Development and Evaluation of Consensus-Based Sediment Effect Concentrations for PCBs in the Hudson River

Prepared for:

Damage Assessment Center
National Oceanic and Atmospheric Administration
Silver Spring, MD
William Conner, Contracting Officer's Technical Representative

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through

Industrial Economics, Incorporated
2067 Massachusetts Avenue
Cambridge, MA 02140

Contract 50-DSNC-7-90032
Task Order 56-DSNC-8-20009

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Executive Summary

The presence of elevated levels of PCBs in aquatic sediments represents a potential environmental concern for two reasons. First, sediments provide essential habitats for communities of benthic and epibenthic organisms. As PCBs are toxic to aquatic organisms, the presence of elevated concentrations of PCBs in freshwater, estuarine, and marine sediments could be harmful to the sediment-dwelling organisms that utilize these habitats. In addition, PCBs can bioaccumulate in the tissues of aquatic organisms and, as a result, pose a potential hazard to those species that consume aquatic organisms, including wildlife and humans.

This study was initiated to support preliminary natural resource damage assessment activities in the Hudson River through the derivation and evaluation of consensus-based, numerical sediment effect concentrations (SECs) for PCBs. To this end, the existing sediment quality guidelines (SQGs) for total PCBs (tPCBs), various formulated PCB products (i.e., Aroclors), and individual PCB congeners were collected, reviewed, and classified. Initially, the SQGs were grouped according to media type (i.e., freshwater vs. marine and estuarine). The SQGs were then further classified according to their original narrative intent. Subsequently, consensus-based SECs were determined by calculating the geometric mean of the SQGs that fell within each category. By estimating the central tendency of the published SQGs, the consensus-based SECs provide a means of reconciling the guidance values that have been derived using various empirically-based approaches. Hence, consensus-based SECs provide a unifying synthesis of the existing SQGs, reflect causal rather than correlative effects (i.e., to the extent that they agree with empirically- and theoretically-derived toxicity thresholds), and account for the effects of contaminant mixtures (Swartz 1999).

In accordance with the classification system, three SECs were derived for total PCBs, including a threshold effect concentration (TEC), a mid-range effect concentration (MEC), and an extreme effect concentration (EEC). The TEC is intended to identify the concentration of total PCBs below which adverse effects on sediment-dwelling organisms are unlikely to be observed. The MEC represents the concentration of total PCBs above which adverse effects on sediment-dwelling organisms are expected to be frequently observed. By comparison, adverse effects on sediment-dwelling organisms are expected to be usually or always observed at tPCB concentrations above the EEC. The limited number of SQGs for formulated PCBs and individual PCB congeners precluded the development of consensus-based SECs for these other substances.

The study area encompasses an estuary with a wide range of salinities, which makes it challenging to determine where to apply the various SECs for the two media types (i.e., freshwater SECs vs. marine and estuarine SECs). In an effort to simplify this process, the possibility of deriving SECs that were more generally applicable across media types was evaluated. As a first step, the corresponding SECs that were derived for the two media types were compared and found to be statistically similar (i.e., based on the results of modified Student's t-tests). Next, the ranges of effective and lethal concentrations of PCBs for freshwater and saltwater organisms (i.e., based on the results of aquatic toxicity tests) were compared and found to overlap. As the available information did not indicate that salinity would influence the bioavailability of PCBs, the SQGs for the two media types were merged and more generally applicable SECs were calculated for tPCBs, as follows:

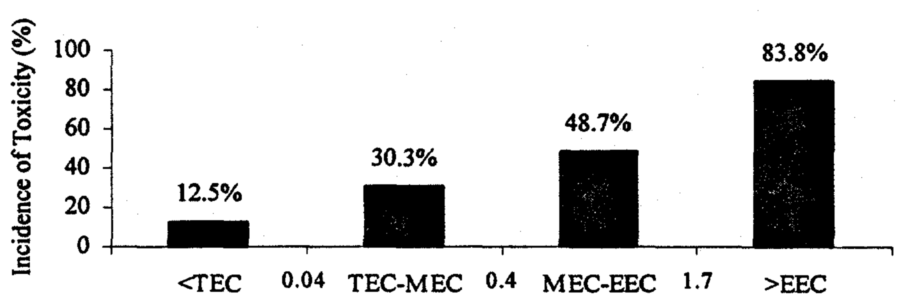
Consensus Based SECs	Freshwater, Estuarine, and Marine Sediments
TEC	0.040 mg/kg DW
MEC	0.40 mg/kg DW
EEC	1.7 mg/kg DW

The resultant consensus-based SECs for tPCBs were evaluated to determine their predictive ability both in freshwater and in marine and estuarine sediments. The predictive ability of the SECs (i.e., their ability to correctly classify sediment samples as toxic or non-toxic) in freshwater systems was evaluated using matching sediment chemistry and biological effects data from various locations in the United States. The results of this evaluation indicate that the TEC can be used to accurately predict the absence of toxicity in freshwater sediments (i.e., the incidence ot toxicity is 16%

below the TEC; predictive ability = 84%). The MEC is intended to identify tPCB concentrations that are frequently associated with adverse effects; the incidence of toxicity was 68% when tPCB concentrations exceeded the MEC (by any amount). The incidence of toxicity was 83% when tPCB concentrations exceeded the EEC (i.e., predictive ability = 83%).

The consensus-based SECs for tPCBs also provide effective tools for assessing the quality of marine and estuarine sediments that are contaminated with PCBs. The incidence of toxicity was 12% at tPCB concentrations below the TEC, indicating that the TEC provides a reliable basis for predicting the absence of toxicity in marine and estuarine sediments (predictive ability = 88%). The incidence of toxicity was 56% when tPCB concentrations exceeded the MEC. The results of this evaluation also indicate that the EEC provides a reliable basis for predicting the toxicity of PCB-contaminated sediments (i.e., predictive ability = 86%). The incidence of effects in freshwater, estuarine, and marine sediments within the four ranges of concentrations defined by the SECs is shown in *Figure 1*. Therefore, the results of this evaluation show that the consensus-based SECs provide an accurate basis for predicting the presence and absence of toxicity in freshwater, estuarine, and marine sediments.

Figure 1. Incidence of toxicity in freshwater, estuarine, and marine sediments within four ranges of PCB concentrations.



The SECs derived in this report are comparable to the chronic effects thresholds that have been estimated from the results of spiked sediment toxicity tests and from equilibrium partitioning models. When considered with an empirically-derived acute-to-chronic ratio from toxicity tests with waterborne PCBs, the results of spiked sediment toxicity tests indicate that PCBs alone are likely to cause adverse effects (i.e., sublethal effects in long-term exposures) to sediment-dwelling organisms at concentrations above 0.8 mg/kg DW. Sublethal effects could be expected at lower concentrations when PCBs occur in mixtures with other contaminants. Chronic effects thresholds for total PCBs (i.e., 0.07 to 0.41 mg/kg DW), when they occur alone in sediments, have also been identified using the equilibrium partitioning approach. The level of agreement between the SECs derived in this report and the chronic toxicity thresholds that have been determined from dose-response data and equilibrium partitioning models indicates that the SECs can be used to determine if sediments contain sufficient quantities of PCBs to cause or substantially contribute to sediment toxicity. That is, PCBs are likely to cause or substantially contribute to sediment injury (i.e., adverse effects on sediment-dwelling organisms) at concentrations above the MEC and EEC derived in this report (i.e., 0.40 mg/kg DW). In contrast, PCBs are not likely to substantially contribute to sediment toxicity below the TEC.

Sufficient SQGs were available to support the determination of consensus-based SECs for tPCB. PCBs always occur in field-collected sediments as complex mixtures of the individual congeners, commonly in association with other contaminants. Thus, effects on sediment-dwelling organisms are likely to result from the cumulative effects of these complex mixtures. Therefore, SECs for individual PCB congeners that are developed through experimental determination of toxicological effects (i.e., spiked sediment bioassays) or with equilibrium partitioning models will likely under-estimate the ecological effects that occur in the field. Similarly, SECs for individual PCB congeners that are developed using data from field studies could over-estimate the effects that are actually caused by those compounds if they were present alone in sediments.

Swartz (1999) coined the term, the 'mixture paradox,' to describe the dilemma associated with assessing the potential toxicity of mixtures of PAHs using SECs for individual substances (as described above). The same term can also be applied to the challenge of establishing SECs for PCBs. Swartz (1999) resolved this dilemma by deriving consensus-based SECs for mixtures of PAHs (i.e., total PAHs). Applying similar logic to the assessment of PCB-contaminated sediments, it is reasonable to rely on SECs that can be applied to mixtures of PCBs (i.e., tPCBs).

The consensus-based SECs developed in this report reflect the toxicity of PCBs when they occur in mixtures with other contaminants. Therefore, the SECs are likely to be most relevant in freshwater, estuarine, and marine sediments that are influenced by multiple sources of contaminants, as is the case in the Hudson River. The results of the evaluation of the predictive ability of the SECs confirm their applicability for assessing the quality of PCB-contaminated sediments. As such, the SECs can be used to identify 'hot spots' with respect to PCB contamination, to determine the potential for and spatial extent of injury to sediment-dwelling organisms, and to support the development of monitoring programs to further evaluate the extent of PCB contamination and the effects of contaminated sediments on sediment-dwelling organisms. However, these SECs do not consider the potential for bioaccumulation of PCBs in aquatic organisms nor the associated hazards to the species that consume aquatic organisms (i.e., wildlife and humans).

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List of Acronyms

µg/kg	=	micrograms per kilogram; parts per billion
µg/L	=	micrograms per liter
AETA	=	Apparent Effects Threshold Approach
Conc.	=	concentration
d	=	day
DW	=	dry weight
EC_{50}	=	effective concentration for 50% of the test organisms
EEC	=	extreme effect concentration
EqP-C	=	chronic equilibrium partitioning threshold
EqPA	=	Equilibrium Partitioning Approach
ERL	=	effects range-low
ERM	=	effects range-median
FCV	=	final chronic value
f_{oc}	=	fraction of organic carbon
h	=	hour
HA-28	=	*Hyalella azteca* - 28 day test
K_{oc}	=	organic carbon partition coefficient
K_{ow}	=	octanol-water partition coefficient
Kp	=	partition coefficient
L/kg	=	liters per kilogram
LAET	=	lowest apparent effects threshold
LAET-C	=	lowest apparent effects threshold - California
LAET-PS	=	lowest apparent effects threshold - Puget Sound
LC_{50}	=	lethal concentrations for 50% of the test organisms
LEL	=	lowest effect level
MAET	=	mid-range apparent effects threshold
MEC	=	mid-range effect concentration
MET	=	minimal effect threshold
mg/kg	=	milligrams per kilogram; parts per million
N/A	=	not available
ND	=	not detected
NEL	=	no effect level
NET	=	no effect threshold
NSTP	=	National Status and Trends Program
NT	=	not toxic
PAETs	=	probable apparent effects threshold
PAHs	=	polycyclic aromatic hydrocarbons
PCBs	=	polychlorinated biphenyls
PEL	=	probable effect level
PW	=	porewater

List of Acronyms (continued)

SEC	=	sediment effect concentration
SEL	=	severe effect level
SLCA	=	Screening Level Concentration Approach
SQG	=	sediment quality guideline
SSLC	=	species screening level concentration
T	=	toxic
TEC	=	threshold effect concentration
TEL	=	threshold effect level
TET	=	toxic effect threshold
tPCBs	=	total polychlorinated biphenyls
WEA	=	Weight-of-Evidence Approach

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1.0 Introduction

Polychlorinated biphenyls (PCBs) is the generic term that is applied to a group of 209 congeners that contain between one and 10 chlorine atoms on a biphenyl ring. The potential positions for chlorine substitution are numbered according to the American Chemical Society standard notation. PCB congeners with the same number of chlorine atoms on the biphenyl rings are grouped into specific classes (e.g., tetrachlorobiphenyl), with each congener in a class assigned a numeric prefix that describes the position of the chlorine atoms (e.g., 3,4,4',5-tetrachlorobiphenyl; Moore and Walker 1991). The ten classes of PCBs, the empirical formulae for each class, and the number of possible congeners for each class are listed in *Table 1*.

Commercially, PCBs have been produced as complex mixtures of many chlorobiphenyl congeners, whose usages depend primarily on the percentage of chlorine in the mixture. For example, mixtures of PCBs that contain between 21% and 54% chlorine (by weight) have been used extensively as dielectric fluids in closed electrical systems. In addition, PCB mixtures have been used as plasticizers, heat transfer liquids, hydraulic fluids, fluids in vacuum pumps and compressors, lubricants, wax extenders, special adhesives, and surface coatings for carbonless copy paper (CCREM 1986). All of these latter uses were curtailed in 1971 in the United States (USEPA 1980).

Polychlorinated biphenyls have been marketed under a number of trade names worldwide (e.g., Askerel, Eucarel and Sovol; McDonald and Tourangeau 1986); however, all of the PCBs manufactured in North America were produced under the trade name Aroclor (Moore and Walker 1991). The commercially available Aroclor mixtures are designated with a four digit number, which typically indicates the molecular structure and the percent chlorine by weight. For example, Aroclor 1254 is a chlorinated biphenyl which contains 54% chlorine by weight (which is designated by the '54'; Kalmaz and Kalmaz 1979). The lower chlorinated Aroclor formulations (e.g., 1221 and 1232) are primarily comprised of mono-, di-, and tri-chlorobiphenyls, whereas the higher chlorinated Aroclor mixtures (e.g., 1254 and 1260) are dominated by tetra-, hexa-, and hepta-chlorobiphenyls (*Table 2*; Rappe and Buser 1980; USEPA 1980).

The presence of high concentrations of PCBs in aquatic sediments represents a potential environmental concern because:

- sediments provide essential habitats for communities of benthic and epibenthic organisms (i.e., sediment-dwelling biota);
- sediment-dwelling biota are important elements of freshwater and coastal ecosystems, representing important sources of food for many fish and wildlife species;
- PCBs are known to be acutely toxic to aquatic organisms and, as a result, the presence of elevated concentrations of PCBs in freshwater, estuarine, and marine sediments could be harmful to sediment-dwelling organisms; and,
- PCBs can bioaccumulate in the tissues of aquatic organisms and, as a result, the presence of elevated concentrations of PCBs in freshwater, estuarine, and marine sediments poses a potential hazard to those species that consume aquatic organisms.

1.1 Study Objectives

This study was initiated to support preliminary natural resource damage assessment activities in the Hudson River. More specifically, this document is intended to support an assessment of the potential for injury to sediment-dwelling organisms in the Hudson River basin by developing and evaluating consensus-based sediment effect concentrations (SECs) for PCBs. The primary objectives of this study are:

- to collect, collate, and review existing, published sediment quality guidelines (SQGs) for PCBs;
- to utilize the existing SQGs to develop consensus-based SECs that can be used to assess sediment quality conditions in the Hudson River; and,
- to evaluate the reliability of the consensus-based SECs for assessing PCB contamination in freshwater, estuarine, and marine sediments.

In this report, the term 'sediment quality guidelines' is used to refer to the chemical-specific sediment quality assessment values that have been developed by various investigators to support evaluations of sediment quality conditions. By comparison, the term 'sediment effect concentrations' is used to refer to the three types of consensus-based sediment quality assessment values that were developed in this report, including threshold effect concentrations (TECs), mid-range effect concentrations (MECs), and extreme effect concentrations (EECs). The consensus-based SECs that are derived in this report provide an estimate of central tendency of the published SQGs that have similar narrative intents. In this way, the SECs that are derived from these published SQGs reflect the agreement that exists among the various types of guidelines. In this way, the consensus-based SECs provide a unifying synthesis of the existing SQGs (i.e., they provide a means of reconciling the various SQGs that have been published), reflect causal rather than correlative effects (i.e., to the extent that they agree with the results of dose-response studies and theoretically-derived guidelines), and account for the effects of contaminant mixtures (i.e., they are derived from SQGs that are based on field-collected data, which contain information on complex mixtures of chemicals; Swartz 1999). The term 'PCBs' is used to refer to all of the polychlorinated biphenyls found in the Hudson River, plus the degradation products and metabolites of these chemicals.

The consensus-based SECs developed in this report are intended to support an assessment of the potential for injury to sediment-dwelling organisms in the Hudson River. In this application, measured concentrations of PCBs can be compared to the consensus-based SECs to determine if the concentrations of sediment-associated PCBs are sufficient to injure sediment-dwelling organisms in the Hudson River. These SECs can also be used to identify sites of concern with respect to PCB contamination (i.e., hot spots), to determine the spatial extent of sediment injury, and to support the design of monitoring programs to further characterize sediment quality conditions. Such monitoring programs could be designed to further characterize contaminant concentrations, to evaluate sediment toxicity, to assess benthic invertebrate community status and/or to determine the potential for bioaccumulation. However, the SECs are not intended to represent sediment quality remediation objectives; determination of such clean-up levels will necessarily require policy decisions regarding the desired future quality of sediments in the Hudson River.

The SECs derived in this report do not consider the potential effects of sediment-associated PCBs on fish or other species that reside in the water column. In addition, the SECs do not consider the potential for bioaccumulation in aquatic organisms nor the potential effects that could occur throughout the food web as a result of the bioaccumulation of PCBs.

2.0 Study Approach

A variety of theoretical and empirical approaches have been used to derive sediment quality guidelines for PCBs. These include the equilibrium partitioning approach (EqPA), screening level concentration approach (SLCA), effects range approach (ERA), effects level approach (ELA), and apparent effects threshold approach (AETA). While the resultant SQGs were derived for various purposes, the narrative intents of these guidelines fall within three general categories: threshold effect concentrations (below which adverse effects are unlikely to occur), mid-range effect concentrations (above which adverse effects frequently occur), and extreme effect concentrations (above which adverse effects usually or always occur). The SQGs that fall within these categories can be used to calculate consensus-based SECs that reflect the agreement among the underlying guidance values. Such consensus-based SECs can provide a unifying synthesis of the existing SQGs, reflect causal rather than correlative effects, and account for the effects of contaminant mixtures (Swartz 1999).

In recognition of the need for numerical guidelines for PCBs, consensus-based SECs were derived to support preliminary natural resource damage assessment activities in the Hudson River. A step-wise approach was used to develop the consensus-based SECs. As a first step, the existing SQGs (including sediment quality guidelines, criteria, objectives, and standards) for PCBs that have been developed by various investigators to support assessments of the quality of freshwater, estuarine, and marine sediments were collected and collated. These published SQGs were primarily located by reviewing the references contained in the library maintained by MacDonald Environmental Sciences Ltd. A number of specialists in the field were also contacted to obtain additional SQGs and related information.

Next, the supporting documentation that was obtained with the various SQGs was reviewed to determine the applicability of the SQGs to this study. The existing SQGs for PCBs were used in this report to support the derivation of SECs if:

- the methods that were used to derive the SQGs were readily apparent;

- the SQGs were based on information on the effects or lack of effects on sediment-dwelling organisms; and,

- the SQGs had been derived on a *de novo* basis (i.e., not simply adopted from another jurisdiction or source).

Dry weight-normalized SQGs were compiled directly into spreadsheets in MS Excel format. The SQGs that were expressed on an organic carbon-normalized basis were converted to dry weight-normalized values assuming 1% organic carbon. The existing SQGs were compiled on a dry weight-normalized basis because the results of earlier studies have indicated that such tools predicted sediment toxicity as well or better than the organic carbon-normalized SECs (USEPA 1996; MacDonald 1997).

The SQGs that met the selection criteria were then classified to facilitate the derivation of consensus-based SECs. The SQGs for each chemical analyte (e.g., tPCBs, Aroclor 1254, PCB 77) that applied to freshwater sediments and to marine and estuarine sediments were initially grouped separately. Next, the SQGs were grouped into three categories according to their original narrative intent, including threshold effect concentrations (i.e., TECs, which were intended to identify concentrations of PCBs below which adverse effects on sediment-dwelling organisms were unlikely to be observed), mid-range effect concentrations (i.e., MECs, which identify concentrations of PCBs above which adverse effects on sediment-dwelling organisms are frequently observed), and extreme effect concentrations (i.e., EECs, which identify concentrations of PCBs above which adverse effects on sediment-dwelling organisms are usually or always observed; Swartz 1999). Only the empirically-derived SQGs were used to derive the consensus-based SECs; the theoretically-derived SQGs were used subsequently to evaluate the reliability of the SECs (the procedures for evaluating reliability are described below).

Several indicators of central tendency were considered for calculating consensus-based SECs for PCBs, including arithmetic mean, geometric mean, and median. Each of these indicators have certain advantages and limitations that affect their applicability for calculating the consensus-based SECs (i.e., there is no perfect indicator of central tendency). In this report, the geometric mean was selected to support the calculation of consensus-based SECs for each category of SQGs. The geometric mean was considered to be an appropriate indicator of central tendency because it tends to minimize the effect of outliers on the mean and because the distribution of the SQGs within each category was unknown (i.e., arithmetic mean is most appropriate for normally-distributed data; Sokal and Rohlf 1981).

As indicated previously, the freshwater SQGs and the marine and estuarine SQGs were considered separately in this analysis. As such, it was possible to derive TECs, MECs, and EECs for both freshwater and marine sediments. As the study area encompasses an estuary with varying salinities, it would be advantageous to derive SECs that would be more generally applicable than either the freshwater SECs or the marine and estuarine SECs. For this reason, the freshwater SECs and the marine and estuarine SECs were compared to determine if they were similar. For those substances or groups of substances that had comparable SECs for both media types (i.e., not statistically different; as indicated by the results of modified Student's t-tests), the underlying SQGs were merged and used to derive more generally-applicable SECs. Final consensus-based SECs were calculated only if three or more SQGs were available in the pooled data set for a chemical substance or group of substances.

The reliability of the SECs for assessing sediment quality conditions was evaluated in several ways, including by:

- determining their predictive ability;
- evaluating the degree of concordance between PCB concentrations and the incidence of adverse effects on sediment-dwelling organisms;
- determining if the SECs agreed with the results of spiked sediment toxicity tests; and,
- determining if the SECs agreed with equilibrium partitioning-based SQGs.

To support the evaluation of predictive ability, matching sediment chemistry and biological effects data were assembled from a variety of freshwater (*Appendix 2* *and 3*), estuarine, and marine (*Appendices 4 and 5*) locations in the United States. In this report, predictive ability was defined as the ability of the SECs to correctly classify sediment samples as toxic or non-toxic using information on PCB concentrations alone. Predictive ability was calculated as the ratio of the number of samples that were correctly classified as toxic or non-toxic and the number of samples that were predicted to be toxic or non-toxic using the various SECs (predictive ability was expressed as a percentage). In this evaluation, samples with PCB concentrations below the TEC were predicted to be not toxic, while those with concentrations above the MEC or above the EEC were predicted to be toxic.

The criteria for evaluating the predictive ability of the SECs were adapted from Long *et al.* (1998). Specifically, the TEC was considered to provide a reliable basis for assessing sediment quality if more than 75% of the sediment samples were correctly predicted to be not toxic. Similarly, the EEC was considered to be reliable if more than 75% of the sediment samples were correctly predicted to be toxic. Therefore, the target level for both false positives (i.e., samples incorrectly classified as toxic) and false negatives (i.e., samples incorrectly classified as not toxic) was 25% using the TEC and EEC. As the MECs are intended to identify contaminant concentrations above which adverse effects occur frequently, the MEC was considered to be reliable if the incidence of toxicity was more than 50% at PCB concentrations above that level. The degree of concordance between PCB concentrations and sediment toxicity was evaluated by determining the incidence of toxicity within the four ranges of concentrations defined by the three SECs (i.e., <TEC, TEC-MEC, MEC-EEC, >EEC). Good concordance was indicated if the incidence of effects increased incrementally within the four ranges of PCB concentrations.

Information on the predictive ability of the empirically-derived SECs is essential for determining their applicability in the Hudson River. However, such evaluations rely exclusively on data from field studies (which were not specifically intended for this purpose), where sediment-associated PCBs are usually present in complex mixtures with other contaminants. Therefore, it is challenging to determine which chemicals were contributing to or causing the effects that were observed. In contrast, data from spiked-sediment toxicity tests and from equilibrium partitioning models provide information on the concentrations of sediment-associated PCBs that are likely to cause toxicity to sediment-dwelling organisms, either when they occur alone or in simple mixtures with other contaminants. Agreement between the empirically-derived SECs and the toxicity thresholds determined from spiked-sediment toxicity tests and from equilibrium partitioning models would provide a causal link between the SECs and the adverse effects observed in field-collected sediments.

To determine if the empirically-derived SECs reflected causal rather than correlative effects, the TEC, MEC, and EEC were compared to the results of dose-response studies and to equilibrium partitioning models for PCBs. As such, the results of spiked sediment toxicity tests and related toxicological data were reviewed to identify chronic toxicity thresholds for PCBs. Likewise, the results obtained from equilibrium partitioning models were used to identify the concentrations of PCBs above which adverse effects are likely to occur on sensitive, sediment-dwelling organisms (i.e., in longer-term exposures). The SECs were considered to be comparable to the chronic effects thresholds if they agreed within a factor of three (Lorenzato *et al.* 1991). This level of agreement among the three independent effects thresholds was considered to provide sufficient rationale for concluding that PCBs were likely to cause or substantially contribute to sediment toxicity at concentrations above the consensus-based SECs.

3.0 Existing Sediment Quality Guidelines for PCBs

A variety of approaches to the development of numerical SQGs have been described in the literature. These approaches can be classified into two main categories, including those that have an empirical basis and those that have a theoretical basis (for detailed information on the various approaches, including derivation procedures, intended uses, and limitations of the SQGs, see USEPA 1992; MacDonald 1994; Ingersoll *et al.* 1997). Both empirical and theoretical approaches were considered to support the derivation and evaluation of consensus-based SECs for PCBs, various PCB mixtures, and/or individual PCB congeners, including:

- Screening Level Concentration Approach (SLCA);
- Effects Range Approach (ERA);
- Effects Level Approach (ELA);
- Apparent Effects Threshold Approach (AETA); and,
- Equilibrium Partitioning Approach (EqPA).

Brief descriptions of each of these approaches are included in the following sections. In addition, narrative descriptions of the SQGs that have been derived using each of these approaches are presented in *Table 3*. These narrative descriptions were used to classify the SQGs into the three categories (i.e., threshold, mid-range, or extreme effect concentrations).

3.1 Screening Level Concentration Approach

The screening level concentration approach (SLCA) is a biological effects-based approach that is applicable to the development of SQGs for the protection of benthic organisms. This approach utilizes matching data on sediment chemistry and benthic invertebrate community structure from field surveys to calculate screening level concentrations (SLC; Neff *et al.* 1986). The SLC is an estimate of the highest concentration of a contaminant that can be tolerated by a pre-defined proportion of benthic infaunal species.

The SLC is determined through the use of a database that contains information on the concentrations of specific contaminants in sediments and on the co-occurrence of benthic organisms in the same sediments. For each benthic organism for which adequate data are available, a species screening level concentration (SSLC) is calculated. The SSLC is determined by plotting the frequency distribution of the contaminant concentrations over all of the sites at which the species occurs (information from at least ten sites is required to calculate a SSLC). The 90th percentile of this distribution is taken as the SSLC for the species being investigated. The SSLCs for all of the species for which adequate data are available are then compiled as a frequency distribution to determine the concentration that can be tolerated by a specific proportion of the species (i.e., the 5th percentile of the distribution would provide an SLC that should be tolerated by 95% of the species). This concentration is termed the screening level concentration of the contaminant.

The SLCA has been used to derive numerical SQGs for several jurisdictions. Under the St. Lawrence Action Plan the SLCA was used to develop SQGs for evaluating and managing sediment quality in the St. Lawrence River system (EC and MENVIQ 1992). Two SQGs were developed for five groups of PCBs, including a minimal effect threshold (MET) and a toxic effect threshold (TET). The MET was calculated as the 15th percentile of the SSLCs, while the TET was calculated as the 90th percentile of the SSLC distribution for each substance. Therefore, the MET and TET are considered to provide protection for 85% and 10% of the species represented in the database, respectively (EC and MENVIQ 1992). Similarly, Environment Ontario has developed a lowest effect level (LEL) and severe effect level (SEL) for each of five groups of PCBs using this approach (Persaud *et al.* 1993). Neff *et al.* (1986) also developed a screening level concentration (SLC) for tPCBs primarily using data from the Great Lakes region.

For the purpose of calculating consensus-based SECs, the MET, LEL, and SLC were considered to represent threshold effect concentrations because they are expected to protect 85 to 90% of sediment-dwelling organisms. The TET and SEL were considered to represent extreme effect concentrations because adverse effects are expected on 90% of sediment-dwelling species above such concentrations.

3.2 Effects Range Approach

The effects range approach (ERA) to the derivation of SQGs was developed to provide informal tools for assessing the potential for various contaminants tested in NOAA's National Status and Trends Program (NSTP) to be associated with adverse effects on sediment-dwelling organisms (Long and Morgan 1991). As a first step, a database was compiled which contained information on the effects of sediment-associated contaminants, including data from spiked-sediment toxicity tests, matching sediment chemistry and biological effects data from field studies, and sediment quality assessment values derived using various approaches. All of the information in the database was weighted equally, regardless of the method that was used to develop it. The objective of this initiative was to identify informal guidelines which could be used to evaluate sediment chemistry data collected nationwide under the NSTP.

Candidate data sets from field studies were evaluated to determine their applicability for incorporation into the database. This evaluation was designed to determine the overall applicability of the data set, the methods that were used, the end-points that were measured, and the degree of concordance between the chemical and biological data. The data which met the evaluation criteria were incorporated into the database.

The database that was compiled included several types of information from each study. Individual entries consisted of the concentration of the contaminant, the location of the study, the species tested and endpoint measured, and an indication of whether or not there was concordance between the observed effect and the concentrations of a specific chemical (i.e., no effect, no or small gradient, no concordance, or a "hit", which indicated that an effect was measured in association with elevated sediment chemistry). Data from non-toxic or unaffected samples were assumed to represent background conditions. Data which showed no concordance between chemical and biological variables were included in the database, but were not used to calculate the SQGs. The data for which a biological effect was observed in association with elevated chemical concentrations (i.e., hits) were sorted in ascending order of concentration and the 10th and 50th percentile concentrations for each substance were determined. The effects range-low (ERL; 10th percentile value) was considered to represent a lower threshold value, below which adverse effects on sensitive life stages and/or species occurred infrequently. The effects range-median (ERM; 50th percentile value) was considered to represent a second threshold value, above which adverse effects were frequently observed. These two parameters, ERL and ERM, were then used as informal SQGs (Long and Morgan 1991; Long *et al.* 1995). USEPA (1996) used a similar approach to derive ERLs (15th percentile of the effects data set) and ERMs (50th percentile of the effects data set) for assessing sediments from various freshwater locations. Similarly, MacDonald (1997) applied the ERA to regionally-collected field data to derive site-specific SECs for PCBs and DDTs in the Southern California Bight.

For the purpose of calculating consensus-based SECs, the ERL values were considered to represent threshold effect concentrations because adverse effects are expected to be observed only infrequently below such SQGs. In contrast, the ERM and SEC (i.e., from MacDonald 1997) values were considered to represent mid-range effect concentrations because adverse effects are likely to be observed at concentrations above such values.

3.3 Effects Level Approach

The effects level approach (ELA) is closely related to the effects range approach described above. However, the ELA is supported by an expanded version of the database that was used to derive the effects levels (Long and Morgan 1991). The expanded database contains matching sediment chemistry and biological effects data from spiked sediment toxicity tests and from field studies conducted throughout North America . The expanded database also contains sediment quality guidelines derived using various approaches. The information contained in the expanded databases was evaluated and classified in the same manner that was used to compile the original NSTP database.

In the ELA, the underlying information in the database was used to derive two types of sediment quality guidelines, including threshold effect levels (TELs) and probable effect levels (PELs). The TEL, which is calculated as the geometric mean of the 15th percentile of the effects data set and the 50th percentile of the no effects data set, represents the chemical concentration below which adverse effects occurred only infrequently. The PEL represents a second threshold value, above which adverse effects were frequently observed. The PEL is calculated as the geometric mean of the 50th percentile of the effects data set and the 85th percentile of the no effects data set. These arithmetic procedures have been applied to the expanded database to derive numerical SQGs (i.e., TELs and PELs) for Florida coastal waters (MacDonald *et al.* 1996), the Great Lakes areas of concern (Ingersoll *et al.* 1996), and Canadian freshwater and marine systems (Smith *et al.* 1996).

Because adverse effects are expected to be observed only infrequently below the TELs, they were considered to represent threshold effect concentrations for the purpose of calculating consensus-based SECs. Similarly, the PELs were considered to represent mid-range effect concentrations because adverse effects are likely to be observed at concentrations above such values.

3.4 Apparent Effects Threshold Approach

The apparent effects threshold approach (AETA) to the development of SQGs was developed for use in the Puget Sound area of Washington State (Tetra Tech Inc. 1986). The AETA is based on empirically-defined relationships between measured concentrations of a contaminant in sediments and observed biological effects. This approach is intended to define the concentration of a contaminant in sediment above which significant ($p \leq 0.05$) biological effects are *always* observed. These biological effects include, but are not limited to, toxicity to benthic and/or water column species (as measured using sediment toxicity tests), changes in the abundance of various benthic species, and changes in benthic community structure. In Puget Sound, for example, four AET values have been generated, including AETs for Microtox, oyster larvae, benthic community, and amphipods. The AET values are based on dry weight-normalized contaminant concentrations for metals and either dry weight- or total organic carbon-normalized concentrations for organic substances (Barrick *et al.* 1988; Washington Department of Ecology 1990). The state of Washington has used the various AET values to establish sediment quality standards and minimum clean-up levels.

Recently, Cubbage *et al.* (1997) refined this approach to support the development of probable AETs (PAETs) using matching sediment chemistry and toxicity data for freshwater sediments from the state of Washington. Ingersoll *et al.* (1996; USEPA 1996) utilized a similar approach to develop freshwater AETs (termed no effect concentrations or NECs in that study) using data from various freshwater locations.

Classification of the AET values is challenging because the relative sensitivity of each endpoint varies for different chemicals. In this study, the AET-type values for tPCBs were classified into three categories to facilitate the derivation of consensus-based SECs. The AET values for the most sensitive endpoints (identified here as low-range AETs; LAETs), including the freshwater AET for Microtox, the California AET for bivalve embryos, and the Puget Sound AET for Microtox, were classified as threshold effect concentrations because adverse effects are not expected below these values. The AETs for the endpoints that exhibited intermediate sensitivities (identified here as mid-range AETs; MAETs) were considered to represent mid-range effect concentrations because adverse effects are likely to be observed on the majority of the endpoints measured above such values. These SQGs included the freshwater NECs, freshwater PAETs for amphipods, California AETs for benthic community, and the Puget Sound AETs for oysters and benthic community. The AETs for the least sensitive endpoints (identified here as high-range AETs; HAETs), including the freshwater AETs for amphipods, the California AETs for amphipods, and the Puget Sound AETs for amphipods, were considered to represent extreme effect concentrations because adverse effects on all of the endpoints measured are expected above such values (i.e., the HAETs are above all the other AETs; therefore, adverse effects can be expected on all of the endpoints for which AETs were derived).

3.5 Equilibrium Partitioning Approach

The water-sediment equilibrium partitioning approach (EqPA) has been one of the most studied and evaluated approaches for developing SQGs for non-polar organic chemicals and metals (Pavlou and Weston 1983; Bolton *et al.* 1985; Kadeg *et al.* 1986; Pavlou 1987; Di Toro *et al.* 1991; Hansen *et al.* 1996). This approach is based on the premise that the distribution of contaminants among different compartments in the sediment matrix (i.e., sediment solids and interstitial water) is predictable based on their physical and chemical properties, assuming that continuous equilibrium exchange between sediment and interstitial water occurs. This approach has been supported by the results of spiked sediment toxicity tests, which indicate that positive correlations exist between the biological effects observed and the concentrations of contaminants measured in the interstitial water (Di Toro *et al.* 1991; Berry *et al.* 1996; Hansen *et al.* 1996).

In the EqPA, water quality criteria developed for the protection of freshwater or marine organisms are used to support the SQGs derivation process. As such, the water quality criteria formulated for the protection of water column species are assumed to be applicable to benthic organisms (Di Toro *et al.* 1991). The SQGs are calculated using the appropriate water quality criteria (usually the final chronic values; FCVs) in conjunction with the sediment/water partition coefficients (Kp) for the specific contaminants. The calculation procedure for non-ionic organic contaminants is as follows:

$$\mathbf{SQG = Kp \cdot FCV}$$

where:

SQG = Sediment quality guideline (in µg/kg);
Kp = Partition coefficient for the chemical (in L/kg); and,
FCV = Final Chronic Value (in µg/L).

The Kp is a function of the partition coefficient for sediment organic carbon (K_{oc}) of the substance under consideration and the amount of organic carbon in the sediment under investigation (f_{oc}; where $Kp = K_{oc} \cdot f_{oc}$; Di Toro *et al.* 1991). The K_{oc} for non-ionic substances can be calculated from its octanol-water partition coefficient (K_{ow}).

The equilibrium partitioning values differ from the other empirically-derived SQGs because they are intended to identify chronic toxicity thresholds for sediment-associated contaminants when they occur alone in sediments. For this reason, EqP-based SQGs were not used to derive consensus-based SECs. Instead, the EqP-based

SQGs were used to evaluate the consensus-based SECs (i.e., in terms of their ability to identify PCB concentrations above which PCBs would cause or substantially contribute to sediment toxicity). Two sets of EqP-based SQGs were located for tPCBs. New York State derived SQGs separately for freshwater sediments and for marine sediments (NYSDEC 1994). In contrast, SQGs which applied more generally to both types of sediments (i.e., to freshwater and to marine sediments) were developed by Bolton *et al.* (1985).

4.0 Sediment Effect Concentrations (SECs) for PCBs

Evaluation of the toxic effects of PCBs is complicated for a number of reasons. First, this group of compounds consists of 209 different congeners, each of which may have unique toxicological characteristics (e.g., see Niimi and Oliver 1989; Safe 1990; MacDonald *et al.* 1997 for information on toxic equivalency factors for various PCB congeners). Second, much of the available dose-response data on the toxicity of sediment-associated PCBs (i.e., from controlled laboratory studies) have been generated on several formulated PCB mixtures, including Aroclor 1242 and Aroclor 1254. However, sediments from the Hudson River could contain more PCB congeners than would be represented by measurements of Aroclor 1242 and/or Aroclor 1254 concentrations alone (i.e., mono-, di-, and hepta-chlorobiphenyls may not be fully represented by these measurements). Therefore, field-collected sediments could be more or less toxic than would be indicated by, for example, Aroclor 1254 concentrations alone. In addition, the majority of field studies have reported concentrations of tPCBs in sediments; however, a variety of procedures have been used to calculate these concentrations, which may cause measurements of tPCBs to vary depending on which procedure has been used. For this reason, an effort was made to develop consensus-based SECs for a range of indicators of PCB contamination, including tPCBs, various formulated PCB mixtures (e.g., Aroclor 1254), and individual PCB congeners. The resultant consensus-based SECs were also evaluated to determine if they could be used to predict the presence and absence of toxicity in field-collected sediment samples. Furthermore, several other indicators of reliability were examined to evaluate the level of confidence that could be placed in the consensus-based SECs.

4.1 Development of Consensus-based SECs for PCBs

During the course of this investigation, published SQGs were located for tPCBs and four formulated PCB mixtures (including Aroclor 1016, Aroclor 1248, Aroclor 1254, and Aroclor 1260). In accordance with the procedures described in Section 2.0, the existing SQGs were sorted by media type (i.e., freshwater vs. marine and estuarine) and classified into three categories, including threshold effect concentrations, mid-range effect concentrations, and extreme effect concentrations (Swartz 1999).

The existing SQGs for freshwater sediments that satisfied all of the selection criteria are presented in *Table 4*. Most of the freshwater SQGs for tPCBs within each category were comparable, as defined by a panel of experts (i.e., SQGs are considered to be comparable if they agree within a factor of three; Lorenzato *et al.* 1991). Of the eight SQGs that were considered to represent TECs, five were within a factor of three of one another. Similarly, five of the six MEC-type SQGs were within a factor of three of each other. Two of the three EEC-type SQGs fell within a factor of three of one another.

The existing marine and estuarine SQGs for PCBs are presented in *Table 5*. Examination of the SQGs that were compiled indicates that the comparability of the marine and estuarine SQGs for tPCBs was somewhat lower than that for the freshwater SQGs. For example, three of the five TEC-type SQGs fell within a factor of three of one another. The MEC-type SQGs fell within two clusters, each of which had three comparable SQGs. The two EEC-type SQGs varied by slightly more than a factor of three. The consensus-based SECs that were calculated for tPCBs are, as follows (*Tables 4 and 5*):

SECs	Freshwater Sediments	Marine and Estuarine Sediments
TEC	0.035 mg/kg DW	0.048 mg/kg DW
MEC	0.34 mg/kg DW	0.47 mg/kg DW
EEC	1.6 mg/kg DW	1.7 mg/kg DW

Examination of the consensus-based SECs for tPCBs indicated that the freshwater SECs were similar to the marine and estuarine SECs (i.e., the respective TEC, MEC, and EEC values for freshwater and saltwater were not statistically different from one another, based on the results of modified Student's t-tests; $p < 0.05$). Therefore, the freshwater, estuarine, and marine SQGs were combined to facilitate the determination of consensus-based SECs that apply more generally to various types of waterbodies. From a scientific perspective, combining the SQGs for the various water types is justified because, in contrast to metals and certain pesticides, no information was located which indicated that salinity would substantially influence the bioavailability of PCBs. In addition, the range of acutely lethal or effective concentrations of PCBs for saltwater species (i.e., 1.0 to 16,000 µg/L; Moore and Walker 1991) fully encompasses the range reported for freshwater species (i.e., 2.0 to 2400 µg/L; USEPA 1980). Similarly, the range of species mean acute values for saltwater crustaceans (i.e., 10.5 to 12.5 µg/L) falls within the range that has been reported for freshwater crustaceans (i.e., 10 to 46 µg/L; USEPA 1980). That the lower end of the effects range is similar for saltwater and freshwater organisms, combined with the high degree of overlap of the effects range, suggests that there are no systematic differences in the sensitivities of freshwater and saltwater species to PCBs. Therefore, the SQGs for both media types were merged and used to calculate the following consensus-based SECs for tPCBs (*Table 6*):

Consensus-Based SECs	Freshwater, Estuarine, and Marine Sediments
TEC	0.040 mg/kg DW
MEC	0.40 mg/kg DW
EEC	1.7 mg/kg DW

Insufficient SQGs were contained in the merged data sets to derive consensus-based SECs for Aroclor 1016, Aroclor 1248, Aroclor 1254, and Aroclor 1260. No SQGs were located for any of the individual PCB congeners that could be present in bed sediments (see *Table 1*).

4.2 Evaluation of the Reliability of Consensus-based SECs for PCBs

4.2.1 Predictive Ability of the SECs in Freshwater Sediments

The predictive ability of the consensus-based SECs for tPCBs was evaluated using matching sediment chemistry and biological effects from a number of freshwater locations in the United States. Because the candidate data sets were generated for a variety of purposes, each data set was critically evaluated to assure the quality of the data used for evaluating the predictive ability of the SECs (see *Appendix 1)*. Data from the following locations were considered to be of acceptable quality for use in this evaluation:

- Grand Calumet River and Indiana Harbor Canal, IN (Hoke *et al.* 1993; Giesy *et al.* 1993);
- Indiana Harbor, IN (USEPA 1996);
- Lower Fox River and Green Bay, WI (Call *et al.* 1991);
- Potomac River, DC (Schlekat *et al.* 1994; Wade *et al.* 1994; Velinsky *et al.* 1994);
- Saginaw River, MI (USEPA 1996);
- Trinity River, TX (Dickson *et al.* 1989);
- Upper Mississippi River, MN to MO (USEPA 1996; USEPA 1997); and,
- Waukegan Harbor, IL (USEPA 1996; Kemble *et al.* 1998).

These studies provided 10 data sets with which to evaluate the predictive ability of the SECs for tPCBs (*Appendices 2 and 3*). Overall, the incidence of toxicity in these studies was 31% (i.e., 60 of the 195 samples evaluated in these studies were found to be significantly toxic to one or more sediment-dwelling species; *Table 11*). The following endpoints were used as indicators of toxicity in this assessment:

- amphipod, *Hyalella azteca*, survival;
- amphipod, *Hyalella azteca*, growth;
- mayfly, *Hexagenia limbata*, survival;
- midge, *Chironomus tentans* or *Chironomus riparius*, survival;
- midge, *Chironomus tentans* or *Chironomus riparius*, growth; and,
- daphnid, *Ceriodaphnia dubia*, survival.

The results of this evaluation indicate that the consensus-based SECs for PCBs in *Table 6* provide a reliable basis for evaluating the potential for toxicity in freshwater sediments. Specifically, the TEC for tPCBs (0.040 mg/kg DW) can be used to accurately predict the absence of toxicity in freshwater sediments. Seventy-six of the 90 samples with tPCB concentrations below the TEC were found to be not toxic (predictive ability = 84%; *Table 7*). The incidence of adverse biological effects was also low (i.e., 3 of 42 samples; 7%) when tPCB concentrations were greater than the TEC but below the MEC (0.40 mg/kg DW; *Table 8*). The incidence of toxicity to freshwater biota was much higher (i.e., 43 of 63 samples; 68%) at tPCB concentrations above the MEC (i.e., by any amount), indicating that this SEC effectively defines the middle of the effects range (*Table 9*). The EEC (1.7 mg/kg DW) provides an incrementally more accurate predictor of toxicity in freshwater sediments, as indicated by the higher incidence of toxicity at tPCB concentrations in excess of this value (i.e., 33 of 40 samples; predictive ability = 83%; *Table 10*). Therefore, the TEC, MEC, and EEC should be considered to provide predictive tools for assessing PCB-contaminated sediments in freshwater systems.

No matching sediment chemistry and toxicity data sets were located to assess the predictive ability of the consensus-based SECs in freshwater sediments from the Hudson River.

4.2.2 Predictive Ability of the SECs in Marine and Estuarine Sediments

The predictive ability of the marine and estuarine SECs was evaluated using a total of 15 data sets from various locations along the United States coast. Each of these data sets was evaluated prior to use to ensure that they met the data quality criteria that were established for this study (*Appendix 1*). The data sets that met the evaluation criteria included:

- Biscayne Bay, FL (Long 1997);
- Boston Harbor, MA (Long *et al.* 1998);
- Environmental Monitoring and Assessment Program (EMAP) Virginian Province (Long *et al.* 1998);
- Hudson-Raritan Estuary, NY (Rice *et al.* 1995);
- Hudson-Raritan Estuary/Newark Bay, NY/NJ (REMAP 1993; 1994; Long *et al.* 1998);
- Long Island Sound (Long *et al.* 1998);

- Naragansett Bay, RI (Munns *et al.* 1991);
- Puget Sound, WA (Pastorok and Becker 1990);
- San Diego Bay, CA (Long *et al.* 1998);
- San Francisco Bay, CA (Chapman *et al.* 1987);
- San Pedro Bay, CA (Long *et al.* 1998);
- South Carolina and Georgia (Long *et al.* 1998); and,
- Tampa Bay, FL (Long *et al.* 1998).

In these studies, sediment toxicity was assessed using the results of toxicity tests conducted on two amphipod species, including *Ampelisca abdita* and *Rhepoxynius abronius* (*Appendices 4 and 5*). Overall, the incidence of toxicity in these studies was 25% (i.e., 290 of the 1151 samples evaluated in these studies were found to be significantly toxic to amphipods; *Table 16*).

Evaluation of the consensus-based SECs using the matching sediment chemistry and biological effects data contained in the independent data set indicates that SECs provide reliable tools for assessing the quality of marine and estuarine sediments. Of the 599 sediment samples which had tPCB concentrations below the TEC (0.040 mg/kg DW), only 72 of these samples were found to be toxic based on the results of the acute amphipod toxicity tests (predictive ability = 88%; *Table 12*). By comparison, 33% (128 of 391) of the sediment samples with tPCB concentrations above the TEC but below the MEC were found to be toxic (*Table 13*). A majority of the sediment samples with tPCB concentrations above the MEC (0.40 mg/kg DW; i.e., by any amount) were found to be toxic (i.e., 90 of 161 sediment samples; predictive ability = 56%; *Table 14*). The incidence of toxicity was higher when tPCB concentrations in sediment samples exceeded the EEC (86%; 24 of 28 samples; *Table 13*). Therefore, the TEC, MEC, and EEC should be considered to provide reliable tools for assessing marine and estuarine sediments that are contaminated with PCBs (i.e., all of the SECs met the evaluation criteria set forth in this study; see Section 2).

Using the matching sediment chemistry and biological effects data that was assembled during this study, it is also possible to evaluate the predictive ability of the consensus-based SECs in Hudson River (including Newark Bay and Long Island Sound) sediments. Only 15 of the 84 sediment samples with tPCB concentrations below the TEC were found to be toxic to amphipods, which represents a predictive ability of 82%. By comparison, the incidence of toxicity was 61% (i.e., 47 of 77 samples were toxic) in sediments from this area with PCB concentrations above the MEC (i.e., by any amount). All of the samples from this area with tPCB concentrations above the EEC were toxic to amphipods (predictive ability = 100%; 15 of 15 samples were toxic). Therefore, the SECs derived in this study provide a reliable basis for predicting the presence and absence of toxicity in sediments collected in and nearby the Hudson River estuary.

4.2.3 Other Measures of the Reliability of the Consensus-Based SECs

Sediment-associated contaminants often occur in complex chemical mixtures. For this reason, it has been argued that individual contaminants can be associated with a toxic response (i.e., sediment toxicity and the contaminant concentration may be correlated) without actually causing or substantially contributing to the observed toxicity. For this reason, the SECs derived in this report were further evaluated to determine if tPCBs are likely to cause or substantially contribute to sediment toxicity at concentrations below the TEC, above the MEC, and above the EEC. Specifically, the SECs were further evaluated by:

- determining the degree of concordance between PCB concentrations and the incidence of adverse biological effects;
- determining if the SECs are comparable to the results of spiked sediment toxicity tests; and,
- determining if the SECs are comparable to the chronic effects thresholds that have been derived using the equilibrium partitioning approach.

The matching sediment chemistry and biological effects data assembled to support evaluations of the predictive ability of the SECs can also be used to determine relationships between contaminant concentrations and sediment toxicity. Specifically, the three consensus-based SECs developed in this report were used to delineate four ranges of tPCB concentrations (i.e., <TEC, TEC-MEC, MEC-EEC,

and >EEC). The incidence of toxicity within each of these ranges of tPCB concentrations was subsequently determined. The results of this evaluation indicate that the incidence of toxicity in freshwater sediments generally increases with increasing concentrations of tPCBs (i.e., the ranges of concentrations defined by the consensus-based SECs; *Table 11)*. This evaluation also shows that the incidence of toxicity in marine and estuarine sediments increases consistently and markedly with increasing tPCB concentrations (*Table 16*). This high degree of concordance between tPCB concentrations and sediment toxicity indicates that PCBs are strongly associated with toxicity at concentrations above the MEC and EEC. Overall (i.e., combining the freshwater, estuarine, and marine data), the incidence of toxicity within the four ranges of PCB concentrations is 12.5%, 30.3%, 48.7%, and 83.8%, which further confirms that PCBs are strongly associated with sediment toxicity.

Dose-response data for sediment-dwelling organisms from controlled laboratory studies are considered to provide a basis for identifying the concentrations of sediment-associated contaminants that would be sufficient to cause sediment toxicity. While no information was located on the toxicity of tPCBs *per se*, data from five spiked sediment toxicity tests which utilized formulated mixtures of PCBs provide relevant information for evaluating the SECs derived in this report (McLeese and Metcalfe 1980;. Polikarpov *et al.* 1980; Plesha *et al.* 1988; Swartz *et al.* 1988; DiPinto *et al.* 1993). The results of these studies indicate that PCBs are acutely toxic to sediment-dwelling organisms, with a median lethal concentration of 8.8 mg/kg DW reported for amphipods (*Rhepoxynius abronius*) when PCBs (Aroclor 1254) alone were tested (Swartz *et al.* 1988). USEPA (1980) reported a species acute to chronic ratio of 11 for the freshwater amphipod, *Gammarus pseudolimnaeus*, based on the results of toxicity tests conducted with waterborne PCBs. This acute to chronic ratio is similar to that observed in other sediment-dwelling species tested with other contaminants (C. Ingersoll. Personal communication. U.S. Geological Survey. Columbia, MO). Application of this empirically-derived acute-to-chronic ratio to the 10-d LC_{50} reported by Swartz *et al.* (1988) suggests that PCBs, when they are present alone in sediments, are likely to cause chronic toxicity to amphipods at concentrations as low as 0.8 mg/kg DW.

Spiked sediment toxicity tests, conducted under controlled laboratory conditions, can be used to determine lethal or effective concentrations of a wide range of chemical substances. However, such response thresholds could underestimate the ecological effects that occur in the field due to the presence of contaminant mixtures in sediments (Swartz 1999). As such, sediments containing mixtures of contaminants could be more toxic than sediments that contain PCBs alone. To evaluate the possible interactive effects of PCBs when they occur with other contaminants, several investigators have conducted spiked sediment toxicity tests with mixtures of contaminants. The results of these studies indicate that PCB-contaminated sediments are more toxic when they contain additional contaminants. For example, Plesha *et al.* (1988) reported acute toxicity to amphipods (*Rhepoxynius abronius*) in sediments which contained Aroclor 1254 (at 1 mg/kg DW) and several chlorinated hydrocarbons. Similarly, sediments that contained 2.1 mg/kg DW of both Aroclor 1254 and fluoranthene were found to be acutely toxic to amphipods (*Rhepoxynius abronius*; Swartz *et al.* 1988). These latter data indicate that PCB-contaminated sediments are more toxic when they also contain other commonly occurring contaminants (such as PAHs; Swartz *et al.* 1988). Considering the relationship between the acute LC_{50}s for PCBs (i.e., 8.8 mg/kg DW) and the concentration of PCBs in acutely toxic sediments that contained both PCBs and fluoranthene (i.e., 2.1 mg/kg DW, giving a ratio of 4.2), it is likely that PCBs would contribute to sediment toxicity at concentrations below the estimated chronic toxicity threshold (i.e., 0.8 mg/kg DW), when they occur in mixtures with other contaminants.

The equilibrium partitioning approach provides a theoretical basis for identifying chronic toxicity thresholds for sediment-associated PCBs. Using this approach, the NYSDEC (1994) has developed chronic sediment quality guidelines for PCBs that are intended to protect freshwater and saltwater benthic aquatic life. These guidelines indicate that the thresholds for chronic toxicity in freshwater and saltwater sediments are 0.19 and 0.41 mg/kg DW at 1% OC, respectively. An EqP-based SQG of 0.07 mg/kg DW at 1% OC has also been derived to support the evaluation of sediment quality conditions at freshwater locations in the United States (Bolton *et al.* 1985). Together, these EqP-based SQGs suggest that chronic effects on sediment-dwelling organisms are likely to occur at tPCB concentrations in excess of 0.07 to 0.41 mg/kg DW. The lowest EqP-based SQG is comparable to the TEC derived in this report (0.04 mg/kg DW), while the other two EqP-based SQGs are comparable to the MEC (0.40 mg/kg DW).

4.2.4 Overall Reliability of the Consensus-Based SECs

Several types of information were used to determine the degree of confidence that can be placed in the consensus-based SECs that were derived in this report. The results of these evaluations indicate that:

- dose-response data from spiked sediment toxicity tests indicated that PCBs are acutely toxic to sediment-dwelling organisms (hence, it is reasonable to derive effects-based SECs);
- the consensus-based SECs that were derived independently for freshwater sediments and for marine and estuarine sediments were found to be similar (i.e., the respective TECs, MECs, and EECs were not statistically different from one another);
- the TEC, MEC, and EEC provided accurate tools for predicting the presence and absence of toxicity (i.e., consistent with their narrative intents) in freshwater, estuarine, and marine sediments in the United States;
- the TEC, MEC, and EEC provided accurate tools for predicting the presence and absence of toxicity (i.e., consistent with their narrative intents) in sediments from the Hudson River estuary;
- the incidence of toxicity increased incrementally with increasing concentrations of tPCBs in freshwater, estuarine, and marine sediments;
- both the MEC (0.4 mg/kg DW) and EEC (1.7 mg/kg DW) were similar (i.e., within a factor of three) to the chronic effects threshold (0.8 mg/kg DW) that was estimated from the results of acute toxicity tests conducted with PCB-spiked sediments and an empirically-derived acute-to-chronic ratio;
- the MEC and EEC are higher than the estimated chronic effects threshold for PCBs in sediments that contain mixtures of other contaminants (i.e., PCBs could substantially contribute to sediment toxicity at concentrations as low as 0.2 mg/kg DW);

- the TEC is similar to the lowest chronic effects threshold (0.07 mg/kg DW) that has been determined using the equilibrium partitioning approach; and,
- the MEC and EEC are similar to or higher than all of the chronic effects thresholds (0.07 to 0.41 mg/kg DW) that have been determined using the equilibrium partitioning approach.

When considered individually, each of these indicators of reliability increases the confidence that can be placed in the SECs that were derived in this report. However, when taken together, they provide a weight-of-evidence for concluding that sediment-associated PCBs are likely to cause or substantially contribute to adverse biological effects at concentrations in excess of the MEC or the EEC. The predictive ability of the SECs, as well as the concordance between PCB concentrations and the incidence of sediment toxicity, indicates that PCBs are strongly associated with, and are likely substantially contributing to, sediment toxicity in field collected sediments. Importantly, this information also demonstrates that the SECs can be used to accurately predict the presence and absence of sediment toxicity in the Hudson River estuary. However, these field-collected data alone do not necessarily indicate that PCBs are actually causing toxicity in the field-collected sediments at concentrations above the MEC and EEC.

Information from spiked sediment toxicity tests and equilibrium partitioning models provides a means of determining the concentrations of PCBs that cause or are likely to cause sediment toxicity. That the MEC derived in this report is similar to the chronic effects thresholds that have been determined using the results of spiked sediment toxicity tests and the equilibrium partitioning approach indicates that PCBs are likely to cause toxicity when they occur in sediments at concentrations above the MEC. This causal linkage between PCBs concentrations and sediment toxicity is even clearer for the EEC, which is higher than all of the chronic toxicity thresholds that were established using dose-response data and equilibrium partitioning models. The TEC fell below all of the chronic toxicity thresholds and, hence, represents the concentration of sediment-associated PCBs below which PCBs are unlikely to substantially contribute to sediment toxicity. The level of agreement between the SECs that were developed independently for the two media types (i.e., freshwater sediments vs. marine and estuarine sediments) provides additional confidence that the SECs correctly identified threshold (TEC), mid-range (MEC), and extreme (EEC) effect concentrations for sediment-associated PCBs.

When taken together, the results of the foregoing evaluations of SEC reliability indicate that PCBs are likely to cause or substantially contribute to sediment toxicity at concentrations above the MEC and EEC. Furthermore, PCBs are unlikely to cause or substantially contribute to sediment toxicity at concentrations below the TEC. Therefore, the SECs that were developed in this report provide reliable tools for assessing sediment quality conditions in freshwater, estuarine, and marine systems.

5.0 Summary and Conclusions

The existing SQGs for tPCBs, various formulated PCB products (i.e., Aroclors), and individual PCB congeners that have been promulgated using a number of different approaches were collected and reviewed. The published SQGs that met the selection criteria that were established for this report were compiled and grouped according to media type (i.e., freshwater vs. marine and estuarine) and narrative intent (i.e., TECs, MECs, and EECs). Subsequently, consensus-based SECs were determined by calculating the geometric mean of the SQGs that fell within each category. Consensus-based SECs were developed for tPCBs only, due to the limited number of published SQGs that were available for formulated PCBs and individual PCB congeners. Initially, three consensus-based SECs were derived for assessing the effects of tPCBs in freshwater sediments, including a threshold effect concentration (TEC; below which adverse effects are unlikely to be observed), a mid-range effect concentration (MEC; above which adverse effects are frequently observed), and an extreme effect concentration (EEC; above which adverse effects are usually or always observed). Likewise, three consensus-based SECs for tPCBs were initially developed for assessing marine and estuarine sediments.

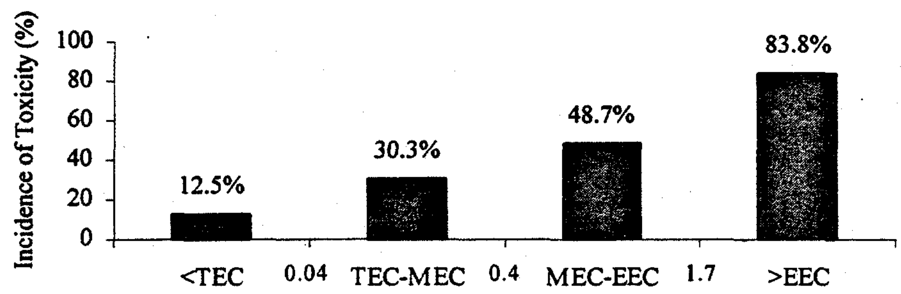
Examination of the consensus-based SECs for tPCBs indicated that the respective TECs, MECs, and EECs for freshwater and saltwater sediments were similar. Subsequent, statistical evaluation of the consensus-based SECs confirmed that the respective TECs, MECs, and EECs were comparable. As this finding was consistent with the results of other toxicological investigations (i.e., toxicity texts with water column species), the SQGs that fell within each category were combined and used to derive more generally applicable consensus-based SECs (i.e., SECs that could be used for assessing the quality of freshwater, estuarine, and marine sediments).

The predictive ability of the SECs (i.e., their ability to correctly classify sediment samples as toxic or non-toxic) was evaluated using matching sediment chemistry and biological effects data from various locations throughout the United States. In this evaluation, the SECs were considered to provide reliable tools for assessing sediment quality conditions if the incidence of toxicity was <25% below the TEC, >50% above the MEC, and >75% above the EEC. For freshwater sediments, data were assembled on a total of 195 sediment samples from eight locations to evaluate the predictive ability of the consensus-based SECs. The results of this evaluation indicated that the TEC (0.040 mg/kg DW) can be used to accurately predict the absence of sediment toxicity (i.e., predictive ability = 84%). Similarly, the EEC (1.7 mg/kg DW) was shown to be a reliable tool for predicting sediment toxicity (i.e., predictive ability = 83%). The incidence of effects was intermediate at tPCB concentrations above the consensus-based MEC (i.e., 68%), which is consistent with its narrative intent. Therefore, the SECs were found to provide a reliable basis for classifying freshwater sediment samples.

In marine and estuarine systems, the consensus-based SECs for tPCBs also provided effective tools for predicting the presence and absence of sediment toxicity. Specifically, the incidence of toxicity to sediment-dwelling organisms was found to be low at tPCB concentrations below the TEC (i.e., 12%; predictive ability = 88%). The predictive ability of the EEC (i.e., 86%) was similar to that of the TEC. The incidence of sediment toxicity was intermediate at tPCB concentrations above the MEC (i.e., 56%). Therefore, the SECs also provided an accurate basis for classifying marine and estuarine sediment samples including those from the vicinity of the Hudson River estuary.

The results of an evaluation conducted using the independent data sets indicate that there is a high degree of concordance between tPCB concentrations and the incidence of toxicity in freshwater, estuarine, and marine sediments. More specifically, the incidence of toxicity increased incrementally among the four ranges of tPCB concentrations defined by the SECs, both in freshwater sediments and in marine and estuarine sediments. The severity of effects also increased with increasing PCB concentrations, as indicated by mean survival within each range of PCB concentrations. When the freshwater, estuarine, and marine data were merged, a clear pattern of increasing toxicity with increasing PCB concentration was evident (*Figure 1*). Together, these evaluations of predictive ability and degree of concordance between the incidence of effects and PCB concentrations demonstrate that adverse biological effects on sediment-dwelling organisms are likely to occur when the concentrations of tPCBs exceed the MEC and EEC in freshwater, estuarine,

Figure 1. Incidence of toxicity in freshwater, estuarine, and marine sediments within four ranges of PCB concentrations.



and marine sediments. However, such effects are unlikely to occur at tPCB concentrations below the TEC.

Information from two additional, independent procedures was used to determine if the SECs for tPCBs represent concentrations that are likely to cause or substantially contribute to adverse effects on sediment-dwelling organisms, including spiked sediment toxicity testing and equilibrium partitioning modeling. The results of spiked sediment toxicity tests show that PCBs, when they occur alone, are acutely toxic to amphipods at concentrations as low as 8.8 mg/kg DW (Swartz *et al.* 1988). Application of an empirically-derived acute-to-chronic ratio for amphipods (USEPA 1980) to this median lethal concentration suggests PCBs are likely to cause chronic toxicity at concentrations above 0.8 mg/kg DW. The results of two related studies indicate that sediments are more toxic when they contain PCBs in mixtures with other contaminants than they are when they contain PCBs alone (Swartz *et al.* 1988; Plesha *et al.* 1988). Therefore, PCBs are likely to substantially contribute to sediment toxicity at concentrations below the chronic toxicity thresholds determined for sediments that contain PCBs alone.

Information from equilibrium partitioning models also provides a basis for determining the concentrations of PCBs that are likely to cause sediment toxicity. The available EqP-based SQGs indicate that PCBs are likely to cause adverse biological effects at concentrations in the range of 0.07 to 0.41 mg/kg DW (Bolton *et al.* 1985; NYSDEC 1994). Together, the information from spiked sediment toxicity tests and equilibrium partitioning models indicates that PCBs are likely to cause adverse effects on sediment-dwelling organisms at concentrations that are similar to or above the MEC and the EEC derived in this report. When considered together with the results of the predictive ability evaluation, it is apparent that PCBs are likely to cause or substantially contribute to toxicity when they occur in sediments at concentrations above the MEC and the EEC. Additionally, PCBs are unlikely to contribute to sediment toxicity at concentrations below the TEC.

Sufficient SQGs were available to support the determination of consensus-based SECs for tPCB only. As PCBs always occur in field-collected sediments as complex mixtures of the individual congeners, commonly in association with other contaminants, adverse effects on sediment-dwelling organisms are likely to result from the cumulative effects of these complex mixtures. Therefore, SECs for individual PCB congeners that are developed through experimental determination of toxicological effects (i.e., spiked sediment bioassays) or with equilibrium partitioning models will likely under-estimate the ecological effects that occur in the field. Similarly, SECs for individual PCB congeners that are developed using data from field studies could over-estimate the effects that are actually caused by those substances, if they were present alone in sediments.

Swartz (1999) coined the term, the 'mixture paradox,' to describe the dilemma associated with assessing the potential toxicity of mixtures of PAHs using SECs for individual substances (as described above). The same term can also be applied to the challenge of establishing SECs for PCBs. Swartz (1999) resolved this dilemma by deriving consensus-based SECs for mixtures of PAHs (i.e., total PAHs). Applying similar logic to the assessment of PCB-contaminated sediments, it is reasonable to rely on SECs that can be applied to mixtures of PCBs (i.e., tPCBs).

The SECs that were developed in this report can be used to identify sites of concern, to determine the spatial extent of sediment injury, and support the design of monitoring programs in the Hudson River. However, these SECs do not consider the potential for bioaccumulation of PCBs in aquatic organisms nor the associated hazards posed by PCBs to the species that consume aquatic organisms (i.e., wildlife and humans).

6.0 References

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Tables 1 - 16

Table 1. Empirical formulae and number of congeners for each class of PCBs (Moore and Walker 1991).

PCB	Empirical Formula	Number of Possible Congeners
Monochlorobiphenyl	$C_{12}H_9Cl$	3
Dichlorobiphenyl	$C_{12}H_8Cl_2$	12
Trichlorobiphenyl	$C_{12}H_7Cl_3$	24
Tetrachlorobiphenyl	$C_{12}H_6Cl_4$	42
Pentachlorobiphenyl	$C_{12}H_5Cl_5$	46
Hexachlorobiphenyl	$C_{12}H_4Cl_6$	42
Heptachlorobiphenyl	$C_{12}H_3Cl_7$	24
Octachlorobiphenyl	$C_{12}H_2Cl_8$	12
Nonachlorobiphenyl	$C_{12}HCl_9$	3
Decachlorobiphenyl	$C_{12}Cl_{10}$	1

Table 2. Approximate molecular composition of Aroclor mixtures (Moore and Walker 1991).

PCB	Percent Chlorine (by weight) of Aroclor Formulations					
	1221	1232	1242	1248	1254	1260
Biphenyl	11.0	6.0	-	-	-	-
Monochlorobiphenyl	51.0	26.0	1.0	-	-	-
Dichlorobiphenyl	32.0	29.0	17.0	1.0	-	-
Trichlorobiphenyl	4.0	24.0	40.0	23.0	-	-
Tetrachlorobiphenyl	2.0	15.0	32.0	50.0	16.0	-
Pentachlorobiphenyl	0.5	0.5	10.0	20.0	60.0	12.0
Hexachlorobiphenyl	-	-	0.5	1.0	23.0	46.0
Heptachlorobiphenyl	-	-	-	-	1.0	36.0
Octachlorobiphenyl	-	-	-	-	-	6.0
Nonachlorobiphenyl	-	-	-	-	-	-
Decachlorobiphenyl	-	-	-	-	-	-

Table 3. Descriptions of the SQGs for PCBs that have been developed using various approaches.

Type of SEC	Acronym	Approach	Description	Reference
Lowest Effect Level	LEL	SLCA	Sediments are considered to be clean to marginally polluted. No effects on the majority of sediment-dwelling organisms are expected below this concentration.	Persaud *et al.* 1993
Severe Effect Level	SEL	SLCA	Sediments are considered to be heavily polluted. Adverse effects on the majority of sediment-dwelling organisms are expected when this concentration is exceeded.	Persaud *et al.* 1993
Threshold Effect Level	TEL	WEA	Represents the concentration below which adverse effects are expected to occur only rarely.	Smith *et al.* 1996
Probable Effects Level	PEL	WEA	Represents the concentration above which adverse effects are expected to occur frequently.	Smith *et al.* 1996
Sediment Effect Concentration	SEC	WEA	Represents the concentration that would be sufficient to adversely affect sediment-dwelling organisms.	MacDonald 1997
Effects Range - Low	ERL	WEA	Represents the chemical concentration below which adverse effects would be rarely observed.	Long and Morgan 1991
Effects Range - Median	ERM	WEA	Represents the chemical concentration above which adverse effects would frequently occur.	Long and Morgan 1991
Threshold Effect Level for *Hyalella azteca* in 28-day tests	TEL-HA28	WEA	Represents the concentration below which adverse effects on the amphipod, *Hyalella azteca*, are expected to occur only rarely (in 28-day tests).	Ingersoll *et al.* 1996; USEPA 1996
Probable Effects Level for *Hyalella azteca* in 28-day tests	PEL-HA28	WEA	Represents the concentration above which adverse effects on the amphipod, *Hyalella azteca*, are expected to occur frequently (in 28-day tests).	Ingersoll *et al.* 1996; USEPA 1996

Table 3. Descriptions of the SQGs for PCBs that have been developed using various approaches.

Type of SEC	Acronym	Approach	Description	Reference
Effects Range - Low for *Hyalella azteca* in 28-day tests	ERL-HA28	WEA	Represents the chemical concentration below which adverse effects on the amphipod, *Hyalella azteca*, would be rarely observed in 28-day tests.	Ingersoll *et al.* 1996; USEPA 1996
Effects Range - Median for *Hyalella azteca* in 28-day tests	ERM-HA28	WEA	Represents the chemical concentration above which adverse effects would frequently occur.	Ingersoll *et al.* 1996; USEPA 1996
No Effect Concentration for *Hyalella azteca* in 28-day tests.	NEC	AET	Represents the chemical concentration above which statistically significant effects on the amphipod, *Hyalella azteca*, are always observed in 28-day tests.	Ingersoll *et al.* 1996; USEPA 1996
Minimal Effect Threshold	MET	SLCA	Sediments are considered to be clean to marginally polluted. No effects on the majority of sediment-dwelling organisms are expected below this concentration.	EC and MENVIQ 1992
Toxic Effect Threshold	TET	SLCA	Sediments are considered to be heavily polluted. Adverse effects on sediment-dwelling organisms are expected when this concentration is exceeded.	EC and MENVIQ 1992
Screening Level Concentration	SLC	SLCA	Represents the concentration of the contaminant that can be tolerated by approximately 95% of benthic infaunal species.	Neff *et al.* 1986
Low Range Apparent Effects Threshold	LAET-C; LAET-PS	AETA	Represents the chemical concentration below which adverse effects are not expected on the most sensitive species tested and/or endpoint measured in Puget Sound (PS) or California (Ç).	Tetra Tech Inc. 1986; Becker *et al.* 1990
Mid-Range Apparent Effects Threshold	MAET-C; MAET-PS	AETA	Represents the chemical concentration above which adverse effects are always expected to occur on at least two of the species tested and/or endpoints measured in Puget Sound (PS) or California (C).	Tetra Tech Inc. 1986; Becker *et al.* 1990

Table 3. Descriptions of the SQGs for PCBs that have been developed using various approaches.

Type of SEC	Acronym	Approach	Description	Reference
High Range Apparent Effects Threshold	HAET-C; HAET-PC	AETA	Represents the chemical concentration above which adverse effects are always expected on all of the species tested and/or endpoints measured in Puget Sound (PS) or California (C).	Tetra Tech Inc. 1986; Becker *et al.* 1990
Low Range Apparent Effects Threshold	LAET	AETA	Represents the chemical concentration below which adverse effects are not expected on the most sensitive species tested and/or endpoint measured in Washington.	Cubbage *et al.* 1997
Probable Apparent Effects Threshold	PAET	AETA	Represents a chemical concentration which is intended to be lower than the Washington HAET and, thereby, reduce the potential for incorrectly classifying sites as unimpacted.	Cubbage *et al.* 1997
High Range Apparent Effects Threshold	HAET	AETA	Represents the chemical concentration above which adverse effects are always expected on all of the species tested and/or endpoints measured in Washington.	Cubbage *et al.* 1997
Chronic Equilibrium Partitioning Threshold	EqP-C	EqPA	Represents the concentration in sediments that is predicted to be associated with concentrations in the interstitial water below the chronic water quality critierion. Adverse effects on sediment-dwelling organisms are predicted to occur only rarely below this concentration.	Bolton *et al.* 1985; Zarba 1992

See Section 3.0 for descriptions of the various approaches to SQG development.

Table 4. Consensus-based sediment effect concentrations of PCBs for freshwater ecosystems.

Category of SEC	Total PCBs (mg/kg DW)	Aroclor 1016 (mg/kg DW)	Aroclor 1248 (mg/kg DW)	Aroclor 1254 (mg/kg DW)	Aroclor 1260 (mg/kg DW)	Reference
Threshold Effect Concentrations						
SLC	0.003					Neff *et al.* 1986
LAET (Microtox)	0.021					Cubbage *et al.* 1997
TEL-HA28	0.032					Ingersoll *et al.* 1996
TEL	0.034					Smith *et al.* 1996
ERL	0.050					Long & Morgan 1991
ERL-HA28	0.050					Ingersoll *et al.* 1996
LEL	0.070	0.007	0.030	0.060	0.005	Persuad *et al.* 1993
MET	0.200	0.100	0.050	0.060	0.005	EC & MENVIQ 1992
Consensus-based TECs	***0.035***	***0.026***	***0.039***	***0.060***	***0.005***	
Standard Deviation	***0.061***	***0.066***	***0.014***	***0.000***	***0.000***	
Mid-Range Effect Concentrations						
NEC	0.190					Ingersoll *et al.* 1996
PEL-HA28	0.240					Ingersoll *et al.* 1996
PEL	0.277					Smith *et al.* 1996
ERM	0.400					Long & Morgan 1991
PAET (amphipod)	0.450					Cubbage *et al.* 1997
ERM-HA28	0.730					Ingersoll *et al.* 1996
Consensus-based MECs	***0.34***					
Standard Deviation	***0.20***					
Extreme Effect Concentrations						
HAET (amphipod)	0.820					Cubbage *et al.* 1997
TET	1.000	0.400	0.600	0.300	0.200	EC & MENVIQ 1992
SEL	5.300	0.530	1.500	0.340	0.240	Persaud *et al.* 1993
Consensus-based EECs	***1.6***	***0.460***	***0.949***	***0.319***	***0.219***	
Standard Deviation	***2.5***	***0.092***	***0.636***	***0.028***	***0.028***	

Table 5. Consensus-based sediment effect concentrations of PCBs for marine and estuarine ecosystems.

Category of SEC	Total PCBs (mg/kg DW)	Aroclor 1016 (mg/kg DW)	Aroclor 1248 (mg/kg DW)	Aroclor 1254 (mg/kg DW)	Aroclor 1260 (mg/kg DW)	Reference
Threshold Effect Concentrations						
TEL	0.022					MacDonald *et al.* 1996
ERL	0.023					Long *et al.* 1995
SLC	0.043					Neff *et al.* 1987
LAET-C (bivalve)	0.088					Becker *et al.* 1990
LAET-PS (Microtox)	0.130					PTI 1988
Consensus-based TECs	***0.048***					
Standard Deviation	***0.047***					
Mid-Range Effect Concentrations						
ERM	0.180					Long *et al.* 1995
PEL	0.189					MacDonald *et al.* 1996
MAET-C (benthic)	0.360					Becker *et al.* 1990
SEC	0.835			0.400		MacDonald 1997
MAET-PS (benthic)	1.000					PTI 1988
MAET-PS (oyster)	1.100					PTI 1988
Consensus-based MECs	***0.47***			***0.400***		
Standard Deviation	***0.42***			***N/A***		
Extreme Effect Concentrations						
HAET-C (amphipod)	0.960					Becker *et al.* 1990
HAET-PS (amphipod)	3.100					PTI 1988
Consensus-based EECs	***1.7***					
Standard Deviation	***1.5***					

Table 6. Consensus-based sediment effect concentrations of PCBs.

Category of SEC	Total PCBs (mg/kg DW)	Reference
Threshold Effect Concentrations		
SLC	0.003	Neff *et al.* 1986
LAET (Microtox)	0.021	Cubbage *et al.* 1997
TEL	0.022	MacDonald *et al.* 1996
ERL	0.023	Long et al. 1995
TEL-HA28	0.032	Ingersoll *et al.* 1996
TEL	0.034	Smith *et al.* 1996
SLC	0.043	Neff *et al.* 1987
ERL	0.050	Long & Morgan 1991
ERL-HA28	0.050	Ingersoll *et al.* 1996
LEL	0.070	Persuad *et al.* 1993
LAET-C (bivalve)	0.088	Becker *et al.* 1990
LAET-PS (Microtox)	0.130	PTI 1988
MET	0.200	EC & MENVIQ 1992
Consensus-based TECs	***0.040***	
Standard Deviation	***0.054***	
Mid-Range Effect Concentrations		
ERM	0.180	Long et al. 1995
PEL	0.189	MacDonald *et al.* 1996
NEC	0.190	Ingersoll *et al.* 1996
PEL-HA28	0.240	Ingersoll *et al.* 1996
PEL	0.277	Smith *et al.* 1996
MAET-C (benthic)	0.360	Becker *et al.* 1990
ERM	0.400	Long & Morgan 1991
PAET (amphipod)	0.450	Cubbage *et al.* 1997
ERM-HA28	0.730	Ingersoll *et al.* 1996
SEC	0.835	MacDonald 1997
MAET-PS (benthic)	1.000	PTI 1988
MAET-PS (oyster)	1.100	PTI 1988
Consensus-based MECs	***0.40***	
Standard Deviation	***0.33***	
Extreme Effect Concentrations		
HAET-C (amphipod)	0.820	Becker *et al.* 1990
HAET (amphipod)	0.960	Cubbage *et al.* 1997
TET	1.000	EC & MENVIQ 1992
HAET-PS (amphipod)	3.100	PTI 1988
SEL	5.300	Persaud *et al.* 1993
Consensus-based EECs	***1.7***	
Standard Deviation	***2.0***	

Table 7. **Evaluation of the predictive ability of the TEC for total PCBs in freshwater sediments.**

Sampling Location	Number of Samples Collected	Number of Samples Predicted to be Not Toxic using the TEC	Number of Samples Correctly Predicted to be Not Toxic	Predictive Ability of the TEC (%)	Reference
Grand Calumet River and Indiana Harbor, IN	10	0	0	NA	Hoke *et al.* 1993; Giesy *et al.* 1993
Indiana Harbor, IN	3	0	0	NA	USEPA 1996
Lower Fox River and Green Bay, WI	13	0	0	NA	Call *et al.* 1991
Potomac River, DC	15	0	0	NA	Scklekat *et al.* 1994; Wade *et al.* 1994; Velinsky *et al.* 1994
Saginaw River, MI	9	0	0	NA	USEPA 1996
Trinity River, TX	72	66	53	80.3	Dickson *et al.* 1989
Upper Mississippi River, MN to MO	4	1	1	100.0	USEPA 1996
Upper Mississippi River, MN to MO	47	23	22	95.7	USEPA 1997
Waukegan Harbor, IL	19	0	0	NA	Kemble *et al.* 1998
Waukegan Harbor, IL	3	0	0	NA	USEPA 1996
All Locations	**195**	**90**	**76**	**84.4**	

Table 8. Incidence of toxicity in freshwater sediments at total PCB concentrations above the TEC and below the MEC.

Sampling Location	Number of Samples Collected	Number of Samples with tPCBs > TEC and < MEC	Number of Samples Observed to be Toxic	Incidence of Toxicity (%)	Reference
Grand Calumet River and Indiana Harbor, IN	10	0	0	NA	Hoke *et al.* 1993; Giesy *et al.* 1993
Indiana Harbor, IN	3	0	0	NA	USEPA 1996
Lower Fox River and Green Bay, WI	13	2	0	0.0	Call *et al.* 1991
Potomac River, DC	15	4	1	25.0	Scklekat *et al.* 1994; Wade *et al.* 1994; Velinsky *et al.* 1994
Saginaw River, MI	9	5	0	0.0	USEPA 1996
Trinity River, TX	72	3	1	33.3	Dickson *et al.* 1989
Upper Mississippi River, MN to MO	4	3	0	0.0	USEPA 1996
Upper Mississippi River, MN to MO	47	24	1	4.2	USEPA 1997
Waukegan Harbor, IL	19	0	0	NA	Kemble *et al.* 1998
Waukegan Harbor, IL	3	1	0	0.0	USEPA 1996
All Locations	**195**	**42**	**3**	**7.1**	

Table 9. Evaluation of the predictive ability of the MEC for total PCBs in freshwater sediments.

Sampling Location	Number of Samples Collected	Number of Samples Predicted to be Toxic using the MEC	Number of Samples Correctly Predicted to be Toxic	Predictive Ability of the MEC (%)	Reference
Grand Calumet River and Indiana Harbor, IN	10	10	10	100.0	Hoke *et al.* 1993; Giesy *et al.* 1993
Indiana Harbor, IN	3	3	3	100.0	USEPA 1996
Lower Fox River and Green Bay, WI	13	11	2	18.2	Call *et al.* 1991
Potomac River, DC	15	11	5	45.5	Scklekat et al. 1994; Wade et al.1994; Velinsky et al. 1994
Saginaw River, MI	9	4	2	50.0	USEPA 1996
Trinity River, TX	72	3	1	33.3	Dickson *et al.* 1989
Upper Mississippi River, MN to MO	4	0	0	NA	USEPA 1996
Upper Mississippi River, MN to MO	47	0	0	NA	USEPA 1997
Waukegan Harbor, IL	19	19	18	94.7	Kemble *et al.* 1998
Waukegan Harbor, IL	3	2	2	100.0	USEPA 1996
All Locations	**195**	**63**	**43**	**68.3**	

Table 10. Evaluation of the predictive ability of the EEC for total PCBs in freshwater sediments.

Sampling Location	Number of Samples Collected	Number of Samples Predicted to be Toxic using the EEC	Number of Samples Correctly Predicted to be Toxic	Predictive Ability of the EEC (%)	Reference
Grand Calumet River and Indiana Harbor, IN	10	7	7	100.0	Hoke *et al.* 1993; Giesy *et al.* 1993
Indiana Harbor, IN	3	3	3	100.0	USEPA 1996
Lower Fox River and Green Bay, WI	13	7	1	14.3	Call *et al.* 1991
Potomac River, DC	15	1	1	100.0	Scklekat et al. 1994; Wade et al.1994; Velinsky et al. 1994
Saginaw River, MI	9	2	2	100.0	USEPA 1996
Trinity River, TX	72	1	1	100.0	Dickson *et al.* 1989
Upper Mississippi River, MN to MO	4	0	0	NA	USEPA 1996
Upper Mississippi River, MN to MO	47	0	0	NA	USEPA 1997
Waukegan Harbor, IL	19	18	17	94.4	Kemble *et al.* 1998
Waukegan Harbor, IL	3	1	1	100.0	USEPA 1996
All Locations	**195**	**40**	**33**	**82.5**	

Table 11. Relationship between the concentrations of sediment-associated PCBs and the incidence of toxicity to freshwater organisms.

Range of PCB Concentrations	Units (mg/kg DW)	Number of Samples	Number of Toxic Samples	Incidence of Toxicity (%)	Average Survival (%)
< TEC	0.00 - 0.04	90	14	15.6	83.8
TEC - MEC	> 0.04 - 0.40	42	3	7.1	81.9
> MEC - EEC	> 0.40 - 1.7	23	10	43.5	71.7
> EEC	> 1.7	40	33	82.5	69.7
Overall		**195**	**60**	**30.8**	**79.0**

Table 12. Evaluation of the predictive ability of the TEC for total PCBs in marine and estuarine sediments.

Sampling Location	Number of Samples Collected	Number of Samples Predicted to be Not Toxic using the TEC	Number of Samples Correctly Predicted to be Not Toxic	Predictive Ability of the TEC (%)	Reference
Hudson River Estuary and Nearby Areas:					
Hudson-Raritan Estuary/Newark Bay, NY/NJ	84	33	28	84.8	REMAP 1993
Hudson-Raritan Estuary/Newark Bay, NY/NJ	84	34	29	85.3	REMAP 1994
Hudson-Raritan Estuary, NY	11	2	2	100.0	Rice *et al.* 1995
Hudson-Raritan Estuary/Newark Bay, NY/NJ	56	2	2	100.0	Long *et al.* 1998
Long Island Sound, NY	63	13	8	61.5	Long *et al.* 1998
Subtotal	*298*	*84*	*69*	*82.1*	
Other Locations					
Biscayne Bay, FL	105	65	61	93.8	Long 1997
Boston Harbor, MA	30	0	0	N/A	Long *et al.* 1998
EMAP Virginian Province	388	332	285	85.8	Long *et al.* 1998
Narragansett Bay, RI	19	4	4	100.0	Munns *et al.* 1991
Puget Sound, WA	15	1	1	100.0	Pastorok and Becker 1990
San Diego Bay, CA	119	11	7	63.6	Long *et al.* 1998
San Francisco Bay, CA	9	6	5	83.3	Chapman *et al.* 1987
San Pedro Bay, CA	44	9	8	88.9	Long *et al.* 1998
South Carolina and Georgia	63	62	62	100.0	Long *et al.* 1998
Tampa Bay, FL	61	25	25	100.0	Long *et al.* 1998
Subtotal	*853*	*515*	*458*	*88.9*	
All Locations	**1151**	**599**	**527**	**88.0**	

Table 13. Incidence of toxicity in marine and estuarine sediments at total PCB concentrations above the TEC and below the MEC.

Sampling Location	Number of Samples Collected	Number of Samples with tPCBs > TEC and < MEC	Number of Samples Observed to be Toxic	Incidence of Toxicity (%)	Reference
Hudson River Estuary and Nearby Areas:					
Hudson-Raritan Estuary/Newark Bay, NY/NJ	84	35	15	42.9	REMAP 1993
Hudson-Raritan Estuary/Newark Bay, NY/NJ	84	29	7	24.1	REMAP 1994
Hudson-Raritan Estuary, NY	11	4	1	25.0	Rice *et al.* 1995
Hudson-Raritan Estuary/Newark Bay, NY/NJ	56	20	12	60.0	Long *et al.* 1998
Long Island Sound, NY	63	49	27	55.1	Long *et al.* 1998
Subtotal	*298*	*137*	*62*	*45.3*	
Other Locations					
Biscayne Bay, FL	105	22	3	13.6	Long 1997
Boston Harbor, MA	30	24	5	20.8	Long *et al.* 1998
EMAP Virginian Province	388	47	12	25.5	Long *et al.* 1998
Narragansett Bay, RI	19	13	0	0.0	Munns *et al.* 1991
Puget Sound, WA	15	10	3	30.0	Pastorok and Becker 1990
San Diego Bay, CA	119	74	29	39.2	Long *et al.* 1998
San Francisco Bay, CA	9	3	3	100.0	Chapman *et al.* 1987
San Pedro Bay, CA	44	32	11	34.4	Long *et al.* 1998
South Carolina and Georgia	63	1	0	0.0	Long *et al.* 1998
Tampa Bay, FL	61	28	0	0.0	Long *et al.* 1998
Subtotal	*853*	*254*	*66*	*26.0*	
All Locations	**1151**	**391**	**128**	**32.7**	

Table 14. Evaluation of the predictive ability of the MEC for total PCBs in marine and estuarine sediments.

Sampling Location	Number of Samples Collected	Number of Samples Predicted to be Toxic using the MEC	Number of Samples Correctly Predicted to be Toxic	Predictive Ability of the MEC (%)	Reference
Hudson River Estuary and Nearby Areas:					
Hudson-Raritan Estuary/Newark Bay, NY/NJ	84	16	7	43.8	REMAP 1993
Hudson-Raritan Estuary/Newark Bay, NY/NJ	84	21	15	71.4	REMAP 1994
Hudson-Raritan Estuary, NY	11	5	2	40.0	Rice *et al.* 1995
Hudson-Raritan Estuary/Newark Bay, NY/NJ	56	34	23	67.6	Long *et al.* 1998
Long Island Sound, NY	63	1	0	0.0	Long *et al.* 1998
Subtotal	*298*	*77*	*47*	*61.0*	
Other Locations					
Biscayne Bay, FL	105	18	16	88.9	Long 1997
Boston Harbor, MA	30	6	1	16.7	Long *et al.* 1998
EMAP Virginian Province	388	9	6	66.7	Long *et al.* 1998
Narragansett Bay, RI	19	2	0	0.0	Munns *et al.* 1991
Puget Sound, WA	15	4	3	75.0	Pastorok and Becker 1990
San Diego Bay, CA	119	34	10	29.4	Long *et al.* 1998
San Francisco Bay, CA	9	0	0	NA	Chapman *et al.* 1987
San Pedro Bay, CA	44	3	3	100.0	Long *et al.* 1998
South Carolina and Georgia	63	0	0	NA	Long *et al.* 1998
Tampa Bay, FL	61	8	4	50.0	Long *et al.* 1998
Subtotal	*853*	*84*	*43*	*51.2*	
All Locations	**1151**	**161**	**90**	**55.9**	

Table 15. **Evaluation of the predictive ability of the EEC for total PCBs in marine and estuarine sediments.**

Sampling Location	Number of Samples Collected	Number of Samples Predicted to be Toxic using the EEC	Number of Samples Correctly Predicted to be Toxic	Predictive Ability of the EEC (%)	Reference
Hudson River Estuary and Nearby Areas:					
Hudson-Raritan Estuary/Newark Bay, NY/NJ	84	2	2	100.0	REMAP 1993
Hudson-Raritan Estuary/Newark Bay, NY/NJ	84	3	3	100.0	REMAP 1994
Hudson-Raritan Estuary, NY	11	1	1	100.0	Rice *et al.* 1995
Hudson-Raritan Estuary/Newark Bay, NY/NJ	56	9	9	100.0	Long *et al.* 1998
Long Island Sound, NY	63	0	0	NA	Long *et al.* 1998
Subtotal	*298*	*15*	*15*	*100.0*	
Other Locations					
Biscayne Bay, FL	105	4	4	100.0	Long 1997
Boston Harbor, MA	30	0	0	NA	Long *et al.* 1998
EMAP Virginian Province	388	1	0	0.0	Long *et al.* 1998
Narragansett Bay, RI	19	0	0	NA	Munns *et al.* 1991
Puget Sound, WA	15	1	1	100.0	Pastorok and Becker 1990
San Diego Bay, CA	119	5	2	40.0	Long *et al.* 1998
San Francisco Bay, CA	9	0	0	NA	Chapman *et al.* 1987
San Pedro Bay, CA	44	0	0	NA	Long *et al.* 1998
South Carolina and Georgia	63	0	0	NA	Long *et al.* 1998
Tampa Bay, FL	61	2	2	100.0	Long *et al.* 1998
Subtotal	*853*	*13*	*9*	*69.2*	
All Locations	**1151**	**28**	**24**	**85.7**	

11.1094

Table 16. Relationship between the concentrations of sediment-associated PCBs and the incidence of toxicity to marine and estuarine organisms.

Range of PCB Concentrations	Units (mg/kg DW)	Number of Samples	Number of Toxic Samples	Incidence of Toxicity (%)	Average Survival (%)
< TEC	0.000 - 0.04	599	72	12.0	89.5
TEC - MEC	> 0.04 - 0.40	391	128	32.7	75.6
> MEC - EEC	> 0.40 - 1.7	133	66	49.6	65.8
> EEC	> 1.7	28	24	85.7	37.7
Overall		1151	290	25.2	80.8

11.1095

Appendix 1

Criteria for Evaluating Candidate Data Sets

Appendix 1. Criteria for evaluating candidate data sets.

A1.1 Introduction

A project database was developed to support an evaluation of the predictive ability of the sediment effect concentrations (SECs) that were derived for assessing sediment quality conditions in the Hudson River. The database is comprised of matching sediment chemistry and biological effects data from various freshwater, estuarine, and marine locations in North America. To assure that high quality data were used in the assessment, all of the candidate data sets were critically evaluated prior to inclusion in the database.

A1.2 Criteria for Evaluating Matching Sediment Chemistry and Biological Effects Data

Matching sediment chemistry and biological effects data from various freshwater, estuarine, and marine locations in North America were used to evaluate the predictive ability of the consensus-based SECs that were developed in this report. Data from individual studies were considered to be acceptable for evaluating the consensus-based SECs if:

- the study was conducted in a freshwater, estuarine, or marine location in North America;
- matching sediment chemistry and biological effects data were collected and reported;
- appropriate procedures were used for collecting, handling, and storing sediments (e.g., ASTM 1997b);
- contaminants concentrations were measured in each sediment sample;
- quality assurance data were reported and minimum data quality requirements were met. For example, analytical detection limits should be reported and be lower than PELs (Smith *et al.* 1996; MacDonald *et al.* 1996), accuracy and precision should be within accepted limits, and analytes should not be present at detectable levels in method blanks;

- appropriate analytical methods were used to generate the sediment chemistry data. For metals, the concentrations of total metals should be measured and reported; however, other measures of metal concentrations are acceptable if sufficient information is available to show that they are comparable to total metal concentrations. For organic substances, the concentrations should be measured using GC-MS, HPLC, or comparable methods.
- sediments were not frozen before toxicity tests were initiated (ASTM 1997a);
- the responses in the control and/or reference groups were within accepted limits (i.e., ASTM 1997a; Hyland *et al.* 1998);
- adequate environmental conditions were maintained in the test chambers during toxicity testing (i.e., ASTM 1997a); and,
- the endpoint(s) measured were ecologically-relevant (i.e., likely to influence the organism's viability in the field) or indicative of ecologically-relevant endpoints.

Appendix 2

Freshwater Data for Assessing Predictive Ability of the SECs: Sorted by Study

Appendix 2. A summary of freshwater data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by study.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result		Species Tested (duration)	Endpoint Measured/ Result		Overall Toxicity	Source
0.94	Grand Calumet River, IN	*Ceriodaphnia dubia* (48h)	EC50 = 60.2% PW	T	*Chironomus tentans* (10d)	100 % reduced growth	T	**T**	Hoke *et al.* 1993; Giesy *et al.* 1993
1.49	Grand Calumet River, IN	*Ceriodaphnia dubia* (48h)	EC50 = >100% PW	NT	*Chironomus tentans* (10d)	89.2 % reduced growth	T	**T**	Hoke *et al.* 1993; Giesy *et al.* 1993
1.66	Grand Calumet River, IN	*Ceriodaphnia dubia* (48h)	EC50 = 67% PW	T	*Chironomus tentans* (10d)	99 % reduced growth	T	**T**	Hoke *et al.* 1993; Giesy *et al.* 1993
2.17	Grand Calumet River, IN	*Ceriodaphnia dubia* (48h)	EC50 = 24.6% PW	T	*Chironomus tentans* (10d)	100 % reduced growth	T	**T**	Hoke *et al.* 1993; Giesy *et al.* 1993
2.8	Grand Calumet River, IN	*Ceriodaphnia dubia* (48h)	EC50 = 3.2% PW	T	*Chironomus tentans* (10d)	98 % reduced growth	T	**T**	Hoke *et al.* 1993; Giesy *et al.* 1993
4.26	Grand Calumet River, IN	*Ceriodaphnia dubia* (48h)	EC50 = >100% PW	NT	*Chironomus tentans* (10d)	37 % reduced growth	T	**T**	Hoke *et al.* 1993; Giesy *et al.* 1993
4.61	Grand Calumet River, IN	*Ceriodaphnia dubia* (48h)	EC50 = 20.3% PW	T	*Chironomus tentans* (10d)	90 % reduced growth	T	**T**	Hoke *et al.* 1993; Giesy *et al.* 1993
6.89	Grand Calumet River, IN	*Ceriodaphnia dubia* (48h)	EC50 = 16.4% PW	T	*Chironomus tentans* (10d)	100 % reduced growth	T	**T**	Hoke *et al.* 1993; Giesy *et al.* 1993
7.93	Grand Calumet River, IN	*Ceriodaphnia dubia* (48h)	EC50 = 71.5% PW	T	*Chironomus tentans* (10d)	89 % reduced growth	T	**T**	Hoke *et al.* 1993; Giesy *et al.* 1993
18.3	Grand Calumet River, IN	*Ceriodaphnia dubia* (48h)	EC50 = 34.5% PW	T	*Chironomus tentans* (10d)	95 % reduced growth	T	**T**	Hoke *et al.* 1993; Giesy *et al.* 1993
4.54	Indiana Harbor, IN	*Chironomus riparius* (14d)	98.5 % mortality	T	*Hyalella azteca* (14d)	100 % mortality	T	**T**	USEPA 1996
25	Indiana Harbor, IN	*Chironomus riparius* (14d)	100 % mortality	T	*Hyalella azteca* (14d)	98.7 % mortality	T	**T**	USEPA 1996
43.8	Indiana Harbor, IN	*Chironomus riparius* (14d)	100 % mortality	T	*Hyalella azteca* (14d)	100 % mortality	T	**T**	USEPA 1996
0.0905	Lower Fox R. & Green Bay, WI	*Hexagenia limbata* (10d)	20 % mortality	NT	*Chironomus riparius* (10d)	0 % mortality	NT	**NT**	Call *et al.* 1991
0.306	Lower Fox R. & Green Bay, WI	*Hexagenia limbata* (10d)	30 % mortality	NT	*Chironomus riparius* (10d)	10 % mortality	NT	**NT**	Call *et al.* 1991
0.414	Lower Fox R. & Green Bay, WI	*Hexagenia limbata* (10d)	30 % mortality	NT	*Chironomus riparius* (10d)	10 % mortality	NT	**NT**	Call *et al.* 1991
0.707	Lower Fox R. & Green Bay, WI	*Hexagenia limbata* (10d)	10 % mortality	NT	*Chironomus riparius* (10d)	25 % mortality	T	**T**	Call *et al.* 1991
0.811	Lower Fox R. & Green Bay, WI	*Hexagenia limbata* (10d)	10 % mortality	NT	*Chironomus riparius* (10d)	0 % mortality	NT	**NT**	Call *et al.* 1991
1.24	Lower Fox R. & Green Bay, WI	*Hexagenia limbata* (10d)	10 % mortality	NT	*Chironomus riparius* (10d)	5 % mortality	NT	**NT**	Call *et al.* 1991
1.83	Lower Fox R. & Green Bay, WI	*Hexagenia limbata* (10d)	30 % mortality	NT	*Chironomus riparius* (10d)	15 % mortality	NT	**NT**	Call *et al.* 1991
2.3	Lower Fox R. & Green Bay, WI	*Hexagenia limbata* (10d)	30 % mortality	NT	*Chironomus riparius* (10d)	0 % mortality	NT	**NT**	Call *et al.* 1991
2.4	Lower Fox R. & Green Bay, WI	*Hexagenia limbata* (10d)	50 % mortality	T	*Chironomus riparius* (10d)	0 % mortality	NT	**T**	Call *et al.* 1991
2.65	Lower Fox R. & Green Bay, WI	*Hexagenia limbata* (10d)	30 % mortality	NT	*Chironomus riparius* (10d)	5 % mortality	NT	**NT**	Call *et al.* 1991
3.06	Lower Fox R. & Green Bay, WI	*Hexagenia limbata* (10d)	0 % mortality	NT	*Chironomus riparius* (10d)	0 % mortality	NT	**NT**	Call *et al.* 1991
4.01	Lower Fox R. & Green Bay, WI	*Hexagenia limbata* (10d)	0 % mortality	NT	*Chironomus riparius* (10d)	5 % mortality	NT	**NT**	Call *et al.* 1991
6.75	Lower Fox R. & Green Bay, WI	*Hexagenia limbata* (10d)	30 % mortality	NT	*Chironomus riparius* (10d)	5 % mortality	NT	**NT**	Call *et al.* 1991
0.07	Potomac River, DC	*Hyalella azteca* (28d)	75 % mortality	T	*Hyalella azteca* (28d)	2.15 mm length	NT	**T**	Schlekat *et al.* 1994*
0.25	Potomac River, DC	*Hyalella azteca* (28d)	26.2 % mortality	NT	*Hyalella azteca* (28d)	2.39 mm length	NT	**NT**	Schlekat *et al.* 1994*
0.31	Potomac River, DC	*Hyalella azteca* (28d)	21.2 % mortality	NT	*Hyalella azteca* (28d)	2.61 mm length	NT	**NT**	Schlekat *et al.* 1994*
0.39	Potomac River, DC	*Hyalella azteca* (28d)	13.7 % mortality	NT	*Hyalella azteca* (28d)	2.58 mm length	NT	**NT**	Schlekat *et al.* 1994*
0.46	Potomac River, DC	*Hyalella azteca* (28d)	21.2 % mortality	NT	*Hyalella azteca* (28d)	2.61 mm length	NT	**NT**	Schlekat *et al.* 1994*
0.49	Potomac River, DC	*Hyalella azteca* (28d)	23.7 % mortality	NT	*Hyalella azteca* (28d)	2.68 mm length	NT	**NT**	Schlekat *et al.* 1994*
0.51	Potomac River, DC	*Hyalella azteca* (28d)	22.5 % mortality	NT	*Hyalella azteca* (28d)	2.1 mm length	NT	**NT**	Schlekat *et al.* 1994*
0.52	Potomac River, DC	*Hyalella azteca* (28d)	27.5 % mortality	NT	*Hyalella azteca* (28d)	2.45 mm length	NT	**NT**	Schlekat *et al.* 1994*
0.53	Potomac River, DC	*Hyalella azteca* (28d)	17.5 % mortality	NT	*Hyalella azteca* (28d)	2.62 mm length	NT	**NT**	Schlekat *et al.* 1994*
0.61	Potomac River, DC	*Hyalella azteca* (28d)	12.5 % mortality	NT	*Hyalella azteca* (28d)	2.96 mm length	NT	**NT**	Schlekat *et al.* 1994*
0.65	Potomac River, DC	*Hyalella azteca* (28d)	38.7 % mortality	T	*Hyalella azteca* (28d)	2.00 mm length	NT	**T**	Schlekat *et al.* 1994*

Appendix 2. A summary of freshwater data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by study.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result		Species Tested (duration)	Endpoint Measured/ Result		Overall Toxicity	Source
0.66	Potomac River, DC	*Hyalella azteca* (28d)	38.5 % mortality	T	*Hyalella azteca* (28d)	2.71 mm length	NT	T	Schlekat *et al.* 1994*
0.71	Potomac River, DC	*Hyalella azteca* (28d)	61.2 % mortality	T	*Hyalella azteca* (28d)	1.96 mm length	NT	T	Schlekat *et al.* 1994*
0.77	Potomac River, DC	*Hyalella azteca* (28d)	46.2 % mortality	T	*Hyalella azteca* (28d)	2.01 mm length	NT	T	Schlekat *et al.* 1994*
2.2	Potomac River, DC	*Hyalella azteca* (28d)	65 % mortality	T	*Hyalella azteca* (28d)	1.96 mm length	NT	T	Schlekat *et al.* 1994*
0.057	Saginaw River, MI	*Chironomus riparius* (14d)	6.5 % mortality	NT	*Hyalella azteca* (28d)	4 mm length	NT	NT	USEPA 1996
0.12	Saginaw River, MI	*Chironomus riparius* (14d)	5.5 % mortality	NT	*Hyalella azteca* (28d)	3.6 mm length	NT	NT	USEPA 1996
0.134	Saginaw River, MI	*Chironomus riparius* (14d)	13 % mortality	NT	*Hyalella azteca* (28d)	3.6 mm length	NT	NT	USEPA 1996
0.244	Saginaw River, MI	*Chironomus riparius* (14d)	11.5 % mortality	NT	*Hyalella azteca* (28d)	3.7 mm length	NT	NT	USEPA 1996
0.351	Saginaw River, MI	*Chironomus riparius* (14d)	8 % mortality	NT	*Hyalella azteca* (28d)	3.9 mm length	NT	NT	USEPA 1996
0.505	Saginaw River, MI	*Chironomus riparius* (14d)	4 % mortality	NT	*Hyalella azteca* (28d)	3.7 mm length	NT	NT	USEPA 1996
0.53	Saginaw River, MI	*Chironomus riparius* (14d)	6 % mortality	NT	*Hyalella azteca* (28d)	4.1 mm length	NT	NT	USEPA 1996
3.13	Saginaw River, MI	*Chironomus riparius* (14d)	30 % mortality	NT	*Hyalella azteca* (28d)	3.4 mm length	T	T	USEPA 1996
8.65	Saginaw River, MI	*Chironomus riparius* (14d)	85.5 % mortality	T	*Hyalella azteca* (28d)	2.1 mm length	T	T	USEPA 1996
ND	Trinity River, TX	*Chironomus tentans* (10d)	0 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	10 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	0 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	20 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	0 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	10 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	10 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	0 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	0 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	0 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	0 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	20 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	0 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	0 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	10 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	10 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	10 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	0 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	0 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	10 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	0 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	0 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	0 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	0 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	30 % mortality	T				T	Dickson *et al.* 1989

Appendix 2. A summary of freshwater data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by study.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result		Species Tested (duration)	Endpoint Measured/ Result		Overall Toxicity	Source
ND	Trinity River, TX	*Chironomus tentans* (10d)	10 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	10 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	10 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	40 % mortality	T				T	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	10 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	10 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	0 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	10 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	20 % mortality	T				T	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	10 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	10 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	20 % mortality	NT	*Hyalella azteca* (10d)	13 % mortality	NT	NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	10 % mortality	NT	*Hyalella azteca* (10d)	20 % mortality	T	T	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	0 % mortality	NT	*Hyalella azteca* (10d)	11 % mortality	NT	NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	0 % mortality	NT	*Hyalella azteca* (10d)	11 % mortality	NT	NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	10 % mortality	NT	*Hyalella azteca* (10d)	27 % mortality	T	T	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	20 % mortality	NT	*Hyalella azteca* (10d)	24 % mortality	T	T	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	40 % mortality	T	*Hyalella azteca* (10d)	13 % mortality	NT	T	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	0 % mortality	NT	*Hyalella azteca* (10d)	7 % mortality	NT	NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	10 % mortality	NT	*Hyalella azteca* (10d)	4 % mortality	NT	NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	10 % mortality	NT	*Hyalella azteca* (10d)	0 % mortality	NT	NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	10 % mortality	NT	*Hyalella azteca* (10d)	4 % mortality	NT	NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	20 % mortality	NT	*Hyalella azteca* (10d)	36 % mortality	T	T	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	20 % mortality	NT	*Hyalella azteca* (10d)	36 % mortality	T	T	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	20 % mortality	NT	*Hyalella azteca* (10d)	4 % mortality	NT	NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	10 % mortality	NT	*Hyalella azteca* (10d)	0 % mortality	NT	NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	20 % mortality	NT	*Hyalella azteca* (10d)	0 % mortality	NT	NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	10 % mortality	NT	*Hyalella azteca* (10d)	9 % mortality	NT	NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	10 % mortality	NT	*Hyalella azteca* (10d)	7 % mortality	NT	NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	20 % mortality	NT	*Hyalella azteca* (10d)	0 % mortality	NT	NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	20 % mortality	NT	*Hyalella azteca* (10d)	9 % mortality	NT	NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	20 % mortality	NT	*Hyalella azteca* (10d)	9 % mortality	NT	NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	60 % mortality	T	*Hyalella azteca* (10d)	11 % mortality	NT	T	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	20 % mortality	NT	*Hyalella azteca* (10d)	0 % mortality	NT	NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	60 % mortality	T	*Hyalella azteca* (10d)	0 % mortality	NT	T	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	20 % mortality	NT	*Hyalella azteca* (10d)	11 % mortality	NT	NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	30 % mortality	T	*Hyalella azteca* (10d)	9 % mortality	NT	T	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	0 % mortality	NT	*Hyalella azteca* (10d)	0 % mortality	NT	NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	20 % mortality	NT	*Hyalella azteca* (10d)	0 % mortality	NT	NT	Dickson *et al.* 1989
0.012	Trinity River, TX	*Chironomus tentans* (10d)	40 % mortality	T	*Hyalella azteca* (10d)	11 % mortality	NT	T	Dickson *et al.* 1989

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Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result		Species Tested (duration)	Endpoint Measured/ Result		Overall Toxicity	Source
0.033	Trinity River, TX	*Chironomus tentans* (10d)	20 % mortality	NT	*Hyalella azteca* (10d)	9 % mortality	NT	NT	Dickson *et al.* 1989
0.207	Trinity River, TX	*Chironomus tentans* (10d)	30 % mortality	T	*Hyalella azteca* (10d)	0 % mortality	NT	T	Dickson *et al.* 1989
0.254	Trinity River, TX	*Chironomus tentans* (10d)	10 % mortality	NT	*Hyalella azteca* (10d)	18 % mortality	NT	NT	Dickson *et al.* 1989
0.383	Trinity River, TX	*Chironomus tentans* (10d)	20 % mortality	NT	*Hyalella azteca* (10d)	9 % mortality	NT	NT	Dickson *et al.* 1989
0.587	Trinity River, TX	*Chironomus tentans* (10d)	20 % mortality	NT	*Hyalella azteca* (10d)	13 % mortality	NT	NT	Dickson *et al.* 1989
1.15	Trinity River, TX	*Chironomus tentans* (10d)	0 % mortality	NT	*Hyalella azteca* (10d)	4 % mortality	NT	NT	Dickson *et al.* 1989
9.77	Trinity River, TX	*Chironomus tentans* (10d)	0 % mortality	NT	*Hyalella azteca* (10d)	18 % mortality	T	T	Dickson *et al.* 1989
0.021	Upper Mississippi River, MN-MO	*Hyalella azteca* (32d)	13.5 % mortality	NT				NT	USEPA 1996
0.112	Upper Mississippi River, MN-MO	*Hyalella azteca* (32d)	0 % mortality	NT				NT	USEPA 1996
0.123	Upper Mississippi River, MN-MO	*Hyalella azteca* (32d)	0 % mortality	NT				NT	USEPA 1996
0.194	Upper Mississippi River, MN-MO	*Hyalella azteca* (32d)	0 % mortality	NT				NT	USEPA 1996
<0.040	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	35 % mortality	NT	*Hyalella azteca* (28d)	3.17 mm length	NT	NT	USEPA 1997
<0.040	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	25 % mortality	NT	*Hyalella azteca* (28d)	3.47 mm length	NT	NT	USEPA 1997
<0.040	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	37.5 % mortality	NT	*Hyalella azteca* (28d)	3.35 mm length	NT	NT	USEPA 1997
<0.040	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	20 % mortality	NT	*Hyalella azteca* (28d)	4.06 mm length	NT	NT	USEPA 1997
<0.040	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	17.5 % mortality	NT	*Hyalella azteca* (28d)	4.08 mm length	NT	NT	USEPA 1997
<0.040	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	5 % mortality	NT	*Hyalella azteca* (28d)	3.7 mm length	NT	NT	USEPA 1997
<0.040	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	7.5 % mortality	NT	*Hyalella azteca* (28d)	4.09 mm length	NT	NT	USEPA 1997
<0.040	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	32.5 % mortality	NT	*Hyalella azteca* (28d)	3.65 mm length	NT	NT	USEPA 1997
<0.040	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	27.5 % mortality	NT	*Hyalella azteca* (28d)	3.86 mm length	NT	NT	USEPA 1997
<0.040	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	42.5 % mortality	NT	*Hyalella azteca* (28d)	3.61 mm length	NT	NT	USEPA 1997
<0.040	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	15 % mortality	NT	*Hyalella azteca* (28d)	3.78 mm length	NT	NT	USEPA 1997
<0.040	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	52.5 % mortality	NT	*Hyalella azteca* (28d)	3.56 mm length	NT	NT	USEPA 1997
<0.040	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	52.5 % mortality	NT	*Hyalella azteca* (28d)	3.5 mm length	NT	NT	USEPA 1997
<0.040	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	27.5 % mortality	NT	*Hyalella azteca* (28d)	3.59 mm length	NT	NT	USEPA 1997
<0.040	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	10 % mortality	NT	*Hyalella azteca* (28d)	3.83 mm length	NT	NT	USEPA 1997
<0.040	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	27.5 % mortality	NT	*Hyalella azteca* (28d)	3.52 mm length	NT	NT	USEPA 1997
<0.040	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	27.5 % mortality	NT	*Hyalella azteca* (28d)	3.44 mm length	NT	NT	USEPA 1997
<0.040	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	5 % mortality	NT	*Hyalella azteca* (28d)	3.3 mm length	NT	NT	USEPA 1997
<0.040	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	12.5 % mortality	NT	*Hyalella azteca* (28d)	3.87 mm length	NT	NT	USEPA 1997
<0.040	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	47.5 % mortality	NT	*Hyalella azteca* (28d)	3.64 mm length	NT	NT	USEPA 1997
<0.040	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	40 % mortality	NT	*Hyalella azteca* (28d)	3.78 mm length	NT	NT	USEPA 1997
<0.040	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	37.5 % mortality	NT	*Hyalella azteca* (28d)	3.63 mm length	NT	NT	USEPA 1997
<0.040	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	10 % mortality	NT	*Hyalella azteca* (28d)	2.88 mm length	T	T	USEPA 1997
<0.200	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	7.5 % mortality	NT	*Hyalella azteca* (28d)	3.66 mm length	NT	NT	USEPA 1997
<0.200	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	25 % mortality	NT	*Hyalella azteca* (28d)	4.07 mm length	NT	NT	USEPA 1997
<0.200	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	5 % mortality	NT	*Hyalella azteca* (28d)	4.27 mm length	NT	NT	USEPA 1997
<0.200	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	15 % mortality	NT	*Hyalella azteca* (28d)	3.39 mm length	NT	NT	USEPA 1997

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Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result		Species Tested (duration)	Endpoint Measured/ Result		Overall Toxicity	Source
<0.200	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	20 % mortality	NT	*Hyalella azteca* (28d)	4.23 mm length	NT	NT	USEPA 1997
<0.200	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	32.5 % mortality	NT	*Hyalella azteca* (28d)	3.53 mm length	NT	NT	USEPA 1997
<0.200	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	0 % mortality	NT	*Hyalella azteca* (28d)	3.66 mm length	NT	NT	USEPA 1997
<0.200	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	2.5 % mortality	NT	*Hyalella azteca* (28d)	3.69 mm length	NT	NT	USEPA 1997
<0.200	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	25 % mortality	NT	*Hyalella azteca* (28d)	3.72 mm length	NT	NT	USEPA 1997
<0.200	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	7.5 % mortality	NT	*Hyalella azteca* (28d)	4.28 mm length	NT	NT	USEPA 1997
<0.200	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	12.5 % mortality	NT	*Hyalella azteca* (28d)	4.31 mm length	NT	NT	USEPA 1997
<0.200	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	27.5 % mortality	NT	*Hyalella azteca* (28d)	3.48 mm length	NT	NT	USEPA 1997
<0.200	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	67.5 % mortality	T	*Hyalella azteca* (28d)	3.87 mm length	NT	T	USEPA 1997
<0.200	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	35 % mortality	NT	*Hyalella azteca* (28d)	3.85 mm length	NT	NT	USEPA 1997
<0.200	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	10 % mortality	NT	*Hyalella azteca* (28d)	3.74 mm length	NT	NT	USEPA 1997
<0.200	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	30 % mortality	NT	*Hyalella azteca* (28d)	3.72 mm length	NT	NT	USEPA 1997
<0.200	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	22.5 % mortality	NT	*Hyalella azteca* (28d)	3.57 mm length	NT	NT	USEPA 1997
<0.200	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	15 % mortality	NT	*Hyalella azteca* (28d)	3.31 mm length	NT	NT	USEPA 1997
<0.200	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	17.5 % mortality	NT	*Hyalella azteca* (28d)	3.43 mm length	NT	NT	USEPA 1997
<0.200	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	5 % mortality	NT	*Hyalella azteca* (28d)	3.46 mm length	NT	NT	USEPA 1997
<0.200	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	15 % mortality	NT	*Hyalella azteca* (28d)	3.79 mm length	NT	NT	USEPA 1997
<0.200	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	12.5 % mortality	NT	*Hyalella azteca* (28d)	3.61 mm length	NT	NT	USEPA 1997
<0.200	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	37.5 % mortality	NT	*Hyalella azteca* (28d)	3.6 mm length	NT	NT	USEPA 1997
<0.200	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	7.5 % mortality	NT	*Hyalella azteca* (28d)	3.51 mm length	NT	NT	USEPA 1997
0.900	Waukegan Harbor, IL	*Hyalella azteca* (28d)	10 % mortality	NT	*Hyalella azteca* (28d)	4 mm length	T	T	Kemble *et al.* 1998
3.00	Waukegan Harbor, IL	*Hyalella azteca* (28d)	0 % mortality	NT	*Hyalella azteca* (28d)	3.5 mm length	T	T	Kemble *et al.* 1998
3.60	Waukegan Harbor, IL	*Hyalella azteca* (28d)	7 % mortality	NT	*Hyalella azteca* (28d)	3.9 mm length	T	T	Kemble *et al.* 1998
4.30	Waukegan Harbor, IL	*Hyalella azteca* (28d)	6 % mortality	NT	*Hyalella azteca* (28d)	4 mm length	T	T	Kemble *et al.* 1998
4.40	Waukegan Harbor, IL	*Hyalella azteca* (28d)	7 % mortality	NT	*Hyalella azteca* (28d)	4 mm length	T	T	Kemble *et al.* 1998
4.70	Waukegan Harbor, IL	*Hyalella azteca* (28d)	0 % mortality	NT	*Hyalella azteca* (28d)	4.1 mm length	T	T	Kemble *et al.* 1998
4.70	Waukegan Harbor, IL	*Hyalella azteca* (28d)	16 % mortality	T	*Hyalella azteca* (28d)	3.8 mm length	T	T	Kemble *et al.* 1998
4.90	Waukegan Harbor, IL	*Hyalella azteca* (28d)	4 % mortality	NT	*Hyalella azteca* (28d)	3.6 mm length	T	T	Kemble *et al.* 1998
5.00	Waukegan Harbor, IL	*Hyalella azteca* (28d)	5 % mortality	NT	*Hyalella azteca* (28d)	3.6 mm length	T	T	Kemble *et al.* 1998
5.10	Waukegan Harbor, IL	*Hyalella azteca* (28d)	21 % mortality	T	*Hyalella azteca* (28d)	3.8 mm length	T	T	Kemble *et al.* 1998
5.20	Waukegan Harbor, IL	*Hyalella azteca* (28d)	1 % mortality	NT	*Hyalella azteca* (28d)	3.6 mm length	T	T	Kemble *et al.* 1998
5.20	Waukegan Harbor, IL	*Hyalella azteca* (28d)	12 % mortality	T	*Hyalella azteca* (28d)	4.1 mm length	T	T	Kemble *et al.* 1998
5.80	Waukegan Harbor, IL	*Hyalella azteca* (28d)	4 % mortality	NT	*Hyalella azteca* (28d)	3.9 mm length	T	T	Kemble *et al.* 1998
6.30	Waukegan Harbor, IL	*Hyalella azteca* (28d)	12 % mortality	T	*Hyalella azteca* (28d)	3.8 mm length	T	T	Kemble *et al.* 1998
7.30	Waukegan Harbor, IL	*Hyalella azteca* (28d)	12 % mortality	T	*Hyalella azteca* (28d)	3.8 mm length	T	T	Kemble *et al.* 1998
7.30	Waukegan Harbor, IL	*Hyalella azteca* (28d)	7 % mortality	NT	*Hyalella azteca* (28d)	4.1 mm length	T	T	Kemble *et al.* 1998
7.40	Waukegan Harbor, IL	*Hyalella azteca* (28d)	7 % mortality	NT	*Hyalella azteca* (28d)	4.3 mm length	NT	NT	Kemble *et al.* 1998
7.70	Waukegan Harbor, IL	*Hyalella azteca* (28d)	10 % mortality	NT	*Hyalella azteca* (28d)	4.1 mm length	T	T	Kemble *et al.* 1998
8.90	Waukegan Harbor, IL	*Hyalella azteca* (28d)	34 % mortality	T	*Hyalella azteca* (28d)	3.9 mm length	T	T	Kemble *et al.* 1998

Appendix 2. A summary of freshwater data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by study.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result		Species Tested (duration)	Endpoint Measured/ Result		Overall Toxicity	Source
0.082	Waukegan Harbor, IL	*Chironomus riparius* (13d)	14.3 % mortality	NT	*Hyalella azteca* (10d)	0 % mortality	NT	NT	USEPA 1996
0.730	Waukegan Harbor, IL	*Chironomus riparius* (13d)	91.4 % mortality	T	*Hyalella azteca* (10d)	65 % mortality	T	T	USEPA 1996
8.90	Waukegan Harbor, IL	*Chironomus riparius* (13d)	48.6 % mortality	T	*Hyalella azteca* (10d)	60 % mortality	T	T	USEPA 1996

DW = dry weight; Conc. = concentration; R. = river; PW = porewater; ND = not detected; N/A = not available; NT = not toxic; T = toxic.
Schlekat *et al.* 1994* = Schlekat et al. 1994; Velinsky *et al.* 1994; Wade *et al.* 1994

Appendix 3

Freshwater Data for Assessing Predictive Ability of the SECs: Sorted by Concentration

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Appendix 3. A summary of freshwater data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by concentration.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result		Species Tested (duration)	Endpoint Measured/ Result		Overall Toxicity	Source
ND	Trinity River, TX	*Chironomus tentans* (10d)	0 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	10 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	0 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	20 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	0 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	10 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	10 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	0 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	0 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	0 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	0 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	20 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	0 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	0 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	10 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	10 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	10 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	0 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	0 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	10 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	0 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	0 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	0 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	0 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	30 % mortality	T				T	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	10 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	10 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	10 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	40 % mortality	T				T	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	10 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	10 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	0 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	10 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	20 % mortality	T				T	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	10 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	10 % mortality	NT				NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	20 % mortality	NT	*Hyalella azteca* (10d)	13 % mortality	NT	NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	10 % mortality	NT	*Hyalella azteca* (10d)	20 % mortality	T	T	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	0 % mortality	NT	*Hyalella azteca* (10d)	11 % mortality	NT	NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	0 % mortality	NT	*Hyalella azteca* (10d)	11 % mortality	NT	NT	Dickson *et al.* 1989

Appendix 3. A summary of freshwater data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by concentration.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result		Species Tested (duration)	Endpoint Measured/ Result		Overall Toxicity	Source
ND	Trinity River, TX	*Chironomus tentans* (10d)	10 % mortality	NT	*Hyalella azteca* (10d)	27 % mortality	T	T	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	20 % mortality	NT	*Hyalella azteca* (10d)	24 % mortality	T	T	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	40 % mortality	T	*Hyalella azteca* (10d)	13 % mortality	NT	T	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	0 % mortality	NT	*Hyalella azteca* (10d)	7 % mortality	NT	NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	10 % mortality	NT	*Hyalella azteca* (10d)	4 % mortality	NT	NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	10 % mortality	NT	*Hyalella azteca* (10d)	0 % mortality	NT	NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	10 % mortality	NT	*Hyalella azteca* (10d)	4 % mortality	NT	NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	20 % mortality	NT	*Hyalella azteca* (10d)	36 % mortality	T	T	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	20 % mortality	NT	*Hyalella azteca* (10d)	36 % mortality	T	T	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	20 % mortality	NT	*Hyalella azteca* (10d)	4 % mortality	NT	NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	10 % mortality	NT	*Hyalella azteca* (10d)	0 % mortality	NT	NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	20 % mortality	NT	*Hyalella azteca* (10d)	0 % mortality	NT	NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	10 % mortality	NT	*Hyalella azteca* (10d)	9 % mortality	NT	NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	10 % mortality	NT	*Hyalella azteca* (10d)	7 % mortality	NT	NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	20 % mortality	NT	*Hyalella azteca* (10d)	0 % mortality	NT	NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	20 % mortality	NT	*Hyalella azteca* (10d)	9 % mortality	NT	NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	20 % mortality	NT	*Hyalella azteca* (10d)	9 % mortality	NT	NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	60 % mortality	T	*Hyalella azteca* (10d)	11 % mortality	NT	T	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	20 % mortality	NT	*Hyalella azteca* (10d)	0 % mortality	NT	NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	60 % mortality	T	*Hyalella azteca* (10d)	0 % mortality	NT	T	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	20 % mortality	NT	*Hyalella azteca* (10d)	11 % mortality	NT	NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	30 % mortality	T	*Hyalella azteca* (10d)	9 % mortality	NT	T	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	0 % mortality	NT	*Hyalella azteca* (10d)	0 % mortality	NT	NT	Dickson *et al.* 1989
ND	Trinity River, TX	*Chironomus tentans* (10d)	20 % mortality	NT	*Hyalella azteca* (10d)	0 % mortality	NT	NT	Dickson *et al.* 1989
0.012	Trinity River, TX	*Chironomus tentans* (10d)	40 % mortality	T	*Hyalella azteca* (10d)	11 % mortality	NT	T	Dickson *et al.* 1989
0.021	Upper Mississippi River, MN-MO	*Hyalella azteca* (32d)	13.5 % mortality	NT				NT	USEPA 1996
0.033	Trinity River, TX	*Chironomus tentans* (10d)	20 % mortality	NT	*Hyalella azteca* (10d)	9 % mortality	NT	NT	Dickson *et al.* 1989
<0.040	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	35 % mortality	NT	*Hyalella azteca* (28d)	3.17 mm length	NT	NT	USEPA 1997
<0.040	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	25 % mortality	NT	*Hyalella azteca* (28d)	3.47 mm length	NT	NT	USEPA 1997
<0.040	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	37.5 % mortality	NT	*Hyalella azteca* (28d)	3.35 mm length	NT	NT	USEPA 1997
<0.040	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	20 % mortality	NT	*Hyalella azteca* (28d)	4.06 mm length	NT	NT	USEPA 1997
<0.040	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	17.5 % mortality	NT	*Hyalella azteca* (28d)	4.08 mm length	NT	NT	USEPA 1997
<0.040	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	5 % mortality	NT	*Hyalella azteca* (28d)	3.7 mm length	NT	NT	USEPA 1997
<0.040	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	7.5 % mortality	NT	*Hyalella azteca* (28d)	4.09 mm length	NT	NT	USEPA 1997
<0.040	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	32.5 % mortality	NT	*Hyalella azteca* (28d)	3.65 mm length	NT	NT	USEPA 1997
<0.040	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	27.5 % mortality	NT	*Hyalella azteca* (28d)	3.86 mm length	NT	NT	USEPA 1997
<0.040	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	42.5 % mortality	NT	*Hyalella azteca* (28d)	3.61 mm length	NT	NT	USEPA 1997
<0.040	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	15 % mortality	NT	*Hyalella azteca* (28d)	3.78 mm length	NT	NT	USEPA 1997
<0.040	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	52.5 % mortality	NT	*Hyalella azteca* (28d)	3.56 mm length	NT	NT	USEPA 1997

Appendix 3. A summary of freshwater data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by concentration.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result		Species Tested (duration)	Endpoint Measured/ Result		Overall Toxicity	Source
<0.040	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	52.5 % mortality	NT	*Hyalella azteca* (28d)	3.5 mm length	NT	**NT**	USEPA 1997
<0.040	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	27.5 % mortality	NT	*Hyalella azteca* (28d)	3.59 mm length	NT	**NT**	USEPA 1997
<0.040	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	10 % mortality	NT	*Hyalella azteca* (28d)	3.83 mm length	NT	**NT**	USEPA 1997
<0.040	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	27.5 % mortality	NT	*Hyalella azteca* (28d)	3.52 mm length	NT	**NT**	USEPA 1997
<0.040	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	27.5 % mortality	NT	*Hyalella azteca* (28d)	3.44 mm length	NT	**NT**	USEPA 1997
<0.040	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	5 % mortality	NT	*Hyalella azteca* (28d)	3.3 mm length	NT	**NT**	USEPA 1997
<0.040	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	12.5 % mortality	NT	*Hyalella azteca* (28d)	3.87 mm length	NT	**NT**	USEPA 1997
<0.040	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	47.5 % mortality	NT	*Hyalella azteca* (28d)	3.64 mm length	NT	**NT**	USEPA 1997
<0.040	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	40 % mortality	NT	*Hyalella azteca* (28d)	3.78 mm length	NT	**NT**	USEPA 1997
<0.040	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	37.5 % mortality	NT	*Hyalella azteca* (28d)	3.63 mm length	NT	**NT**	USEPA 1997
<0.040	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	10 % mortality	NT	*Hyalella azteca* (28d)	2.88 mm length	T	**T**	USEPA 1997
0.057	Saginaw River, MI	*Chironomus riparius* (14d)	6.5 % mortality	NT	*Hyalella azteca* (28d)	4 mm length	NT	**NT**	USEPA 1996
0.070	Potomac River, DC	*Hyalella azteca* (28d)	75 % mortality	T	*Hyalella azteca* (28d)	2.15 mm length	NT	**T**	Schlekat *et al.* 1994*
0.082	Waukegan Harbor, IL	*Chironomus riparius* (13d)	14.3 % mortality	NT	*Hyalella azteca* (10d)	0 % mortality	NT	**NT**	USEPA 1996
0.091	Lower Fox R. & Green Bay, WI	*Hexagenia limbata* (10d)	20 % mortality	NT	*Chironomus riparius* (10d)	0 % mortality	NT	**NT**	Call *et al.* 1991
0.112	Upper Mississippi River, MN-MO	*Hyalella azteca* (32d)	0 % mortality	NT				**NT**	USEPA 1996
0.120	Saginaw River, MI	*Chironomus riparius* (14d)	5.5 % mortality	NT	*Hyalella azteca* (28d)	3.6 mm length	NT	**NT**	USEPA 1996
0.123	Upper Mississippi River, MN-MO	*Hyalella azteca* (32d)	0 % mortality	NT				**NT**	USEPA 1996
0.134	Saginaw River, MI	*Chironomus riparius* (14d)	13 % mortality	NT	*Hyalella azteca* (28d)	3.6 mm length	NT	**NT**	USEPA 1996
0.194	Upper Mississippi River, MN-MO	*Hyalella azteca* (32d)	0 % mortality	NT				**NT**	USEPA 1996
<0.200	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	7.5 % mortality	NT	*Hyalella azteca* (28d)	3.66 mm length	NT	**NT**	USEPA 1997
<0.200	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	25 % mortality	NT	*Hyalella azteca* (28d)	4.07 mm length	NT	**NT**	USEPA 1997
<0.200	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	5 % mortality	NT	*Hyalella azteca* (28d)	4.27 mm length	NT	**NT**	USEPA 1997
<0.200	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	15 % mortality	NT	*Hyalella azteca* (28d)	3.39 mm length	NT	**NT**	USEPA 1997
<0.200	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	20 % mortality	NT	*Hyalella azteca* (28d)	4.23 mm length	NT	**NT**	USEPA 1997
<0.200	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	32.5 % mortality	NT	*Hyalella azteca* (28d)	3.53 mm length	NT	**NT**	USEPA 1997
<0.200	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	0 % mortality	NT	*Hyalella azteca* (28d)	3.66 mm length	NT	**NT**	USEPA 1997
<0.200	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	2.5 % mortality	NT	*Hyalella azteca* (28d)	3.69 mm length	NT	**NT**	USEPA 1997
<0.200	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	25 % mortality	NT	*Hyalella azteca* (28d)	3.72 mm length	NT	**NT**	USEPA 1997
<0.200	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	7.5 % mortality	NT	*Hyalella azteca* (28d)	4.28 mm length	NT	**NT**	USEPA 1997
<0.200	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	12.5 % mortality	NT	*Hyalella azteca* (28d)	4.31 mm length	NT	**NT**	USEPA 1997
<0.200	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	27.5 % mortality	NT	*Hyalella azteca* (28d)	3.48 mm length	NT	**NT**	USEPA 1997
<0.200	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	67.5 % mortality	T	*Hyalella azteca* (28d)	3.87 mm length	NT	**T**	USEPA 1997
<0.200	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	35 % mortality	NT	*Hyalella azteca* (28d)	3.85 mm length	NT	**NT**	USEPA 1997
<0.200	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	10 % mortality	NT	*Hyalella azteca* (28d)	3.74 mm length	NT	**NT**	USEPA 1997
<0.200	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	30 % mortality	NT	*Hyalella azteca* (28d)	3.72 mm length	NT	**NT**	USEPA 1997
<0.200	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	22.5 % mortality	NT	*Hyalella azteca* (28d)	3.57 mm length	NT	**NT**	USEPA 1997
<0.200	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	15 % mortality	NT	*Hyalella azteca* (28d)	3.31 mm length	NT	**NT**	USEPA 1997
<0.200	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	17.5 % mortality	NT	*Hyalella azteca* (28d)	3.43 mm length	NT	**NT**	USEPA 1997
<0.200	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	5 % mortality	NT	*Hyalella azteca* (28d)	3.46 mm length	NT	**NT**	USEPA 1997

Appendix 3. A summary of freshwater data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by concentration.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result		Species Tested (duration)	Endpoint Measured/ Result		Overall Toxicity	Source
<0.200	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	15 % mortality	NT	*Hyalella azteca* (28d)	3.79 mm length	NT	**NT**	USEPA 1997
<0.200	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	12.5 % mortality	NT	*Hyalella azteca* (28d)	3.61 mm length	NT	**NT**	USEPA 1997
<0.200	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	37.5 % mortality	NT	*Hyalella azteca* (28d)	3.6 mm length	NT	**NT**	USEPA 1997
<0.200	Upper Mississippi River, MN-MO	*Hyalella azteca* (28d)	7.5 % mortality	NT	*Hyalella azteca* (28d)	3.51 mm length	NT	**NT**	USEPA 1997
0.207	Trinity River, TX	*Chironomus tentans* (10d)	30 % mortality	T	*Hyalella azteca* (10d)	0 % mortality	NT	**T**	Dickson *et al.* 1989
0.244	Saginaw River, MI	*Chironomus riparius* (14d)	11.5 % mortality	NT	*Hyalella azteca* (28d)	3.7 mm length	NT	**NT**	USEPA 1996
0.250	Potomac River, DC	*Hyalella azteca* (28d)	26.2 % mortality	NT	*Hyalella azteca* (28d)	2.39 mm length	NT	**NT**	Schlekat *et al.* 1994*
0.254	Trinity River, TX	*Chironomus tentans* (10d)	10 % mortality	NT	*Hyalella azteca* (10d)	18 % mortality	NT	**NT**	Dickson *et al.* 1989
0.306	Lower Fox R. & Green Bay, WI	*Hexagenia limbata* (10d)	30 % mortality	NT	*Chironomus riparius* (10d)	10 % mortality	NT	**NT**	Call *et al.* 1991
0.310	Potomac River, DC	*Hyalella azteca* (28d)	21.2 % mortality	NT	*Hyalella azteca* (28d)	2.61 mm length	NT	**NT**	Schlekat *et al.* 1994*
0.351	Saginaw River, MI	*Chironomus riparius* (14d)	8 % mortality	NT	*Hyalella azteca* (28d)	3.9 mm length	NT	**NT**	USEPA 1996
0.383	Trinity River, TX	*Chironomus tentans* (10d)	20 % mortality	NT	*Hyalella azteca* (10d)	9 % mortality	NT	**NT**	Dickson *et al.* 1989
0.390	Potomac River, DC	*Hyalella azteca* (28d)	13.7 % mortality	NT	*Hyalella azteca* (28d)	2.58 mm length	NT	**NT**	Schlekat *et al.* 1994*
0.414	Lower Fox R. & Green Bay, WI	*Hexagenia limbata* (10d)	30 % mortality	NT	*Chironomus riparius* (10d)	10 % mortality	NT	**NT**	Call *et al.* 1991
0.460	Potomac River, DC	*Hyalella azteca* (28d)	21.2 % mortality	NT	*Hyalella azteca* (28d)	2.61 mm length	NT	**NT**	Schlekat *et al.* 1994*
0.490	Potomac River, DC	*Hyalella azteca* (28d)	23.7 % mortality	NT	*Hyalella azteca* (28d)	2.68 mm length	NT	**NT**	Schlekat *et al.* 1994*
0.505	Saginaw River, MI	*Chironomus riparius* (14d)	4 % mortality	NT	*Hyalella azteca* (28d)	3.7 mm length	NT	**NT**	USEPA 1996
0.510	Potomac River, DC	*Hyalella azteca* (28d)	22.5 % mortality	NT	*Hyalella azteca* (28d)	2.1 mm length	NT	**NT**	Schlekat *et al.* 1994*
0.520	Potomac River, DC	*Hyalella azteca* (28d)	27.5 % mortality	NT	*Hyalella azteca* (28d)	2.45 mm length	NT	**NT**	Schlekat *et al.* 1994*
0.530	Potomac River, DC	*Hyalella azteca* (28d)	17.5 % mortality	NT	*Hyalella azteca* (28d)	2.62 mm length	NT	**NT**	Schlekat *et al.* 1994*
0.530	Saginaw River, MI	*Chironomus riparius* (14d)	6 % mortality	NT	*Hyalella azteca* (28d)	4.1 mm length	NT	**NT**	USEPA 1996
0.587	Trinity River, TX	*Chironomus tentans* (10d)	20 % mortality	NT	*Hyalella azteca* (10d)	13 % mortality	NT	**NT**	Dickson *et al.* 1989
0.610	Potomac River, DC	*Hyalella azteca* (28d)	12.5 % mortality	NT	*Hyalella azteca* (28d)	2.96 mm length	NT	**NT**	Schlekat *et al.* 1994*
0.650	Potomac River, DC	*Hyalella azteca* (28d)	38.7 % mortality	T	*Hyalella azteca* (28d)	2.00 mm length	NT	**T**	Schlekat *et al.* 1994*
0.660	Potomac River, DC	*Hyalella azteca* (28d)	38.5 % mortality	T	*Hyalella azteca* (28d)	2.71 mm length	NT	**T**	Schlekat *et al.* 1994*
0.707	Lower Fox R. & Green Bay, WI	*Hexagenia limbata* (10d)	10 % mortality	NT	*Chironomus riparius* (10d)	25 % mortality	T	**T**	Call *et al.* 1991
0.710	Potomac River, DC	*Hyalella azteca* (28d)	61.2 % mortality	T	*Hyalella azteca* (28d)	1.96 mm length	NT	**T**	Schlekat *et al.* 1994*
0.730	Waukegan Harbor, IL	*Chironomus riparius* (13d)	91.4 % mortality	T	*Hyalella azteca* (10d)	65 % mortality	T	**T**	USEPA 1996
0.770	Potomac River, DC	*Hyalella azteca* (28d)	46.2 % mortality	T	*Hyalella azteca* (28d)	2.01 mm length	NT	**T**	Schlekat *et al.* 1994*
0.811	Lower Fox R. & Green Bay, WI	*Hexagenia limbata* (10d)	10 % mortality	NT	*Chironomus riparius* (10d)	0 % mortality	NT	**NT**	Call *et al.* 1991
0.900	Waukegan Harbor, IL	*Hyalella azteca* (28d)	10 % mortality	NT	*Hyalella azteca* (28d)	4 mm length	T	**T**	Kemble *et al.* 1998
0.940	Grand Calumet River, IN	*Ceriodaphnia dubia* (48h)	EC50 = 60.2% PW	T	*Chironomus tentans* (10d)	100 % reduced growth	T	**T**	Hoke *et al.* 1993; Giesy *et al.* 1993
1.15	Trinity River, TX	*Chironomus tentans* (10d)	0 % mortality	NT	*Hyalella azteca* (10d)	4 % mortality	NT	**NT**	Dickson *et al.* 1989
1.24	Lower Fox R. & Green Bay, WI	*Hexagenia limbata* (10d)	10 % mortality	NT	*Chironomus riparius* (10d)	5 % mortality	NT	**NT**	Call *et al.* 1991
1.49	Grand Calumet River, IN	*Ceriodaphnia dubia* (48h)	EC50 = >100% PW	NT	*Chironomus tentans* (10d)	89.2 % reduced growth	T	**T**	Hoke *et al.* 1993; Giesy *et al.* 1993
1.66	Grand Calumet River, IN	*Ceriodaphnia dubia* (48h)	EC50 = 67% PW	T	*Chironomus tentans* (10d)	99 % reduced growth	T	**T**	Hoke *et al.* 1993; Giesy *et al.* 1993
1.83	Lower Fox R. & Green Bay, WI	*Hexagenia limbata* (10d)	30 % mortality	NT	*Chironomus riparius* (10d)	15 % mortality	NT	**NT**	Call *et al.* 1991
2.17	Grand Calumet River, IN	*Ceriodaphnia dubia* (48h)	EC50 = 24.6% PW	T	*Chironomus tentans* (10d)	100 % reduced growth	T	**T**	Hoke *et al.* 1993; Giesy *et al.* 1993
2.20	Potomac River, DC	*Hyalella azteca* (28d)	65 % mortality	T	*Hyalella azteca* (28d)	1.96 mm length	NT	**T**	Schlekat *et al.* 1994*
2.30	Lower Fox R. & Green Bay, WI	*Hexagenia limbata* (10d)	30 % mortality	NT	*Chironomus riparius* (10d)	0 % mortality	NT	**NT**	Call *et al.* 1991

Appendix 3. A summary of freshwater data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by concentration.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result		Species Tested (duration)	Endpoint Measured/ Result		Overall Toxicity	Source
2.40	Lower Fox R. & Green Bay, WI	*Hexagenia limbata* (10d)	50 % mortality	T	*Chironomus riparius* (10d)	0 % mortality	NT	T	Call *et al.* 1991
2.65	Lower Fox R. & Green Bay, WI	*Hexagenia limbata* (10d)	30 % mortality	NT	*Chironomus riparius* (10d)	5 % mortality	NT	NT	Call *et al.* 1991
2.80	Grand Calumet River, IN	*Ceriodaphnia dubia* (48h)	EC50 = 3.2% PW	T	*Chironomus tentans* (10d)	98 % reduced growth	T	T	Hoke *et al.* 1993; Giesy *et al.* 1993
3.00	Waukegan Harbor, IL	*Hyalella azteca* (28d)	0 % mortality	NT	*Hyalella azteca* (28d)	3.5 mm length	T	T	Kemble *et al.* 1998
3.06	Lower Fox R. & Green Bay, WI	*Hexagenia limbata* (10d)	0 % mortality	NT	*Chironomus riparius* (10d)	0 % mortality	NT	NT	Call *et al.* 1991
3.13	Saginaw River, MI	*Chironomus riparius* (14d)	30 % mortality	NT	*Hyalella azteca* (28d)	3.4 mm length	T	T	USEPA 1996
3.60	Waukegan Harbor, IL	*Hyalella azteca* (28d)	7 % mortality	NT	*Hyalella azteca* (28d)	3.9 mm length	T	T	Kemble *et al.* 1998
4.01	Lower Fox R. & Green Bay, WI	*Hexagenia limbata* (10d)	0 % mortality	NT	*Chironomus riparius* (10d)	5 % mortality	NT	NT	Call *et al.* 1991
4.26	Grand Calumet River, IN	*Ceriodaphnia dubia* (48h)	EC50 = >100% PW	NT	*Chironomus tentans* (10d)	37 % reduced growth	T	T	Hoke *et al.* 1993; Giesy *et al.* 1993
4.30	Waukegan Harbor, IL	*Hyalella azteca* (28d)	6 % mortality	NT	*Hyalella azteca* (28d)	4 mm length	T	T	Kemble *et al.* 1998
4.40	Waukegan Harbor, IL	*Hyalella azteca* (28d)	7 % mortality	NT	*Hyalella azteca* (28d)	4 mm length	T	T	Kemble *et al.* 1998
4.54	Indiana Harbor, IN	*Chironomus riparius* (14d)	98.5 % mortality	T	*Hyalella azteca* (14d)	100 % mortality	T	T	USEPA 1996
4.61	Grand Calumet River, IN	*Ceriodaphnia dubia* (48h)	EC50 = 20.3% PW	T	*Chironomus tentans* (10d)	90 % reduced growth	T	T	Hoke *et al.* 1993; Giesy *et al.* 1993
4.70	Waukegan Harbor, IL	*Hyalella azteca* (28d)	0 % mortality	NT	*Hyalella azteca* (28d)	4.1 mm length	T	T	Kemble *et al.* 1998
4.70	Waukegan Harbor, IL	*Hyalella azteca* (28d)	16 % mortality	T	*Hyalella azteca* (28d)	3.8 mm length	T	T	Kemble *et al.* 1998
4.90	Waukegan Harbor, IL	*Hyalella azteca* (28d)	4 % mortality	NT	*Hyalella azteca* (28d)	3.6 mm length	T	T	Kemble *et al.* 1998
5.00	Waukegan Harbor, IL	*Hyalella azteca* (28d)	5 % mortality	NT	*Hyalella azteca* (28d)	3.6 mm length	T	T	Kemble *et al.* 1998
5.10	Waukegan Harbor, IL	*Hyalella azteca* (28d)	21 % mortality	T	*Hyalella azteca* (28d)	3.8 mm length	T	T	Kemble *et al.* 1998
5.20	Waukegan Harbor, IL	*Hyalella azteca* (28d)	1 % mortality	NT	*Hyalella azteca* (28d)	3.6 mm length	T	T	Kemble *et al.* 1998
5.20	Waukegan Harbor, IL	*Hyalella azteca* (28d)	12 % mortality	T	*Hyalella azteca* (28d)	4.1 mm length	T	T	Kemble *et al.* 1998
5.80	Waukegan Harbor, IL	*Hyalella azteca* (28d)	4 % mortality	NT	*Hyalella azteca* (28d)	3.9 mm length	T	T	Kemble *et al.* 1998
6.30	Waukegan Harbor, IL	*Hyalella azteca* (28d)	12 % mortality	T	*Hyalella azteca* (28d)	3.8 mm length	T	T	Kemble *et al.* 1998
6.75	Lower Fox R. & Green Bay, WI	*Hexagenia limbata* (10d)	30 % mortality	NT	*Chironomus riparius* (10d)	5 % mortality	NT	NT	Call *et al.* 1991
6.89	Grand Calumet River, IN	*Ceriodaphnia dubia* (48h)	EC50 = 16.4% PW	T	*Chironomus tentans* (10d)	100 % reduced growth	T	T	Hoke *et al.* 1993; Giesy *et al.* 1993
7.30	Waukegan Harbor, IL	*Hyalella azteca* (28d)	12 % mortality	T	*Hyalella azteca* (28d)	3.8 mm length	T	T	Kemble *et al.* 1998
7.30	Waukegan Harbor, IL	*Hyalella azteca* (28d)	7 % mortality	NT	*Hyalella azteca* (28d)	4.1 mm length	T	T	Kemble *et al.* 1998
7.40	Waukegan Harbor, IL	*Hyalella azteca* (28d)	7 % mortality	NT	*Hyalella azteca* (28d)	4.3 mm length	NT	NT	Kemble *et al.* 1998
7.70	Waukegan Harbor, IL	*Hyalella azteca* (28d)	10 % mortality	NT	*Hyalella azteca* (28d)	4.1 mm length	T	T	Kemble *et al.* 1998
7.93	Grand Calumet River, IN	*Ceriodaphnia dubia* (48h)	EC50 = 71.5% PW	T	*Chironomus tentans* (10d)	89 % reduced growth	T	T	Hoke *et al.* 1993; Giesy *et al.* 1993
8.65	Saginaw River, MI	*Chironomus riparius* (14d)	85.5 % mortality	T	*Hyalella azteca* (28d)	2.1 mm length	T	T	USEPA 1996
8.90	Waukegan Harbor, IL	*Hyalella azteca* (28d)	34 % mortality	T	*Hyalella azteca* (28d)	3.9 mm length	T	T	Kemble *et al.* 1998
8.90	Waukegan Harbor, IL	*Chironomus riparius* (13d)	48.6 % mortality	T	*Hyalella azteca* (10d)	60 % mortality	T	T	USEPA 1996
9.77	Trinity River, TX	*Chironomus tentans* (10d)	0 % mortality	NT	*Hyalella azteca* (10d)	18 % mortality	T	T	Dickson *et al.* 1989
18.3	Grand Calumet River, IN	*Ceriodaphnia dubia* (48h)	EC50 = 34.5% PW	T	*Chironomus tentans* (10d)	95 % reduced growth	T	T	Hoke *et al.* 1993; Giesy *et al.* 1993
25.0	Indiana Harbor, IN	*Chironomus riparius* (14d)	100 % mortality	T	*Hyalella azteca* (14d)	98.7 % mortality	T	T	USEPA 1996
43.8	Indiana Harbor, IN	*Chironomus riparius* (14d)	100 % mortality	T	*Hyalella azteca* (14d)	100 % mortality	T	T	USEPA 1996

DW = dry weight; Conc. = concentration; R. = river; PW = porewater; ND = not detected; N/A = not available; NT = not toxic; T = toxic.
Schlekat *et al.* 1994* = Schlekat et al. 1994; Velinsky *et al.* 1994; Wade *et al.* 1994

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Appendix 4

Marine and Estuarine Data for Assessing Predictive Ability of the SECs: Sorted by Study

Appendix 4. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by study.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result	Overall Toxicity	Source
0.001	Biscayne Bay, FL	*Ampelisca abdita* (10d)	3 % mortality NT	NT	Long 1997
0.001	Biscayne Bay, FL	*Ampelisca abdita* (10d)	43 % mortality T	T	Long 1997
0.001	Biscayne Bay, FL	*Ampelisca abdita* (10d)	18 % mortality NT	NT	Long 1997
0.001	Biscayne Bay, FL	*Ampelisca abdita* (10d)	12 % mortality NT	NT	Long 1997
0.001	Biscayne Bay, FL	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long 1997
0.001	Biscayne Bay, FL	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long 1997
0.001	Biscayne Bay, FL	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long 1997
0.001	Biscayne Bay, FL	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long 1997
0.001	Biscayne Bay, FL	*Ampelisca abdita* (10d)	56 % mortality T	T	Long 1997
0.001	Biscayne Bay, FL	*Ampelisca abdita* (10d)	4 % mortality NT	NT	Long 1997
0.001	Biscayne Bay, FL	*Ampelisca abdita* (10d)	4 % mortality NT	NT	Long 1997
0.002	Biscayne Bay, FL	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long 1997
0.002	Biscayne Bay, FL	*Ampelisca abdita* (10d)	4 % mortality NT	NT	Long 1997
0.002	Biscayne Bay, FL	*Ampelisca abdita* (10d)	11 % mortality NT	NT	Long 1997
0.002	Biscayne Bay, FL	*Ampelisca abdita* (10d)	5 % mortality NT	NT	Long 1997
0.002	Biscayne Bay, FL	*Ampelisca abdita* (10d)	19 % mortality NT	NT	Long 1997
0.002	Biscayne Bay, FL	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long 1997
0.002	Biscayne Bay, FL	*Ampelisca abdita* (10d)	18 % mortality NT	NT	Long 1997
0.002	Biscayne Bay, FL	*Ampelisca abdita* (10d)	6 % mortality NT	NT	Long 1997
0.002	Biscayne Bay, FL	*Ampelisca abdita* (10d)	35 % mortality T	T	Long 1997
0.002	Biscayne Bay, FL	*Ampelisca abdita* (10d)	7 % mortality NT	NT	Long 1997
0.002	Biscayne Bay, FL	*Ampelisca abdita* (10d)	19 % mortality NT	NT	Long 1997
0.002	Biscayne Bay, FL	*Ampelisca abdita* (10d)	2 % mortality NT	NT	Long 1997
0.002	Biscayne Bay, FL	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long 1997
0.002	Biscayne Bay, FL	*Ampelisca abdita* (10d)	18 % mortality NT	NT	Long 1997
0.002	Biscayne Bay, FL	*Ampelisca abdita* (10d)	5 % mortality NT	NT	Long 1997
0.003	Biscayne Bay, FL	*Ampelisca abdita* (10d)	11 % mortality NT	NT	Long 1997
0.003	Biscayne Bay, FL	*Ampelisca abdita* (10d)	8 % mortality NT	NT	Long 1997
0.003	Biscayne Bay, FL	*Ampelisca abdita* (10d)	6 % mortality NT	NT	Long 1997
0.004	Biscayne Bay, FL	*Ampelisca abdita* (10d)	7 % mortality NT	NT	Long 1997
0.004	Biscayne Bay, FL	*Ampelisca abdita* (10d)	4 % mortality NT	NT	Long 1997
0.004	Biscayne Bay, FL	*Ampelisca abdita* (10d)	17 % mortality NT	NT	Long 1997
0.005	Biscayne Bay, FL	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long 1997
0.005	Biscayne Bay, FL	*Ampelisca abdita* (10d)	9 % mortality NT	NT	Long 1997
0.005	Biscayne Bay, FL	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long 1997
0.005	Biscayne Bay, FL	*Ampelisca abdita* (10d)	1 % mortality NT	NT	Long 1997
0.005	Biscayne Bay, FL	*Ampelisca abdita* (10d)	2 % mortality NT	NT	Long 1997
0.005	Biscayne Bay, FL	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long 1997
0.006	Biscayne Bay, FL	*Ampelisca abdita* (10d)	10 % mortality NT	NT	Long 1997

11.1114

Appendix 4. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by study.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result		Overall Toxicity	Source
0.006	Biscayne Bay, FL	*Ampelisca abdita* (10d)	4 % mortality	NT	NT	Long 1997
0.006	Biscayne Bay, FL	*Ampelisca abdita* (10d)	9 % mortality	NT	NT	Long 1997
0.007	Biscayne Bay, FL	*Ampelisca abdita* (10d)	1 % mortality	NT	NT	Long 1997
0.008	Biscayne Bay, FL	*Ampelisca abdita* (10d)	4 % mortality	NT	NT	Long 1997
0.009	Biscayne Bay, FL	*Ampelisca abdita* (10d)	23 % mortality	T	T	Long 1997
0.012	Biscayne Bay, FL	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long 1997
0.012	Biscayne Bay, FL	*Ampelisca abdita* (10d)	8 % mortality	NT	NT	Long 1997
0.012	Biscayne Bay, FL	*Ampelisca abdita* (10d)	2 % mortality	NT	NT	Long 1997
0.012	Biscayne Bay, FL	*Ampelisca abdita* (10d)	3 % mortality	NT	NT	Long 1997
0.013	Biscayne Bay, FL	*Ampelisca abdita* (10d)	2 % mortality	NT	NT	Long 1997
0.014	Biscayne Bay, FL	*Ampelisca abdita* (10d)	2 % mortality	NT	NT	Long 1997
0.015	Biscayne Bay, FL	*Ampelisca abdita* (10d)	7 % mortality	NT	NT	Long 1997
0.016	Biscayne Bay, FL	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long 1997
0.018	Biscayne Bay, FL	*Ampelisca abdita* (10d)	1 % mortality	NT	NT	Long 1997
0.018	Biscayne Bay, FL	*Ampelisca abdita* (10d)	1 % mortality	NT	NT	Long 1997
0.020	Biscayne Bay, FL	*Ampelisca abdita* (10d)	6 % mortality	NT	NT	Long 1997
0.020	Biscayne Bay, FL	*Ampelisca abdita* (10d)	2 % mortality	NT	NT	Long 1997
0.022	Biscayne Bay, FL	*Ampelisca abdita* (10d)	9 % mortality	NT	NT	Long 1997
0.028	Biscayne Bay, FL	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long 1997
0.028	Biscayne Bay, FL	*Ampelisca abdita* (10d)	4 % mortality	NT	NT	Long 1997
0.029	Biscayne Bay, FL	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long 1997
0.033	Biscayne Bay, FL	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long 1997
0.033	Biscayne Bay, FL	*Ampelisca abdita* (10d)	1 % mortality	NT	NT	Long 1997
0.037	Biscayne Bay, FL	*Ampelisca abdita* (10d)	13 % mortality	NT	NT	Long 1997
0.038	Biscayne Bay, FL	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long 1997
0.039	Biscayne Bay, FL	*Ampelisca abdita* (10d)	9 % mortality	NT	NT	Long 1997
0.042	Biscayne Bay, FL	*Ampelisca abdita* (10d)	4 % mortality	NT	NT	Long 1997
0.043	Biscayne Bay, FL	*Ampelisca abdita* (10d)	1 % mortality	NT	NT	Long 1997
0.044	Biscayne Bay, FL	*Ampelisca abdita* (10d)	5 % mortality	NT	NT	Long 1997
0.045	Biscayne Bay, FL	*Ampelisca abdita* (10d)	2 % mortality	NT	NT	Long 1997
0.047	Biscayne Bay, FL	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long 1997
0.050	Biscayne Bay, FL	*Ampelisca abdita* (10d)	6 % mortality	NT	NT	Long 1997
0.050	Biscayne Bay, FL	*Ampelisca abdita* (10d)	7 % mortality	NT	NT	Long 1997
0.052	Biscayne Bay, FL	*Ampelisca abdita* (10d)	31 % mortality	T	T	Long 1997
0.055	Biscayne Bay, FL	*Ampelisca abdita* (10d)	2 % mortality	NT	NT	Long 1997
0.062	Biscayne Bay, FL	*Ampelisca abdita* (10d)	2 % mortality	NT	NT	Long 1997
0.070	Biscayne Bay, FL	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long 1997
0.071	Biscayne Bay, FL	*Ampelisca abdita* (10d)	11 % mortality	NT	NT	Long 1997
0.096	Biscayne Bay, FL	*Ampelisca abdita* (10d)	5 % mortality	NT	NT	Long 1997

Appendix 4. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by study.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result		Overall Toxicity	Source
0.113	Biscayne Bay, FL	*Ampelisca abdita* (10d)	3 % mortality	NT	NT	Long 1997
0.116	Biscayne Bay, FL	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long 1997
0.118	Biscayne Bay, FL	*Ampelisca abdita* (10d)	4 % mortality	NT	NT	Long 1997
0.124	Biscayne Bay, FL	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long 1997
0.163	Biscayne Bay, FL	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long 1997
0.202	Biscayne Bay, FL	*Ampelisca abdita* (10d)	9 % mortality	NT	NT	Long 1997
0.209	Biscayne Bay, FL	*Ampelisca abdita* (10d)	84 % mortality	T	T	Long 1997
0.213	Biscayne Bay, FL	*Ampelisca abdita* (10d)	59 % mortality	T	T	Long 1997
0.314	Biscayne Bay, FL	*Ampelisca abdita* (10d)	5 % mortality	NT	NT	Long 1997
0.473	Biscayne Bay, FL	*Ampelisca abdita* (10d)	59 % mortality	T	T	Long 1997
0.565	Biscayne Bay, FL	*Ampelisca abdita* (10d)	6 % mortality	NT	NT	Long 1997
0.628	Biscayne Bay, FL	*Ampelisca abdita* (10d)	68 % mortality	T	T	Long 1997
0.660	Biscayne Bay, FL	*Ampelisca abdita* (10d)	33 % mortality	T	T	Long 1997
0.820	Biscayne Bay, FL	*Ampelisca abdita* (10d)	81 % mortality	T	T	Long 1997
0.881	Biscayne Bay, FL	*Ampelisca abdita* (10d)	49 % mortality	T	T	Long 1997
0.915	Biscayne Bay, FL	*Ampelisca abdita* (10d)	69 % mortality	T	T	Long 1997
0.935	Biscayne Bay, FL	*Ampelisca abdita* (10d)	91 % mortality	T	T	Long 1997
1.07	Biscayne Bay, FL	*Ampelisca abdita* (10d)	59 % mortality	T	T	Long 1997
1.08	Biscayne Bay, FL	*Ampelisca abdita* (10d)	61 % mortality	T	T	Long 1997
1.08	Biscayne Bay, FL	*Ampelisca abdita* (10d)	61 % mortality	T	T	Long 1997
1.15	Biscayne Bay, FL	*Ampelisca abdita* (10d)	6 % mortality	NT	NT	Long 1997
1.22	Biscayne Bay, FL	*Ampelisca abdita* (10d)	65 % mortality	T	T	Long 1997
1.30	Biscayne Bay, FL	*Ampelisca abdita* (10d)	98 % mortality	T	T	Long 1997
1.95	Biscayne Bay, FL	*Ampelisca abdita* (10d)	91 % mortality	T	T	Long 1997
2.00	Biscayne Bay, FL	*Ampelisca abdita* (10d)	95 % mortality	T	T	Long 1997
2.50	Biscayne Bay, FL	*Ampelisca abdita* (10d)	90 % mortality	T	T	Long 1997
2.89	Biscayne Bay, FL	*Ampelisca abdita* (10d)	92 % mortality	T	T	Long 1997
0.052	Boston Harbor, MA	*Ampelisca abdita* (10d)	10 % mortality	NT	NT	Long *et al.* 1998
0.065	Boston Harbor, MA	*Ampelisca abdita* (10d)	6 % mortality	NT	NT	Long *et al.* 1998
0.106	Boston Harbor, MA	*Ampelisca abdita* (10d)	17 % mortality	NT	NT	Long *et al.* 1998
0.114	Boston Harbor, MA	*Ampelisca abdita* (10d)	17.5 % mortality	NT	NT	Long *et al.* 1998
0.137	Boston Harbor, MA	*Ampelisca abdita* (10d)	17 % mortality	NT	NT	Long *et al.* 1998
0.145	Boston Harbor, MA	*Ampelisca abdita* (10d)	75 % mortality	T	T	Long *et al.* 1998
0.150	Boston Harbor, MA	*Ampelisca abdita* (10d)	13 % mortality	NT	NT	Long *et al.* 1998
0.161	Boston Harbor, MA	*Ampelisca abdita* (10d)	18 % mortality	NT	NT	Long *et al.* 1998
0.161	Boston Harbor, MA	*Ampelisca abdita* (10d)	86 % mortality	T	T	Long *et al.* 1998
0.166	Boston Harbor, MA	*Ampelisca abdita* (10d)	93 % mortality	T	T	Long *et al.* 1998
0.195	Boston Harbor, MA	*Ampelisca abdita* (10d)	10 % mortality	NT	NT	Long *et al.* 1998

Appendix 4. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by study.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result	Overall Toxicity	Source
0.195	Boston Harbor, MA	*Ampelisca abdita* (10d)	14 % mortality NT	**NT**	Long *et al.* 1998
0.195	Boston Harbor, MA	*Ampelisca abdita* (10d)	13 % mortality NT	**NT**	Long *et al.* 1998
0.215	Boston Harbor, MA	*Ampelisca abdita* (10d)	17 % mortality NT	**NT**	Long *et al.* 1998
0.241	Boston Harbor, MA	*Ampelisca abdita* (10d)	7 % mortality NT	**NT**	Long *et al.* 1998
0.243	Boston Harbor, MA	*Ampelisca abdita* (10d)	19 % mortality NT	**NT**	Long *et al.* 1998
0.262	Boston Harbor, MA	*Ampelisca abdita* (10d)	53 % mortality T	**T**	Long *et al.* 1998
0.267	Boston Harbor, MA	*Ampelisca abdita* (10d)	16.2 % mortality NT	**NT**	Long *et al.* 1998
0.285	Boston Harbor, MA	*Ampelisca abdita* (10d)	17 % mortality NT	**NT**	Long *et al.* 1998
0.303	Boston Harbor, MA	*Ampelisca abdita* (10d)	17 % mortality NT	**NT**	Long *et al.* 1998
0.313	Boston Harbor, MA	*Ampelisca abdita* (10d)	5 % mortality NT	**NT**	Long *et al.* 1998
0.346	Boston Harbor, MA	*Ampelisca abdita* (10d)	69 % mortality T	**T**	Long *et al.* 1998
0.351	Boston Harbor, MA	*Ampelisca abdita* (10d)	22 % mortality NT	**NT**	Long *et al.* 1998
0.380	Boston Harbor, MA	*Ampelisca abdita* (10d)	21.2 % mortality NT	**NT**	Long *et al.* 1998
0.417	Boston Harbor, MA	*Ampelisca abdita* (10d)	10 % mortality NT	**NT**	Long *et al.* 1998
0.454	Boston Harbor, MA	*Ampelisca abdita* (10d)	12 % mortality NT	**NT**	Long *et al.* 1998
0.530	Boston Harbor, MA	*Ampelisca abdita* (10d)	16.2 % mortality NT	**NT**	Long *et al.* 1998
0.535	Boston Harbor, MA	*Ampelisca abdita* (10d)	78 % mortality T	**T**	Long *et al.* 1998
0.802	Boston Harbor, MA	*Ampelisca abdita* (10d)	9 % mortality NT	**NT**	Long *et al.* 1998
0.878	Boston Harbor, MA	*Ampelisca abdita* (10d)	20 % mortality NT	**NT**	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	9 % mortality NT	**NT**	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	**NT**	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality NT	**NT**	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	24 % mortality T	**T**	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	8 % mortality NT	**NT**	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	4 % mortality NT	**NT**	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	**NT**	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	**NT**	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	5 % mortality NT	**NT**	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	18 % mortality NT	**NT**	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	3 % mortality NT	**NT**	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	**NT**	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	10 % mortality NT	**NT**	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	5 % mortality NT	**NT**	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality NT	**NT**	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality NT	**NT**	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	70 % mortality T	**T**	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	3 % mortality NT	**NT**	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	8 % mortality NT	**NT**	Long *et al.* 1998

Appendix 4. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by study.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result	Overall Toxicity	Source
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	20 % mortality NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	8 % mortality NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	11 % mortality NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	56 % mortality T	T	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	7 % mortality NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	10 % mortality NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	5 % mortality NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	13 % mortality NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	16 % mortality NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	5 % mortality NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	19 % mortality NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	13 % mortality NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	23 % mortality T	T	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	9 % mortality NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	6 % mortality NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	21 % mortality T	T	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	2 % mortality NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	4 % mortality NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	9 % mortality NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	30 % mortality T	T	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	14 % mortality NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	26 % mortality T	T	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	2 % mortality NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	4 % mortality NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	30 % mortality T	T	Long *et al.* 1998

Appendix 4. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by study.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result		Overall Toxicity	Source
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	6 % mortality	NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	18 % mortality	NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	4 % mortality	NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality	NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	11 % mortality	NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	7 % mortality	NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	4 % mortality	NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	7 % mortality	NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	8 % mortality	NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	8 % mortality	NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	5 % mortality	NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	3 % mortality	NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality	NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	8 % mortality	NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	9 % mortality	NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality	NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	13 % mortality	NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	10 % mortality	NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	16 % mortality	NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	6 % mortality	NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	12 % mortality	NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	8 % mortality	NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	2 % mortality	NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	6 % mortality	NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	3 % mortality	NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	5 % mortality	NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	12 % mortality	NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	3 % mortality	NT	NT	Long *et al.* 1998

Appendix 4. **A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by study.**

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result	Overall Toxicity	Source
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	7 % mortality NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	15 % mortality NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	11 % mortality NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	9 % mortality NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	40 % mortality T	T	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	7 % mortality NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	10 % mortality NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	7 % mortality NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	72 % mortality T	T	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	7 % mortality NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	6 % mortality NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	7 % mortality NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	5 % mortality NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	2 % mortality NT	NT	Long *et al.* 1998
0.001	EMAP Virginia Province	*Ampelisca abdita* (10d)	7 % mortality NT	NT	Long *et al.* 1998
0.002	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.002	EMAP Virginia Province	*Ampelisca abdita* (10d)	17 % mortality NT	NT	Long *et al.* 1998
0.002	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.002	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality NT	NT	Long *et al.* 1998
0.002	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.002	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.002	EMAP Virginia Province	*Ampelisca abdita* (10d)	13 % mortality NT	NT	Long *et al.* 1998
0.002	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.002	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.002	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality NT	NT	Long *et al.* 1998
0.002	EMAP Virginia Province	*Ampelisca abdita* (10d)	10 % mortality NT	NT	Long *et al.* 1998
0.002	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.002	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality NT	NT	Long *et al.* 1998
0.002	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.002	EMAP Virginia Province	*Ampelisca abdita* (10d)	8 % mortality NT	NT	Long *et al.* 1998
0.002	EMAP Virginia Province	*Ampelisca abdita* (10d)	14 % mortality NT	NT	Long *et al.* 1998
0.002	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.002	EMAP Virginia Province	*Ampelisca abdita* (10d)	7 % mortality NT	NT	Long *et al.* 1998
0.002	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.002	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.002	EMAP Virginia Province	*Ampelisca abdita* (10d)	13 % mortality NT	NT	Long *et al.* 1998
0.002	EMAP Virginia Province	*Ampelisca abdita* (10d)	6 % mortality NT	NT	Long *et al.* 1998
0.002	EMAP Virginia Province	*Ampelisca abdita* (10d)	16 % mortality NT	NT	Long *et al.* 1998
0.002	EMAP Virginia Province	*Ampelisca abdita* (10d)	3 % mortality NT	NT	Long *et al.* 1998

11.1119

Appendix 4. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by study.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result	Overall Toxicity	Source
0.002	EMAP Virginia Province	*Ampelisca abdita* (10d)	2 % mortality NT	NT	Long *et al.* 1998
0.002	EMAP Virginia Province	*Ampelisca abdita* (10d)	4 % mortality NT	NT	Long *et al.* 1998
0.002	EMAP Virginia Province	*Ampelisca abdita* (10d)	10 % mortality NT	NT	Long *et al.* 1998
0.002	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.002	EMAP Virginia Province	*Ampelisca abdita* (10d)	21 % mortality T	T	Long *et al.* 1998
0.002	EMAP Virginia Province	*Ampelisca abdita* (10d)	5 % mortality NT	NT	Long *et al.* 1998
0.002	EMAP Virginia Province	*Ampelisca abdita* (10d)	18 % mortality NT	NT	Long *et al.* 1998
0.002	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.002	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.002	EMAP Virginia Province	*Ampelisca abdita* (10d)	10 % mortality NT	NT	Long *et al.* 1998
0.002	EMAP Virginia Province	*Ampelisca abdita* (10d)	20 % mortality NT	NT	Long *et al.* 1998
0.002	EMAP Virginia Province	*Ampelisca abdita* (10d)	4 % mortality NT	NT	Long *et al.* 1998
0.002	EMAP Virginia Province	*Ampelisca abdita* (10d)	3 % mortality NT	NT	Long *et al.* 1998
0.002	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality NT	NT	Long *et al.* 1998
0.002	EMAP Virginia Province	*Ampelisca abdita* (10d)	3 % mortality NT	NT	Long *et al.* 1998
0.002	EMAP Virginia Province	*Ampelisca abdita* (10d)	4 % mortality NT	NT	Long *et al.* 1998
0.002	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.002	EMAP Virginia Province	*Ampelisca abdita* (10d)	7 % mortality NT	NT	Long *et al.* 1998
0.002	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.003	EMAP Virginia Province	*Ampelisca abdita* (10d)	5 % mortality NT	NT	Long *et al.* 1998
0.003	EMAP Virginia Province	*Ampelisca abdita* (10d)	11 % mortality NT	NT	Long *et al.* 1998
0.003	EMAP Virginia Province	*Ampelisca abdita* (10d)	6 % mortality NT	NT	Long *et al.* 1998
0.003	EMAP Virginia Province	*Ampelisca abdita* (10d)	22 % mortality T	T	Long *et al.* 1998
0.003	EMAP Virginia Province	*Ampelisca abdita* (10d)	5 % mortality NT	NT	Long *et al.* 1998
0.003	EMAP Virginia Province	*Ampelisca abdita* (10d)	4 % mortality NT	NT	Long *et al.* 1998
0.003	EMAP Virginia Province	*Ampelisca abdita* (10d)	27 % mortality NT	NT	Long *et al.* 1998
0.003	EMAP Virginia Province	*Ampelisca abdita* (10d)	89 % mortality T	T	Long *et al.* 1998
0.003	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.003	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality NT	NT	Long *et al.* 1998
0.003	EMAP Virginia Province	*Ampelisca abdita* (10d)	26 % mortality T	T	Long *et al.* 1998
0.003	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.003	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.003	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality NT	NT	Long *et al.* 1998
0.003	EMAP Virginia Province	*Ampelisca abdita* (10d)	12 % mortality NT	NT	Long *et al.* 1998
0.003	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.003	EMAP Virginia Province	*Ampelisca abdita* (10d)	5 % mortality NT	NT	Long *et al.* 1998
0.003	EMAP Virginia Province	*Ampelisca abdita* (10d)	28 % mortality T	T	Long *et al.* 1998
0.003	EMAP Virginia Province	*Ampelisca abdita* (10d)	9 % mortality NT	NT	Long *et al.* 1998
0.004	EMAP Virginia Province	*Ampelisca abdita* (10d)	14 % mortality NT	NT	Long *et al.* 1998

Appendix 4. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by study.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result		Overall Toxicity	Source
0.004	EMAP Virginia Province	*Ampelisca abdita* (10d)	3 % mortality	NT	**NT**	Long *et al.* 1998
0.004	EMAP Virginia Province	*Ampelisca abdita* (10d)	4 % mortality	NT	**NT**	Long *et al.* 1998
0.004	EMAP Virginia Province	*Ampelisca abdita* (10d)	12 % mortality	NT	**NT**	Long *et al.* 1998
0.004	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	**NT**	Long *et al.* 1998
0.004	EMAP Virginia Province	*Ampelisca abdita* (10d)	2 % mortality	NT	**NT**	Long *et al.* 1998
0.004	EMAP Virginia Province	*Ampelisca abdita* (10d)	6 % mortality	NT	**NT**	Long *et al.* 1998
0.004	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	**NT**	Long *et al.* 1998
0.004	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	**NT**	Long *et al.* 1998
0.004	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	**NT**	Long *et al.* 1998
0.004	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	**NT**	Long *et al.* 1998
0.004	EMAP Virginia Province	*Ampelisca abdita* (10d)	12 % mortality	NT	**NT**	Long *et al.* 1998
0.005	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	**NT**	Long *et al.* 1998
0.005	EMAP Virginia Province	*Ampelisca abdita* (10d)	7 % mortality	NT	**NT**	Long *et al.* 1998
0.005	EMAP Virginia Province	*Ampelisca abdita* (10d)	9 % mortality	NT	**NT**	Long *et al.* 1998
0.005	EMAP Virginia Province	*Ampelisca abdita* (10d)	30 % mortality	T	**T**	Long *et al.* 1998
0.005	EMAP Virginia Province	*Ampelisca abdita* (10d)	7 % mortality	NT	**NT**	Long *et al.* 1998
0.005	EMAP Virginia Province	*Ampelisca abdita* (10d)	8 % mortality	NT	**NT**	Long *et al.* 1998
0.005	EMAP Virginia Province	*Ampelisca abdita* (10d)	10 % mortality	NT	**NT**	Long *et al.* 1998
0.005	EMAP Virginia Province	*Ampelisca abdita* (10d)	4 % mortality	NT	**NT**	Long *et al.* 1998
0.005	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	**NT**	Long *et al.* 1998
0.005	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	**NT**	Long *et al.* 1998
0.005	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality	NT	**NT**	Long *et al.* 1998
0.005	EMAP Virginia Province	*Ampelisca abdita* (10d)	3 % mortality	NT	**NT**	Long *et al.* 1998
0.005	EMAP Virginia Province	*Ampelisca abdita* (10d)	18 % mortality	NT	**NT**	Long *et al.* 1998
0.005	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	**NT**	Long *et al.* 1998
0.005	EMAP Virginia Province	*Ampelisca abdita* (10d)	7 % mortality	NT	**NT**	Long *et al.* 1998
0.005	EMAP Virginia Province	*Ampelisca abdita* (10d)	11 % mortality	NT	**NT**	Long *et al.* 1998
0.005	EMAP Virginia Province	*Ampelisca abdita* (10d)	2 % mortality	NT	**NT**	Long *et al.* 1998
0.006	EMAP Virginia Province	*Ampelisca abdita* (10d)	6 % mortality	NT	**NT**	Long *et al.* 1998
0.006	EMAP Virginia Province	*Ampelisca abdita* (10d)	9 % mortality	NT	**NT**	Long *et al.* 1998
0.006	EMAP Virginia Province	*Ampelisca abdita* (10d)	5 % mortality	NT	**NT**	Long *et al.* 1998
0.006	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	**NT**	Long *et al.* 1998
0.006	EMAP Virginia Province	*Ampelisca abdita* (10d)	13 % mortality	NT	**NT**	Long *et al.* 1998
0.006	EMAP Virginia Province	*Ampelisca abdita* (10d)	23 % mortality	T	**T**	Long *et al.* 1998
0.006	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality	NT	**NT**	Long *et al.* 1998
0.006	EMAP Virginia Province	*Ampelisca abdita* (10d)	14 % mortality	NT	**NT**	Long *et al.* 1998
0.006	EMAP Virginia Province	*Ampelisca abdita* (10d)	6 % mortality	NT	**NT**	Long *et al.* 1998
0.006	EMAP Virginia Province	*Ampelisca abdita* (10d)	21 % mortality	T	**T**	Long *et al.* 1998
0.006	EMAP Virginia Province	*Ampelisca abdita* (10d)	27 % mortality	T	**T**	Long *et al.* 1998

11.1122

Appendix 4. **A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by study.**

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result	Overall Toxicity	Source
0.006	EMAP Virginia Province	*Ampelisca abdita* (10d)	4 % mortality NT	NT	Long *et al.* 1998
0.006	EMAP Virginia Province	*Ampelisca abdita* (10d)	8 % mortality NT	NT	Long *et al.* 1998
0.006	EMAP Virginia Province	*Ampelisca abdita* (10d)	2 % mortality NT	NT	Long *et al.* 1998
0.006	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality NT	NT	Long *et al.* 1998
0.006	EMAP Virginia Province	*Ampelisca abdita* (10d)	32 % mortality T	T	Long *et al.* 1998
0.006	EMAP Virginia Province	*Ampelisca abdita* (10d)	9 % mortality NT	NT	Long *et al.* 1998
0.006	EMAP Virginia Province	*Ampelisca abdita* (10d)	4 % mortality NT	NT	Long *et al.* 1998
0.006	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.006	EMAP Virginia Province	*Ampelisca abdita* (10d)	4 % mortality NT	NT	Long *et al.* 1998
0.006	EMAP Virginia Province	*Ampelisca abdita* (10d)	8 % mortality NT	NT	Long *et al.* 1998
0.006	EMAP Virginia Province	*Ampelisca abdita* (10d)	26 % mortality T	T	Long *et al.* 1998
0.006	EMAP Virginia Province	*Ampelisca abdita* (10d)	23 % mortality T	T	Long *et al.* 1998
0.006	EMAP Virginia Province	*Ampelisca abdita* (10d)	11 % mortality NT	NT	Long *et al.* 1998
0.006	EMAP Virginia Province	*Ampelisca abdita* (10d)	6 % mortality NT	NT	Long *et al.* 1998
0.007	EMAP Virginia Province	*Ampelisca abdita* (10d)	3 % mortality NT	NT	Long *et al.* 1998
0.007	EMAP Virginia Province	*Ampelisca abdita* (10d)	4 % mortality NT	NT	Long *et al.* 1998
0.007	EMAP Virginia Province	*Ampelisca abdita* (10d)	5 % mortality NT	NT	Long *et al.* 1998
0.007	EMAP Virginia Province	*Ampelisca abdita* (10d)	5 % mortality NT	NT	Long *et al.* 1998
0.007	EMAP Virginia Province	*Ampelisca abdita* (10d)	6 % mortality NT	NT	Long *et al.* 1998
0.007	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.007	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.007	EMAP Virginia Province	*Ampelisca abdita* (10d)	37 % mortality T	T	Long *et al.* 1998
0.007	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality NT	NT	Long *et al.* 1998
0.007	EMAP Virginia Province	*Ampelisca abdita* (10d)	8 % mortality NT	NT	Long *et al.* 1998
0.007	EMAP Virginia Province	*Ampelisca abdita* (10d)	31 % mortality T	T	Long *et al.* 1998
0.008	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.008	EMAP Virginia Province	*Ampelisca abdita* (10d)	37 % mortality T	T	Long *et al.* 1998
0.008	EMAP Virginia Province	*Ampelisca abdita* (10d)	25 % mortality T	T	Long *et al.* 1998
0.008	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality NT	NT	Long *et al.* 1998
0.008	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality NT	NT	Long *et al.* 1998
0.008	EMAP Virginia Province	*Ampelisca abdita* (10d)	7 % mortality NT	NT	Long *et al.* 1998
0.008	EMAP Virginia Province	*Ampelisca abdita* (10d)	12 % mortality NT	NT	Long *et al.* 1998
0.008	EMAP Virginia Province	*Ampelisca abdita* (10d)	2 % mortality NT	NT	Long *et al.* 1998
0.008	EMAP Virginia Province	*Ampelisca abdita* (10d)	11 % mortality NT	NT	Long *et al.* 1998
0.008	EMAP Virginia Province	*Ampelisca abdita* (10d)	6 % mortality NT	NT	Long *et al.* 1998
0.008	EMAP Virginia Province	*Ampelisca abdita* (10d)	24 % mortality NT	NT	Long *et al.* 1998
0.008	EMAP Virginia Province	*Ampelisca abdita* (10d)	21 % mortality T	T	Long *et al.* 1998
0.008	EMAP Virginia Province	*Ampelisca abdita* (10d)	39 % mortality T	T	Long *et al.* 1998
0.009	EMAP Virginia Province	*Ampelisca abdita* (10d)	37 % mortality T	T	Long *et al.* 1998

Appendix 4. **A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by study.**

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result		Overall Toxicity	Source
0.009	EMAP Virginia Province	*Ampelisca abdita* (10d)	14 % mortality	NT	NT	Long *et al.* 1998
0.009	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality	NT	NT	Long *et al.* 1998
0.009	EMAP Virginia Province	*Ampelisca abdita* (10d)	2 % mortality	NT	NT	Long *et al.* 1998
0.009	EMAP Virginia Province	*Ampelisca abdita* (10d)	7 % mortality	NT	NT	Long *et al.* 1998
0.009	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.009	EMAP Virginia Province	*Ampelisca abdita* (10d)	27 % mortality	T	T	Long *et al.* 1998
0.009	EMAP Virginia Province	*Ampelisca abdita* (10d)	5 % mortality	NT	NT	Long *et al.* 1998
0.009	EMAP Virginia Province	*Ampelisca abdita* (10d)	6 % mortality	NT	NT	Long *et al.* 1998
0.009	EMAP Virginia Province	*Ampelisca abdita* (10d)	23 % mortality	T	T	Long *et al.* 1998
0.009	EMAP Virginia Province	*Ampelisca abdita* (10d)	24 % mortality	T	T	Long *et al.* 1998
0.009	EMAP Virginia Province	*Ampelisca abdita* (10d)	4 % mortality	NT	NT	Long *et al.* 1998
0.009	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.009	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.009	EMAP Virginia Province	*Ampelisca abdita* (10d)	14 % mortality	NT	NT	Long *et al.* 1998
0.010	EMAP Virginia Province	*Ampelisca abdita* (10d)	4 % mortality	NT	NT	Long *et al.* 1998
0.010	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality	NT	NT	Long *et al.* 1998
0.011	EMAP Virginia Province	*Ampelisca abdita* (10d)	49 % mortality	T	T	Long *et al.* 1998
0.011	EMAP Virginia Province	*Ampelisca abdita* (10d)	7 % mortality	NT	NT	Long *et al.* 1998
0.011	EMAP Virginia Province	*Ampelisca abdita* (10d)	9 % mortality	NT	NT	Long *et al.* 1998
0.011	EMAP Virginia Province	*Ampelisca abdita* (10d)	84 % mortality	T	T	Long *et al.* 1998
0.012	EMAP Virginia Province	*Ampelisca abdita* (10d)	28 % mortality	T	T	Long *et al.* 1998
0.012	EMAP Virginia Province	*Ampelisca abdita* (10d)	11 % mortality	NT	NT	Long *et al.* 1998
0.012	EMAP Virginia Province	*Ampelisca abdita* (10d)	23 % mortality	T	T	Long *et al.* 1998
0.012	EMAP Virginia Province	*Ampelisca abdita* (10d)	6 % mortality	NT	NT	Long *et al.* 1998
0.012	EMAP Virginia Province	*Ampelisca abdita* (10d)	3 % mortality	NT	NT	Long *et al.* 1998
0.013	EMAP Virginia Province	*Ampelisca abdita* (10d)	9 % mortality	NT	NT	Long *et al.* 1998
0.013	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.013	EMAP Virginia Province	*Ampelisca abdita* (10d)	3 % mortality	NT	NT	Long *et al.* 1998
0.013	EMAP Virginia Province	*Ampelisca abdita* (10d)	31 % mortality	T	T	Long *et al.* 1998
0.013	EMAP Virginia Province	*Ampelisca abdita* (10d)	12 % mortality	NT	NT	Long *et al.* 1998
0.013	EMAP Virginia Province	*Ampelisca abdita* (10d)	8 % mortality	NT	NT	Long *et al.* 1998
0.014	EMAP Virginia Province	*Ampelisca abdita* (10d)	21 % mortality	T	T	Long *et al.* 1998
0.014	EMAP Virginia Province	*Ampelisca abdita* (10d)	17 % mortality	NT	NT	Long *et al.* 1998
0.014	EMAP Virginia Province	*Ampelisca abdita* (10d)	6 % mortality	NT	NT	Long *et al.* 1998
0.014	EMAP Virginia Province	*Ampelisca abdita* (10d)	14 % mortality	NT	NT	Long *et al.* 1998
0.015	EMAP Virginia Province	*Ampelisca abdita* (10d)	4 % mortality	NT	NT	Long *et al.* 1998
0.015	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.016	EMAP Virginia Province	*Ampelisca abdita* (10d)	9 % mortality	NT	NT	Long *et al.* 1998
0.017	EMAP Virginia Province	*Ampelisca abdita* (10d)	31 % mortality	T	T	Long *et al.* 1998

Appendix 4. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by study.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result		Overall Toxicity	Source
0.017	EMAP Virginia Province	*Ampelisca abdita* (10d)	31 % mortality	T	T	Long *et al.* 1998
0.017	EMAP Virginia Province	*Ampelisca abdita* (10d)	12 % mortality	NT	NT	Long *et al.* 1998
0.017	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality	NT	NT	Long *et al.* 1998
0.018	EMAP Virginia Province	*Ampelisca abdita* (10d)	6 % mortality	NT	NT	Long *et al.* 1998
0.018	EMAP Virginia Province	*Ampelisca abdita* (10d)	37 % mortality	NT	NT	Long *et al.* 1998
0.019	EMAP Virginia Province	*Ampelisca abdita* (10d)	15 % mortality	NT	NT	Long *et al.* 1998
0.019	EMAP Virginia Province	*Ampelisca abdita* (10d)	11 % mortality	NT	NT	Long *et al.* 1998
0.020	EMAP Virginia Province	*Ampelisca abdita* (10d)	28 % mortality	T	T	Long *et al.* 1998
0.020	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.020	EMAP Virginia Province	*Ampelisca abdita* (10d)	21 % mortality	T	T	Long *et al.* 1998
0.021	EMAP Virginia Province	*Ampelisca abdita* (10d)	6 % mortality	NT	NT	Long *et al.* 1998
0.021	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality	NT	NT	Long *et al.* 1998
0.021	EMAP Virginia Province	*Ampelisca abdita* (10d)	4 % mortality	NT	NT	Long *et al.* 1998
0.022	EMAP Virginia Province	*Ampelisca abdita* (10d)	19 % mortality	NT	NT	Long *et al.* 1998
0.023	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.024	EMAP Virginia Province	*Ampelisca abdita* (10d)	11 % mortality	NT	NT	Long *et al.* 1998
0.024	EMAP Virginia Province	*Ampelisca abdita* (10d)	24 % mortality	T	T	Long *et al.* 1998
0.025	EMAP Virginia Province	*Ampelisca abdita* (10d)	18 % mortality	NT	NT	Long *et al.* 1998
0.025	EMAP Virginia Province	*Ampelisca abdita* (10d)	21 % mortality	T	T	Long *et al.* 1998
0.025	EMAP Virginia Province	*Ampelisca abdita* (10d)	4 % mortality	NT	NT	Long *et al.* 1998
0.027	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.027	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.027	EMAP Virginia Province	*Ampelisca abdita* (10d)	29 % mortality	NT	NT	Long *et al.* 1998
0.027	EMAP Virginia Province	*Ampelisca abdita* (10d)	3 % mortality	NT	NT	Long *et al.* 1998
0.028	EMAP Virginia Province	*Ampelisca abdita* (10d)	9 % mortality	NT	NT	Long *et al.* 1998
0.028	EMAP Virginia Province	*Ampelisca abdita* (10d)	41 % mortality	T	T	Long *et al.* 1998
0.029	EMAP Virginia Province	*Ampelisca abdita* (10d)	3 % mortality	NT	NT	Long *et al.* 1998
0.029	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.030	EMAP Virginia Province	*Ampelisca abdita* (10d)	12 % mortality	NT	NT	Long *et al.* 1998
0.032	EMAP Virginia Province	*Ampelisca abdita* (10d)	7 % mortality	NT	NT	Long *et al.* 1998
0.033	EMAP Virginia Province	*Ampelisca abdita* (10d)	24 % mortality	T	T	Long *et al.* 1998
0.034	EMAP Virginia Province	*Ampelisca abdita* (10d)	19 % mortality	NT	NT	Long *et al.* 1998
0.034	EMAP Virginia Province	*Ampelisca abdita* (10d)	14 % mortality	NT	NT	Long *et al.* 1998
0.035	EMAP Virginia Province	*Ampelisca abdita* (10d)	59 % mortality	T	T	Long *et al.* 1998
0.036	EMAP Virginia Province	*Ampelisca abdita* (10d)	10 % mortality	NT	NT	Long *et al.* 1998
0.036	EMAP Virginia Province	*Ampelisca abdita* (10d)	12 % mortality	NT	NT	Long *et al.* 1998
0.037	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.038	EMAP Virginia Province	*Ampelisca abdita* (10d)	14 % mortality	NT	NT	Long *et al.* 1998
0.038	EMAP Virginia Province	*Ampelisca abdita* (10d)	13 % mortality	NT	NT	Long *et al.* 1998

Appendix 4. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by study.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result	Overall Toxicity	Source
0.039	EMAP Virginia Province	*Ampelisca abdita* (10d)	8 % mortality NT	NT	Long *et al.* 1998
0.041	EMAP Virginia Province	*Ampelisca abdita* (10d)	13 % mortality NT	NT	Long *et al.* 1998
0.041	EMAP Virginia Province	*Ampelisca abdita* (10d)	3 % mortality NT	NT	Long *et al.* 1998
0.041	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.043	EMAP Virginia Province	*Ampelisca abdita* (10d)	3 % mortality NT	NT	Long *et al.* 1998
0.044	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.046	EMAP Virginia Province	*Ampelisca abdita* (10d)	30 % mortality T	T	Long *et al.* 1998
0.046	EMAP Virginia Province	*Ampelisca abdita* (10d)	3 % mortality NT	NT	Long *et al.* 1998
0.048	EMAP Virginia Province	*Ampelisca abdita* (10d)	5 % mortality NT	NT	Long *et al.* 1998
0.048	EMAP Virginia Province	*Ampelisca abdita* (10d)	2 % mortality NT	NT	Long *et al.* 1998
0.049	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.049	EMAP Virginia Province	*Ampelisca abdita* (10d)	11 % mortality NT	NT	Long *et al.* 1998
0.050	EMAP Virginia Province	*Ampelisca abdita* (10d)	15 % mortality NT	NT	Long *et al.* 1998
0.052	EMAP Virginia Province	*Ampelisca abdita* (10d)	16 % mortality NT	NT	Long *et al.* 1998
0.053	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.054	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.062	EMAP Virginia Province	*Ampelisca abdita* (10d)	56 % mortality T	T	Long *et al.* 1998
0.062	EMAP Virginia Province	*Ampelisca abdita* (10d)	7 % mortality NT	NT	Long *et al.* 1998
0.063	EMAP Virginia Province	*Ampelisca abdita* (10d)	46 % mortality T	T	Long *et al.* 1998
0.065	EMAP Virginia Province	*Ampelisca abdita* (10d)	8 % mortality NT	NT	Long *et al.* 1998
0.067	EMAP Virginia Province	*Ampelisca abdita* (10d)	4 % mortality NT	NT	Long *et al.* 1998
0.069	EMAP Virginia Province	*Ampelisca abdita* (10d)	4 % mortality NT	NT	Long *et al.* 1998
0.072	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.073	EMAP Virginia Province	*Ampelisca abdita* (10d)	12 % mortality NT	NT	Long *et al.* 1998
0.081	EMAP Virginia Province	*Ampelisca abdita* (10d)	99 % mortality T	T	Long *et al.* 1998
0.082	EMAP Virginia Province	*Ampelisca abdita* (10d)	12 % mortality NT	NT	Long *et al.* 1998
0.092	EMAP Virginia Province	*Ampelisca abdita* (10d)	3 % mortality NT	NT	Long *et al.* 1998
0.094	EMAP Virginia Province	*Ampelisca abdita* (10d)	18 % mortality NT	NT	Long *et al.* 1998
0.096	EMAP Virginia Province	*Ampelisca abdita* (10d)	14 % mortality NT	NT	Long *et al.* 1998
0.099	EMAP Virginia Province	*Ampelisca abdita* (10d)	10 % mortality NT	NT	Long *et al.* 1998
0.104	EMAP Virginia Province	*Ampelisca abdita* (10d)	35 % mortality T	T	Long *et al.* 1998
0.112	EMAP Virginia Province	*Ampelisca abdita* (10d)	15 % mortality NT	NT	Long *et al.* 1998
0.118	EMAP Virginia Province	*Ampelisca abdita* (10d)	99 % mortality T	T	Long *et al.* 1998
0.120	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.121	EMAP Virginia Province	*Ampelisca abdita* (10d)	21 % mortality T	T	Long *et al.* 1998
0.121	EMAP Virginia Province	*Ampelisca abdita* (10d)	33 % mortality T	T	Long *et al.* 1998
0.134	EMAP Virginia Province	*Ampelisca abdita* (10d)	18 % mortality NT	NT	Long *et al.* 1998
0.142	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.155	EMAP Virginia Province	*Ampelisca abdita* (10d)	8 % mortality NT	NT	Long *et al.* 1998

Appendix 4. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by study.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result	Overall Toxicity	Source
0.165	EMAP Virginia Province	*Ampelisca abdita* (10d)	26 % mortality T	**T**	Long *et al.* 1998
0.174	EMAP Virginia Province	*Ampelisca abdita* (10d)	26 % mortality T	**T**	Long *et al.* 1998
0.177	EMAP Virginia Province	*Ampelisca abdita* (10d)	7 % mortality NT	**NT**	Long *et al.* 1998
0.191	EMAP Virginia Province	*Ampelisca abdita* (10d)	5 % mortality NT	**NT**	Long *et al.* 1998
0.199	EMAP Virginia Province	*Ampelisca abdita* (10d)	68 % mortality T	**T**	Long *et al.* 1998
0.212	EMAP Virginia Province	*Ampelisca abdita* (10d)	17 % mortality NT	**NT**	Long *et al.* 1998
0.233	EMAP Virginia Province	*Ampelisca abdita* (10d)	18 % mortality NT	**NT**	Long *et al.* 1998
0.273	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	**NT**	Long *et al.* 1998
0.370	EMAP Virginia Province	*Ampelisca abdita* (10d)	32 % mortality T	**T**	Long *et al.* 1998
0.458	EMAP Virginia Province	*Ampelisca abdita* (10d)	4 % mortality NT	**NT**	Long *et al.* 1998
0.458	EMAP Virginia Province	*Ampelisca abdita* (10d)	99 % mortality T	**T**	Long *et al.* 1998
0.488	EMAP Virginia Province	*Ampelisca abdita* (10d)	99 % mortality T	**T**	Long *et al.* 1998
0.603	EMAP Virginia Province	*Ampelisca abdita* (10d)	4 % mortality NT	**NT**	Long *et al.* 1998
0.647	EMAP Virginia Province	*Ampelisca abdita* (10d)	53 % mortality T	**T**	Long *et al.* 1998
0.704	EMAP Virginia Province	*Ampelisca abdita* (10d)	95 % mortality T	**T**	Long *et al.* 1998
1.48	EMAP Virginia Province	*Ampelisca abdita* (10d)	52 % mortality T	**T**	Long *et al.* 1998
1.53	EMAP Virginia Province	*Ampelisca abdita* (10d)	77 % mortality T	**T**	Long *et al.* 1998
2.09	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality NT	**NT**	Long *et al.* 1998
<0.002	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	7 % mortality NT	**NT**	REMAP 1993
<0.002	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	4 % mortality NT	**NT**	REMAP 1993
<0.002	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	4 % mortality NT	**NT**	REMAP 1993
<0.002	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	16 % mortality T	**T**	REMAP 1993
<0.002	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	4 % mortality NT	**NT**	REMAP 1993
<0.002	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	1 % mortality NT	**NT**	REMAP 1993
<0.002	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	15 % mortality T	**T**	REMAP 1993
<0.002	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	3 % mortality NT	**NT**	REMAP 1993
<0.002	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	1 % mortality NT	**NT**	REMAP 1993
<0.002	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	2 % mortality NT	**NT**	REMAP 1993
<0.002	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	6 % mortality NT	**NT**	REMAP 1993
0.005	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	5 % mortality NT	**NT**	REMAP 1993
0.006	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	17 % mortality NT	**NT**	REMAP 1993
0.006	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	2 % mortality NT	**NT**	REMAP 1993
0.006	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	6 % mortality NT	**NT**	REMAP 1993
0.006	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	4 % mortality NT	**NT**	REMAP 1993
0.006	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	3 % mortality NT	**NT**	REMAP 1993
0.006	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	16 % mortality NT	**NT**	REMAP 1993
0.006	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	2 % mortality NT	**NT**	REMAP 1993
0.008	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	9 % mortality NT	**NT**	REMAP 1993

Appendix 4. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by study.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result		Overall Toxicity	Source
0.009	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	17 % mortality	T	T	REMAP 1993
0.009	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	5 % mortality	NT	NT	REMAP 1993
0.011	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	5 % mortality	NT	NT	REMAP 1993
0.011	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	7 % mortality	NT	NT	REMAP 1993
0.015	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	8 % mortality	T	T	REMAP 1993
0.016	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	2 % mortality	NT	NT	REMAP 1993
0.017	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	6 % mortality	NT	NT	REMAP 1993
0.020	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	3 % mortality	NT	NT	REMAP 1993
0.021	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	6 % mortality	NT	NT	REMAP 1993
0.025	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	9 % mortality	T	T	REMAP 1993
0.028	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	5 % mortality	NT	NT	REMAP 1993
0.032	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	7 % mortality	NT	NT	REMAP 1993
0.037	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	5 % mortality	NT	NT	REMAP 1993
0.045	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	64 % mortality	T	T	REMAP 1993
0.053	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	27 % mortality	T	T	REMAP 1993
0.054	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	15 % mortality	NT	NT	REMAP 1993
0.069	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	16 % mortality	T	T	REMAP 1993
0.074	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	4 % mortality	NT	NT	REMAP 1993
0.074	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	5 % mortality	NT	NT	REMAP 1993
0.074	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	100 % mortality	T	T	REMAP 1993
0.076	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	5 % mortality	NT	NT	REMAP 1993
0.079	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	31 % mortality	T	T	REMAP 1993
0.083	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	8 % mortality	NT	NT	REMAP 1993
0.086	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	3 % mortality	NT	NT	REMAP 1993
0.087	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	30 % mortality	NT	NT	REMAP 1993
0.087	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	4 % mortality	NT	NT	REMAP 1993
0.089	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	3 % mortality	NT	NT	REMAP 1993
0.098	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	7 % mortality	NT	NT	REMAP 1993
0.101	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	4 % mortality	NT	NT	REMAP 1993
0.102	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	1 % mortality	NT	NT	REMAP 1993
0.103	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	91 % mortality	T	T	REMAP 1993
0.106	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	63 % mortality	T	T	REMAP 1993
0.126	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	11 % mortality	NT	NT	REMAP 1993
0.127	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	16 % mortality	NT	NT	REMAP 1993
0.128	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	49 % mortality	T	T	REMAP 1993
0.142	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	8 % mortality	NT	NT	REMAP 1993
0.166	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	10 % mortality	T	T	REMAP 1993
0.173	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	21 % mortality	NT	NT	REMAP 1993
0.200	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	38 % mortality	T	T	REMAP 1993

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Appendix 4. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by study.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result	Overall Toxicity	Source
0.245	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	16 % mortality T	**T**	REMAP 1993
0.265	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	8 % mortality NT	**NT**	REMAP 1993
0.297	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	14 % mortality NT	**NT**	REMAP 1993
0.305	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	1 % mortality NT	**NT**	REMAP 1993
0.324	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	17 % mortality T	**T**	REMAP 1993
0.326	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	16 % mortality T	**T**	REMAP 1993
0.350	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	7 % mortality T	**T**	REMAP 1993
0.360	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	13 % mortality T	**T**	REMAP 1993
0.371	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	9 % mortality NT	**NT**	REMAP 1993
0.419	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	18 % mortality NT	**NT**	REMAP 1993
0.427	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	12 % mortality NT	**NT**	REMAP 1993
0.427	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	18 % mortality T	**T**	REMAP 1993
0.428	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	9 % mortality NT	**NT**	REMAP 1993
0.446	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	15 % mortality NT	**NT**	REMAP 1993
0.459	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	5 % mortality NT	**NT**	REMAP 1993
0.517	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	18 % mortality NT	**NT**	REMAP 1993
0.550	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	63 % mortality T	**T**	REMAP 1993
0.578	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	5 % mortality NT	**NT**	REMAP 1993
0.694	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	25 % mortality T	**T**	REMAP 1993
0.746	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	55 % mortality T	**T**	REMAP 1993
0.809	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	4 % mortality NT	**NT**	REMAP 1993
0.851	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	7 % mortality NT	**NT**	REMAP 1993
1.53	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	17 % mortality T	**T**	REMAP 1993
1.89	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	17 % mortality T	**T**	REMAP 1993
1.99	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	17 % mortality T	**T**	REMAP 1993
<0.002	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	8 % mortality NT	**NT**	REMAP 1994
<0.002	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	11 % mortality T	**T**	REMAP 1994
<0.002	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	19 % mortality NT	**NT**	REMAP 1994
<0.002	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	8 % mortality NT	**NT**	REMAP 1994
<0.002	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	7 % mortality T	**T**	REMAP 1994
<0.002	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	16 % mortality NT	**NT**	REMAP 1994
<0.002	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	10 % mortality NT	**NT**	REMAP 1994
<0.002	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	12 % mortality NT	**NT**	REMAP 1994
<0.002	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	16 % mortality NT	**NT**	REMAP 1994
<0.002	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	14 % mortality NT	**NT**	REMAP 1994
<0.002	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	11 % mortality NT	**NT**	REMAP 1994
<0.002	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	14 % mortality NT	**NT**	REMAP 1994
<0.002	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	9 % mortality NT	**NT**	REMAP 1994

Appendix 4. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by study.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result	Overall Toxicity	Source
<0.002	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	7 % mortality NT	NT	REMAP 1994
<0.002	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	7 % mortality T	T	REMAP 1994
<0.002	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	7 % mortality NT	NT	REMAP 1994
<0.002	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	5 % mortality NT	NT	REMAP 1994
<0.002	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	13 % mortality T	T	REMAP 1994
0.003	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	6 % mortality NT	NT	REMAP 1994
0.004	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	6 % mortality NT	NT	REMAP 1994
0.004	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	9 % mortality NT	NT	REMAP 1994
0.005	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	8 % mortality NT	NT	REMAP 1994
0.005	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	2 % mortality NT	NT	REMAP 1994
0.007	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	6 % mortality T	T	REMAP 1994
0.008	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	9 % mortality NT	NT	REMAP 1994
0.008	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	9 % mortality NT	NT	REMAP 1994
0.011	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	2 % mortality NT	NT	REMAP 1994
0.011	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	8 % mortality NT	NT	REMAP 1994
0.012	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	10 % mortality NT	NT	REMAP 1994
0.013	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	9 % mortality NT	NT	REMAP 1994
0.017	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	10 % mortality NT	NT	REMAP 1994
0.027	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	8 % mortality NT	NT	REMAP 1994
0.028	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	23 % mortality NT	NT	REMAP 1994
0.031	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	8 % mortality NT	NT	REMAP 1994
0.043	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	3 % mortality NT	NT	REMAP 1994
0.044	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	6 % mortality NT	NT	REMAP 1994
0.045	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	9 % mortality NT	NT	REMAP 1994
0.052	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	4 % mortality NT	NT	REMAP 1994
0.078	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	7 % mortality NT	NT	REMAP 1994
0.085	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	20 % mortality T	T	REMAP 1994
0.097	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	11 % mortality NT	NT	REMAP 1994
0.099	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	10 % mortality NT	NT	REMAP 1994
0.107	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	11 % mortality NT	NT	REMAP 1994
0.112	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	15 % mortality T	T	REMAP 1994
0.117	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	14 % mortality NT	NT	REMAP 1994
0.118	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	15 % mortality NT	NT	REMAP 1994
0.118	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	14 % mortality T	T	REMAP 1994
0.131	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	8 % mortality NT	NT	REMAP 1994
0.137	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	9 % mortality T	T	REMAP 1994
0.155	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	14 % mortality NT	NT	REMAP 1994
0.165	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	12 % mortality NT	NT	REMAP 1994
0.166	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	7 % mortality NT	NT	REMAP 1994

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Appendix 4. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by study.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result		Overall Toxicity	Source
0.168	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	11 % mortality	NT	NT	REMAP 1994
0.180	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	96 % mortality	T	T	REMAP 1994
0.182	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	6 % mortality	T	T	REMAP 1994
0.202	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	7 % mortality	NT	NT	REMAP 1994
0.231	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	9 % mortality	NT	NT	REMAP 1994
0.234	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	9 % mortality	NT	NT	REMAP 1994
0.251	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	8 % mortality	NT	NT	REMAP 1994
0.326	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	10 % mortality	NT	NT	REMAP 1994
0.357	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	12 % mortality	NT	NT	REMAP 1994
0.396	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	85 % mortality	T	T	REMAP 1994
0.400	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	6 % mortality	NT	NT	REMAP 1994
0.447	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	31 % mortality	T	T	REMAP 1994
0.461	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	11 % mortality	NT	NT	REMAP 1994
0.506	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	13 % mortality	T	T	REMAP 1994
0.566	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	17 % mortality	NT	NT	REMAP 1994
0.570	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	84 % mortality	T	T	REMAP 1994
0.595	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	46 % mortality	T	T	REMAP 1994
0.625	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	7 % mortality	NT	NT	REMAP 1994
0.627	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	17 % mortality	T	T	REMAP 1994
0.646	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	5 % mortality	NT	NT	REMAP 1994
0.677	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	12 % mortality	T	T	REMAP 1994
0.753	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	30 % mortality	T	T	REMAP 1994
0.761	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	11 % mortality	NT	NT	REMAP 1994
0.860	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	4 % mortality	NT	NT	REMAP 1994
1.01	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	11 % mortality	T	T	REMAP 1994
1.33	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	47 % mortality	T	T	REMAP 1994
1.36	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	40 % mortality	T	T	REMAP 1994
1.45	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	59 % mortality	T	T	REMAP 1994
1.59	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	32 % mortality	T	T	REMAP 1994
2.87	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	92 % mortality	T	T	REMAP 1994
3.34	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	75 % mortality	T	T	REMAP 1994
4.96	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	23 % mortality	T	T	REMAP 1994
0.002	Hudson-Raritan Estuary, NY	*Rhepoxynius abronius* (10d)	2 % mortality	NT	NT	Rice *et al.* 1995
0.002	Hudson-Raritan Estuary, NY	*Rhepoxynius abronius* (10d)	2 % mortality	NT	NT	Rice *et al.* 1995
0.045	Hudson-Raritan Estuary, NY	*Rhepoxynius abronius* (10d)	5 % mortality	NT	NT	Rice *et al.* 1995
0.090	Hudson-Raritan Estuary, NY	*Rhepoxynius abronius* (10d)	6 % mortality	NT	NT	Rice *et al.* 1995
0.220	Hudson-Raritan Estuary, NY	*Rhepoxynius abronius* (10d)	10 % mortality	NT	NT	Rice *et al.* 1995
0.390	Hudson-Raritan Estuary, NY	*Rhepoxynius abronius* (10d)	15 % mortality	T	T	Rice *et al.* 1995

Appendix 4. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by study.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result		Overall Toxicity	Source
0.430	Hudson-Raritan Estuary, NY	*Rhepoxynius abronius* (10d)	8 % mortality	NT	NT	Rice *et al.* 1995
0.470	Hudson-Raritan Estuary, NY	*Rhepoxynius abronius* (10d)	9 % mortality	NT	NT	Rice *et al.* 1995
0.970	Hudson-Raritan Estuary, NY	*Rhepoxynius abronius* (10d)	5 % mortality	NT	NT	Rice *et al.* 1995
1.64	Hudson-Raritan Estuary, NY	*Rhepoxynius abronius* (10d)	16 % mortality	T	T	Rice *et al.* 1995
2.88	Hudson-Raritan Estuary, NY	*Rhepoxynius abronius* (10d)	14 % mortality	T	T	Rice *et al.* 1995
0.015	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	6.3 % mortality	NT	NT	Long *et al.* 1998
0.024	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.079	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	83 % mortality	T	T	Long *et al.* 1998
0.086	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	24 % mortality	NT	NT	Long *et al.* 1998
0.107	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	41.7 % mortality	T	T	Long *et al.* 1998
0.158	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	43 % mortality	T	T	Long *et al.* 1998
0.168	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	97 % mortality	T	T	Long *et al.* 1998
0.175	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	90 % mortality	T	T	Long *et al.* 1998
0.225	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	1.1 % mortality	NT	NT	Long *et al.* 1998
0.226	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	16 % mortality	NT	NT	Long *et al.* 1998
0.233	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	19 % mortality	NT	NT	Long *et al.* 1998
0.241	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	7.1 % mortality	NT	NT	Long *et al.* 1998
0.253	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	73.7 % mortality	T	T	Long *et al.* 1998
0.269	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	53 % mortality	T	T	Long *et al.* 1998
0.271	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	84 % mortality	T	T	Long *et al.* 1998
0.286	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	23 % mortality	T	T	Long *et al.* 1998
0.297	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	100 % mortality	T	T	Long *et al.* 1998
0.324	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	63 % mortality	T	T	Long *et al.* 1998
0.360	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	100 % mortality	T	T	Long *et al.* 1998
0.370	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	13 % mortality	NT	NT	Long *et al.* 1998
0.379	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	1 % mortality	NT	NT	Long *et al.* 1998
0.388	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	25 % mortality	NT	NT	Long *et al.* 1998
0.429	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	5.9 % mortality	NT	NT	Long *et al.* 1998
0.453	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	27 % mortality	T	T	Long *et al.* 1998
0.454	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	9.2 % mortality	NT	NT	Long *et al.* 1998
0.464	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	19.6 % mortality	NT	NT	Long *et al.* 1998
0.474	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	67.4 % mortality	T	T	Long *et al.* 1998
0.477	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	12 % mortality	NT	NT	Long *et al.* 1998
0.495	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	7 % mortality	NT	NT	Long *et al.* 1998
0.503	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	8 % mortality	NT	NT	Long *et al.* 1998
0.507	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	83 % mortality	T	T	Long *et al.* 1998
0.507	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	38.9 % mortality	T	T	Long *et al.* 1998
0.513	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	40.8 % mortality	NT	NT	Long *et al.* 1998

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Appendix 4. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by study.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result	Overall Toxicity	Source
0.518	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	50 % mortality T	**T**	Long *et al.* 1998
0.540	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	23.2 % mortality NT	**NT**	Long *et al.* 1998
0.593	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	35 % mortality T	**T**	Long *et al.* 1998
0.606	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	11 % mortality NT	**NT**	Long *et al.* 1998
0.642	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	39 % mortality NT	**NT**	Long *et al.* 1998
0.803	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	68 % mortality T	**T**	Long *et al.* 1998
0.912	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	30 % mortality T	**T**	Long *et al.* 1998
1.01	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	29 % mortality T	**T**	Long *et al.* 1998
1.16	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	10.5 % mortality NT	**NT**	Long *et al.* 1998
1.17	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	82 % mortality T	**T**	Long *et al.* 1998
1.21	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	59 % mortality T	**T**	Long *et al.* 1998
1.23	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	87 % mortality T	**T**	Long *et al.* 1998
1.33	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	69 % mortality T	**T**	Long *et al.* 1998
1.67	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	100 % mortality T	**T**	Long *et al.* 1998
1.71	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	87 % mortality T	**T**	Long *et al.* 1998
1.83	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	92 % mortality T	**T**	Long *et al.* 1998
1.89	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	83 % mortality T	**T**	Long *et al.* 1998
2.02	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	71 % mortality T	**T**	Long *et al.* 1998
2.04	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	77 % mortality T	**T**	Long *et al.* 1998
2.33	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	82 % mortality T	**T**	Long *et al.* 1998
2.54	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	100 % mortality T	**T**	Long *et al.* 1998
3.95	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	98 % mortality T	**T**	Long *et al.* 1998
4.09	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	70 % mortality T	**T**	Long *et al.* 1998
0.008	Long Island Sound, NY	*Ampelisca abdita* (10d)	37 % mortality T	**T**	Long *et al.* 1998
0.010	Long Island Sound, NY	*Ampelisca abdita* (10d)	28 % mortality T	**T**	Long *et al.* 1998
0.015	Long Island Sound, NY	*Ampelisca abdita* (10d)	91 % mortality T	**T**	Long *et al.* 1998
0.019	Long Island Sound, NY	*Ampelisca abdita* (10d)	27 % mortality T	**T**	Long *et al.* 1998
0.020	Long Island Sound, NY	*Ampelisca abdita* (10d)	21 % mortality NT	**NT**	Long *et al.* 1998
0.021	Long Island Sound, NY	*Ampelisca abdita* (10d)	15 % mortality NT	**NT**	Long *et al.* 1998
0.022	Long Island Sound, NY	*Ampelisca abdita* (10d)	30 % mortality T	**T**	Long *et al.* 1998
0.022	Long Island Sound, NY	*Ampelisca abdita* (10d)	25 % mortality NT	**NT**	Long *et al.* 1998
0.025	Long Island Sound, NY	*Ampelisca abdita* (10d)	8 % mortality NT	**NT**	Long *et al.* 1998
0.026	Long Island Sound, NY	*Ampelisca abdita* (10d)	19 % mortality NT	**NT**	Long *et al.* 1998
0.027	Long Island Sound, NY	*Ampelisca abdita* (10d)	15 % mortality NT	**NT**	Long *et al.* 1998
0.038	Long Island Sound, NY	*Ampelisca abdita* (10d)	26 % mortality NT	**NT**	Long *et al.* 1998
0.039	Long Island Sound, NY	*Ampelisca abdita* (10d)	17 % mortality NT	**NT**	Long *et al.* 1998
0.040	Long Island Sound, NY	*Ampelisca abdita* (10d)	69 % mortality T	**T**	Long *et al.* 1998
0.041	Long Island Sound, NY	*Ampelisca abdita* (10d)	13 % mortality NT	**NT**	Long *et al.* 1998

Appendix 4. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (*tPCBs; mg/kg DW*): *sorted by study.*

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result	Overall Toxicity	Source
0.043	Long Island Sound, NY	*Ampelisca abdita* (10d)	15 % mortality NT	NT	Long *et al.* 1998
0.045	Long Island Sound, NY	*Ampelisca abdita* (10d)	24 % mortality NT	NT	Long *et al.* 1998
0.047	Long Island Sound, NY	*Ampelisca abdita* (10d)	16 % mortality NT	NT	Long *et al.* 1998
0.047	Long Island Sound, NY	*Ampelisca abdita* (10d)	17 % mortality NT	NT	Long *et al.* 1998
0.048	Long Island Sound, NY	*Ampelisca abdita* (10d)	46 % mortality T	T	Long *et al.* 1998
0.050	Long Island Sound, NY	*Ampelisca abdita* (10d)	13 % mortality NT	NT	Long *et al.* 1998
0.051	Long Island Sound, NY	*Ampelisca abdita* (10d)	35 % mortality T	T	Long *et al.* 1998
0.052	Long Island Sound, NY	*Ampelisca abdita* (10d)	31 % mortality T	T	Long *et al.* 1998
0.052	Long Island Sound, NY	*Ampelisca abdita* (10d)	23 % mortality NT	NT	Long *et al.* 1998
0.052	Long Island Sound, NY	*Ampelisca abdita* (10d)	19 % mortality NT	NT	Long *et al.* 1998
0.055	Long Island Sound, NY	*Ampelisca abdita* (10d)	36 % mortality T	T	Long *et al.* 1998
0.057	Long Island Sound, NY	*Ampelisca abdita* (10d)	24 % mortality NT	NT	Long *et al.* 1998
0.059	Long Island Sound, NY	*Ampelisca abdita* (10d)	62 % mortality T	T	Long *et al.* 1998
0.060	Long Island Sound, NY	*Ampelisca abdita* (10d)	26 % mortality NT	NT	Long *et al.* 1998
0.061	Long Island Sound, NY	*Ampelisca abdita* (10d)	16 % mortality NT	NT	Long *et al.* 1998
0.062	Long Island Sound, NY	*Ampelisca abdita* (10d)	31 % mortality T	T	Long *et al.* 1998
0.062	Long Island Sound, NY	*Ampelisca abdita* (10d)	21 % mortality NT	NT	Long *et al.* 1998
0.067	Long Island Sound, NY	*Ampelisca abdita* (10d)	32 % mortality T	T	Long *et al.* 1998
0.068	Long Island Sound, NY	*Ampelisca abdita* (10d)	28 % mortality NT	NT	Long *et al.* 1998
0.078	Long Island Sound, NY	*Ampelisca abdita* (10d)	16 % mortality NT	NT	Long *et al.* 1998
0.094	Long Island Sound, NY	*Ampelisca abdita* (10d)	36 % mortality T	T	Long *et al.* 1998
0.099	Long Island Sound, NY	*Ampelisca abdita* (10d)	65 % mortality T	T	Long *et al.* 1998
0.105	Long Island Sound, NY	*Ampelisca abdita* (10d)	27 % mortality NT	NT	Long *et al.* 1998
0.108	Long Island Sound, NY	*Ampelisca abdita* (10d)	15 % mortality NT	NT	Long *et al.* 1998
0.112	Long Island Sound, NY	*Ampelisca abdita* (10d)	26 % mortality NT	NT	Long *et al.* 1998
0.123	Long Island Sound, NY	*Ampelisca abdita* (10d)	20 % mortality NT	NT	Long *et al.* 1998
0.123	Long Island Sound, NY	*Ampelisca abdita* (10d)	37 % mortality T	T	Long *et al.* 1998
0.124	Long Island Sound, NY	*Ampelisca abdita* (10d)	40 % mortality T	T	Long *et al.* 1998
0.128	Long Island Sound, NY	*Ampelisca abdita* (10d)	67 % mortality T	T	Long *et al.* 1998
0.135	Long Island Sound, NY	*Ampelisca abdita* (10d)	30 % mortality T	T	Long *et al.* 1998
0.137	Long Island Sound, NY	*Ampelisca abdita* (10d)	32 % mortality T	T	Long *et al.* 1998
0.139	Long Island Sound, NY	*Ampelisca abdita* (10d)	40 % mortality T	T	Long *et al.* 1998
0.148	Long Island Sound, NY	*Ampelisca abdita* (10d)	27 % mortality NT	NT	Long *et al.* 1998
0.150	Long Island Sound, NY	*Ampelisca abdita* (10d)	24 % mortality NT	NT	Long *et al.* 1998
0.175	Long Island Sound, NY	*Ampelisca abdita* (10d)	33 % mortality T	T	Long *et al.* 1998
0.177	Long Island Sound, NY	*Ampelisca abdita* (10d)	45 % mortality T	T	Long *et al.* 1998
0.180	Long Island Sound, NY	*Ampelisca abdita* (10d)	28 % mortality T	T	Long *et al.* 1998
0.198	Long Island Sound, NY	*Ampelisca abdita* (10d)	42 % mortality T	T	Long *et al.* 1998
0.224	Long Island Sound, NY	*Ampelisca abdita* (10d)	20 % mortality NT	NT	Long *et al.* 1998

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Appendix 4. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by study.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result		Overall Toxicity	Source
0.232	Long Island Sound, NY	*Ampelisca abdita* (10d)	51 % mortality	T	T	Long *et al.* 1998
0.256	Long Island Sound, NY	*Ampelisca abdita* (10d)	41 % mortality	T	T	Long *et al.* 1998
0.278	Long Island Sound, NY	*Ampelisca abdita* (10d)	51 % mortality	T	T	Long *et al.* 1998
0.287	Long Island Sound, NY	*Ampelisca abdita* (10d)	57 % mortality	T	T	Long *et al.* 1998
0.314	Long Island Sound, NY	*Ampelisca abdita* (10d)	31 % mortality	T	T	Long *et al.* 1998
0.358	Long Island Sound, NY	*Ampelisca abdita* (10d)	21 % mortality	NT	NT	Long *et al.* 1998
0.364	Long Island Sound, NY	*Ampelisca abdita* (10d)	32 % mortality	T	T	Long *et al.* 1998
0.373	Long Island Sound, NY	*Ampelisca abdita* (10d)	85 % mortality	T	T	Long *et al.* 1998
0.496	Long Island Sound, NY	*Ampelisca abdita* (10d)	17 % mortality	NT	NT	Long *et al.* 1998
0.003	Narragansett Bay, RI	*Ampelisca abdita* (10d)	8.7 % mortality	NT	NT	Munns *et al.* 1991
0.008	Narragansett Bay, RI	*Ampelisca abdita* (10d)	12 % mortality	NT	NT	Munns *et al.* 1991
0.014	Narragansett Bay, RI	*Ampelisca abdita* (10d)	5.3 % mortality	NT	NT	Munns *et al.* 1991
0.022	Narragansett Bay, RI	*Ampelisca abdita* (10d)	8.6 % mortality	NT	NT	Munns *et al.* 1991
0.043	Narragansett Bay, RI	*Ampelisca abdita* (10d)	4 % mortality	NT	NT	Munns *et al.* 1991
0.047	Narragansett Bay, RI	*Ampelisca abdita* (10d)	4.7 % mortality	NT	NT	Munns *et al.* 1991
0.049	Narragansett Bay, RI	*Ampelisca abdita* (10d)	6 % mortality	NT	NT	Munns *et al.* 1991
0.095	Narragansett Bay, RI	*Ampelisca abdita* (10d)	2 % mortality	NT	NT	Munns *et al.* 1991
0.126	Narragansett Bay, RI	*Ampelisca abdita* (10d)	6.7 % mortality	NT	NT	Munns *et al.* 1991
0.132	Narragansett Bay, RI	*Ampelisca abdita* (10d)	10.7 % mortality	NT	NT	Munns *et al.* 1991
0.182	Narragansett Bay, RI	*Ampelisca abdita* (10d)	8 % mortality	NT	NT	Munns *et al.* 1991
0.202	Narragansett Bay, RI	*Ampelisca abdita* (10d)	1.3 % mortality	NT	NT	Munns *et al.* 1991
0.204	Narragansett Bay, RI	*Ampelisca abdita* (10d)	8.7 % mortality	NT	NT	Munns *et al.* 1991
0.221	Narragansett Bay, RI	*Ampelisca abdita* (10d)	4.7 % mortality	NT	NT	Munns *et al.* 1991
0.233	Narragansett Bay, RI	*Ampelisca abdita* (10d)	3.3 % mortality	NT	NT	Munns *et al.* 1991
0.284	Narragansett Bay, RI	*Ampelisca abdita* (10d)	2 % mortality	NT	NT	Munns *et al.* 1991
0.348	Narragansett Bay, RI	*Ampelisca abdita* (10d)	4.7 % mortality	NT	NT	Munns *et al.* 1991
0.498	Narragansett Bay, RI	*Ampelisca abdita* (10d)	6 % mortality	NT	NT	Munns *et al.* 1991
0.505	Narragansett Bay, RI	*Ampelisca abdita* (10d)	4 % mortality	NT	NT	Munns *et al.* 1991
0.011	Puget Sound, WA	*Rhepoxynius abronius* (10d)	9 % mortality	NT	NT	Pastorok & Becker 1990
0.044	Puget Sound, WA	*Rhepoxynius abronius* (10d)	15 % mortality	NT	NT	Pastorok & Becker 1990
0.056	Puget Sound, WA	*Rhepoxynius abronius* (10d)	11 % mortality	NT	NT	Pastorok & Becker 1990
0.056	Puget Sound, WA	*Rhepoxynius abronius* (10d)	13 % mortality	NT	NT	Pastorok & Becker 1990
0.100	Puget Sound, WA	*Rhepoxynius abronius* (10d)	100 % mortality	T	T	Pastorok & Becker 1990
0.110	Puget Sound, WA	*Rhepoxynius abronius* (10d)	13 % mortality	NT	NT	Pastorok & Becker 1990
0.150	Puget Sound, WA	*Rhepoxynius abronius* (10d)	22 % mortality	NT	NT	Pastorok & Becker 1990
0.150	Puget Sound, WA	*Rhepoxynius abronius* (10d)	100 % mortality	T	T	Pastorok & Becker 1990
0.160	Puget Sound, WA	*Rhepoxynius abronius* (10d)	16 % mortality	NT	NT	Pastorok & Becker 1990

Appendix 4. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by study.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result	Overall Toxicity	Source
0.170	Puget Sound, WA	*Rhepoxynius abronius* (10d)	100 % mortality T	T	Pastorok & Becker 1990
0.210	Puget Sound, WA	*Rhepoxynius abronius* (10d)	16 % mortality NT	NT	Pastorok & Becker 1990
0.420	Puget Sound, WA	*Rhepoxynius abronius* (10d)	9 % mortality NT	NT	Pastorok & Becker 1990
0.590	Puget Sound, WA	*Rhepoxynius abronius* (10d)	100 % mortality T	T	Pastorok & Becker 1990
0.840	Puget Sound, WA	*Rhepoxynius abronius* (10d)	31 % mortality T	T	Pastorok & Becker 1990
1.70	Puget Sound, WA	*Rhepoxynius abronius* (10d)	54 % mortality T	T	Pastorok & Becker 1990
0.017	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	10 % mortality NT	NT	Long *et al.* 1998
0.019	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	13 % mortality NT	NT	Long *et al.* 1998
0.020	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	13 % mortality NT	NT	Long *et al.* 1998
0.023	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	70 % mortality T	T	Long *et al.* 1998
0.023	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	15 % mortality NT	NT	Long *et al.* 1998
0.024	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	94 % mortality T	T	Long *et al.* 1998
0.027	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	15 % mortality NT	NT	Long *et al.* 1998
0.031	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	75 % mortality T	T	Long *et al.* 1998
0.031	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	10 % mortality NT	NT	Long *et al.* 1998
0.037	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	27 % mortality T	T	Long *et al.* 1998
0.039	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	15 % mortality NT	NT	Long *et al.* 1998
0.044	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	20 % mortality NT	NT	Long *et al.* 1998
0.045	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	86 % mortality T	T	Long *et al.* 1998
0.046	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	4 % mortality NT	NT	Long *et al.* 1998
0.046	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	31 % mortality T	T	Long *et al.* 1998
0.046	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	25 % mortality NT	NT	Long *et al.* 1998
0.046	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	19 % mortality NT	NT	Long *et al.* 1998
0.046	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	20 % mortality NT	NT	Long *et al.* 1998
0.047	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	69 % mortality T	T	Long *et al.* 1998
0.047	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	6 % mortality NT	NT	Long *et al.* 1998
0.047	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	25 % mortality T	T	Long *et al.* 1998
0.047	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	2 % mortality NT	NT	Long *et al.* 1998
0.056	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	22 % mortality NT	NT	Long *et al.* 1998
0.061	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	87 % mortality T	T	Long *et al.* 1998
0.062	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	62 % mortality T	T	Long *et al.* 1998
0.065	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	43 % mortality T	T	Long *et al.* 1998
0.065	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	29 % mortality T	T	Long *et al.* 1998
0.069	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	23 % mortality T	T	Long *et al.* 1998
0.073	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	25 % mortality NT	NT	Long *et al.* 1998
0.073	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	68 % mortality T	T	Long *et al.* 1998
0.073	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	78 % mortality T	T	Long *et al.* 1998
0.074	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	28 % mortality T	T	Long *et al.* 1998

Appendix 4. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by study.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result	Overall Toxicity	Source
0.077	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	32 % mortality T	**T**	Long *et al.* 1998
0.087	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	7 % mortality NT	**NT**	Long *et al.* 1998
0.088	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	23 % mortality NT	**NT**	Long *et al.* 1998
0.097	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	18 % mortality NT	**NT**	Long *et al.* 1998
0.099	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	18 % mortality NT	**NT**	Long *et al.* 1998
0.103	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	43 % mortality T	**T**	Long *et al.* 1998
0.106	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	93 % mortality T	**T**	Long *et al.* 1998
0.109	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	73 % mortality T	**T**	Long *et al.* 1998
0.112	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	63 % mortality T	**T**	Long *et al.* 1998
0.113	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	14 % mortality NT	**NT**	Long *et al.* 1998
0.129	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	53 % mortality T	**T**	Long *et al.* 1998
0.131	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	19 % mortality NT	**NT**	Long *et al.* 1998
0.140	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	21 % mortality NT	**NT**	Long *et al.* 1998
0.141	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	71 % mortality T	**T**	Long *et al.* 1998
0.144	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	60 % mortality T	**T**	Long *et al.* 1998
0.145	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	27 % mortality T	**T**	Long *et al.* 1998
0.148	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	12 % mortality NT	**NT**	Long *et al.* 1998
0.150	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	8 % mortality NT	**NT**	Long *et al.* 1998
0.152	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	19 % mortality NT	**NT**	Long *et al.* 1998
0.159	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	16 % mortality NT	**NT**	Long *et al.* 1998
0.163	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	24 % mortality NT	**NT**	Long *et al.* 1998
0.172	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	28 % mortality T	**T**	Long *et al.* 1998
0.184	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	19 % mortality NT	**NT**	Long *et al.* 1998
0.189	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	40 % mortality T	**T**	Long *et al.* 1998
0.206	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	40 % mortality NT	**NT**	Long *et al.* 1998
0.209	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	9 % mortality NT	**NT**	Long *et al.* 1998
0.209	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	99 % mortality T	**T**	Long *et al.* 1998
0.213	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	16 % mortality NT	**NT**	Long *et al.* 1998
0.215	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	10 % mortality NT	**NT**	Long *et al.* 1998
0.217	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	71 % mortality T	**T**	Long *et al.* 1998
0.224	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	11 % mortality NT	**NT**	Long *et al.* 1998
0.243	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	19 % mortality NT	**NT**	Long *et al.* 1998
0.252	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	13 % mortality NT	**NT**	Long *et al.* 1998
0.259	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	65 % mortality T	**T**	Long *et al.* 1998
0.260	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	11 % mortality NT	**NT**	Long *et al.* 1998
0.281	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	63 % mortality T	**T**	Long *et al.* 1998
0.301	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	8 % mortality NT	**NT**	Long *et al.* 1998
0.318	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	20 % mortality NT	**NT**	Long *et al.* 1998
0.321	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	7 % mortality NT	**NT**	Long *et al.* 1998

Appendix 4. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by study.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result	Overall Toxicity	Source
0.335	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	26 % mortality NT	NT	Long *et al.* 1998
0.336	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	50 % mortality NT	NT	Long *et al.* 1998
0.339	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	19 % mortality NT	NT	Long *et al.* 1998
0.340	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	8 % mortality NT	NT	Long *et al.* 1998
0.341	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	36 % mortality T	T	Long *et al.* 1998
0.342	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	30 % mortality NT	NT	Long *et al.* 1998
0.343	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	5 % mortality NT	NT	Long *et al.* 1998
0.349	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	37 % mortality NT	NT	Long *et al.* 1998
0.359	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	8 % mortality NT	NT	Long *et al.* 1998
0.359	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	16 % mortality NT	NT	Long *et al.* 1998
0.367	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	12 % mortality NT	NT	Long *et al.* 1998
0.372	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	30 % mortality T	T	Long *et al.* 1998
0.381	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	22 % mortality NT	NT	Long *et al.* 1998
0.387	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	6 % mortality NT	NT	Long *et al.* 1998
0.416	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	62 % mortality T	T	Long *et al.* 1998
0.436	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	10 % mortality NT	NT	Long *et al.* 1998
0.446	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	7 % mortality NT	NT	Long *et al.* 1998
0.447	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	24 % mortality NT	NT	Long *et al.* 1998
0.466	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	23 % mortality NT	NT	Long *et al.* 1998
0.538	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	9 % mortality NT	NT	Long *et al.* 1998
0.544	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	85 % mortality T	T	Long *et al.* 1998
0.554	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	53 % mortality T	T	Long *et al.* 1998
0.566	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	17 % mortality NT	NT	Long *et al.* 1998
0.605	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	95 % mortality T	T	Long *et al.* 1998
0.686	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	9 % mortality NT	NT	Long *et al.* 1998
0.687	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	19 % mortality NT	NT	Long *et al.* 1998
0.692	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	12 % mortality NT	NT	Long *et al.* 1998
0.710	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	23 % mortality NT	NT	Long *et al.* 1998
0.738	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	25 % mortality T	T	Long *et al.* 1998
0.776	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	17 % mortality NT	NT	Long *et al.* 1998
0.795	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	13 % mortality NT	NT	Long *et al.* 1998
0.803	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	63 % mortality T	T	Long *et al.* 1998
0.815	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	11 % mortality NT	NT	Long *et al.* 1998
0.817	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	21 % mortality NT	NT	Long *et al.* 1998
0.831	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	12 % mortality NT	NT	Long *et al.* 1998
0.835	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	7 % mortality NT	NT	Long *et al.* 1998
0.996	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	14 % mortality NT	NT	Long *et al.* 1998
0.999	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	9 % mortality NT	NT	Long *et al.* 1998
1.02	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	100 % mortality T	T	Long *et al.* 1998

Appendix 4. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by study.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result	Overall Toxicity	Source
1.05	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	51 % mortality T	T	Long *et al.* 1998
1.17	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	21 % mortality NT	NT	Long *et al.* 1998
1.28	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	17 % mortality NT	NT	Long *et al.* 1998
1.34	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	7 % mortality NT	NT	Long *et al.* 1998
1.74	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	98 % mortality T	T	Long *et al.* 1998
1.90	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	12 % mortality NT	NT	Long *et al.* 1998
2.81	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	16 % mortality NT	NT	Long *et al.* 1998
5.60	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	14 % mortality NT	NT	Long *et al.* 1998
12.1	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	63 % mortality T	T	Long *et al.* 1998
0.006	San Francisco Bay, CA	*Rhepoxynius abronius* (10d)	9 % mortality NT	NT	Chapman *et al.* 1987
0.011	San Francisco Bay, CA	*Rhepoxynius abronius* (10d)	4 % mortality NT	NT	Chapman *et al.* 1987
0.018	San Francisco Bay, CA	*Rhepoxynius abronius* (10d)	24 % mortality T	T	Chapman *et al.* 1987
0.027	San Francisco Bay, CA	*Rhepoxynius abronius* (10d)	13 % mortality NT	NT	Chapman *et al.* 1987
0.027	San Francisco Bay, CA	*Rhepoxynius abronius* (10d)	13 % mortality NT	NT	Chapman *et al.* 1987
0.037	San Francisco Bay, CA	*Rhepoxynius abronius* (10d)	9 % mortality NT	NT	Chapman *et al.* 1987
0.057	San Francisco Bay, CA	*Rhepoxynius abronius* (10d)	37 % mortality T	T	Chapman *et al.* 1987
0.180	San Francisco Bay, CA	*Rhepoxynius abronius* (10d)	95 % mortality T	T	Chapman *et al.* 1987
0.255	San Francisco Bay, CA	*Rhepoxynius abronius* (10d)	24 % mortality T	T	Chapman *et al.* 1987
0.003	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	5 % mortality NT	NT	Long *et al.* 1998
0.011	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	6 % mortality NT	NT	Long *et al.* 1998
0.014	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	7 % mortality NT	NT	Long *et al.* 1998
0.018	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	9 % mortality NT	NT	Long *et al.* 1998
0.021	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	18 % mortality NT	NT	Long *et al.* 1998
0.029	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	22 % mortality NT	NT	Long *et al.* 1998
0.030	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	12 % mortality NT	NT	Long *et al.* 1998
0.031	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	29 % mortality T	T	Long *et al.* 1998
0.038	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	23 % mortality NT	NT	Long *et al.* 1998
0.042	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	8 % mortality NT	NT	Long *et al.* 1998
0.043	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	37 % mortality NT	NT	Long *et al.* 1998
0.044	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	36 % mortality T	T	Long *et al.* 1998
0.049	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	8 % mortality NT	NT	Long *et al.* 1998
0.051	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	24 % mortality NT	NT	Long *et al.* 1998
0.051	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	16 % mortality NT	NT	Long *et al.* 1998
0.055	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	56 % mortality T	T	Long *et al.* 1998
0.061	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	8 % mortality NT	NT	Long *et al.* 1998
0.063	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	33 % mortality T	T	Long *et al.* 1998
0.065	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	27 % mortality T	T	Long *et al.* 1998

Appendix 4. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by study.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result		Overall Toxicity	Source
0.066	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	17 % mortality	NT	**NT**	Long *et al.* 1998
0.068	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	17 % mortality	NT	**NT**	Long *et al.* 1998
0.078	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	48 % mortality	T	**T**	Long *et al.* 1998
0.079	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	7 % mortality	NT	**NT**	Long *et al.* 1998
0.084	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	11 % mortality	NT	**NT**	Long *et al.* 1998
0.094	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	18 % mortality	NT	**NT**	Long *et al.* 1998
0.097	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	12 % mortality	NT	**NT**	Long *et al.* 1998
0.106	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	22 % mortality	NT	**NT**	Long *et al.* 1998
0.114	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	8 % mortality	NT	**NT**	Long *et al.* 1998
0.127	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	29 % mortality	T	**T**	Long *et al.* 1998
0.148	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	36 % mortality	T	**T**	Long *et al.* 1998
0.149	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	20 % mortality	NT	**NT**	Long *et al.* 1998
0.155	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	20 % mortality	NT	**NT**	Long *et al.* 1998
0.161	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	35 % mortality	T	**T**	Long *et al.* 1998
0.192	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	49 % mortality	T	**T**	Long *et al.* 1998
0.200	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	29 % mortality	T	**T**	Long *et al.* 1998
0.204	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	26 % mortality	NT	**NT**	Long *et al.* 1998
0.214	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	4 % mortality	NT	**NT**	Long *et al.* 1998
0.284	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	7 % mortality	NT	**NT**	Long *et al.* 1998
0.328	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	12 % mortality	NT	**NT**	Long *et al.* 1998
0.367	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	17 % mortality	NT	**NT**	Long *et al.* 1998
0.381	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	27 % mortality	T	**T**	Long *et al.* 1998
0.490	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	42 % mortality	T	**T**	Long *et al.* 1998
0.493	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	46 % mortality	T	**T**	Long *et al.* 1998
0.551	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	41 % mortality	T	**T**	Long *et al.* 1998
0.0001	South Carolina and Georgia	*Ampelisca abdita* (10d)	10 % mortality	NT	**NT**	Long *et al.* 1998
0.0001	South Carolina and Georgia	*Ampelisca abdita* (10d)	13 % mortality	NT	**NT**	Long *et al.* 1998
0.0003	South Carolina and Georgia	*Ampelisca abdita* (10d)	14 % mortality	NT	**NT**	Long *et al.* 1998
0.0003	South Carolina and Georgia	*Ampelisca abdita* (10d)	9 % mortality	NT	**NT**	Long *et al.* 1998
0.0003	South Carolina and Georgia	*Ampelisca abdita* (10d)	9 % mortality	NT	**NT**	Long *et al.* 1998
0.0003	South Carolina and Georgia	*Ampelisca abdita* (10d)	16 % mortality	NT	**NT**	Long *et al.* 1998
0.0004	South Carolina and Georgia	*Ampelisca abdita* (10d)	8 % mortality	NT	**NT**	Long *et al.* 1998
0.0004	South Carolina and Georgia	*Ampelisca abdita* (10d)	14 % mortality	NT	**NT**	Long *et al.* 1998
0.0004	South Carolina and Georgia	*Ampelisca abdita* (10d)	7 % mortality	NT	**NT**	Long *et al.* 1998
0.0004	South Carolina and Georgia	*Ampelisca abdita* (10d)	10 % mortality	NT	**NT**	Long *et al.* 1998
0.0004	South Carolina and Georgia	*Ampelisca abdita* (10d)	7 % mortality	NT	**NT**	Long *et al.* 1998
0.0004	South Carolina and Georgia	*Ampelisca abdita* (10d)	12 % mortality	NT	**NT**	Long *et al.* 1998
0.0004	South Carolina and Georgia	*Ampelisca abdita* (10d)	13 % mortality	NT	**NT**	Long *et al.* 1998

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Appendix 4. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by study.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result	Overall Toxicity	Source
0.0005	South Carolina and Georgia	*Ampelisca abdita* (10d)	9 % mortality NT	NT	Long *et al.* 1998
0.001	South Carolina and Georgia	*Ampelisca abdita* (10d)	14 % mortality NT	NT	Long *et al.* 1998
0.001	South Carolina and Georgia	*Ampelisca abdita* (10d)	12 % mortality NT	NT	Long *et al.* 1998
0.001	South Carolina and Georgia	*Ampelisca abdita* (10d)	16 % mortality NT	NT	Long *et al.* 1998
0.001	South Carolina and Georgia	*Ampelisca abdita* (10d)	19 % mortality NT	NT	Long *et al.* 1998
0.001	South Carolina and Georgia	*Ampelisca abdita* (10d)	19 % mortality NT	NT	Long *et al.* 1998
0.001	South Carolina and Georgia	*Ampelisca abdita* (10d)	15 % mortality NT	NT	Long *et al.* 1998
0.001	South Carolina and Georgia	*Ampelisca abdita* (10d)	7 % mortality NT	NT	Long *et al.* 1998
0.001	South Carolina and Georgia	*Ampelisca abdita* (10d)	23 % mortality NT	NT	Long *et al.* 1998
0.001	South Carolina and Georgia	*Ampelisca abdita* (10d)	13 % mortality NT	NT	Long *et al.* 1998
0.001	South Carolina and Georgia	*Ampelisca abdita* (10d)	9 % mortality NT	NT	Long *et al.* 1998
0.001	South Carolina and Georgia	*Ampelisca abdita* (10d)	12 % mortality NT	NT	Long *et al.* 1998
0.001	South Carolina and Georgia	*Ampelisca abdita* (10d)	13 % mortality NT	NT	Long *et al.* 1998
0.001	South Carolina and Georgia	*Ampelisca abdita* (10d)	12 % mortality NT	NT	Long *et al.* 1998
0.001	South Carolina and Georgia	*Ampelisca abdita* (10d)	18 % mortality NT	NT	Long *et al.* 1998
0.001	South Carolina and Georgia	*Ampelisca abdita* (10d)	7 % mortality NT	NT	Long *et al.* 1998
0.002	South Carolina and Georgia	*Ampelisca abdita* (10d)	18 % mortality NT	NT	Long *et al.* 1998
0.002	South Carolina and Georgia	*Ampelisca abdita* (10d)	11 % mortality NT	NT	Long *et al.* 1998
0.002	South Carolina and Georgia	*Ampelisca abdita* (10d)	13 % mortality NT	NT	Long *et al.* 1998
0.002	South Carolina and Georgia	*Ampelisca abdita* (10d)	13 % mortality NT	NT	Long *et al.* 1998
0.002	South Carolina and Georgia	*Ampelisca abdita* (10d)	7 % mortality NT	NT	Long *et al.* 1998
0.002	South Carolina and Georgia	*Ampelisca abdita* (10d)	7 % mortality NT	NT	Long *et al.* 1998
0.002	South Carolina and Georgia	*Ampelisca abdita* (10d)	2.5 % mortality NT	NT	Long *et al.* 1998
0.002	South Carolina and Georgia	*Ampelisca abdita* (10d)	10 % mortality NT	NT	Long *et al.* 1998
0.003	South Carolina and Georgia	*Ampelisca abdita* (10d)	8 % mortality NT	NT	Long *et al.* 1998
0.003	South Carolina and Georgia	*Ampelisca abdita* (10d)	9 % mortality NT	NT	Long *et al.* 1998
0.003	South Carolina and Georgia	*Ampelisca abdita* (10d)	8 % mortality NT	NT	Long *et al.* 1998
0.003	South Carolina and Georgia	*Ampelisca abdita* (10d)	6 % mortality NT	NT	Long *et al.* 1998
0.003	South Carolina and Georgia	*Ampelisca abdita* (10d)	17 % mortality NT	NT	Long *et al.* 1998
0.003	South Carolina and Georgia	*Ampelisca abdita* (10d)	11 % mortality NT	NT	Long *et al.* 1998
0.003	South Carolina and Georgia	*Ampelisca abdita* (10d)	14 % mortality NT	NT	Long *et al.* 1998
0.004	South Carolina and Georgia	*Ampelisca abdita* (10d)	13 % mortality NT	NT	Long *et al.* 1998
0.004	South Carolina and Georgia	*Ampelisca abdita* (10d)	19 % mortality NT	NT	Long *et al.* 1998
0.004	South Carolina and Georgia	*Ampelisca abdita* (10d)	15 % mortality NT	NT	Long *et al.* 1998
0.005	South Carolina and Georgia	*Ampelisca abdita* (10d)	16 % mortality NT	NT	Long *et al.* 1998
0.005	South Carolina and Georgia	*Ampelisca abdita* (10d)	12 % mortality NT	NT	Long *et al.* 1998
0.005	South Carolina and Georgia	*Ampelisca abdita* (10d)	9 % mortality NT	NT	Long *et al.* 1998
0.005	South Carolina and Georgia	*Ampelisca abdita* (10d)	6 % mortality NT	NT	Long *et al.* 1998
0.005	South Carolina and Georgia	*Ampelisca abdita* (10d)	8 % mortality NT	NT	Long *et al.* 1998

Appendix 4. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by study.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result	Overall Toxicity	Source
0.006	South Carolina and Georgia	*Ampelisca abdita* (10d)	5 % mortality NT	NT	Long *et al.* 1998
0.007	South Carolina and Georgia	*Ampelisca abdita* (10d)	12 % mortality NT	NT	Long *et al.* 1998
0.007	South Carolina and Georgia	*Ampelisca abdita* (10d)	9 % mortality NT	NT	Long *et al.* 1998
0.008	South Carolina and Georgia	*Ampelisca abdita* (10d)	9 % mortality NT	NT	Long *et al.* 1998
0.008	South Carolina and Georgia	*Ampelisca abdita* (10d)	9 % mortality NT	NT	Long *et al.* 1998
0.009	South Carolina and Georgia	*Ampelisca abdita* (10d)	9 % mortality NT	NT	Long *et al.* 1998
0.011	South Carolina and Georgia	*Ampelisca abdita* (10d)	14 % mortality NT	NT	Long *et al.* 1998
0.015	South Carolina and Georgia	*Ampelisca abdita* (10d)	15 % mortality NT	NT	Long *et al.* 1998
0.023	South Carolina and Georgia	*Ampelisca abdita* (10d)	16 % mortality NT	NT	Long *et al.* 1998
0.030	South Carolina and Georgia	*Ampelisca abdita* (10d)	15 % mortality NT	NT	Long *et al.* 1998
0.320	South Carolina and Georgia	*Ampelisca abdita* (10d)	7 % mortality NT	NT	Long *et al.* 1998
0.001	Tampa Bay, FL	*Ampelisca abdita* (10d)	20 % mortality NT	NT	Long *et al.* 1998
0.001	Tampa Bay, FL	*Ampelisca abdita* (10d)	11 % mortality NT	NT	Long *et al.* 1998
0.001	Tampa Bay, FL	*Ampelisca abdita* (10d)	6 % mortality NT	NT	Long *et al.* 1998
0.001	Tampa Bay, FL	*Ampelisca abdita* (10d)	13 % mortality NT	NT	Long *et al.* 1998
0.001	Tampa Bay, FL	*Ampelisca abdita* (10d)	16 % mortality NT	NT	Long *et al.* 1998
0.002	Tampa Bay, FL	*Ampelisca abdita* (10d)	15 % mortality NT	NT	Long *et al.* 1998
0.002	Tampa Bay, FL	*Ampelisca abdita* (10d)	5 % mortality NT	NT	Long *et al.* 1998
0.003	Tampa Bay, FL	*Ampelisca abdita* (10d)	23 % mortality NT	NT	Long *et al.* 1998
0.004	Tampa Bay, FL	*Ampelisca abdita* (10d)	15 % mortality NT	NT	Long *et al.* 1998
0.008	Tampa Bay, FL	*Ampelisca abdita* (10d)	9 % mortality NT	NT	Long *et al.* 1998
0.008	Tampa Bay, FL	*Ampelisca abdita* (10d)	7 % mortality NT	NT	Long *et al.* 1998
0.008	Tampa Bay, FL	*Ampelisca abdita* (10d)	19 % mortality NT	NT	Long *et al.* 1998
0.009	Tampa Bay, FL	*Ampelisca abdita* (10d)	11 % mortality NT	NT	Long *et al.* 1998
0.011	Tampa Bay, FL	*Ampelisca abdita* (10d)	15 % mortality NT	NT	Long *et al.* 1998
0.014	Tampa Bay, FL	*Ampelisca abdita* (10d)	19 % mortality NT	NT	Long *et al.* 1998
0.020	Tampa Bay, FL	*Ampelisca abdita* (10d)	7 % mortality NT	NT	Long *et al.* 1998
0.022	Tampa Bay, FL	*Ampelisca abdita* (10d)	4 % mortality NT	NT	Long *et al.* 1998
0.025	Tampa Bay, FL	*Ampelisca abdita* (10d)	14 % mortality NT	NT	Long *et al.* 1998
0.026	Tampa Bay, FL	*Ampelisca abdita* (10d)	6 % mortality NT	NT	Long *et al.* 1998
0.027	Tampa Bay, FL	*Ampelisca abdita* (10d)	5 % mortality NT	NT	Long *et al.* 1998
0.031	Tampa Bay, FL	*Ampelisca abdita* (10d)	7 % mortality NT	NT	Long *et al.* 1998
0.031	Tampa Bay, FL	*Ampelisca abdita* (10d)	17 % mortality NT	NT	Long *et al.* 1998
0.032	Tampa Bay, FL	*Ampelisca abdita* (10d)	12 % mortality NT	NT	Long *et al.* 1998
0.036	Tampa Bay, FL	*Ampelisca abdita* (10d)	5 % mortality NT	NT	Long *et al.* 1998
0.038	Tampa Bay, FL	*Ampelisca abdita* (10d)	13 % mortality NT	NT	Long *et al.* 1998
0.047	Tampa Bay, FL	*Ampelisca abdita* (10d)	19 % mortality NT	NT	Long *et al.* 1998
0.061	Tampa Bay, FL	*Ampelisca abdita* (10d)	9 % mortality NT	NT	Long *et al.* 1998

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Appendix 4. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by study.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result	Overall Toxicity	Source
0.068	Tampa Bay, FL	*Ampelisca abdita* (10d)	13 % mortality NT	NT	Long *et al.* 1998
0.069	Tampa Bay, FL	*Ampelisca abdita* (10d)	13 % mortality NT	NT	Long *et al.* 1998
0.073	Tampa Bay, FL	*Ampelisca abdita* (10d)	11 % mortality NT	NT	Long *et al.* 1998
0.074	Tampa Bay, FL	*Ampelisca abdita* (10d)	16 % mortality NT	NT	Long *et al.* 1998
0.084	Tampa Bay, FL	*Ampelisca abdita* (10d)	17 % mortality NT	NT	Long *et al.* 1998
0.090	Tampa Bay, FL	*Ampelisca abdita* (10d)	12 % mortality NT	NT	Long *et al.* 1998
0.109	Tampa Bay, FL	*Ampelisca abdita* (10d)	10 % mortality NT	NT	Long *et al.* 1998
0.137	Tampa Bay, FL	*Ampelisca abdita* (10d)	14 % mortality NT	NT	Long *et al.* 1998
0.144	Tampa Bay, FL	*Ampelisca abdita* (10d)	10 % mortality NT	NT	Long *et al.* 1998
0.156	Tampa Bay, FL	*Ampelisca abdita* (10d)	18 % mortality NT	NT	Long *et al.* 1998
0.162	Tampa Bay, FL	*Ampelisca abdita* (10d)	10 % mortality NT	NT	Long *et al.* 1998
0.178	Tampa Bay, FL	*Ampelisca abdita* (10d)	16 % mortality NT	NT	Long *et al.* 1998
0.193	Tampa Bay, FL	*Ampelisca abdita* (10d)	18 % mortality NT	NT	Long *et al.* 1998
0.201	Tampa Bay, FL	*Ampelisca abdita* (10d)	15 % mortality NT	NT	Long *et al.* 1998
0.217	Tampa Bay, FL	*Ampelisca abdita* (10d)	18 % mortality NT	NT	Long *et al.* 1998
0.225	Tampa Bay, FL	*Ampelisca abdita* (10d)	6 % mortality NT	NT	Long *et al.* 1998
0.279	Tampa Bay, FL	*Ampelisca abdita* (10d)	22 % mortality NT	NT	Long *et al.* 1998
0.283	Tampa Bay, FL	*Ampelisca abdita* (10d)	17 % mortality NT	NT	Long *et al.* 1998
0.298	Tampa Bay, FL	*Ampelisca abdita* (10d)	17 % mortality NT	NT	Long *et al.* 1998
0.303	Tampa Bay, FL	*Ampelisca abdita* (10d)	10 % mortality NT	NT	Long *et al.* 1998
0.307	Tampa Bay, FL	*Ampelisca abdita* (10d)	8 % mortality NT	NT	Long *et al.* 1998
0.308	Tampa Bay, FL	*Ampelisca abdita* (10d)	1 % mortality NT	NT	Long *et al.* 1998
0.341	Tampa Bay, FL	*Ampelisca abdita* (10d)	11 % mortality NT	NT	Long *et al.* 1998
0.353	Tampa Bay, FL	*Ampelisca abdita* (10d)	9 % mortality NT	NT	Long *et al.* 1998
0.381	Tampa Bay, FL	*Ampelisca abdita* (10d)	10 % mortality NT	NT	Long *et al.* 1998
0.383	Tampa Bay, FL	*Ampelisca abdita* (10d)	22 % mortality NT	NT	Long *et al.* 1998
0.513	Tampa Bay, FL	*Ampelisca abdita* (10d)	27 % mortality T	T	Long *et al.* 1998
0.521	Tampa Bay, FL	*Ampelisca abdita* (10d)	15 % mortality NT	NT	Long *et al.* 1998
0.693	Tampa Bay, FL	*Ampelisca abdita* (10d)	55 % mortality T	T	Long *et al.* 1998
0.799	Tampa Bay, FL	*Ampelisca abdita* (10d)	24 % mortality NT	NT	Long *et al.* 1998
1.58	Tampa Bay, FL	*Ampelisca abdita* (10d)	23 % mortality NT	NT	Long *et al.* 1998
1.60	Tampa Bay, FL	*Ampelisca abdita* (10d)	22 % mortality NT	NT	Long *et al.* 1998
3.58	Tampa Bay, FL	*Ampelisca abdita* (10d)	61 % mortality T	T	Long *et al.* 1998
16.7	Tampa Bay, FL	*Ampelisca abdita* (10d)	52 % mortality T	T	Long *et al.* 1998

DW = dry weight; ND = not detected; N/A = not available; NT = not toxic; T = toxic.

Appendix 5

Marine and Estuarine Data for Assessing Predictive Ability of the SECs: Sorted by Concentration

Appendix 5. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by concentration.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result	Overall Toxicity	Source
0.0001	South Carolina and Georgia	*Ampelisca abdita* (10d)	10 % mortality NT	NT	Long *et al.* 1998
0.0001	South Carolina and Georgia	*Ampelisca abdita* (10d)	13 % mortality NT	NT	Long *et al.* 1998
0.0003	South Carolina and Georgia	*Ampelisca abdita* (10d)	14 % mortality NT	NT	Long *et al.* 1998
0.0003	South Carolina and Georgia	*Ampelisca abdita* (10d)	9 % mortality NT	NT	Long *et al.* 1998
0.0003	South Carolina and Georgia	*Ampelisca abdita* (10d)	9 % mortality NT	NT	Long *et al.* 1998
0.0003	South Carolina and Georgia	*Ampelisca abdita* (10d)	16 % mortality NT	NT	Long *et al.* 1998
0.0004	South Carolina and Georgia	*Ampelisca abdita* (10d)	8 % mortality NT	NT	Long *et al.* 1998
0.0004	South Carolina and Georgia	*Ampelisca abdita* (10d)	14 % mortality NT	NT	Long *et al.* 1998
0.0004	South Carolina and Georgia	*Ampelisca abdita* (10d)	7 % mortality NT	NT	Long *et al.* 1998
0.0004	South Carolina and Georgia	*Ampelisca abdita* (10d)	10 % mortality NT	NT	Long *et al.* 1998
0.0004	South Carolina and Georgia	*Ampelisca abdita* (10d)	7 % mortality NT	NT	Long *et al.* 1998
0.0004	South Carolina and Georgia	*Ampelisca abdita* (10d)	12 % mortality NT	NT	Long *et al.* 1998
0.0004	South Carolina and Georgia	*Ampelisca abdita* (10d)	13 % mortality NT	NT	Long *et al.* 1998
0.0005	South Carolina and Georgia	*Ampelisca abdita* (10d)	9 % mortality NT	NT	Long *et al.* 1998
0.0005	EMAP Virginia Province	*Ampelisca abdita* (10d)	9 % mortality NT	NT	Long *et al.* 1998
0.0005	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.0005	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality NT	NT	Long *et al.* 1998
0.0005	EMAP Virginia Province	*Ampelisca abdita* (10d)	24 % mortality T	T	Long *et al.* 1998
0.0005	EMAP Virginia Province	*Ampelisca abdita* (10d)	8 % mortality NT	NT	Long *et al.* 1998
0.0005	EMAP Virginia Province	*Ampelisca abdita* (10d)	4 % mortality NT	NT	Long *et al.* 1998
0.0005	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.0005	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.0005	EMAP Virginia Province	*Ampelisca abdita* (10d)	5 % mortality NT	NT	Long *et al.* 1998
0.0005	EMAP Virginia Province	*Ampelisca abdita* (10d)	18 % mortality NT	NT	Long *et al.* 1998
0.0005	EMAP Virginia Province	*Ampelisca abdita* (10d)	3 % mortality NT	NT	Long *et al.* 1998
0.0005	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.0005	EMAP Virginia Province	*Ampelisca abdita* (10d)	10 % mortality NT	NT	Long *et al.* 1998
0.0005	EMAP Virginia Province	*Ampelisca abdita* (10d)	5 % mortality NT	NT	Long *et al.* 1998
0.0005	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality NT	NT	Long *et al.* 1998
0.0005	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality NT	NT	Long *et al.* 1998
0.0005	EMAP Virginia Province	*Ampelisca abdita* (10d)	70 % mortality T	T	Long *et al.* 1998
0.0005	EMAP Virginia Province	*Ampelisca abdita* (10d)	3 % mortality NT	NT	Long *et al.* 1998
0.0006	EMAP Virginia Province	*Ampelisca abdita* (10d)	8 % mortality NT	NT	Long *et al.* 1998
0.0006	EMAP Virginia Province	*Ampelisca abdita* (10d)	20 % mortality NT	NT	Long *et al.* 1998
0.0006	EMAP Virginia Province	*Ampelisca abdita* (10d)	8 % mortality NT	NT	Long *et al.* 1998
0.0006	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.0006	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.0006	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.0006	EMAP Virginia Province	*Ampelisca abdita* (10d)	11 % mortality NT	NT	Long *et al.* 1998

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Appendix 5. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by concentration.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result		Overall Toxicity	Source
0.0006	EMAP Virginia Province	*Ampelisca abdita* (10d)	56 % mortality	T	**T**	Long *et al.* 1998
0.0006	EMAP Virginia Province	*Ampelisca abdita* (10d)	7 % mortality	NT	**NT**	Long *et al.* 1998
0.0006	EMAP Virginia Province	*Ampelisca abdita* (10d)	10 % mortality	NT	**NT**	Long *et al.* 1998
0.0006	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	**NT**	Long *et al.* 1998
0.0006	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	**NT**	Long *et al.* 1998
0.0006	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	**NT**	Long *et al.* 1998
0.0006	EMAP Virginia Province	*Ampelisca abdita* (10d)	5 % mortality	NT	**NT**	Long *et al.* 1998
0.0006	South Carolina and Georgia	*Ampelisca abdita* (10d)	14 % mortality	NT	**NT**	Long *et al.* 1998
0.0006	South Carolina and Georgia	*Ampelisca abdita* (10d)	12 % mortality	NT	**NT**	Long *et al.* 1998
0.0006	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality	NT	**NT**	Long *et al.* 1998
0.0006	EMAP Virginia Province	*Ampelisca abdita* (10d)	13 % mortality	NT	**NT**	Long *et al.* 1998
0.0006	South Carolina and Georgia	*Ampelisca abdita* (10d)	16 % mortality	NT	**NT**	Long *et al.* 1998
0.0007	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	**NT**	Long *et al.* 1998
0.0007	EMAP Virginia Province	*Ampelisca abdita* (10d)	16 % mortality	NT	**NT**	Long *et al.* 1998
0.0007	EMAP Virginia Province	*Ampelisca abdita* (10d)	5 % mortality	NT	**NT**	Long *et al.* 1998
0.0007	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality	NT	**NT**	Long *et al.* 1998
0.0007	South Carolina and Georgia	*Ampelisca abdita* (10d)	19 % mortality	NT	**NT**	Long *et al.* 1998
0.0007	South Carolina and Georgia	*Ampelisca abdita* (10d)	19 % mortality	NT	**NT**	Long *et al.* 1998
0.0007	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	**NT**	Long *et al.* 1998
0.0007	EMAP Virginia Province	*Ampelisca abdita* (10d)	19 % mortality	NT	**NT**	Long *et al.* 1998
0.0007	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	**NT**	Long *et al.* 1998
0.0007	EMAP Virginia Province	*Ampelisca abdita* (10d)	13 % mortality	NT	**NT**	Long *et al.* 1998
0.0007	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	**NT**	Long *et al.* 1998
0.0007	EMAP Virginia Province	*Ampelisca abdita* (10d)	23 % mortality	T	**T**	Long *et al.* 1998
0.0007	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	**NT**	Long *et al.* 1998
0.0007	EMAP Virginia Province	*Ampelisca abdita* (10d)	9 % mortality	NT	**NT**	Long *et al.* 1998
0.0007	EMAP Virginia Province	*Ampelisca abdita* (10d)	6 % mortality	NT	**NT**	Long *et al.* 1998
0.0007	EMAP Virginia Province	*Ampelisca abdita* (10d)	21 % mortality	T	**T**	Long *et al.* 1998
0.0007	EMAP Virginia Province	*Ampelisca abdita* (10d)	2 % mortality	NT	**NT**	Long *et al.* 1998
0.0007	EMAP Virginia Province	*Ampelisca abdita* (10d)	4 % mortality	NT	**NT**	Long *et al.* 1998
0.0007	EMAP Virginia Province	*Ampelisca abdita* (10d)	9 % mortality	NT	**NT**	Long *et al.* 1998
0.0007	South Carolina and Georgia	*Ampelisca abdita* (10d)	15 % mortality	NT	**NT**	Long *et al.* 1998
0.0007	EMAP Virginia Province	*Ampelisca abdita* (10d)	30 % mortality	T	**T**	Long *et al.* 1998
0.0008	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality	NT	**NT**	Long *et al.* 1998
0.0008	EMAP Virginia Province	*Ampelisca abdita* (10d)	14 % mortality	NT	**NT**	Long *et al.* 1998
0.0008	EMAP Virginia Province	*Ampelisca abdita* (10d)	26 % mortality	T	**T**	Long *et al.* 1998
0.0008	EMAP Virginia Province	*Ampelisca abdita* (10d)	2 % mortality	NT	**NT**	Long *et al.* 1998
0.0008	EMAP Virginia Province	*Ampelisca abdita* (10d)	4 % mortality	NT	**NT**	Long *et al.* 1998
0.0008	South Carolina and Georgia	*Ampelisca abdita* (10d)	7 % mortality	NT	**NT**	Long *et al.* 1998

Appendix 5. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (*tPCBs*; mg/kg DW): *sorted by concentration.*

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result		Overall Toxicity	Source
0.0008	EMAP Virginia Province	*Ampelisca abdita* (10d)	30 % mortality	T	T	Long *et al.* 1998
0.0008	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.0008	EMAP Virginia Province	*Ampelisca abdita* (10d)	6 % mortality	NT	NT	Long *et al.* 1998
0.0008	Tampa Bay, FL	*Ampelisca abdita* (10d)	20 % mortality	NT	NT	Long *et al.* 1998
0.0008	EMAP Virginia Province	*Ampelisca abdita* (10d)	18 % mortality	NT	NT	Long *et al.* 1998
0.0008	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.0008	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.0008	EMAP Virginia Province	*Ampelisca abdita* (10d)	4 % mortality	NT	NT	Long *et al.* 1998
0.0008	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.0008	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality	NT	NT	Long *et al.* 1998
0.0008	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.0009	EMAP Virginia Province	*Ampelisca abdita* (10d)	11 % mortality	NT	NT	Long *et al.* 1998
0.0009	EMAP Virginia Province	*Ampelisca abdita* (10d)	7 % mortality	NT	NT	Long *et al.* 1998
0.0009	EMAP Virginia Province	*Ampelisca abdita* (10d)	4 % mortality	NT	NT	Long *et al.* 1998
0.0009	EMAP Virginia Province	*Ampelisca abdita* (10d)	7 % mortality	NT	NT	Long *et al.* 1998
0.0009	EMAP Virginia Province	*Ampelisca abdita* (10d)	8 % mortality	NT	NT	Long *et al.* 1998
0.0009	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.0009	EMAP Virginia Province	*Ampelisca abdita* (10d)	8 % mortality	NT	NT	Long *et al.* 1998
0.0009	EMAP Virginia Province	*Ampelisca abdita* (10d)	5 % mortality	NT	NT	Long *et al.* 1998
0.0009	EMAP Virginia Province	*Ampelisca abdita* (10d)	3 % mortality	NT	NT	Long *et al.* 1998
0.0009	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality	NT	NT	Long *et al.* 1998
0.0009	South Carolina and Georgia	*Ampelisca abdita* (10d)	23 % mortality	NT	NT	Long *et al.* 1998
0.0009	EMAP Virginia Province	*Ampelisca abdita* (10d)	8 % mortality	NT	NT	Long *et al.* 1998
0.0010	South Carolina and Georgia	*Ampelisca abdita* (10d)	13 % mortality	NT	NT	Long *et al.* 1998
0.0010	EMAP Virginia Province	*Ampelisca abdita* (10d)	9 % mortality	NT	NT	Long *et al.* 1998
0.0010	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality	NT	NT	Long *et al.* 1998
0.0010	South Carolina and Georgia	*Ampelisca abdita* (10d)	9 % mortality	NT	NT	Long *et al.* 1998
0.0010	EMAP Virginia Province	*Ampelisca abdita* (10d)	13 % mortality	NT	NT	Long *et al.* 1998
0.0010	EMAP Virginia Province	*Ampelisca abdita* (10d)	10 % mortality	NT	NT	Long *et al.* 1998
0.0010	EMAP Virginia Province	*Ampelisca abdita* (10d)	16 % mortality	NT	NT	Long *et al.* 1998
0.0010	EMAP Virginia Province	*Ampelisca abdita* (10d)	6 % mortality	NT	NT	Long *et al.* 1998
0.0010	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.0011	EMAP Virginia Province	*Ampelisca abdita* (10d)	12 % mortality	NT	NT	Long *et al.* 1998
0.0011	Biscayne Bay, FL	*Ampelisca abdita* (10d)	3 % mortality	NT	NT	Long 1997
0.0011	Biscayne Bay, FL	*Ampelisca abdita* (10d)	43 % mortality	T	T	Long 1997
0.0011	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.0011	EMAP Virginia Province	*Ampelisca abdita* (10d)	8 % mortality	NT	NT	Long *et al.* 1998
0.0011	EMAP Virginia Province	*Ampelisca abdita* (10d)	2 % mortality	NT	NT	Long *et al.* 1998
0.0011	Biscayne Bay, FL	*Ampelisca abdita* (10d)	18 % mortality	NT	NT	Long 1997

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Appendix 5. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by concentration.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result	Overall Toxicity	Source
0.0011	EMAP Virginia Province	*Ampelisca abdita* (10d)	6 % mortality NT	NT	Long *et al.* 1998
0.0011	South Carolina and Georgia	*Ampelisca abdita* (10d)	12 % mortality NT	NT	Long *et al.* 1998
0.0011	Tampa Bay, FL	*Ampelisca abdita* (10d)	11 % mortality NT	NT	Long *et al.* 1998
0.0012	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.0012	EMAP Virginia Province	*Ampelisca abdita* (10d)	3 % mortality NT	NT	Long *et al.* 1998
0.0012	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.0012	EMAP Virginia Province	*Ampelisca abdita* (10d)	5 % mortality NT	NT	Long *et al.* 1998
0.0012	EMAP Virginia Province	*Ampelisca abdita* (10d)	12 % mortality NT	NT	Long *et al.* 1998
0.0012	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.0012	Biscayne Bay, FL	*Ampelisca abdita* (10d)	12 % mortality NT	NT	Long 1997
0.0012	EMAP Virginia Province	*Ampelisca abdita* (10d)	3 % mortality NT	NT	Long *et al.* 1998
0.0012	South Carolina and Georgia	*Ampelisca abdita* (10d)	13 % mortality NT	NT	Long *et al.* 1998
0.0012	South Carolina and Georgia	*Ampelisca abdita* (10d)	12 % mortality NT	NT	Long *et al.* 1998
0.0012	Tampa Bay, FL	*Ampelisca abdita* (10d)	6 % mortality NT	NT	Long *et al.* 1998
0.0012	EMAP Virginia Province	*Ampelisca abdita* (10d)	7 % mortality NT	NT	Long *et al.* 1998
0.0012	EMAP Virginia Province	*Ampelisca abdita* (10d)	15 % mortality NT	NT	Long *et al.* 1998
0.0013	Tampa Bay, FL	*Ampelisca abdita* (10d)	13 % mortality NT	NT	Long *et al.* 1998
0.0013	EMAP Virginia Province	*Ampelisca abdita* (10d)	11 % mortality NT	NT	Long *et al.* 1998
0.0013	EMAP Virginia Province	*Ampelisca abdita* (10d)	9 % mortality NT	NT	Long *et al.* 1998
0.0013	EMAP Virginia Province	*Ampelisca abdita* (10d)	40 % mortality T	T	Long *et al.* 1998
0.0013	EMAP Virginia Province	*Ampelisca abdita* (10d)	7 % mortality NT	NT	Long *et al.* 1998
0.0013	EMAP Virginia Province	*Ampelisca abdita* (10d)	10 % mortality NT	NT	Long *et al.* 1998
0.0013	Biscayne Bay, FL	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long 1997
0.0013	EMAP Virginia Province	*Ampelisca abdita* (10d)	7 % mortality NT	NT	Long *et al.* 1998
0.0013	Biscayne Bay, FL	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long 1997
0.0013	EMAP Virginia Province	*Ampelisca abdita* (10d)	72 % mortality T	T	Long *et al.* 1998
0.0013	EMAP Virginia Province	*Ampelisca abdita* (10d)	7 % mortality NT	NT	Long *et al.* 1998
0.0013	Biscayne Bay, FL	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long 1997
0.0014	Biscayne Bay, FL	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long 1997
0.0014	Biscayne Bay, FL	*Ampelisca abdita* (10d)	56 % mortality T	T	Long 1997
0.0014	EMAP Virginia Province	*Ampelisca abdita* (10d)	6 % mortality NT	NT	Long *et al.* 1998
0.0014	EMAP Virginia Province	*Ampelisca abdita* (10d)	7 % mortality NT	NT	Long *et al.* 1998
0.0014	Tampa Bay, FL	*Ampelisca abdita* (10d)	16 % mortality NT	NT	Long *et al.* 1998
0.0014	Biscayne Bay, FL	*Ampelisca abdita* (10d)	4 % mortality NT	NT	Long 1997
0.0014	EMAP Virginia Province	*Ampelisca abdita* (10d)	5 % mortality NT	NT	Long *et al.* 1998
0.0015	South Carolina and Georgia	*Ampelisca abdita* (10d)	18 % mortality NT	NT	Long *et al.* 1998
0.0015	EMAP Virginia Province	*Ampelisca abdita* (10d)	2 % mortality NT	NT	Long *et al.* 1998
0.0015	EMAP Virginia Province	*Ampelisca abdita* (10d)	7 % mortality NT	NT	Long *et al.* 1998
0.0015	South Carolina and Georgia	*Ampelisca abdita* (10d)	7 % mortality NT	NT	Long *et al.* 1998

Appendix 5. **A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by concentration.**

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result	Overall Toxicity	Source
0.0015	Biscayne Bay, FL	*Ampelisca abdita* (10d)	4 % mortality NT	NT	Long 1997
0.0015	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.0015	Tampa Bay, FL	*Ampelisca abdita* (10d)	15 % mortality NT	NT	Long *et al.* 1998
0.0016	EMAP Virginia Province	*Ampelisca abdita* (10d)	17 % mortality NT	NT	Long *et al.* 1998
0.0016	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.0016	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality NT	NT	Long *et al.* 1998
0.0016	South Carolina and Georgia	*Ampelisca abdita* (10d)	18 % mortality NT	NT	Long *et al.* 1998
0.0016	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.0016	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.0017	EMAP Virginia Province	*Ampelisca abdita* (10d)	13 % mortality NT	NT	Long *et al.* 1998
0.0017	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.0017	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.0017	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality NT	NT	Long *et al.* 1998
0.0017	South Carolina and Georgia	*Ampelisca abdita* (10d)	11 % mortality NT	NT	Long *et al.* 1998
0.0017	Biscayne Bay, FL	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long 1997
0.0017	EMAP Virginia Province	*Ampelisca abdita* (10d)	10 % mortality NT	NT	Long *et al.* 1998
0.0017	South Carolina and Georgia	*Ampelisca abdita* (10d)	13 % mortality NT	NT	Long *et al.* 1998
0.0017	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.0017	Biscayne Bay, FL	*Ampelisca abdita* (10d)	4 % mortality NT	NT	Long 1997
0.0017	Biscayne Bay, FL	*Ampelisca abdita* (10d)	11 % mortality NT	NT	Long 1997
0.0017	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality NT	NT	Long *et al.* 1998
0.0018	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.0018	Biscayne Bay, FL	*Ampelisca abdita* (10d)	5 % mortality NT	NT	Long 1997
0.0018	Biscayne Bay, FL	*Ampelisca abdita* (10d)	19 % mortality NT	NT	Long 1997
0.0018	EMAP Virginia Province	*Ampelisca abdita* (10d)	8 % mortality NT	NT	Long *et al.* 1998
0.0018	EMAP Virginia Province	*Ampelisca abdita* (10d)	14 % mortality NT	NT	Long *et al.* 1998
0.0018	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.0018	Biscayne Bay, FL	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long 1997
0.0019	EMAP Virginia Province	*Ampelisca abdita* (10d)	7 % mortality NT	NT	Long *et al.* 1998
0.0019	South Carolina and Georgia	*Ampelisca abdita* (10d)	13 % mortality NT	NT	Long *et al.* 1998
0.0019	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.0019	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.0019	EMAP Virginia Province	*Ampelisca abdita* (10d)	13 % mortality NT	NT	Long *et al.* 1998
0.0019	EMAP Virginia Province	*Ampelisca abdita* (10d)	6 % mortality NT	NT	Long *et al.* 1998
0.0019	South Carolina and Georgia	*Ampelisca abdita* (10d)	7 % mortality NT	NT	Long *et al.* 1998
0.0019	EMAP Virginia Province	*Ampelisca abdita* (10d)	16 % mortality NT	NT	Long *et al.* 1998
0.0019	Biscayne Bay, FL	*Ampelisca abdita* (10d)	18 % mortality NT	NT	Long 1997
<0.0020	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	7 % mortality NT	NT	REMAP 1993
<0.0020	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	4 % mortality NT	NT	REMAP 1993

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Appendix 5. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by concentration.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result	Overall Toxicity	Source
<0.0020	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	4 % mortality NT	NT	REMAP 1993
<0.0020	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	16 % mortality T	T	REMAP 1993
<0.0020	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	4 % mortality NT	NT	REMAP 1993
<0.0020	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	1 % mortality NT	NT	REMAP 1993
<0.0020	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	15 % mortality T	T	REMAP 1993
<0.0020	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	3 % mortality NT	NT	REMAP 1993
<0.0020	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	1 % mortality NT	NT	REMAP 1993
<0.0020	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	2 % mortality NT	NT	REMAP 1993
<0.0020	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	6 % mortality NT	NT	REMAP 1993
<0.0020	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	8 % mortality NT	NT	REMAP 1994
<0.0020	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	11 % mortality T	T	REMAP 1994
<0.0020	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	19 % mortality NT	NT	REMAP 1994
<0.0020	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	8 % mortality NT	NT	REMAP 1994
<0.0020	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	7 % mortality T	T	REMAP 1994
<0.0020	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	16 % mortality NT	NT	REMAP 1994
<0.0020	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	10 % mortality NT	NT	REMAP 1994
<0.0020	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	12 % mortality NT	NT	REMAP 1994
<0.0020	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	16 % mortality NT	NT	REMAP 1994
<0.0020	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	14 % mortality NT	NT	REMAP 1994
<0.0020	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	11 % mortality NT	NT	REMAP 1994
<0.0020	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	14 % mortality NT	NT	REMAP 1994
<0.0020	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	9 % mortality NT	NT	REMAP 1994
<0.0020	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	7 % mortality NT	NT	REMAP 1994
<0.0020	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	7 % mortality T	T	REMAP 1994
<0.0020	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	7 % mortality NT	NT	REMAP 1994
<0.0020	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	5 % mortality NT	NT	REMAP 1994
<0.0020	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	13 % mortality T	T	REMAP 1994
0.0020	EMAP Virginia Province	*Ampelisca abdita* (10d)	3 % mortality NT	NT	Long *et al.* 1998
0.0020	EMAP Virginia Province	*Ampelisca abdita* (10d)	2 % mortality NT	NT	Long *et al.* 1998
0.0020	Tampa Bay, FL	*Ampelisca abdita* (10d)	5 % mortality NT	NT	Long *et al.* 1998
0.0020	EMAP Virginia Province	*Ampelisca abdita* (10d)	4 % mortality NT	NT	Long *et al.* 1998
0.0020	Hudson-Raritan Estuary, NY	*Rhepoxynius abronius* (10d)	2 % mortality NT	NT	Rice *et al.* 1995
0.0020	Hudson-Raritan Estuary, NY	*Rhepoxynius abronius* (10d)	2 % mortality NT	NT	Rice *et al.* 1995
0.0020	EMAP Virginia Province	*Ampelisca abdita* (10d)	10 % mortality NT	NT	Long *et al.* 1998
0.0020	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.0020	EMAP Virginia Province	*Ampelisca abdita* (10d)	21 % mortality T	T	Long *et al.* 1998
0.0020	Biscayne Bay, FL	*Ampelisca abdita* (10d)	6 % mortality NT	NT	Long 1997
0.0021	South Carolina and Georgia	*Ampelisca abdita* (10d)	7 % mortality NT	NT	Long *et al.* 1998
0.0021	EMAP Virginia Province	*Ampelisca abdita* (10d)	5 % mortality NT	NT	Long *et al.* 1998

Appendix 5. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by concentration.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result		Overall Toxicity	Source
0.0021	EMAP Virginia Province	*Ampelisca abdita* (10d)	18 % mortality	NT	NT	Long *et al.* 1998
0.0021	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.0021	Biscayne Bay, FL	*Ampelisca abdita* (10d)	35 % mortality	T	T	Long 1997
0.0021	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.0022	Biscayne Bay, FL	*Ampelisca abdita* (10d)	7 % mortality	NT	NT	Long 1997
0.0022	EMAP Virginia Province	*Ampelisca abdita* (10d)	10 % mortality	NT	NT	Long *et al.* 1998
0.0022	EMAP Virginia Province	*Ampelisca abdita* (10d)	20 % mortality	NT	NT	Long *et al.* 1998
0.0022	Biscayne Bay, FL	*Ampelisca abdita* (10d)	19 % mortality	NT	NT	Long 1997
0.0022	EMAP Virginia Province	*Ampelisca abdita* (10d)	4 % mortality	NT	NT	Long *et al.* 1998
0.0022	South Carolina and Georgia	*Ampelisca abdita* (10d)	2.5 % mortality	NT	NT	Long *et al.* 1998
0.0023	Biscayne Bay, FL	*Ampelisca abdita* (10d)	2 % mortality	NT	NT	Long 1997
0.0023	South Carolina and Georgia	*Ampelisca abdita* (10d)	10 % mortality	NT	NT	Long *et al.* 1998
0.0023	Biscayne Bay, FL	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long 1997
0.0023	Biscayne Bay, FL	*Ampelisca abdita* (10d)	18 % mortality	NT	NT	Long 1997
0.0024	Biscayne Bay, FL	*Ampelisca abdita* (10d)	5 % mortality	NT	NT	Long 1997
0.0024	EMAP Virginia Province	*Ampelisca abdita* (10d)	3 % mortality	NT	NT	Long *et al.* 1998
0.0024	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality	NT	NT	Long *et al.* 1998
0.0024	EMAP Virginia Province	*Ampelisca abdita* (10d)	3 % mortality	NT	NT	Long *et al.* 1998
0.0025	EMAP Virginia Province	*Ampelisca abdita* (10d)	4 % mortality	NT	NT	Long *et al.* 1998
0.0025	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.0025	EMAP Virginia Province	*Ampelisca abdita* (10d)	7 % mortality	NT	NT	Long *et al.* 1998
0.0025	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.0025	EMAP Virginia Province	*Ampelisca abdita* (10d)	5 % mortality	NT	NT	Long *et al.* 1998
0.0026	EMAP Virginia Province	*Ampelisca abdita* (10d)	11 % mortality	NT	NT	Long *et al.* 1998
0.0026	EMAP Virginia Province	*Ampelisca abdita* (10d)	6 % mortality	NT	NT	Long *et al.* 1998
0.0026	Biscayne Bay, FL	*Ampelisca abdita* (10d)	11 % mortality	NT	NT	Long 1997
0.0026	EMAP Virginia Province	*Ampelisca abdita* (10d)	22 % mortality	T	T	Long *et al.* 1998
0.0027	EMAP Virginia Province	*Ampelisca abdita* (10d)	5 % mortality	NT	NT	Long *et al.* 1998
0.0027	South Carolina and Georgia	*Ampelisca abdita* (10d)	8 % mortality	NT	NT	Long *et al.* 1998
0.0027	South Carolina and Georgia	*Ampelisca abdita* (10d)	9 % mortality	NT	NT	Long *et al.* 1998
0.0027	EMAP Virginia Province	*Ampelisca abdita* (10d)	4 % mortality	NT	NT	Long *et al.* 1998
0.0027	EMAP Virginia Province	*Ampelisca abdita* (10d)	27 % mortality	NT	NT	Long *et al.* 1998
0.0027	EMAP Virginia Province	*Ampelisca abdita* (10d)	89 % mortality	T	T	Long *et al.* 1998
0.0028	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.0028	Tampa Bay, FL	*Ampelisca abdita* (10d)	23 % mortality	NT	NT	Long *et al.* 1998
0.0029	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality	NT	NT	Long *et al.* 1998
0.0030	South Carolina and Georgia	*Ampelisca abdita* (10d)	8 % mortality	NT	NT	Long *et al.* 1998
0.0030	Biscayne Bay, FL	*Ampelisca abdita* (10d)	8 % mortality	NT	NT	Long 1997
0.0030	South Carolina and Georgia	*Ampelisca abdita* (10d)	6 % mortality	NT	NT	Long *et al.* 1998

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Appendix 5. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by concentration.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result		Overall Toxicity	Source
0.0031	EMAP Virginia Province	*Ampelisca abdita* (10d)	26 % mortality	T	T	Long *et al.* 1998
0.0031	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.0031	South Carolina and Georgia	*Ampelisca abdita* (10d)	17 % mortality	NT	NT	Long *et al.* 1998
0.0032	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.0032	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	5 % mortality	NT	NT	Long *et al.* 1998
0.0032	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality	NT	NT	Long *et al.* 1998
0.0032	EMAP Virginia Province	*Ampelisca abdita* (10d)	12 % mortality	NT	NT	Long *et al.* 1998
0.0033	Narragansett Bay, RI	*Ampelisca abdita* (10d)	8.7 % mortality	NT	NT	Munns *et al.* 1991
0.0033	South Carolina and Georgia	*Ampelisca abdita* (10d)	11 % mortality	NT	NT	Long *et al.* 1998
0.0033	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.0033	EMAP Virginia Province	*Ampelisca abdita* (10d)	5 % mortality	NT	NT	Long *et al.* 1998
0.0033	Biscayne Bay, FL	*Ampelisca abdita* (10d)	6 % mortality	NT	NT	Long 1997
0.0034	EMAP Virginia Province	*Ampelisca abdita* (10d)	28 % mortality	T	T	Long *et al.* 1998
0.0034	South Carolina and Georgia	*Ampelisca abdita* (10d)	14 % mortality	NT	NT	Long *et al.* 1998
0.0034	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	6 % mortality	NT	NT	REMAP 1994
0.0035	EMAP Virginia Province	*Ampelisca abdita* (10d)	9 % mortality	NT	NT	Long *et al.* 1998
0.0035	EMAP Virginia Province	*Ampelisca abdita* (10d)	14 % mortality	NT	NT	Long *et al.* 1998
0.0036	South Carolina and Georgia	*Ampelisca abdita* (10d)	13 % mortality	NT	NT	Long *et al.* 1998
0.0036	EMAP Virginia Province	*Ampelisca abdita* (10d)	3 % mortality	NT	NT	Long *et al.* 1998
0.0037	EMAP Virginia Province	*Ampelisca abdita* (10d)	4 % mortality	NT	NT	Long *et al.* 1998
0.0037	South Carolina and Georgia	*Ampelisca abdita* (10d)	19 % mortality	NT	NT	Long *et al.* 1998
0.0038	EMAP Virginia Province	*Ampelisca abdita* (10d)	12 % mortality	NT	NT	Long *et al.* 1998
0.0038	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.0038	EMAP Virginia Province	*Ampelisca abdita* (10d)	2 % mortality	NT	NT	Long *et al.* 1998
0.0039	EMAP Virginia Province	*Ampelisca abdita* (10d)	6 % mortality	NT	NT	Long *et al.* 1998
0.0040	Biscayne Bay, FL	*Ampelisca abdita* (10d)	7 % mortality	NT	NT	Long 1997
0.0040	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.0040	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	6 % mortality	NT	NT	REMAP 1994
0.0041	Biscayne Bay, FL	*Ampelisca abdita* (10d)	4 % mortality	NT	NT	Long 1997
0.0041	Tampa Bay, FL	*Ampelisca abdita* (10d)	15 % mortality	NT	NT	Long *et al.* 1998
0.0041	South Carolina and Georgia	*Ampelisca abdita* (10d)	15 % mortality	NT	NT	Long *et al.* 1998
0.0041	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.0041	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	9 % mortality	NT	NT	REMAP 1994
0.0042	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.0042	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.0044	EMAP Virginia Province	*Ampelisca abdita* (10d)	12 % mortality	NT	NT	Long *et al.* 1998
0.0044	Biscayne Bay, FL	*Ampelisca abdita* (10d)	17 % mortality	NT	NT	Long 1997
0.0045	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.0045	Biscayne Bay, FL	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long 1997

Appendix 5. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by concentration.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result		Overall Toxicity	Source
0.0057	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	17 % mortality	NT	NT	REMAP 1993
0.0057	Biscayne Bay, FL	*Ampelisca abdita* (10d)	4 % mortality	NT	NT	Long 1997
0.0058	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	2 % mortality	NT	NT	REMAP 1993
0.0058	EMAP Virginia Province	*Ampelisca abdita* (10d)	6 % mortality	NT	NT	Long *et al.* 1998
0.0058	EMAP Virginia Province	*Ampelisca abdita* (10d)	21 % mortality	T	T	Long *et al.* 1998
0.0058	EMAP Virginia Province	*Ampelisca abdita* (10d)	27 % mortality	T	T	Long *et al.* 1998
0.0059	EMAP Virginia Province	*Ampelisca abdita* (10d)	4 % mortality	NT	NT	Long *et al.* 1998
0.0060	EMAP Virginia Province	*Ampelisca abdita* (10d)	8 % mortality	NT	NT	Long *et al.* 1998
0.0060	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	6 % mortality	NT	NT	REMAP 1993
0.0060	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	4 % mortality	NT	NT	REMAP 1993
0.0061	EMAP Virginia Province	*Ampelisca abdita* (10d)	2 % mortality	NT	NT	Long *et al.* 1998
0.0061	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality	NT	NT	Long *et al.* 1998
0.0061	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	3 % mortality	NT	NT	REMAP 1993
0.0061	EMAP Virginia Province	*Ampelisca abdita* (10d)	32 % mortality	T	T	Long *et al.* 1998
0.0062	Biscayne Bay, FL	*Ampelisca abdita* (10d)	9 % mortality	NT	NT	Long 1997
0.0062	EMAP Virginia Province	*Ampelisca abdita* (10d)	9 % mortality	NT	NT	Long *et al.* 1998
0.0062	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	16 % mortality	NT	NT	REMAP 1993
0.0062	EMAP Virginia Province	*Ampelisca abdita* (10d)	4 % mortality	NT	NT	Long *et al.* 1998
0.0062	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.0062	EMAP Virginia Province	*Ampelisca abdita* (10d)	4 % mortality	NT	NT	Long *et al.* 1998
0.0063	EMAP Virginia Province	*Ampelisca abdita* (10d)	8 % mortality	NT	NT	Long *et al.* 1998
0.0063	South Carolina and Georgia	*Ampelisca abdita* (10d)	5 % mortality	NT	NT	Long *et al.* 1998
0.0063	EMAP Virginia Province	*Ampelisca abdita* (10d)	26 % mortality	T	T	Long *et al.* 1998
0.0063	EMAP Virginia Province	*Ampelisca abdita* (10d)	23 % mortality	T	T	Long *et al.* 1998
0.0064	EMAP Virginia Province	*Ampelisca abdita* (10d)	11 % mortality	NT	NT	Long *et al.* 1998
0.0065	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	2 % mortality	NT	NT	REMAP 1993
0.0065	EMAP Virginia Province	*Ampelisca abdita* (10d)	6 % mortality	NT	NT	Long *et al.* 1998
0.0065	EMAP Virginia Province	*Ampelisca abdita* (10d)	3 % mortality	NT	NT	Long *et al.* 1998
0.0066	EMAP Virginia Province	*Ampelisca abdita* (10d)	4 % mortality	NT	NT	Long *et al.* 1998
0.0066	EMAP Virginia Province	*Ampelisca abdita* (10d)	5 % mortality	NT	NT	Long *et al.* 1998
0.0066	EMAP Virginia Province	*Ampelisca abdita* (10d)	5 % mortality	NT	NT	Long *et al.* 1998
0.0067	EMAP Virginia Province	*Ampelisca abdita* (10d)	6 % mortality	NT	NT	Long *et al.* 1998
0.0067	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.0068	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.0069	South Carolina and Georgia	*Ampelisca abdita* (10d)	12 % mortality	NT	NT	Long *et al.* 1998
0.0069	EMAP Virginia Province	*Ampelisca abdita* (10d)	37 % mortality	T	T	Long *et al.* 1998
0.0070	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	6 % mortality	T	T	REMAP 1994
0.0070	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality	NT	NT	Long *et al.* 1998
0.0071	South Carolina and Georgia	*Ampelisca abdita* (10d)	9 % mortality	NT	NT	Long *et al.* 1998

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Appendix 5. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by concentration.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result	Overall Toxicity	Source
0.0045	EMAP Virginia Province	*Ampelisca abdita* (10d)	7 % mortality NT	NT	Long *et al.* 1998
0.0046	Biscayne Bay, FL	*Ampelisca abdita* (10d)	9 % mortality NT	NT	Long 1997
0.0046	EMAP Virginia Province	*Ampelisca abdita* (10d)	9 % mortality NT	NT	Long *et al.* 1998
0.0046	EMAP Virginia Province	*Ampelisca abdita* (10d)	30 % mortality T	T	Long *et al.* 1998
0.0046	South Carolina and Georgia	*Ampelisca abdita* (10d)	16 % mortality NT	NT	Long *et al.* 1998
0.0047	EMAP Virginia Province	*Ampelisca abdita* (10d)	7 % mortality NT	NT	Long *et al.* 1998
0.0048	South Carolina and Georgia	*Ampelisca abdita* (10d)	12 % mortality NT	NT	Long *et al.* 1998
0.0048	Biscayne Bay, FL	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long 1997
0.0048	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	8 % mortality NT	NT	REMAP 1994
0.0048	South Carolina and Georgia	*Ampelisca abdita* (10d)	9 % mortality NT	NT	Long *et al.* 1998
0.0048	EMAP Virginia Province	*Ampelisca abdita* (10d)	8 % mortality NT	NT	Long *et al.* 1998
0.0049	South Carolina and Georgia	*Ampelisca abdita* (10d)	6 % mortality NT	NT	Long *et al.* 1998
0.0049	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	5 % mortality NT	NT	REMAP 1993
0.0049	EMAP Virginia Province	*Ampelisca abdita* (10d)	10 % mortality NT	NT	Long *et al.* 1998
0.0050	EMAP Virginia Province	*Ampelisca abdita* (10d)	4 % mortality NT	NT	Long *et al.* 1998
0.0050	Biscayne Bay, FL	*Ampelisca abdita* (10d)	1 % mortality NT	NT	Long 1997
0.0050	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.0050	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.0050	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality NT	NT	Long *et al.* 1998
0.0050	Biscayne Bay, FL	*Ampelisca abdita* (10d)	2 % mortality NT	NT	Long 1997
0.0051	EMAP Virginia Province	*Ampelisca abdita* (10d)	3 % mortality NT	NT	Long *et al.* 1998
0.0051	EMAP Virginia Province	*Ampelisca abdita* (10d)	18 % mortality NT	NT	Long *et al.* 1998
0.0051	South Carolina and Georgia	*Ampelisca abdita* (10d)	8 % mortality NT	NT	Long *et al.* 1998
0.0051	Biscayne Bay, FL	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long 1997
0.0052	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.0052	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	2 % mortality NT	NT	REMAP 1994
0.0053	EMAP Virginia Province	*Ampelisca abdita* (10d)	7 % mortality NT	NT	Long *et al.* 1998
0.0054	EMAP Virginia Province	*Ampelisca abdita* (10d)	11 % mortality NT	NT	Long *et al.* 1998
0.0054	EMAP Virginia Province	*Ampelisca abdita* (10d)	2 % mortality NT	NT	Long *et al.* 1998
0.0055	EMAP Virginia Province	*Ampelisca abdita* (10d)	6 % mortality NT	NT	Long *et al.* 1998
0.0056	EMAP Virginia Province	*Ampelisca abdita* (10d)	9 % mortality NT	NT	Long *et al.* 1998
0.0056	EMAP Virginia Province	*Ampelisca abdita* (10d)	5 % mortality NT	NT	Long *et al.* 1998
0.0057	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.0057	EMAP Virginia Province	*Ampelisca abdita* (10d)	13 % mortality NT	NT	Long *et al.* 1998
0.0057	Biscayne Bay, FL	*Ampelisca abdita* (10d)	10 % mortality NT	NT	Long 1997
0.0057	EMAP Virginia Province	*Ampelisca abdita* (10d)	23 % mortality T	T	Long *et al.* 1998
0.0057	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality NT	NT	Long *et al.* 1998
0.0057	San Francisco Bay, CA	*Rhepoxynius abronius* (10d)	9 % mortality NT	NT	Chapman *et al.* 1987
0.0057	EMAP Virginia Province	*Ampelisca abdita* (10d)	14 % mortality NT	NT	Long *et al.* 1998

Appendix 5. **A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by concentration.**

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result		Overall Toxicity	Source
0.0073	Biscayne Bay, FL	*Ampelisca abdita* (10d)	1 % mortality	NT	NT	Long 1997
0.0073	EMAP Virginia Province	*Ampelisca abdita* (10d)	8 % mortality	NT	NT	Long *et al.* 1998
0.0073	EMAP Virginia Province	*Ampelisca abdita* (10d)	31 % mortality	T	T	Long *et al.* 1998
0.0075	South Carolina and Georgia	*Ampelisca abdita* (10d)	9 % mortality	NT	NT	Long *et al.* 1998
0.0076	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.0077	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	9 % mortality	NT	NT	REMAP 1994
0.0077	EMAP Virginia Province	*Ampelisca abdita* (10d)	37 % mortality	T	T	Long *et al.* 1998
0.0077	EMAP Virginia Province	*Ampelisca abdita* (10d)	25 % mortality	T	T	Long *et al.* 1998
0.0077	Biscayne Bay, FL	*Ampelisca abdita* (10d)	4 % mortality	NT	NT	Long 1997
0.0077	Tampa Bay, FL	*Ampelisca abdita* (10d)	9 % mortality	NT	NT	Long *et al.* 1998
0.0077	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality	NT	NT	Long *et al.* 1998
0.0078	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality	NT	NT	Long *et al.* 1998
0.0078	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	9 % mortality	NT	NT	REMAP 1993
0.0079	Long Island Sound, NY	*Ampelisca abdita* (10d)	37 % mortality	T	T	Long *et al.* 1998
0.0080	Tampa Bay, FL	*Ampelisca abdita* (10d)	7 % mortality	NT	NT	Long *et al.* 1998
0.0081	EMAP Virginia Province	*Ampelisca abdita* (10d)	7 % mortality	NT	NT	Long *et al.* 1998
0.0081	South Carolina and Georgia	*Ampelisca abdita* (10d)	9 % mortality	NT	NT	Long *et al.* 1998
0.0081	Tampa Bay, FL	*Ampelisca abdita* (10d)	19 % mortality	NT	NT	Long *et al.* 1998
0.0081	Narragansett Bay, RI	*Ampelisca abdita* (10d)	12 % mortality	NT	NT	Munns *et al.* 1991
0.0081	EMAP Virginia Province	*Ampelisca abdita* (10d)	12 % mortality	NT	NT	Long *et al.* 1998
0.0082	EMAP Virginia Province	*Ampelisca abdita* (10d)	2 % mortality	NT	NT	Long *et al.* 1998
0.0082	EMAP Virginia Province	*Ampelisca abdita* (10d)	11 % mortality	NT	NT	Long *et al.* 1998
0.0083	EMAP Virginia Province	*Ampelisca abdita* (10d)	6 % mortality	NT	NT	Long *et al.* 1998
0.0083	EMAP Virginia Province	*Ampelisca abdita* (10d)	24 % mortality	NT	NT	Long *et al.* 1998
0.0083	EMAP Virginia Province	*Ampelisca abdita* (10d)	21 % mortality	T	T	Long *et al.* 1998
0.0083	EMAP Virginia Province	*Ampelisca abdita* (10d)	39 % mortality	T	T	Long *et al.* 1998
0.0083	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	9 % mortality	NT	NT	REMAP 1994
0.0086	EMAP Virginia Province	*Ampelisca abdita* (10d)	37 % mortality	T	T	Long *et al.* 1998
0.0086	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	17 % mortality	T	T	REMAP 1993
0.0086	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	5 % mortality	NT	NT	REMAP 1993
0.0086	EMAP Virginia Province	*Ampelisca abdita* (10d)	14 % mortality	NT	NT	Long *et al.* 1998
0.0087	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality	NT	NT	Long *et al.* 1998
0.0087	EMAP Virginia Province	*Ampelisca abdita* (10d)	2 % mortality	NT	NT	Long *et al.* 1998
0.0087	EMAP Virginia Province	*Ampelisca abdita* (10d)	7 % mortality	NT	NT	Long *et al.* 1998
0.0087	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.0087	EMAP Virginia Province	*Ampelisca abdita* (10d)	27 % mortality	T	T	Long *et al.* 1998
0.0088	EMAP Virginia Province	*Ampelisca abdita* (10d)	5 % mortality	NT	NT	Long *et al.* 1998
0.0088	EMAP Virginia Province	*Ampelisca abdita* (10d)	6 % mortality	NT	NT	Long *et al.* 1998
0.0090	EMAP Virginia Province	*Ampelisca abdita* (10d)	23 % mortality	T	T	Long *et al.* 1998

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Appendix 5. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by concentration.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result		Overall Toxicity	Source
0.0091	EMAP Virginia Province	*Ampelisca abdita* (10d)	24 % mortality	T	T	Long *et al.* 1998
0.0092	Biscayne Bay, FL	*Ampelisca abdita* (10d)	23 % mortality	T	T	Long 1997
0.0092	South Carolina and Georgia	*Ampelisca abdita* (10d)	9 % mortality	NT	NT	Long *et al.* 1998
0.0093	EMAP Virginia Province	*Ampelisca abdita* (10d)	4 % mortality	NT	NT	Long *et al.* 1998
0.0093	Tampa Bay, FL	*Ampelisca abdita* (10d)	11 % mortality	NT	NT	Long *et al.* 1998
0.0094	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.0094	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.0095	EMAP Virginia Province	*Ampelisca abdita* (10d)	14 % mortality	NT	NT	Long *et al.* 1998
0.010	EMAP Virginia Province	*Ampelisca abdita* (10d)	4 % mortality	NT	NT	Long *et al.* 1998
0.010	Long Island Sound, NY	*Ampelisca abdita* (10d)	28 % mortality	T	T	Long *et al.* 1998
0.010	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality	NT	NT	Long *et al.* 1998
0.011	EMAP Virginia Province	*Ampelisca abdita* (10d)	49 % mortality	T	T	Long *et al.* 1998
0.011	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	5 % mortality	NT	NT	REMAP 1993
0.011	EMAP Virginia Province	*Ampelisca abdita* (10d)	7 % mortality	NT	NT	Long *et al.* 1998
0.011	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	2 % mortality	NT	NT	REMAP 1994
0.011	EMAP Virginia Province	*Ampelisca abdita* (10d)	9 % mortality	NT	NT	Long *et al.* 1998
0.011	South Carolina and Georgia	*Ampelisca abdita* (10d)	14 % mortality	NT	NT	Long *et al.* 1998
0.011	EMAP Virginia Province	*Ampelisca abdita* (10d)	84 % mortality	T	T	Long *et al.* 1998
0.011	Puget Sound, WA	*Rhepoxynius abronius* (10d)	9 % mortality	NT	NT	Pastorok & Becker 1990
0.011	San Francisco Bay, CA	*Rhepoxynius abronius* (10d)	4 % mortality	NT	NT	Chapman *et al.* 1987
0.011	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	6 % mortality	NT	NT	Long *et al.* 1998
0.011	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	7 % mortality	NT	NT	REMAP 1993
0.011	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	8 % mortality	NT	NT	REMAP 1994
0.011	Tampa Bay, FL	*Ampelisca abdita* (10d)	15 % mortality	NT	NT	Long *et al.* 1998
0.012	EMAP Virginia Province	*Ampelisca abdita* (10d)	28 % mortality	T	T	Long *et al.* 1998
0.012	Biscayne Bay, FL	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long 1997
0.012	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	10 % mortality	NT	NT	REMAP 1994
0.012	EMAP Virginia Province	*Ampelisca abdita* (10d)	11 % mortality	NT	NT	Long *et al.* 1998
0.012	EMAP Virginia Province	*Ampelisca abdita* (10d)	23 % mortality	T	T	Long *et al.* 1998
0.012	Biscayne Bay, FL	*Ampelisca abdita* (10d)	8 % mortality	NT	NT	Long 1997
0.012	EMAP Virginia Province	*Ampelisca abdita* (10d)	6 % mortality	NT	NT	Long *et al.* 1998
0.012	Biscayne Bay, FL	*Ampelisca abdita* (10d)	2 % mortality	NT	NT	Long 1997
0.012	Biscayne Bay, FL	*Ampelisca abdita* (10d)	3 % mortality	NT	NT	Long 1997
0.012	EMAP Virginia Province	*Ampelisca abdita* (10d)	3 % mortality	NT	NT	Long *et al.* 1998
0.013	Biscayne Bay, FL	*Ampelisca abdita* (10d)	2 % mortality	NT	NT	Long 1997
0.013	EMAP Virginia Province	*Ampelisca abdita* (10d)	9 % mortality	NT	NT	Long *et al.* 1998
0.013	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.013	EMAP Virginia Province	*Ampelisca abdita* (10d)	3 % mortality	NT	NT	Long *et al.* 1998
0.013	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	9 % mortality	NT	NT	REMAP 1994

Appendix 5. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by concentration.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result		Overall Toxicity	Source
0.013	EMAP Virginia Province	*Ampelisca abdita* (10d)	31 % mortality	T	T	Long *et al.* 1998
0.013	EMAP Virginia Province	*Ampelisca abdita* (10d)	12 % mortality	NT	NT	Long *et al.* 1998
0.013	EMAP Virginia Province	*Ampelisca abdita* (10d)	8 % mortality	NT	NT	Long *et al.* 1998
0.014	Biscayne Bay, FL	*Ampelisca abdita* (10d)	2 % mortality	NT	NT	Long 1997
0.014	EMAP Virginia Province	*Ampelisca abdita* (10d)	21 % mortality	T	T	Long *et al.* 1998
0.014	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	7 % mortality	NT	NT	Long *et al.* 1998
0.014	EMAP Virginia Province	*Ampelisca abdita* (10d)	17 % mortality	NT	NT	Long *et al.* 1998
0.014	Tampa Bay, FL	*Ampelisca abdita* (10d)	19 % mortality	NT	NT	Long *et al.* 1998
0.014	Narragansett Bay, RI	*Ampelisca abdita* (10d)	5.3 % mortality	NT	NT	Munns *et al.* 1991
0.014	EMAP Virginia Province	*Ampelisca abdita* (10d)	6 % mortality	NT	NT	Long *et al.* 1998
0.014	EMAP Virginia Province	*Ampelisca abdita* (10d)	14 % mortality	NT	NT	Long *et al.* 1998
0.015	South Carolina and Georgia	*Ampelisca abdita* (10d)	15 % mortality	NT	NT	Long *et al.* 1998
0.015	Long Island Sound, NY	*Ampelisca abdita* (10d)	91 % mortality	T	T	Long *et al.* 1998
0.015	EMAP Virginia Province	*Ampelisca abdita* (10d)	4 % mortality	NT	NT	Long *et al.* 1998
0.015	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.015	Biscayne Bay, FL	*Ampelisca abdita* (10d)	7 % mortality	NT	NT	Long 1997
0.015	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	6.3 % mortality	NT	NT	Long *et al.* 1998
0.015	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	8 % mortality	T	T	REMAP 1993
0.016	Biscayne Bay, FL	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long 1997
0.016	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	2 % mortality	NT	NT	REMAP 1993
0.016	EMAP Virginia Province	*Ampelisca abdita* (10d)	9 % mortality	NT	NT	Long *et al.* 1998
0.017	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	10 % mortality	NT	NT	Long *et al.* 1998
0.017	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	6 % mortality	NT	NT	REMAP 1993
0.017	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	10 % mortality	NT	NT	REMAP 1994
0.017	EMAP Virginia Province	*Ampelisca abdita* (10d)	31 % mortality	T	T	Long *et al.* 1998
0.017	EMAP Virginia Province	*Ampelisca abdita* (10d)	31 % mortality	T	T	Long *et al.* 1998
0.017	EMAP Virginia Province	*Ampelisca abdita* (10d)	12 % mortality	NT	NT	Long *et al.* 1998
0.017	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality	NT	NT	Long *et al.* 1998
0.018	San Francisco Bay, CA	*Rhepoxynius abronius* (10d)	24 % mortality	T	T	Chapman *et al.* 1987
0.018	EMAP Virginia Province	*Ampelisca abdita* (10d)	6 % mortality	NT	NT	Long *et al.* 1998
0.018	Biscayne Bay, FL	*Ampelisca abdita* (10d)	1 % mortality	NT	NT	Long 1997
0.018	EMAP Virginia Province	*Ampelisca abdita* (10d)	37 % mortality	NT	NT	Long *et al.* 1998
0.018	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	9 % mortality	NT	NT	Long *et al.* 1998
0.018	Biscayne Bay, FL	*Ampelisca abdita* (10d)	1 % mortality	NT	NT	Long 1997
0.019	Long Island Sound, NY	*Ampelisca abdita* (10d)	27 % mortality	T	T	Long *et al.* 1998
0.019	EMAP Virginia Province	*Ampelisca abdita* (10d)	15 % mortality	NT	NT	Long *et al.* 1998
0.019	EMAP Virginia Province	*Ampelisca abdita* (10d)	11 % mortality	NT	NT	Long *et al.* 1998
0.019	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	13 % mortality	NT	NT	Long *et al.* 1998
0.020	Biscayne Bay, FL	*Ampelisca abdita* (10d)	6 % mortality	NT	NT	Long 1997

Appendix 5. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by concentration.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result		Overall Toxicity	Source
0.020	Tampa Bay, FL	*Ampelisca abdita* (10d)	7 % mortality	NT	NT	Long *et al.* 1998
0.020	EMAP Virginia Province	*Ampelisca abdita* (10d)	28 % mortality	T	T	Long *et al.* 1998
0.020	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	3 % mortality	NT	NT	REMAP 1993
0.020	Long Island Sound, NY	*Ampelisca abdita* (10d)	21 % mortality	NT	NT	Long *et al.* 1998
0.020	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.020	EMAP Virginia Province	*Ampelisca abdita* (10d)	21 % mortality	T	T	Long *et al.* 1998
0.020	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	13 % mortality	NT	NT	Long *et al.* 1998
0.020	Biscayne Bay, FL	*Ampelisca abdita* (10d)	2 % mortality	NT	NT	Long 1997
0.021	EMAP Virginia Province	*Ampelisca abdita* (10d)	6 % mortality	NT	NT	Long *et al.* 1998
0.021	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality	NT	NT	Long *et al.* 1998
0.021	EMAP Virginia Province	*Ampelisca abdita* (10d)	4 % mortality	NT	NT	Long *et al.* 1998
0.021	Long Island Sound, NY	*Ampelisca abdita* (10d)	15 % mortality	NT	NT	Long *et al.* 1998
0.021	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	18 % mortality	NT	NT	Long *et al.* 1998
0.021	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	6 % mortality	NT	NT	REMAP 1993
0.022	Biscayne Bay, FL	*Ampelisca abdita* (10d)	9 % mortality	NT	NT	Long 1997
0.022	Long Island Sound, NY	*Ampelisca abdita* (10d)	30 % mortality	T	T	Long *et al.* 1998
0.022	Long Island Sound, NY	*Ampelisca abdita* (10d)	25 % mortality	NT	NT	Long *et al.* 1998
0.022	EMAP Virginia Province	*Ampelisca abdita* (10d)	19 % mortality	NT	NT	Long *et al.* 1998
0.022	Narragansett Bay, RI	*Ampelisca abdita* (10d)	8.6 % mortality	NT	NT	Munns *et al.* 1991
0.022	Tampa Bay, FL	*Ampelisca abdita* (10d)	4 % mortality	NT	NT	Long *et al.* 1998
0.023	South Carolina and Georgia	*Ampelisca abdita* (10d)	16 % mortality	NT	NT	Long *et al.* 1998
0.023	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.023	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	70 % mortality	T	T	Long *et al.* 1998
0.023	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	15 % mortality	NT	NT	Long *et al.* 1998
0.024	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	94 % mortality	T	T	Long *et al.* 1998
0.024	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.024	EMAP Virginia Province	*Ampelisca abdita* (10d)	11 % mortality	NT	NT	Long *et al.* 1998
0.024	EMAP Virginia Province	*Ampelisca abdita* (10d)	24 % mortality	T	T	Long *et al.* 1998
0.025	EMAP Virginia Province	*Ampelisca abdita* (10d)	18 % mortality	NT	NT	Long *et al.* 1998
0.025	Long Island Sound, NY	*Ampelisca abdita* (10d)	8 % mortality	NT	NT	Long *et al.* 1998
0.025	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	9 % mortality	T	T	REMAP 1993
0.025	Tampa Bay, FL	*Ampelisca abdita* (10d)	14 % mortality	NT	NT	Long *et al.* 1998
0.025	EMAP Virginia Province	*Ampelisca abdita* (10d)	21 % mortality	T	T	Long *et al.* 1998
0.025	EMAP Virginia Province	*Ampelisca abdita* (10d)	4 % mortality	NT	NT	Long *et al.* 1998
0.026	Tampa Bay, FL	*Ampelisca abdita* (10d)	6 % mortality	NT	NT	Long *et al.* 1998
0.026	Long Island Sound, NY	*Ampelisca abdita* (10d)	19 % mortality	NT	NT	Long *et al.* 1998
0.027	San Francisco Bay, CA	*Rhepoxynius abronius* (10d)	13 % mortality	NT	NT	Chapman *et al.* 1987
0.027	Tampa Bay, FL	*Ampelisca abdita* (10d)	5 % mortality	NT	NT	Long *et al.* 1998
0.027	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	15 % mortality	NT	NT	Long *et al.* 1998

Appendix 5. **A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by concentration.**

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result		Overall Toxicity	Source
0.027	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	**NT**	Long *et al.* 1998
0.027	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	**NT**	Long *et al.* 1998
0.027	San Francisco Bay, CA	*Rhepoxynius abronius* (10d)	13 % mortality	NT	**NT**	Chapman *et al.* 1987
0.027	EMAP Virginia Province	*Ampelisca abdita* (10d)	29 % mortality	NT	**NT**	Long *et al.* 1998
0.027	Long Island Sound, NY	*Ampelisca abdita* (10d)	15 % mortality	NT	**NT**	Long *et al.* 1998
0.027	EMAP Virginia Province	*Ampelisca abdita* (10d)	3 % mortality	NT	**NT**	Long *et al.* 1998
0.027	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	8 % mortality	NT	**NT**	REMAP 1994
0.028	EMAP Virginia Province	*Ampelisca abdita* (10d)	9 % mortality	NT	**NT**	Long *et al.* 1998
0.028	Biscayne Bay, FL	*Ampelisca abdita* (10d)	0 % mortality	NT	**NT**	Long 1997
0.028	Biscayne Bay, FL	*Ampelisca abdita* (10d)	4 % mortality	NT	**NT**	Long 1997
0.028	EMAP Virginia Province	*Ampelisca abdita* (10d)	41 % mortality	T	**T**	Long *et al.* 1998
0.028	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	5 % mortality	NT	**NT**	REMAP 1993
0.028	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	23 % mortality	NT	**NT**	REMAP 1994
0.029	EMAP Virginia Province	*Ampelisca abdita* (10d)	3 % mortality	NT	**NT**	Long *et al.* 1998
0.029	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	**NT**	Long *et al.* 1998
0.029	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	22 % mortality	NT	**NT**	Long *et al.* 1998
0.029	Biscayne Bay, FL	*Ampelisca abdita* (10d)	0 % mortality	NT	**NT**	Long 1997
0.030	EMAP Virginia Province	*Ampelisca abdita* (10d)	12 % mortality	NT	**NT**	Long *et al.* 1998
0.030	South Carolina and Georgia	*Ampelisca abdita* (10d)	15 % mortality	NT	**NT**	Long *et al.* 1998
0.030	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	12 % mortality	NT	**NT**	Long *et al.* 1998
0.031	Tampa Bay, FL	*Ampelisca abdita* (10d)	7 % mortality	NT	**NT**	Long *et al.* 1998
0.031	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	75 % mortality	T	**T**	Long *et al.* 1998
0.031	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	10 % mortality	NT	**NT**	Long *et al.* 1998
0.031	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	8 % mortality	NT	**NT**	REMAP 1994
0.031	Tampa Bay, FL	*Ampelisca abdita* (10d)	17 % mortality	NT	**NT**	Long *et al.* 1998
0.031	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	29 % mortality	T	**T**	Long *et al.* 1998
0.032	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	7 % mortality	NT	**NT**	REMAP 1993
0.032	EMAP Virginia Province	*Ampelisca abdita* (10d)	7 % mortality	NT	**NT**	Long *et al.* 1998
0.032	Tampa Bay, FL	*Ampelisca abdita* (10d)	12 % mortality	NT	**NT**	Long *et al.* 1998
0.033	Biscayne Bay, FL	*Ampelisca abdita* (10d)	0 % mortality	NT	**NT**	Long 1997
0.033	Biscayne Bay, FL	*Ampelisca abdita* (10d)	1 % mortality	NT	**NT**	Long 1997
0.033	EMAP Virginia Province	*Ampelisca abdita* (10d)	24 % mortality	T	**T**	Long *et al.* 1998
0.034	EMAP Virginia Province	*Ampelisca abdita* (10d)	19 % mortality	NT	**NT**	Long *et al.* 1998
0.034	EMAP Virginia Province	*Ampelisca abdita* (10d)	14 % mortality	NT	**NT**	Long *et al.* 1998
0.035	EMAP Virginia Province	*Ampelisca abdita* (10d)	59 % mortality	T	**T**	Long *et al.* 1998
0.036	EMAP Virginia Province	*Ampelisca abdita* (10d)	10 % mortality	NT	**NT**	Long *et al.* 1998
0.036	Tampa Bay, FL	*Ampelisca abdita* (10d)	5 % mortality	NT	**NT**	Long *et al.* 1998
0.036	EMAP Virginia Province	*Ampelisca abdita* (10d)	12 % mortality	NT	**NT**	Long *et al.* 1998
0.037	San Francisco Bay, CA	*Rhepoxynius abronius* (10d)	9 % mortality	NT	**NT**	Chapman *et al.* 1987

Appendix 5. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by concentration.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result		Overall Toxicity	Source
0.037	Biscayne Bay, FL	*Ampelisca abdita* (10d)	13 % mortality	NT	NT	Long 1997
0.037	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	27 % mortality	T	T	Long *et al.* 1998
0.037	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.037	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	5 % mortality	NT	NT	REMAP 1993
0.038	Biscayne Bay, FL	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long 1997
0.038	Long Island Sound, NY	*Ampelisca abdita* (10d)	26 % mortality	NT	NT	Long *et al.* 1998
0.038	Tampa Bay, FL	*Ampelisca abdita* (10d)	13 % mortality	NT	NT	Long *et al.* 1998
0.038	EMAP Virginia Province	*Ampelisca abdita* (10d)	14 % mortality	NT	NT	Long *et al.* 1998
0.038	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	23 % mortality	NT	NT	Long *et al.* 1998
0.038	EMAP Virginia Province	*Ampelisca abdita* (10d)	13 % mortality	NT	NT	Long *et al.* 1998
0.039	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	15 % mortality	NT	NT	Long *et al.* 1998
0.039	Biscayne Bay, FL	*Ampelisca abdita* (10d)	9 % mortality	NT	NT	Long 1997
0.039	EMAP Virginia Province	*Ampelisca abdita* (10d)	8 % mortality	NT	NT	Long *et al.* 1998
0.039	Long Island Sound, NY	*Ampelisca abdita* (10d)	17 % mortality	NT	NT	Long *et al.* 1998
0.040	Long Island Sound, NY	*Ampelisca abdita* (10d)	69 % mortality	T	T	Long *et al.* 1998
0.041	EMAP Virginia Province	*Ampelisca abdita* (10d)	13 % mortality	NT	NT	Long *et al.* 1998
0.041	EMAP Virginia Province	*Ampelisca abdita* (10d)	3 % mortality	NT	NT	Long *et al.* 1998
0.041	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.041	Long Island Sound, NY	*Ampelisca abdita* (10d)	13 % mortality	NT	NT	Long *et al.* 1998
0.042	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	8 % mortality	NT	NT	Long *et al.* 1998
0.042	Biscayne Bay, FL	*Ampelisca abdita* (10d)	4 % mortality	NT	NT	Long 1997
0.043	Biscayne Bay, FL	*Ampelisca abdita* (10d)	1 % mortality	NT	NT	Long 1997
0.043	Narragansett Bay, RI	*Ampelisca abdita* (10d)	4 % mortality	NT	NT	Munns *et al.* 1991
0.043	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	3 % mortality	NT	NT	REMAP 1994
0.043	EMAP Virginia Province	*Ampelisca abdita* (10d)	3 % mortality	NT	NT	Long *et al.* 1998
0.043	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	37 % mortality	NT	NT	Long *et al.* 1998
0.043	Long Island Sound, NY	*Ampelisca abdita* (10d)	15 % mortality	NT	NT	Long *et al.* 1998
0.044	Biscayne Bay, FL	*Ampelisca abdita* (10d)	5 % mortality	NT	NT	Long 1997
0.044	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	20 % mortality	NT	NT	Long *et al.* 1998
0.044	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.044	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	6 % mortality	NT	NT	REMAP 1994
0.044	Puget Sound, WA	*Rhepoxynius abronius* (10d)	15 % mortality	NT	NT	Pastorok & Becker 1990
0.044	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	36 % mortality	T	T	Long *et al.* 1998
0.045	Biscayne Bay, FL	*Ampelisca abdita* (10d)	2 % mortality	NT	NT	Long 1997
0.045	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	64 % mortality	T	T	REMAP 1993
0.045	Long Island Sound, NY	*Ampelisca abdita* (10d)	24 % mortality	NT	NT	Long *et al.* 1998
0.045	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	86 % mortality	T	T	Long *et al.* 1998
0.045	Hudson-Raritan Estuary, NY	*Rhepoxynius abronius* (10d)	5 % mortality	NT	NT	Rice *et al.* 1995
0.045	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	9 % mortality	NT	NT	REMAP 1994

Appendix 5. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by concentration.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result	Overall Toxicity	Source
0.046	EMAP Virginia Province	*Ampelisca abdita* (10d)	30 % mortality T	T	Long *et al.* 1998
0.046	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	4 % mortality NT	NT	Long *et al.* 1998
0.046	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	31 % mortality T	T	Long *et al.* 1998
0.046	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	25 % mortality NT	NT	Long *et al.* 1998
0.046	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	19 % mortality NT	NT	Long *et al.* 1998
0.046	EMAP Virginia Province	*Ampelisca abdita* (10d)	3 % mortality NT	NT	Long *et al.* 1998
0.046	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	20 % mortality NT	NT	Long *et al.* 1998
0.047	Biscayne Bay, FL	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long 1997
0.047	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	69 % mortality T	T	Long *et al.* 1998
0.047	Long Island Sound, NY	*Ampelisca abdita* (10d)	16 % mortality NT	NT	Long *et al.* 1998
0.047	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	6 % mortality NT	NT	Long *et al.* 1998
0.047	Long Island Sound, NY	*Ampelisca abdita* (10d)	17 % mortality NT	NT	Long *et al.* 1998
0.047	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	25 % mortality T	T	Long *et al.* 1998
0.047	Narragansett Bay, RI	*Ampelisca abdita* (10d)	4.7 % mortality NT	NT	Munns *et al.* 1991
0.047	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	2 % mortality NT	NT	Long *et al.* 1998
0.047	Tampa Bay, FL	*Ampelisca abdita* (10d)	19 % mortality NT	NT	Long *et al.* 1998
0.048	Long Island Sound, NY	*Ampelisca abdita* (10d)	46 % mortality T	T	Long *et al.* 1998
0.048	EMAP Virginia Province	*Ampelisca abdita* (10d)	5 % mortality NT	NT	Long *et al.* 1998
0.048	EMAP Virginia Province	*Ampelisca abdita* (10d)	2 % mortality NT	NT	Long *et al.* 1998
0.049	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.049	Narragansett Bay, RI	*Ampelisca abdita* (10d)	6 % mortality NT	NT	Munns *et al.* 1991
0.049	EMAP Virginia Province	*Ampelisca abdita* (10d)	11 % mortality NT	NT	Long *et al.* 1998
0.049	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	8 % mortality NT	NT	Long *et al.* 1998
0.050	Biscayne Bay, FL	*Ampelisca abdita* (10d)	6 % mortality NT	NT	Long 1997
0.050	EMAP Virginia Province	*Ampelisca abdita* (10d)	15 % mortality NT	NT	Long *et al.* 1998
0.050	Biscayne Bay, FL	*Ampelisca abdita* (10d)	7 % mortality NT	NT	Long 1997
0.050	Long Island Sound, NY	*Ampelisca abdita* (10d)	13 % mortality NT	NT	Long *et al.* 1998
0.051	Long Island Sound, NY	*Ampelisca abdita* (10d)	35 % mortality T	T	Long *et al.* 1998
0.051	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	24 % mortality NT	NT	Long *et al.* 1998
0.051	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	16 % mortality NT	NT	Long *et al.* 1998
0.052	Biscayne Bay, FL	*Ampelisca abdita* (10d)	31 % mortality T	T	Long 1997
0.052	Long Island Sound, NY	*Ampelisca abdita* (10d)	31 % mortality T	T	Long *et al.* 1998
0.052	Long Island Sound, NY	*Ampelisca abdita* (10d)	23 % mortality NT	NT	Long *et al.* 1998
0.052	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	4 % mortality NT	NT	REMAP 1994
0.052	Boston Harbor, MA	*Ampelisca abdita* (10d)	10 % mortality NT	NT	Long *et al.* 1998
0.052	Long Island Sound, NY	*Ampelisca abdita* (10d)	19 % mortality NT	NT	Long *et al.* 1998
0.052	EMAP Virginia Province	*Ampelisca abdita* (10d)	16 % mortality NT	NT	Long *et al.* 1998
0.053	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	27 % mortality T	T	REMAP 1993
0.053	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998

Appendix 5. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by concentration.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result		Overall Toxicity	Source
0.054	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	15 % mortality	NT	NT	REMAP 1993
0.054	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.055	Biscayne Bay, FL	*Ampelisca abdita* (10d)	2 % mortality	NT	NT	Long 1997
0.055	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	56 % mortality	T	T	Long *et al.* 1998
0.055	Long Island Sound, NY	*Ampelisca abdita* (10d)	36 % mortality	T	T	Long *et al.* 1998
0.056	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	22 % mortality	NT	NT	Long *et al.* 1998
0.056	Puget Sound, WA	*Rhepoxynius abronius* (10d)	11 % mortality	NT	NT	Pastorok & Becker 1990
0.056	Puget Sound, WA	*Rhepoxynius abronius* (10d)	13 % mortality	NT	NT	Pastorok & Becker 1990
0.057	Long Island Sound, NY	*Ampelisca abdita* (10d)	24 % mortality	NT	NT	Long *et al.* 1998
0.057	San Francisco Bay, CA	*Rhepoxynius abronius* (10d)	37 % mortality	T	T	Chapman *et al.* 1987
0.059	Long Island Sound, NY	*Ampelisca abdita* (10d)	62 % mortality	T	T	Long *et al.* 1998
0.060	Long Island Sound, NY	*Ampelisca abdita* (10d)	26 % mortality	NT	NT	Long *et al.* 1998
0.061	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	87 % mortality	T	T	Long *et al.* 1998
0.061	Tampa Bay, FL	*Ampelisca abdita* (10d)	9 % mortality	NT	NT	Long *et al.* 1998
0.061	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	8 % mortality	NT	NT	Long *et al.* 1998
0.061	Long Island Sound, NY	*Ampelisca abdita* (10d)	16 % mortality	NT	NT	Long *et al.* 1998
0.062	EMAP Virginia Province	*Ampelisca abdita* (10d)	56 % mortality	T	T	Long *et al.* 1998
0.062	Long Island Sound, NY	*Ampelisca abdita* (10d)	31 % mortality	T	T	Long *et al.* 1998
0.062	Biscayne Bay, FL	*Ampelisca abdita* (10d)	2 % mortality	NT	NT	Long 1997
0.062	Long Island Sound, NY	*Ampelisca abdita* (10d)	21 % mortality	NT	NT	Long *et al.* 1998
0.062	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	62 % mortality	T	T	Long *et al.* 1998
0.062	EMAP Virginia Province	*Ampelisca abdita* (10d)	7 % mortality	NT	NT	Long *et al.* 1998
0.063	EMAP Virginia Province	*Ampelisca abdita* (10d)	46 % mortality	T	T	Long *et al.* 1998
0.063	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	33 % mortality	T	T	Long *et al.* 1998
0.065	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	43 % mortality	T	T	Long *et al.* 1998
0.065	EMAP Virginia Province	*Ampelisca abdita* (10d)	8 % mortality	NT	NT	Long *et al.* 1998
0.065	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	27 % mortality	T	T	Long *et al.* 1998
0.065	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	29 % mortality	T	T	Long *et al.* 1998
0.065	Boston Harbor, MA	*Ampelisca abdita* (10d)	6 % mortality	NT	NT	Long *et al.* 1998
0.066	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	17 % mortality	NT	NT	Long *et al.* 1998
0.067	EMAP Virginia Province	*Ampelisca abdita* (10d)	4 % mortality	NT	NT	Long *et al.* 1998
0.067	Long Island Sound, NY	*Ampelisca abdita* (10d)	32 % mortality	T	T	Long *et al.* 1998
0.068	Tampa Bay, FL	*Ampelisca abdita* (10d)	13 % mortality	NT	NT	Long *et al.* 1998
0.068	Long Island Sound, NY	*Ampelisca abdita* (10d)	28 % mortality	NT	NT	Long *et al.* 1998
0.068	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	17 % mortality	NT	NT	Long *et al.* 1998
0.069	EMAP Virginia Province	*Ampelisca abdita* (10d)	4 % mortality	NT	NT	Long *et al.* 1998
0.069	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	23 % mortality	T	T	Long *et al.* 1998
0.069	Tampa Bay, FL	*Ampelisca abdita* (10d)	13 % mortality	NT	NT	Long *et al.* 1998
0.069	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	16 % mortality	T	T	REMAP 1993

Appendix 5. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by concentration.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result	Overall Toxicity	Source
0.070	Biscayne Bay, FL	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long 1997
0.071	Biscayne Bay, FL	*Ampelisca abdita* (10d)	11 % mortality NT	NT	Long 1997
0.072	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality NT	NT	Long *et al.* 1998
0.073	Tampa Bay, FL	*Ampelisca abdita* (10d)	11 % mortality NT	NT	Long *et al.* 1998
0.073	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	25 % mortality NT	NT	Long *et al.* 1998
0.073	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	68 % mortality T	T	Long *et al.* 1998
0.073	EMAP Virginia Province	*Ampelisca abdita* (10d)	12 % mortality NT	NT	Long *et al.* 1998
0.073	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	78 % mortality T	T	Long *et al.* 1998
0.074	Tampa Bay, FL	*Ampelisca abdita* (10d)	16 % mortality NT	NT	Long *et al.* 1998
0.074	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	28 % mortality T	T	Long *et al.* 1998
0.074	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	4 % mortality NT	NT	REMAP 1993
0.074	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	5 % mortality NT	NT	REMAP 1993
0.074	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	100 % mortality T	T	REMAP 1993
0.076	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	5 % mortality NT	NT	REMAP 1993
0.077	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	32 % mortality T	T	Long *et al.* 1998
0.078	Long Island Sound, NY	*Ampelisca abdita* (10d)	16 % mortality NT	NT	Long *et al.* 1998
0.078	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	48 % mortality T	T	Long *et al.* 1998
0.078	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	7 % mortality NT	NT	REMAP 1994
0.079	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	31 % mortality T	T	REMAP 1993
0.079	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	7 % mortality NT	NT	Long *et al.* 1998
0.079	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	83 % mortality T	T	Long *et al.* 1998
0.081	EMAP Virginia Province	*Ampelisca abdita* (10d)	99 % mortality T	T	Long *et al.* 1998
0.082	EMAP Virginia Province	*Ampelisca abdita* (10d)	12 % mortality NT	NT	Long *et al.* 1998
0.083	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	8 % mortality NT	NT	REMAP 1993
0.084	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	11 % mortality NT	NT	Long *et al.* 1998
0.084	Tampa Bay, FL	*Ampelisca abdita* (10d)	17 % mortality NT	NT	Long *et al.* 1998
0.085	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	20 % mortality T	T	REMAP 1994
0.086	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	3 % mortality NT	NT	REMAP 1993
0.086	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	24 % mortality NT	NT	Long *et al.* 1998
0.087	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	30 % mortality NT	NT	REMAP 1993
0.087	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	7 % mortality NT	NT	Long *et al.* 1998
0.087	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	4 % mortality NT	NT	REMAP 1993
0.088	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	23 % mortality NT	NT	Long *et al.* 1998
0.089	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	3 % mortality NT	NT	REMAP 1993
0.090	Tampa Bay, FL	*Ampelisca abdita* (10d)	12 % mortality NT	NT	Long *et al.* 1998
0.090	Hudson-Raritan Estuary, NY	*Rhepoxynius abronius* (10d)	6 % mortality NT	NT	Rice *et al.* 1995
0.092	EMAP Virginia Province	*Ampelisca abdita* (10d)	3 % mortality NT	NT	Long *et al.* 1998
0.094	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	18 % mortality NT	NT	Long *et al.* 1998
0.094	Long Island Sound, NY	*Ampelisca abdita* (10d)	36 % mortality T	T	Long *et al.* 1998

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Appendix 5. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by concentration.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result		Overall Toxicity	Source
0.094	EMAP Virginia Province	*Ampelisca abdita* (10d)	18 % mortality	NT	NT	Long *et al.* 1998
0.095	Narragansett Bay, RI	*Ampelisca abdita* (10d)	2 % mortality	NT	NT	Munns *et al.* 1991
0.096	Biscayne Bay, FL	*Ampelisca abdita* (10d)	5 % mortality	NT	NT	Long 1997
0.096	EMAP Virginia Province	*Ampelisca abdita* (10d)	14 % mortality	NT	NT	Long *et al.* 1998
0.097	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	12 % mortality	NT	NT	Long *et al.* 1998
0.097	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	11 % mortality	NT	NT	REMAP 1994
0.097	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	18 % mortality	NT	NT	Long *et al.* 1998
0.098	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	7 % mortality	NT	NT	REMAP 1993
0.099	EMAP Virginia Province	*Ampelisca abdita* (10d)	10 % mortality	NT	NT	Long *et al.* 1998
0.099	Long Island Sound, NY	*Ampelisca abdita* (10d)	65 % mortality	T	T	Long *et al.* 1998
0.099	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	10 % mortality	NT	NT	REMAP 1994
0.099	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	18 % mortality	NT	NT	Long *et al.* 1998
0.100	Puget Sound, WA	*Rhepoxynius abronius* (10d)	100 % mortality	T	T	Pastorok & Becker 1990
0.101	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	4 % mortality	NT	NT	REMAP 1993
0.102	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	1 % mortality	NT	NT	REMAP 1993
0.103	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	43 % mortality	T	T	Long *et al.* 1998
0.103	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	91 % mortality	T	T	REMAP 1993
0.104	EMAP Virginia Province	*Ampelisca abdita* (10d)	35 % mortality	T	T	Long *et al.* 1998
0.105	Long Island Sound, NY	*Ampelisca abdita* (10d)	27 % mortality	NT	NT	Long *et al.* 1998
0.106	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	63 % mortality	T	T	REMAP 1993
0.106	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	93 % mortality	T	T	Long *et al.* 1998
0.106	Boston Harbor, MA	*Ampelisca abdita* (10d)	17 % mortality	NT	NT	Long *et al.* 1998
0.106	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	22 % mortality	NT	NT	Long *et al.* 1998
0.107	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	41.7 % mortality	T	T	Long *et al.* 1998
0.107	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	11 % mortality	NT	NT	REMAP 1994
0.108	Long Island Sound, NY	*Ampelisca abdita* (10d)	15 % mortality	NT	NT	Long *et al.* 1998
0.109	Tampa Bay, FL	*Ampelisca abdita* (10d)	10 % mortality	NT	NT	Long *et al.* 1998
0.109	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	73 % mortality	T	T	Long *et al.* 1998
0.110	Puget Sound, WA	*Rhepoxynius abronius* (10d)	13 % mortality	NT	NT	Pastorok & Becker 1990
0.112	EMAP Virginia Province	*Ampelisca abdita* (10d)	15 % mortality	NT	NT	Long *et al.* 1998
0.112	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	15 % mortality	T	T	REMAP 1994
0.112	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	63 % mortality	T	T	Long *et al.* 1998
0.112	Long Island Sound, NY	*Ampelisca abdita* (10d)	26 % mortality	NT	NT	Long *et al.* 1998
0.113	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	14 % mortality	NT	NT	Long *et al.* 1998
0.113	Biscayne Bay, FL	*Ampelisca abdita* (10d)	3 % mortality	NT	NT	Long 1997
0.114	Boston Harbor, MA	*Ampelisca abdita* (10d)	17.5 % mortality	NT	NT	Long *et al.* 1998
0.114	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	8 % mortality	NT	NT	Long *et al.* 1998
0.116	Biscayne Bay, FL	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long 1997
0.117	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	14 % mortality	NT	NT	REMAP 1994

Appendix 5. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by concentration.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result		Overall Toxicity	Source
0.118	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	15 % mortality	NT	NT	REMAP 1994
0.118	EMAP Virginia Province	*Ampelisca abdita* (10d)	99 % mortality	T	T	Long *et al.* 1998
0.118	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	14 % mortality	T	T	REMAP 1994
0.118	Biscayne Bay, FL	*Ampelisca abdita* (10d)	4 % mortality	NT	NT	Long 1997
0.120	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.121	EMAP Virginia Province	*Ampelisca abdita* (10d)	21 % mortality	T	T	Long *et al.* 1998
0.121	EMAP Virginia Province	*Ampelisca abdita* (10d)	33 % mortality	T	T	Long *et al.* 1998
0.123	Long Island Sound, NY	*Ampelisca abdita* (10d)	20 % mortality	NT	NT	Long *et al.* 1998
0.123	Long Island Sound, NY	*Ampelisca abdita* (10d)	37 % mortality	T	T	Long *et al.* 1998
0.124	Long Island Sound, NY	*Ampelisca abdita* (10d)	40 % mortality	T	T	Long *et al.* 1998
0.124	Biscayne Bay, FL	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long 1997
0.126	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	11 % mortality	NT	NT	REMAP 1993
0.126	Narragansett Bay, RI	*Ampelisca abdita* (10d)	6.7 % mortality	NT	NT	Munns *et al.* 1991
0.127	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	16 % mortality	NT	NT	REMAP 1993
0.127	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	29 % mortality	T	T	Long *et al.* 1998
0.128	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	49 % mortality	T	T	REMAP 1993
0.128	Long Island Sound, NY	*Ampelisca abdita* (10d)	67 % mortality	T	T	Long *et al.* 1998
0.129	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	53 % mortality	T	T	Long *et al.* 1998
0.131	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	8 % mortality	NT	NT	REMAP 1994
0.131	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	19 % mortality	NT	NT	Long *et al.* 1998
0.132	Narragansett Bay, RI	*Ampelisca abdita* (10d)	10.7 % mortality	NT	NT	Munns *et al.* 1991
0.134	EMAP Virginia Province	*Ampelisca abdita* (10d)	18 % mortality	NT	NT	Long *et al.* 1998
0.135	Long Island Sound, NY	*Ampelisca abdita* (10d)	30 % mortality	T	T	Long *et al.* 1998
0.137	Boston Harbor, MA	*Ampelisca abdita* (10d)	17 % mortality	NT	NT	Long *et al.* 1998
0.137	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	9 % mortality	T	T	REMAP 1994
0.137	Long Island Sound, NY	*Ampelisca abdita* (10d)	32 % mortality	T	T	Long *et al.* 1998
0.137	Tampa Bay, FL	*Ampelisca abdita* (10d)	14 % mortality	NT	NT	Long *et al.* 1998
0.139	Long Island Sound, NY	*Ampelisca abdita* (10d)	40 % mortality	T	T	Long *et al.* 1998
0.140	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	21 % mortality	NT	NT	Long *et al.* 1998
0.141	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	71 % mortality	T	T	Long *et al.* 1998
0.142	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.142	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	8 % mortality	NT	NT	REMAP 1993
0.144	Tampa Bay, FL	*Ampelisca abdita* (10d)	10 % mortality	NT	NT	Long *et al.* 1998
0.144	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	60 % mortality	T	T	Long *et al.* 1998
0.145	Boston Harbor, MA	*Ampelisca abdita* (10d)	75 % mortality	T	T	Long *et al.* 1998
0.145	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	27 % mortality	T	T	Long *et al.* 1998
0.148	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	12 % mortality	NT	NT	Long *et al.* 1998
0.148	Long Island Sound, NY	*Ampelisca abdita* (10d)	27 % mortality	NT	NT	Long *et al.* 1998
0.148	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	36 % mortality	T	T	Long *et al.* 1998

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Appendix 5. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by concentration.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result		Overall Toxicity	Source
0.149	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	20 % mortality	NT	NT	Long *et al.* 1998
0.150	Long Island Sound, NY	*Ampelisca abdita* (10d)	24 % mortality	NT	NT	Long *et al.* 1998
0.150	Puget Sound, WA	*Rhepoxynius abronius* (10d)	22 % mortality	NT	NT	Pastorok & Becker 1990
0.150	Puget Sound, WA	*Rhepoxynius abronius* (10d)	100 % mortality	T	T	Pastorok & Becker 1990
0.150	Boston Harbor, MA	*Ampelisca abdita* (10d)	13 % mortality	NT	NT	Long *et al.* 1998
0.150	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	8 % mortality	NT	NT	Long *et al.* 1998
0.152	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	19 % mortality	NT	NT	Long *et al.* 1998
0.155	EMAP Virginia Province	*Ampelisca abdita* (10d)	8 % mortality	NT	NT	Long *et al.* 1998
0.155	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	20 % mortality	NT	NT	Long *et al.* 1998
0.155	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	14 % mortality	NT	NT	REMAP 1994
0.156	Tampa Bay, FL	*Ampelisca abdita* (10d)	18 % mortality	NT	NT	Long *et al.* 1998
0.158	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	43 % mortality	T	T	Long *et al.* 1998
0.159	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	16 % mortality	NT	NT	Long *et al.* 1998
0.160	Puget Sound, WA	*Rhepoxynius abronius* (10d)	16 % mortality	NT	NT	Pastorok & Becker 1990
0.161	Boston Harbor, MA	*Ampelisca abdita* (10d)	18 % mortality	NT	NT	Long *et al.* 1998
0.161	Boston Harbor, MA	*Ampelisca abdita* (10d)	86 % mortality	T	T	Long *et al.* 1998
0.161	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	35 % mortality	T	T	Long *et al.* 1998
0.162	Tampa Bay, FL	*Ampelisca abdita* (10d)	10 % mortality	NT	NT	Long *et al.* 1998
0.163	Biscayne Bay, FL	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long 1997
0.163	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	24 % mortality	NT	NT	Long *et al.* 1998
0.165	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	12 % mortality	NT	NT	REMAP 1994
0.165	EMAP Virginia Province	*Ampelisca abdita* (10d)	26 % mortality	T	T	Long *et al.* 1998
0.166	Boston Harbor, MA	*Ampelisca abdita* (10d)	93 % mortality	T	T	Long *et al.* 1998
0.166	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	7 % mortality	NT	NT	REMAP 1994
0.166	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	10 % mortality	T	T	REMAP 1993
0.168	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	11 % mortality	NT	NT	REMAP 1994
0.168	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	97 % mortality	T	T	Long *et al.* 1998
0.170	Puget Sound, WA	*Rhepoxynius abronius* (10d)	100 % mortality	T	T	Pastorok & Becker 1990
0.172	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	28 % mortality	T	T	Long *et al.* 1998
0.173	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	21 % mortality	NT	NT	REMAP 1993
0.174	EMAP Virginia Province	*Ampelisca abdita* (10d)	26 % mortality	T	T	Long *et al.* 1998
0.175	Long Island Sound, NY	*Ampelisca abdita* (10d)	33 % mortality	T	T	Long *et al.* 1998
0.175	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	90 % mortality	T	T	Long *et al.* 1998
0.177	Long Island Sound, NY	*Ampelisca abdita* (10d)	45 % mortality	T	T	Long *et al.* 1998
0.177	EMAP Virginia Province	*Ampelisca abdita* (10d)	7 % mortality	NT	NT	Long *et al.* 1998
0.178	Tampa Bay, FL	*Ampelisca abdita* (10d)	16 % mortality	NT	NT	Long *et al.* 1998
0.180	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	96 % mortality	T	T	REMAP 1994
0.180	San Francisco Bay, CA	*Rhepoxynius abronius* (10d)	95 % mortality	T	T	Chapman *et al.* 1987
0.180	Long Island Sound, NY	*Ampelisca abdita* (10d)	28 % mortality	T	T	Long *et al.* 1998

Appendix 5. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by concentration.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result	Overall Toxicity	Source
0.182	Narragansett Bay, RI	*Ampelisca abdita* (10d)	8 % mortality NT	NT	Munns *et al.* 1991
0.182	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	6 % mortality T	T	REMAP 1994
0.184	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	19 % mortality NT	NT	Long *et al.* 1998
0.189	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	40 % mortality T	T	Long *et al.* 1998
0.191	EMAP Virginia Province	*Ampelisca abdita* (10d)	5 % mortality NT	NT	Long *et al.* 1998
0.192	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	49 % mortality T	T	Long *et al.* 1998
0.193	Tampa Bay, FL	*Ampelisca abdita* (10d)	18 % mortality NT	NT	Long *et al.* 1998
0.195	Boston Harbor, MA	*Ampelisca abdita* (10d)	10 % mortality NT	NT	Long *et al.* 1998
0.195	Boston Harbor, MA	*Ampelisca abdita* (10d)	14 % mortality NT	NT	Long *et al.* 1998
0.195	Boston Harbor, MA	*Ampelisca abdita* (10d)	13 % mortality NT	NT	Long *et al.* 1998
0.198	Long Island Sound, NY	*Ampelisca abdita* (10d)	42 % mortality T	T	Long *et al.* 1998
0.199	EMAP Virginia Province	*Ampelisca abdita* (10d)	68 % mortality T	T	Long *et al.* 1998
0.200	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	29 % mortality T	T	Long *et al.* 1998
0.200	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	38 % mortality T	T	REMAP 1993
0.201	Tampa Bay, FL	*Ampelisca abdita* (10d)	15 % mortality NT	NT	Long *et al.* 1998
0.202	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	7 % mortality NT	NT	REMAP 1994
0.202	Narragansett Bay, RI	*Ampelisca abdita* (10d)	1.3 % mortality NT	NT	Munns *et al.* 1991
0.202	Biscayne Bay, FL	*Ampelisca abdita* (10d)	9 % mortality NT	NT	Long 1997
0.204	Narragansett Bay, RI	*Ampelisca abdita* (10d)	8.7 % mortality NT	NT	Munns *et al.* 1991
0.204	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	26 % mortality NT	NT	Long *et al.* 1998
0.206	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	40 % mortality NT	NT	Long *et al.* 1998
0.209	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	9 % mortality NT	NT	Long *et al.* 1998
0.209	Biscayne Bay, FL	*Ampelisca abdita* (10d)	84 % mortality T	T	Long 1997
0.209	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	99 % mortality T	T	Long *et al.* 1998
0.210	Puget Sound, WA	*Rhepoxynius abronius* (10d)	16 % mortality NT	NT	Pastorok & Becker 1990
0.212	EMAP Virginia Province	*Ampelisca abdita* (10d)	17 % mortality NT	NT	Long *et al.* 1998
0.213	Biscayne Bay, FL	*Ampelisca abdita* (10d)	59 % mortality T	T	Long 1997
0.213	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	16 % mortality NT	NT	Long *et al.* 1998
0.214	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	4 % mortality NT	NT	Long *et al.* 1998
0.215	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	10 % mortality NT	NT	Long *et al.* 1998
0.215	Boston Harbor, MA	*Ampelisca abdita* (10d)	17 % mortality NT	NT	Long *et al.* 1998
0.217	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	71 % mortality T	T	Long *et al.* 1998
0.217	Tampa Bay, FL	*Ampelisca abdita* (10d)	18 % mortality NT	NT	Long *et al.* 1998
0.220	Hudson-Raritan Estuary, NY	*Rhepoxynius abronius* (10d)	10 % mortality NT	NT	Rice *et al.* 1995
0.221	Narragansett Bay, RI	*Ampelisca abdita* (10d)	4.7 % mortality NT	NT	Munns *et al.* 1991
0.224	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	11 % mortality NT	NT	Long *et al.* 1998
0.224	Long Island Sound, NY	*Ampelisca abdita* (10d)	20 % mortality NT	NT	Long *et al.* 1998
0.225	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	1.1 % mortality NT	NT	Long *et al.* 1998
0.225	Tampa Bay, FL	*Ampelisca abdita* (10d)	6 % mortality NT	NT	Long *et al.* 1998

Appendix 5. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by concentration.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result		Overall Toxicity	Source
0.226	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	16 % mortality	NT	NT	Long *et al.* 1998
0.231	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	9 % mortality	NT	NT	REMAP 1994
0.232	Long Island Sound, NY	*Ampelisca abdita* (10d)	51 % mortality	T	T	Long *et al.* 1998
0.233	EMAP Virginia Province	*Ampelisca abdita* (10d)	18 % mortality	NT	NT	Long *et al.* 1998
0.233	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	19 % mortality	NT	NT	Long *et al.* 1998
0.233	Narragansett Bay, RI	*Ampelisca abdita* (10d)	3.3 % mortality	NT	NT	Munns *et al.* 1991
0.234	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	9 % mortality	NT	NT	REMAP 1994
0.241	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	7.1 % mortality	NT	NT	Long *et al.* 1998
0.241	Boston Harbor, MA	*Ampelisca abdita* (10d)	7 % mortality	NT	NT	Long *et al.* 1998
0.243	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	19 % mortality	NT	NT	Long *et al.* 1998
0.243	Boston Harbor, MA	*Ampelisca abdita* (10d)	19 % mortality	NT	NT	Long *et al.* 1998
0.245	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	16 % mortality	T	T	REMAP 1993
0.251	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	8 % mortality	NT	NT	REMAP 1994
0.252	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	13 % mortality	NT	NT	Long *et al.* 1998
0.253	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	73.7 % mortality	T	T	Long *et al.* 1998
0.255	San Francisco Bay, CA	*Rhepoxynius abronius* (10d)	24 % mortality	T	T	Chapman *et al.* 1987
0.256	Long Island Sound, NY	*Ampelisca abdita* (10d)	41 % mortality	T	T	Long *et al.* 1998
0.259	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	65 % mortality	T	T	Long *et al.* 1998
0.260	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	11 % mortality	NT	NT	Long *et al.* 1998
0.262	Boston Harbor, MA	*Ampelisca abdita* (10d)	53 % mortality	T	T	Long *et al.* 1998
0.265	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	8 % mortality	NT	NT	REMAP 1993
0.267	Boston Harbor, MA	*Ampelisca abdita* (10d)	16.2 % mortality	NT	NT	Long *et al.* 1998
0.269	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	53 % mortality	T	T	Long *et al.* 1998
0.271	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	84 % mortality	T	T	Long *et al.* 1998
0.273	EMAP Virginia Province	*Ampelisca abdita* (10d)	0 % mortality	NT	NT	Long *et al.* 1998
0.278	Long Island Sound, NY	*Ampelisca abdita* (10d)	51 % mortality	T	T	Long *et al.* 1998
0.279	Tampa Bay, FL	*Ampelisca abdita* (10d)	22 % mortality	NT	NT	Long *et al.* 1998
0.281	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	63 % mortality	T	T	Long *et al.* 1998
0.283	Tampa Bay, FL	*Ampelisca abdita* (10d)	17 % mortality	NT	NT	Long *et al.* 1998
0.284	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	7 % mortality	NT	NT	Long *et al.* 1998
0.284	Narragansett Bay, RI	*Ampelisca abdita* (10d)	2 % mortality	NT	NT	Munns *et al.* 1991
0.285	Boston Harbor, MA	*Ampelisca abdita* (10d)	17 % mortality	NT	NT	Long *et al.* 1998
0.286	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	23 % mortality	T	T	Long *et al.* 1998
0.287	Long Island Sound, NY	*Ampelisca abdita* (10d)	57 % mortality	T	T	Long *et al.* 1998
0.297	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	14 % mortality	NT	NT	REMAP 1993
0.297	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	100 % mortality	T	T	Long *et al.* 1998
0.298	Tampa Bay, FL	*Ampelisca abdita* (10d)	17 % mortality	NT	NT	Long *et al.* 1998
0.301	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	8 % mortality	NT	NT	Long *et al.* 1998
0.303	Boston Harbor, MA	*Ampelisca abdita* (10d)	17 % mortality	NT	NT	Long *et al.* 1998

Appendix 5. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by concentration.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result		Overall Toxicity	Source
0.303	Tampa Bay, FL	*Ampelisca abdita* (10d)	10 % mortality	NT	NT	Long *et al.* 1998
0.305	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	1 % mortality	NT	NT	REMAP 1993
0.307	Tampa Bay, FL	*Ampelisca abdita* (10d)	8 % mortality	NT	NT	Long *et al.* 1998
0.308	Tampa Bay, FL	*Ampelisca abdita* (10d)	1 % mortality	NT	NT	Long *et al.* 1998
0.313	Boston Harbor, MA	*Ampelisca abdita* (10d)	5 % mortality	NT	NT	Long *et al.* 1998
0.314	Biscayne Bay, FL	*Ampelisca abdita* (10d)	5 % mortality	NT	NT	Long 1997
0.314	Long Island Sound, NY	*Ampelisca abdita* (10d)	31 % mortality	T	T	Long *et al.* 1998
0.318	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	20 % mortality	NT	NT	Long *et al.* 1998
0.320	South Carolina and Georgia	*Ampelisca abdita* (10d)	7 % mortality	NT	NT	Long *et al.* 1998
0.321	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	7 % mortality	NT	NT	Long *et al.* 1998
0.324	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	63 % mortality	T	T	Long *et al.* 1998
0.324	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	17 % mortality	T	T	REMAP 1993
0.326	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	16 % mortality	T	T	REMAP 1993
0.326	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	10 % mortality	NT	NT	REMAP 1994
0.328	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	12 % mortality	NT	NT	Long *et al.* 1998
0.335	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	26 % mortality	NT	NT	Long *et al.* 1998
0.336	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	50 % mortality	NT	NT	Long *et al.* 1998
0.339	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	19 % mortality	NT	NT	Long *et al.* 1998
0.340	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	8 % mortality	NT	NT	Long *et al.* 1998
0.341	Tampa Bay, FL	*Ampelisca abdita* (10d)	11 % mortality	NT	NT	Long *et al.* 1998
0.341	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	36 % mortality	T	T	Long *et al.* 1998
0.342	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	30 % mortality	NT	NT	Long *et al.* 1998
0.343	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	5 % mortality	NT	NT	Long *et al.* 1998
0.346	Boston Harbor, MA	*Ampelisca abdita* (10d)	69 % mortality	T	T	Long *et al.* 1998
0.348	Narragansett Bay, RI	*Ampelisca abdita* (10d)	4.7 % mortality	NT	NT	Munns *et al.* 1991
0.349	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	37 % mortality	NT	NT	Long *et al.* 1998
0.350	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	7 % mortality	T	T	REMAP 1993
0.351	Boston Harbor, MA	*Ampelisca abdita* (10d)	22 % mortality	NT	NT	Long *et al.* 1998
0.353	Tampa Bay, FL	*Ampelisca abdita* (10d)	9 % mortality	NT	NT	Long *et al.* 1998
0.357	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	12 % mortality	NT	NT	REMAP 1994
0.358	Long Island Sound, NY	*Ampelisca abdita* (10d)	21 % mortality	NT	NT	Long *et al.* 1998
0.359	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	8 % mortality	NT	NT	Long *et al.* 1998
0.359	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	16 % mortality	NT	NT	Long *et al.* 1998
0.360	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	13 % mortality	T	T	REMAP 1993
0.360	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	100 % mortality	T	T	Long *et al.* 1998
0.364	Long Island Sound, NY	*Ampelisca abdita* (10d)	32 % mortality	T	T	Long *et al.* 1998
0.367	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	12 % mortality	NT	NT	Long *et al.* 1998
0.367	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	17 % mortality	NT	NT	Long *et al.* 1998
0.370	EMAP Virginia Province	*Ampelisca abdita* (10d)	32 % mortality	T	T	Long *et al.* 1998

Appendix 5. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by concentration.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result		Overall Toxicity	Source
0.370	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	13 % mortality	NT	NT	Long *et al.* 1998
0.371	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	9 % mortality	NT	NT	REMAP 1993
0.372	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	30 % mortality	T	T	Long *et al.* 1998
0.373	Long Island Sound, NY	*Ampelisca abdita* (10d)	85 % mortality	T	T	Long *et al.* 1998
0.379	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	1 % mortality	NT	NT	Long *et al.* 1998
0.380	Boston Harbor, MA	*Ampelisca abdita* (10d)	21.2 % mortality	NT	NT	Long *et al.* 1998
0.381	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	22 % mortality	NT	NT	Long *et al.* 1998
0.381	Tampa Bay, FL	*Ampelisca abdita* (10d)	10 % mortality	NT	NT	Long *et al.* 1998
0.381	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	27 % mortality	T	T	Long *et al.* 1998
0.383	Tampa Bay, FL	*Ampelisca abdita* (10d)	22 % mortality	NT	NT	Long *et al.* 1998
0.387	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	6 % mortality	NT	NT	Long *et al.* 1998
0.388	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	25 % mortality	NT	NT	Long *et al.* 1998
0.390	Hudson-Raritan Estuary, NY	*Rhepoxynius abronius* (10d)	15 % mortality	T	T	Rice *et al.* 1995
0.396	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	85 % mortality	T	T	REMAP 1994
0.400	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	6 % mortality	NT	NT	REMAP 1994
0.416	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	62 % mortality	T	T	Long *et al.* 1998
0.417	Boston Harbor, MA	*Ampelisca abdita* (10d)	10 % mortality	NT	NT	Long *et al.* 1998
0.419	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	18 % mortality	NT	NT	REMAP 1993
0.420	Puget Sound, WA	*Rhepoxynius abronius* (10d)	9 % mortality	NT	NT	Pastorok & Becker 1990
0.427	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	12 % mortality	NT	NT	REMAP 1993
0.427	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	18 % mortality	T	T	REMAP 1993
0.428	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	9 % mortality	NT	NT	REMAP 1993
0.429	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	5.9 % mortality	NT	NT	Long *et al.* 1998
0.430	Hudson-Raritan Estuary, NY	*Rhepoxynius abronius* (10d)	8 % mortality	NT	NT	Rice *et al.* 1995
0.436	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	10 % mortality	NT	NT	Long *et al.* 1998
0.446	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	7 % mortality	NT	NT	Long *et al.* 1998
0.446	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	15 % mortality	NT	NT	REMAP 1993
0.447	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	24 % mortality	NT	NT	Long *et al.* 1998
0.447	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	31 % mortality	T	T	REMAP 1994
0.453	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	27 % mortality	T	T	Long *et al.* 1998
0.454	Boston Harbor, MA	*Ampelisca abdita* (10d)	12 % mortality	NT	NT	Long *et al.* 1998
0.454	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	9.2 % mortality	NT	NT	Long *et al.* 1998
0.458	EMAP Virginia Province	*Ampelisca abdita* (10d)	4 % mortality	NT	NT	Long *et al.* 1998
0.458	EMAP Virginia Province	*Ampelisca abdita* (10d)	99 % mortality	T	T	Long *et al.* 1998
0.459	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	5 % mortality	NT	NT	REMAP 1993
0.461	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	11 % mortality	NT	NT	REMAP 1994
0.464	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	19.6 % mortality	NT	NT	Long *et al.* 1998
0.466	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	23 % mortality	NT	NT	Long *et al.* 1998
0.470	Hudson-Raritan Estuary, NY	*Rhepoxynius abronius* (10d)	9 % mortality	NT	NT	Rice *et al.* 1995

Appendix 5. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by concentration.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result	Overall Toxicity	Source
0.473	Biscayne Bay, FL	*Ampelisca abdita* (10d)	59 % mortality T	T	Long 1997
0.474	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	67.4 % mortality T	T	Long *et al.* 1998
0.477	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	12 % mortality NT	NT	Long *et al.* 1998
0.488	EMAP Virginia Province	*Ampelisca abdita* (10d)	99 % mortality T	T	Long *et al.* 1998
0.490	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	42 % mortality T	T	Long *et al.* 1998
0.493	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	46 % mortality T	T	Long *et al.* 1998
0.495	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	7 % mortality NT	NT	Long *et al.* 1998
0.496	Long Island Sound, NY	*Ampelisca abdita* (10d)	17 % mortality NT	NT	Long *et al.* 1998
0.498	Narragansett Bay, RI	*Ampelisca abdita* (10d)	6 % mortality NT	NT	Munns *et al.* 1991
0.503	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	8 % mortality NT	NT	Long *et al.* 1998
0.505	Narragansett Bay, RI	*Ampelisca abdita* (10d)	4 % mortality NT	NT	Munns *et al.* 1991
0.506	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	13 % mortality T	T	REMAP 1994
0.507	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	83 % mortality T	T	Long *et al.* 1998
0.507	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	38.9 % mortality T	T	Long *et al.* 1998
0.513	Tampa Bay, FL	*Ampelisca abdita* (10d)	27 % mortality T	T	Long *et al.* 1998
0.513	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	40.8 % mortality NT	NT	Long *et al.* 1998
0.517	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	18 % mortality NT	NT	REMAP 1993
0.518	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	50 % mortality T	T	Long *et al.* 1998
0.521	Tampa Bay, FL	*Ampelisca abdita* (10d)	15 % mortality NT	NT	Long *et al.* 1998
0.530	Boston Harbor, MA	*Ampelisca abdita* (10d)	16.2 % mortality NT	NT	Long *et al.* 1998
0.535	Boston Harbor, MA	*Ampelisca abdita* (10d)	78 % mortality T	T	Long *et al.* 1998
0.538	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	9 % mortality NT	NT	Long *et al.* 1998
0.540	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	23.2 % mortality NT	NT	Long *et al.* 1998
0.544	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	85 % mortality T	T	Long *et al.* 1998
0.550	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	63 % mortality T	T	REMAP 1993
0.551	San Pedro Bay, CA	*Rhepoxynius abronius* (10d)	41 % mortality T	T	Long *et al.* 1998
0.554	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	53 % mortality T	T	Long *et al.* 1998
0.565	Biscayne Bay, FL	*Ampelisca abdita* (10d)	6 % mortality NT	NT	Long 1997
0.566	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	17 % mortality NT	NT	REMAP 1994
0.566	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	17 % mortality NT	NT	Long *et al.* 1998
0.570	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	84 % mortality T	T	REMAP 1994
0.578	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	5 % mortality NT	NT	REMAP 1993
0.590	Puget Sound, WA	*Rhepoxynius abronius* (10d)	100 % mortality T	T	Pastorok & Becker 1990
0.593	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	35 % mortality T	T	Long *et al.* 1998
0.595	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	46 % mortality T	T	REMAP 1994
0.603	EMAP Virginia Province	*Ampelisca abdita* (10d)	4 % mortality NT	NT	Long *et al.* 1998
0.605	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	95 % mortality T	T	Long *et al.* 1998
0.606	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	11 % mortality NT	NT	Long *et al.* 1998
0.625	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	7 % mortality NT	NT	REMAP 1994

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Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result		Overall Toxicity	Source
0.627	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	17 % mortality	T	T	REMAP 1994
0.628	Biscayne Bay, FL	*Ampelisca abdita* (10d)	68 % mortality	T	T	Long 1997
0.642	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	39 % mortality	NT	NT	Long *et al.* 1998
0.646	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	5 % mortality	NT	NT	REMAP 1994
0.647	EMAP Virginia Province	*Ampelisca abdita* (10d)	53 % mortality	T	T	Long *et al.* 1998
0.660	Biscayne Bay, FL	*Ampelisca abdita* (10d)	33 % mortality	T	T	Long 1997
0.677	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	12 % mortality	T	T	REMAP 1994
0.686	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	9 % mortality	NT	NT	Long *et al.* 1998
0.687	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	19 % mortality	NT	NT	Long *et al.* 1998
0.692	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	12 % mortality	NT	NT	Long *et al.* 1998
0.693	Tampa Bay, FL	*Ampelisca abdita* (10d)	55 % mortality	T	T	Long *et al.* 1998
0.694	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	25 % mortality	T	T	REMAP 1993
0.704	EMAP Virginia Province	*Ampelisca abdita* (10d)	95 % mortality	T	T	Long *et al.* 1998
0.710	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	23 % mortality	NT	NT	Long *et al.* 1998
0.738	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	25 % mortality	T	T	Long *et al.* 1998
0.746	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	55 % mortality	T	T	REMAP 1993
0.753	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	30 % mortality	T	T	REMAP 1994
0.761	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	11 % mortality	NT	NT	REMAP 1994
0.776	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	17 % mortality	NT	NT	Long *et al.* 1998
0.795	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	13 % mortality	NT	NT	Long *et al.* 1998
0.799	Tampa Bay, FL	*Ampelisca abdita* (10d)	24 % mortality	NT	NT	Long *et al.* 1998
0.802	Boston Harbor, MA	*Ampelisca abdita* (10d)	9 % mortality	NT	NT	Long *et al.* 1998
0.803	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	68 % mortality	T	T	Long *et al.* 1998
0.803	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	63 % mortality	T	T	Long *et al.* 1998
0.809	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	4 % mortality	NT	NT	REMAP 1993
0.815	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	11 % mortality	NT	NT	Long *et al.* 1998
0.817	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	21 % mortality	NT	NT	Long *et al.* 1998
0.820	Biscayne Bay, FL	*Ampelisca abdita* (10d)	81 % mortality	T	T	Long 1997
0.831	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	12 % mortality	NT	NT	Long *et al.* 1998
0.835	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	7 % mortality	NT	NT	Long *et al.* 1998
0.840	Puget Sound, WA	*Rhepoxynius abronius* (10d)	31 % mortality	T	T	Pastorok & Becker 1990
0.851	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	7 % mortality	NT	NT	REMAP 1993
0.860	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	4 % mortality	NT	NT	REMAP 1994
0.878	Boston Harbor, MA	*Ampelisca abdita* (10d)	20 % mortality	NT	NT	Long *et al.* 1998
0.881	Biscayne Bay, FL	*Ampelisca abdita* (10d)	49 % mortality	T	T	Long 1997
0.912	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	30 % mortality	T	T	Long *et al.* 1998
0.915	Biscayne Bay, FL	*Ampelisca abdita* (10d)	69 % mortality	T	T	Long 1997
0.935	Biscayne Bay, FL	*Ampelisca abdita* (10d)	91 % mortality	T	T	Long 1997
0.970	Hudson-Raritan Estuary, NY	*Rhepoxynius abronius* (10d)	5 % mortality	NT	NT	Rice *et al.* 1995

Appendix 5. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by concentration.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result		Overall Toxicity	Source
0.996	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	14 % mortality	NT	**NT**	Long *et al.* 1998
0.999	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	9 % mortality	NT	**NT**	Long *et al.* 1998
1.01	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	11 % mortality	T	**T**	REMAP 1994
1.01	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	29 % mortality	T	**T**	Long *et al.* 1998
1.02	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	100 % mortality	T	**T**	Long *et al.* 1998
1.05	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	51 % mortality	T	**T**	Long *et al.* 1998
1.07	Biscayne Bay, FL	*Ampelisca abdita* (10d)	59 % mortality	T	**T**	Long 1997
1.08	Biscayne Bay, FL	*Ampelisca abdita* (10d)	61 % mortality	T	**T**	Long 1997
1.08	Biscayne Bay, FL	*Ampelisca abdita* (10d)	61 % mortality	T	**T**	Long 1997
1.15	Biscayne Bay, FL	*Ampelisca abdita* (10d)	6 % mortality	NT	**NT**	Long 1997
1.16	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	10.5 % mortality	NT	**NT**	Long *et al.* 1998
1.17	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	82 % mortality	T	**T**	Long *et al.* 1998
1.17	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	21 % mortality	NT	**NT**	Long *et al.* 1998
1.21	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	59 % mortality	T	**T**	Long *et al.* 1998
1.22	Biscayne Bay, FL	*Ampelisca abdita* (10d)	65 % mortality	T	**T**	Long 1997
1.23	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	87 % mortality	T	**T**	Long *et al.* 1998
1.28	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	17 % mortality	NT	**NT**	Long *et al.* 1998
1.30	Biscayne Bay, FL	*Ampelisca abdita* (10d)	98 % mortality	T	**T**	Long 1997
1.33	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	69 % mortality	T	**T**	Long *et al.* 1998
1.33	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	47 % mortality	T	**T**	REMAP 1994
1.34	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	7 % mortality	NT	**NT**	Long *et al.* 1998
1.36	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	40 % mortality	T	**T**	REMAP 1994
1.45	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	59 % mortality	T	**T**	REMAP 1994
1.48	EMAP Virginia Province	*Ampelisca abdita* (10d)	52 % mortality	T	**T**	Long *et al.* 1998
1.53	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	17 % mortality	T	**T**	REMAP 1993
1.53	EMAP Virginia Province	*Ampelisca abdita* (10d)	77 % mortality	T	**T**	Long *et al.* 1998
1.58	Tampa Bay, FL	*Ampelisca abdita* (10d)	23 % mortality	NT	**NT**	Long *et al.* 1998
1.59	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	32 % mortality	T	**T**	REMAP 1994
1.60	Tampa Bay, FL	*Ampelisca abdita* (10d)	22 % mortality	NT	**NT**	Long *et al.* 1998
1.64	Hudson-Raritan Estuary, NY	*Rhepoxynius abronius* (10d)	16 % mortality	T	**T**	Rice *et al.* 1995
1.67	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	100 % mortality	T	**T**	Long *et al.* 1998
1.70	Puget Sound, WA	*Rhepoxynius abronius* (10d)	54 % mortality	T	**T**	Pastorok & Becker 1990
1.71	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	87 % mortality	T	**T**	Long *et al.* 1998
1.74	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	98 % mortality	T	**T**	Long *et al.* 1998
1.83	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	92 % mortality	T	**T**	Long *et al.* 1998
1.89	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	83 % mortality	T	**T**	Long *et al.* 1998
1.89	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	17 % mortality	T	**T**	REMAP 1993
1.90	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	12 % mortality	NT	**NT**	Long *et al.* 1998
1.95	Biscayne Bay, FL	*Ampelisca abdita* (10d)	91 % mortality	T	**T**	Long 1997

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Appendix 5. A summary of marine and estuarine data used for assessing the predictive ability of the consensus-based SECs for total polychlorinated biphenyls (tPCBs; mg/kg DW): sorted by concentration.

Sediment Concentration (mg/kg DW)	Area	Species Tested (duration)	Endpoint Measured/ Result		Overall Toxicity	Source
1.99	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	17 % mortality	T	T	REMAP 1993
2.00	Biscayne Bay, FL	*Ampelisca abdita* (10d)	95 % mortality	T	T	Long 1997
2.02	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	71 % mortality	T	T	Long *et al.* 1998
2.04	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	77 % mortality	T	T	Long *et al.* 1998
2.09	EMAP Virginia Province	*Ampelisca abdita* (10d)	1 % mortality	NT	NT	Long *et al.* 1998
2.33	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	82 % mortality	T	T	Long *et al.* 1998
2.50	Biscayne Bay, FL	*Ampelisca abdita* (10d)	90 % mortality	T	T	Long 1997
2.54	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	100 % mortality	T	T	Long *et al.* 1998
2.81	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	16 % mortality	NT	NT	Long *et al.* 1998
2.87	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	92 % mortality	T	T	REMAP 1994
2.88	Hudson-Raritan Estuary, NY	*Rhepoxynius abronius* (10d)	14 % mortality	T	T	Rice *et al.* 1995
2.89	Biscayne Bay, FL	*Ampelisca abdita* (10d)	92 % mortality	T	T	Long 1997
3.34	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	75 % mortality	T	T	REMAP 1994
3.58	Tampa Bay, FL	*Ampelisca abdita* (10d)	61 % mortality	T	T	Long *et al.* 1998
3.95	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	98 % mortality	T	T	Long *et al.* 1998
4.09	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	70 % mortality	T	T	Long *et al.* 1998
4.96	Hudson-Raritan Estuary/Newark Bay, NY/NJ	*Ampelisca abdita* (10d)	23 % mortality	T	T	REMAP 1994
5.60	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	14 % mortality	NT	NT	Long *et al.* 1998
12.1	San Diego Bay, CA	*Rhepoxynius abronius* (10d)	63 % mortality	T	T	Long *et al.* 1998
16.7	Tampa Bay, FL	*Ampelisca abdita* (10d)	52 % mortality	T	T	Long *et al.* 1998

DW = dry weight; ND = not detected; N/A = not available; NT = not toxic; T = toxic.