



Jana Friedrich, PhD

Head of Radioecology Section

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Work Background

- Since 2022 Head of Radioecology Section at Marine Environment Laboratories of the International Atomic Energy Agency (IAEA)
- 2011–2022 Deputy Head of Department 'Aquatic Nutrient Cycles' (former Head of Department) & senior scientist at Institute of Carbon Cycles/Biogeochemistry of Coastal Seas (Helmholtz Zentrum Hereon, Geesthacht, Germany)
- 2003–2011 Head of Radiochemistry Group and deputy head of Department 'Marine Geochemistry' (Alfred Wegener Institute Helmholtz Centre for Polar and Marine Research – AWI, Bremerhaven, Germany)
- 2000–2003 Project manager of German Research Network Natural Disasters (Helmholtz Zentrum Potsdam – German Research Centre for Geosciences, Potsdam, Germany)
- 1997–2000 Postdoc research into Benthic Nutrient Cycling (Swiss Federal Institute of Aquatic Science and Technology – Eawag, Switzerland)
- 1996 PhD in Chemical Oceanography (University of Bremen, Germany)
- 1991 MSc in Mineralogy and Geochemistry (Technical University Bergakademie Freiberg, Germany)

Expertise and work focus

As Head of the Radioecology Section at the IAEA Marine Environment Laboratories in Monaco, her work focusses on providing scientific and technical support and expertise to IAEA Member States on the application of nuclear and isotopic techniques to understand the transfer, behaviour and impact of contaminants and biotoxins related to harmful algal blooms (HABs) and radionuclides with regard to biodiversity, food safety and ecosystem services of the marine environment and to assess climate- and ocean change impact. She is leading the Ocean Acidification International Coordination Centre (OA-ICC).

Her expertise includes freshwater and marine biogeochemistry in a river-sea continuum's perspective, with focus on eutrophication and hypoxia using radionuclides as tracers and in-situ observation systems as tools. She uses the social-ecological systems approach and ecosystem services concept, DPSIR conceptual frameworks and worked on natural disaster risk assessment. Geographical coverage of her research encompasses Danube Delta-Black Sea, Elbe River-North Sea, Aral Sea and the Polar Oceans.

She was one of the driving forces (and member of the steering committee) for implementing the pan-European ESFRI Research Infrastructure DANUBIUS-RI 'The International Centre for Advanced Studies on River-Sea Systems'. She coordinated one of its supersites (living labs) and led the preparation of the DANUBIUS-RI Strategic Science and Innovation Agenda.

Award

Decorated by the President of Romania in 2020: Order of Cultural Merit for the support of Romanian Research and leadership in the development and strategy of DANUBIUS-RI.

Selected Publications

Logemann, A., M. Reininghaus, M. Schmidt, A. Ebeling, T. Zimmermann, H. Wolschke, **J. Friedrich**, B. Brockmeyer, D. Pröfrock and G. Witt (2022). "Assessing the chemical anthropocene – Development of the legacy pollution fingerprint in the North Sea during the last century." *Environmental Pollution*: 119040, <https://doi.org/10.1016/j.envpol.2022.119040>.

Neumann A, van Beusekom J, Eisele A, Emeis K-Ch, **Friedrich J**, Kröncke I, Logemann EL, Meyer J, Naderipour C, Schücker U, Wrede A, M. Zettler (2021) Macrofauna as a major driver of benthic-pelagic exchange in the southern North Sea. *Limnology & Oceanography*, <https://doi.org/10.1002/lno.11748>.

Friedrich J, Bold S, Heininger P, Bradley Ch, Tyler A, Stanica A & DANUBIUS-PP Consortium (2019) Science and Innovation Agenda of DANUBIUS-RI – The International Centre for Advanced Studies on River-Sea Systems. DOI 10.5281/zenodo.3712902.

Stevens T, Mee L, **Friedrich J**, Aleynik D and G Minicheva (2019) Partial Recovery of Macro-Epibenthic Assemblages on the North-West Shelf of the Black Sea. *Frontiers in Marine Science* **6**: 474, <https://doi.org/10.3389/fmars.2019.00474>.

Roca-Martí M, Puigcorbó V, **Friedrich J**, van der Loeff MMR, Rabe B, Korhonen M, Cámara-Mor P, García-Orellana J and P Masqué (2018) Distribution of ²¹⁰Pb and ²¹⁰Po in the Arctic water column during the 2007 sea-ice minimum: Particle export in the ice-covered basins. *Deep Sea Research Part I: Oceanographic Research Papers* **142**: 94-106.

Friedrich, J., F. Janssen, et al mult. (2014). Investigating hypoxia in aquatic environments: diverse approaches to addressing a complex phenomenon. *Biogeosciences* **11**(4): 1215-1259.

Renaud FG, Syvitski JPM, Sebesvari Z, Werners SE, Kremer HH, Kuenzer C, Ramesh R, Jeuken A, and **J Friedrich** (2013) Tipping from the Holocene to the Anthropocene: how threatened are major world deltas? *Current Opinion in Environmental Sustainability*, <http://dx.doi.org/10.1016/j.cosust.2013.11.007>.

Friedrich, J. (2009) Uranium contamination of the Aral Sea, *Journal of Marine Systems*, **76**, 322-335, doi:10.1016/j.jmarsys.2008.03.020