanus		15	1.000			1.000	☐	74
		1/4 x 1/2	Flat			Pleuronectes americanus		17	1.000			1.000	☐	72
		1/4 x 1/2	Flat			Pogonias cromis		45	0.890			0.530	☐	74
		1/4 x 1/2	Flat			Pogonias cromis		13	1.000			0.770	☐	73
		1/4 x 1/2	Flat			Pogonias cromis		35	0.970			0.710	☐	70
		1/4 x 1/2	Flat			Pomatomus saltatrix		83	0.880			0.800	☐	74
		1/4 x 1/2	Flat			Pomatomus saltatrix		34	0.910			0.880	☐	70
		1/4 x 1/2	Flat			Pomatomus saltatrix		10	0.900			0.900	☐	71
		1/4 x 1/2	Flat			Pomatomus saltatrix		57	0.910			0.860	☐	73
		1/4 x 1/2	Flat			Prionotus carolinus		112	0.920			0.920	☐	74
		1/4 x 1/2	Flat			Prionotus carolinus		55	0.960			0.930	☐	71
		1/4 x 1/2	Flat			Prionotus carolinus		433	0.970			0.950	☐	73
		1/4 x 1/2	Flat			Prionotus carolinus		177	0.930			0.920	☐	70
		1/4 x 1/2	Flat			Scophthalmus aquosus		10	0.800			0.800	☐	70
		1/4 x 1/2	Flat			Scophthalmus aquosus		40	1.000			1.000	☐	73
		1/4 x 1/2	Flat			Scophthalmus aquosus		29	1.000			1.000	☐	71
		1/4 x 1/2	Flat			Syngnathus fuscus		12	1.000			1.000	☐	72
		1/4 x 1/2	Flat			Syngnathus fuscus		41	1.000			1.000	☐	71

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
Y	Continuous	1/4 x 1/2	Flat			Syngnathus fuscus		17	1.000			1.000	☐	70
		1/4 x 1/2	Flat			Syngnathus fuscus		91	0.990			0.990	☐	73
		1/4 x 1/2	Flat			Syngnathus fuscus		65	0.980			0.980	☐	74
		1/4 x 1/2	Flat	15	5	Trinectes maculatus		185		0.887	96		☐	233
		1/4 x 1/2	Flat			Trinectes maculatus		468	1.000			1.000	☐	72
		1/4 x 1/2	Flat			Trinectes maculatus		1023	0.980			0.960	☐	73
		1/4 x 1/2	Flat			Trinectes maculatus		2890	1.000			0.990	☐	70
		1/4 x 1/2	Flat			Trinectes maculatus		2954	1.000			0.990	☐	74
		1/4 x 1/2	Flat			Trinectes maculatus		3523	1.000			1.000	☐	71
		1/4 x 1/2	Flat	15	5	Urophycis chuss		25		0.365	96		☐	232
		1/4 x 1/2	Flat			Urophycis regia		743	0.970			0.950	☐	70
		1/4 x 1/2	Flat			Urophycis regia		1126	0.990			0.980	☐	73
		1/4 x 1/2	Flat			Urophycis regia		1045	1.000			0.990	☐	71
		1/4 x 1/2	Flat			Urophycis regia		44	1.000			1.000	☐	72
		1/4 x 1/2	Flat			Urophycis regia		1616	0.990			0.980	☐	74
		1/8 x 1/2	Flat	10	5	Alosa pseudoharengus		30	0.000	0.000	24		☐	251
		1/8 x 1/2	Flat	10	5	Alosa pseudoharengus		183	0.989	0.224	24		☐	251
		1/8 x 1/2	Flat	10	5	Ambloplites rupestris		19	0.895	0.895	24		☐	251
		1/8 x 1/2	Flat	10	5	Ambloplites rupestris		180	0.989	0.989	24		☐	251
		1/8 x 1/2	Flat	10	5	Catostomus commersoni		11	1.000	1.000	24		☐	251
		1/8 x 1/2	Flat	10	5	Dorosoma cepedianum		65	1.000	0.969	24		☐	251
		1/8 x 1/2	Flat	10	5	Dorosoma cepedianum	Juvenile	315	0.149	0.051	24		☐	251
		1/8 x 1/2	Flat	10	5	Morone chrysops		127	0.984	0.976	24		☐	251
		1/8 x 1/2	Flat	10	5	Notropis atherinoides		628	0.989	0.973	24		☐	251
		1/8 x 1/2	Flat	10	5	Notropis atherinoides		2201	0.985	0.975	24		☐	251
		1/8 x 1/2	Flat	10	5	Notropis hudsonius		18	0.944	0.944	24		☐	251
		1/8 x 1/2	Flat	10	5	Notropis hudsonius		231	0.983	0.978	24		☐	251
		1/8 x 1/2	Flat	10	5	Osmerus mordax	< 100 mm	1733	0.970	0.744	24		☐	251
		1/8 x 1/2	Flat	10	5	Osmerus mordax		1824	0.801	0.480	24		☐	251

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
Y	Continuous	1/8 x 1/2	Flat	10	5	Osmerus mordax	> 100 mm	1685	0.995	0.943	24		☐	251
		1/8 x 1/2	Flat	10	5	Perca flavescens		20	1.000	1.000	24		☐	251
		1/8 x 1/2	Flat	10	5	Percopsis omiscomaycus		67	1.000	1.000	24		☐	251
		1/8 x 1/8	Woven wire		15	Cottus sp.		66	0.985				☐	234
		1/8 x 1/8	Woven wire		15	Gasterosteus aculeatus		18	1.000				☐	234
		1/8 x 1/8	Woven wire		15	Oncorhynchus tshawytscha		781	0.981				☐	234
		1/8 x 1/8	Woven wire		15	Perca flavescens		753	0.944				☐	234
		1/8 x 1/8	Woven wire		15	Ptychocheilus oregonenis		99	0.990				☐	234
		1/8 x 1/8	Woven wire		15	Richardsonius balteatus		32	1.000				☐	234
		2 screens wit	Woven wire			Anchoa mitchilli		249	0.458	0.000	96	60.000	☐	115
		2 screens wit	Woven wire			Anchoa mitchilli		596	0.099	0.000	96		☐	115
		2 screens wit	Woven wire			Brevoortia tyrannus		32	0.937	0.156	96		☐	115
		2 screens wit	Woven wire			Callinectes sp.		26	0.923	0.923	96		☐	115
		2 screens wit	Woven wire			Callinectes sp.		170	0.976	0.927	96		☐	115
		2 screens wit	Woven wire			Callinectes sp.	Megalop	159	0.981	0.889	96		☐	115
		2 screens wit	Woven wire			Callinectes sp.	Megalop	203	0.970	0.863	96		☐	115
		2 screens wit	Woven wire			Cynoscion regalis		282	0.806	0.126	96		☐	115
		2 screens wit	Woven wire			Leiostomus xanthurus	< 25 mm	1349	0.810	0.310	96		☐	115
		2 screens wit	Woven wire			Leiostomus xanthurus	>= 25 mm	333	0.721	0.280	96		☐	115
		2 screens wit	Woven wire			Leiostomus xanthurus	< 25 mm	1806	0.609	0.076	96		☐	115
		2 screens wit	Woven wire			Micropogonias undulatus	>= 25 mm	597	0.846	0.356	96		☐	115
		2 screens wit	Woven wire			Micropogonias undulatus	< 25 mm	2105	0.399	0.096	96		☐	115
		2 screens wit	Woven wire			Micropogonias undulatus	< 25 mm	2903	0.604	0.289	96		☐	115
		2 screens wit	Woven wire			Micropogonias undulatus	>= 25 mm	584	0.640	0.360	96		☐	115
		2 screens wit	Woven wire			Mugil cephalus	YOY	62	0.839	0.677	96		☐	115
		2 screens wit	Woven wire			Mugil cephalus	Juv/Adult	37	1.000	0.919	96		☐	115
		2 screens wit	Woven wire			Paralichthyidae		91	0.911	0.900	96		☐	115
		2 screens wit	Woven wire			Penaeidae	Postlarvae	188	0.957	0.902	96		☐	115
		2 screens wit	Woven wire			Penaeidae	Postlarvae	131	0.908	0.771	96		☐	115

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
Y	Continuous	2 screens wit	Woven wire			Penaeus aztecus		87	0.921	0.690	96		☐	115
		2 screens wit	Woven wire			Penaeus aztecus		249	0.968	0.892	96		☐	115
		2 screens wit	Woven wire			Penaeus sp.		264	0.986	0.927	96		☐	115
		2 screens wit	Woven wire			Penaeus sp.		48	0.917	0.812	96		☐	115
		2 screens wit	Woven wire			Prionotus sp.		132	0.977	0.898	96		☐	115
		2 screens wit	Woven wire			Symphurus plagiusa		110	0.945	0.796	96		☐	115
		2 screens wit	Woven wire			Trachypeneus constrictus		123	0.333	0.220	96		☐	115
		2.5mm	Woven nylon			Alosa aestivalis	YOY	479	0.930	0.233	84		☐	203
		2.5mm	Woven nylon	30	10	Alosa aestivalis	YOY	50	0.440	0.060	96		☐	202
		2.5mm	Woven nylon		10	Alosa aestivalis	Juvenile	234	0.770	0.001	96		☐	236
		2.5mm	Woven nylon			Alosa pseudoharengus	YOY	102	0.690	0.062	84		☐	203
		2.5mm	Woven nylon		10	Alosa sapidissima	Juvenile	23	0.870	0.000	96		☐	236
		2.5mm	Woven nylon			Ameiurus catus	YOY	29	1.000	1.000	84		☐	203
		2.5mm	Woven nylon			Anchoa mitchilli	Adult	65	0.550	0.132	84		☐	203
		2.5mm	Woven nylon		10	Anchoa mitchilli	PYS larvae	65	0.000	0.000	96		☐	236
		2.5mm	Woven nylon			Anchoa mitchilli	YOY	2415	0.250	0.010	84		☐	203
		2.5mm	Woven nylon		10	Microgadus tomcod	Juvenile	10	0.900	0.000	96		☐	236
		2.5mm	Woven nylon			Microgadus tomcod	YOY	78	0.920	0.570	84		☐	203
		2.5mm	Woven nylon		10	Morone americana	Juvenile	14	0.790	0.561	96		☐	236
		2.5mm	Woven nylon		10	Morone americana	PYS larvae	13	0.000	0.000	96		☐	236
		2.5mm	Woven nylon			Morone americana	Yearling&Older	37	0.410	0.164	84		☐	203
		2.5mm	Woven nylon	30	10	Morone americana	YOY	33	1.000	1.000	96		☐	202
		2.5mm	Woven nylon			Morone americana	YOY	228	0.450	0.257	84		☐	203
		2.5mm	Woven nylon			Morone saxatilis	YOY	13	0.850	0.748	84		☐	203
		2.5mm	Woven nylon		10	Morone saxatilis	Juvenile	35	0.770	0.462	96		☐	236
		2.5mm	Woven nylon		10	Osmerus mordax	Juvenile	120	0.280	0.000	96		☐	236
		2.5mm	Woven nylon			Osmerus mordax	YOY	20	0.100				☐	203
		3/8 x 3/8	Woven PVC	130	100	Alosa aestivalis		3426	0.233	0.000	96		☐	248
		3/8 x 3/8	Woven wire	60	10	Alosa aestivalis	YOY	244	0.770	0.110	96		☐	198

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
Y	Continuous	3/8 x 3/8	Woven PVC	130	100	Alosa aestivalis		2880	0.023	0.000	96		☐	248
		3/8 x 3/8	Woven wire			Alosa aestivalis	YOY	84		0.000	102		☐	197
		3/8 x 3/8	Woven wire	60	10	Alosa aestivalis	YOY	127	0.795	0.000	96		☐	208
		3/8 x 3/8	Woven wire			Alosa aestivalis	YOY	156		0.050	102		☑	197
		3/8 x 3/8	Woven wire			Alosa aestivalis	YOY	158		0.000	102		☑	197
		3/8 x 3/8	Woven wire	60	10	Alosa aestivalis	YOY	158	0.710	0.000	96		☐	198
		3/8 x 3/8	Woven wire			Alosa aestivalis	YOY	244		0.240	102		☑	197
		3/8 x 3/8	Woven wire	20	15	Alosa aestivalis			0.904				☐	241
		3/8 x 3/8	Woven wire			Alosa pseudoharengus	YOY	33		0.110	102		☑	197
		3/8 x 3/8	Woven wire			Alosa pseudoharengus	Adult	17		0.000	102		☐	197
		3/8 x 3/8	Woven wire			Alosa pseudoharengus	YOY	132		0.020	102		☐	197
		3/8 x 3/8	Woven wire	60	10	Alosa pseudoharengus		41	0.756	0.000	96		☐	208
		3/8 x 3/8	Woven wire			Alosa pseudoharengus	YOY	89		0.000	102		☐	197
		3/8 x 3/8	Woven PVC	130	100	Alosa pseudoharengus		99	0.364	0.000	96		☐	248
		3/8 x 3/8	Woven wire	60	10	Alosa pseudoharengus	YOY	33	0.730	0.030	96		☐	198
		3/8 x 3/8	Woven wire	60	10	Alosa pseudoharengus	YOY	32	0.720	0.090	96		☐	198
		3/8 x 3/8	Woven wire			Alosa pseudoharengus	YOY	32		0.120	102		☐	197
		3/8 x 3/8	Woven PVC	130	100	Alosa pseudoharengus		637	0.016	0.001	96		☐	248
		3/8 x 3/8	Woven wire	100	50	Alosa pseudoharengus	YOY	13	0.690				☐	199
		3/8 x 3/8	Woven wire	60	10	Alosa pseudoharengus	Yearling	20	0.850	0.000	96		☐	198
		3/8 x 3/8	Woven wire			Alosa pseudoharengus	Yearling	20		0.000	102		☐	197
		3/8 x 3/8	Woven wire	20	15	Alosa pseudoharengus			0.907				☐	241
		3/8 x 3/8	Woven PVC	130	100	Alosa sapidissima		546	0.026	0.002	96		☐	248
		3/8 x 3/8	Woven PVC	130	100	Alosa sapidissima		66	0.364	0.000	96		☐	248
		3/8 x 3/8	Woven wire			Alosa sapidissima	YOY	28		0.000	102		☑	197
		3/8 x 3/8	Woven wire	20	15	Alosa sapidissima			0.935				☐	241
		3/8 x 3/8	Woven wire	60	10	Alosa sp.	Adult	65	0.890	0.010	96		☐	198
		3/8 x 3/8	Woven wire			Alosa sp.		51	0.549	0.000	96		☐	110
		3/8 x 3/8	Woven wire			Alosa sp.		89	0.708	0.101	96		☐	110

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
Y	Continuous	3/8 x 3/8	Woven wire			Alosa sp.		140		0.791	48			75
		3/8 x 3/8	Woven wire			Alosa sp.		306		0.212	48			75
		3/8 x 3/8	Woven wire	60	10	Alosa sp.	Yearling	63	0.940	0.020	96			198
		3/8 x 3/8	Woven wire	100	50	Alosa sp.	YOY	50	0.840	0.000	84			199
		3/8 x 3/8	Woven wire	60	10	Alosa sp.	YOY	219	0.750	0.020	96			198
		3/8 x 3/8	Woven wire	60	10	Alosa sp.	YOY	296	0.750	0.110	96			198
		3/8 x 3/8	Woven wire	100	50	Ameiurus catus	YOY	31	1.000					199
		3/8 x 3/8	Woven wire			Ameiurus catus	YOY	11	1.000					199
		3/8 x 3/8	Woven PVC	130	100	Ameiurus catus		55	0.818	0.745	96			248
		3/8 x 3/8	Woven wire	20	15	Ameiurus catus			0.992					241
		3/8 x 3/8	Woven wire	100	50	Ameiurus catus	YOY	17	1.000					199
		3/8 x 3/8	Woven PVC	130	100	Ameiurus nebulosus		158	0.911	0.611	96			248
		3/8 x 3/8	Woven wire	20	15	Ameiurus nebulosus			0.968					241
		3/8 x 3/8	Woven wire	60	10	Anchoa mitchilli		62	0.640	0.050	96			198
		3/8 x 3/8	Woven wire	20	15	Anchoa mitchilli			0.820					241
		3/8 x 3/8	Woven PVC	130	100	Anchoa mitchilli		409	0.000	0.000	96			248
		3/8 x 3/8	Woven PVC	130	100	Anchoa mitchilli		1667	0.001	0.000	96			248
		3/8 x 3/8	Woven wire			Anchoa mitchilli		1236		0.493	48			75
		3/8 x 3/8	Woven wire			Anchoa mitchilli	YOY	18		0.000	102			197
		3/8 x 3/8	Woven wire			Anchoa mitchilli	YOY	62		0.050	102			197
		3/8 x 3/8	Woven wire			Anchoa mitchilli		2999		0.180	48			75
		3/8 x 3/8	Woven wire	20	15	Anguilla rostrata			0.989					241
		3/8 x 3/8	Woven wire	60	10	Anguilla rostrata	Adult	21	0.900	0.050	96			198
		3/8 x 3/8	Woven wire			Anguilla rostrata	Adult	21		0.075	102			197
		3/8 x 3/8	Woven wire	20	15	Brevoortia tyrannus			0.949					241
		3/8 x 3/8	Woven wire	20	15	Caranx hippos			0.857					241
		3/8 x 3/8	Woven wire	60	10	Centrarchidae		52	0.940	0.650	96			198
		3/8 x 3/8	Woven wire			Centrarchidae	YOY	52		0.555	102			197
		3/8 x 3/8	Woven wire			Cynoscion regalis		3372		0.380	48			75

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
Y	Continuous	3/8 x 3/8	Woven wire			Cynoscion regalis		3783		0.509	48		☐	75
		3/8 x 3/8	Woven wire			Cynoscion regalis		3006	0.746	0.459	48		☐	173
		3/8 x 3/8	Woven wire			Cyprinidae	Yearling	35		0.835	102		☑	197
		3/8 x 3/8	Woven wire			Cyprinidae	Adult	38		0.840	102		☑	197
		3/8 x 3/8	Woven wire	20	15	Cyprinodon variegatus			1.000				☐	241
		3/8 x 3/8	Woven wire			Cyprinodontidae	YOY	37		0.920	102		☐	197
		3/8 x 3/8	Woven wire	20	15	Cyprinus carpio			0.929				☐	241
		3/8 x 3/8	Woven wire			Dorosoma cepedianum	YOY	65		0.515	102		☐	197
		3/8 x 3/8	Woven wire			Dorosoma cepedianum	YOY	41	0.930				☐	199
		3/8 x 3/8	Woven wire	100	50	Dorosoma cepedianum	YOY	75	0.880				☐	199
		3/8 x 3/8	Woven wire			Dorosoma cepedianum	Adult	10		0.600	102		☑	197
		3/8 x 3/8	Woven wire			Dorosoma cepedianum	YOY	15		0.000	102		☐	197
		3/8 x 3/8	Woven wire	20	15	Dorosoma cepedianum			0.931				☐	241
		3/8 x 3/8	Woven wire			Dorosoma cepedianum	Yearling	32		0.310	102		☑	197
		3/8 x 3/8	Woven PVC	130	100	Dorosoma cepedianum		23	0.130	0.000	96		☐	248
		3/8 x 3/8	Woven wire	100	50	Dorosoma cepedianum	YOY	14	1.000				☐	199
		3/8 x 3/8	Woven wire			Dorosoma cepedianum		78	0.974	0.000	96		☐	110
		3/8 x 3/8	Woven PVC	130	100	Dorosoma cepedianum		216	0.667	0.054	96		☐	248
		3/8 x 3/8	Woven wire	20	15	Dorosoma petenense			0.936				☐	241
		3/8 x 3/8	Woven wire	20	15	Enneacanthus gloriosus			1.000				☐	241
		3/8 x 3/8	Woven wire	60	10	Etheostoma olmstedi		12	1.000	1.000	96		☐	208
		3/8 x 3/8	Woven wire	20	15	Fundulus diaphanus			1.000				☐	241
		3/8 x 3/8	Woven wire	60	10	Fundulus diaphanus		13	1.000	1.000	96		☐	198
		3/8 x 3/8	Woven wire	60	10	Fundulus heteroclitus		24	0.960	0.920	96		☐	198
		3/8 x 3/8	Woven wire	20	15	Fundulus heteroclitus			1.000				☐	241
		3/8 x 3/8	Woven wire	60	10	Gasterosteidae		33	0.940	0.880	96		☐	198
		3/8 x 3/8	Woven wire			Gasterosteidae	Yearling	33		0.900	102		☐	197
		3/8 x 3/8	Woven wire	60	10	Gasterosteus aculeatus		11	0.909	0.900	96		☐	208
		3/8 x 3/8	Woven wire	20	15	Gobiosoma bosc			0.997				☐	241

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
Y	Continuous	3/8 x 3/8	Woven wire	20	15	Gobiosoma ginsburgi			1.000				☐	241
		3/8 x 3/8	Woven wire	20	15	Ictalurus punctatus			0.988				☐	241
		3/8 x 3/8	Woven wire	20	15	Leiostomus xanthurus			0.967				☐	241
		3/8 x 3/8	Woven wire			Leiostomus xanthurus		91		0.930	48		☐	75
		3/8 x 3/8	Woven wire			Leiostomus xanthurus		576		0.657	48		☐	75
		3/8 x 3/8	Woven PVC	130	100	Lepomis gibbosus		77	0.766	0.727	96		☐	248
		3/8 x 3/8	Woven wire	20	15	Lepomis gibbosus			0.995				☐	241
		3/8 x 3/8	Woven wire	20	15	Lepomis macrochirus			1.000				☐	241
		3/8 x 3/8	Woven PVC	130	100	Lepomis macrochirus		52	0.846	0.827	96		☐	248
		3/8 x 3/8	Woven wire	20	15	Membras martinica			0.817				☐	241
		3/8 x 3/8	Woven wire	20	15	Menidia beryllina			0.946				☐	241
		3/8 x 3/8	Woven wire	20	15	Menidia menidia			0.940				☐	241
		3/8 x 3/8	Woven wire			Microgadus tomcod	Adult	243		0.685	102		☑	197
		3/8 x 3/8	Woven wire			Microgadus tomcod	YOY	37		0.730	102		☑	197
		3/8 x 3/8	Woven wire	60	10	Microgadus tomcod	YOY	63	0.860	0.590	96		☐	198
		3/8 x 3/8	Woven wire			Microgadus tomcod	YOY	63		0.595	102		☐	197
		3/8 x 3/8	Woven wire			Microgadus tomcod	Yearling	144		0.895	102		☐	197
		3/8 x 3/8	Woven wire			Microgadus tomcod	Yearling	57		0.525	102		☑	197
		3/8 x 3/8	Woven wire	60	10	Microgadus tomcod	Adult	116	0.980	0.901	96		☐	208
		3/8 x 3/8	Woven wire	60	10	Microgadus tomcod	Adult	114	0.970	0.880	96		☐	198
		3/8 x 3/8	Woven wire	90	10	Microgadus tomcod	Adult	30	0.967	0.834	84		☐	172
		3/8 x 3/8	Woven PVC	130	100	Microgadus tomcod		61	0.328	0.082	96		☐	248
		3/8 x 3/8	Woven wire			Microgadus tomcod		46	1.000	1.000	96		☐	110
		3/8 x 3/8	Woven wire			Micropogonias undulatus		175		0.510	48		☐	75
		3/8 x 3/8	Woven wire			Micropogonias undulatus		3044		0.768	48		☐	75
		3/8 x 3/8	Woven wire	20	15	Micropogonias undulatus			0.827				☐	241
		3/8 x 3/8	Woven wire	60	10	Morone americana	Adult	499	0.890	0.330	96		☐	198
		3/8 x 3/8	Woven wire	60	10	Morone americana	Yearling	1047	0.940	0.361	96		☐	208
		3/8 x 3/8	Woven wire	60	10	Morone americana	Yearling	747	0.930	0.510	96		☐	198

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
Y	Continuous	3/8 x 3/8	Woven wire			Morone americana	Yearling	747		0.515	102		☑	197
		3/8 x 3/8	Woven wire	60	10	Morone americana	YOY	6485	0.974	0.534	96		☐	208
		3/8 x 3/8	Woven wire			Morone americana	Yearling	270		0.880	102		☑	197
		3/8 x 3/8	Woven wire	90	10	Morone americana	Yearling	61	0.984	0.509	84		☐	172
		3/8 x 3/8	Woven wire	100	50	Morone americana	Yearling	49	0.980	0.167	84		☐	199
		3/8 x 3/8	Woven wire	60	10	Morone americana	Yearling	2003	0.920	0.530	96		☐	198
		3/8 x 3/8	Woven wire			Morone americana	Yearling	13	1.000	0.615	84		☐	199
		3/8 x 3/8	Woven wire	100	50	Morone americana	YOY	98	0.980	0.073	84		☐	199
		3/8 x 3/8	Woven wire			Morone americana	Adult	499		0.415	102		☑	197
		3/8 x 3/8	Woven wire			Morone americana	Adult	364		0.515	102		☑	197
		3/8 x 3/8	Woven wire			Morone americana	Adult	279		0.800	102		☑	197
		3/8 x 3/8	Woven wire	90	10	Morone americana	Adult	216	0.981	0.666	84		☐	172
		3/8 x 3/8	Woven wire			Morone americana	Adult	102		0.270	102		☑	197
		3/8 x 3/8	Woven wire	60	10	Morone americana	Adult	47	0.940	0.680	96		☐	198
		3/8 x 3/8	Woven wire			Morone americana	Adult	46		0.680	102		☑	197
		3/8 x 3/8	Woven wire	90	10	Morone americana	Yearling	18	0.944	0.555	84		☐	172
		3/8 x 3/8	Woven wire			Morone americana	YOY	369		0.315	102		☑	197
		3/8 x 3/8	Woven wire			Morone americana	YOY	37	0.946	0.629	84		☐	199
		3/8 x 3/8	Woven wire	100	50	Morone americana	YOY	33	0.939	0.032	84		☐	199
		3/8 x 3/8	Woven wire	60	10	Morone americana	Yearling	3196	0.890	0.310	96		☐	198
		3/8 x 3/8	Woven wire			Morone americana	Yearling	3196		0.670	102		☑	197
		3/8 x 3/8	Woven wire	60	10	Morone americana	Yearling	2145	0.857	0.286	96		☐	208
		3/8 x 3/8	Woven wire			Morone americana	YOY	260		0.000	102		☐	197
		3/8 x 3/8	Woven wire			Morone americana	YOY	271		0.650	102		☑	197
		3/8 x 3/8	Woven wire			Morone americana	Yearling	2003		0.560	102		☑	197
		3/8 x 3/8	Woven wire	90	10	Morone americana	YOY	317	0.981	0.423	84		☐	172
		3/8 x 3/8	Woven wire			Morone americana	YOY	238		0.765	102		☑	197
		3/8 x 3/8	Woven wire	90	10	Morone americana	Yearling	76	0.974				☐	172
		3/8 x 3/8	Woven wire			Morone americana	YOY	467		0.850	102		☑	197

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
Y	Continuous	3/8 x 3/8	Woven wire	90	10	Morone americana	Adult	40	0.925				☐	172
		3/8 x 3/8	Woven wire	50	10	Morone americana	YOY	1057	0.800	0.168	108		☐	177
		3/8 x 3/8	Woven wire	60	10	Morone americana	YOY	2764	0.970	0.540	96		☐	198
		3/8 x 3/8	Woven wire	50	10	Morone americana	YOY	5891	0.970	0.543	96		☐	177
		3/8 x 3/8	Woven wire	60	10	Morone americana	YOY	238	0.910	0.720	96		☐	198
		3/8 x 3/8	Woven wire	90	10	Morone americana	YOY	48	0.917	0.667	84		☐	172
		3/8 x 3/8	Woven wire	60	10	Morone americana	YOY	271	0.930	0.630	96		☐	198
		3/8 x 3/8	Woven PVC	130	100	Morone americana		925	0.491	0.088	96		☐	248
		3/8 x 3/8	Woven wire	60	10	Morone americana	Adult	36	0.920	0.500	96		☐	198
		3/8 x 3/8	Woven wire			Morone americana	Yearling	283		0.370	102		☑	197
		3/8 x 3/8	Woven wire	20	15	Morone americana			0.997				☐	241
		3/8 x 3/8	Woven wire			Morone americana		1036		0.947	48		☐	75
		3/8 x 3/8	Woven wire			Morone americana	Adult	36		0.495	102		☑	197
		3/8 x 3/8	Woven wire			Morone americana		2483	0.952	0.608	96		☐	110
		3/8 x 3/8	Woven wire			Morone americana		2905		0.871	48		☐	75
		3/8 x 3/8	Woven wire			Morone americana		3701	0.976	0.493	96		☐	110
		3/8 x 3/8	Woven PVC	130	100	Morone americana		1438	0.687	0.333	96		☐	248
		3/8 x 3/8	Woven wire	60	10	Morone saxatilis	YOY	10	0.800	0.500	96		☐	198
		3/8 x 3/8	Woven wire	100	50	Morone saxatilis	YOY	11	0.910				☐	199
		3/8 x 3/8	Woven PVC	130	100	Morone saxatilis		39	0.590	0.169	96		☐	248
		3/8 x 3/8	Woven wire			Morone saxatilis	YOY	21		0.810	102		☑	197
		3/8 x 3/8	Woven wire			Morone saxatilis	YOY	208		0.535	102		☐	197
		3/8 x 3/8	Woven wire	50	10	Morone saxatilis	YOY	617	0.900	0.288	108		☐	177
		3/8 x 3/8	Woven wire	60	10	Morone saxatilis	Yearling	173	0.936	0.136	96		☐	208
		3/8 x 3/8	Woven PVC	130	100	Morone saxatilis		268	0.642	0.238	96		☐	248
		3/8 x 3/8	Woven wire	60	10	Morone saxatilis	YOY	445	0.953	0.521	96		☐	208
		3/8 x 3/8	Woven wire	50	10	Morone saxatilis	YOY	412	0.950	0.589	96		☐	177
		3/8 x 3/8	Woven wire	60	10	Morone saxatilis	YOY	208	0.990	0.540	96		☐	198
		3/8 x 3/8	Woven wire			Morone saxatilis	YOY	10		0.500	102		☑	197

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
Y	Continuous	3/8 x 3/8	Woven wire	60	10	Morone saxatilis	Yearling	843	0.910	0.250	96		☐	198
		3/8 x 3/8	Woven wire			Morone saxatilis		181	0.961	0.619	96		☐	110
		3/8 x 3/8	Woven wire			Morone saxatilis		282	0.943	0.482	96		☐	110
		3/8 x 3/8	Woven wire			Morone saxatilis	Adult	11		0.275	102		☐	197
		3/8 x 3/8	Woven wire	60	10	Morone saxatilis	Adult	11	0.910	0.270	96		☐	198
		3/8 x 3/8	Woven wire	60	10	Morone saxatilis	Yearling	648	0.910	0.420	96		☐	198
		3/8 x 3/8	Woven wire			Morone saxatilis	Yearling	648		0.470	102		☑	197
		3/8 x 3/8	Woven wire	60	10	Morone saxatilis	Yearling	628	0.900	0.319	96		☐	208
		3/8 x 3/8	Woven wire			Morone saxatilis	Yearling	14		0.540	102		☐	197
		3/8 x 3/8	Woven wire	60	10	Morone saxatilis	Yearling	14	0.930	0.360	96		☐	198
		3/8 x 3/8	Woven wire			Morone saxatilis	Yearling	843		0.605	102		☑	197
		3/8 x 3/8	Woven wire	20	15	Notemigonus crysoleucas			1.000				☐	241
		3/8 x 3/8	Woven PVC	130	100	Notemigonus crysoleucas		15	0.667	0.467	96		☐	248
		3/8 x 3/8	Woven PVC	130	100	Notropis hudsonius		150	0.653	0.518	96		☐	248
		3/8 x 3/8	Woven PVC	130	100	Notropis hudsonius		27	0.370	0.135	96		☐	248
		3/8 x 3/8	Woven wire	100	50	Notropis hudsonius	Adult	10	1.000				☐	199
		3/8 x 3/8	Woven wire			Notropis hudsonius	Adult	12	0.500				☐	199
		3/8 x 3/8	Woven wire	100	50	Notropis hudsonius	Adult	16	0.940				☐	199
		3/8 x 3/8	Woven wire	90	10	Notropis hudsonius	Adult	18	1.000				☐	172
		3/8 x 3/8	Woven wire	90	10	Notropis hudsonius	Adult	53	1.000	0.981	84		☐	172
		3/8 x 3/8	Woven wire	100	50	Notropis hudsonius	Yearling	15	0.800				☐	199
		3/8 x 3/8	Woven wire	20	15	Notropis hudsonius			0.966				☐	241
		3/8 x 3/8	Woven wire			Osmerus mordax	Adult	35		0.175	102		☐	197
		3/8 x 3/8	Woven wire	60	10	Osmerus mordax	YOY	42	0.900	0.020	96		☐	198
		3/8 x 3/8	Woven wire			Osmerus mordax	YOY	42		0.045	102		☐	197
		3/8 x 3/8	Woven wire	60	10	Osmerus mordax	Yearling	695	0.950	0.110	96		☐	198
		3/8 x 3/8	Woven wire			Osmerus mordax	Yearling	695		0.120	102		☐	197
		3/8 x 3/8	Woven wire	60	10	Osmerus mordax	Adult	35	0.860	0.170	96		☐	198
		3/8 x 3/8	Woven PVC	130	100	Osmerus mordax		16	0.000	0.000	96		☐	248

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
Y	Continuous	3/8 x 3/8	Woven wire	60	10	Osmerus mordax	Yearling	562	0.943	0.038	96		☐	208
		3/8 x 3/8	Woven wire	20	15	Paralichthys dentatus			0.972				☐	241
		3/8 x 3/8	Woven wire	60	10	Percidae		23	1.000	0.960	96		☐	198
		3/8 x 3/8	Woven wire			Percidae	YOY	23		0.940	102		☐	197
		3/8 x 3/8	Woven wire	90	30	Pleuronectes americanus			0.974	0.897	96		☐	247
		3/8 x 3/8	Woven wire	20	15	Pomatomus saltatrix			0.853				☐	241
		3/8 x 3/8	Woven wire	60	10	Pomatomus saltatrix	YOY	20	0.700	0.050	96		☐	198
		3/8 x 3/8	Woven wire	60	10	Sciaenidae		95	0.880	0.180	96		☐	198
		3/8 x 3/8	Woven wire			Sciaenidae	YOY	95		0.175	102		☐	197
		3/8 x 3/8	Woven wire	60	10	Syngnathus fuscus		15	0.870	0.600	96		☐	198
		3/8 x 3/8	Woven wire			Syngnathus fuscus	YOY	15		0.600	102		☐	197
		3/8 x 3/8	Woven wire	60	10	Trinectes maculatus	Yearling	189	0.980	0.900	96		☐	198
		3/8 x 3/8	Woven wire			Trinectes maculatus	Yearling	201	0.830	0.080	96		☐	197
		3/8 x 3/8	Woven wire			Trinectes maculatus	YOY	227		0.905	102		☐	197
		3/8 x 3/8	Woven wire	60	10	Trinectes maculatus	YOY	227	0.990	0.920	96		☐	198
		3/8 x 3/8	Woven PVC	130	100	Trinectes maculatus		266	0.989	0.914	96		☐	248
		3/8 x 3/8	Woven wire			Trinectes maculatus	YOY	275	0.950	0.160	96		☐	197
		3/8 x 3/8	Woven wire	20	15	Trinectes maculatus			0.965				☐	241
		3/8 x 3/8	Woven wire			Trinectes maculatus	Yearling	189		0.895	102		☐	197
		3/8 x 3/8	Woven PVC	130	100	Trinectes maculatus		60	0.967	0.904	96		☐	248
		3/8 x 3/8 and	Woven wire			Alosa pseudoharengus		1068	0.995	0.445	96	0.646	☐	181
		3/8 x 3/8 and	Woven wire			Alosa pseudoharengus		26	0.962	0.000	96	0.000	☐	181
		3/8 x 3/8 and	Woven wire			Notropis hudsonius		10	1.000	1.000	96	1.000	☐	181
		3/8 x 3/8 and	Woven wire			Notropis hudsonius		21	1.000	0.429	96	1.000	☐	181
		3/8 x 3/8 and	Woven wire			Notropis hudsonius		10	1.000	0.600	96	1.000	☐	181
		3/8 x 3/8 and	Woven wire			Osmerus mordax		174	1.000	0.408	96	0.063	☐	181
	Intermittant	3/8 x 3/8	Woven wire			Alosa sp.		28	0.143	0.000	96		✔	110
		3/8 x 3/8	Woven wire			Alosa sp.		22	0.273	0.000	96		☐	110
		3/8 x 3/8	Woven wire	60	10	Callinectes sapidus		140	0.979	0.956	96		☐	208

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
Y	Intermittant	3/8 x 3/8	Woven wire			Morone americana		1281	0.882	0.236	96		☐	110
		3/8 x 3/8	Woven wire			Morone americana		1339	0.883	0.258	96		☐	110
		3/8 x 3/8	Woven wire			Morone saxatilis		105	0.895	0.305	96		☐	110
		3/8 x 3/8	Woven wire			Morone saxatilis		164	0.945	0.134	96		☐	110

Screen Char. Listing of Impingement Survival Estimates

Screen Type - Dual Flow

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
N	2-hour	1/8 x 1/8	Woven wire			Alosa pseudoharengus	Adult	14	0.929	0.000	24		☐	227
		1/8 x 1/8	Woven wire			Alosa pseudoharengus	Juvenile	13	0.390	0.080	96		☐	227
		1/8 x 1/8	Woven wire			Alosa pseudoharengus	Juvenile	78	1.000	0.039	24		☐	227
		1/8 x 1/8	Woven wire			Alosa pseudoharengus	PYS larvae	25	0.400	0.120	96		☐	227
		1/8 x 1/8	Woven wire			Alosa pseudoharengus	PYS larvae	50	0.980	0.000	24		☐	227
		1/8 x 1/8	Woven wire			Ambloplites rupestris	Adult	25	1.000	0.680	24		☐	227
		1/8 x 1/8	Woven wire			Ambloplites rupestris	Juvenile	112	1.000				☐	227
		1/8 x 1/8	Woven wire			Aplodinotus grunniens	PYS larvae	236	0.314				☐	227
		1/8 x 1/8	Woven wire			Aplodinotus grunniens	PYS larvae	26	0.500				☐	227
		1/8 x 1/8	Woven wire			Dorosoma cepedianum	Juvenile	44	0.818				☐	227
		1/8 x 1/8	Woven wire			Dorosoma cepedianum	PYS larvae	47	0.745	0.000	24		☐	227
		1/8 x 1/8	Woven wire			Dorosoma cepedianum	Juvenile	502	0.964	0.474	24		☐	227
		1/8 x 1/8	Woven wire			Dorosoma cepedianum	Juvenile	10	0.900				☐	227
		1/8 x 1/8	Woven wire			Dorosoma cepedianum	Adult	23	1.000	0.783	24		☐	227
		1/8 x 1/8	Woven wire			Dorosoma cepedianum	PYS larvae	12	1.000				☐	227
		1/8 x 1/8	Woven wire			Lepomis macrochirus	Juvenile	20	1.000	1.000	24		☐	227
		1/8 x 1/8	Woven wire			Micropterus dolomieu	PYS larvae	14	0.000				☐	227
		1/8 x 1/8	Woven wire			Micropterus dolomieu	Juvenile	74	0.027				☐	227
		1/8 x 1/8	Woven wire			Micropterus dolomieu	Juvenile	10	1.000	1.000	24		☐	227
		1/8 x 1/8	Woven wire			Micropterus dolomieu	PYS larvae	12	1.000	1.000	24		☐	227
		1/8 x 1/8	Woven wire			Micropterus salmoides	Juvenile	12	0.833				☐	227
		1/8 x 1/8	Woven wire			Micropterus salmoides	Juvenile	22	1.000				☐	227
		1/8 x 1/8	Woven wire			Morone americana	Adult	61	0.951	0.557	24		☐	227
		1/8 x 1/8	Woven wire			Morone americana	Juvenile	110	0.991	0.546	24		☐	227
		1/8 x 1/8	Woven wire			Morone americana	PYS larvae	10	1.000	0.600	24		☐	227

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
N	2-hour	1/8 x 1/8	Woven wire			Morone americana	PYS larvae	56	0.286	0.000	84		☐	227
		1/8 x 1/8	Woven wire			Morone americana	PYS larvae	165	0.188	0.000	84		☐	227
		1/8 x 1/8	Woven wire			Morone chrysops	Adult	144	0.979	0.646	24		☐	227
		1/8 x 1/8	Woven wire			Morone chrysops	PYS larvae	10	1.000				☐	227
		1/8 x 1/8	Woven wire			Morone chrysops	Juvenile	119	0.983	0.874	24		☐	227
		1/8 x 1/8	Woven wire			Morone chrysops	Juvenile	23	1.000				☐	227
		1/8 x 1/8	Woven wire			Morone chrysops	PYS larvae	190	0.984	0.316	24		☐	227
		1/8 x 1/8	Woven wire			Notropis atherinoides	Juvenile	436	0.995	0.837	24		☐	227
		1/8 x 1/8	Woven wire			Notropis atherinoides	Juvenile	67	0.552	0.000	84		☐	227
		1/8 x 1/8	Woven wire			Notropis atherinoides	PYS larvae	60	0.917	0.333	24		☐	227
		1/8 x 1/8	Woven wire			Notropis atherinoides	Adult	11	1.000	0.818	24		☐	227
		1/8 x 1/8	Woven wire			Notropis atherinoides	Juvenile	276	0.192	0.001	84		☐	227
		1/8 x 1/8	Woven wire			Notropis hudsonius	Adult	18	1.000	0.889	24		☐	227
		1/8 x 1/8	Woven wire			Notropis hudsonius	PYS larvae	29	0.759				☐	227
		1/8 x 1/8	Woven wire			Notropis hudsonius	PYS larvae	22	1.000	0.864	24		☐	227
		1/8 x 1/8	Woven wire			Notropis hudsonius	Juvenile	46	0.326				☐	227
		1/8 x 1/8	Woven wire			Oncorhynchus kisutch	Juvenile	41	1.000	0.927	24		☐	227
		1/8 x 1/8	Woven wire			Oncorhynchus mykiss	Juvenile	36	0.917				☐	227
		1/8 x 1/8	Woven wire			Oncorhynchus mykiss	Adult	11	1.000	0.909	24		☐	227
		1/8 x 1/8	Woven wire			Oncorhynchus tshawytscha	Juvenile	33	1.000	0.667	24		☐	227
		1/8 x 1/8	Woven wire			Osmerus mordax	PYS larvae	187	0.947				☐	227
		1/8 x 1/8	Woven wire			Osmerus mordax	PYS larvae	475	0.817	0.008	24		☐	227
		1/8 x 1/8	Woven wire			Osmerus mordax	Adult	511	0.988	0.530	24		☐	227
		1/8 x 1/8	Woven wire			Osmerus mordax	Juvenile	11	0.909				☐	227
		1/8 x 1/8	Woven wire			Osmerus mordax	Juvenile	122	0.943	0.434	24		☐	227
		1/8 x 1/8	Woven wire			Perca flavescens	Adult	21	1.000	0.952	24		☐	227
		1/8 x 1/8	Woven wire			Perca flavescens	PYS larvae	96	0.990	0.615	24		☐	227
		1/8 x 1/8	Woven wire			Perca flavescens	PYS larvae	174	0.190	0.000	84		☐	227
		1/8 x 1/8	Woven wire			Perca flavescens	PYS larvae	48	0.438	0.000	84		☐	227

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
N	2-hour	1/8 x 1/8	Woven wire			Perca flavescens	Juvenile	86	1.000	0.954	24		☐	227
		1/8 x 1/8	Woven wire			Percina caprodes	PYS larvae	25	0.800				☐	227
		1/8 x 1/8	Woven wire			Percopsis omiscomaycus	Juvenile	29	0.931				☐	227
		1/8 x 1/8	Woven wire			Pomoxis nigromaculatus	Juvenile	264	0.216	0.002	84		☐	227
		1/8 x 1/8	Woven wire			Pomoxis nigromaculatus	Juvenile	117	0.265	0.000	84		☐	227
		1/8 x 1/8	Woven wire			Salmo trutta	Adult	15	1.000	1.000	24		☐	227
	Continuous	1/8 x 1/8	Woven wire			Ambloplites rupestris	Juvenile	29	1.000				☐	227
		1/8 x 1/8	Woven wire			Aplodinotus grunniens	PYS larvae	21	0.905				☐	227
		1/8 x 1/8	Woven wire			Dorosoma cepedianum	PYS larvae	11	1.000				☐	227
		1/8 x 1/8	Woven wire			Micropterus salmoides	Juvenile	17	0.875				☐	227
		1/8 x 1/8	Woven wire			Morone americana	PYS larvae	21	0.429	0.000	84		☐	227
		1/8 x 1/8	Woven wire			Morone americana	Juvenile	15	0.867				☐	227
		1/8 x 1/8	Woven wire			Morone americana	PYS larvae	21	0.810	0.068	84		☐	227
		1/8 x 1/8	Woven wire			Notropis atherinoides	Juvenile	64	0.922	0.018	84		☐	227
		1/8 x 1/8	Woven wire			Notropis atherinoides	PYS larvae	14	0.857				☐	227
		1/8 x 1/8	Woven wire			Notropis atherinoides	Juvenile	68	0.735	0.158	84		☐	227
		1/8 x 1/8	Woven wire			Notropis hudsonius	PYS larvae	21	1.000				☐	227
		1/8 x 1/8	Woven wire			Notropis hudsonius	Juvenile	27	0.778				☐	227
		1/8 x 1/8	Woven wire			Oncorhynchus kisutch	Adult	10	1.000				☐	227
		1/8 x 1/8	Woven wire			Osmerus mordax	PYS larvae	63	0.984				☐	227
		1/8 x 1/8	Woven wire			Perca flavescens	PYS larvae	33	0.818	0.000	84		☐	227
		1/8 x 1/8	Woven wire			Perca flavescens	PYS larvae	77	0.675	0.057	84		☐	227
		1/8 x 1/8	Woven wire			Percina caprodes	PYS larvae	12	1.000				☐	227
		1/8 x 1/8	Woven wire			Percina caprodes	PYS larvae	24	0.958				☐	227
		1/8 x 1/8	Woven wire			Pomoxis nigromaculatus	Juvenile	103	0.748	0.014	84		☐	227
		1/8 x 1/8	Woven wire			Pomoxis nigromaculatus	Juvenile	53	0.868	0.187	84		☐	227
Y		0.5mm	Woven monofilament polyes			Anchoa mitchilli	Eggs			0.740			☐	231
		0.5mm	Woven monofilament polyes	55	10	Anchoa mitchilli	Larvae	274	0.015	0.003	96		☐	230
		0.5mm	Woven monofilament polyes	55	10	Anchoa mitchilli	Eggs			0.800			☐	230

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
Y	Continuous	0.5mm	Woven monofilament polyes			Anchoa mitchilli	Larvae		0.160	0.109	48		☐	231
		0.5mm	Woven monofilament polyes	55	10	Bairdiella chrysoura	Larvae	39	0.192				☐	230
		0.5mm	Woven monofilament polyes	55	10	Bairdiella chrysoura	Eggs			1.000			☐	230
		0.5mm	Woven monofilament polyes	55	10	Brachyura	Megalop		0.651	0.467	48		☐	230
		0.5mm	Woven monofilament polyes	55	10	Brachyura	Zoea		0.955	0.800	48		☐	230
		0.5mm	Woven monofilament polyes			Caridea			0.720	0.482	48		☐	231
		0.5mm	Woven monofilament polyes	55	10	Caridea	Zoea		0.943	0.801	48		☐	230
		0.5mm	Woven monofilament polyes	55	10	Caridea	Megalop		1.000	1.000	48		☐	230
		0.5mm	Woven monofilament polyes	55	10	Clupeidae	Eggs			0.810			☐	230
		0.5mm	Woven monofilament polyes	55	10	Clupeidae	Larvae	278	0.015	0.005	96		☐	230
		0.5mm		60	40	Cynoscion nebulosus		64	0.875				☐	239
		0.5mm	Woven monofilament polyes	55	10	Cynoscion sp.	Eggs			1.000			☐	230
		0.5mm	Woven monofilament polyes	55	10	Cynoscion sp.	Larvae	51	0.157	0.157	96		☐	230
		0.5mm	Woven monofilament polyes	55	10	Grapsizoea	Megalop		1.000	0.981	48		☐	230
		0.5mm	Woven monofilament polyes	55	10	Grapsizoea	Zoea		1.000	0.951	48		☐	230
		0.5mm	Woven monofilament polyes	55	10	Harengula jaguana	Larvae	15	0.000				☐	230
		0.5mm	Woven monofilament polyes	55	10	Harengula jaguana	Eggs			0.929			☐	230
		0.5mm		60	40	Hyporhamphus unifasciatus		11	0.545				☐	239
		0.5mm		60	40	Lagodon rhomboides		26	1.000				☐	239
		0.5mm		60	40	Leiostomus xanthurus		220	0.954				☐	239
		0.5mm		60	40	Lucania parva		808	0.694				☐	239
		0.5mm	Woven monofilament polyes	55	10	Menippe mercenaria	Zoea		0.979	0.896	48		☐	230
		0.5mm	Woven monofilament polyes	55	10	Menippe mercenaria	Megalop		1.000	0.983	48		☐	230
		0.5mm	Woven monofilament polyes	55	10	Menticirrhus sp.	Larvae	15	0.000		96		☐	230
		0.5mm	Woven monofilament polyes	55	10	Menticirrhus sp.	Eggs			1.000			☐	230
		0.5mm		60	40	Mugil curema		185	0.989				☐	239
		0.5mm		60	40	Ophichthus gomesi		43	1.000				☐	239
		0.5mm	Woven monofilament polyes	55	10	Paguridae	Zoea		0.947	0.915	48		☐	230
		0.5mm	Woven monofilament polyes	55	10	Paguridae	Megalop		1.000	0.900	48		☐	230

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
Y	Continuous	0.5mm		60	40	Palaemonetes intermedius		716	0.997				☐	239
		0.5mm		60	40	Penaeus duorarum		287	0.986				☐	239
		0.5mm		60	40	Penaeus setiferus		55	0.945				☐	239
		0.5mm	Woven monofilament polyes			Pinnotheridae			0.990	0.700	48		☐	231
		0.5mm	Woven monofilament polyes	55	10	Pinnotheridae	Megalop		1.000	1.000	48		☐	230
		0.5mm	Woven monofilament polyes	55	10	Pinnotheridae	Zoea		1.000	0.922	48		☐	230
		0.5mm	Woven monofilament polyes	55	10	Pogonias cromis	Eggs			1.000			☐	230
		0.5mm	Woven monofilament polyes			Sciaenidae	Larvae		0.630	0.397	48		☐	231
		0.5mm	Woven monofilament polyes			Sciaenidae	Eggs			0.800			☐	231
		0.5mm	Woven monofilament polyes	55	10	Sciaenidae	Eggs			0.948			☐	230
		0.5mm	Woven monofilament polyes	55	10	Sciaenidae	Larvae	108	0.186	0.020	96		☐	230
		0.5mm		60	40	Tozeuma carolinensis		16	1.000				☐	239
		0.5mm	Woven monofilament polyes	55	10	Upogebia affinis	Zoea		0.913	0.768	48		☐	230
		0.5mm	Woven monofilament polyes	55	10	Upogebia affinis	Megalop		1.000	0.977	48		☐	230
		0.5mm	Woven monofilament polyes	55	10	Xanthidae	Zoea		0.991	0.950	48		☐	230
		0.5mm	Woven monofilament polyes	55	10	Xanthidae	Megalop		1.000	0.983	48		☐	230
		0.5mm	Woven monofilament polyes			Xanthidae			0.930	0.744	48		☐	231
		1/8 x 1/2	Flat	90	5	Alosa aestivalis		8973	0.753	0.071	96		☐	206
		1/8 x 1/2	Flat	130	15	Alosa aestivalis		17719	0.038	0.000	96		☐	248
		1/8 x 1/2	Flat	130	15	Alosa aestivalis		10625	0.240	0.001	96		☐	248
		1/8 x 1/2	Flat	130	15	Alosa pseudoharengus		118	0.576	0.000	96		☐	248
		1/8 x 1/2	Flat	10	5	Alosa pseudoharengus		260	0.835	0.300	24		☐	252
		1/8 x 1/2	Flat	10	5	Alosa pseudoharengus		12	0.250	0.000	24		☐	252
		1/8 x 1/2	Flat	130	15	Alosa pseudoharengus		2402	0.065	0.003	96		☐	248
		1/8 x 1/2	Flat	90	5	Alosa pseudoharengus		1839	0.662	0.060	96		☐	206
		1/8 x 1/2	Flat	130	15	Alosa sapidissima		2460	0.080	0.005	96		☐	248
		1/8 x 1/2	Flat	90	5	Alosa sapidissima		575	0.689	0.068	96		☐	206
		1/8 x 1/2	Flat	130	15	Alosa sapidissima		70	0.414	0.000	96		☐	248
		1/8 x 1/2	Flat	10	5	Ambloplites rupestris		24	0.917	0.917	24		☐	252

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
Y	Continuous	1/8 x 1/2	Flat	10	5	Ambloplites rupestris		157	1.000	1.000	24		☐	252
		1/8 x 1/2	Flat	10	5	Ambloplites rupestris		300	0.997	0.993	24		☐	252
		1/8 x 1/2	Flat	90	5	Ameiurus catus		83	0.988	0.627	96		☐	206
		1/8 x 1/2	Flat	130	15	Ameiurus catus		82	0.841	0.841	96		☐	248
		1/8 x 1/2	Flat	90	5	Ameiurus nebulosus		1102	0.988	0.720	96		☐	206
		1/8 x 1/2	Flat	130	15	Ameiurus nebulosus		28	0.964	0.896	96		☐	248
		1/8 x 1/2	Flat	130	15	Ameiurus nebulosus		332	0.985	0.828	96		☐	248
		1/8 x 1/2	Flat	130	15	Anchoa mitchilli		3098	0.010	0.000	96		☐	248
		1/8 x 1/2	Flat	130	15	Anchoa mitchilli		2063	0.015	0.000	96		☐	248
		1/8 x 1/2	Flat	90	5	Anchoa mitchilli		1093	0.282	0.004	96		☐	206
		1/8 x 1/2	Flat	130	15	Anguilla rostrata		33	0.788	0.721	96		☐	248
		1/8 x 1/2	Flat	90	5	Anguilla rostrata		114	0.965	0.904	96		☐	206
		1/8 x 1/2	Flat	90	5	Apeltes quadracus		11	1.000	1.000	96		☐	206
		1/8 x 1/2	Flat	130	15	Brevoortia tyrannus		39	0.154	0.026	96		☐	248
		1/8 x 1/2	Flat	90	5	Callinectes sapidus		2855	0.993	0.916	96		☐	206
		1/8 x 1/2	Flat	90	5	Centrarchidae		10	1.000	1.000	96		☐	206
		1/8 x 1/2	Flat	90	5	Clupeidae		46	1.000	0.000	96		☐	206
		1/8 x 1/2	Flat	10	5	Dorosoma cepedianum	Juvenile	1927	0.972	0.947	24		☐	252
		1/8 x 1/2	Flat	90	5	Dorosoma cepedianum		40	0.925	0.700	96		☐	206
		1/8 x 1/2	Flat	130	15	Dorosoma cepedianum		276	0.888	0.236	96		☐	248
		1/8 x 1/2	Flat	10	5	Dorosoma cepedianum		338	0.864	0.707	24		☐	252
		1/8 x 1/2	Flat	130	15	Dorosoma cepedianum		470	0.202	0.121	96		☐	248
		1/8 x 1/2	Flat	10	5	Dorosoma cepedianum	Adult	12	0.917	0.917	24		☐	252
		1/8 x 1/2	Flat	10	5	Dorosoma cepedianum	Adult	93	0.968	0.925	24		☐	252
		1/8 x 1/2	Flat	10	5	Dorosoma cepedianum	Juvenile	211	0.948	0.649	24		☐	252
		1/8 x 1/2	Flat	10	5	Dorosoma cepedianum	Juvenile	1477	0.997	0.986	24		☐	252
		1/8 x 1/2	Flat	130	15	Etheostoma olmstedi		26	1.000	0.922	96		☐	248
		1/8 x 1/2	Flat	90	5	Etheostoma olmstedi		89	0.978	0.888	96		☐	206
		1/8 x 1/2	Flat	130	15	Fundulus diaphanus		42	1.000	0.952	96		☐	248

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
Y	Continuous	1/8 x 1/2	Flat	90	5	Fundulus diaphanus		269	0.985	0.859	96		☐	206
		1/8 x 1/2	Flat	90	5	Fundulus heteroclitus		14	1.000	1.000	96		☐	206
		1/8 x 1/2	Flat	90	5	Lepomis gibbosus		158	0.994	0.899	96		☐	206
		1/8 x 1/2	Flat	10	5	Lepomis gibbosus		14	1.000	1.000	24		☐	252
		1/8 x 1/2	Flat	90	5	Lepomis macrochirus		84	0.988	0.988	96		☐	206
		1/8 x 1/2	Flat	10	5	Lepomis macrochirus		25	1.000	1.000	24		☐	252
		1/8 x 1/2	Flat	130	15	Microgadus tomcod		79	0.595	0.203	96		☐	248
		1/8 x 1/2	Flat	90	5	Microgadus tomcod		35	0.943	0.429	96		☐	206
		1/8 x 1/2	Flat	10	5	Micropterus dolomieu		18	0.944	0.944	24		☐	252
		1/8 x 1/2	Flat	10	5	Morone americana		45	1.000	1.000	24		☐	252
		1/8 x 1/2	Flat	10	5	Morone americana		22	1.000	1.000	24		☐	252
		1/8 x 1/2	Flat	130	15	Morone americana		2539	0.799	0.476	96		☐	248
		1/8 x 1/2	Flat	130	15	Morone americana		2691	0.749	0.327	96		☐	248
		1/8 x 1/2	Flat	90	5	Morone americana		899	0.950	0.583	96		☐	206
		1/8 x 1/2	Flat	10	5	Morone chrysops		147	0.986	0.986	24		☐	252
		1/8 x 1/2	Flat	130	15	Morone saxatilis		77	0.805	0.311	96		☐	248
		1/8 x 1/2	Flat	90	5	Morone saxatilis		899	0.889	0.345	96		☐	206
		1/8 x 1/2	Flat	130	15	Morone saxatilis		2073	0.816	0.429	96		☐	248
		1/8 x 1/2	Flat	130	15	Morone sp.		13	1.000	0.185	96		☐	248
		1/8 x 1/2	Flat	90	5	Morone sp.		21	1.000	0.000	96		☐	206
		1/8 x 1/2	Flat	10	5	Neogobius melanostomus		10	1.000	1.000	24		☐	252
		1/8 x 1/2	Flat	90	5	Notemigonus crysoleucas		53	0.981	0.585	96		☐	206
		1/8 x 1/2	Flat	10	5	Notropis atherinoides		6072	0.988	0.980	24		☐	252
		1/8 x 1/2	Flat	10	5	Notropis atherinoides		3738	0.988	0.982	24		☐	252
		1/8 x 1/2	Flat	10	5	Notropis atherinoides		2564	0.985	0.950	24		☐	252
		1/8 x 1/2	Flat	10	5	Notropis atherinoides		46	0.913	0.674	24		☐	252
		1/8 x 1/2	Flat	130	15	Notropis hudsonius		404	0.963	0.742	96		☐	248
		1/8 x 1/2	Flat	10	5	Notropis hudsonius		393	0.964	0.908	24		☐	252
		1/8 x 1/2	Flat	90	5	Notropis hudsonius		331	0.958	0.831	96		☐	206

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
Y	Continuous	1/8 x 1/2	Flat	10	5	Notropis hudsonius		297	1.000	0.997	24		☐	252
		1/8 x 1/2	Flat	10	5	Notropis hudsonius		263	0.989	0.985	24		☐	252
		1/8 x 1/2	Flat	130	15	Notropis hudsonius		157	0.682	0.459	96		☐	248
		1/8 x 1/2	Flat	10	5	Notropis hudsonius		132	0.992	0.985	24		☐	252
		1/8 x 1/2	Flat	10	5	Osmerus mordax	< 100 mm	188	0.904	0.710	24		☐	252
		1/8 x 1/2	Flat	10	5	Osmerus mordax		473	0.968	0.759	24		☐	252
		1/8 x 1/2	Flat	10	5	Osmerus mordax		318	0.893	0.632	24		☐	252
		1/8 x 1/2	Flat	130	15	Osmerus mordax		80	0.150	0.033	96		☐	248
		1/8 x 1/2	Flat	10	5	Osmerus mordax		48	0.792	0.188	24		☐	252
		1/8 x 1/2	Flat	10	5	Osmerus mordax	> 100 mm	426	0.974	0.886	24		☐	252
		1/8 x 1/2	Flat	10	5	Perca flavescens		14	0.929	0.929	24		☐	252
		1/8 x 1/2	Flat	10	5	Perca flavescens		66	1.000	1.000	24		☐	252
		1/8 x 1/2	Flat	10	5	Perca flavescens		178	0.989	0.989	24		☐	252
		1/8 x 1/2	Flat	10	5	Percina caprodes		10	1.000	1.000	24		☐	252
		1/8 x 1/2	Flat	10	5	Percopsis omiscomaycus		51	1.000	0.941	24		☐	252
		1/8 x 1/2	Flat	130	15	Trinectes maculatus		112	1.000	0.982	96		☐	248
		1/8 x 1/2	Flat	90	5	Trinectes maculatus		259	1.000	0.931			☐	206
		1/8 x 1/2	Flat	130	15	Trinectes maculatus		232	0.996	0.957	96		☐	248

Screen Char. Listing of Impingement Survival Estimates

Screen Type - Angled

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
N		3/8 x 3/8	Woven wire			Alosa pseudoharengus		3850	0.447	0.000	24	0.009	☐	180
		3/8 x 3/8	Woven wire			Alosa pseudoharengus		12496		0.116	96	0.518	☐	180
		3/8 x 3/8	Woven wire			Cottus bairdi		28	0.821	0.821	24	0.821	☐	180
		3/8 x 3/8	Woven wire			Cottus bairdi		460		0.763	96	0.815	☐	180
		3/8 x 3/8	Woven wire			Dorosoma cepedianum		1393		0.352	96	0.737	☐	180
		3/8 x 3/8	Woven wire			Gasterosteus aculeatus		10	0.200	0.000	24	0.100	☐	180
		3/8 x 3/8	Woven wire			Morone americana		10	0.200	0.000	24	0.100	☐	180
		3/8 x 3/8	Woven wire			Morone americana		475		0.386	96	0.556	☐	180
		3/8 x 3/8	Woven wire			Notropis atherinoides		812		0.765	96	0.874	☐	180
		3/8 x 3/8	Woven wire			Notropis atherinoides		13	0.077	0.077	24	0.000	☐	180
		3/8 x 3/8	Woven wire			Notropis hudsonius		443		0.783	96	0.862	☐	180
		3/8 x 3/8	Woven wire			Notropis hudsonius		30	0.400	0.291	24	0.100	☐	180
		3/8 x 3/8	Woven wire			Osmerus mordax		761	0.130	0.028	24	0.013	☐	180
		3/8 x 3/8	Woven wire			Osmerus mordax		18215		0.165	96	0.452	☐	180
	2-hour	3/8 x 3/8	Woven wire			Dorosoma cepedianum		5833	0.060	0.000	96		☐	180
	4-hour	3/8 x 3/8	Woven wire			Dorosoma cepedianum		327	0.030	0.000	96		☐	180
	9-hour	3/8 x 3/8	Woven wire			Dorosoma cepedianum		4476	0.060	0.000	96		☐	180
	Continuous	3/8 x 3/8	Woven wire			Dorosoma cepedianum		16	0.250	0.000	96		☐	180
Y		1/4 x 1/4				Alosa aestivalis		4793	0.986	0.525	96		☐	244
		1/4 x 1/4				Alosa pseudoharengus		187	0.979	0.396	96		☐	244
		1/4 x 1/4				Alosa sp.		44	1.000	0.000	96		☐	244
		1/4 x 1/4				Ameiurus catus		415	0.995	0.977	96		☐	244
		1/4 x 1/4				Ameiurus nebulosus		24	0.958	0.958	96		☐	244
		1/4 x 1/4				Anchoa mitchilli		4157	0.899	0.139	96		☐	244
		1/4 x 1/4				Anguilla rostrata		76	1.000	0.900	96		☐	244

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
Y		1/4 x 1/4				Brevoortia tyrannus		99	0.929	0.000	96		☐	244
		1/4 x 1/4				Callinectes sapidus		13	1.000		96		☐	244
		1/4 x 1/4				Cynoscion regalis		10	1.000	0.000	96		☐	244
		1/4 x 1/4				Dorosoma cepedianum		59	0.949	0.509	96		☐	244
		1/4 x 1/4				Etheostoma olmstedi		82	1.000	1.000	96		☐	244
		1/4 x 1/4				Fundulus diaphanus		94	0.989	0.967	96		☐	244
		1/4 x 1/4				Lepomis gibbosus		159	1.000	0.969	96		☐	244
		1/4 x 1/4				Lepomis macrochirus		60	0.967	0.967	96		☐	244
		1/4 x 1/4				Microgadus tomcod		1139	0.980	0.863	96		☐	244
		1/4 x 1/4				Morone americana		3110	0.987	0.938	96		☐	244
		1/4 x 1/4				Morone saxatilis		101	0.970	0.910	96		☐	244
		1/4 x 1/4				Notemigonus crysoleucas		38	0.947	0.947	96		☐	244
		1/4 x 1/4				Notropis hudsonius		331	0.997	0.985	96		☐	244
		1/4 x 1/4				Osmerus mordax		122	0.934	0.493	96		☐	244
		1/4 x 1/4				Perca flavescens		15	1.000	0.867	96		☐	244
		1/4 x 1/4				Trinectes maculatus		1343	0.999	0.990	96		☐	244
		1/4 x 1/4				Xanthidae		21	0.952	0.952	96		☐	244
		3/8 x 3/8	Woven wire			Anchoa delicatissima		95		0.000	96		☐	243
		3/8 x 3/8	Woven nylon			Anchoa mitchilli		668	0.748	0.000	48		☐	237
		3/8 x 3/8	Woven nylon			Anchoa mitchilli		113	0.150	0.000	48		☐	237
		3/8 x 3/8	Woven wire			Engraulis mordax		4630		0.979	96		☐	243
		3/8 x 3/8	Woven wire			Engraulis mordax		930		0.943	96		☐	243
		3/8 x 3/8	Woven wire			Genyonemus lineatus		95		0.495	96		☐	243
		3/8 x 3/8	Woven wire			Genyonemus lineatus		40		0.250	96		☐	243
		3/8 x 3/8	Woven nylon			Gobiosoma ginsburgi		10	1.000	1.000	48		☐	237
		3/8 x 3/8	Woven nylon			Gobiosoma ginsburgi		24	1.000	0.818	48		☐	237
		3/8 x 3/8	Woven wire			Hyperprosopon argenteum		12		1.000	96		☐	243
		3/8 x 3/8	Woven wire			Hyperprosopon argenteum		19		1.000	96		☐	243
		3/8 x 3/8	Woven nylon			Menidia menidia		155	0.871	0.436	48		☐	237

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
Y		3/8 x 3/8	Woven nylon			Menidia menidia		46	0.500	0.432	48		☐	237
		3/8 x 3/8	Woven wire			Phanerodon furcatus		19		0.947	96		☐	243
		3/8 x 3/8	Woven nylon			Pleuronectes americanus		96	0.990	0.980	48		☐	237
		3/8 x 3/8	Woven wire			Seriphus politus		846		0.541	96		☐	243
		3/8 x 3/8	Woven wire			Seriphus politus		753		0.316	96		☐	243
		3/8 x 3/8	Woven nylon			Syngnathus fuscus		50	0.940	0.940	48		☐	237
		3/8 x 3/8	Woven nylon			Syngnathus fuscus		96	0.990	0.834	48		☐	237
		3/8 x 3/8	Woven nylon			Tautoga onitis		19	0.947	0.947	48		☐	237
		3/8 x 3/8	Woven nylon			Tautoga onitis		19	1.000	1.000	48		☐	237
		3/8 x 3/8	Woven wire			Umbrina roncador		58		1.000	96		☐	243
		3/8 x 3/8	Woven wire			Umbrina roncador		133		0.970	96		☐	243
		3/8 x 3/8	Woven wire			Xenistius californiensis		21		0.210	96		☐	243
		3/8 x 3/8	Woven wire			Xenistius californiensis		38		1.000	96		☐	243
		3/8 x 3/8 and	Woven wire			Anchoa mitchilli		9095	0.056	0.000	48		☐	170
		3/8 x 3/8 and	Woven wire			Anguilla rostrata		391	0.997	0.849	48		☐	170
		3/8 x 3/8 and	Woven wire			Apeltes quadracus		448	0.984	0.901	48		☐	170
		3/8 x 3/8 and	Woven wire			Brevoortia tyrannus		606	0.160	0.028	48		☐	170
		3/8 x 3/8 and	Woven wire			Gasterosteus aculeatus		621	0.986	0.974	48		☐	170
		3/8 x 3/8 and	Woven wire			Gobiosoma ginsburgi		294	0.912	0.664	48		☐	170
		3/8 x 3/8 and	Woven wire			Menidia menidia		10338	0.818	0.232	48		☐	170
		3/8 x 3/8 and	Woven wire			Peprilus triacanthus		381	0.499	0.066	48		☐	170
		3/8 x 3/8 and	Woven wire			Pleuronectes americanus		3114	0.961	0.880	48		☐	170
		3/8 x 3/8 and	Woven wire			Syngnathus fuscus		837	0.962	0.685	48		☐	170
		3/8 x 3/8 and	Woven wire			Tautoga onitis		256	0.992	0.988	48		☐	170
		3/8 x 3/8 and	Woven wire			Trinectes maculatus		326	0.994	0.960	48		☐	170
	Continuous	3/8 x 3/8 and	Woven wire			Anchoa mitchilli		13987	0.017	0.000	48		☐	170
		3/8 x 3/8 and	Woven wire			Apeltes quadracus		183	0.869	0.835	48		☐	170
		3/8 x 3/8 and	Woven wire			Brevoortia tyrannus		126	0.381	0.032	48		☐	170
		3/8 x 3/8 and	Woven wire			Gasterosteus aculeatus		113	0.938	0.902	48		☐	170

Screen Mods?	Wash Frequency	Mesh Size (in)	Mesh Type	HP Wash (psi)	LP Wash (psi)	Scientific Name	Age/Length	No.	Si	Se	Te (hrs)	Si(dd)	Contr. Adj?	Report ID
Y	Continuous	3/8 x 3/8 and	Woven wire			Gobiosoma ginsburgi		126	0.873	0.745	48		☐	170
		3/8 x 3/8 and	Woven wire			Menidia menidia		745	0.821	0.182	48		☐	170
		3/8 x 3/8 and	Woven wire			Peprilus triacanthus		37	0.568	0.324	48		☐	170
		3/8 x 3/8 and	Woven wire			Pleuronectes americanus		1025	0.956	0.910	48		☐	170
		3/8 x 3/8 and	Woven wire			Syngnathus fuscus		1551	0.981	0.933	48		☐	170
		3/8 x 3/8 and	Woven wire			Tautoga onitis		329	0.979	0.963	48		☐	170
		3/8 x 3/8 and	Woven wire			Trinectes maculatus		117	0.991	0.956	48		☐	170

Programs:
Section 316(a) and (b) Fish Protection Issues

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