

**TRACE METAL AND METALLOID
ACCUMULATION, DISTRIBUTION,
AND, SPECIATION IN LAKE
MACQUARIE, N.S.W, AUSTRALIA.**

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PUBLICATIONS RELATING TO THIS THESIS

Kirby J, Maher W, Spooner D.

Arsenic Occurrence and Speciation in Near Shore Macro - Algae -Feeding Marine Animals.

Accepted for publication in Environmental Science and Technology on the 1st May 2005.

Kirby J, Maher W, Ellwood M, Krikowa F.

Arsenic Species Determination in Biological Tissues by HPLC-ICP-MS and HPLC-HG-ICP-MS.

Australian Journal of Chemistry, v57 (2004) pp 957-966.

Maher W, Krikowa F, Kirby J, Townsend A, Snitch P.

Measurement of Trace Elements in Environmental Samples using Solution ICP-MS: Current and Future Applications.

Australian Journal of Chemistry, v56 (2003) pp 103-116.

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Measurement of Water-Soluble Arsenic Species in Freeze-Dried Marine Animal Tissues by Microwave-Assisted Extraction and HPLC-ICP-MS.

Journal of Analytical Atomic Spectrometry, v17 (2002) pp 838-843.

Kirby J, Maher W, Chariton A, Krikowa F.

Arsenic Concentrations and Speciation in a Temperate Mangrove Ecosystem, N.S.W, Australia.

Applied Organometallic Chemistry, v16 (2002) pp 192-201.

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Tissue Accumulation and Distribution of Arsenic Compounds in Three Marine Fish Species: Relationship to Trophic Position.

Applied Organometallic Chemistry, v16 (2002) pp 108-115.

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Selenium, Cadmium, Copper, and Zinc Concentrations in Mullet (*Mugil cephalus*) from the Southern Basin of Lake Macquarie, NSW Australia. Archives of Environmental Contamination and Toxicology, v 40 (2001) pp 246-256.

Maher W, Goessler W, **Kirby J**, Raber G.

Arsenic Concentrations and Speciation in the Tissues and Blood of Sea Mullet (*Mugil cephalus*) from Lake Macquarie NSW, Australia. Marine Chemistry v 68 (1999) pp 169-182.

THESIS ORGANISATION

This thesis is organised into nine chapters that include seven international and national publications (six accepted and one submitted for publication). The initial overview chapter outlines the justification and direction for this thesis. With the exception of chapter 8 (accepted for publication on the 1st May 2005); all chapters are exact duplicates of published articles in international and national refereed journals (chapters 2 to 7). The initial chapters (2 and 3) presents research findings using a marine fish species, mullet (*Mugil cephalus*), to measure trace metal bioavailability in Lake Macquarie, NSW Australia. While subsequent chapters (4 to 8) are presenting research under taken to improve the understanding of arsenic cycling in marine and estuarine environments. The final chapter (chapter 9) is a synopsis of the major findings presented in this thesis. Due to the publication nature of this thesis, an unavoidable degree of replication exists within chapters (publications).