



Abstract Book

SETAC Latin America 14th Biennial Meeting
Latin America, Diversity of Knowledge for a Sustainable Future

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Abstract Book

SETAC Latin America 14th Biennial Meeting

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This book comprises the abstracts of the presentations for the platform and poster sessions of the Society of Environmental Toxicology and Chemistry (SETAC) Latin America 14th Biennial Meeting, conducted virtually from 26–29 September 2021. The abstracts are reproduced as accepted by the Scientific Program Committee and appear in numerical order. In each abstract, the presenting author’s name is underlined. The author index cross-references the corresponding abstract numbers.

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About SETAC

The Society of Environmental Toxicology and Chemistry (SETAC), with offices in North America and Europe, is a nonprofit, professional society established to provide a forum for individuals and institutions engaged in the study, analysis and solution of environmental problems, the management and regulation of natural resources, environmental education, and research and development.

Specific goals of the society are:

- Promote research, education and training in the environmental sciences
- Promote the systematic application of all relevant scientific disciplines to the evaluation of chemical hazards
- Participate in the scientific interpretation of issues concerned with hazard assessment and risk analysis
- Support the development of ecologically acceptable practices and principles
- Provide a forum (meetings and publications) for communication among professionals in government, business, academia and other segments of society involved in the use, protection and management of our environment

These goals are pursued through the conduct of numerous activities, which include:

- Conduct meetings with study and workshop sessions, platform and poster presentations, and achievement and merit awards
- Publish scientific journals, a newsletter and special technical publications
- Provide funds for education and training through the SETAC Scholarship/Fellowship Program
- Organize and sponsor chapters and branches to provide a forum for the presentation of scientific data and for the interchange and study of information about local and regional concerns
- Provide advice and counsel to technical and nontechnical persons through a number of standing and ad hoc committees

SETAC membership currently comprises about 5,300 individuals from government, academia, business and nongovernmental organizations with backgrounds in chemistry, toxicology, biology, ecology, atmospheric sciences, health sciences, earth sciences, environmental engineering, hazard and risk assessment, and life cycle assessment.

If you have training in these or related disciplines and are engaged in the study, use or management of environmental resources, SETAC can fulfill your professional affiliation needs.

All members receive the SETAC Globe newsletter highlighting environmental topics and SETAC activities, reduced fees for meetings and discounts on SETAC books. All members receive online access to *Environmental Toxicology and Chemistry* (ET&C) and *Integrated Environmental Assessment and Management* (IEAM), the peer-reviewed journals of the society. Members may hold office and, with the Emeritus Members, constitute the voting membership.

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specimens exposed via intraperitoneal to six conditions with five replicates, no injection control, solvent vehicle control, β -naphthoflavone (BNF), naphthalene (NAP), phenanthrene (PHE) and benzo[a]pyrene (BaP), transcriptomic analysis of RNA-seq derived data was performed. A total of 396 differentially expressed genes (DEG) were identified for the comparison between solvent and BNF, 330 for NAP, 396 for PHE and 381 for BaP of which 15 genes were common to all 4 PAH. In turn, enrichment analysis identified 9, 31, 12 and 31 KEGG pathways for BNF, NAP, PHE and BaP, respectively. In general, the pathways affected were associated with the processes of cell growth and death; lipid and carbohydrate metabolism; transport and catabolism; folding, sorting and degradation; the endocrine system; signal transduction; xenobiotic metabolism; nucleotide metabolism; viral infectious diseases and the endocrine system. Overall, the analysis showed evidence of toxic effects on liver tissue in fish exposed to the different PAH underlying molecular mechanisms through the study of transcriptomic profiling being a pioneer study in Colombian fish in this area. **Acknowledgment:** This study was funded by Colciencias-ANH and Universidad de los Llanos project No 162-2016 and also a project from the Pontificia Universidad Javeriana from Colombia.

6B. Aquatic Toxicology, Ecology and Stress Response

06B.01 Exploring the Potential Recovery of a Waterbird 16 Years After a Pulse Pollution Event in a Large Wetland of Chile

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In 2004, a pulse pollution event occurred on the Cruces River wetland in Southern Chile. During this event several Black-necked swans were affected including mortalities and massive emigration from the ecosystem. During this period, a correlation of body condition and blood parameters with the Iron (Fe) concentration in the ecosystem, including Fe concentration ranging from 10,000 to 30,000 mg/kg on swan's main food item -aquatic plant *Egeria densa*- was established. Here we explore the variation of body condition, hematological and biochemical parameters in swans 16 years after the pollution event. We used hematological and blood chemistry parameters to evaluate the recovery of this population. We gathered data on these parameters from published sources and analyzed datasets from scientists who shared their data for this investigation replicating the sampling and analyses for recent years. Body condition was evaluated using Scaled Mass Index (SMI) as a proxy of individual quality by means of the energy accumulated in the body of swans as a result of feeding. Overall SMI of adult swans was significantly higher in 2019 (6.24 ± 0.85 kg) than right after the pollution event in 2004 (5.45 ± 0.83 kg). However, neither hematocrit nor erythrocytes and mean corpuscular volume were different in 2019 than values obtained both before and after the pollution event, with hemoglobin concentration showing significantly lower values in 2019 with respect to those measured in previous periods. The concentration of triglycerides and glucose in swan's plasma was significantly higher in 2019 than right after the perturbation in 2004, reaching similar values in 2019 than before the pollution event. With regard to enzymes in blood, both aspartate transaminase and creatine kinase concentrations showed similar values in 2019 than before the pollution event and were significantly lower than right after the perturbation in 2004. Noticeably,

concentration of both enzymes was higher than the reference values for the species both right after the perturbation and in 2019. Swan's SMI increased from the year of the perturbation (2004) to present times (2019). However, current values of hematological and biochemical parameters do not support the hypothesis that Black-necked swan population have been recovered from the perturbation, as was suggested by recent studies based on increasing swan numbers and increasing distribution of their main food.

06B.02 Ecotoxicological Quality of Caraguatatuba Bay Sediment, São Paulo, Brazil

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Caraguatatuba Bay (-23.66363 , -45.43035), at the northern seashore of São Paulo State, Brazil, is exposed to significant sources of marine pollution: domestic effluents and spills of oil and its derivatives. This is due to its proximity to the São Sebastião Channel, where the submarine emissary outfall takes place and where the largest oil transport terminal in Brazil is located. Due to their hydrodynamic characteristics, pollutants tend to deposit in the sediment, impacting the organisms associated with it. These organisms are of great ecological importance, linked to the basis of the food chain and many species are of nutritional and commercial interest. The region remains an important stronghold of artisanal fishermen and mollusk pickers, which raises concerns about the consumption of these organisms by the local population and tourists. The aim of this study was to evaluate the quality of the bay sediment by means of ecotoxicological tests on sediments collected at six points distributed in the bay, in the 2018 winter and in the 2019 summer. Total sediment acute toxicity tests were performed using the amphipod *Leptocheirus plumulosus*. Samples that presented different results compared to the control sample were only observed in the winter campaign, in three points: Indaiá and Centro Beaches, according to Dunnett's test ($p \leq 0.05$) and Indaiá, Centro and Camaroeiro Beaches, according to the t-test ($p \leq 0.05$). Sediment samples of these beaches showed adverse effect to the organisms of the assay, being considered toxic. Sediment samples from Porto Novo, Flexeiras and Palmeiras Beaches in winter and all points in the summer campaign did not cause adverse effects to the organisms and were not considered toxic. The three points which samples were considered toxic are on the beaches located from the center to the northern end of the bay where an inlet is formed. The distribution of points with toxicity follows the pattern of particle deposition and approaches the results of sanitary quality of the region according to CETESB, the São Paulo State Environmental Protection Agency.

06B.04 Estudio Ecotoxicológico del Arroyo las Conchitas, Provincia de Buenos Aires Realizado con Embriones de *Rhinella arenarum* y *Danio rerio*

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Se realizó un estudio ecotoxicológico del agua del arroyo Las Conchitas, partido de Florencio Varela y Berazategui, provincia de Buenos Aires comparativo al realizado en el 2002. Se seleccionaron en base a estudios previos cuatro estaciones de monitoreo, la primera con mínimo impacto y las restantes con un impacto antrópico elevado. Los bioensayos de ecotoxicidad se realizaron con embriones de un anfibio nativo, *Rhinella*

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