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## Research output

### **Microplastic contamination in green mussels (*Perna viridis* Linnaeus, 1858) from traditional seafood markets in Jakarta, Indonesia, and an evaluation of potential hazards**

Irnidayanti, Y., Soegianto, A., Ramdhany, F. A., Afifudin, A. F. M., Payus, C. M. & Hartl, M. G. J., May 2025, In: Marine Pollution Bulletin. 214, 117818.

### **Evidence of microcystin bioaccumulation and its effects on structural alterations in various shrimp (*Litopenaeus vannamei* Boone, 1931) tissues from shrimp aquaculture in the northern coastal region of East Java, Indonesia**

Soegianto, A., Mukhollandun, W., Putranto, T. W. C., Marchellina, A., Manaf, L. B. A., Irnidayanti, Y., Hartl, M. G. J. & Payus, C. M., Feb 2025, In: Marine Pollution Bulletin. 211, 117467.

### **At-sea application of the Comet assay to a deep-sea fish**

Hartl, M. G. J., Baumann, L. M. & Sweetman, A. K., Jun 2024, In: Deep Sea Research Part I: Oceanographic Research Papers. 208, 104298.

### **The presence and physico-chemical properties of microplastics in seawater, sediment, and several organs of the spotted scat fish (*Scatophagus argus*, Linnaeus, 1766) collected from different locations along the East Java coast in Indonesia**

Marchellina, A., Soegianto, A., Irawan, B., Indriyasari, K. N., Rahmatin, N. M., Mukhollandun, W., Irnidayanti, Y., Payus, C. M. & Hartl, M. G. J., Jun 2024, In: Chemosphere. 358, 142214.

### **Insights into technical challenges in the field of microplastic pollution through the lens of early career researchers (ECRs) and a proposed pathway forward**

Danopoulos, E., Stanton, T., Ma, Y., Horton, A. A., Chen, Q., Levermore, J. M., Li, J., McGoran, A. R., Lai, Y., Nolte, S., Li, R., Alvarez Barrantes, L., Tu, C., Beaumont, H., Williams, B., Hartl, M. G. J., Shi, H., Rotchell, J. M. & Nel, H. A., 17 Nov 2023, In: Frontiers in Earth Science. 11, 1271547.

### **Macroplastics and Microplastics in Intertidal Sediment of Vinces and Los Tintos Rivers, Guayas Province, Ecuador**

Talbot, R., Cárdenas-Calle, M., Mair, J. M., López, F., Cárdenas, G., Pernía, B., Hartl, M. G. J. & Uyaguari, M., 7 Dec 2022, In: Microplastics. 1, 4, p. 651-668 18 p.

### **Trophic Transfer of Single-Walled Carbon Nanotubes at the Base of the Food Chain and Toxicological Response**

Al-Shaeri, M., Paterson, L., Stobie, M., Cyphus, P. & Hartl, M. G. J., 7 Dec 2022, In: Nanomaterials. 12, 24, 4363.

### **An Integrated Testing Strategy for Ecotoxicity (ITS-ECO) Assessment in the Marine Environmental Compartment Using *Mytilus* spp. A Case Study Using Pristine and Coated CuO and TiO<sub>2</sub> Nanomaterials**

Connolly, M., Little, S., Hartl, M. G. J. & Fernandez, T. F., Jun 2022, In: Environmental Toxicology and Chemistry. 41, 6, p. 1390-1406 17 p.

### **Effects of pile driving sound playbacks and cadmium co-exposure on the early life stage development of the Norway lobster, *Nephrops norvegicus***

Stenton, C. A., Bolger, E. L., Michenot, M., Dodd, J. A., Wale, M. A., Briers, R. A., Hartl, M. G. J. & Diele, K., Jun 2022, In: Marine Pollution Bulletin. 179, 113667.

### **The abundance of microplastics in cnidaria and ctenophora in the North Sea**

Devereux, R., Hartl, M. G. J., Bell, M. & Capper, A., Dec 2021, In: Marine Pollution Bulletin. 173, Part A, 112992.

**Microplastic accumulation in a *Zostera marina* L. bed at Deerness Sound, Orkney, Scotland**

Jones, K. L., Hartl, M. G. J., Bell, M. C. & Capper, A., Mar 2020, In: Marine Pollution Bulletin. 152, 110883.

**Importance of Surface Coating to Accumulation Dynamics and Acute Toxicity of Copper Nanomaterials and Dissolved Copper in *Daphnia magna***

Gajda-Meissner, Z. A., Matyja, K., Brown, D., Hartl, M. G. J. & Fernandes, T. F., Feb 2020, In: Environmental Toxicology and Chemistry. 39, 2, p. 287-299 13 p.

**From DNA to ecological performance: Effects of anthropogenic noise on a reef-building mussel**

Wale, M. A., Briers, R. A., Hartl, M. G. J., Bryson, D. & Diele, K., 1 Nov 2019, In: Science of the Total Environment. 689, p. 126-132 7 p.

**Climate Change: Implications for Ecotoxicological Environmental Impact Assessment**

Connell, S. P., Fernandes, T. F. & Hartl, M. G. J., Dec 2017, In: Journal of Environmental Engineering. 143, 12, 04017078.

**Microplastic contamination of intertidal sediments of Scapa Flow, Orkney: a first assessment**

Blumenröder, J., Sechet, P., Kakkonen, J. E. & Hartl, M. G. J., 15 Nov 2017, In: Marine Pollution Bulletin. 124, 1, p. 112-120 9 p.

**Natural marine bacteria as model organisms for the hazard-assessment of consumer products containing silver nanoparticles**

Echavarri Bravo, V., Paterson, L., Aspray, T. J., Porter, J., Winson, M. K. & Hartl, M. G. J., Sept 2017, In: Marine Environmental Research. 130, p. 293-302 10 p.

**Neutral Red cytotoxicity assays for assessing in vivo carbon nanotube ecotoxicity in mussels – Comparing microscope and microplate methods**

Miller, M. A., Bankier, C., Al-Shaeri, M. & Hartl, M. G. J., 30 Dec 2015, In: Marine Pollution Bulletin. 101, 2, p. 903-907 5 p.

**Review of existing knowledge – emerging contaminant: Focus on nanomaterials and microplastics in the aquatic environment**

Hartl, M. G. J., Gubbins, E., Gutierrez, T. & Fernandes, T. F., 15 Oct 2015, CREW - Centre of Expertise for Waters. 20 p.

**Shifts in the metabolic function of a benthic estuarine microbial community following a single pulse exposure to silver nanoparticles**

Echavarri-Bravo, V., Paterson, L., Aspray, T. J., Porter, J. S., Winson, M. K., Thornton, B. & Hartl, M. G. J., Jun 2015, In: Environmental Pollution. 201, p. 91-99 9 p.

**Fish Ecotoxicology in a Changing World: do we Need New Biomarker Endpoints in Light of Climate Change?**

Hartl, M. G. J., 2015, In: Journal of FisheriesSciences.com. 9, 4, p. 49-51 3 p.

**A unified framework for nanosafety is needed**

Scott-Fordsmand, J. J., Pozzi-Mucelli, S., Tran, L., Aschberger, K., Sabella, S., Vogel, U., Poland, C., Balharry, D., Fernandes, T., Gottardo, S., Hankin, S., Hartl, M. G. J., Hartmann, N. B., Hristozov, D., Hund-Rinke, K., Johnston, H., Marcomini, A., Panzer, O., Roncato, D. & Saber, A. T. & 2 others, Wallin, H. & Stone, V., 8 Oct 2014, In: Nano Today. 9, 5, p. 546-549 4 p.

**ITS-NANO - Prioritising nanosafety research to develop a stakeholder driven intelligent testing strategy**

Stone, V., Pozzi-Mucelli, S., Tran, L., Aschberger, K., Sabella, S., Vogel, U., Poland, C., Balharry, D., Fernandes, T., Gottardo, S., Hankin, S., Hartl, M. G. J., Hartmann, N., Hristozov, D., Hund-Rinke, K., Johnston, H., Marcomini, A., Panzer, O., Roncato, D. & Saber, A. T. & 2 others, Wallin, H. & Scott-Fordsmand, J. J., 13 Feb 2014, In: Particle and Fibre Toxicology. 11, 9, 9.

**Potentiating toxicological interaction of single-walled carbon nanotubes with dissolved metals: Potentiating toxicological interaction of SWCNTs with metals**

Al-Shaeri, M., Ahmed, D., McCluskey, F., Turner, G., Paterson, L., Dyrinda, E. & Hartl, M. G. J., Dec 2013, In: *Environmental Toxicology and Chemistry*. 32, 12, p. 2701-10 10 p.

#### **Homeostasis and toxicology of non-essential metals**

Hartl, M. G. J., Nov 2013, In: *Journal of Fish Biology*. 83, 5, p. 1476-1477 2 p.

#### **Fluctuating estuarine conditions are not confounding factors for the Comet assay assessment of DNA damage in the mussel *Mytilus edulis***

Singh, R. & Hartl, M., 2012, In: *Ecotoxicology*. 21, 7, p. 1998-2003

#### **Organotins and hydromineral homeostasis in aquatic animals**

Hartl, M., 2012, *Biochemical and Biological Effects of Organotins*. Pagliarani, A., Trombetti, F. & Ventrella, V. (eds.). Bentham Science, p. 125-148 24 p.

#### **Maintenance of bivalve hemocytes for the purpose of delayed DNA strand break assessment using the Comet assay**

Hartl, M. G. J., Grigson, S. J. W. & Sinet, E., Jan 2010, In: *Environmental and Molecular Mutagenesis*. 51, 1, p. 64-68 5 p.

#### **Effects of contaminated sediment from Cork Harbour, Ireland on the cytochrome P450 system of turbot**

Kilemade, M., Hartl, M., O'Halloran, J., O'Brien, N., Sheehan, D., Mothersill, C. & Pelt, F. N. A. M. V., Mar 2009, In: *Ecotoxicology and Environmental Safety*. 72, 3, p. 747-755 9 p.

#### **Putting the sodium dominance index to the test as a measure of acid sensitivity across diverse geological conditions and with reference to the influence of plantation forests**

Cruickshanks, R., Lauridsen, R., Hartl, M., Harrison, A., Kelly-Quinn, M., O'Halloran, J. & Giller, P. S., May 2008, In: *Water, Air and Soil Pollution*. 190, 1-4, p. 221-229 9 p.

#### **Hepatic biomarkers of sediment-associated pollution in juvenile turbot, *Scophthalmus maximus* L.**

Hartl, M., Kilemade, M., Sheehan, D., Mothersill, C., O'Halloran, J., O'Brien, N. M. & Pelt, F. N. A. M. V., Aug 2007, In: *Marine Environmental Research*. 64, 2, p. 191-208 18 p.

#### **The role of ecotoxicology in environmental impact assessment - a new European perspective**

Hartl, M., Jul 2006.

#### **A two-species biomarker model for the assessment of sediment toxicity in the marine and estuarine environment**

Hartl, M., Kilemade, M., Coughlan, B. M., O'Halloran, J., Pelt, F. N. A. M. V., Sheehan, D., Mothersill, C. & O'Brien, N. M., 2006, In: *Journal of Environmental Science and Health. Part A, Environmental Science and Engineering and Toxic and Hazardous Substance Control*. 41, p. 939-953 15 p.

#### **A test battery approach for the ecotoxicological evaluation of estuarine sediments**

Davoren, M., Shuilleabhain, S. N., O'Halloran, J., Hartl, M. G. J., Sheehan, D., O'Brien, N. M., Van Pelt, F. N. A. M. & Mothersill, C., Oct 2005, In: *Ecotoxicology and Environmental Safety*. 14, 7, p. 741-755 15 p.

#### **Identification of a multixenobiotic resistance mechanism in primary cultured epidermal cells from *Oncorhynchus mykiss* and the effects of environmental complex mixtures on its activity**

Ní Shuilleabháin, S., Davoren, M., Mothersill, C. E., Sheehan, D., Hartl, M. G. J., Kilemade, M. F., O'Brien, N. M., O'Halloran, J., van Pelt, F. N. A. M. & Lyng, F. M., 15 Jun 2005, In: *Aquatic Toxicology*. 73, 2, p. 115-127 13 p.

#### **Assessing the potential of fish cell lines as tools for the cytotoxicity testing of estuarine sediment aqueous elutriates**

Davoren, M., Ní Shuilleabháin, S., Hartl, M. G. J., Sheehan, D., O'Brien, N. M., O'Halloran, J., van Pelt, F. N. A. M. & Mothersill, C. E., Apr 2005, In: *Toxicology in Vitro*. 19, 3, p. 421-431 11 p.

#### **An assessment of the pollutant status of surficial sediment in Cork Harbour in the South East of Ireland with particular reference to polycyclic aromatic hydrocarbons**

Kilemade, M., Hartl, M. G. J., Sheehan, D., Mothersill, C., van Pelt, F. N. A. M., O'Brien, N. M. & O'Halloran, J., Dec 2004, In: *Marine Pollution Bulletin*. 49, 11-12, p. 1084-1096 13 p.

**Implications of seasonal priming and reproductive activity on the interpretation of Comet assay data derived from the clam, *Tapes semidecussatus* Reeves 1864, exposed to contaminated sediments**

Hartl, M. G. J., Coughlan, B. M., Sheehan, D., Mothersill, C., van Pelt, F. N. A. M., O'Reilly, S. J., Heffron, J. J. A., O'Halloran, J. & O'Brien, N. M., May 2004, In: Marine Environmental Research. 57, 4, p. 295-310 16 p.

**Genotoxicity of field-collected inter-tidal sediments from Cork Harbor, Ireland, to juvenile turbot (*Scophthalmus maximus* L.) as measured by the Comet assay**

Kilemade, M. F., Hartl, M. G. J., Sheehan, D., Mothersill, C. E., van Pelt, F. N. A. M., O'Halloran, J. & O'Brien, N. M., 2004, In: Environmental and Molecular Mutagenesis. 44, 1, p. 56-64 9 p.

**Variability of heat shock proteins and glutathione S-transferase in gill and digestive gland of blue mussel, *Mytilus edulis***

Lyons, C., Dowling, V., Tedengren, M., Gardstrom, J., Hartl, M. G. J., O'Brien, N., van Pelt, F. N. A. M., O'Halloran, J. & Sheehan, D., Dec 2003, In: Marine Environmental Research. 56, 5, p. 585-597 13 p.

**Detecting genotoxicity using the Comet assay following chronic exposure of Manila clam *Tapes semidecussatus* to polluted estuarine sediments**

Coughlan, B. M., Hartl, M. G. J., O'Reilly, S. J., Sheehan, D., Mothersill, C., van Pelt, F. N. A. M., O'Halloran, J. & O'Brien, N. M., Dec 2002, In: Marine Pollution Bulletin. 44, 12, p. 1359-1365 7 p.

**Sediment-associated tri-*n*-butyltin chloride and its effects on osmoregulation of freshwater-adapted 0-group European flounder, *Platichthys flesus* (L.)**

Hartl, M. G. J., Hutchinson, S. & Hawkins, L. E., 12 Nov 2001, In: Aquatic Toxicology. 55, 3-4, p. 125-136 12 p.

**The effects of sediment-associated triorganotin compounds on the gills of the European flounder, *Platichthys flesus* (L.)**

Hartl, M. G. J., Hutchinson, S., Hawkins, L. E. & Grand, D. J., 15 Jun 2001, In: Journal of Experimental Marine Biology and Ecology. 261, 1, p. 75-91 17 p.

**Environmental levels of sediment-associated tri-*n*-butyltin chloride (TBTCI) and ionic regulation in flounders during seawater adaptation**

Hartl, M. G. J., Hutchinson, S., Hawkins, L. E. & Grand, D. J., 1 Jun 2001, In: Marine Biology. 138, 6, p. 1121-1130 10 p.

**Organotin and osmoregulation: quantifying the effects of environmental concentrations of sediment-associated TBT and TPhT on the freshwater-adapted European flounder, *Platichthys flesus* (L.)**

Hartl, M. G. J., Hutchinson, S. & Hawkins, L. E., 31 Jan 2001, In: Journal of Experimental Marine Biology and Ecology. 256, 2, p. 267-278 12 p.

**The biometry of gills of 0-group European flounder**

Hartl, M. G. J., Hutchinson, S., Hawkins, L. E. & Eledjam, M., Oct 2000, In: Journal of Fish Biology. 57, 4, p. 1037-1046 10 p.

**Reduced blood osmolality in freshwater-adapted European 0-group flounder, *Platichthys flesus* (L.), exposed to environmental levels of sediment-associated tributyl- and triphenyltin**

Hartl, M. G. J., Hutchinson, S. & Hawkins, L. E., Sept 2000, In: Marine Pollution Bulletin. 40, 9, p. 792-794 3 p.

**An *in-situ* study on the influence of ascidian suspension feeding on the subtidal nepheloid layer in the northern Adriatic Sea**

Hartl, M. G. J. & Ott, J. A., Dec 1999, In: Marine Ecology. 20, 3-4, p. 359-372 14 p.

**Influence of chronic exposure to silver and mercury in the field on the bioaccumulation potential of the bivalve *Macoma balthica***

Boisson, F., Hartl, M. G. J., Fowler, S. W. & Amiard-Triquet, C., May 1998, In: Marine Environmental Research. 45, 4-5, p. 325-340 16 p.

## Roles and Responsibilities

Lecturer in Marine Biology  
Programme Director for the Life Sciences Marine and Environmental taught MSc cluster  
MSc in Marine Resource Development & Protection  
MSc in Marine Biodiversity & Biotechnology  
MSc in Climate Change: Managing the Marine Environment  
MRes Environmental Analysis & Assessment  
Past President of the Physiology Section of the American Fisheries Society

## Projects

2013: £24,000 NERC FENAC  
2012: £30,000 CREW Centre of Expertise for Waters  
2011: £80,000 FP7-NMP-2011-CSA, NMP.211.1.3-3.ITS-NANO  
2010: £30,000 MASTS Prize studentship PhD proposal  
2010: £60,000 Heriot-Watt Environment and Climate Change Theme PhD proposal  
2010: £68,000 The Royal Embassy of Saudi Arabia Cultural Bureau in the UK and Ireland  
2009: £51,000 The Royal Embassy of Saudi Arabia Cultural Bureau in the UK and Ireland  
2008: £1,000 Edinburgh Convention Bureau travel award  
2006: £1,000 USEPA travel grant  
1999: Richard Newitt Prize ( University of Southampton, travel grant).  
1997 University of Southampton research studentship.  
1994: Travel grant for short-term scientific work abroad ( University of Vienna).

## Editorial Boards

Journal of Fisheries Science ([fisheriesscience.com](http://fisheriesscience.com))

## Grant committees & advisory boards

Member of the Peer Review Panel for the Swedish Research Council FORMAS – Evaluation Panel: Marine Litter and Pollution  
Member of the Peer Review Panel for the Swedish Research Council FORMAS – Evaluation Panel: Environmental Pollution  
Member of the Peer Review Panel for proposals submitted to the National Priorities Research Program (NPRP). The NPRP is the largest grant funding activity of the Qatar National Research Fund (QNRF).  
Reviewer for The Leverhulme Trust research applications.  
Reviewer for Natural Sciences and Engineering Research Council of Canada (NSERC) research applications.

## Professional and Learned Societies

American Fisheries Society  
Fisheries Society of the British Isles  
Society of Environmental Toxicology & Chemistry (SETAC)  
Scottish Toxicology Interest Group

## Invited presentations

19 February, 2010. Scottish Toxicology Interest Group Meeting, Napier University Edinburgh. Title: Biomarkers in marine ecotoxicology  
18–22 July 2006, International Congress on the Biology of Fish St. John's Newfoundland, Canada. Title: The Role of ecotoxicology in environmental impact assessment – a new European perspective.  
06–10 April 2005, international conference “Biomarkers, risk and environmental assessment” – CroWat final Conference, Cavtat, Croatia. Title: Biomarkers of sediment-associated pollution - constraints and strategies .  
22 November 2002, Department of Biology, Memorial University of New Foundland, Canada: Title: Ionic and osmoregulation in fish - constraints and strategies.  
21 November 2002, Ocean Sciences Centre, Memorial University of New Foundland, Canada: Title: Sediment-associated pollutants and hydromineral regulation of benthic fish.

## Conference and Meeting Organization

Local Organizing Committee Chair and Co-organiser of a symposium, “Fish in a toxic world: Biomarkers and impacts of exposure” at the American Fisheries Society, Physiology Section’s 10th International Conference on the Biology of Fish. 3-7 August 2014, Edinburgh.  
Scientific Programme Chair and Co-organiser of a symposium, “Fish in a toxic world: Biomarkers and impacts of exposure” at the American Fisheries Society, Physiology Section’s 10th International Conference on the Biology of Fish. 15-19 July 2012, Madison, Wisconsin.

Co-organiser of 45th European Marine Biology Symposium. 23-27 August, 2010. Heriot-Watt University, Edinburgh.

Co-organiser of a symposium, "Fish in a toxic world: Biomarkers and impacts of exposure" at the American Fisheries Society, Physiology Section's 9th International Conference on the Biology of Fish. 5-9 July 2010, Barcelona, Spain.

Co-organiser of a symposium: "" at the forth-coming American Fisheries Society, Physiology Chapter's Conference, 28 July - 01 August 2008, Portland, Oregon.

Co-organiser of a symposium: "New Perspectives on Environmental Pollution in Fish" at the forth-coming American Fisheries Society, Physiology Chapter's Conference, 28 July - 01 August 2008, Portland, Oregon. Visit the Fish Biology Congress website.

Organiser of a symposium: "Ecotoxicological biomarkers in fish" at the American Fisheries Society, Physiology Chapter's Conference, 18-26 July 2006, St. John's, New Foundland. Visit the Fish Biology Congress website.

Co-organiser Irish Society of Toxicology Spring Conference. "Biomonitoring: Environmental and Public Health Perspectives!", 26-27 March 2004. University College Cork.

Session chair (Environmental Assessment - Ecotoxicology IV) Environ2002, 25-27 January 2002, Cork