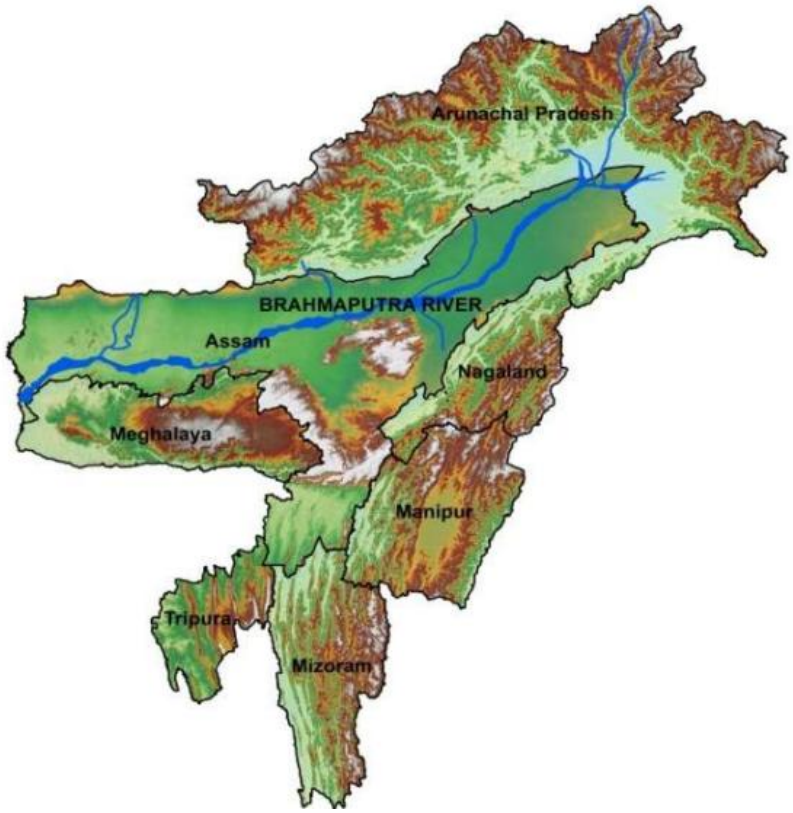
GROUND WATER LEVEL BULLETIN

AUGUST 2025

NORTH EASTERN STATES



Issued by

Central Ground Water Board

North Eastern Region, Guwahati

1.0 INTRODUCTION

Groundwater bulletin published by CGWB depicts the changes in groundwater regime of the country through different seasons. It helps to obtain information on groundwater levels through representative monitoring wells of which, the important attributes of groundwater regime monitoring are groundwater level.

Groundwater regime monitoring started in the year 1969 by Central GroundWater Board. The natural conditions affecting groundwater regime involve climatic parameters like rainfall, evapotranspiration etc., whereas, anthropogenic factors include pumpage from the aquifer, recharge due to irrigation systems and other practices like waste disposal etc.

Groundwater levels are monitored four times a year; January, March, August and November.

2.0 STUDY AREA

The North-Eastern Region (NER) of India comprises of a unique agglomeration with diversified geological set-up. The spectacular physiographic set up includes; the stunning Himalayan Mountain belt in the North, the Indo-Myanmar Range in the east and the extensive Assam plains formed by the mighty Brahmaputra River. North-Eastern India, comprising of the seven states of the Indian Union, viz, Assam, Arunachal, Meghalaya, Nagaland, Mizoram, Manipur and Tripura, geologically represents a collage of different tectonic blocks with distinctive geological history.

The Region represents varied geomorphological and geological setup which rangesin age from Precambrian to Recent. It is manifested by the panoramic Himalayan Mountain Belt in the north, Shillong Massif Plateau in the south,the mighty Brahmaputra forming the extensive Assam plain in between and the Indo-Myanmar Range in the east.The central part of the terrain constitutes the Shillong–Mikir Precambrian massif (Meghalaya plateau and Mikir Hills of Assam), representing the north-eastern continuation of the Chhotanagpur Gneissic Complex (CGC) across the Bengal Basin (Ganges–Brahmaputra valley). The Dauki Fault demarcates the southern boundary of the plateau while, the northern and eastern edges are covered by thealluviums of the Brahmaputra river valley in the Assam plains.Several inselbergs of the basement jut out in the Brahmaputra alluvial plains, of which, those at Goalpara and Dhubri are the most prominent ones. The easternmost segment of the Himalaya including the ‘Eastern Himalayan Syntaxis’ (occupying Arunachal Pradesh) and the Indo-Burman Range (IBR) passing through Nagaland–Manipur binds the region along its north and east. Along the west of the IBR, there are N–S to NE–SW trending Neogene molasse sediments of shelf facies, the southern parts of which make up the low hill ranges of Tripura–Mizoram. The Bengal Basin (Rajmahal–Garo Hills gap) intervenes between the Indian Peninsular shield and the North-Eastern region, though there is an uninterrupted continuation of the Himalayan Range along the northern territory.

Hydrogeologically, the area is grouped into porous and fissured formations based on the nature of openings in the aquifer

system. Alluvium and sedimentary formations and fissured consolidated rocks form the main repositories of ground water. As per 2023-24 Groundwater resource assessment, Total Annual Ground Water Recharge of the State has been assessed as 36.37bcm and Annual Extractable Ground Water Resource is 28.85 bcm. The Total Current Annual Ground Water extraction is 2.89bcm and Stage of Ground Water extraction is 10%.

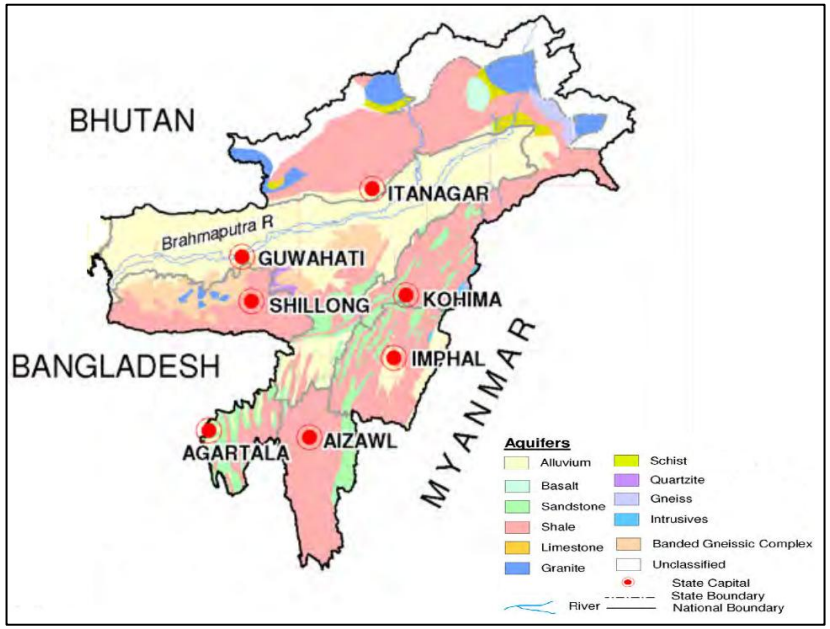


Fig.1: Map showing disposition of principal aquifers of NE States

3.0 GROUND WATER LEVEL MONITORING

Central Ground Water Board, North Eastern Region, is monitoring changes in ground water regime in the states on quarterly basis continuously. Monitoring of August 2025 started from 20th of August till 31st. This is facilitated by a network of monitoring stations in the State located in diverse hydrogeological and geomorphic units. The total numbers of monitoring stations as of August 2025 is 977 of which 716 are dugwells, 177 Piezometers (tubewells & borewells) and 84 springs.

Table 1: State wise number of monitoring stations

Sl. No.	State	Existing Monitoring NHNS station as on August 2025			
		Dugwell	Tubewell	Springs	Total
1	Arunachal Pradesh	27	4	6	37
2	Assam	395	110	0	505
3	Manipur	4	0	2	6
4	Meghalaya	75	15	21	111
5	Mizoram	9	0	27	36
6	Nagaland	101	4	28	133
7	Tripura	105	44	0	149
	Total	**716**	**177**	**84**	**977**

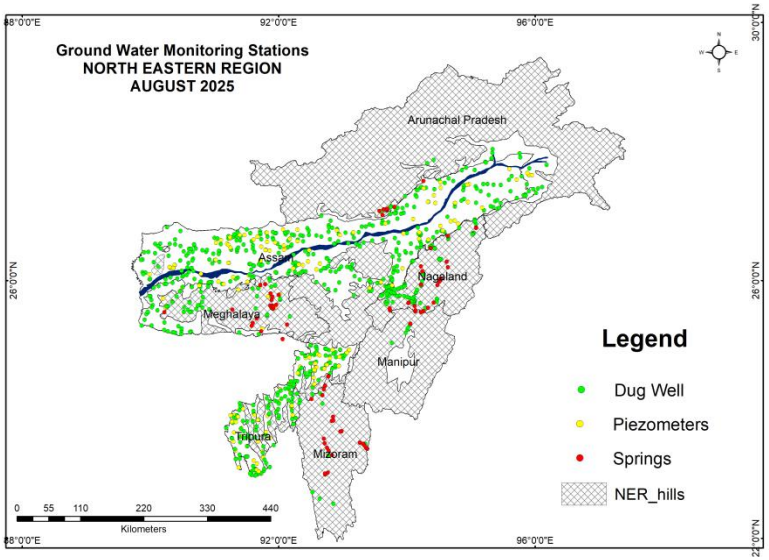


Fig.2: NHS monitoring stations of NE States, as on August, 2025

4.0 GROUND WATER LEVEL SCENARIO IN UNCONFINED AQUIFERS

4.1 Depth to Water level (August 2025)

Arunachal Pradesh

A total of 27 stations were monitored for depth to water level range for August 2025. In these wells, water level between 0-2 m bgl was recorded in 55.56% (15) of wells, between 2 to 5 m bgl in 25.93% (7) of wells, between 5 to 10 m bgl in 14.81% (4) of wells and between 10 to 20 m bgl in 3.7% (1) wells. Both minimum and maximum water level of 0.14 mbgl and 11.13mbgl is recorded from Papumpare district.

Assam

A total of 357 dug wells were monitored in August 2025 and used for analysis of depth to water level in Assam. In these wells, water level between 0-2 m bgl was recorded in 64.43% (230 wells) of wells, between 2 to 5 m bgl in 27.45% (98 wells) of wells, between 5 to 10 m bgl in 5.32% (19) wells, between 10 to 20 m bgl in 2.52% (9) wells and one dugwell from East Karbi Anglong district was recorded to have water level >20m bgl. Minimum water level of 0.18 magl was recorded from Shribhumi district and maximum water level of 21.28 mbgl was also recorded from a dug well in East Karbi Anglong district

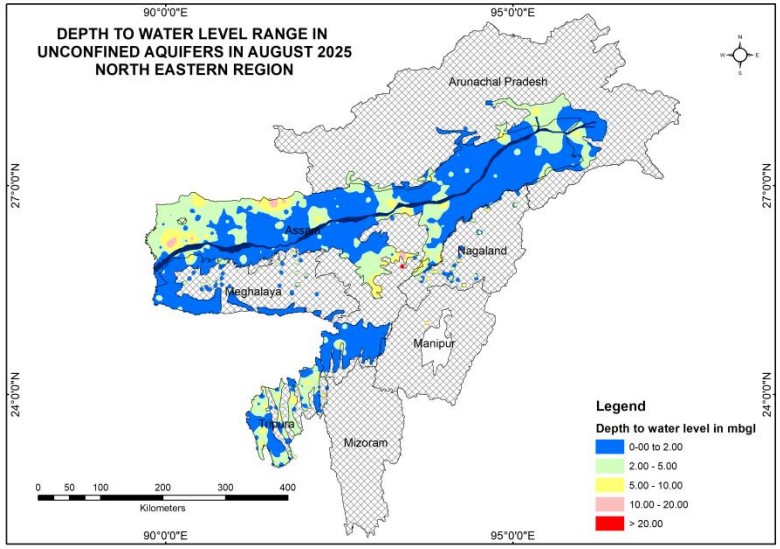


Fig.3: Depth to Water level Map for Unconfined aquifers (August 2025), NE States

Manipur

During August 2025 monitoring, one well from Kangpokpi have water level in 0-2m range and 3 stations, 1 from Kangkokpi and 2 from Senapati district have water level in 2-5m range.

Meghalaya

During August 2025, a total of 67 stations from Meghalaya were monitored and analyzed. Water level in the range of 0-2m were recorded in 73.13% (49) wells, 2-5 m in 25.37% (17) wells and one station from West Garo Hills district have water level in 5-10m range of water level. Minimum water level of 0.11 mbgl from South Garo Hill district and maximum water level of 7.10 mbgl from West Garo Hills district is recorded for August 2025.

Nagaland

In Nagaland 80 stations were monitored and analyzed. In these wells, water level in the range of 0-2m were recorded in 55.0% (44) wells, 2-5 m in 30.0% (24) wells, 13.75% (11) stations in 5-10m range of water level and between 10 to 20 m bgl in one well from Dimapur district. Minimum water level of 0.01 mbgl was recorded from a dug well in Kohima district and maximum water level of 11.1 mbgl was also recorded from a dug well in Dimapur district.

Tripura

The depth to water level of 93 stations were monitored and analyzed for Tripura in August 2025. In these wells, water level in the range of 0-2m is recorded in 51.61% (48) stations, 2-5m range in 40.86% (38) stations and 5-10m range in 7.53% (7) stations. Minimum water level of 0.24 magl from a dug well in Sepahijala district and maximum water level of 8.08 mbgl was recorded from Gomati district.

4.2 Annual Fluctuation in Water level (August 2023 Vs August 2025)

Arunachal Pradesh

Comparison of August 2025 to August 2023 water level data was done for 28 stations in Arunachal Pradesh. In these wells, fall and rise was recorded in 19 (67.86%) stations and 9 (32.14%) stations respectively. Rise in the range of 0-2m is recorded in 28.57% (8) wells and one well from Lower Dibang valley district have rise in >4m range. Fall in the range of 0-2m was recorded in 14 (50%) stations and 5 (17.86%) stations shows fall in >4m range.

Assam

A total of 306 stations were analyzed for Assam in August 2025 with respect to August 2023. In these wells, 166 (54.25%) stations show rise and 140 (45.75%) stations show fall in water level. Rise in the range of 0-2m range is recorded in 143 (46.73%) stations, 2-4m range in 17 (5.56%) stations and 6 (1.96%) stations have water level rise in >4m range. Rise of >4m range is recorded in districts of Hojai, Kamrup, Karbi Anglong and Morigaon districts. Fall in the range of 0-2m range is recorded in 125 (40.85%) stations, 2-4m in 8 (2.61%) stations and in >4m range in 7 (2.29%) stations from mainly Bajali, Baksa, Darrang, Dhubri and Karbi Anglong districts in the state.

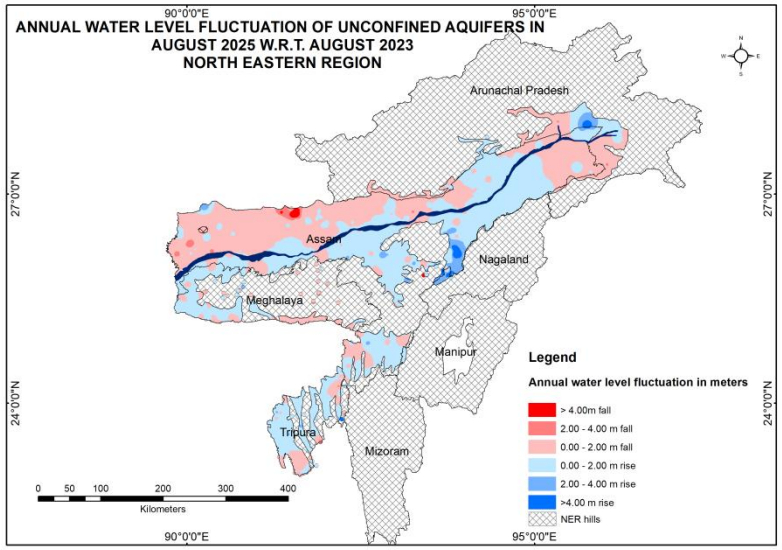


Fig. 5: Annual Fluctuation in water level, Unconfined Aquifers (August 2023 Vs August 2025)

Meghalaya

A total of 59 stations were analyzed for Meghalaya in August 2025 with respect to August 2023. In these wells, 27 (45.76%) stations show rising water level trend and 32 (54.24%) stations show fall in water level trend. Rise in the range of 0-2m range is recorded in 24 (40.68%) stations and one station shows water level trend in 2-4m range and two stations from Ri Bhoi and West Garo Hills have rise in >4m range. All of the fall is recorded in the range of 0-2m range.

Nagaland

A total of 10 stations all from Dimapur district were analysed for annual fluctutation of August 2025 with respect to August 2023. In these wells, 8 (80%) stations show rise and 2 (20%) stations show fall in water level. Rise in 0-2m was recorded in 3 (30%) stations, 2 (20%) stations in 2-4m range and 3 (30%) stations in >4m range. Fall in the range of 0-2m is recorded in one station and one station in 2-4m range.

Tripura

In Tripura state, 93 stations were analysed for August 2025 with respect to August 2023 water level. In these wells, 66 (70.97%) stations show rise and 27 (29.03%) stations show falling trend. Rise in the range of 0-2m is recorded in 60 (64.52%) stations, 2-4m in 3 (3.23%) stations and 3 (3.23%) stations from North Tripura, South Tripura and West Tripura district have water level trend in >4m range. Fall in the range of 0-2m range is recorded in 25 (26.88%) stations and two stations in 2-4m range.

4.3 Annual Fluctuation in Water level (August 2024 Vs August 2025)

Arunachal Pradesh

Comparison of August 2024 to August 2025 water level data was done for 25 stations in Arunachal Pradesh. In these wells, fall and rise was recorded in 11 (44%) stations and 14 (56%) stations respectively. All the 14 stations showing rise is in the range of 0-2m. Fall in 0-2m range was recorded in 10 (40%) stations and one station from East Siang shows fall in >4m range.

Assam

A total of 363 stations were analyzed for Assam in August 2024 with respect to August 2025. In these wells, 254 (69.67%) stations show rise and 109 (30.03%) stations show fall in water level. Rise in the range of 0-2m range is recorded in 234 (64.46%) stations, 2-4m range in 17 (4.68%) stations and 3 (0.83%) stations have water level rise in >4m range. Rise of >4m range is recorded in districts of Darrang and Shribhumi districts. Fall in the range of 0-2m range is recorded in 102 (28.10%) stations, 2-4m in 6 (1.65%) stations and in >4m range in one station from Baksa district in the state.

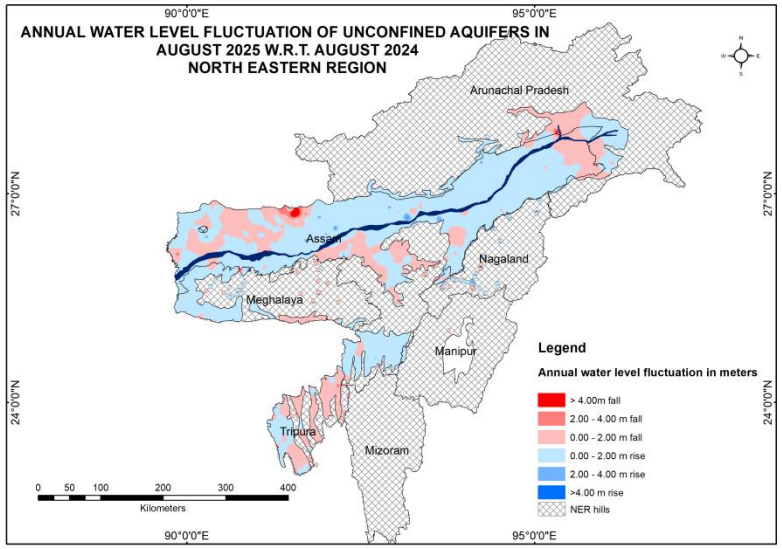


Fig. 5: Annual Fluctuation in water level, Unconfined Aquifers (August 2024 Vs August 2025)

Manipur

Four dug wells, 2 from Kangkokpi and 2 from Senapati district was analyzed. One station from Kangkokpi district show rise in 0-2m range and 2 wells from Senapati show fall in 0-2m range and one station from Kangkokpi show fall in 2-4m range.

Meghalaya

A total of 73 stations were analyzed for Meghalaya in August 2025 with respect to August 2024. In these wells, 48 (65.75%) stations show rising water level trend and 25 (34.25%) stations show fall in water level trend. Rise in the range of 0-2m range is recorded in 45 (61.64%) stations and rest 3 (4.11%) stations shows water level trend in 2-4m range. Fall in the range of 0-2m range is recorded in 24 (32.88%) stations and 2-4m range in one station.

Nagaland

A total of 80 stations were analysed for annual fluctutation of August 2025 with respect to August 2024. In these wells, 58 (72.5%) stations show rise and 22 (27.5%) stations show fall in water level. Rise in 0-2m was recorded in 54 (67.5%) stations, 3 (3.75%) stations in 2-4m range and 1 (1.25%) station from Dimapur district in >4m range. Fall in the range of 0-2m is recorded in 20 (25%) stations and one each in 2-4m range and >4m range. Fall of >4m range is also recorded from in Dimapur district.

Tripura

In Tripura state, 99 stations were analysed for August 2025 with respect to August 2024 water level. In these wells, 36 (36.36%) stations show rise and 63 (63.64%) stations show falling trend. Rise in the range of 0-2m is recorded in 33 (33.33%) stations, 2-4m in 2 (2.02%) stations and one station from West Tripura district have water level trend in >4m range. Fall in the range of

0-2m range is recorded in 61 (61.62%) stations, and one station each in 2-4m and in >4m range. Fall of >4m range is recorded from in North Tripura district.

4.4 Seasonal Fluctuation in Water level (August 2025 Vs March 2025)

Arunachal Pradesh

Comparison of August 2025 to March 2025 water level data was done for 23 stations in Arunachal Pradesh. In these wells, fall was recorded in 5 (21.74%) stations, all in 0-2m range and rise is recorded in 18 (78.26%) stations. Rise in the range of 0-2m was recorded in 12 (52.17%) stations and 3 (13.04%) stations in 2-4m range and 3 in >4m range in the state. Rise of >4m is recorded from East Siang, Lower Dibang Valley and Lower Subansiri district.

Assam

A total of 336 stations were analyzed for Assam in August 2025 to March 2025. In these wells, 324 (96.43%) stations show rise and 12 (3.57%) stations show fall in water level. Rise in the range of 0-2m range is recorded in 185 (55.06%) stations, 2-4m range in 107 (31.85%) stations and 32 (9.52%) stations have water level fall in >4m range. Rise of >4m range is recorded in districts of Baksa, Barpeta, Cachar, Dhubri, Goalpara, Golaghat, Hailakandi, Kamrup, Shribhumi, Karbi Anglong, Morigaon, Nagaon, Sonitpur, Tamulpur, Tinsukia and Udalguri districts. Fall in the range of 0-2m range is recorded in 11 (3.27%) stations and 2-4m range in one station.

Manipur

During August 2025 monitoring, one well from Kangpokpi have fall in 0-2m range and 3 stations, 1 from Kangkokpi and 2 from Senapati district have rise in water level in 2-5m range.

Meghalaya

A total of 64 stations were analyzed for Meghalaya in August 2025 with respect to March 2025. In these wells, 54 (84.38%) stations show rising water level trend and 10 (15.63%) stations show fall in water level trend. Rise in the range of 0-2m range is recorded in 35 (54.69%) stations, 2-4m range in 17 (26.56%) stations and >4m in two stations. All the fall is in the range of 0-2m range. Rise>4m is recorded in East Khasi Hills and North Garo Hills.

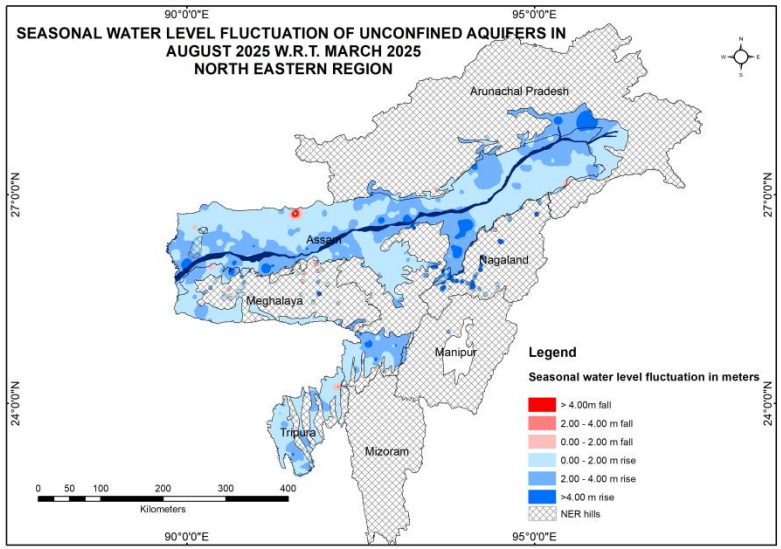


Fig. 7: Seasonal Fluctuation in water level, Unconfined Aquifers (March 2025 Vs August 2025)

Nagaland

A total of 80 stations were analyzed for August 2025 with respect to March 2025. In these stations, 72 (90%) stations show rise and 8 (10%) stations show fall in water level. Rise in 0-2m was recorded in 33 (41.25%) stations, 2-4m in 15 (18.75%) stations and >4m in 24 (30%) stations. Rise of >4m is recorded in Dimapur, Kohima, Mokochung, Mon, Peren, Tseminyu and Wokha district. Fall in the range of 0-2m is recorded in all the 8 stations.

Tripura

A total of 92 stations were analyzed for August 2025 with respect to March 2025. In these stations, 88 (95.65%) stations show rise and 4 (4.35%) stations show fall in water level. Rise in 0-2m was recorded in 62 (67.39%) stations, 2-4m in 22 (23.91%) stations and >4m in 4 (4.35%) stations. Rise of >4m is recorded in Sepahijhala, South Tripura and Unakoti districts. Fall in the range of 0-2m is recorded in 3 (3.26%) station and one station from North Tripura district have water level fall in >4m range.

4.5 Decadal Fluctuation in Water level (August 2015 to August 2024 Vs August 2025)

Arunachal Pradesh

In Arunachal Pradesh 18 stations were analysed for decadal flutctuation. In these wells,12 (66.67%) stations show rise and 6 (33.33%) stations show fall in water level. All rise and fall is in 0-2m. Minimum and maximum rise of 0.29m and 1.24m is recorded from a dug well in Kamle and Lower Subansiri districts respectively. Minimum fall of 0.08 m and maximum fall of 1.69 m are recorded from Papumpare and Namsai districts respectively.

Assam

Decadal analyses of 214 stations were done for Assam state. In these wells, 172 (80.37%) stations show rise and 42 (19.63%) stations show fall in water level. Rise is recorded in 163 (76.17%) stations in 0-2m range, 8 (3.74%) stations in 2-4m range and one station from Karbi Anglong district have >4m range rise in water level. Fall in 0-2m range is recorded in 39 (18.22%) stations, 2 (0.93%) stations are found in 2-4m range and one station also from Karbi Anglong have >4m range rise in water level. Minimum rise of 0.03 m from a dug well in Hojai and maximum rise of 8.03 from a dug well in Karbi Anglong district is recorded respectively. Minimum fall of 0.02m and maximum fall of 7.80m is recorded from dug wells in Tinsukia district and East Karbi Anglong district respectively.

Meghalaya

A total of 44 stations in Meghalaya state were analyzed for August 2025 with respect to the decadal mean. In these wells, rise is recorded in 25 (56.87%) stations and fall is recorded in 19 (43.18%) stations. Rise in the range of 0-2m range is recorded in 23 (52.27%) of stations and 2 (4.55%) stations in 2-4m range. Fall in 0-2m range is recorded in all the 18 (40.91%) stations and one station in 2-4m range. Minimum rise of 0.01m is recorded from a dug well in North Garo Hills district and maximum rise of 3.84 m is recorded from a

dugwell in Ri Bhoi district. Minimum fall of 0.06m from a dugwell in East Khasi Hills district and maximum of 2.08 m fall from a dugwell in Ri-Bhoi district was recorded.

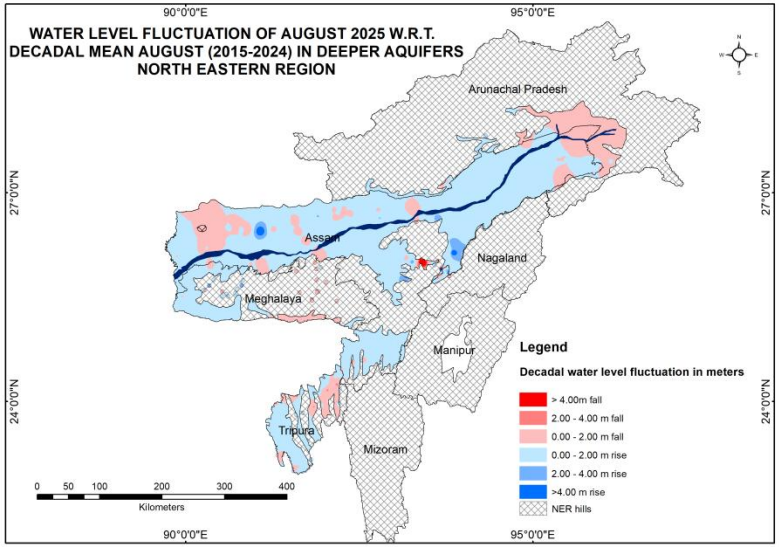


Fig. 9: Decadal Fluctuation in water level, Unconfined Aquifers (August 2015 to August 2024 Vs August 2025)

Nagaland

Decadal analysis for 12 wells in Dimapur district was done for Nagaland state. Out of these stations, 7 (58.33%) stations show rise and 5 (41.67%) stations show fall in the district. Rise in 2-4m range is found in 6 (50%) stations and one station in >4m range. Fall in the range of 0-2m is recorded in 4 (33.33%) stations and one station have water level range of > 4 m.

Tripura

In Tripura state, a total of 68 stations were analyzed. Out of these, 46 (67.65%) stations show rising trend and 22 (32.35%) stations show falling trend. Rise in the range of 0-2m range is rcorded in 44 (64.71%) and one each in 2-4m and >4m range. Minimum rise of 0.01 m from a dug well in South Tripura district and maximum rise of 9.63 from a dug well in West Tripura district is recorded respectively. Minimum fall of 0.01 m from South Tripura and Unakoti district and maximum fall of 3.59 m is recorded from dug wells in North Tripura district respectively.

6. Measurement of spring discharge in the Hilly Regions

Arunachal Pradesh

Seven (7) springs were monitored in Arunachal Pradesh in August 2025 all the springs have discharge in 0-2lps. The springs are from Papumpareand and Kamle district. The discharge of the springs ranges within 0.045-0.96 lps.

Manipur

Two springs were monitored in Manipur, both are in Senapati district. The discharge from the spring at Mao gate is 2.42 lps and Upper Kathiko spring has a discharge of 0.06 lps.

Meghalaya

A total of 21springs were measured insix districts of Meghalaya namely, Ri Bhoi, East Khasi Hills, West Khasi Hills, South West Khasi Hills, West Garo Hills and West Jaintia Hills. Discharge in the range of 0-2lps occurs in 15 springs and one spring each in 2-5 lps and 5-10lps range. The minimum discharge of 0.07 lps was reported from Nongwah, Ri-Bhoi district and maximum

of 8.69 lps was recorded from Umshing Umjapung spring in East Khasi Hills district.

Nagaland

Twenty three (23) springs were monitored in Nagaland state, where discharge in 0-2 lps is recorded in majority of springs (22) and the one spring spring remaining is from Phek district and have discharge of 2.15 lps.

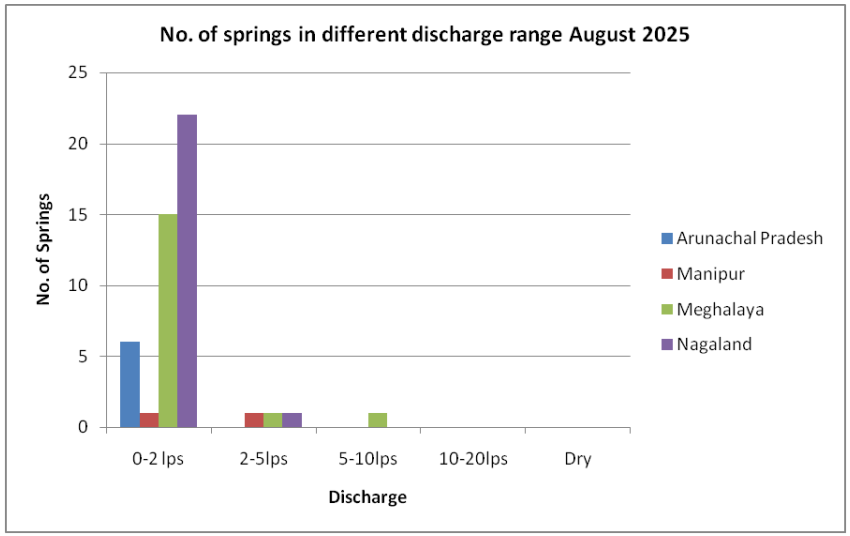


Fig.11: Number of Spring with discharge (in lps) in specified range.

Summary

As a component of the National Ground Water Monitoring Programme, the CGWB, NER conducts monitoring of the ground water conditions on a quarterly basis: in January, pre-monsoon March, August, and post- monsoon November. Additionally, a yearly assessment of ground water quality is performed in March. As of August 31, 2025, the Central Ground Water Board, NER, monitors 695 dug wells, 123 piezometers and 70 springs. This comprehensive effort aims to portray the variations in the groundwater conditions across different aquifers in the North Eastern Regions.

In August 2025, the unconfined aquifers around 98% of the area exhibited depth to water level within 10 meters below ground level. Deeper water levels of more than 20 m are reported only from East Karbi Anglong district of Assam in unconfined aquifers.

Annual water level fluctuation of August 2025 with respect to August 2023 in unconfined aquifer shows that about 55.65% of wells (276) has shown rise in water level and 44.35% of wells (220) showed fall in water level.

Annual water level fluctuation of August 2025 with respect to August 2024 in unconfined aquifer shows that about 64% of wells (411) has shown rise in water level and 36% of wells (233) showed fall in water level.

Seasonal water level fluctuation of August 2025 with respect to March 2025 in unconfined aquifer shows that about 93% of wells (559) has shown rise in water level and only 7% of wells (40) showed fall in water level.

The Decadal fluctuation (August 2015-2024 to August 2025) of ground Water Level in unconfined aquifer shows 72% of the area experienced rise in water levels and 28% wells show fall in water level when compared to the decadal August (2024-2014) mean.

Measurement of spring discharge in Hilly regions show that during August 2025, 49 springs were monitored and 45 springs have discharge in 0-2 lps range, three spring have discharge each in 2-5lps and one springs has discharge in 5-10lps range.