

Haithem Aib

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About me

PhD candidate in Hydrobiology at the University of Debrecen with a strong background in aquatic ecology, water quality, and ecotoxicology. My research focuses on micropollutant accumulation (heavy metals, microplastics and pharmaceuticals) in freshwater fish using XRF, AAS, PIXE, and HPLC. Experienced in fieldwork, data analysis (R, Python, Google Colab), and environmental biomonitoring, including novel work on turtle shell biomarkers. Open to interdisciplinary research in water-related environmental science.

I am a passionate and detail-oriented candidate with a multidisciplinary background in hydraulic engineering, aquatic ecology, and water quality management. My current doctoral research focuses on the accumulation of micropollutants which involve analytical techniques (XRF; ICP; SEM; HPLC).

With 22 citations, I have contributed to peer-reviewed research and am eager to further advance scientific understanding of pollutant dynamics in aquatic ecosystems:

Work experience

Junior Support Engineer | ADE Algeria Water | 01/03/2018 - 31/08/2018 | Khenchela, Algeria

Customer service representative | OGContact | 01/07/2018 - 01/09/2018 | Algiers, Algeria

Packaging and filling machine operator | Star-Plus Mqanya | 01/07/2020 - 31/07/2021 | Miskolc, Hungary

Technical Support Analyst- French Agent (part timer) | Transcosmos Europe Kft | 05/10/2023 - Current | Debrecen, Hungary

PhD candidate Hydrobiology | University of Debrecen | 01/09/2021 - Current | Debrecen, Hungary

Education & Training

Bachelor's degree | University of Aarbi Belmhidi | 01/09/2015 - 15/06/2018 | Oum El bouaghi, Algeria

Master's degree | University of Debrecen | 01/09/2018 - 20/08/2020 | Debrecen, Hungary

Final grade: Summa Cum Laude | **Thesis:** Evaluation of the Performance and Efficiency of Fourteen Wastewater Treatment Plants in the Hungarian Plain Using Physicochemical and Microbiological Parameters

Doctoral degree | University of Debrecen (Juhász-Nagy Pál Doctoral School of Biology and environment sciences) | 01/09/2021 - Current | Debrecen, Hungary

Thesis: Excellent Bioindicators: Using Fish Scales and Turtle Shells to Trace Elemental Pollution in Freshwater Ecosystems

Language Skills

Mother tongue(s): **Arabic**

	Understanding		Speaking		Writing
	Listening	Reading	Spoken production	Spoken interaction	
French	C1	C1	B2	B2	C1
English	C2	C1	C1	C1	C1

Skills

Water quality assessment | Field sampling techniques | Use of field instruments | Species identification |

Biomonitoring and bioindicator analysis | Sediment and water chemistry analysis | Pollution and ecotoxicology testing | GIS and Remote Sensing | Statistical analysis and modeling | Scientific writing & publishing | Policy awareness | Time Management, Attentiveness, Problem solving, Effective communication skills | Written & Verbal Communication Skills | MS Office (MS Word, MS Powerpoint, MS Excel, MS) | Teaching

Conferences & Seminars

Conference: LXIV Hydrobiology Days: multidisciplinary wetland research (Balaton Institute) | 04/10/2023 - Current | Tihany

Presented original research findings on the use of fish scales as non-invasive bioindicators for assessing heavy metal contamination in freshwater ecosystems. The presentation focused on trace and macroelement accumulation patterns, highlighting the potential of fish scales in monitoring aquatic pollution and supporting sustainable water quality assessment methods.

Conference: 3rd International Symposium on Environmental, Health and Safety (ISEHS) | 28/10/2023 - Current | Debrecen

Delivered a detailed presentation on the bioaccumulation of heavy metals in the scales of *Squalius cephalus* (chub) collected from the Tisza River, using X-ray fluorescence (XRF) analysis. The study emphasized the value of fish scales as bioindicators for non-invasive environmental monitoring and contributed insights into metal contamination patterns in a major freshwater ecosystem.

Conference: AZ ELMÉLET ÉS A GYAKORLAT TALÁLKOZÁSA A TÉRINFORMATIKÁBAN XV | 14/05/2024 - Current | Debrecen

This study investigates the spatiotemporal dynamics of drought conditions in Constantine, Algeria, spanning from 2002 to 2022. Leveraging MODIS-derived vegetation and temperature indices, including the Vegetation Condition Index (VCI), Temperature Condition Index (TCI), and Vegetation Health Index (VHI), we meticulously analyze drought patterns.

Biodiversity in Algeria | 23/09/2025 - Current | Oum El Bouaghi

Publications

Evaluating the Efficiency of WWTPs in the Northern Hungarian Plains

<https://doi.org/10.3390/w16243590>.

Fish Scales as a Non-Invasive Method for Monitoring Trace and Macroelement Pollution

<https://doi.org/10.3390/biology14040344>.

Elemental analysis in the scales of commercially important coastal fishes

10.3389/fmars.2025.1546313.

Pharmaceuticals and Microplastics in Aquatic Environments

<https://doi.org/10.3390/ijerph22050799>.

Wintering Diurnal Behavior of the Aquatic Bird

DOI:10.21608/EJABF.2025.448208.

Wintering Water Birds in Lac Ayata (Oued Righ Valley, Algerian Sahara)

DOI: 10.21608/EJABF.2025.448447.

Impact of Pollution on Water Quality in Algerian Wetlands (preprint)

DOI: 10.2139/ssrn.5236329.

Hard Evidence from Turtle Shells: Tracing Metal Bioaccumulation in Freshwater Ecosystems

Under review.

Drought Monitoring Using Moderate Resolution Imaging Spectroradiometer

DOI: 10.3390/environments11050095.