

Bimal Gyawali
Department of Earth and Atmospheric Science
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EDUCATION

- Ph.D.**, Texas A&M University-Corpus Christi, Texas **Aug 2022**
Coastal and Marine System Science
Dissertation Title: *Improving Assessments of Water Resources Characterization and Relationships to Climate Variabilities*
Advisor: Dr. Dorina Murgulet
- M. Sc. Tech.**, Banaras Hindu University, Banaras, India **May 2012**
Geophysics
Thesis: *Study of possible linkage of Pacific decadal oscillation with Indian summer monsoon in relation to quasi-biennial oscillation*
Advisor: Dr. Rajeev Bhatla
- B. Sc.**, Tribhuvan University, Kathmandu, Nepal **May 2008**
Physics

AWARDS & GRANTS

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|---------------------------------------------------------|------|
| • Center for Coastal Studies Research Award - \$2500 | 2020 |
| • Texas Sea Grant GIAR - \$2500 | 2020 |
| • Texas Sea Grant GIAR - \$2000 | 2017 |
| • Corpus Christi Geological Society Scholarship - \$500 | 2018 |
| • Corpus Christi Geological Society Scholarship - \$300 | 2017 |

PROFESSIONAL EXPERIENCE

Postdoctoral Research Associate, University of Houston, Houston, TX, 2022 – Present

- Modeling meltwater discharge and quantifying the relationship between meltwater discharge and channel dynamics in arctic river deltas using numerical modeling, remote sensing, and field observations.
- Conduct research on sediment transport in River Deltas using remote sensing and field observations.

Research Assistant, Texas A&M University-Corpus Christi, Corpus Christi, TX, 2016 – 2022

- Collaborated on multiple projects for sample collection and lab processing.
- Conducted sample processing and analysis of surface and porewater samples to assess geochemical parameters and water quality.
- Developed methodologies and created Standard Operating Procedures
- Performed geospatial information systems and statistical analysis for project data.
- Assisted in writing project reports and mentored undergraduate students.

Instructor of Record, Texas A&M University-Corpus Christi, Corpus Christi, TX, 2016 – 2019

- Taught general physics I (PHYS 1401) course (Fall 2019)
- Served as a lab teaching assistant for Physics I (PHYS 1401 and PHYS 2425) (Fall 2016 – Spring 2019)
- Provided assistance to students with writing, editing, and peer reviews.
- Graded assignments, term papers, and lab reports

Graduate Research Assistant, Utah State University, Logan, Utah, 2014 – 2015

- Analyzed large-scale climate forecast data to characterize the onset of the Indian summer monsoon.

Junior Research Fellow, Allahabad University, Allahabad, India, 2013 – 2014

- Analyzed large climate data to predict intra-seasonal oscillation of climate variabilities using coupled models.

Conference Secretariat, Society of Hydrologists and Meteorologists, Nepal, 2013

- Worked as a conference secretariat for an international conference on "International Conference on Climate Change, Water Resources and Disasters in Mountainous Regions: Building Resilience to Changing Climate (November 27-29, 2013)

Hydrometeorologist, Recham Consultants, Kathmandu, Nepal, 2012 – 2013

- Collected different hydrometeorological data from rivers, streams, lakes, and reservoirs.
- Analyzed data using different statistical analysis approaches.

SKILLS

- **Computer/Language Skills:** Python, ArcGIS, R, Soil and Water Assessment Tool (SWAT), Machine learning in python, Statistical Analysis, Power BI, SQL
- **Field/Lab Skills:** Geophysical resistivity logging, Rad7 and RaDeCC for Radium and radon sample processing, Auto titrator for alkalinity sample processing, slug test, acoustic Doppler current profiler, Real-time kinematic positioning

PROFESSIONAL ORGANIZATIONS

- Association for the Sciences of Limnology and Oceanography (2016 – 2017)
- American Geophysical Union Member (2017 – Present)
- National Groundwater Association Member (2017 – Present)
- Marine Science Graduate Student Organization at Texas A&M University-Corpus Christi (2017 – 2022)

PUBLICATIONS

- **Gyawali, B.**, Carlson, B., Overeem, I., Pierce, E., Amplified meltwater discharge enhances channel migration rates for proglacial Arctic deltas (Manuscript under preparation)
- Gyawali, M.S., Lamsal, L.N., Neupane, S., **Gyawali, B.**, Bhattarai, K., Krotkov, N., 2023. Cement and Brick Factories Contribute Elevated Levels of NO₂ Pollution in Nepal: Evidence of High-Resolution View from Space (submitted to Geophysical Research Letters).
- Wolfe, W. W., Murgulet, D., **Gyawali, B.**, & Sterba-Boatwright, B. (2023). Modeling time series radon inventory and constraints on the submarine groundwater discharge mass balance of a well-mixed, highly dynamic estuary. *Journal of Hydrology*, 130065.
- Gyawali, M.S., Lamsal, L.N., Sedai, J.R., **Gyawali, B.**, Bhattarai, K., Williams, Q., Neige, S., Sharma, S. and Aryal, R., 2023. Tracking NO₂ Pollution Changes Over Texas: Synthesis of In Situ and Satellite Observations. *Journal of Geophysical Research: Atmospheres*, 128(4), p.e2022JD037473.
- **Gyawali, B.**; Ahmed, M.; Murgulet, D.; Wiese, D.N. Filling Temporal Gaps within and between GRACE and GRACE-FO Terrestrial Water Storage Records: An Innovative Approach. *Remote Sens.* 2022, 14, 1565. <https://doi.org/10.3390/rs14071565>
- Fallatah, O., Ahmed, M., **Gyawali, B.** and Alhawsawi, A., 2022. Factors controlling groundwater radioactivity in arid environments: An automated machine learning approach. *Science of The Total Environment*, p.154707. <https://doi.org/10.1016/j.scitotenv.2022.154707>

- **Gyawali, B.**; Murgulet, D.; Ahmed, M. Quantifying Changes in Groundwater Storage and Response to Hydroclimatic Extremes in a Coastal Aquifer Using Remote Sensing and Ground-Based Measurements: The Texas Gulf Coast Aquifer. *Remote Sens.* 2022, 14, 612. <https://doi.org/10.3390/rs14030612>.
- Bhatla, R., Sharma, S., Verma, S., & **Gyawali, B.** (2020). Impact of Pacific Decadal Oscillation in relation to QBO on Indian summer monsoon rainfall. *Arabian Journal of Geosciences*, 13(22), 1-9.
- Bhatla, R., **Gyawali, B.**, Mall, R. K., & Raju, P. V. S. (2013). Study of possible linkage of PDO with Indian summer monsoon in relation to QBO. *Vayumandal*, 39(1-2), 40-45.

REPORTS

- Murgulet, D., Douglas, A., Lopez, C., **Gyawali, B.**, & Murgulet, V. (2019). Impacts of Temporal and Spatial Variation of Submarine Groundwater Discharge on Nutrient Fluxes to Texas Coastal Embayments. Texas General Land Office, Austin, TX.

PRESENTATIONS

- **Gyawali, B.**, Ahmed, M., Response of Global Aquifers to Climate Changes: AGU, Chicago, IL, Dec. 2022.
- **Gyawali, B.**, Ahmed, M., Murgulet, D., & Wiese, D. N., Integrated Approach for Filling Temporal Gaps Within and Between GRACE and GRACE-FO Terrestrial Water Storage Records: AGU, New Orleans, Louisiana, Dec. 2021.
- Balch, W., Pappas, C., Geramifard, A., Gyawali, M., Lamsal, L., **Gyawali, B.**, Vieira, C., Wright, A. and Aryal, R., (2021) Space and Ground-Based Decadal Trends of Nitrogen Oxides in Texas. *Bulletin of the American Physical Society*, 66.
- **Gyawali, B.**, Murgulet, D., & Wolfe, W. Estimation of Groundwater Discharge Variability to the Gulf of Mexico Using Remote Sensing and Field Observations: AGU, San Francisco, CA, Dec. 2020.
- Mohamed Ahmed, David N Wiese, **Bimal Gyawali**, Irem Ilhan, Diaa E Fawzy, Guvenc Arslan and Melis Somay-Altas, 2020, Filling Temporal Gaps Within and Between GRACE and GRACE-FO Records: Advances, Challenges, and Future Opportunities: AGU, San Francisco, CA, Dec. 2020.
- Ahmed, M., **Gyawali, B.**, Wiese, D., Applications of Data-Driven Techniques in Filling Temporal Gaps Within and Between GRACE and GRACE-FO Records: The GRACE/GRACE-FO Science Team Meeting (GSTM) 2020.
- Ahmed, M., **Gyawali, B.**, Sultan, M., 2019, Bridging gravity field observations across GRACE and GRACE-FO missions over Africa: AGU, San Francisco, CA, Dec. 2019.
- **Gyawali, B.**, Murgulet, D., Ahmed, M., 2019, Quantifying changes in groundwater storage in the coastal region of Texas: AGU, San Francisco, CA, Dec. 2019.
- **Gyawali, B.**, Murgulet, D. 2019, Quantifying Temporal variation in Groundwater Storage and Submarine Groundwater Discharge in The Coastal Region of Texas, Texas Sea Grant Research Symposium 2019, College Station, TX.
- **Gyawali, B.**, Murgulet, D., and Ahmed, Mohamed 2018, Prediction of Terrestrial Water Storage Using Multiple Approaches, UCOWR 2018, Pittsburg, PA.
- **Gyawali, B.** & Murgulet, D. 2017, Evaluation of Coastal Groundwater Storage Variability: Implications on the Effect of Climate Anomalies on Submarine Groundwater Discharge, ASLO Aquatic Science Meeting 2017, Honolulu, Hawaii.
- **Gyawali, B.** & Wang, Simon 2015, Subseasonal Prediction of Bay of Bengal Monsoon Onset Using CFSv2, NOAA's 40th Climate Diagnostics and Prediction Workshop 2015, Denver, Colorado.