IMRAN HOSSAIN NEWTON

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PROFILE SUMMARY

I am a Graduate Teaching Assistant at Texas A&M University at Galveston and a Ph.D. student in the Department of Oceanography at Texas A&M University, College Station. I am working on Coastal Sediment Management. In addition, I have five years of research experience in the Water Resources sector with a specialization in Ocean & Coastal Hydro-morphodynamics. Strong research capabilities such as initiating research, problem-solving abilities, strong technical writing skills, and proficiency in preparing manuscripts.

RESEARCH INTERESTS

Ocean & Coastal Hydrodynamics, Coastal Sedimentology, Coastal Sediment Transport, Coastal Flooding, Coastal Geomorphology, Coastal Processes, Physical Oceanography, Numerical Modeling, and Remote Sensing & GIS for Environmental Monitoring.

EDUCATION

Ph.D. in Oceanography | Ongoing from 2023
Texas A&M University (TAMU), College Station, Texas 77843, USA
Result: CGPA: **3.70** (Grade Scale: 4.00)

M.Sc. in Water Resources Development | 2018
Bangladesh University of Engineering and Technology (BUET), Dhaka-1000, Bangladesh
Result: CGPA: **3.67** (Grade Scale: 4.00), **2nd Position**

B.Sc. Engineering in Civil and Environmental Engineering | 2016
Shahjalal University of Science and Technology (SUST), Sylhet-3114, Bangladesh
Result: CGPA: **3.58** (Grade Scale: 4.00), (Last 4 Semester: **3.81**), **4th Position**

PROFESSIONAL EXPERIENCES

Graduate Teaching Assistant | Texas A&M University at Galveston
August 2022- Present

Research Associate | Institute of Water and Flood Management (IWFM), BUET
July 2019 – July 2022

- Worked in the research projects entitled **"Research on Sediment Distribution and Management in South-West Region of Bangladesh"** project funded by Water Resources Planning Organization (WARPO), Bangladesh; **"UKRI GCRF Living Delta Hub"** project funded by Global Challenges Research Fund (GCRF), United Kingdom; and **"Planning Capacity Enhancement and Establishment of a Technology Adaptation Cycle on Comprehensive Nodi (River) Management"** project funded by Japan International Cooperation Agency (JICA), Bangladesh.

Research Assistant | Institute of Water and Flood Management (IWFM), BUET
August 2017 – June 2019

- Worked in the research projects entitled **"The Morphological processes under Climate Changes, Sea Level Rise and Anthropogenic Intervention in the Coastal Zone"** funded by WARPO; **"Bangladesh: Roads to the Rescue (RttR) project under MetaMeta Research"** funded by Government of the Nederland; **"BN Submarine Base (BNS Sheikh Hasian) Project"** funded by Bangladesh-NAVY; **"Deltas, Vulnerability & Climate Change: Migration & Adaptation (DECCMA)"** funded by International Development Research Council, Canada (IDRC) and Department for International Development, UK (DFID); **Feasibility Study with ESIA for Resuscitation of Ichamoti River in Pabna District"** funded by Bangladesh Water Development Board (BWDB); "**Freshwater Harvesting, Land Reclamation and Development in the Coastal Zone: A Promise to Blue Economy**" funded by BWDB; "**Feasibility Study and Detailed Design for Development of Jetties and Infrastructure at Mirsarai & Sandwip at Chittagong, Subrang & Jaliar Dwip at Teknaf, and Sonadia Dwip at Cox's Bazar**"

funded by Bangladesh Inland Water Transport Authority (BIWTA); and **"Detailed Master Plan of Payra Port"** funded by Ministry of Shipping.

RESEARCH EXPERIENCES

- Coastal Flood Hazards Assessment and Management using Numerical Modeling.
- Storm Surge Inundation Modeling.
- Ocean Processes.
- Ocean & Coastal Sediment Transport using Numerical Modeling.
- Engineering Intervention Impact on Coastal Hydro-morphodynamics.
- River Flood Hazards Assessment using Numerical Modeling.
- Riverbank Erosion and Bar Dynamics Analysis.
- Engineering Intervention Impact on River Hydro-morphodynamics.

RESEARCH ADVISORY EXPERIENCES

M.Sc. Thesis by Rashed Uz Zzaman, IWFM, BUET.

Thesis Title: Application of Different Remote Sensing and GIS-Based Multi-Criteria Approaches in Mapping Potential Recharge Zones of Groundwater in The North-West of Bangladesh. (Defence held on 25 March 2021).

M.Sc. Thesis by Shanjida Noor, IWFM. BUET.

Thesis Title: Investigation on Polderization Induced Water Logging and Feasible Adaptation Measures in Dumuria Upazila under Khulna District (Defence held on 17 April 2018).

M.Sc. Thesis by Sadmina Razzaque, IWFM. BUET.

Thesis Title: Re-Construction of Hydro-Morphological History of Ichamoti River System by Numerical Simulation (Defence held on 18 August 2024).

PUBLICATIONS

Peer-Reviewed Journals

1. **Newton, I. H.,** Hasan, M. H., Razzaque, S., & Roy, S. K. (2024). Assessment of Climate-Induced Rice Yield Using Ordinary Least Squares (OLS) Regression Analysis: A Case Study from Coastal Context. *Earth Systems and Environment, 8(4)*, 1437-1451. https://doi.org/10.1007/s41748-024-00483-0.
2. Zzaman, R. U., Nayeem, M. A., Nowreen, S., **Newton, I. H.,** Islam, A. S., Zahid, A., & Rahman, M. S. (2023). CIMCA: Infusing computational intelligence in multi-criteria analysis to assess groundwater potential for recharge. *Environmental Modelling & Software,* 169, 105812. https://doi.org/10.1016/j.envsoft.2023.105812
3. Hasan, M. H., **Newton, I. H.,** Chowdhury, M. A., Esha, A. A., Razzaque, S., & Hossain, M. J. (2023). Land Use Land Cover Change and Related Drivers have Livelihood Consequences in Coastal Bangladesh. *Earth Systems and Environment*, 1-19. https://doi.org/10.1007/s41748-023-00339-z. Publisher-**Springer,** (Impact Factor**: 1.25**, Type: **Q1**).
4. Leya, R. S., Bala, S. K., **Newton, I. H.,** Chowdhury, M. A., Haque, S.M. (2022). Water Security Assessment of a Peri-Urban Area: A Study in Singair Upazila of Manikganj District of Bangladesh, *Environment, Development and Sustainability,* https://doi.org/10.1007/s10668-021-02023-6, Publisher-**Springer,** (Impact Factor**: 4.08**, Type: **Q2**).
5. **Newton, I.H.**, Islam, A.S., Islam, G.M.T., Razzaque, S., Bala, S.K. (2021). A Conjugate Application of MODIS/Terra data and Empirical Method to Assess Reference Evapotranspiration for the Southwest Region of Bangladesh, *Environmental Earth Sciences, 80(6),* 1-22, https://doi.org/10.1007/s12665-021-09482-0 Publisher-**Springer**, (Impact Factor**: 3.11**, Type: **Q2**).
6. Nowreen, S., **Newton, I.H.,** Zaman, R.U., Islam, A.S., Islam, G.M.T., Alam, M.S. (2021). Development of potential map for groundwater abstraction in the Northwest region of Bangladesh using RS-GIS based weighted overlay analysis and water-table-fluctuation technique. *Environmental Monitoring and Assessment. 193(1),* 1-17, https://doi.org/10.1007/s10661-020-08790-5, Publisher-**Springer**, (Impact Factor**: 3.31**, Type: **Q2**).
7. **Newton, I.H.,** Islam, A. F. M. T., Islam, A.S., Islam, G.M.T., Tahsin, A., Razzaque, S. (2018). Yield Prediction Model for Potato Using Landsat Time Series Images Driven Vegetation Indices. *Remote Sensing in Earth Systems Sciences, 1(1–2),* 29–38. https://doi.org/10.1007/s41976-018-0006-0, Publisher- **Springer**.
8. **Newton, I.H.,** Biswas, A., Sakib, M.M., Zaman, S., Sattar, N.S., Akter, R. (2017). Development of Extreme Rainfall Based Intensity-Duration-Frequency Curves for Dhaka City in Bangladesh. *International Journal of Scientific & Engineering Research, 8*(1), 1324–1328.

Book chapters

1. **Newton, I.H.,** Zaman, R.U., Nowreen, S., Islam, A.S., Razzaque, S., Islam, G.M.T. (2020). Deciphering of Groundwater Recharge Potential Zones in Dhaka City, Bangladesh by RS and GIS Techniques. *In Water, Flood Management and Water Security Under a Changing Climate* (pp. 85–97). Springer, Cham.

https://doi.org/10.1007/978-3-030-47786-8_5, Publisher- **Springer**.

2. Tahsin, A., Razzaque, S., Haque, A., **Newton, I.H.,** Saleh, A.F.M., Mamtaz, R., et al. (2020). **Impact of Internal Road Network on Water-Logging Inside Polders.** *In Water, Flood Management and Water Security Under a Changing Climate* (pp. 15–35). Springer, Cham. https://doi.org/10.1007/978-3-030-47786-8_2, Publisher- **Springer**.
3. Zzaman, R.U., Nowreen, S., **Newton, I.H.** (2020). Groundwater Fluctuation in Response to Annual Rainfall in North-West Region of Bangladesh. *In Water, Flood Management and Water Security Under a Changing Climate* (pp. 251–266). Springer, Cham. https://doi.org/10.1007/978-3-030-47786-8_18, Publisher- **Springer**.

Articles in Preparation

1. **Newton, I.H.**, Jiabi, Du., Timothy, M. D., (2024). Will sea level rise lead to stronger/weaker sediment resuspension? (In preparation).

Conference Proceedings (Abstract and Presentation)

1. Peter, A., **Newton, I. H**. (2024). Flood Risk and Exposure for Critical Infrastructure in Texas Coast: A Spatial Analysis Approach to Resilience Planning. *TAMUG 19th Annual Student Research Symposium!,* April 16-18, 2024
2. Islam, J., Mahmud, M. T., Mamun, A. A., Karmakar, T., & Newton, I. H. (2024). Groundwater level lowering due to over-pumping in rohingya refugee camps and its socio-environmental consequences*. 7th International Conference on Advances in Civil Engineering (ICACE2024)*, CUET, Chattogram, Bangladesh.
3. **Newton, I.H.,** Razzaque, S., Akter, A., Hossain, D., Tahsin, A., Haque, A., et al. (2021). Modelling probabilistic monsoon flood in Bangladesh, In: 8th International Conference on Water and Flood Management (ICWFM-2021). IWFM, BUET, Dhaka, Bangladesh.
4. **Newton, I.H.,** Razzaque, S., Akter, M., Rahman, M., Ahsan, Q., Haque, A et al. (2021). Juvenile Hilsa response to hydro-morphodynamic changes in the migratory routes due to anthropogenic interventions in the coastal waters of Bangladesh, In: 8th International Conference on Water and Flood Management (ICWFM-2021). IWFM, BUET, Dhaka, Bangladesh.
5. Akter, A., Razzaque, S., **Newton, I.H**., Hossain, D., Tahsin, A., Ahsan, Q., et al. (2021). Sedimentation along Bangladesh Coast during storm surge events, In: 8th International Conference on Water and Flood Management (ICWFM-2021). IWFM, BUET, Dhaka, Bangladesh.
6. Dutta, P., Islam, A.S., Roy, B., **Newton, I.H.** (2021). A study on the probabilistic future floods in the Teesta River basin of Bangladesh. In: 8th International Conference on Water and Flood Management (ICWFM-2021). IWFM, BUET, Dhaka, Bangladesh.
7. Haider, M J., Haque, M.A., Hossain, M. J., **Newton, I.H.,** Razzaque, S., Akter, A., et al. (2021). Flooding and Sedimentation in the Floodplains of Bangladesh: Application of Bangladesh Delta Model (BDM), In: 8th International Conference on Water and Flood Management (ICWFM-2021). IWFM, BUET, Dhaka, Bangladesh.
8. Hossain, M.J., Haider, M.J., Haque, M.A., Razzaque, S., Hossain, D., **Newton, I.H**., et al. (2021). Tide and Storm Surge Propagation and its impacts on sedimentation in the Coastal Ocean and the Bay of Bengal, In: 8th International Conference on Water and Flood Management. (ICWFM-2021). IWFM, BUET, Dhaka, Bangladesh.
9. Razzaque, S., **Newton, I.H.,** Akter, A., Hossain, D., Tahsin, A., Haque, A., et al. (2021). Three-dimensional modeling of hydro-morphodynamic processes in the Ganges- Brahmaputra-Meghna delta, In: 8th International Conference on Water and Flood Management (ICWFM-2021). IWFM, BUET, Dhaka, Bangladesh.
10. Tahsin, A., Razzaque, S., Hossain, D., **Newton, I.H.,** Akter, A., Ahsan, Q., et al. (2021). Impact of monsoon depression on the coastal flooding in Bangladesh, In: 8th International Conference on Water and Flood Management (ICWFM-2021). IWFM, BUET, Dhaka, Bangladesh.

TECHNICAL SKILLS

Software: SCHISM Numerical Modeling, Delft-3D, ArcGIS, QGIS, ILWIS, AutoCAD, SPSS 20, and STATA
Programming Language: Python

TRAINING

- Professional Training Course on "Introduction to ETABS".
- Hands-on Training on Mathematical Modeling.
- Short Course on Mathematical Modeling.

SEMINARS AND WORKSHOPS

- Dissemination workshop on **"Development of IoT enable data logger to monitor groundwater and analysis of the collected data"** organized by IWFM, BUET (Nov 2021).
- Dissemination workshop on **"Water-energy-food nexus perspective: Path making for Sustainable Development Goals (SDGs) to country actions in Asia"** organized by IWFM, BUET (Jun 2019).

- Dissemination workshop on **"Assessment of Climate-Induced Long-term Water Availability in Ganges River Basin and Impacts on Energy Security in South Asia (Phase I)"** organized by IWFM, BUET (Dec 2018).
- Seminar on **"Science-Policy Interaction in Adaptive Delta Planning"** organized by IWFM, BUET (Oct 2017)
- Dissemination workshop on **"Assessment of River Water Availability in Bangladesh for Off-stream Uses"** organized by IWFM, BUET (Dec 2017).
- Seminar on **"Structural control systems for earthquake protection and advanced seismic testing methods"** organized by CEE, SUST. (Sept 2014).

REFERENCES

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