

# Heba Mohamed Taha Bedair

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## CONTACT DATA

### Name

Heba Mohamed Taha Abdel Megied Bedair

### First Address

Eagle Heights, Madison, WI, 53705, USA

### Second Address

8<sup>th</sup> of Mostafa Kamel Preparatory school street, Floor 3,  
El-Mahalla El-Kobra, Gharbeya, Egypt

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[heba.taha@science.tanta.edu.eg](mailto:heba.taha@science.tanta.edu.eg), [bedair@wisc.edu](mailto:bedair@wisc.edu)

## EDUCATION HISTORY

- Primary School, El-Shaheed Adel Ghanem, El-Mahalla, Egypt with score 98% in 2006
- Elementary School, El-Sayeda Khadeja School, El-Mahalla, Egypt with Excellent grade 98% in 2009
- Secondary School, Talat Harb Secondary School for girls, El-Mahalla, Egypt with score 96.9% in 2012
- Tanta University, Faculty of Science, Botany Department in Tanta, Egypt with Excellent grade "Honor" 91.65% in 2016
- Master of Science in Ecology from Faculty of Science, Tanta University, Egypt in 2020.
- Doctor of Philosophy in Science (Ecology) from Faculty of Science, Tanta University, Egypt in 2023.
- Fulbright scholar for AY2023-2024
- Now I am Post Doctoral Fellow at SILVIS lab, Department of Forest and Wildlife Ecology, University of Wisconsin-Madison, Madison, WI, USA.

## PROFESSIONAL POSITIONS HELD

Currently, I work as a Lecturer at Botany Department, Faculty of Science, Tanta University, Egypt.  
Post Doctoral Fellow at University of Wisconsin-Madison, USA.

## COURSES TAUGHT AND SERVICES PROVIDED TO HOME INSTITUTION

- 1- I teach these courses to undergraduate students: General Botany, General plant ecology, Non flowering plants, Soil Ecology, Plant taxonomy, Economic botany, crop plants, Medicinal and aromatic plants, Wetland and desert ecology, Flora of Egypt, Plant Anatomy, Environmental issues, Biodiversity and Conservation, Phytosociology, Environmental management and Impact assessment.
- 2- A member in Quality Assurance Unit Team at Faculty of Science, Tanta University.
- 3- I gave some seminars to undergraduate and post-graduate students such as:
  - Basics of scientific research with collaboration of Tanta Students' Scientific Society.
  - How to complete your way in post-graduate studies in the 2<sup>nd</sup> Scientific Forum of Tanta University.

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-Scientific skills development with collaboration of Undergraduate Research Initiative.

## PUBLICATIONS

### Original articles

- Bedair H, Badawy N, Morsy A, Rashad H, & Dakhil M (2024). Impact of climate change on the spatial distribution of the endemic shrub *Rubus asirensis* in the Arabian Peninsula. *Plant Ecology*, 1-23.
- El-Khalafy, M.M., Al-Sodany, Y.M., Ahmed, D.A. Bedair, H., Haroun, S., & Shaltout S. (2024). Evaluation of Conservation status of the Egyptian endemic plants along the Mediterranean coastal strip region. *Journal of Coastal Conservation*, 28, 16.
- Bedair, H., Shaltout, K., & Halmy, M. (2023). Stacked machine learning models for predicting species richness and endemism for Mediterranean endemic plants in the Mareotis subsector in Egypt. *Plant Ecology*, 1-14.
- Yang, J., Wu, Q., Dakhil, M. A., Halmy, M. W. A., Bedair, H., & Fouad, M. S. (2023). Towards Forest Conservation Planning: How Temperature Fluctuations Determine the Potential Distribution and Extinction Risk of *Cupressus funebris* Conifer Trees in China. *Forests*, 14(11), 2234.
- Bedair, H., Shaltout, K., & Halmy, M. (2023). A critical inventory of the Mediterranean endemics in the Egyptian flora. *Biodiversity and Conservation*, 32, 1327–1351.
- Bedair, H., Shaltout, K. H., El-Din, A. S., El-Fahhar, R., & Halmy, M. W. (2022). Characterization of Mediterranean endemics in the Egyptian flora. *Anales del Jardín Botánico de Madrid, Real Jardín Botánico*, 79(2): e130-e130.
- Shaltout K & Bedair H (2023). Perennial shrubs in Egypt: current status and updated red data list. *Phytotaxa*, 585(3), 167-192.
- Shaltout, K., & Bedair, H. (2022). Diversity, distribution and regional conservation status of the Egyptian tree flora. *African Journal of Ecology*, 60(4), 1155-1183.
- Bedair H, Shaltout K, Ahmed D, Sharaf El-Din A, & El-Fahhar R (2020). Characterization of the wild trees and shrubs in the Egyptian Flora. *Egyptian Journal of Botany*, 60(1): 147–168.
- Shaltout K, Bedair H, El-Khalafy M, Keshta A, & Halmy M (2023). The link of socioeconomic importance to the conservation status of the Mediterranean endemic plants in Egypt. *Nusantara Bioscience*, 15(2).
- Bedair, H., Shaltout, K., Al-Sodany, Y. M., & Halmy, M. W. (2023). Phytosociological Survey of Mediterranean Endemic Plants in Egypt. *Egyptian Journal of Botany*.
- Shaltout K, Bedair H, El-Khalafy M, & Halmy M (2023). Extinction risk of the Mediterranean endemic plants of Egypt based on IUCN assessments. *Kew Bulletin*. Under review.
- Bedair, H., Shaltout, K., & Halmy, M. (2024). Assessing the impact of anthropogenic activities on the land cover in the western Mediterranean region of Egypt. *Environment, Development & Sustainability*. Under review.

### Review articles

- Bedair H, Anibaba Q, Ghosh S, Rady H, Omar E, Remon M & Alghariani M (2023). Funding African-led climate initiatives. *Nature Climate Change* 13, 493–494.
- Bedair, H., Alghariani, M.S., Omar, E. et al. (2023). Global Warming Status in the African Continent: Sources, Challenges, Policies, and Future Direction. *International Journal of Environmental Research* 17(3), 45.
- Bedair, H., Ghosh, S., Abdelsalam, I. M., Keerio, A. A., & AlKafaas, S. S. (2022). Potential implementation of trees to remediate contaminated soil in Egypt. *Environmental science and pollution research*, 29(52), 78132-78151.

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- Alkafaas, S. S., Abdallah, A. M., Hussien, A. M., **Bedair, H.**, Abdo, M., Ghosh, S., ... & Hessien, M. (2023). A study on the effect of natural products against the transmission of B. 1.1. 529 Omicron. *Virology Journal*, 20(1), 1-32.
- Abdelsalam, I. M., Ghosh, S., AlKafaas, S. S., **Bedair, H.**, Malloum, A., ElKafas, S. S., & Saad-Allah, K. M. (2023). Nanotechnology as a tool for abiotic stress mitigation in horticultural crops. *Biologia*, 78(1), 163-178.
- Ghosh, S., AlKafaas, S. S., Bornman, C., Apollon, W., Hussien, A. M., Badawy, A. E., ... & **Bedair, H.** (2022). The application of rapid test paper technology for pesticide detection in horticulture crops: a comprehensive review. *Beni-Suef University Journal of Basic and Applied Sciences*, 11(1), 1-28.
- Bedair, H.**, Rady, H. A., Hussien, A. M., Pandey, M., Apollon, W., AlKafaas, S. S., & Ghosh, S. (2022). Pesticide Detection in Vegetable Crops Using Enzyme Inhibition Methods: a Comprehensive Review. *Food Analytical Methods*, 1-22.
- Ghosh, S., Falyouna, O., Malloum, A., Othmani, A., Bornman, C., **Bedair, H.**, ... & Ahmadi, S. (2021). A general review on the use of advance oxidation and adsorption processes for the removal of furfural from industrial effluents. *Microporous and Mesoporous Materials*, 111638.
- Abd Elkodous, M., El-Husseiny, H. M., El-Sayyad, G. S., Hashem, A. H., Doghish, A. S., Elfadil, D., et al. (2021). Recent advances in waste-recycled nanomaterials for biomedical applications: Waste-to-wealth. *Nanotechnology Reviews*, 10(1), 1662-1739.

### Book chapters

- Bedair H.**, El-Makawy A, Nasser H, Halmy M (2024). Application of remote sensing for monitoring aquatic vegetation: A case study of Egyptian coastal wetlands using MODIS/Terra data. In: *Aquatic Ecosystem monitoring- traditional to Advanced technology*. Taylor & Francis. In production
- Alghariani M, **Bedair H.**, Al-Quraishi A (2024). Google Earth Engine to Detect Vegetation Cover Changes in NW Libya. In: *The Handbook of Environmental Chemistry. Climate Change and Environmental Degradation in the MENA Region*. Springer, Berlin, Heidelberg. Under review.
- Alghariani M, Mejjad N, Sagar E, **Bedair H.** (2024). Monitoring Coastal Chlorophyll-a Concentration in The Coast of North Africa Using Remote Sensing and Machine Learning. In: *Aquatic Ecosystem monitoring- traditional to Advanced technology*. Taylor & Francis. In production.
- Mushtaq W, **Bedair H.**, Shakeel A (2020). Halophytes: a phytoremediation tool for salt-affected soils with special reference to Indian subcontinent. In: *Handbook of Halophytes. From Molecules to Ecosystems towards Biosaline Agriculture*. Springer, Berlin, Heidelberg.
- AlKafaas, S. S., **Bedair, H.**, Ghosh, S., El-Sebaïi, N. A., Apollon, W., Bornman, C., ... & El-Sheekh, M. (2023). Exploring and phylogenetic characterization of microbial communities in African lakes. In *Lakes of Africa* (pp. 33-72). Elsevier.

## **OTHER PROFESSIONAL ACTIVITIES**

### **A) Projects**

- Member in Native Tree and Shrub of North Africa “Biodiversity and fight against erosion and desertification”

Charco,J. (Coord.) 2021. Árboles y arbustos autóctonos del norte de África. Centro de Cooperación del Mediterráneo de la Unión Internacional para la Conservación de la Naturaleza (IUCN). Málaga. Publicado en internet: <https://www.northafricatrees.org/en/>

### **B) Conferences**

Has attended and participated in:

- The 7<sup>th</sup> International Conference on“Plant and Microbial Biotechnology and their role in the development of the Society”. Held in Faculty of Science, Tanta University, Egypt on 19-20 April 2017.
- The 7<sup>th</sup> International Conference of National Institute of Diabetes & Endocrinology (NIDE). Held in Grand Nile Tower Hotel, Cairo, Egypt on 18-19 July 2018.
- The 8<sup>th</sup> International Conference on“Plant and Microbial Biotechnology and their role in the development of the Society”. Held in Faculty of Science, Kafrelsheikh University, Egypt on 3-4 October 2018.
  
- The 9<sup>th</sup> International Conference on Biological Sciences in collaboration with zoological society (A.R.E). Held in Faculty of Science, Tanta University, Egypt on 6<sup>th</sup> December 2018.
  
- The 1<sup>st</sup> Conference on Commercialization of Science. Held in Faculty of Science, Tanta University, Tanta, Egypt on 8-9 July 2019.
- The 62<sup>nd</sup> IAVS annual symposium on vegetation science and biodiversity research. Held in University of Bremen, Bremen, Germany on 14-19 July 2019.
- The 2<sup>nd</sup> International Conference on Biodiversity and Climate Change. Held in Helwan University, Helwan, Egypt.
- First International Virtual Conference of Tanta University. Scientific Research Confronting COVID-19 & Future of the World after this Pandemic. Held in Tanta University, Tanta, Egypt on 27-28 May 2020.
- GLF Bonn Digital Conference 2020, held on 3-5 June 2020.
- The 4<sup>th</sup> International Environmental Forum. Green Environmental & Sustainable Development. Held in Tanta University, Tanta, Egypt on 21-22 June 2020.
- Virtual Evolution 2021 Conference on June 21-25, 2021.
- 63<sup>rd</sup> IAVS Virtual Symposium 2021 - Vegetation goes Virtual held on September 20-23, 2021.
- IAVS 2022 64<sup>th</sup> Annual Symposium. Held at UCM School of Pharmacy, Complutense University, Madrid, Spain on 27<sup>th</sup> June to 1<sup>st</sup> July 2022.
- COP27, held in Sharm El-Sheikh, Egypt, 6-18 November 2022.
- AGU Fall Meeting 2022, held in Chicago, USA, IL, 12-16 December 2022, id. B42G-1691.
- AGU Annual meeting 2023, held in San Francisco, CA, USA, 11-15 December 2023.

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### C) Workshops

Has attended the following workshops:

- How to avoid Plagiarism at Tanta University on 30 December 2019.
- Research opportunities and international publications at Tanta University on 11 February 2020.
- Quality assurance of educational courses at Tanta University on 11 February 2020.
- Journal impact factor 2019 at Tanta University on 3 July 2020.
- SciVal: How researchers can benefit from it? at Tanta University on Thursday 25 June 2020.
- Boost your academic profile held at Faculty of Science, Tanta University on 19 July 2020.
- Step-by-step guide on how to prepare a successful paper held at Faculty of Science, Tanta University on 28 September 2020.
- The 1<sup>st</sup> International IAVS Young Scientists workshop. Challenges to vegetation of science in the face of global change. Worldwide 13<sup>th</sup>-14<sup>th</sup> October 2020.
- “World Environment Day” held by Arab Planning Institute in cooperation with Kuwait Water Association on Wednesday 9/6/2021.
- Hyperdominance and hyperdiversity in the Amazon tree flora on 26 March 2021.
- Evolution in primroses: from reproductive biology to comparative genomics with Elena Conti. Organised by the Faculty of Science and Technology of the Free University of Bozen-Bolzano on 04 April 2022.
- “Multivariate Analysis (classification and ordination) of vegetation using CAP”. Organized by the Scientific Forum on Taxonomy and Genetics on 30/05/2022.
- Fruit Traits, Diversification Rates, and the Evolution of Tropical Rain Forest Diversity with Renske Onstein, organised by the Faculty of Science and Technology of the Free University of Bozen-Bolzano held online on 25 January 2022, duration: 2 h.

### D) Seminars

- Digital Electronics held by Faculty of Science, Tanta University on February 11.2021.
- Total Quality Management and Laboratories Accreditation-ISO 17025 held by Faculty of Science, Tanta University on February 17.2021.
- How to search for job opportunities in mining sector held by Faculty of Science, Tanta University on 25 January 2021.
  
- Introduction about occupational health, safety and environment held by Faculty of Science, Tanta University on 29 January 2021.
  
- Career pathways for science graduates held by Faculty of Science, Tanta University on 23 January 2021.
- Hyperdominance and hyperdiversity in the Amazon Tree Flora. Presented by Prof. Dr. Hans ter Steege, Naturalis at Oxford Centre for Tropical Forests on 26/3/2021.
- Environmental assessment of projects held by Faculty of Science, Tanta University on 30/3/2021.
- Transparency and sustainability in global supply chains held by Oxford Centre for Tropical Forests on 23/4/2021.
- Marketing of Universities services held at Faculty of Science, Tanta University on 2nd September 2021.
- Presentation skills held at Faculty of Science, Tanta University on 5 September 2021.
- Transform your idea into startup company at Faculty of Science, Tanta University on 11 September 2021.

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## E) Online courses

- The essentials of R for Ecologists.
- Data Analysis Track.
- NASA ARSET - Satellite Observations and Tools for Fire Risk, Detection, and Analysis.
- Assessing Species' Extinction Risk Using IUCN Red List Methodology.

## F) Grants and awards

- AY2023-2024 **Fulbright** Egyptian Student Program Nominee.
- Tanta University International Publishing Prizes (2021-2023)

## MEMBERSHIP AND ACTIVITIES IN PROFESSIONAL ASSOCIATIONS

- 1- A member in the International Association for Vegetation Science (IAVS).
- 2- A member in the British Ecological Society (BES).
- 3- A member in the Egyptian Botanic Association.
- 4- A member in the Society of Herbarium Curators.
- 5- A member in society for the study of evolution (SSE).
- 6- A member in National Network for Egyptian Herbaria.
- 7- A member in American Geophysical Union (AGU).
- 8- A Regional and Global IUCN Assessor.

## COMMUNITY SERVICE

- Volunteer at Washington Forest Restoration program with Delridge Neighborhoods Development Association (DNDA), Seattle, Washington.
- A volunteer at DC Central Kitchen, Washington, DC.
- A member in Graduates Follow-up Unit that is part of Community Service and Environmental Development Affairs Sector, Faculty of Science, Tanta University, Egypt.
- A Climate Ambassador in One Million Youth Volunteers for Climate Adaptation Initiative.

## PROFESSIONAL LINKS

- Google Scholar:** <https://scholar.google.com/citations?user=0cr4OK0AAAAJ&hl=ar>
- ResearchGate:** <https://www.researchgate.net/profile/Heba-Bedair>
- Web of Science:** <https://www.webofscience.com/wos/author/record/IYS-3181-2023>
- Scopus:** <https://www.scopus.com/authid/detail.uri?authorId=57216532510>
- ORCID:** <https://orcid.org/my-orcid?orcid=0000-0001-9824-2443>
- University website:** [http://tdb2.tanta.edu.eg/staff/StaffDetails.aspx?staff\\_id=6321](http://tdb2.tanta.edu.eg/staff/StaffDetails.aspx?staff_id=6321)

## OTHER LINKS

- Twitter/X:** <https://twitter.com/hebataha402>
- Linkedin:** <https://www.linkedin.com/in/heba-bedair-phd-76a239137/>