GROUND WATER LEVEL BULLETIN

August – 2025

JAMMU & KASHMIR

CENTRAL GROUND WATER BOARD

NORTH WESTERN HIMALAYAN REGION

Jammu

ABSTRACT

The present report discusses the regional behaviour of groundwater water levels in the phreatic aquifers of the Kashmir valley and outer plains of the Jammu region, In this area, the water supply is mainly dependent on groundwater either from the springs or shallow/ or deep aquifer systems. The groundwater also forms the main source of the surface water bodies through base flow. The groundwater level maps showed that the water levels in the Kandi formation are deeper than areas in the Sirowal formation and are significantly controlled by the monsoons. In general, the groundwater levels in Jammu Region are shallow in November. However, in the Kashmir region, August has having deepest water levels as compared to May and November due to non-monsoon rainfall, glacier melt and paddy cultivation. In certain places, particularly in urban and industrial areas, the groundwater levels are showing a declining trend in response to over-exploitation and climate change.

In Kashmir Region, the depth to water level varied from 0.45 m bgl to 15.1 m bgl. In Jammu's outer plains, the depth to water level varied from 0.05 m bgl to 36.57 m bgl. The annual fluctuation of water levels of August-25 in the Jammu Region shows a rise in 136 wells and a fall in 45 wells with no change in 4 wells. A minimum rise of 0.01 m to a maximum rise of 6.7 m whereas, a minimum decline of 0.02 m to a maximum decline of 4.13 m is recorded.

The annual fluctuation of water levels of August-25 in the Kashmir region shows a rise in 28 wells and a fall in 42 wells. A minimum rise of 0.01 m to a maximum rise of 2.4 m whereas, a minimum decline of 0.02 m to a maximum of 5.9 m is recorded.

The decadal fluctuation of water levels of August 2025 in the Jammu region shows a rise in 144 wells and a fall in 41 wells (especially in the Kandi areas of Outer plains). The minimum rise of 0.04 m to a maximum rise of 4.95 m, whereas, a minimum decline of 0.01 m to a maximum of 5.95 m is observed.

The decadal fluctuation of water levels of August 2025 in the Kashmir region shows a rise in 24 wells and a fall in 47 wells. The minimum rise of 0.01 m to a maximum rise of 3.2 m, whereas, a minimum decline of 0.01 m to a maximum of 4.68 m is observed.

1. INTRODUCTION

Groundwater bulletin is prepared by CGWB depicting changes in groundwater regime of the country through different seasons. It is an effort to obtain information on groundwater levels through representative monitoring wells. The important attribute of groundwater regime monitoring are groundwater level. The natural conditions affecting the groundwater regime involve climatic parameters like rainfall, evapotranspiration, etc., whereas anthropogenic influences include pumpage from the aquifer, recharge due to irrigation systems, and other practices like waste disposal, etc.

The Central Groundwater Board, North Western Himalayan Region is monitoring water levels in observation wells in Jammu and Kashmir State four times a year viz. May (between 20th and 31st), August (between 20th and 31st), November (1st and 10th), and January (1st and 10th). The total number of active groundwater monitoring wells are 374 (Dug Wells 273 and Piezometers 101) as of August 2025 which are located in alluvial areas of Jammu, Kathua, Samba, Rajouri, Reasi, Udhampur, Srinagar, Baramulla, Anantnag, Kupwara and Pulwama Districts. Most monitoring stations fall in valley areas of these districts. For a better understanding of the spatiotemporal behaviour of groundwater, the groundwater level contour maps were generated using IDW Interpolation methods in the GIS platform. Furthermore, the groundwater level categorization and data analysis were done using using Microsoft Excel. The present report discusses the regional behaviour of water levels in phreatic aquifers for the period August 2025 which will enable user agencies to plan development strategies.

2. STUDY AREA

Jammu and Kashmir is the northernmost Union Territory of India after Ladakh. It lies within latitudes of 32°17’ and 36°08’ N and longitudes of 73°23’ and 76°47' E. The UT has a total geographical area of 42,241 sq. km and has an international border with Pakistan in the west. The States of Punjab and Himachal Pradesh form its southern border and the UT of Ladakh forms the northern and northeastern border. Jammu & Kashmir is divided into two administrative divisions’ viz. Kashmir Division and Jammu Division. There are a total of 20 districts in J&K UT. The administrative map of the state is shown in Figure 1.

Major parts of the J&K represent high and rugged mountainous terrain. The geography of the J&K is highly varied with the highest mountain ranges in the world, extensive plateau, enormous valleys, deep gorges, and large canyons in the Middle and Higher Himalayan Regions. The UT can be divided into six distinct physiographic units Sirowal, Kandi, Shiwaliks, Kashmir Valley, Hilly Mountains, and Trans-Himalayan zone. Geological formations ranging in age from pre-Cambrian to Recent. These formations can broadly be classified into three categories viz – Hard or consolidated- rocks comprising granites, slates, quartzite, Panjal traps, limestone, etc. Semi-consolidated rocks comprising claystone, siltstone, sandstone, etc. Unconsolidated formations from Quaternary to Recent age are comprised of Clay, Silt, Sand, Gravel, pebbles, boulders, etc.

The entire UT of Jammu and Kashmir falls in the Indus River Basin Major sub-basins of the Indus System in J&K are the Jhelum Sub-basin, the Chenab Sub-basin, and the Ravi Sub-basin. The UT of J&K has great diversity in its temperature and

precipitation. Excepting the plain, south of the Siwaliks of the Jammu Division, the climate over the greater parts of the state resembles that of the mountainous and continental parts of the temperate latitudes.

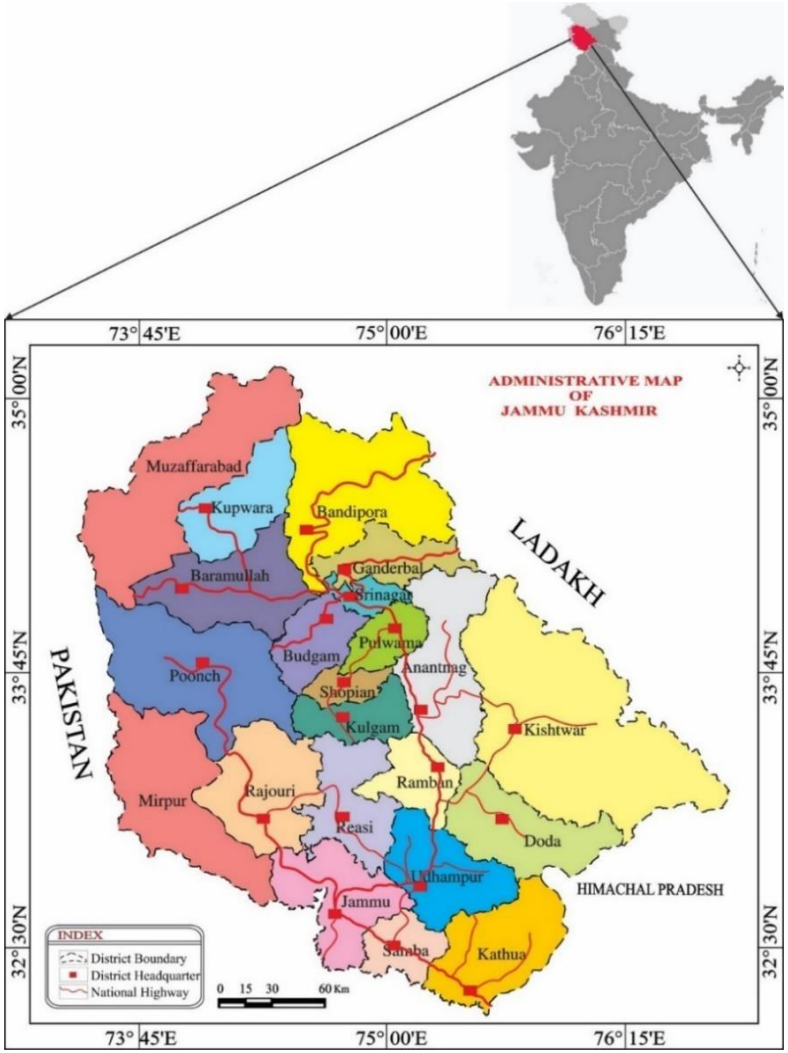

Figure 1: Administrative Map of J&K

3. GROUND WATER LEVEL MONITORING

In Jammu & Kashmir, at present, 587 Hydrograph Network Stations are being monitored during pre-monsoon and post-monsoon periods. 348 NHS exist in the Jammu Region and 219 stations in the Kashmir Region. 20 monitoring stations have been established in the Ladakh Region. District-wise number of hydrograph network stations as of May - 2025 is shown in table 1 and their locations are shown in Figure 2.

Table 1A. District-wise break-up of active Ground Water Monitoring Wells (DUG WELLS) in J&K (August-2025)

Sl. No.	Region	District	Total No of Monitoring wells	Number of Active Ground Water Monitoring Wells
1	Kashmir Region	Anantnag	0	0
2		Baramulla	25	25
3		Kupwara	43	43
4		Pulwama	1	1
5		Srinagar	1	1
6		Bandipora	4	4
7		Budgam	1	1
8		Ganderbal	1	1
9		Kulgam	0	0
10		Shopian	0	0
	Total		**76**	**76**
11	Jammu Region	Jammu	70	70
12		Kathua	31	31
13		Rajauri	36	36
14		Reasi	7	7
15		Samba	31	31
16		Udhampur	19	19
17		Doda	0	0
18		Kishtwar	0	0
19		Ramban	0	0
20		Poonch	3	3
	Total		**197**	**197**
	TOTAL J&K		**273**	**273**

Table 1B. District-wise break-up of active Ground Water Monitoring Wells (PIEZOMETERS) in J&K (August- 2025)				
Sl. No.	**Region**	**District**	**Total No of Monitoring wells**	**Number of Active Ground Water Monitoring Wells**
1	Kashmir Region	Anantnag	0	0
2		Baramulla	0	0
3		Kupwara	0	0
4		Pulwama	0	0
5		Srinagar	2	2
6		Bandipora	0	0
7		Budgam	0	0
8		Ganderbal	1	1
9		Kulgam	0	0
10		Shopian	0	0
	Total		**3**	**3**
11	Jammu Region	Jammu	30	30
12		Kathua	16	16
13		Rajauri	9	9
14		Reasi	8	8
15		Samba	10	10
16		Udhampur	13	13
17		Doda	2	2
18		Kishtwar	0	0
19		Ramban	2	2
20		POONCH	8	8
	Total		**98**	**98**
	TOTAL J&K		**101**	**101**

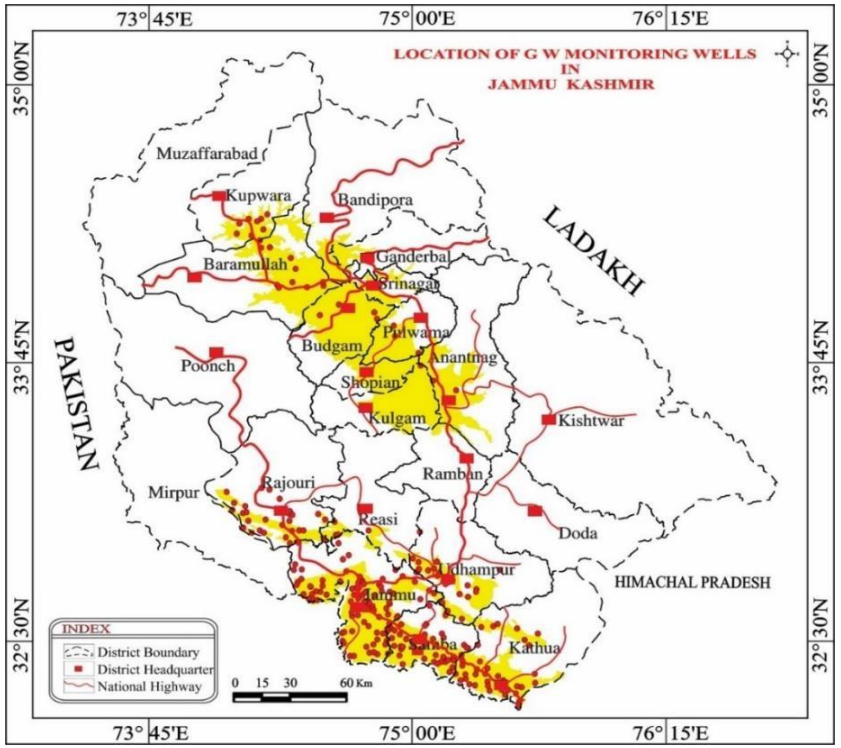

Figure 2: Location Map of Groundwater monitoring wells in Alluvial Aquifers in J&K

4. RAINFALL

The State of Jammu and Kashmir has great diversity in its temperature and precipitation. Excepting the plain, south of the Siwaliks of the Jammu Division, the climate over the greater parts of the state resembles that of the mountainous and continental parts of the temperate latitudes.

4.1 The climate of the Jammu Division

The climate of the Jammu division is sub-humid to sub-tropical. It is divisible into two parts namely (i) the plain region, lying to the south of the Siwaliks, and (ii) the mountainous region, stretching over the Middle and the Greater Himalayas in the districts of Doda, Rajouri, Poonch, and Udhampur. The climate of the plain region and Middle Himalayas including the Pir Panjal is characterized by a rhythm of seasons which is caused by the reversal of winds in the form of southwest and north-east monsoons. The reversal of pressure takes place regularly twice a year. This region has a sub-tropical climate with a hot and dry climate in summer and a cold climate in winter. It lies in the northern hemisphere above the tropic of Cancer. The Minimum and Maximum temperature of the district varies between 4°C to 47°C and the monsoon starts from the beginning of July to the first week of September. From October to June the precipitation and temperature patterns resemble closely the valley temperature zones. However, the summer rainfall and temperature resemble the precipitation pattern in the sub-tropical zone. The region receives an average annual precipitation of 1070 mm mainly in the form of rainfall. Snowfall occurs in high mountainous parts of the Jammu region due to the southwest monsoon from July to September and contributes about 80% of the total rainfall. The temperature in plain areas of the Jammu region go up to 45ºC during summer and drops to as low as 3ºC during the winter season.

4.2 The climate of the Kashmir Division

The weather and climate of the Kashmir Division are intrinsically linked with the weather mechanism of the subcontinent in general. The location of the Kashmir Valley at a high altitude (about 1600m AMSL) in the north-western corner of the subcontinent, surrounded by high mountains on all sides, gives it a unique geographical character with distinctive climatic characteristics. It experiences Temperate-cum-Mediterranean type of climate. The average annual precipitation is 660 mm. In winter, rainfall occurs from the western disturbances (temperate cyclones). These disturbances have their origin in the Mediterranean Sea. The rainfall generated by these cyclones is fairly widespread locally known as *Alamgir*. About 65% of the precipitation occurs in the form of snow during the winter season, i.e. December to February. March and April are the months of rainfall. May to September are relatively dry months. The mercury drops between -8ºC and 12ºC during winter and attains a moderate temperature of around 35ºC during summer.

5. GROUND WATER LEVEL SCENARIO (AUG 2025)

5.1.1 SHALLOW AQUIFER (UNCONFINED)

5.1.2 DEPTH TO WATER LEVEL

Depth To Water Level in Unconfined Aquifer (Aug 2025)

The water level data in respect of 273 wells for August 2025 were analysed in J&K out of which 197 fall in Jammu region and 76 in Kashmir valley. In Kashmir Region, the depth to water level varied from 0.45 m bgl (Saidpora in baramulla District) to 15.1 m bgl (Tral in Pulwama district). In Jammu's outer plains, the depth to water level varied from 0.05 m bgl (Jhakkar in Udhampur District) to 36.57 m bgl (Taryai in Jammu district).

DTWL in Kashmir Region: out of 75 wells, 14 wells (18.67%) have recorded a water level of less than 2.0 m bgl. About 49 (65.33%) of the total wells analyzed have shown depth to water level in the range of 2-5 m bgl. Whereas 11 wells (14.67%) have shown water levels in the range of 5-10 m bgl. 1 (1.33%) wells have registered deeper water levels, in the range of 10-20 m bgl. None of the wells has shown water levels below 20 mbgl.

DTWL in Jammu Region: Out of 194 wells, 118 wells (60.82%) have recorded a water level of less than 2.0 m bgl. About 45 (23.20%) of the total wells analyzed have shown depth to water level in the range of 2-5 m bgl. Whereas 16 wells (8.25%) have shown water levels in the range of 5-10 m bgl. 9 (4.64%) wells have registered deeper water levels, in the range of 10-20 m bgl. 6 wells (3.09%) have shown water levels below 20 mbgl.

Valley areas of Jammu, Samba and Kathua districts below the contact of Kandi Sirowal show water levels between 2-5 m bgl except few patches that show water levels between 0-2m bgl. In the Sirowal area of Outer Plains, most of the water levels have been recorded between 2 - 5 m bgl except a few small patches that show water levels from 0 to 2 m bgl. In the Kandi Belt, the water levels are deeper ranging between 5-20 m bgl and a few patches of northern and northwestern Jammu, having water levels more than 10 m bgl. The northwestern and northern parts of the Jammu district show water levels > 20 mbgl (Figure 3).

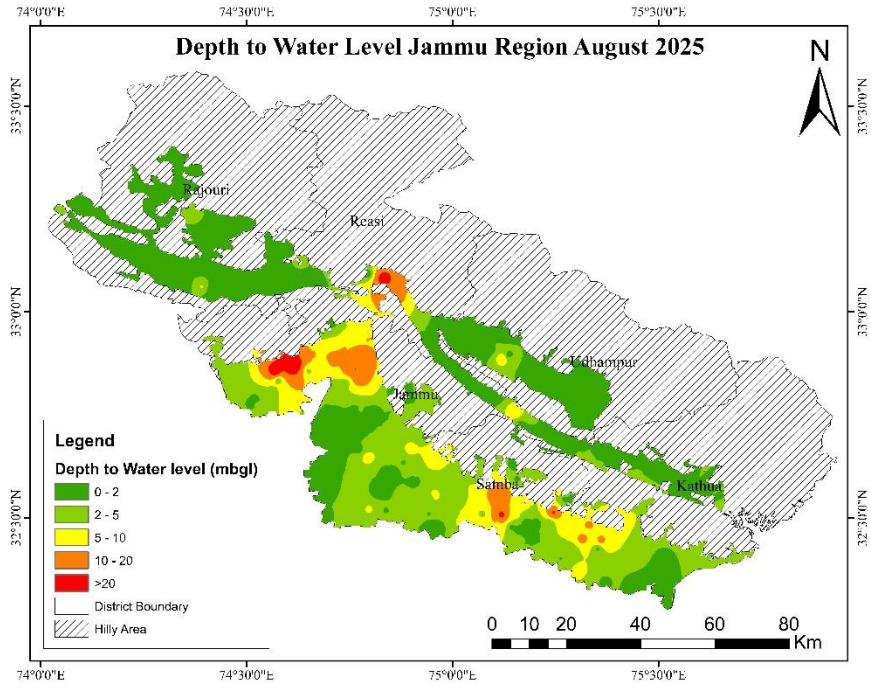

Figure 3: DTWL August 2025 Jammu Region

6. ANNUAL FLUCTUATION OF WATER LEVELS

6.1 August 2025 w. r. t. August 2024

The water level data with respect to 185 National Hydrograph Stations for August 2025 was analyzed in the Jammu Region. Majority of the wells have shown rise in water level. A total of 136 wells have shown rise and 45 wells have shown a fall in water levels and no change in fluctuation is shown by 4 well. The minimum rise of 0.01 m has shown in 03 no. of wells at Nagrota Panjgrain in Udhampur, Dadua in Reasi and at Samba in Samba District to a maximum rise of 6.7 m is shown at Sumwan in kathua district. Whereas a minimum decline of 0.02 m is recorded at Birpur in Samba district and at Kalsian in Rajouri District to a maximum of 4.13 at Battal Balliyan in Udhampur District.

The water level data with respect to 72 National Hydrograph Stations was analyzed in the kashmir Region. Majority of the wells have shown a fall in water level. A total of 42 wells have shown a fall and 28 wells have shown a rise in water levels. The minimum rise of 0.01 m at Garoora in Bandipora District to a maximum rise of 2.4 m is shown at Bramari in Kupwara district. Whereas a minimum decline of 0.02 m at Handawara Al Mustafa Colony is recorded in Kupwara district to a maximum of 5.9 m at Dohama in Kupwara district. No change in fluctuation is shown by 2 wells (2.78 %) .

Rise in water Levels:

In Jammu region rise is shown by 119 wells (64.32%) in the range of 0-2 m. 14 wells (7.57%) have registered a rise from 2-4 m bgl and 3 wells (1.62%) showing a rise of >4 m.

In Kashmir region rise is shown by 27 wells (37.5%) in the range of 0-2 m. and 01 well (1.39%) showing a rise of 2-4 m. and no well has shown rise in water level >4 m.

Fall in Water Levels:

In Jammu region 41 wells (22.16%) have shown a fall in the range of 0-2 m, 3 wells (1.62%) have shown a fall between 2-4 m, and 1 wells (0.54%) have shown fall of >4 m.

In Kashmir region 38 wells (52.77%) have shown a fall in the range of 0-2 m, 2 wells (2.77%) have shown a fall between 2-4 m, and 2 wells (2.78 %) have shown fall of >4 m.

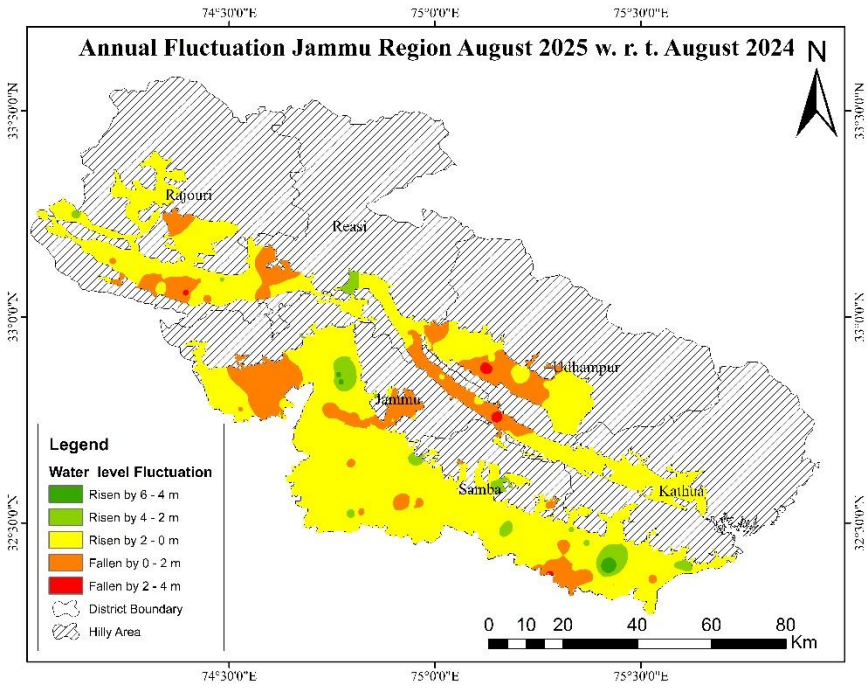

Figure 4: Annual Fluctuation August 2025 w. r. t. August 2024

6.2 August 2025 w. r. t. August 2023

The water level data with respect to 182 National Hydrograph Stations was analyzed in the Jammu region. Majority of the wells have shown a rise in water level. A total of 132 wells have shown a rise and 48 wells have shown a fall in water levels in the range of 0-2 m, 2-4 m, and >4 m, and no change in fluctuation is shown by 2 well. The minimum rise of 0.04 m at Gho Mashan in Jammu and at sunal in Udhampur District to a maximum rise of 5.46 m is shown at Sumwan in Kathua district. Whereas a minimum decline of 0.01 m is recorded at patyari-II in Kathua district to a maximum 5.72 m at Battal Baliyan in Udhampur district.

The water level data with respect to 73 National Hydrograph Stations was analyzed in the Kashmir region. Majority of the wells have shown a fall in water level. A total of 42 wells have shown a fall and 28 wells have shown a rise in water levels in the range of 0-2 m, 2-4 m, and >4 m, and no change in fluctuation is shown by 3 well. The minimum rise of 0.03 m at Khanpora in Kupwara District to a maximum rise of 1.2 m is shown at Chanjmul in Kupwara district. Whereas a minimum decline of 0.05 m is recorded at Palpora in Kupwara district to a maximum 4.3 m at Dohama in Kupwara district

Rise in water Levels:

In Jammu region Rise is shown by 114 wells (62.64%) in the range of 0-2 m. 16 wells (8.8%) have registered a rise from 2-4 m and 2 well (1.1%) are showing a rise of >4 m.

In Kashmir region Rise is shown by 28 wells (38.35%) in the range of 0-2 m.

Fall in Water Levels:

In Jammu region 42 wells (23..08%) have shown a fall in the range of 0-2 m, 4 wells (2.20 %) have shown a fall between 2-4 m, and 2 wells (1.1 %) have shown fall of >4 m.

In Kashmir region 36 wells (49.31%) have shown a fall in the range of 0-2 m, 5 wells (6.85%) have shown a fall between 2-4m. and 1 well (1.36 %) have shown a fall of >4m.

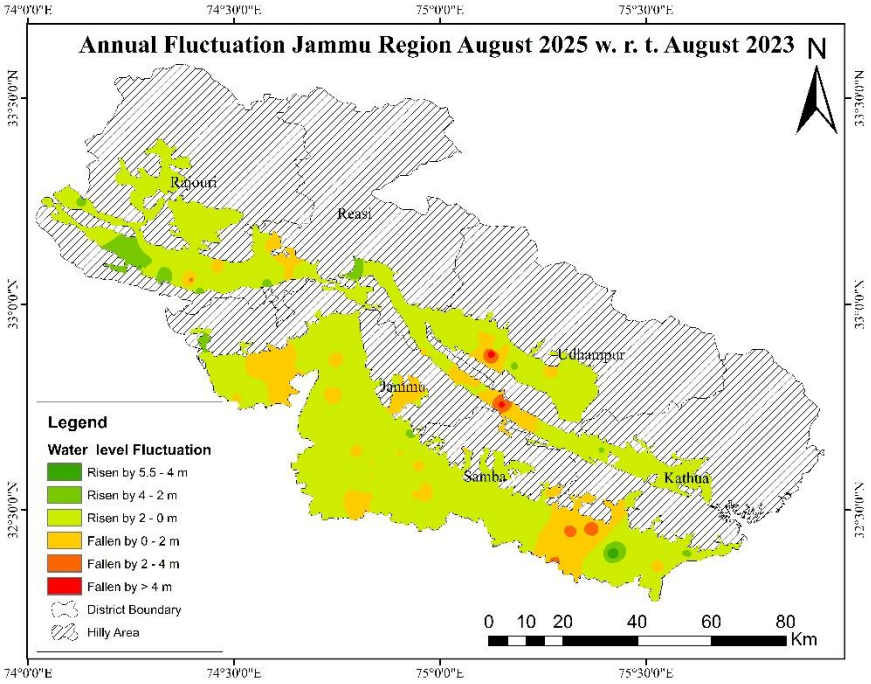

Figure 5: Annual fluctuation August 2025 w. r. t. August 2023

7. SEASONAL FLUCTUATION OF WATER LEVEL IN UNCONFINED AQUIFER

7.1 August 2025 with respect to May 2025

The water level data with respect to 190 National Hydrograph Stations was analyzed in the Jammu Region. Majority of the wells have shown a rise in water level. A total of 188 wells have shown a rise and 2 wells have shown a fall in water levels in the range of 0-2 m, 2-4 m, and >4 m. The minimum rise of 0.07 m at Pansar in Kathua District to a maximum rise of 18.52 m is shown at Bhagwal in Kathua district. Whereas a minimum decline of 0.21 m is recorded at Rangoora in Jammu district to a maximum of 0.44 m at Raiyan in Samba district.

The water level data with respect to 70 National Hydrograph Stations was analyzed in the Kashmir Region. Majority of the wells have shown a fall. A total of 60 wells have shown a decline and 8 wells have shown a rise in water levels in the range of 0-2 m, 2-4 m, and >4 m and 02 well with no change. The minimum rise of 0.03 m at Hambal Gadoora in Ganderbal District to a maximum rise of 1.58 m is shown at Regal Chowk in Srinagar district. Whereas a minimum decline of 0.05 m is recorded at Wasar Khoto in Kupwara district to a maximum of 5.70 m at Dohama in Kupwara district

Rise in water Levels:

In Jammu region rise is shown by 59 wells (31.05%) in the range of 0-2 m. 84 wells (44.21%) have registered a rise from 2-4 m bgl and 45 well (23.68%) are showing a rise of >4 m.

In Kashmir region rise is shown by 8 wells (11.43%) in the range of 0-2 m and no well has shown a rise of >2 m.

Fall in Water Levels:

In Jammu Region 02 wells (1.05%) have shown a fall in the range of 0-2 m, no well has shown fall > 2 m.

In Kashmir region 45 wells (64.29%) have shown a fall in the range of 0-2 m, 12 wells (17.15 %) have shown fall in range of 2- 4 m, and 03 wells (4.29 %) have shown fall >4 m .

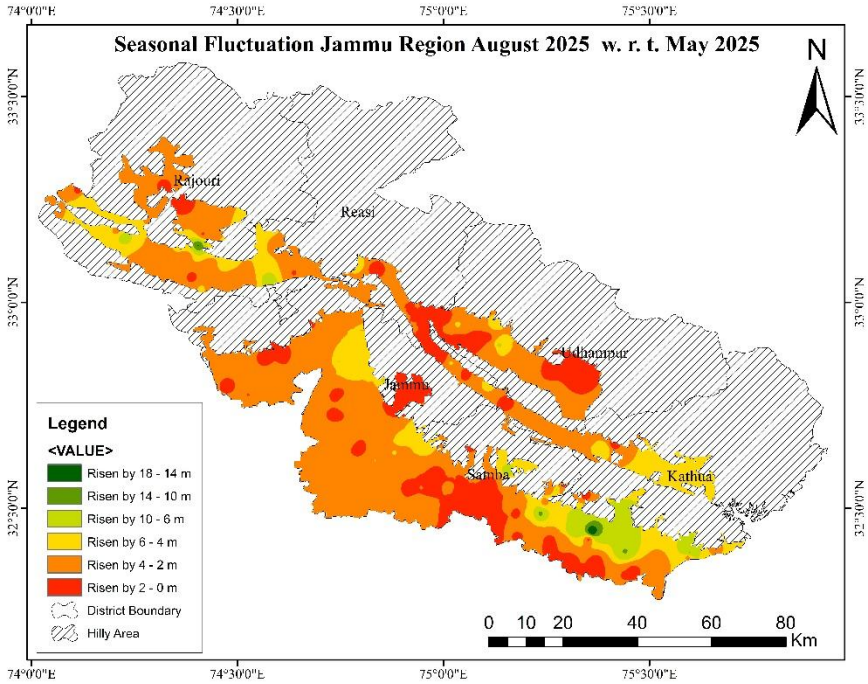

Figure 6: Seasonal Fluctuation August 2025 vs May 2025

7.2 August 2025 with respect to January 2025

The water level data with respect to 185 National Hydrograph Stations were analyzed in the Jammu Region. Majority of the wells have shown a rise. A total of 166 wells have shown a rise and 19 wells have shown a fall in water levels in the range of 0-2 m, 2-4 m, and >4 m. The minimum rise of 0.14 m at Khanpur Nagrota in Jammu District to a maximum rise of 9.7 m is shown at Bhagwal in Kathua district. Whereas a minimum decline of 0.04 m

is recorded at Manwal in Udhampur district to a maximum decline of 2.32 m at Kangri (Grid Station) in Rajouri district

Rise in water Levels:

In Jammu region rise is shown by 87 wells (47.02%) in the range of 0-2 m. 62 wells (33.51%) have registered a rise from 2-4 m bgl and 17 well (9.19%) are showing a rise of >4 m.

Fall in Water Levels:

In Jammu region 17 wells (9.19%) have shown a fall in the range of 0-2 m, 02 wells (1.08 %) have shown a fall between 2-4 m, and no well has shown fall of >4 m.

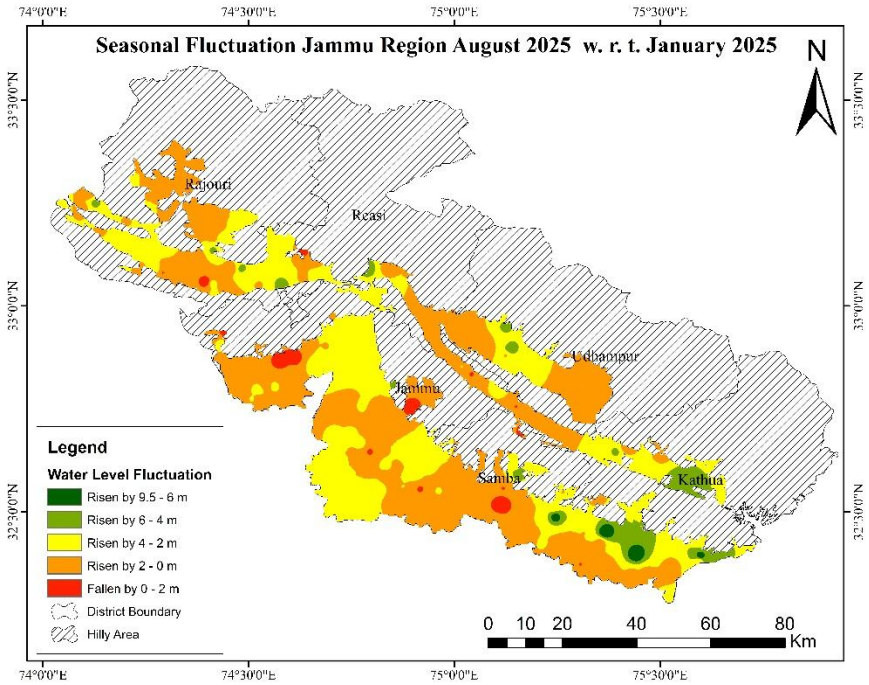

Figure 7: Seasonal Fluctuation August 2025 vs January 2025

7.3 August 2025 with respect to November 2024

The water level data with respect to 183 National Hydrograph Stations were analyzed in the Jammu Region. Majority of the wells have shown a rise. A total of 162 wells have shown a rise and 21 wells have shown a fall in water levels in the range of 0-2 m, 2-4 m, and >4 m. The minimum rise of 0.01 m at Jagati in Jammu District to a maximum rise of 9.02 m is shown at Sumwan in Kathua district. Whereas a minimum decline of 0.02 m is recorded at Dayala in Rajoiri district to a maximum decline of 2.7 m at Raiyan in Samba district.

The water level data with respect to 70 National Hydrograph Stations were analyzed in the Kashmir Region. Majority of the wells have shown a fall in water level. A total of 38 wells have shown a decline and 31 wells have shown a rise in water levels in the range of 0-2 m, 2-4 m, and >4 m and 1 well with no change. The minimum rise of 0.06 m at Badran in Baramulla District to a maximum rise of 2.79 m is shown at Railway station Sopore in Baramulla district. Whereas a minimum decline of 0.02 m is recorded at Jambazpora in Baramulla district to a maximum decline of 5.22 m at Dohama in Kupwara district

Rise in water Levels:

In Jammu region 116 wells (63.39%) have shown a rise in the range of 0-2 m, 34 wells (18.58 %) have shown a rise between 2-4 m, and 12 wells (6.56 %) have shown rise of >4 m.

In Kashmir region rise is shown by 27 wells (38.57%) in the range of 0-2 m. 4 wells (5.71%) have registered a rise from 2-4 m bgl and no well having a rise of >4 m.

Fall in Water Levels:

In Jammu region 17 wells (9.28%) have shown a fall in the range of 0-2 m, 4 wells (2.19 %) have shown a fall between 2-4 m,

and no well has shown fall of >4 m.

In Kashmir region, 34 wells (48.57%) have shown a fall in the range of 0-2 m, 3 wells (4.28%) have shown a fall between 2-4 m, and 1 wells (1.43%) have shown fall of >4 m.

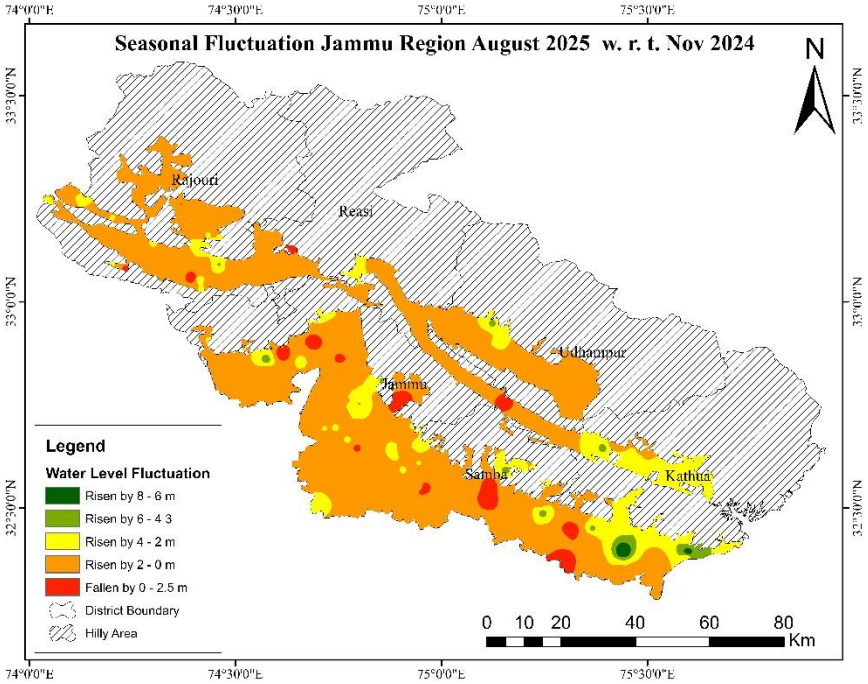

Figure 8: Seasonal Fluctuation August 2025 vs November 2025

8. DECADAL FLUCTUATION OF WATER LEVEL

8.1 August 2025 with respect to the mean of August 2015 – August 2024

In Jammu region the water level fluctuation for August 2025 Vs. (Mean of August 2015 – August 2024 has been worked out in respect of 186 wells. It is observed that a total of 144 wells have shown a rise and 41 wells have shown a decline in water level (especially in Kandi areas of Outer plains) and 01 well has shown no change.The minimum rise of 0.04 m at Nilcha in Samba district to a maximum rise of 4.95 m at Sumwan in Kathua district, whereas, a minimum decline of 0.01 m at Gho-Brahamna in Samba district to a maximum of 5.95 m at Battal Ballian in Udhampur district is recorded.

In Kashmir region the water level fluctuation for August 2025 Vs. (Mean of August 2015 – August 2024 has been worked out in respect of 72 wells. It is observed that a total of 24 wells have shown a rise and 47 wells have shown a decline in water level, and 1 well has shown no change. The minimum rise of 0.01 m at Uplona in Baramulla district to a maximum rise of 3.2 m at Goose-II in Kupwara district, whereas, a minimum decline of 0.01 m in Lassipora in Kupwara district to a maximum of 4.68 m at Dohama in Kupwara district is recorded.

8.2 Rise in water Levels:

In Jammu region rise is shown by 130 wells (69.9%) in the range of 0-2 m. 12 wells (6.45%) have registered a rise from 2-4 m bgl and 2 wells (1.07 %) are showing a rise of >4 m.

In Kashmir region rise is shown by 23 wells (31.94%) in the range of 0-2 m. and 1 wells (1.39%) are showing a rise of 2 – 4 m.

8.3 Fall in Water Levels:

In Jammu region 31 wells (16.66 %) have shown a fall in water level in the range of 0-2 m, 8 wells (4.30%) have shown a fall between 2-4 m, and 2 wells (1.07%) have shown fall of >4 m.

In Kashmir region fall is shown by 43 wells (59.72%) in the range of 0-2 m. 3 wells (4.16%) have registered a rise from 2-4 m

bgl and 1 wells (1.39 %) is showing a rise of >4 m.

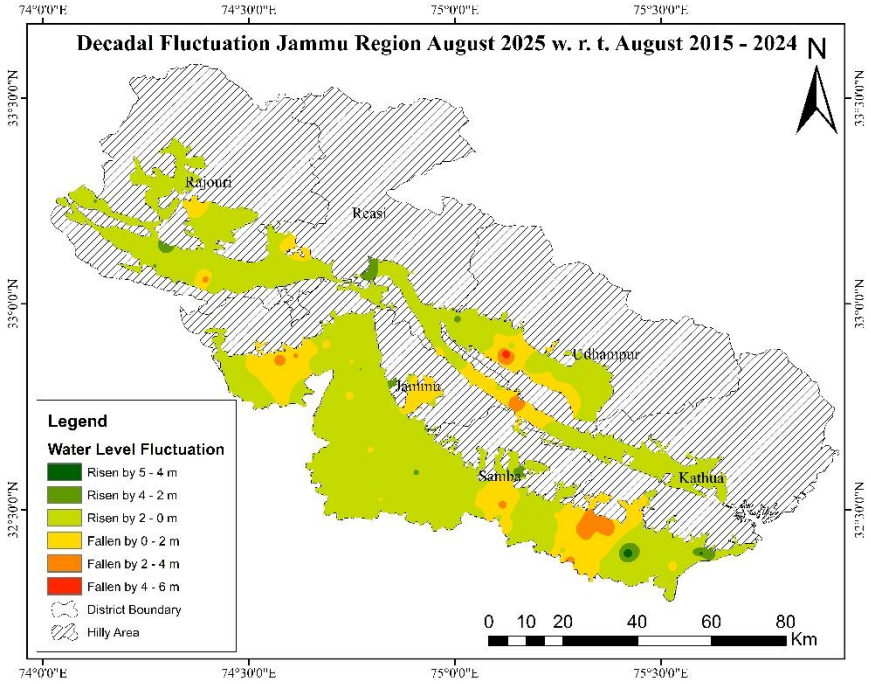

Figure 9: Decadal Fluctuation August-2025 vs Mean August 2015-2024

9. RECOMMENDATIONS

Development of Deeper Aquifers:

Deeper aquifers in both Jammu and Kashmir can be developed to meet water supply demands. Micro-level planning, based on aquifer geometry, parameters, and water resources data, is necessary for sustainable development.

Tube Well Construction Guidelines:

Tube wells should be designed to tap only iron-free aquifers, avoiding iron-rich zones through cement sealing and selective gravel packing.

Climate Change & Spring Water Conservation:

Climate change significantly threatens water resources, especially in hilly regions where springs are drying up. A systematic inventory of springs, along with the adoption of snow water harvesting and other sustainable groundwater development techniques, is required.

Well Head Protection & Sewage Management:

Groundwater- based water supplies in Jammu and Srinagar require well head protection to prevent bacterial contamination (e.g., coliform, E. coli). The lack of proper sewage and sanitation across the UT is a major cause of water contamination and needs immediate action. Proper sewage treatment and drainage systems must be implemented, especially in waterlogged areas, to prevent groundwater pollution.

Groundwater Quality & Protection:

Groundwater in Jammu and Kashmir UT is generally fresh and potable. As the primary water source—including springs, shallow, and deep groundwater—it also sustains surface water bodies through base flow during dry periods. Protection measures are essential to prevent contamination.

Iron & Gas Contamination in Kashmir Valley:

Groundwater from deeper aquifers in Kashmir contains iron and marshy gases, requiring proper treatment before supply.

Identifying iron-free aquifers through advanced scientific and geophysical exploration will help mitigate this issue.

Industrial & Urban Water Quality Monitoring:

Rapid urbanization and industrialization necessitate strict water quality monitoring. State authorities should establish monitoring networks in industrial areas like Bari-Brahmana, Gangyal, and Kashmir Valley, particularly along drains carrying industrial effluents