...n, and K. Those species for which fish of widely differing weights were analyzed, larger fish had higher concentration of trace elements than smaller fish. It seems that ...ewater rather than freshwater fish have more trace element contents. Variations in ...trace element levels found in this study probably reflect differences between species ...al differences in size, life histories, dietary habits, and concentration in the marine environment.

HALF-LIFE OF POLYCHLORINATED BIPHENYL (AROCLOR 1254) IN FISH FROM AN ALABAMA RESERVOIR AND STREAM. Chong-i Paul Lo, Mary W. Vitter, Robert S. Reimers, Gerald E. Gunning, and Ann C. Anderson. Tulane University School of Public Health and Tropical Medicine, 1430 Tulane Avenue, New Orleans, LA 70112.

Data from an eight year (1969-1976) field study for PCB's (Aroclor 1254) in fish along Choccoloco Creek and Logan Martin Reservoir in Alabama were analyzed. Two additional years of collecting field data completed the study. Four fish collecting stations were established. Station #1 was a control station miles above the mouth of Snow Creek (which is known as the discharging point by the PCB's plant of Monsanto Chemical Co.). Station #2 and #3 were downstream along Choccoloco Creek and Station #4 was at the Logan Martin Reservoir. Concentration of PCB's (Aroclor 1254) in fish tissue were analyzed to determine accumulation patterns over time and to calculate the half life of the compound for the various fish species. A decreasing concentration of PCB's (Aroclor 1254) in fish was observed from samples taken in Choccoloco Creek. The half lives for individual species range from 18.0 to 27.8 months with good statistical correlation within individual species. The average half life for PCB's (Aroclor 1254) for all species was 21.2 months. In contrast, fish sampled in Logan Martin Reservoir (Bass and Longear Sunfish) showed increasing PCB concentration over time. Based on uptake data, the projected time for doubling PCB concentration is 46 months for Longear Sunfish and 61 months for Bass. This increasing trend may be due to the availability of PCB's because of transport of suspended and colloidal material downstream from Choccoloco Creek. Different uptake patterns in fish taken from stream and reservoir will be elucidated.

1. SOLUBILITY OF SOME ORGANOTIN ANTIFOULANTS IN AQUEOUS SOLUTIONS. M. Özcan and M. L. Good, Division of Engineering Research, Louisiana State University, Baton Rouge, Louisiana 70803.

Trialkyl and triaryltin compounds are well known for their biocidal, antifungal and antifouling activities. Tributyltin and triphenyltin derivatives in particular have found extensive use as toxicants in marine antifouling coatings. These materials are toxic to a wide spectrum of marine organisms and in order to develop efficient antifouling coatings which result in minimal environmental impact, a complete understanding of the aqueous chemistry of these compounds is essential. This report describes a complete quantitative analysis method for low concentrations of organotins in aqueous solution and the determination of the aqueous solubilities of a variety of tributyl and triphenyl organotins as a function of pH in distilled water and in artificial seawater. The organotins are concentrated by solvent extraction and directly determined by an adaptation of the dithizone spectrophotometric method. The solubility decreases significantly in basic solution and in seawater. The results can be explained in terms of the ionic solubility of the organotins.

1. A STUDY OF ORGANOTIN COMPOUNDS IN AQUEOUS SOLUTIONS USING EXTRACTION TECHNIQUES. S. P. Monahan, Department of Chemistry and Physics, Northeastern State University of Louisiana, Natchitoches, LA 71457; V. I. Kulkarni, Department of Chemistry, P.G. Center, Gulbarga - 585105, India; M. Özcan and Mary L. Good, Division of Engineering Research, Louisiana State University, Baton Rouge, LA 70803.

Organotin compounds of the type $(n\text{-}C_4H_9)_3SnY$ are used as toxicants in marine antifouling coatings. Although the coating matrix is thought to control the release of toxicant from the coating to the seawater environment, little information is known concerning the reactions of these organotin compounds with water. In order to gather more information concerning these reactions, a variety of triphenyltin and tributyltin compounds were suspended in distilled water and artificial seawater, and the dissolved components were recovered by extraction with chloroform. Residues recovered from the chloroform extracts were examined using thin layer chromatography and infrared spectroscopy. In most cases either Bu_3Sn^+ or $(Bu)_3Sn^+$ were identified to be the primary soluble component. Triphenyltin chloride evidently underwent considerable degradation in solution as Ph_3Sn^+, Ph_2Sn^{2+}, $PhSn^{3+}$, Sn^{4+} oxidation were identified using thin layer chromatography. Structures such as R_3SnOH and R_2SnO can be eliminated as possible soluble species since $\nu(O\text{-}H)$ and $\nu(Sn\text{-}O\text{-}Sn)$ stretching vibrations were absent in the infrared spectra of the residues.