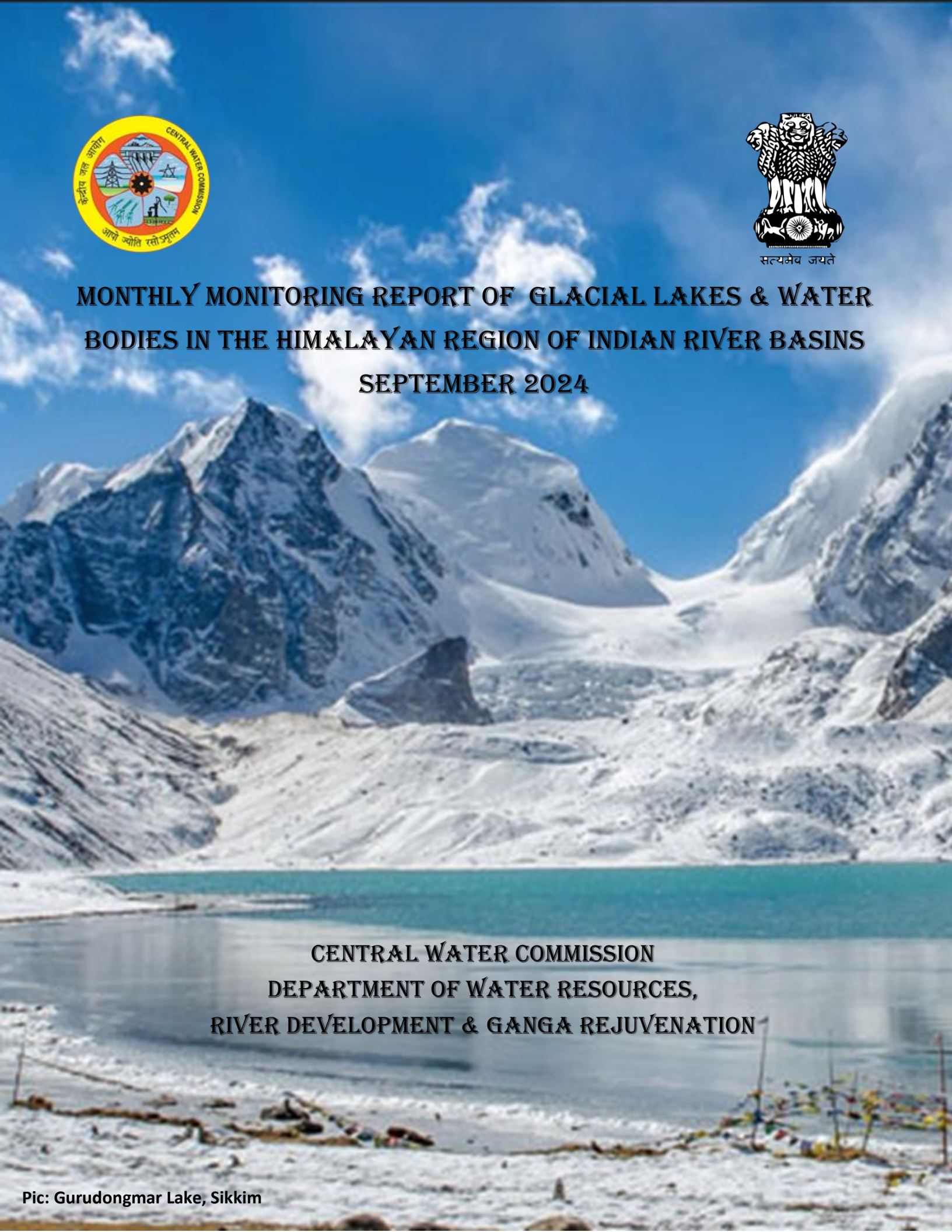


सत्यमेव जयते

MONTHLY MONITORING REPORT OF GLACIAL LAKES & WATER BODIES IN THE HIMALAYAN REGION OF INDIAN RIVER BASINS

SEPTEMBER 2024

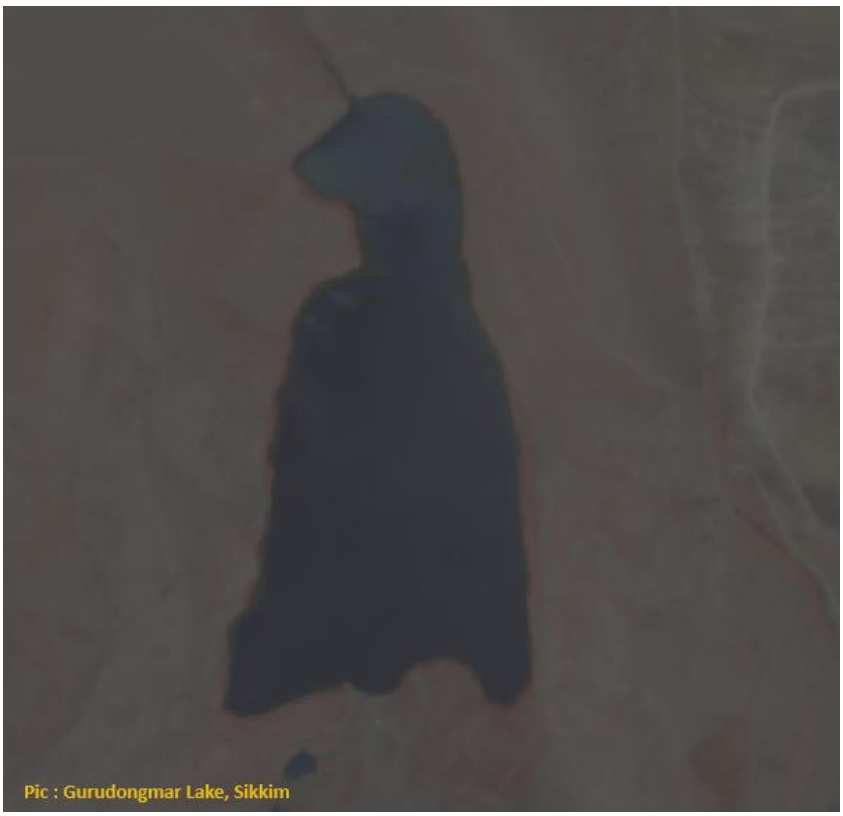
CENTRAL WATER COMMISSION

DEPARTMENT OF WATER RESOURCES,

RIVER DEVELOPMENT & GANGA REJUVENATION

Pic: Gurudongmar Lake, Sikkim

Monthly Monitoring Report of Glacial Lakes & Water Bodies in the Himalayan Region of Indian River Basins- September 2024



Morphology & Climate Change Directorate

Planning & Development Organisation

Central Water Commission

Department of Water Resources, River Development & Ganga Rejuvenation

Ministry of Jal Shakti, New Delhi

Document Control Sheet

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<tr><td>10.</td><td colspan="5">Abstract (with Keywords): CWC monitors 902 Glacial Lakes & Water Bodies in the Himalayan region and Tibetan region, draining to India on monthly basis using Remote Sensing Data. This report presents the monitoring of 902 Glacial Lakes & Water Bodies for September 2024. The Glacial Lakes located in India requiring vigorous monitoring for disaster purpose has also been identified.

Keywords: Glacial Lake, Water Bodies, Indian Himalayan Region, Satellite Images, Remote Sensing, Google Earth Engine.</td></tr>
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ABBREVIATIONS	
AR	Arunachal Pradesh
CWC	Central Water Commission
DoWR, RD & GR	Department of Water Resources, River Development & Ganga Rejuvenation
DWRIS	Development of Water Resources Information System
GEE	Google Earth Engine
GL(s)	Glacial Lake(s)
GLOF	Glacial Lake Outburst Flood
FCC	False Color Composite
ha	Hectare
HP	Himachal Pradesh
J&K	Jammu & Kashmir
LAT	Latitude
LONG	Longitude
LU/LC	Land Use /Land Cover
NDWI	Normalized Difference Water Index
NDMA	National Disaster Management Authority
NIR	Near-Infrared
NRSC	National Remote Sensing Centre
SAR	Synthetic Aperture Radar
SDC	Swiss Agency for Development and Cooperation
SK	Sikkim
TAR	Tibet Autonomous Region
UID	Unique Identification
UK	Uttarakhand
WB(s)	Water Body(ies)

Executive Summary

The Himalayan Region (HR) is facing important challenges in coping withthe adverse effects of climate change. Physically, the shrinking of mountain glaciers and expansion of Glacial Lakes are amongst the most recognizable and dynamic impacts of climate warming in this environment. In combination with this, altered stability of surrounding rock and ice walls, the potential threat from Glacial Lake Outburst Flood (GLOF) is evolving over time. Therefore, under such changing environment, a close watch on the relative change in water spread area of even smaller lakes has become very crucial in this region.

Analysis of worldwide literature on the outburst of glacial lakes and the field and theoretical experience have led to the conclusion that it is not feasible to make a reliable prediction of a specific occurrence on the basis of our existing knowledge. As direct predictions cannot be made, there is an urgent need to monitor a careful selection of prioritized lakes on a regular basis. This should be carried out in collaboration with other institutions, both nationally and internationally.

The work of monitoring of Glacial Lakes/Water Bodies (GLs/WBs) using remote sensing technique was taken up by CWC, DoWR, RD&DR, Ministry of Jal Shakti, during XI Plan period in the year 2009 under DWRIS Plan scheme. The inventory of GLs/WBs was published in September, 2011 in association with National Remote Sensing Centre (NRSC), Hyderabad based on the satellite data of Advanced Wide Field Sensor (AWiFS) of the Indian Remote Sensing Satellite, Resourcesat-1 collected from May-Nov, 2009. This inventory is therefore hereafter referred as *Inventory of Glacial Lakes & Water Bodies (2011).* As per this inventory, there are 2028 GLs/WBs with size more than 10 ha in the Himalayan Region draining towards India. The country wise & basin wise details of the inventory are given in **Table ES.1.**

Table ES.1: Country wise & Basin wise Distribution of Glacial lakes and Water bodies above 10 Ha(in Nos.)

Country-wise Distribution					Basin-wise Distribution			
Country	**Glacial Lakes (>10 Ha)**	**Water Bodies (>10 Ha)**	**Total (>10 Ha)**		**Basin Name**	**Glacial Lakes**	**Water Bodies**	**Total**
India	60	448	508		Brahmaputra	294	1099	1393
Bhutan	77	124	201		Ganga	178	105	283
Nepal	57	45	102		Indus	31	321	352
China	309	904	1213		**Total**	**503**	**1525**	**2028**
Myanmar	-	4	4					
Total	**503**	**1525**	**2028**					

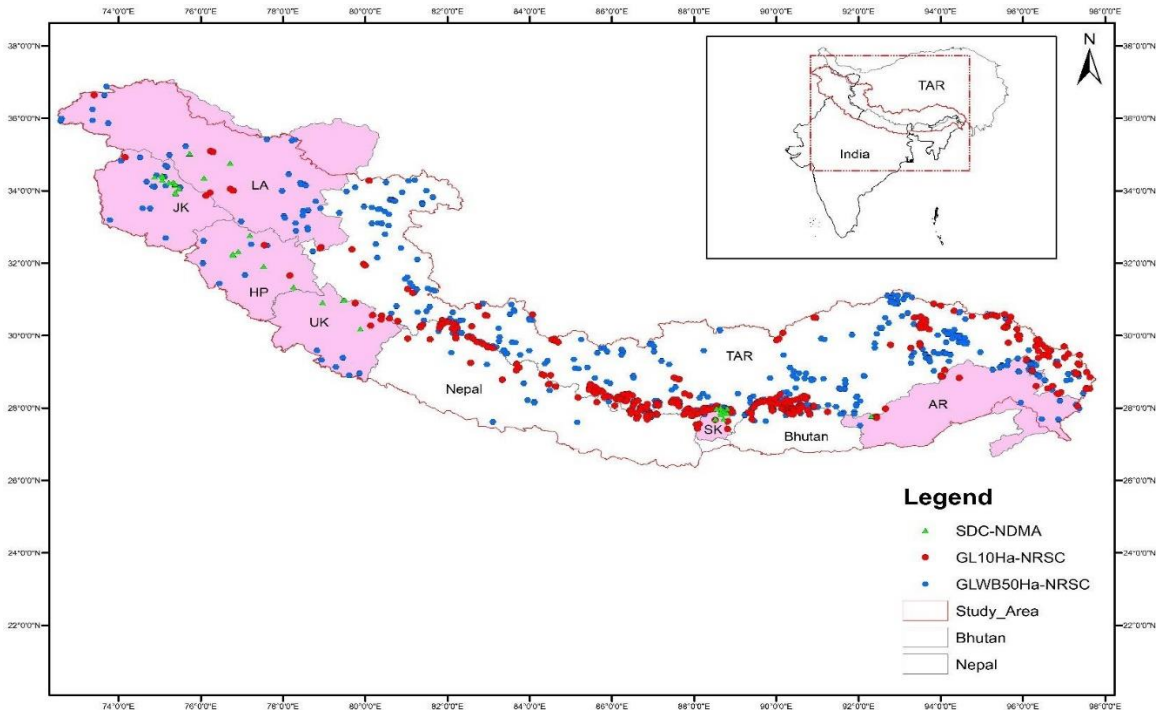
Monitoring of 477 GLs/WBs with size more than 50 ha, sourced from Glacial Lake Inventory 2011, for change in water spread area, was carried out during monsoon season (September to October) every year since 2011. The monitoring activity initiated in NRSC was continued till 2015. CWC has taken up monitoring during 2016 and the work was undertaken by downloading and manually digitising Advanced Wide Field Sensor (AWiFS) Satellite imageries procured/ downloaded from NRSC and processing them in Arc GIS. This continued till 2021. From 2022, monitoring of additional 425 GLs with sizes of 10ha to 50ha was also included. This includes 385 Glacial Lakes with water spread area between 10-50 Ha from Glacial Lake Inventory (2011) and 40 high priority Glacial Lakes identified by Swiss Agency for Development and Cooperation (SDC) for NDMA. Thus, currently CWC is monitoring a total of 902

GLs/WBs. High resolution multi-spectral and microwave (SAR) images of foreign satellites at 10 m resolution have been processed and analysed in open-source cloud computing platform Google Earth Engine using automatic algorithm which has been developed in-house. Visual inspection & manual digitisation has been used to supplement the automatic algorithm to complete the task. The Monthly Monitoring Report is shared with all stakeholders through email for further necessary action. The reports are also e-published on CWC website for any time access by the concerned *(https://cwc.gov.in/glacial-lakeswater-bodies-himalayan-region)*. The abstract of 902 GL/WB is given in **Table ES.2.**

Table ES.2: Abstract of 902 GLs/WBs

Country/ Area	State/ Union Territory	No of Glacial Lakes					No of Water Bodies				Grand Total
		Indus Basin	Ganga Basin	Brahma-putra Basin	Total		Indus Basin	Ganga Basin	Brahma-putra Basin	Total	
India	Ladakh	15	0	0	15		26	0	0	26	41
	Jammu & Kashmir	15	0	0	15		16	0	0	16	31
	Himachal Pradesh	10	0	0	10		5	0	0	5	15
	Uttarakhand	0	9	0	9		0	6	0	6	15
	Sikkim	0	0	42	42		0	0	1	1	42
	Arunachal Pradesh	0	0	9	9		0	0	25	25	35
	Total	40	9	51	100		47	6	26	79	179
	India Total	100					79				179
Transboundary	China	12	110	187	309		49	19	191	259	568
	Bhutan	0	0	71	71		0	0	11	11	82
	Nepal	0	64	0	64		0	9	0	9	73
	Total	12	174	258	444		49	28	202	279	723
	Transboundary Total	444					279				723
Grand Total		544					358				902

Map of Study Area showing Glacial Lakes and Water Bodies being monitored by CWC



Limitations and Assumptions:

Limitations:

- Glacial lake identification can be done either using visual interpretation or automatic mapping methods. The automatic mapping procedures have limitations due to varying terrain conditions such as lakes situated in the shadow portions of mountains, presence of snow cover, cloud cover, lakes being partly frozen, etc. As lake water absorbs the incident radiation making it appear in darker tone and colour in the standard FCC of satellite data, similar response also prevails over shadow region of clouds or mountains on surface, which may lead to incorrect mapping. Moreover, a mountain shadow covering a lake partly/completely within its vicinity, also makes it difficult to accurately map the lake boundary.
- A few Glacial lakes could not be mapped owing to the constraints such as Glacial lakes being under frozen condition, presence of snow or cloud cover over the lakes, lakes under mountain shadow or lakes in dried up condition.

Assumptions:

- Inclusion or exclusion of water pixels near lake boundaries depending on more than or less than certain fraction of its area falling within the lake boundary.

This document presents the analysis and results of monitoring of 902 GL&WBs for September 2024. The lakes are analysed for change in water spread area with respect to area of Inventory 2011 and are categorized into 5 classes.

(i) increase in water spread area greater than 40%

(ii) increase in water spread area up to 40%

(iii) no change in water spread area

(iv) decrease in water spread area

(v) change detection not performed due to reasons such as frozen condition, dried up condition, cloud cover etc.

The change detection in water spread area of 477 GLs & WBs greater than 50 Ha have been calculated for the following three cases.

- Difference between the current area of lake and base year area(2011)
- Difference between the current area of lake and Last five years average area(2019-2023)
- Difference between the current area of lake and Last ten years average area(2014-2023)

The minimum of change observed from the above three cases has been adopted to identify increase, decrease and no change in water spread area.

As the monitoring of 385 GLs with water spread area between 10 Ha & 50 Ha was initiated in 2022, the change detection in water spread area has been calculated for the following two cases

- Difference between the current area of lake and base year area(2011)
- Difference between the current area of lake and last two years average area(2022-2023)

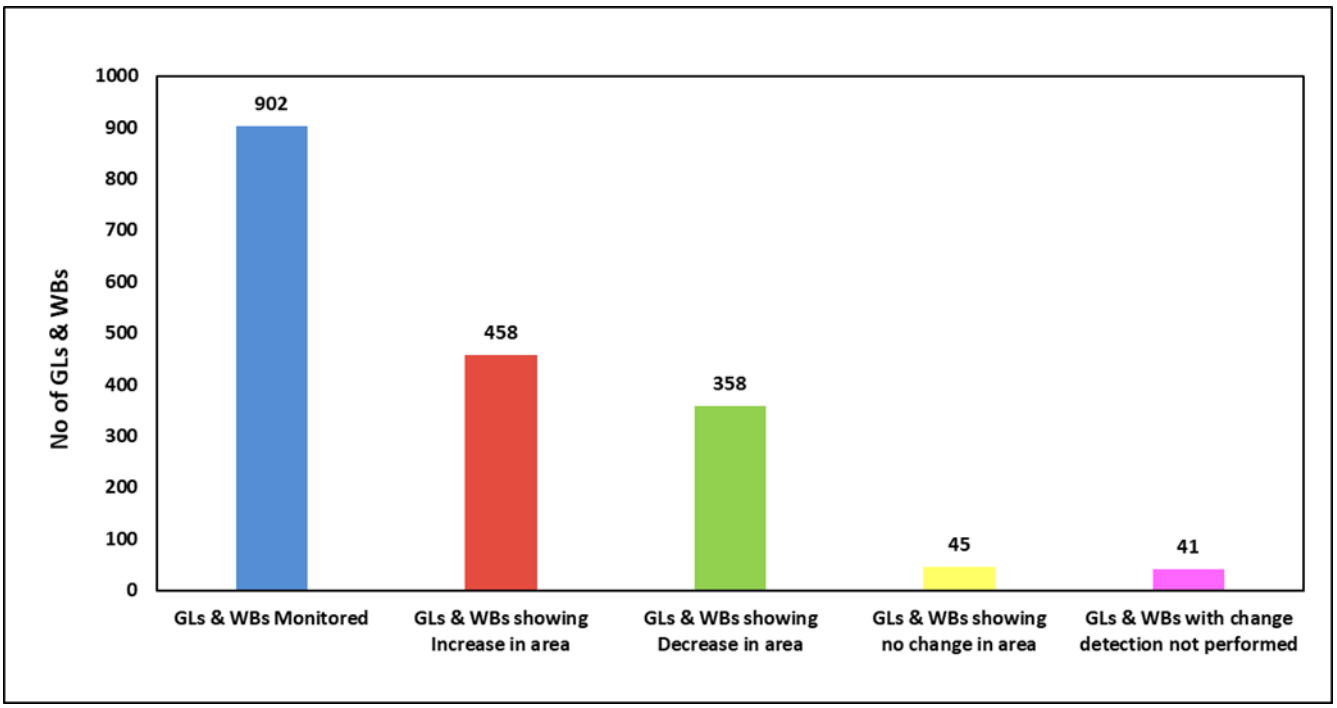
The minimum of change observed from the above two cases has been adopted to identify increase, decrease and no change in water spread area.

For the remaining 40 GLs, as the inventory details (base year 2011) are not available and monitoring data being available only since 2022, the change detection in water spread area has been calculated as the

- Difference between the current area of lake and last two years average area(2022-2023)

The number of lakes in each class has been identified. The lakes showing an increase in water spread area greater than 40% have been identified as those requiring vigorous monitoring for disaster purpose.

Results:



Results of Monitoring September 2024

Conclusions:

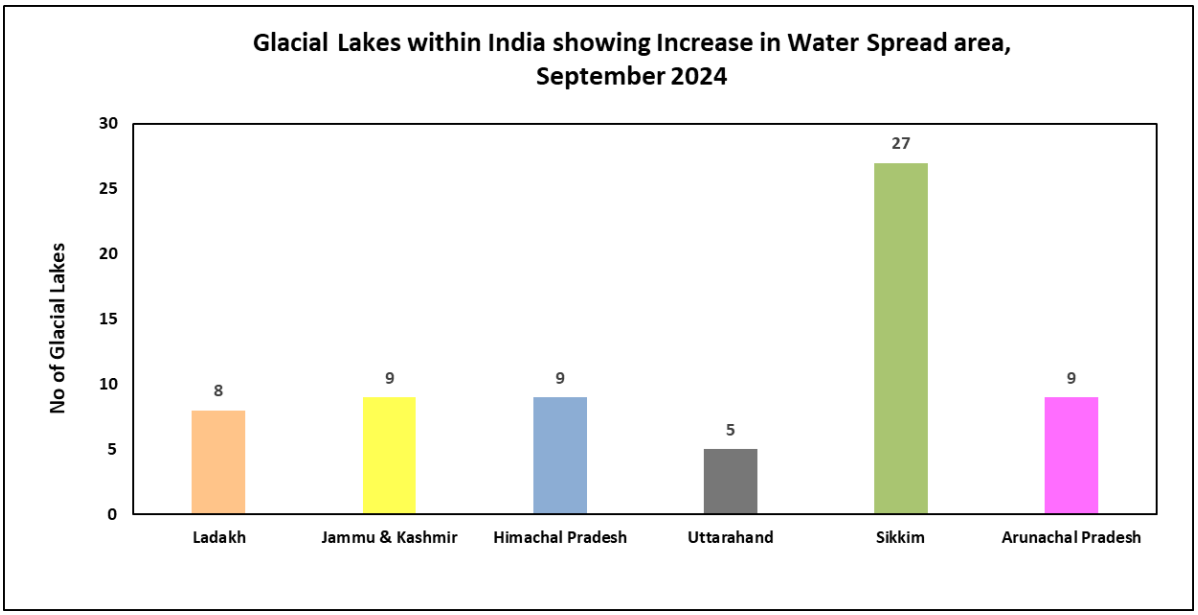
- **2 Glacial Lake and 14 Water Bodies** (>50Ha area) show increase in area greater than 40% when change detection was carried out with respect to base year area(2011), average area of last 5 years(2019-2023) & average area of last 10 years(2014-2023). The Glacial Lake and Water Bodies are located in China.
- 26 nos. of Glacial Lakes & Water Bodies have been merged to 13 nos. of Glacial Lakes & Water Bodies & combined area of merged glacial lakes and water bodies has been shown against respective glacial lakes and water bodies. However, merging and demerging of lakes is a dynamic process; hence figure of 902 Glacial Lakes & Water Bodies has been kept intact for analysis part. Details of merged Glacial Lakes & Water Bodies are as under.

Sl. No.	ID	GL/WB	Location	Remarks
1	03_71G_008	WB	China	Merged with nearby lake not in inventory 2011
2	03_71K_011	WB	China	Merged with nearby lake not in inventory 2011
3	03_82N_032	GL	China	Merged with nearby lake not in inventory 2011
4	03_62O_040	WB	China	Merged with nearby lake not in inventory 2011
5	01_61C_014	WB	China	Merged with each other
	01_61C_015			
6	03_78E_009	WB	China	Merged with each other
	03_78E_010			
7	03_62O_041	WB	China	Merged with each other
	03_62O_042			
8	03_71K_007	WB	China	Merged with each other
	03_71K_009			
9	03_91C_035	GL	China	Merged with each other
	03_91C_036	GL		
10	02_71P_018	WB	China	Merged with each other
	02_71P_019	GL		
	02_71P_020	GL		
11	03_77L_048	GL	China	Merged with each other
	03_77L_053	GL		
12	01_61C_002	WB	China	Merged with each other
	01_61C_004	WB		
	01_61C_005	WB		
	01_61C_010	WB		
	01_61C_011	WB		
13	01_52H_003	GL	India (Himachal Pradesh)	Merged with each other
	01_52H_004			

- **14 Glacial Lakes (10 ha-50 Ha area)** show increase in area greater than 40% when change detection was carried out with respect to base year area (2011), average area of last 2 years (2022-2023). 8 Glacial Lakes are located in China and 1 in Bhutan. The remaining Glacial lakes are located in India **(Jammu & Kashmir- 2, Uttarakhand-1, Sikkim -2).**
- The total Inventory area of **Glacial Lakes and Water Bodies** was 5,33,401 Ha during the year 2011 which has increased to 5,91,108 Ha during the year 2024 (September). There is a **10.81%** increase in area. (*Out of 902 GL & WB, only 825 lakes were considered for this interpretation. The remaining lakes include 40 SDC lakes which have no inventory details as well 37 GLS/WBs which were not analyzed/have been merged during the month of September, 2024.)* This is shown in Figure below.
- The total Inventory area of **Glacial Lakes** was 20,362 Ha during the year 2011 which has increased to 24,362 Ha during the year 2024 (September). There is a **19.64%** increase in area.

(Out of 544 GL, only 488 lakes were considered for this interpretation. The remaining lakes include 40 SDC lakes which have no inventory details as well as 16 lakes which were not analyzed/ have been merged during the month of September, 2024.). This is shown in Figure below.

- The total Inventory area of **Glacial Lakes within India** was 1,962 Ha during the year 2011 which has increased to 2623 Ha during the year 2024 (September). There is a **33.7%** increase in area. (*Out of 100GL, only 54 lakes were considered for this interpretation. The remaining lakes include 40 SDC lakes which have no inventory details as well as 6 lakes which were not analysed/have been merged during the month of September, 2024.)*.This is shown in Figure below.
- **67 Glacial Lakes** (out of 100) located within India, as shown below, display increase in water spread area during the month of September 2024, and hence demand vigorous monitoring for disaster purpose *(Ladhak-8, Jammu & Kashmir-9, Himachal Pradesh-9, Uttarakhand- 5, Sikkim – 27 & Arunachal Pradesh-9)*.



1. Introduction

1.1 Glacial Lakes and Water Bodies

A glacial lake is a body of water with origins from a glacier. It is formed when a glacier erodes the surface before melting and the melt water fills the resulting depression. The water in Glacial Lakes accumulates behind loose naturally formed 'glacial/moraine dams' made of ice, sand, pebbles and ice residue as the glaciers melt. Various types of lakes may have different levels of hazard potential depending upon many factors such as the nature of damming materials, position of the lake, volume of the water, the nature and position of the associated mother glacier, physical and topographical conditions, and other physical conditions of the surroundings. Interaction between the risk factors and triggering processes such as ice avalanches, debris flows, rock fall, earthquake or landslides reaching a lake strongly affect the risk of a lake outburst. Moraine-dammed lakes located at the snout of a glacier have a high probability of breaching with high hazard potential and can breach suddenly leading to catastrophic floods. Such outburst floods are known as Glacial Lake Outburst Flood (GLOF).

A water Body referred in this report is the body of water retained permanently due to obstruction created naturally or artificially but not directly associated with Glaciers.

1.2 Glacial Lakes in Indian Himalayan Region

The Indian Himalayan Region (IHR) contains the world's largest number of glaciers and snow outside the Polar Regions and are aptly called Third Pole of the world. It consist of three major river systems, ie, Indus, Ganga and Brahmaputra stretching over five countries viz. India, China, Nepal, Pakistan and Bhutan.

1.3 Inventory of Glacial Lakes & Water Bodies 2011

The work of monitoring of Glacial Lakes/Water Bodies (GLs/WBs) was taken up by CWC, DoWR, RD&DR, Ministry of Jal Shakti, during XI Plan period in the year 2009, under DWRIS Plan scheme. The inventory of glacial lakes and water bodies of the Himalayan region of Indian river basins published in September, 2011 was done in association with National Remote Sensing Centre (NRSC), Hyderabad based on the satellite data of Advanced Wide Field Sensor (AWiFS) of the Indian Remote Sensing Satellite, Resourcesat-1 collected from May to November, 2009. The inventory consisted of a total of 2028 glacial lakes and water bodies with water spread area greater than 10 Ha. The country-wise and basin-wise details of the Inventory are furnished in **Table No. 1.1** and **Table No. 1.2**

Table 1.1: Country-wise details of Glacial Lakes & Water Bodies of Inventory (2011)

Country	Glacial Lakes >10 Ha (Nos.)	Water Bodies >10 Ha (Nos.)	Total >10 Ha (Nos.)
India	60	448	508
Bhutan	77	124	201
Nepal	57	45	102
China	309	904	1213
Myanmar	-	4	4
Total	**503**	**1525**	**2028**

Table 1.2: Basin-wise details of Glacial Lakes & Water Bodies of Inventory (2011)

Basin Name	Glacial Lakes (Nos.)	Water Bodies (Nos.)	Total (Nos.)
Brahmaputra	294	1099	1393
Ganga	178	105	283
Indus	31	321	352
Total	**503**	**1525**	**2028**

1.4 Objectives

The broad objectives of the study are

- To monitor the spatial extent in terms of water spread area of the Glacial Lakes &Water Bodies from the inventory on monthly basis during September to October.
- To detect temporal changes in water spread area of Glacial Lakes & Water Bodies.
- To share the report with concerned stakeholders including National Disaster Management Authority / State Disaster Management Authority for suitable action.

1.5 Limitations and Assumption

Limitations

- Glacial lake identification can be done either using visual interpretation or automatic mapping methods. The automatic mapping procedures have limitations due to varying terrain conditions such as lakes being situated in the shadow portions of mountains, presence of snow cover, cloud cover, lakes being partly frozen, etc. As lake water absorbs the incident radiation making it appear in darker tone and colour in the standard FCC of satellite data, similar response also prevails over shadow region of clouds or mountains on surface, which may lead to incorrect mapping. Moreover, a mountain shadow covering a lake partly/completely within its vicinity, also makes it difficult to accurately map the lake boundary.

- A few Glacial lakes could not be mapped owing to the constraints such as they being under frozen condition, presence of snow or cloud cover over the lakes, lakes under mountain shadow or lakes in dried-up condition.

Assumptions:

- Inclusion or exclusion of water pixels near lake boundaries depending on more than or less than certain fraction of its area falling within the lake boundary.

2. Monitoring of Glacial Lakes and Water Bodies

2.1 Study Area

The present study area covers the Glacial Lakes & Water Bodies (GLs & WBs) lying in the region of Himalaya and TAR, that drain to India, based on 2011 Inventory of NRSC. The study area extends across the countries of India, Nepal, Bhutan and China.

The Glacial Lakes and Water Bodies taken up for monitoring in the study area are as follows:

(i) **477** Glacial Lakes/Water Bodies, with water spread area greater than 50Ha which have been sourced from the inventory of Glacial Lakes & Water Bodies in the Indian Himalayan region(2011) (Ref: NRSC Report No. NRSC-RS&GISAA-WRG-CWC-Lakes- May2011-TR255).

The state-wise and basin-wise details of the 477 GLs/WBs above 50 Ha are shown in **Table.2.1**

Table 2.1: State-wise and Basin-wise details of the 477 GLs/WBs above 50 Ha (Nos.)

Country/ Area	State/UT	Glacial Lake>50Ha				Water Body >50Ha				Grand Total
		Indus Basin	Ganga Basin	Brahma-putra Basin	Total	Indus Basin	Ganga Basin	Brahma-putra Basin	Total	
India	Ladakh	3	0	0	3	26	0	0	26	26
	Jammu & Kashmir	0	0	0	0	16	0	0	16	16
	Himachal Pradesh	2	0	0	2	5	0	0	5	7
	Uttarakhand	0	0	0	0	0	6	0	6	6
	Sikkim	0	0	10	10	0	0	1	1	11
	Arunachal Pradesh	0	0	0	0	0	0	25	25	25
	Total	5	0	10	15	47	6	26	79	94
	India Total	15				79				94
Transboundary	China	1	36	40	77	49	19	191	259	336
	Bhutan	0	0	15	15	0	0	11	11	26
	Nepal	0	12	0	12	0	9	0	9	21
	Total	1	48	55	104	49	28	202	279	383
	Total Transboundary	104				279				383
Grand Total		**Total Glacial Lakes = 119**				**Total Water Bodies = 358**				477

(ii) **385** Glacial Lakes, with spatial extent greater than 10 ha, have been taken from the inventory of Glacial Lakes & Water Bodies in the Indian Himalayan region(2011) (Ref: NRSC Report No. NRSC-RS&GISAA-WRG-CWC-Lakes-May2011-TR255).

(iii) **40** Glacial Lakes, which have been listed as high priority lakes, as per "Synthesis report on GLOF hazard and risk across the Indian Himalayan Region" prepared by Swiss Agency for Development and Cooperation (SDC) for NDMA.

This adds up to a total of **425 Glacial Lakes of water spread area between 10Ha and 50Ha.** The state-wise and basin-wise details of these lakes are shown in **Table No. 2.2.**

Table 2.2: State-wise and Basin-wise details of the 425 GLs/WBs with water spread area between 10Ha and 50 Ha

Country/Area	Glacial Lake of size 10Ha -50 Ha				Grand Total (Nos.)
	State/UT	Indus Basin (Nos.)	Ganga Basin (Nos.)	Brahmaputra Basin (Nos.)	
India	Ladakh	**12**	0	0	12
	Jammu & Kashmir	**15**	0	0	15
	Himachal Pradesh	**8**	0	0	8
	Uttarakhand	0	**9**	0	9
	Sikkim	0	0	**32**	32
	Arunachal Pradesh	0	0	**9**	9
	Total	35	9	41	85
	India Total	85			
Transboundary	China	**11**	**74**	**147**	232
	Bhutan	0	0	**56**	56
	Nepal	0	**52**	0	52
	Total	11	126	203	340
	Total Transboundary	340			
Grand Total		425			

Currently, a total of **902 Glacial Lakes and Water Bodies** are being monitored by CWC. Of these, 544 are Glacial Lakes and 358 are Water Bodies. The break-up of Glacial Lakes and Water Bodies is shown in **Figure 2.1**. The abstract of state-wise and basin-wise details of the 902 GLs & WBs being monitored by CWC on monthly basis are furnished in **Table no. 2.3.**

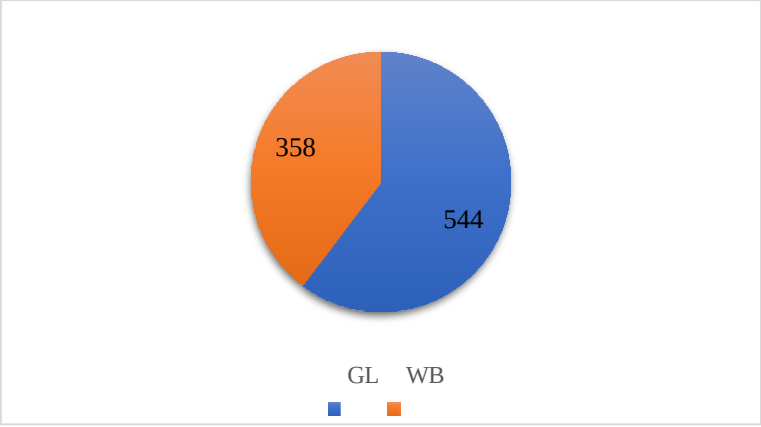


Figure 2.1: Lake Type Distribution

Table 2.3: Abstract of State-wise & Basin-wise details of GLs&WBs being monitored monthly by CWC

Country/ Area	State/ Union Territory	No of Glacial Lakes					No of Water Bodies				Grand Total
		Indus Basin	Ganga Basin	Brahma-putra Basin	Total		Indus Basin	Ganga Basin	Brahma-putra Basin	Total	
India	Ladakh	15	0	0	15		26	0	0	26	41
	Jammu & Kashmir	15	0	0	15		16	0	0	16	31
	Himachal Pradesh	10	0	0	10		5	0	0	5	15
	Uttarakhand	0	9	0	9		0	6	0	6	15
	Sikkim	0	0	42	42		0	0	1	1	42
	Arunachal Pradesh	0	0	9	9		0	0	25	25	35
	Total	40	9	51	100		47	6	26	79	179
	India Total	100					79				179
Transboundary	China	12	110	187	309		49	19	191	259	568
	Bhutan	0	0	71	71		0	0	11	11	82
	Nepal	0	64	0	64		0	9	0	9	73
	Total	12	174	258	444		49	28	202	279	723
	Transboundary Total	444					279				723
Grand Total		544					358				902

The index map of the study area is shown in **Figure. 2.2,** and the location map of the study area showing the glacial lakes and Water Bodies being monitored by CWC is shown in **Figure.2.3**.

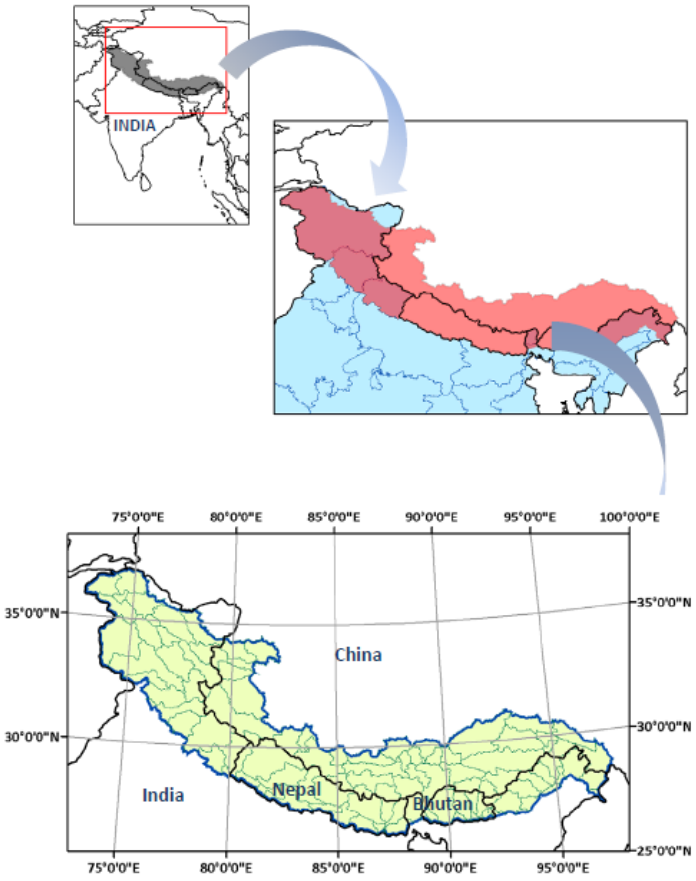


Figure 2.2: Index Map of Study Area

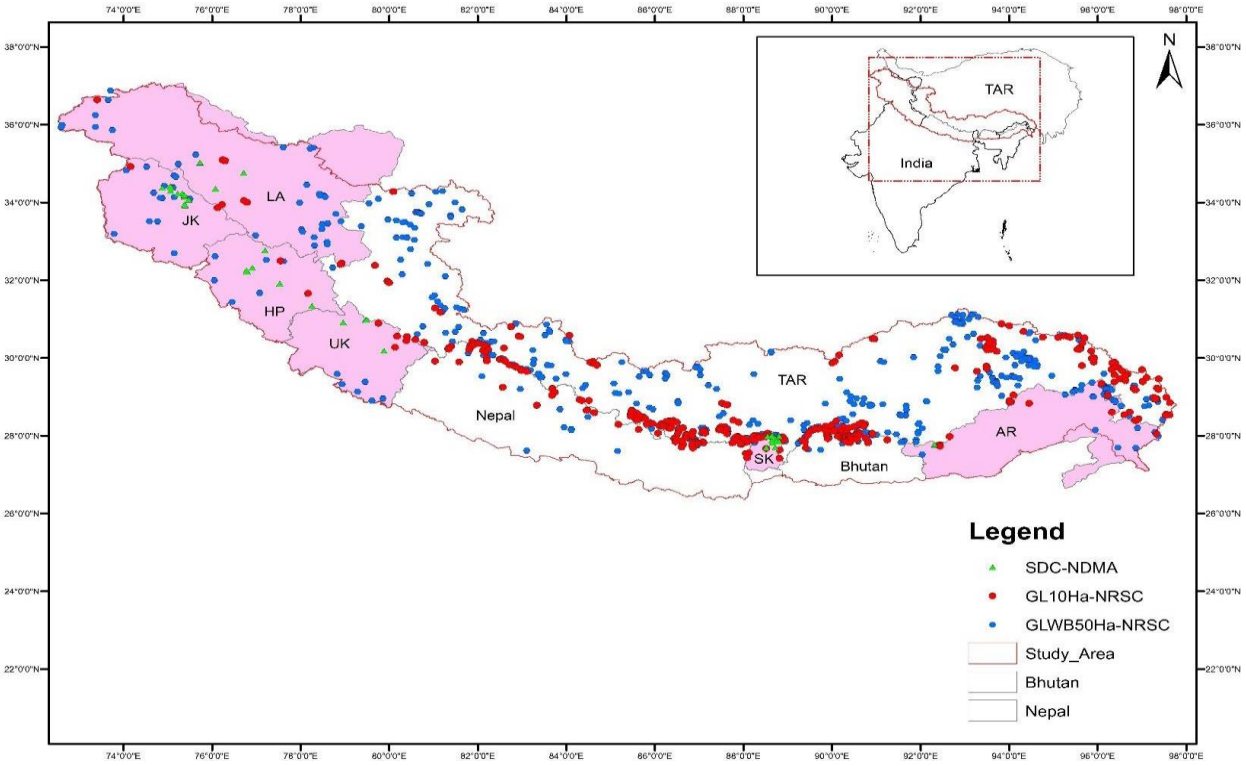


Figure 2.3: **Map of Study Area showing Glacial Lakes and Water Bodies being monitored by CWC**

The GLs & WBs are mostly located at an elevation range of 3000m to 5500m. A few of them are located above elevation of 5500m and some below 3000m. The elevation of Waterbodies range from 200 m to 5000m. This can be visualized by comparing the location map of study area (**Figure 2.3**) with the relief map of the study area shown in **Figure 2.4**. The elevation range of GLs & WBs being monitored by CWC is shown in **Figure 2.5.**

Figure 2.4: **Relief Map of the Study Area**

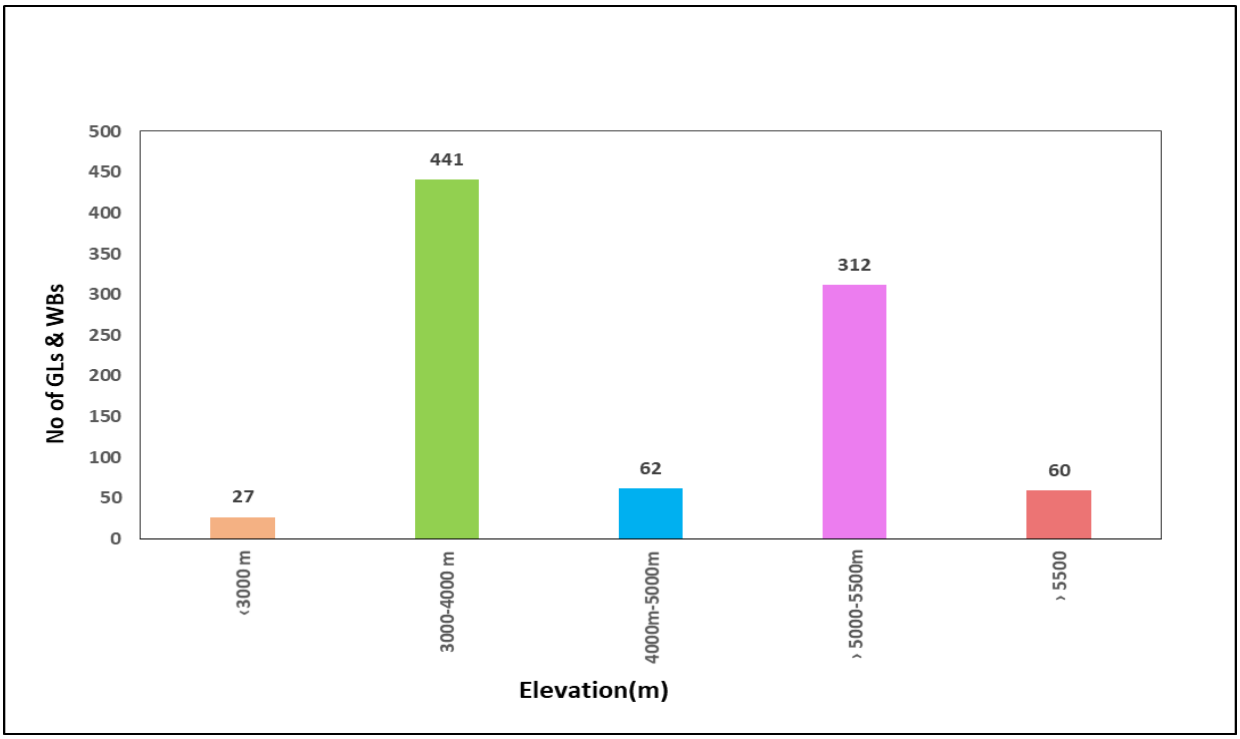


Figure 2.5: Elevation Range of GLs & WBs within Indian Himalayan Region being monitored by CWC

The country-wise distribution of Glacial Lakes & Water Bodiess being monitored by CWC is shown in **Figure 2.6**.

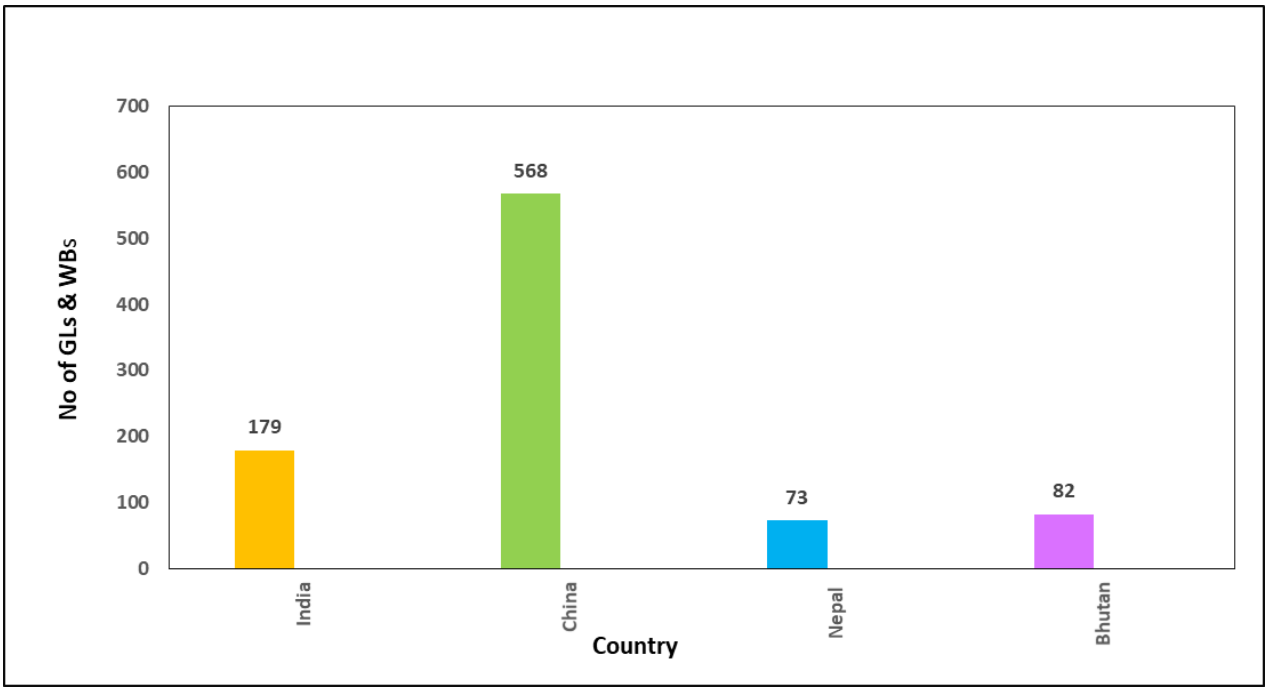


Figure 2.6:**Country-wise distribution of GLs & WBs in Indian Himalayan Region being monitored by CWC**

The state-wise distribution of Glacial Lakes being monitored by CWC within India is shown in **Figure 2.7**.

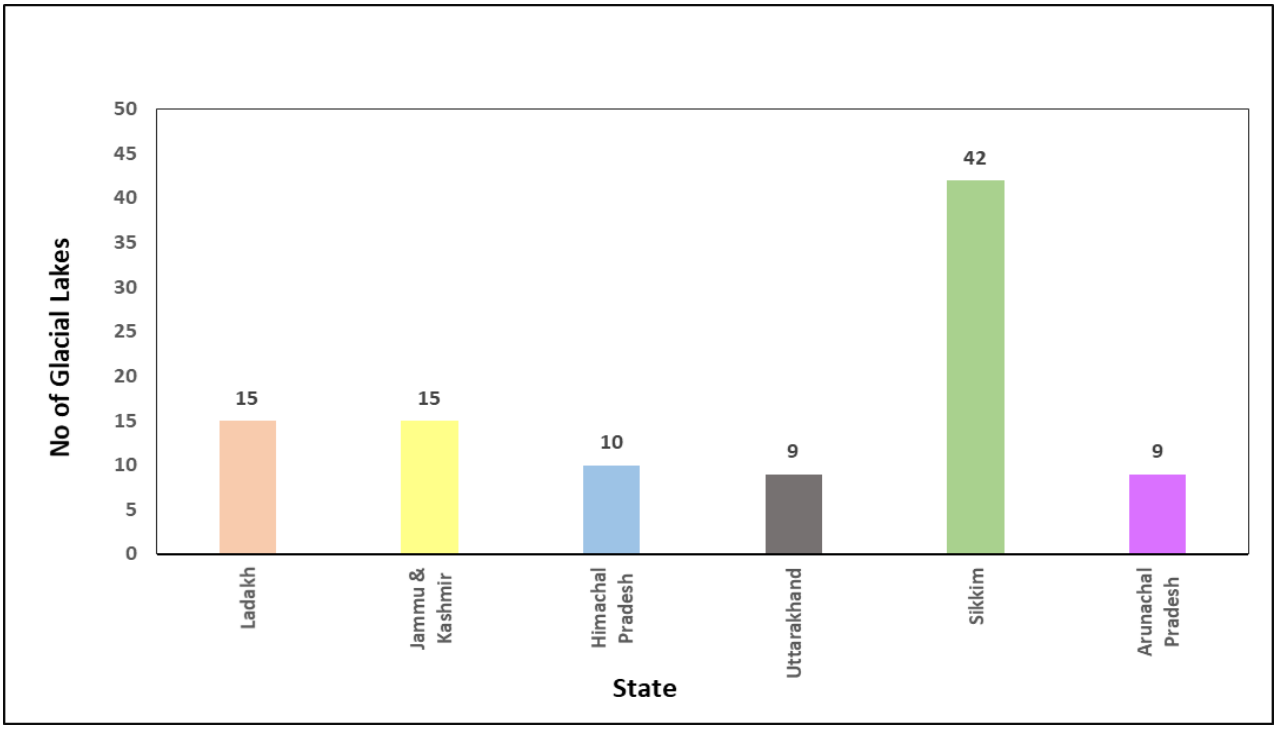


Figure: 2.7: State-wise Distribution of Glacial Lakes within India being monitored by CWC

The State-wise distribution of Water Bodies within India being monitored by CWC is shown in **Figure 2.8.**

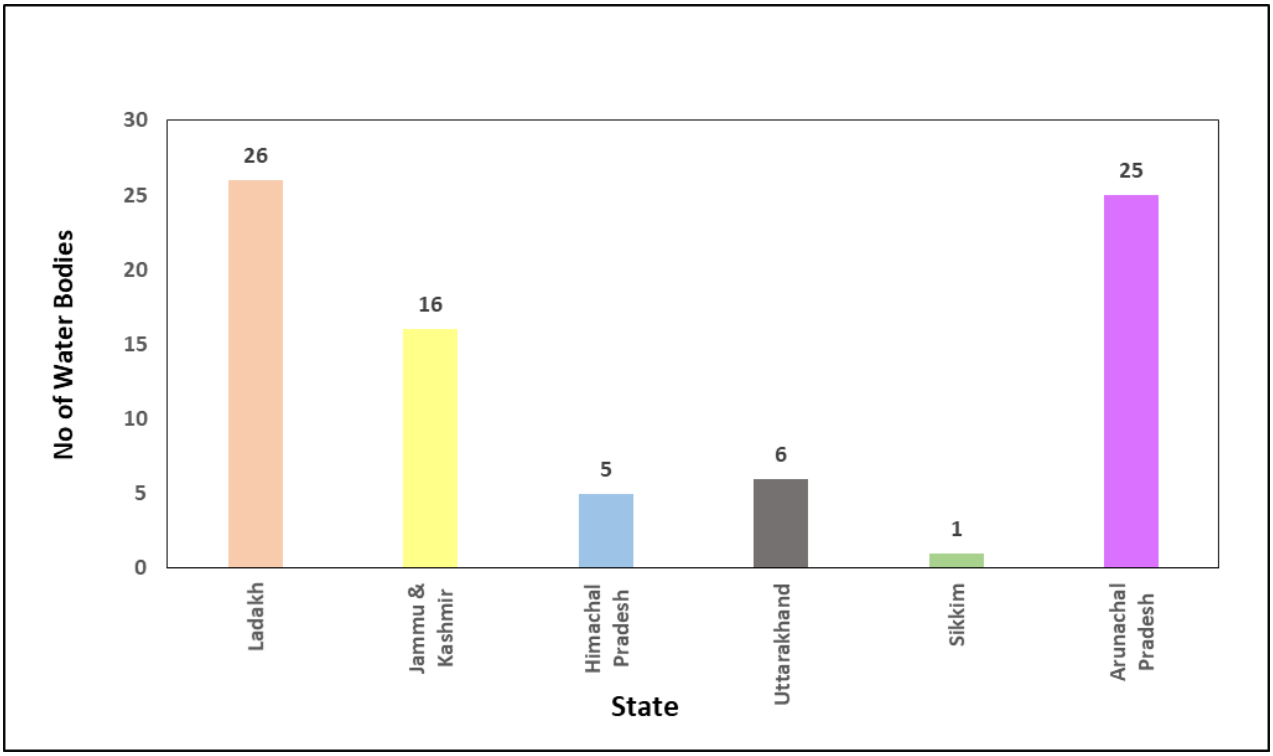


Figure: 2.8 State-wise Distribution of Water Bodies being monitored by CWC

2.2 Remote Sensing Technology

Remote sensing is the science of acquiring information about the Earth's surface without actually being in contact with it. This is done by sensing and recording reflected or emitted energy and processing, analysing, and applying that information. Satellite remote sensing technology has contributed significantly to the acquisition of Earth’s resources, thus helping in their better management. They also plays a complementary role to the conventional data collection procedures. Satellite remote sensing offers several unique advantages like quick and repetitive data collection, reliability, accuracy, geometric integrity and digital storage, which makes it an ideal tool for mapping, inventorying and monitoring the natural resources.

Monitoring of glacial lakes located in remote mountain areas with rugged terrain and inclement weather by traditional means is very tedious and difficult. Hence Remote Sensing data plays a greater role in generating information on glacial lakes. Satellites with high spatial, spectral and temporal resolution sensors are useful in deriving lake information with better accuracy at regular intervals. Visual and digital image processing and analysis techniques integrated with Geographic Information Systems (GIS) are very useful for the study and monitoring of Glacial Lakes and Water Bodies.

The monitoring was done by downloading and manually digitising Advanced Wide Field Sensor (AWiFS) Satellite imageries procured/ downloaded from NRSC till 2021. High resolution SENTINEL-2 Multi-Spectral Imagery (MSI) and Sentinel-1 Synthetic Aperture Radar (SAR) data (Microwave Imagery) have been utilized for the study, thereafter in Google Earth Engine platform.

2.2.1 Sentinel-2 Multi Spectral Imagery

The Sentinal-2 mission comprises of a constellation of two polar-orbiting satellites placed in the same sun-synchronous orbit, phased at 180° to each other. It is a wide-swath, high-resolution, multi-spectral imaging mission for monitoring of vegetation, soil and water cover, inland waterways and coastal areas. The SENTINEL-2 Multi-SpectralInstrument (MSI) has visible, near infrared and shortwave infrared sensors sampling 13 spectral bands - 4 bands at 10 m, 6 bands at 20 m and 3 bands at 60 m spatial resolution with a swath width of 290 km. The revisit frequency of each single SENTINEL-2 satellite is 10 days and the combined constellation revisit is 5 days. The Green, Red and NIR bands have been utilized for this study.

2.2.2 Sentinel-1 Synthetic Aperture Radar (Microwave Imagery)

The Sentinel-1 mission comprises a constellation of two polar-orbiting satellites, Sentinel-1A and Sentinel-1B, sharing the same orbital plane. It has C-band synthetic aperture radar (SAR) active

sensor. Synthetic Aperture Radar (SAR) has the advantage of operating at wavelengths not impeded by cloud cover or a lack of illumination and can acquire data over a site during day or night time under all weather conditions. SAR actively transmits microwave signals towards the Earth and receives a portion of transmitted energy as backscatter from the ground. The SAR instrument provides radar backscatter measurements influenced by the terrain structure and surface roughness. Generally, the more roughness or structure on the ground, the greater the backscatter. Rough surfaces will scatter the energy and return a significant amount back to the antenna resulting in a bright feature. The C-band imaging operates in four exclusive imaging modes with different resolution (down to 5 m) and coverage (up to 400 km). It provides dual polarisation capability, very short revisit times and rapid product delivery. It can transmit a signal in either horizontal (H) or vertical (V) polarisation, and then receive in both H and V polarisations. For each observation, precise measurements of spacecraft position and altitude are available. The repeat orbit cycle of each Sentinel-1 satellite is 12-day. The backscatter intensity of vertical transmit-vertical receive (X) band (VV band) data has been utilized for the study.

3. Methodology

Google Earth Engine(GEE) has been used to process the Multispectral and Microwave Sentinel image data for the monitoring of Glacial Lakes & Water Bodies. Google Earth Engine (GEE) is a cloud-based geospatial analysis platform that enables users to visualize and analyze satellite images. The Microwave and Multispectral Satellite works on different principle, and hence separate methodology has been adopted to compute the water spread area of GL&WBs in an automatic manner.

Multispectral data consist of visible and infrared bands. The spectral combination of NIR, red & green bands is used to generate false colour composite (FCC). The Normalised Difference Water Index (NDWI) is computed using green and NIR band. The process of calculation of NDWI and FCC is repeated for each GL&WB. The OTSU algorithm is further used to identify the threshold of NDWI for segregating water pixels from other types of features. The detected water pixels are further summed to calculate water spread area in the region of interest.

Microwave data of Sentinel-1 is a phase-preserving dual polarisation SAR system. The backscatter intensity of vertical transmit vertical receive (X) band has been used to distinguish water pixels from other types of features. The OTSU algorithm is further used to identify the threshold of backscatter intensity for segregation. The water spread area of each lake has been calculated by summation of water pixels in the region of interest.

The automated area of the GLs&WBs are then verified manually in GEE. The lakes which show discrepancy in automated area extraction are required to be delineated manually based on the visual interpretation. This is required as the region being monitored has rugged terrain with high mountains and deep valleys, which may lead to effects like foreshortening, layover, mountain shadows etc in the microwave/SAR data. Cloud cover hinders the performance of Multispectral Satellite images. The change detection in water spread area of 477 GLs & WBs greater than 50 Ha have been calculated for the following three cases.

- Difference between the current area of lake and base year area(2011)
- Difference between the current area of lake and Last five years average area(2019-2023)
- Difference between the current area of lake and Last ten years average area(2014-2023)

The minimum of change observed from the above three cases has been adopted to identify increase, decrease and no change in water spread area.

As the monitoring of 385 GLs with waterspread area between 10 Ha & 50 Ha was initiated in 2022, the change detection in water spread area has been calculated for the following two cases

- Difference between the current area of lake and base year area(2011)
- Difference between the current area of lake and last two years average area(2022-2023)

The minimum of change observed from the above two cases has been adopted to identify increase, decrease and no change in water spread area.

For the remaining 40 GLs, as the inventory details (base year 2011) are not available and monitoring data being available only since 2022, the change detection in water spread area has been calculated as the

- Difference between the current area of lake and last two years average area(2022-2023)

Thereafter the GLs & WBs are categorized as those with increase in water spread area greater than 40%, increase in water spread area up to 40%, no change in water spread area, decrease in water spread area and analysis not performed due to limitations in remote sensing technology such as cloud cover, frozen condition, dried up condition etc.

The detailed flow-chart on methodology for automatic monitoring of Glacial Lakes and Water Bodies using satellite images is given below in **Figure 3.1**

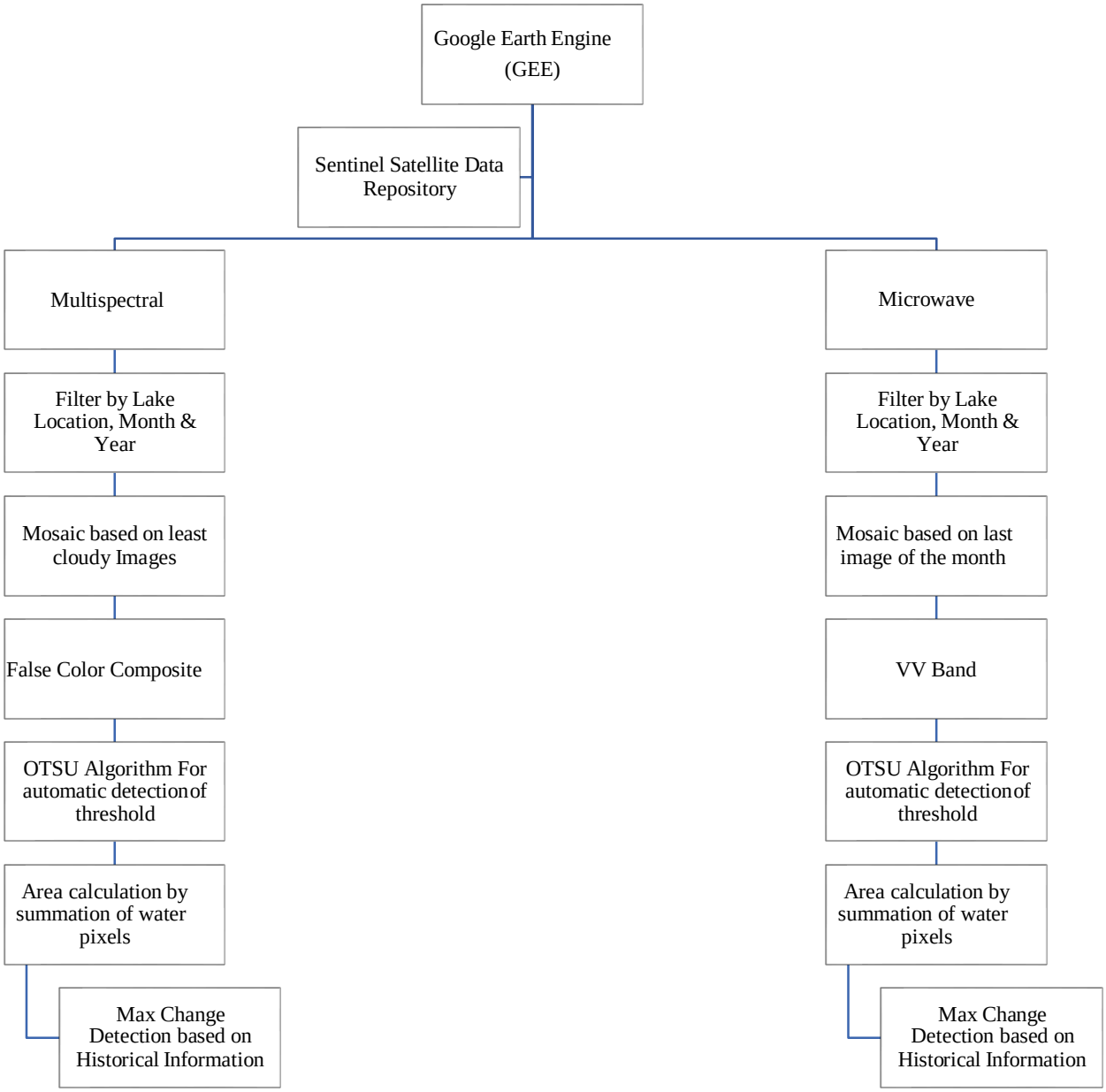


Figure 3.1: **Flowchart on Methodology for automatic monitoring of Glacial Lakes & Water Bodies using Satellite Images**

4. Results

4.1 Results of Monitoring of Glacial Lakes & Water Bodies

The water spread area of 902 Glacial Lakes & Water Bodies was calculated for the month of September 2024 in an automatic manner and manually digitized wherever required using the methodology described above. It includes **477 GL & WBs** with water spread area greater than 50ha which are being monitored since the year 2011 and **425 GLs** with water spread area between 10 Ha to 50 ha being monitored from the year 2022.

The results of change detection in water spread area of 477 GL & WBs are shown in Table 4.1 to Table 4.5.

It is observed that out of **477 GL&WBs**,

i. **16** show increase in water spread area greater than 40%

ii. **209** show increase in water spread area but less than 40%

iii. **26** show no change in water spread area

iv. **198** show decrease in water spread area

v. change detection for remaining **28** could not be performed due to reasons such as like frozen condition, dried up condition, cloud cover etc.

The results of change detection in water spread area of remaining **425 GLs** are shown in Table 4.6 and Table 4.7.

It was observed that out of 425 Glacial Lakes,

i. **14** show increase in water spread area greater than 40%

ii. **219** show increase in water spread area but less than 40%

iii. **19** show no change in water spread area

iv. **160** show decrease in water spread area

v. change detection for remaining **13** could not be performed due to reasons such as like frozen condition, dried up condition, cloud cover etc.

The same is shown in Figure.4.1.

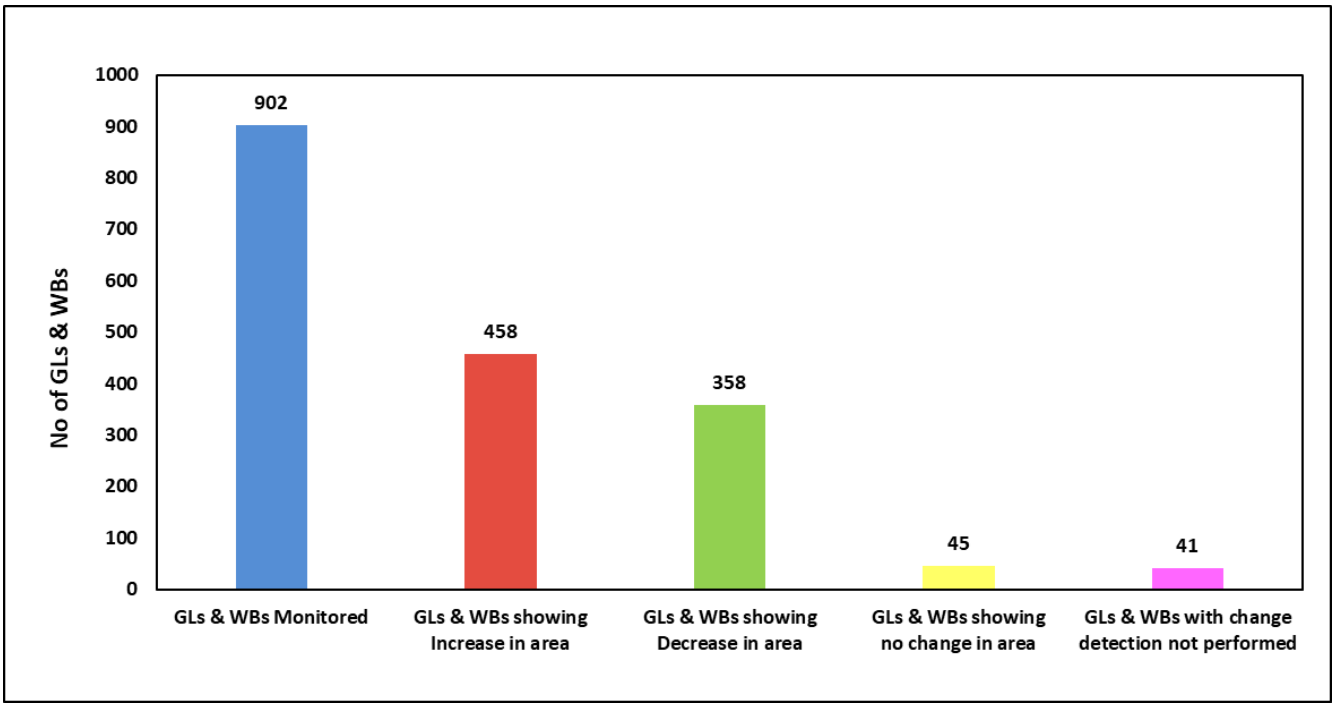


Figure 4.1: Outcome of Monitoring of GLs & WBs, September 2024

4.2 Glacial Lakes located in India requiring vigorous monitoring

Out of the 902 GLs & WBs monitored, 100 Glacial Lakes (15 GLs>50 Ha & 85GLs – 10 to 50 Ha) are located in India. The analysis indicates that

Out of 15 GLs

(i) **6** show increase in water spread area

(ii) **6** show decrease in water spread area

(iii) **2** show no change in water spread area

(iv) change detection of **1** GL could not be performed

Out of 85 GLs

(i) **61** show increase in water spread area

(ii) **18** show decrease in water spread area

(iii) **3** shows no change in water spread area

(iv) change detection of **3** GL could not be performed

The results of change detection in water spread area of 15 GLs (>50Ha) and 85 GLs (10ha-50ha) are shown in Table 4.8 and Table 4.9 respectively. The results of change detection in water spread area of **15 GLs** (>50Ha) and **85 GLs** (10ha-50ha) are shown in Table 4.8 and Table 4.9 respectively.

The state-wise distribution of Glacial Lakes located in India analyzed for the month of September 2024 is shown in figure 4.2. The lakes showing increase in water spread demand vigorous monitoring.

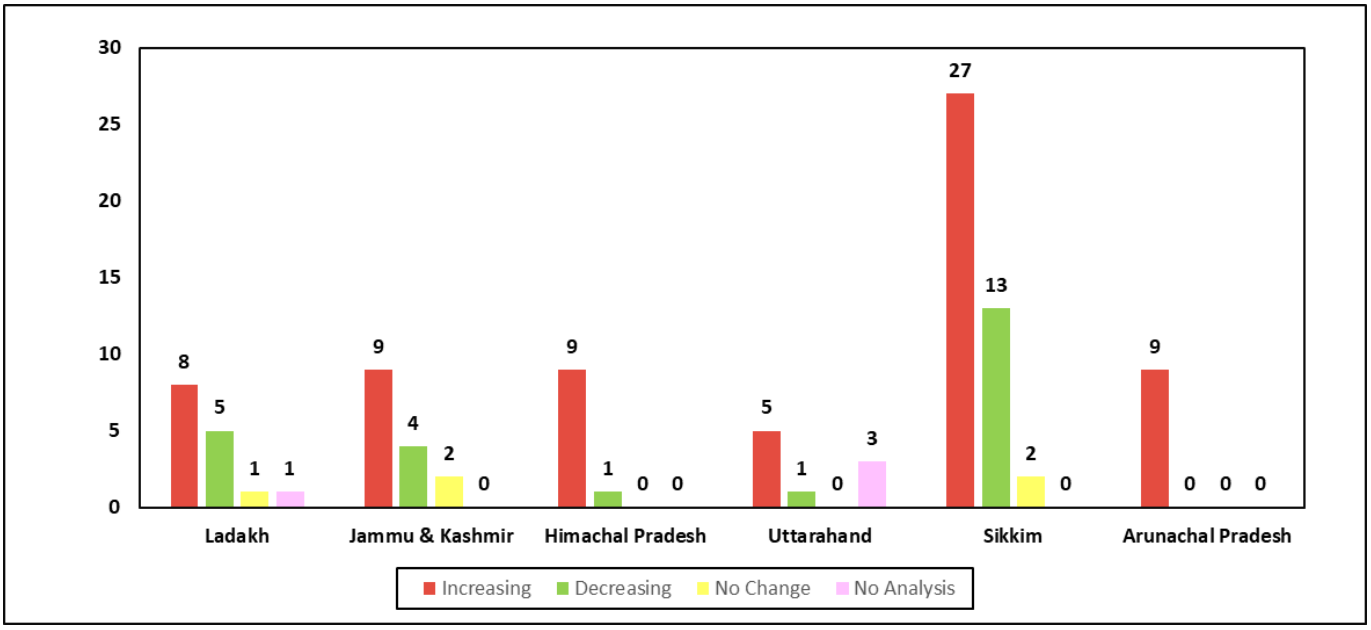


Figure 4.2: State-wise distribution of Outcome of monitoring of GLs within India, September 2024

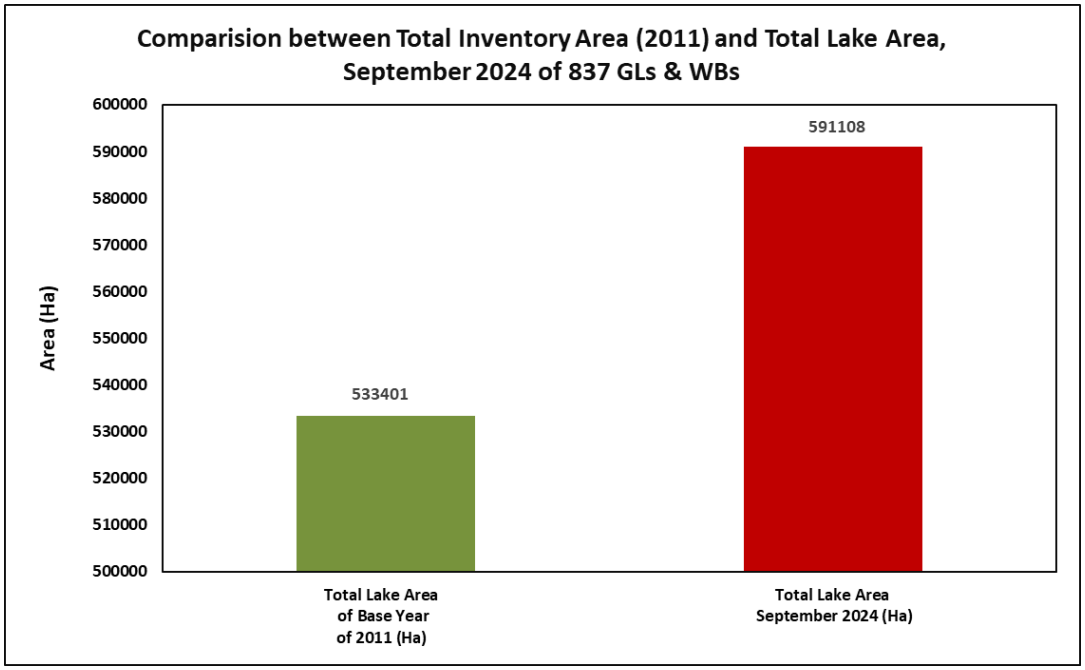
5.0 Conclusion

- **2 Glacial Lake and 14 Water Bodies** (>50Ha area) show increase in area greater than 40% when change detection was carried out with respect to base year area(2011), average area of last 5 years(2019-2023) & average area of last 10 years(2014-2023). The Glacial Lake and Water Bodies are located in China.
- 26 nos. of Glacial Lakes & Water Bodies have been merged to 13 nos. of Glacial Lakes & Water Bodies & combined area of merged glacial lakes and water bodies has been shown against respective glacial lakes and water bodies. However, merging and demerging of lakes is a dynamic process; hence figure of 902 Glacial Lakes & Water Bodies has been kept intact for analysis part. Details of merged Glacial Lakes & Water Bodies are as under.

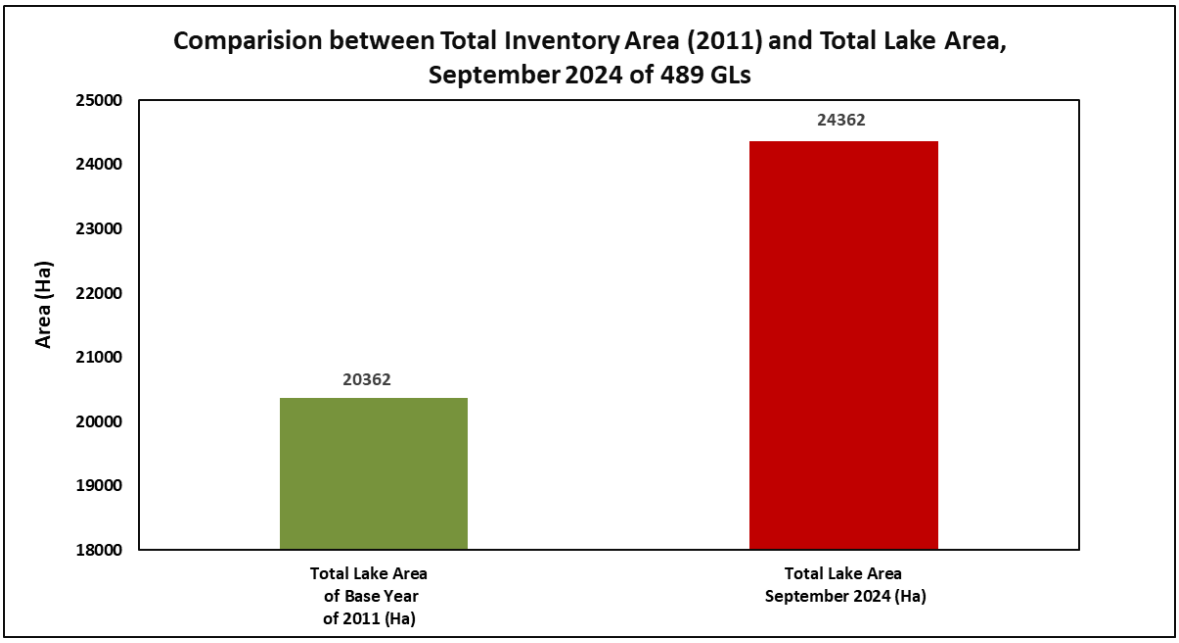
Sl. No.	ID	GL/WB	Location	Remarks
1	03_71G_008	WB	China	Merged with nearby lake not in inventory 2011
2	03_71K_011	WB	China	Merged with nearby lake not in inventory 2011
3	03_82N_032	GL	China	Merged with nearby lake not in inventory 2011
4	03_62O_040	WB	China	Merged with nearby lake not in inventory 2011
5	01_61C_014	WB	China	Merged with each other
	01_61C_015			
6	03_78E_009	WB	China	Merged with each other
	03_78E_010			
7	03_62O_041	WB	China	Merged with each other
	03_62O_042			
8	03_71K_007	WB	China	Merged with each other
	03_71K_009			
9	03_91C_035	GL	China	Merged with each other
	03_91C_036	GL		
10	02_71P_018	WB	China	Merged with each other
	02_71P_019	GL		
	02_71P_020	GL		
11	03_77L_048	GL	China	Merged with each other
	03_77L_053	GL		
12	01_61C_002	WB	China	Merged with each other
	01_61C_004	WB		
	01_61C_005	WB		
	01_61C_010	WB		
	01_61C_011	WB		
13	01_52H_003	GL	India (Himachal Pradesh)	Merged with each other
	01_52H_004			

The details of these lakes are given as footnote under Table Nos 4.1 to 4.6.

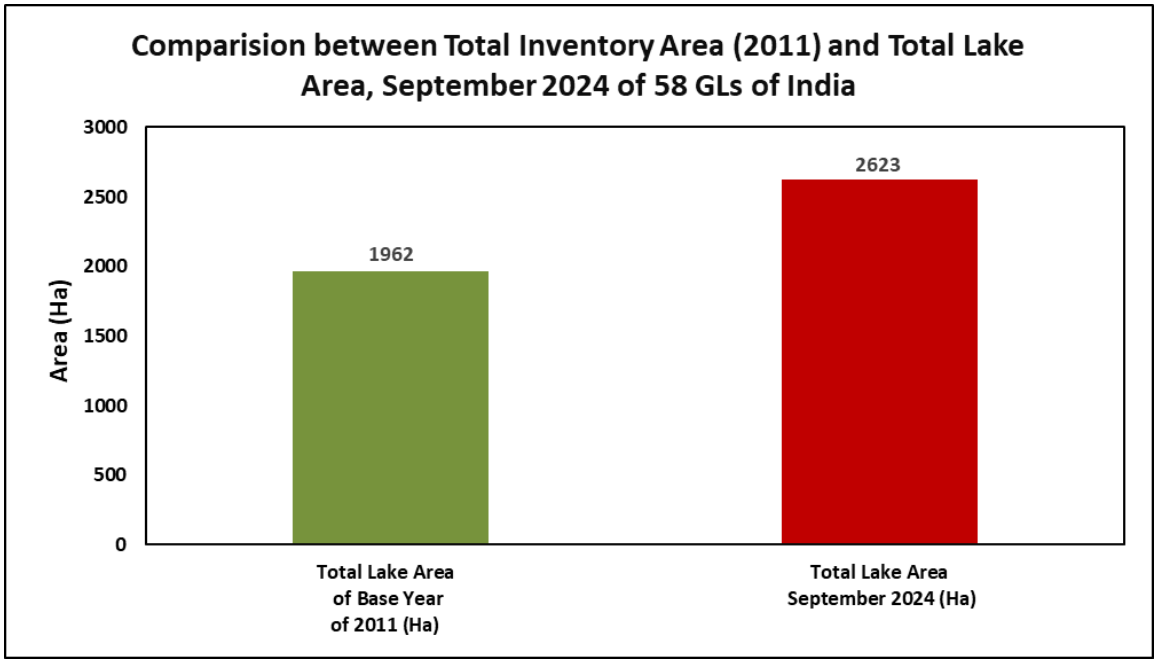
- **14 Glacial Lakes (10 ha-50 Ha area)** show increase in area greater than 40% when change detection was carried out with respect to base year area (2011), average area of last 2 years (2022-2023). 8 Glacial Lakes are located in China and 1 in Bhutan. The remaining Glacial lakes are located in India **(Jammu & Kashmir- 2, Uttarakhand-1, Sikkim -2).**
- The total Inventory area of **Glacial Lakes and Water Bodies** was 5,33,401 Ha during the year 2011 which has increased to 5,91,108 Ha during the year 2024 (September). There is a **10.81%** increase in area. (*Out of 902 GL & WB, only 825 lakes were considered for this interpretation. The remaining lakes include 40 SDC lakes which have no inventory details as well 37 GLS/WBs which were not analyzed/have been merged during the month of September, 2024.)* This is shown in Figure below.



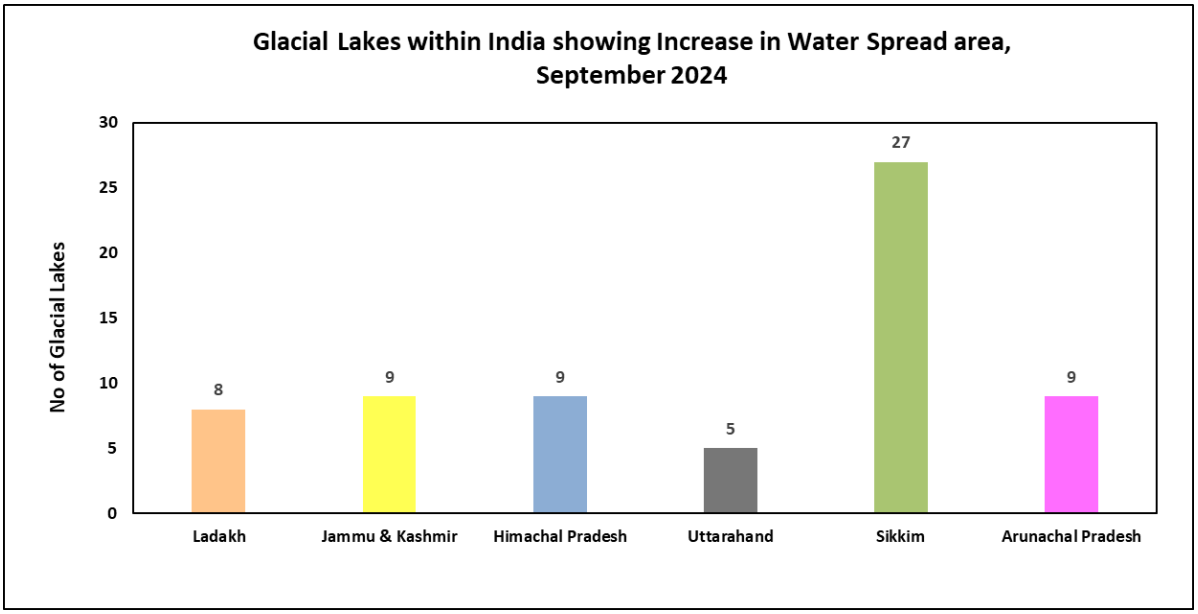
- The total Inventory area of **Glacial Lakes** was 20,362 Ha during the year 2011 which has increased to 24,362 Ha during the year 2024 (September). There is a **19.64%** increase in area. *(Out of 544 GL, only 488 lakes were considered for this interpretation. The remaining lakes include 40 SDC lakes which have no inventory details as well as 16 lakes which were not analyzed/ have been merged during the month of September, 2024.)*. This is shown in Figure below.



- The total Inventory area of **Glacial Lakes within India** was 1,962 Ha during the year 2011 which has increased to 2623 Ha during the year 2024 (September). There is a **33.7%** increase in area. (*Out of 100GL, only 54 lakes were considered for this interpretation. The remaining lakes include 40 SDC lakes which have no inventory details as well as 6 lakes which were not analysed/have been merged during the month of September, 2024.)*.This is shown in Figure below.



- **67 Glacial Lakes** (out of 100) located within India, as shown below, display increase in water spread area during the month of September 2024, and hence demand vigorous monitoring for disaster purpose *(Ladhak-8, Jammu & Kashmir-9, Himachal Pradesh-9, Uttarakhand- 5, Sikkim – 27 & Arunachal Pradesh-9)*.



- Use of a combination of Microwave satellite images in conjunction with multispectral satellite images (MSI) has largely overcome the short-comings due to obscurity from cloud cover and this has led to almost all-time and all-weather monitoring of all 902 Lakes. This has increased availability of satellite images at shorter frequency interval and will facilitate in reducing the monitoring interval in future.
- The use of Sentinel satellite images has brought the improvement of spatial resolution from 56m to10m leading to enhancement of monitoring accuracy. Sentinel images have also aided in improving temporal resolution.
- Most of GLs & WBs exhibiting 40% or more increase in water spread area, are located in transboundary region.

Table 4.1: Results of Analysis of GLs & WBs with water spread area greater than 50 ha showing "More than 40% Increase" in area

Sl. No.	Lake ID	Inventory Developed by	Rank of Vulnerability	UID	Elevation (m)	Lake Type	Latitude(N)	Longitude(E)	Basin	River	Country	Area of September 2024 (Ha)	Area of Base Year of 2011 (Ha) (i)	Average Area of Last5 Years (Ha) (ii)	Average Area of Last10 years (ha) (iii)	Change in Area (%) w.r.t maximum of (i), (ii)&(iii)
1	01_61C_004	NRSC			4495	WB	33°45'16.2"	80°38'37.68"	Indus	Indus	China	3020	21	#	#	14006
2	01_61C_010	NRSC		CH_38	4495	WB	33°43'28.92"	80°41'25.08"	Indus	Indus	China	3020	88	145	148	1935
3	01_61C_005	NRSC		CH_33	4495	WB	33°44'54.96"	80°38'29.76"	Indus	Indus	China	3020	139	449	335	573
4	03_71K_007	NRSC		CH_430	4752	WB	29°34'46.2"	86°15'39.6"	Brahmaputra		China	560	99	81	76	464
5	01_61C_011	NRSC		CH_39	4494	WB	33°43'13.44"	80°43'16.68"	Indus	Indus	China	3020	403	597	515	406
6	03_62O_042	NRSC		CH_387	4964	WB	29°29'56.04"	83°25'40.44"	Brahmaputra		China	294	57	60	57	387
7	03_78E_010	NRSC		CH_606	4582	WB	27°57'48.96"	89°24'45.72"	Brahmaputra		China	187	49	39	40	285
8	01_61C_014	NRSC		CH_42	4279	WB	33°29'57.12"	80°20'60"	Indus	Indus	China	1120	286	307	295	265
9	02_71P_019	NRSC		CH_207	4199	GL	28°21'8.64"	87°52'30.36"	Ganga	Arun Kosi	China	210	48	58	55	261
10	01_61C_002	NRSC		CH_30	4494	WB	33°45'3.96"	80°35'51.72"	Indus	Indus	China	3020	685	851	800	255
11	03_71K_009	NRSC		CH_432	4750	WB	29°33'26.28"	86°15'58.68"	Brahmaputra		China	560	230	219	194	144
12	02_71P_018	NRSC		CH_206	4199	WB	28°21'27.72"	87°53'6.72"	Ganga	Arun Kosi	China	210	51	87	67	142
13	03_62O_040	NRSC		CH_385	4896	WB	29°34'56.64"	83°21'20.16"	Brahmaputra		China	286	107	118	114	142
14	03_71K_011	NRSC		CH_434	4761	WB	29°28'32.88"	86°13'50.88"	Brahmaputra		China	912	387	347	352	136
15	02_71L_034	NRSC	89G	CH_188	5095	GL	28°2'0.96"	86°29'46.32"	Ganga	Sun Kosi	China	88	46	62	56	42
16	03_62O_041	NRSC		CH_386	4963	WB	29°30'39.6"	83°26'39.48"	Brahmaputra		China	294	206	208	209	41

Note: G stands for Ganga, I for Indus and B for Brahmaputra under the rank of vulnerability,

" -" Inventory Data not available , "#" indicates frozen/ dried lakes.

A Water Body of China of Lake ID: 03_71K_011 has have merged with a nearby lake. The combined area has been shown against the lake.

A Water Body of China of Lake ID: 03_62O_040 has have merged with a nearby lake. The combined area has been shown against the lake.

The Waterbodies of China of Lake ID : 01_61C_002, 01_61C_004, 01_61C_005, 01_61C_010 & 01_61C_011 have merged with each other and combined area has been shown against each lake.

The Waterbodies of China of Lake ID : 02_71P_018 has merged with nearby Glacial lakes of Lake ID: 02_71P_019 & Lake ID: 02_71P_020 and combined area has been shown against each lake.

The Waterbodies of China of Lake ID : 03_71K_007 &03_71K_009 have merged with each other and combined area has been shown against each lake

The Waterbodies of China of Lake ID : 03_62O_041 &03_62O_042 have merged with each other and combined area has been shown against each lake

The Waterbodies of China of Lake ID : 01_61C_014 &01_61C_015 have merged with each other and combined area has been shown against each lake

Table 4.2: Results of Analysis of GLs & WBs with water spread area greater than 50 ha showing "Increase in area upto 40%"

Sl. No.	Lake ID	Inventory Developed by	Rank of Vulnerability	UID	Elevation (m)	Lake Type	Latitude(N)	Longitude(E)	Basin	River	Country	Area of September 2024 (Ha)	Area of Base Year of 2011 (Ha) (i)	Average Area of Last5 Years (Ha) (ii)	Average Area of Last10 years (ha) (iii)	Change in Area (%) w.r.t maximum of (i), (ii)&(iii)
1	02_71P_025	NRSC		CH_213	4807	WB	28°12'51.12"	87°28'5.88"	Ganga	Arun Kosi	China	182	104	132	125	38
2	01_61C_015	NRSC		CH_43	4280	WB	33°29'16.44"	80°18'58.32"	Indus	Indus	China	1120	742	835	775	34
3	01_43G_001	NRSC		JK_67	346	WB	33°12'47.16"	73°42'41.76"	Indus	Jhelum	India	29746	14989	20855	22406	33
4	03_91C_024	NRSC		CH_1075	3977	GL	29°17'53.16"	96°48'59.04"	Brahmaputra		China	370	262	298	283	24
5	03_77H_007	NRSC		CH_481	4424	WB	28°16'25.68"	89°20'44.52"	Brahmaputra		China	1064	866	502	565	23
6	03_78A_021	NRSC		SK_26	5431	GL	27°49'28.2"	88°14'57.12"	Brahmaputra	Teesta	India	95	56	78	56	22
7	01_43J_004	NRSC	5I	JK_82	4078	WB	34°55'15.24"	74°31'14.88"	Indus	Jhelum	India	80	59	66	64	22
8	02_53K_001	NRSC		UK_1	355	WB	29°34'10.2"	78°45'46.8"	Ganga	Ramganga	India	6563	3880	5390	5253	22
9	03_77H_018	NRSC		CH_488	4699	WB	28°10'50.52"	89°32'3.84"	Brahmaputra		China	98	80	81	75	21
10	03_77L_009	NRSC		CH_525	4515	WB	28°47'21.12"	90°53'38.76"	Brahmaputra		China	660	522	549	513	20
11	02_72M_016	NRSC	7G	NP_92	4572	GL	27°47'54.6"	87°5'33.36"	Ganga	Arun Kosi	Nepal	246	161	209	164	18
12	02_72I_023	NRSC	227G	NP_76	5232	GL	27°46'59.16"	86°57'24.84"	Ganga	Sun Kosi	Nepal	96	81	72	67	18
13	01_43M_003	NRSC		JK_120	2663	WB	35°13'54.84"	75°37'49.44"	Indus	Shigar (Indus)	India	254	187	212	217	17
14	02_53P_003	NRSC		UK_11	207	WB	28°54'3.6"	79°37'22.8"	Ganga	Ramganga	India	1262	1078	831	828	17
15	01_52D_001	NRSC		HP_1	780	WB	32°36'52.92"	76°1'53.76"	Indus	Ravi	India	875	725	729	757	16
16	03_82O_047	NRSC		CH_1039	3574	WB	29°9'46.08"	95°29'27.6"	Brahmaputra	Dihang	China	52	44	45	37	15
17	01_43J_022	NRSC		JK_100	1583	WB	34°7'11.28"	74°49'50.52"	Indus	Jhelum	India	71	60	62	60	15
18	03_82O_016	NRSC		CH_1023	4374	WB	29°22'19.56"	95°52'18.48"	Brahmaputra	Dihang	China	105	91	87	70	15
19	03_62O_032	NRSC		CH_377	5012	WB	29°41'21.48"	83°11'24.36"	Brahmaputra		China	61	49	53	52	15
20	03_71P_001	NRSC		CH_448	5302	WB	28°49'56.64"	87°33'36"	Brahmaputra		China	149	112	129	122	15

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21	03_78E_007	NRSC		BH_60	5008	GL	27°56'29.04"	89°55'48"	Brahmaputra	Puna Tsang Chhu	Bhutan	73	61	63	56	15
22	03_77L_017	NRSC		CH_533	5340	WB	28°23'8.52"	90°19'9.12"	Brahmaputra		China	90	74	78	69	15
23	03_82N_004	NRSC		CH_975	4290	GL	30°36'3.96"	95°10'59.16"	Brahmaputra		China	142	92	123	102	15
24	01_52H_004	NRSC		HP_5	4155	GL	32°29'47.04"	77°33'5.76"	Indus	Chenab	India	167	46	146	132	14
25	02_78A_003	NRSC	24G	CH_269	5522	GL	27°56'46.68"	88°4'30.72"	Ganga	Arun Kosi	China	182	124	160	140	14
26	03_77K_015	NRSC		CH_517	4455	WB	29°7'3.36"	90°20'9.24"	Brahmaputra		China	124	108	109	105	14
27	03_77D_003	NRSC		SK_3	5098	WB	28°0'47.52"	88°45'20.88"	Brahmaputra	Teesta	India	114	84	100	94	14
28	03_71G_001	NRSC		CH_410	5163	WB	29°53'34.08"	85°14'49.56"	Brahmaputra		China	847	720	746	735	14
29	03_78I_085	NRSC		BH_166	4764	WB	27°47'58.56"	90°13'50.16"	Brahmaputra	Puna Tsang Chhu	Bhutan	79	70	69	58	13
30	03_91H_025	NRSC		CH_1190	3741	WB	28°46'58.8"	97°9'6.84"	Brahmaputra	Lohit	China	96	85	85	79	13
31	02_71L_010	NRSC	185G	CH_165	5387	GL	28°20'54.96"	86°13'30"	Ganga	Sun Kosi	China	66	47	59	52	12
32	03_62K_009	NRSC		CH_313	5079	GL	29°50'25.8"	82°47'0.6"	Brahmaputra		China	325	250	291	284	12
33	01_61F_004	NRSC		CH_61	4814	WB	34°1'19.92"	81°36'47.88"	Indus	Indus	China	42546	36392	37961	37980	12
34	02_71L_028	NRSC	38G	CH_183	5027	GL	28°8'8.88"	86°31'45.48"	Ganga	Sun Kosi	China	114	79	102	90	12
35	02_72M_005	NRSC	139G	CH_251	5141	GL	27°56'57.12"	87°55'51.96"	Ganga	Arun Kosi	China	85	71	76	69	12
36	02_71P_043	NRSC	18G	CH_231	5206	GL	28°5'36.6"	87°38'15"	Ganga	Arun Kosi	China	87	67	78	68	12
37	03_77H_030	NRSC		CH_495	4802	WB	28°1'32.16"	89°25'37.56"	Brahmaputra		China	74	66	58	54	12
38	02_71P_047	NRSC	81G	CH_235	5614	GL	28°4'9.48"	87°2'53.88"	Ganga	Arun Kosi	China	100	80	90	84	11
39	03_82O_062	NRSC		AP_55	3612	WB	29°0'18.36"	95°54'19.44"	Brahmaputra	Dibang	India	58	52	52	42	11

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40	03_82L_009	NRSC		CH_971	3893	GL	28°51'14.04"	94°0'0.72"	Brahmaputra		China	72	54	65	55	11
41	03_77L_008	NRSC		CH_524	4448	WB	28°49'31.8"	90°41'11.04"	Brahmaputra		China	79	71	62	71	11
42	03_77P_023	NRSC		CH_593	4235	WB	28°1'55.56"	91°0'6.12"	Brahmaputra	Kuri Chhu	China	79	45	71	58	11
43	03_77L_077	NRSC		BH_45	5136	WB	28°0'54.36"	90°12'37.08"	Brahmaputra	Puna Tsang Chhu	Bhutan	58	51	52	44	11
44	02_72I_011	NRSC	1G	NP_64	5034	GL	27°53'58.2"	86°55'15.96"	Ganga	Sun Kosi	Nepal	184	107	167	134	10
45	02_72I_027	NRSC	41G	NP_80	4977	GL	27°45'17.28"	86°57'28.8"	Ganga	Sun Kosi	Nepal	90	82	81	72	10
46	02_71L_004	NRSC	5G	CH_159	5518	GL	28°23'40.92"	86°22'45.12"	Ganga	Arun Kosi	China	129	79	118	101	10
47	02_77D_006	NRSC		CH_1032	3345	WB	28°3'21.6"	88°25'35.4"	Brahmaputra	Dihang	China	103	80	89	94	10
48	02_78A_004	NRSC	194G	CH_270	5603	GL	27°55'58.08"	88°4'0.48"	Ganga	Arun Kosi	China	119	84	109	99	9
49	03_91C_069	NRSC		AP_101	3245	WB	29°3'3.6"	96°8'40.2"	Brahmaputra	Dibang	India	85	78	76	68	9
50	03_77L_027	NRSC		CH_543	4531	WB	28°16'25.68"	90°44'12.48"	Brahmaputra	Kuri Chhu	China	196	163	181	160	9
51	02_62F_019	NRSC	144G	NP_12	5039	WB	30°7'46.56"	81°46'44.76"	Ganga	Karnali	Nepal	72	58	66	60	9
52	01_43K_010	NRSC		JK_111	3946	WB	33°31'8.4"	74°35'1.32"	Indus	Jhelum	India	73	66	67	63	9
53	02_71L_001	NRSC		CH_156	5106	WB	28°53'12.84"	86°30'52.2"	Ganga	Arun Kosi	China	98	83	90	81	9
54	03_82G_017	NRSC		CH_778	4437	WB	29°32'32.28"	93°49'49.44"	Brahmaputra		China	58	53	52	49	9
55	02_72M_007	NRSC	33G	CH_253	4950	GL	27°55'35.04"	87°46'11.64"	Ganga	Arun Kosi	China	110	94	101	87	9
56	02_62P_003	NRSC	4G	NP_36	4937	GL	28°41'31.92"	83°51'9"	Ganga	Trishuli	Nepal	370	315	340	292	9
57	01_62E_003	NRSC		CH_78	5104	WB	31°27'30.24"	81°5'26.52"	Indus	Indus	China	168	136	154	148	9
58	03_71O_006	NRSC		CH_442	4738	WB	29°33'21.6"	87°1'39"	Brahmaputra		China	123	104	113	109	9
59	03_77D_005	NRSC/SDC	/Very High Risk	SK_5	5249	GL	28°0'32.76"	88°41'52.44"	Brahmaputra	Teesta	India	110	88	101	86	9
60	02_77D_006	NRSC		CH_261	4894	GL	28°3'21.6"	88°25'35.4"	Ganga	Arun Kosi	China	102	80	89	94	9

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61	03_82J_023	NRSC		CH_853	4315	WB	30°2'45.96"	94°9'24.84"	Brahmaputra		China	115	105	107	98	8
62	03_82B_015	NRSC		CH_641	5124	WB	30°20'56.4"	92°44'7.08"	Brahmaputra		China	87	75	81	73	8
63	01_52H_005	NRSC		HP_6	4286	WB	32°28'53.76"	77°36'52.56"	Indus	Chenab	India	49	45	45	42	8
64	03_71G_007	NRSC		CH_416	5153	WB	29°39'14.4"	85°48'31.68"	Brahmaputra		China	206	191	191	186	8
65	01_62E_010	NRSC		CH_85	5233	WB	31°16'26.76"	81°35'41.64"	Indus	Indus	China	168	156	151	145	8
66	01_52K_014	NRSC		JK_222	4535	WB	33°15'6.84"	78°2'34.44"	Indus	Indus	India	465	405	431	419	8
67	03_77N_004	NRSC		CH_563	3890	WB	30°0'32.4"	91°51'39.24"	Brahmaputra		China	1396	1296	1220	1175	8
68	02_71H_008	NRSC		CH_128	5152	GL	28°37'1.56"	85°31'35.4"	Ganga	Arun Kosi	China	117	95	108	98	8
69	01_61H_001	NRSC		CH_66	4619	WB	32°7'7.68"	81°16'9.84"	Indus	Indus	China	321	282	297	285	8
70	01_52J_005	NRSC		JK_201	5430	WB	34°11'9.96"	78°30'28.08"	Indus	Shyok	India	47	44	44	40	7
71	03_78E_002	NRSC		BH_57	5110	GL	27°58'21"	89°55'47.64"	Brahmaputra	Puna Tsang Chhu	Bhutan	62	58	49	47	7
72	03_62J_031	NRSC		CH_303	4897	GL	30°6'14.04"	82°16'10.56"	Brahmaputra		China	236	160	221	199	7
73	03_82J_005	NRSC		CH_835	4134	GL	30°37'34.68"	94°26'42"	Brahmaputra		China	78	67	73	66	7
74	03_78I_056	NRSC		BH_137	4794	WB	27°51'42.48"	90°35'27.6"	Brahmaputra	Manas Chhu & Mangde Chhu	Bhutan	82	76	76	67	7
75	01_62E_005	NRSC		CH_80	5174	WB	31°18'47.88"	81°31'1.56"	Indus	Indus	China	213	189	199	190	7
76	02_62J_003	NRSC	254G	NP_19	4854	WB	30°4'4.08"	82°7'35.04"	Ganga	Karnali	Nepal	62	49	58	53	7
77	03_82O_054	NRSC		CH_1046	3311	WB	29°7'41.88"	95°26'17.88"	Brahmaputra	Dibang	China	55	51	46	44	7
78	03_77L_011	NRSC		CH_527	4533	WB	28°45'34.92"	90°50'49.2"	Brahmaputra		China	1292	1209	1170	1149	7
79	03_82J_024	NRSC		CH_854	4362	WB	30°0'46.44"	94°28'17.76"	Brahmaputra		China	72	67	64	55	7

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80	02_71L_002	NRSC		CH_157	5261	WB	28°51'29.16"	86°31'12.36"	Ganga	Arun Kosi	China	85	72	80	77	7
81	03_78E_009	NRSC		CH_605	4580	WB	27°57'37.08"	89°23'47.04"	Brahmaputra		China	187	175	174	162	7
82	01_61C_023	NRSC		CH_51	4350	WB	33°5'57.48"	80°10'38.64"	Indus	Indus	China	697	623	649	601	7
83	03_82B_020	NRSC		CH_646	4986	WB	30°12'59.04"	92°30'59.76"	Brahmaputra		China	52	49	48	45	7
84	03_77H_003	NRSC		CH_478	4714	WB	28°24'1.8"	89°3'41.04"	Brahmaputra		China	236	220	192	164	7
85	01_53A_002	NRSC		HP_10	495	WB	31°23'7.8"	76°32'6"	Indus	Sutlej	India	12700	10256	11140	11816	7
86	03_82K_080	NRSC		CH_936	4530	WB	29°28'21.72"	94°14'10.68"	Brahmaputra		China	51	47	48	42	6
87	01_62F_010	NRSC	9I	CH_101	5250	GL	30°23'11.04"	81°55'47.64"	Indus	Sutlej	China	70	45	66	59	6
88	03_82B_014	NRSC		CH_640	4825	WB	30°29'36.96"	92°38'35.88"	Brahmaputra		China	166	157	150	140	6
89	03_71K_006	NRSC		CH_429	4847	WB	29°37'30.36"	86°14'50.28"	Brahmaputra		China	2218	2096	2078	1997	6
90	02_71P_054	NRSC		CH_242	4859		#N/A	#N/A	Ganga	Arun Kosi	China	106	-	100	87	6
91	03_77P_009	NRSC		CH_580	5086	WB	28°32'46.68"	91°31'31.8"	Brahmaputra		China	112	94	105	102	6
92	03_82J_019	NRSC		CH_849	3944	GL	30°5'49.56"	94°16'10.92"	Brahmaputra		China	87	45	82	68	6
93	03_82P_010	NRSC		AP_67	1676	WB	28°8'53.16"	95°56'35.88"	Brahmaputra	Dibang	India	105	99	95	86	6
94	03_78I_051	NRSC		BH_132	5074	GL	27°53'26.16"	90°17'24.36"	Brahmaputra	Manas Chhu & Mangde Chhu	Bhutan	125	103	118	102	6
95	01_53A_001	NRSC		HP_9	409	WB	31°59'21.84"	76°3'1.44"	Indus	Beas	India	19865	16946	18732	18149	6
96	02_71D_004	NRSC	16G	NP_45	4064	GL	28°29'19.68"	84°29'8.52"	Ganga	Trishuli	Nepal	103	74	99	90	5
97	03_62K_012	NRSC		CH_316	5368	GL	29°44'7.8"	82°58'26.04"	Brahmaputra		China	92	73	88	77	5
98	03_78A_009	NRSC		SK_16	5044	GL	27°56'51.72"	88°19'52.68"	Brahmaputra	Teesta	India	65	55	62	58	5
99	03_77H_023	NRSC		CH_492	5313	WB	28°8'14.64"	89°32'5.28"	Brahmaputra		China	50	47	45	44	5
100	01_62E_013	NRSC		CH_88	5345	WB	31°14'29.4"	81°41'9.96"	Indus	Indus	China	174	166	159	155	5

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101	02_72I_004	NRSC	9G	CH_244	5074	GL	27°56'45.96"	86°26'47.4"	Ganga	Sun Kosi	China	204	121	194	178	5
102	03_78M_003	NRSC		CH_614	4459	WB	27°54'3.96"	91°53'48.84"	Brahmaputra	Dangme Chhu	China	220	207	210	196	5
103	01_62E_004	NRSC		CH_79	5161	WB	31°21'24.48"	81°8'59.28"	Indus	Indus	China	256	233	245	237	5
104	03_71B_002	NRSC		CH_392	5388	WB	30°26'7.8"	84°3'33.12"	Brahmaputra		China	8609	8185	8115	7956	5
105	03_82K_075	NRSC		CH_931	4511	WB	29°31'3.36"	94°7'14.88"	Brahmaputra		China	124	118	118	106	5
106	03_82J_025	NRSC		CH_855	4038	WB	30°0'17.64"	94°23'1.68"	Brahmaputra		China	62	59	57	53	5
107	03_62N_017	NRSC		CH_334	5454	WB	30°27'55.44"	83°59'4.2"	Brahmaputra		China	82	77	79	78	4
108	03_62J_015	NRSC		CH_287	5207	WB	30°23'52.08"	82°11'32.28"	Brahmaputra		China	85	70	81	80	4
109	03_82G_045	NRSC		CH_806	4523	WB	29°24'19.44"	93°42'28.44"	Brahmaputra		China	75	71	72	68	4
110	01_62E_015	NRSC		CH_90	5415	WB	31°10'56.28"	81°11'40.2"	Indus	Sutlej	China	53	51	47	44	4
111	03_82A_007	NRSC		CH_626	4911	WB	31°2'10.32"	92°47'12.84"	Brahmaputra		China	98	85	94	89	4
112	02_71L_003	NRSC		CH_158	5324	WB	28°49'55.92"	86°31'21"	Ganga	Arun Kosi	China	280	258	269	254	4
113	03_62O_039	NRSC		CH_384	4555	WB	29°35'21.48"	83°59'19.68"	Brahmaputra		China	305	236	294	272	4
114	03_77L_012	NRSC		CH_528	5014	WB	28°33'58.68"	90°23'47.04"	Brahmaputra		China	30288	28771	29192	29023	4
115	01_62A_003	NRSC		CH_69	5142	WB	31°34'40.08"	80°59'22.2"	Indus	Indus	China	1405	1355	1336	1284	4
116	01_43N_001	NRSC		JK_128	4142	WB	34°59'28.32"	75°14'9.96"	Indus	Shingo (Indus)	India	132	127	125	124	4
117	02_71H_029	NRSC	1G	CH_149	5098	GL	28°19'14.16"	85°50'21.12"	Ganga	Sun Kosi	China	544	413	524	474	4
118	03_78E_012	NRSC		CH_607	4576	WB	27°56'32.64"	89°23'16.44"	Brahmaputra		China	290	279	264	256	4
119	03_82O_044	NRSC		CH_1037	3552	WB	29°10'46.92"	95°29'6.72"	Brahmaputra	Dihang	China	95	92	89	74	4
120	03_91H_017	NRSC		CH_1182	4590	WB	28°52'37.2"	97°21'19.44"	Brahmaputra	Lohit	China	48	46	38	32	4
121	01_52J_009	NRSC		JK_205	5576	WB	34°9'2.16"	78°33'11.52"	Indus	Shyok	India	60	57	58	54	3
122	03_77L_030	NRSC		BH_12	5305	GL	28°16'43.32"	90°13'32.88"	Brahmaputra		Bhutan	90	79	87	82	3

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123	03_82O_064	NRSC		AP_57	3689	WB	29°3'41.76"	95°15'45"	Brahmaputra	Dihang	India	48	44	47	40	3
124	03_78E_026	NRSC		CH_613	5161	GL	27°48'31.32"	89°13'37.2"	Brahmaputra	Amo Chhu	China	54	36	53	51	3
125	03_77L_051	NRSC		BH_22	4548	GL	28°5'31.2"	90°17'60"	Brahmaputra	Puna Tsang Chhu	Bhutan	166	143	161	143	3
126	01_52H_002	NRSC/SDC	4I/Very High Risk	HP_3	4101	GL	32°31'28.92"	77°13'5.88"	Indus	Chenab	India	102	62	99	88	3
127	01_61G_002	NRSC		CH_63	4663	WB	33°40'21.72"	81°22'16.32"	Indus	Indus	China	1390	1134	1356	1281	3
128	03_82K_045	NRSC		CH_901	4572	WB	29°49'0.12"	94°7'58.8"	Brahmaputra		China	51	49	46	40	3
129	03_82O_061	NRSC		AP_54	3811	WB	29°0'40.32"	95°53'5.64"	Brahmaputra	Dibang	India	58	54	56	48	3
130	03_77L_066	NRSC		BH_34	4896	GL	28°1'21.36"	90°42'29.88"	Brahmaputra	Manas Chhu & Mangde Chhu	Bhutan	173	148	168	144	3
131	01_61B_003	NRSC		CH_28	5074	WB	34°14'5.64"	80°30'20.88"	Indus	Indus	China	230	224	206	194	3
132	03_78I_018	NRSC		BH_99	5083	GL	27°58'37.92"	90°13'56.28"	Brahmaputra	Puna Tsang Chhu	Bhutan	71	63	69	63	3
133	03_82A_002	NRSC		CH_621	4905	WB	31°7'12.36"	92°49'59.52"	Brahmaputra		China	399	319	389	361	3
134	01_62J_001	NRSC		CH_102	4784	WB	30°38'15.72"	82°8'6.36"	Indus	Sutlej	China	5990	5571	5827	5499	3
135	02_71H_035	NRSC		CH_155	4366	WB	28°10'57"	85°55'22.44"	Ganga	Sun Kosi	China	46	45	43	42	3
136	01_61C_024	NRSC		CH_52	4323	WB	33°2'6.72"	80°34'51.96"	Indus	Indus	China	5340	4486	5185	4958	3
137	03_62J_001	NRSC		CH_273	5449	WB	30°52'49.8"	82°51'33.12"	Brahmaputra		China	152	147	141	134	3
138	02_71P_040	NRSC	126G	CH_228	4962	WB	28°6'50.04"	87°39'19.08"	Ganga	Arun Kosi	China	149	126	144	133	3

Sl. No.	Lake ID	Inventory Developed by	Rank of Vulnerability	UID	Elevation (m)	Lake Type	Latitude(N)	Longitude(E)	Basin	River	Country	Area of September 2024 (Ha)	Area of Base Year of 2011 (Ha) (i)	Average Area of Last5 Years (Ha) (ii)	Average Area of Last10 years (ha) (iii)	Change in Area (%) w.r.t maximum of (i), (ii)&(iii)
139	03_82J_004	NRSC		CH_834	3957	GL	30°39'37.8"	94°29'7.8"	Brahmaputra		China	568	356	552	512	3
140	03_91H_040	NRSC		CH_1205	4324	WB	28°24'44.28"	97°27'52.56"	Brahmaputra	Lohit	China	58	51	56	50	3
141	03_92A_006	NRSC		AP_204	1178	WB	27°41'50.28"	96°27'7.2"	Brahmaputra	Lohit	India	85	83	76	71	3
142	01_61G_003	NRSC		CH_64	4864	WB	33°37'59.88"	81°23'14.64"	Indus	Indus	China	87	85	60	65	3
143	02_71P_028	NRSC		CH_216	4997	GL	28°12'21.6"	87°3'7.56"	Ganga	Arun Kosi	China	61	50	59	60	2
144	03_62N_021	NRSC		CH_338	5432	WB	30°25'50.88"	83°59'48.84"	Brahmaputra		China	202	197	186	187	2
145	03_77L_029	NRSC		CH_545	5451	GL	28°16'22.8"	90°35'24.36"	Brahmaputra	Kuri Chhu	China	48	45	47	46	2
146	02_71H_015	NRSC		CH_135	5367	GL	28°31'58.8"	85°36'30.96"	Ganga	Arun Kosi	China	549	515	537	484	2
147	01_62E_006	NRSC		CH_81	5055	WB	31°17'31.2"	81°14'40.92"	Indus	Indus	China	538	524	528	493	2
148	03_82C_010	NRSC		CH_665	4921	WB	29°46'44.04"	92°23'17.16"	Brahmaputra		China	156	153	151	138	2
149	01_52O_001	NRSC		CH_4	4242	WB	33°45'0"	79°14'23.93"	Indus	Shyok	China	69865	65825	68537	67080	2
150	03_82B_002	NRSC		CH_628	4906	WB	30°58'33.24"	92°56'28.68"	Brahmaputra		China	452	405	443	418	2
151	01_43N_022	NRSC		JK_149	4243	WB	34°39'59.4"	75°10'45.48"	Indus	Jhelum	India	75	73	71	70	2
152	03_71G_006	NRSC		CH_415	5065	WB	29°39'11.52"	85°44'15.72"	Brahmaputra		China	996	956	977	927	2
153	01_62F_004	NRSC		CH_95	5493	WB	30°25'50.88"	81°25'58.44"	Indus	Sutlej	China	200	196	183	173	2
154	01_62F_003	NRSC		CH_94	4586	WB	30°41'5.28"	81°28'12.36"	Indus	Sutlej	China	41549	40552	40466	40731	2
155	03_82G_024	NRSC		CH_785	4647	WB	29°32'25.8"	93°20'42"	Brahmaputra		China	102	95	100	91	2
156	03_78E_028	NRSC		BH_72	2161	WB	27°38'21.12"	89°44'24.36"	Brahmaputra	Puna Tsang Chhu	Bhutan	48	47	43	41	2
157	03_82G_062	NRSC		CH_823	4925	WB	29°14'25.08"	93°16'33.6"	Brahmaputra		China	59	58	56	53	2
158	03_82F_004	NRSC		CH_729	4508	WB	30°37'16.32"	93°10'49.8"	Brahmaputra		China	714	692	701	661	2
159	02_71H_001	NRSC		CH_121	4580	WB	28°53'32.28"	85°35'8.52"	Ganga	Arun Kosi	China	27450	26825	27009	25843	2
160	03_82A_004	NRSC		CH_623	5008	WB	31°6'9"	92°41'55.68"	Brahmaputra		China	49	46	48	46	2

Sl. No.	Lake ID	Inventory Developed by	Rank of Vulnerability	UID	Elevation (m)	Lake Type	Latitude(N)	Longitude(E)	Basin	River	Country	Area of September 2024 (Ha)	Area of Base Year of 2011 (Ha) (i)	Average Area of Last5 Years (Ha) (ii)	Average Area of Last10 years (ha) (iii)	Change in Area (%) w.r.t maximum of (i), (ii)&(iii)
161	03_62J_026	NRSC		CH_298	5078	GL	30°15'21.6"	82°12'34.2"	Brahmaputra		China	136	103	134	121	2
162	01_43N_030	NRSC		JK_157	3799	WB	34°8'21.12"	75°8'50.64"	Indus	Jhelum	India	88	86	79	82	2
163	02_62K_010	NRSC		NP_28	2975	WB	29°31'50.16"	82°5'29.04"	Ganga	Karnali	Nepal	1069	1051	1037	943	2
164	03_77J_003	NRSC		CH_499	5039	WB	30°28'45.48"	90°57'58.32"	Brahmaputra		China	91	89	85	80	2
165	03_82G_060	NRSC		CH_821	4577	WB	29°17'13.92"	93°44'10.68"	Brahmaputra		China	60	59	54	50	2
166	01_61C_022	NRSC		CH_50	4339	WB	33°5'51.36"	80°23'34.08"	Indus	Indus	China	1605	1420	1580	1481	2
167	03_77L_001	NRSC		CH_520	4443	WB	28°57'20.52"	90°42'39.6"	Brahmaputra		China	56630	55435	55508	54765	2
168	02_71P_029	NRSC	43G	CH_217	5045	GL	28°10'42.24"	87°33'41.4"	Ganga	Arun Kosi	China	108	80	106	93	2
169	01_52K_010	NRSC		JK_218	5313	WB	33°27'17.64"	78°29'54.24"	Indus	Shyok	India	155	152	143	133	2
170	03_62J_011	NRSC		CH_283	5181	WB	30°28'6.6"	82°3'33.12"	Brahmaputra		China	408	401	382	359	2
171	01_62E_002	NRSC		CH_77	5139	WB	31°36'58.32"	81°1'0.48"	Indus	Indus	China	165	161	146	145	2
172	01_43J_017	NRSC	3I	JK_95	3580	WB	34°25'55.56"	74°55'27.12"	Indus	Jhelum	India	167	164	158	155	2
173	03_77L_072	NRSC		BH_40	5201	GL	28°0'55.8"	90°22'26.76"	Brahmaputra	Manas Chhu & Mangde Chhu	Bhutan	97	91	95	86	2
174	03_91C_042	NRSC		AP_89	4531	WB	29°14'38.04"	96°14'39.12"	Brahmaputra	Dibang	India	51	50	50	42	1
175	03_82N_019	NRSC		CH_990	4877	WB	30°28'24.6"	95°34'30.36"	Brahmaputra		China	56	55	51	44	1
176	01_52K_012	NRSC		JK_220	4695	WB	33°18'46.8"	78°28'41.16"	Indus	Indus	India	167	166	161	154	1
177	03_71O_010	NRSC		CH_446	4296	WB	29°12'14.4"	87°23'29.04"	Brahmaputra		China	988	813	982	882	1
178	03_82K_007	NRSC		CH_863	4294	WB	29°57'31.68"	94°17'30.48"	Brahmaputra		China	131	130	125	126	1
179	03_77L_043	NRSC		CH_552	5200	GL	28°5'21.84"	90°47'18.6"	Brahmaputra	Kuri Chhu	China	241	181	238	207	1
180	03_77H_020	NRSC		CH_490	4473	WB	28°8'59.64"	89°20'58.92"	Brahmaputra		China	4647	4588	4500	4563	1

Sl. No.	Lake ID	Inventory Developed by	Rank of Vulnerability	UID	Elevation (m)	Lake Type	Latitude(N)	Longitude(E)	Basin	River	Country	Area of September 2024 (Ha)	Area of Base Year of 2011 (Ha) (i)	Average Area of Last5 Years (Ha) (ii)	Average Area of Last10 years (ha) (iii)	Change in Area (%) w.r.t maximum of (i), (ii)&(iii)
181	03_62J_013	NRSC		CH_285	4934	WB	30°25'8.04"	82°18'7.92"	Brahmaputra		China	934	854	927	901	1
182	03_82B_009	NRSC		CH_635	4963	WB	30°54'21.96"	92°49'1.56"	Brahmaputra		China	177	156	175	161	1
183	03_77L_033	NRSC		BH_13	5176	GL	28°15'56.88"	90°4'7.68"	Brahmaputra		Bhutan	214	177	211	190	1
184	03_82B_028	NRSC		CH_654	4998	WB	30°2'58.2"	92°26'35.52"	Brahmaputra		China	51	48	51	46	1
185	01_52G_001	NRSC		JK_189	5008	WB	33°59'57.12"	77°58'44.04"	Indus	Shyok	India	45	45	41	41	1
186	03_82G_023	NRSC		CH_784	4377	WB	29°30'45"	93°37'11.64"	Brahmaputra		China	85	84	83	79	1
187	03_77L_044	NRSC		BH_19	4385	GL	28°6'20.88"	90°14'49.56"	Brahmaputra	Puna Tsang Chhu	Bhutan	135	123	133	119	1
188	01_52K_016	NRSC		JK_224	4675	WB	33°6'22.32"	78°18'12.96"	Indus	Sutlej	India	513	507	497	482	1
189	01_52N_001	NRSC		CH_3	4964	WB	34°9'32.04"	79°46'45.84"	Indus	Indus	China	12372	11564	12293	12183	1
190	01_61C_001	NRSC		CH_29	4526	WB	33°57'12.6"	80°54'12.96"	Indus	Indus	China	11823	11154	11659	11512	1
191	03_82F_022	NRSC		CH_747	4200	GL	30°14'30.48"	93°38'14.28"	Brahmaputra		China	112	103	111	101	1
192	03_77H_008	NRSC		CH_482	4570	WB	28°13'37.92"	89°38'17.52"	Brahmaputra		China	1279	1268	1248	1172	1
193	01_52O_005	NRSC		CH_8	4358	WB	33°23'25.08"	79°22'1.2"	Indus	Indus	China	809	780	798	770	1
194	03_77P_004	NRSC		CH_575	4452	WB	28°48'36"	91°8'42.72"	Brahmaputra		China	200	143	194	198	1
195	01_61F_003	NRSC		CH_60	5256	WB	34°16'30.36"	81°3'7.56"	Indus	Indus	China	575	570	555	504	1
196	01_43N_020	NRSC		JK_147	4112	WB	34°41'50.28"	75°8'12.84"	Indus	Jhelum	India	63	61	62	60	1
197	01_52C_003	NRSC	7I	JK_187	4512	GL	33°9'26.28"	76°59'3.48"	Indus	Indus	India	58	45	58	56	1
198	03_77P_017	NRSC		CH_588	4751	WB	28°17'49.92"	91°56'44.52"	Brahmaputra	Dangme Chhu	China	2359	2345	2236	2148	1
199	03_91D_009	NRSC		AP_108	4037	WB	28°55'40.44"	96°20'19.68"	Brahmaputra	Dibang	India	49	47	49	39	1
200	03_82K_036	NRSC		CH_892	4251	WB	29°49'46.56"	94°37'55.2"	Brahmaputra		China	70	69	61	51	1
201	01_43E_023	NRSC		JK_47	4155	WB	35°51'54"	73°44'42.72"	Indus	Gilgit	India	87	86	84	83	1

Sl. No.	Lake ID	Inventory Developed by	Rank of Vulnerability	UID	Elevation (m)	Lake Type	Latitude(N)	Longitude(E)	Basin	River	Country	Area of September 2024 (Ha)	Area of Base Year of 2011 (Ha) (i)	Average Area of Last5 Years (Ha) (ii)	Average Area of Last10 years (ha) (iii)	Change in Area (%) w.r.t maximum of (i), (ii)&(iii)
202	03_78M_016	NRSC		CH_617	4647	WB	27°50'30.84"	91°53'34.44"	Brahmaputra	Dangme Chhu	China	151	142	150	135	1
203	03_82A_003	NRSC		CH_622	4896	WB	31°6'33.12"	92°57'7.2"	Brahmaputra		China	100	99	91	88	1
204	01_61D_002	NRSC		CH_54	4313	WB	32°32'12.12"	80°13'42.96"	Indus	Indus	China	1540	1216	1530	1504	1
205	02_72I_007	NRSC	785G	NP_62	4540	GL	27°55'25.32"	86°47'11.76"	Ganga	Sun Kosi	Nepal	60	48	53	59	1
206	01_61C_016	NRSC		CH_44	4289	WB	33°25'58.44"	80°27'59.76"	Indus	Indus	China	376	344	374	366	1
207	03_82G_051	NRSC		CH_812	4735	WB	29°22'10.92"	93°41'38.04"	Brahmaputra		China	50	49	46	43	1
208	03_77H_004	NRSC		CH_479	4428	WB	28°19'37.56"	89°25'43.68"	Brahmaputra		China	203	201	133	140	1
209	03_71G_011	NRSC		CH_420	4619	WB	29°7'19.56"	85°23'54.6"	Brahmaputra		China	1494	951	1486	1308	1

Note: G stands for Ganga, I for Indus and B for Brahmaputra under the rank of vulnerability,

" -" Inventory Data not available , "#" indicates frozen/ dried lakes.

The Waterbodies of China of Lake ID : 03_78E_009 & 03_78E_010 have merged with each other and combined area has been shown against each lake.

The Glacial Lakes of India (Himachal Pradesh) of Lake ID: 01_52H_003 & Lake ID: 01_52H_004 have with each other and combined area has been shown against each lake.

Table 4.3: Results of Analysis of GLs & WBs with water spread area greater than 50 ha showing "No Change" in area

Sl. No.	Lake ID	Inventory Developed by	Rank of Vulnerability	UID	Elevation (m)	Lake Type	Latitude(N)	Longitude(E)	Basin	River	Country	Area of September 2024 (Ha)	Area of Base Year of 2011 (Ha) (i)	Average Area of Last5 Years (Ha) (ii)	Average Area of Last10 years (ha) (iii)	Change in Area (%) w.r.t maximum of (i), (ii)&(iii)
1	03_82K_020	NRSC		CH_876	4364	WB	29°53'47.76"	94°27'41.4"	Brahmaputra		China	80	77	80	71	0
2	03_82B_005	NRSC		CH_631	4888	WB	30°56'4.56"	92°49'45.12"	Brahmaputra		China	221	195	221	201	0
3	01_52J_001	NRSC	8I	JK_197	5311	GL	34°27'27.72"	78°8'6.36"	Indus	Shyok	India	98	65	98	90	0
4	03_78E_019	NRSC		CH_611	5022	GL	27°52'40.44"	89°18'43.2"	Brahmaputra		China	60	60	55	55	0
5	02_71L_006	NRSC	3G	CH_161	5365	GL	28°22'26.76"	86°18'16.56"	Ganga	Arun Kosi	China	390	379	390	359	0
6	02_71H_017	NRSC		CH_137	5314	GL	28°29'43.44"	85°38'9.24"	Ganga	Arun Kosi	China	494	493	491	443	0
7	03_77K_017	NRSC		CH_519	4448	WB	29°0'39.6"	90°26'50.28"	Brahmaputra		China	3869	3853	3750	3594	0
8	03_82B_004	NRSC		CH_630	4893	WB	30°56'56.04"	92°53'22.56"	Brahmaputra		China	104	93	104	95	0
9	03_82F_030	NRSC		CH_755	3485	WB	30°1'13.8"	93°58'5.16"	Brahmaputra		China	2684	2675	2684	2607	0
10	03_62N_001	NRSC		CH_318	5102	WB	30°53'20.04"	83°34'48.72"	Brahmaputra		China	14820	14300	14868	14696	0
11	02_71P_022	NRSC	34G	CH_210	5439	GL	28°13'45.84"	87°35'27.6"	Ganga	Arun Kosi	China	82	80	82	76	0
12	01_52K_004	NRSC		JK_212	4293	WB	33°31'49.08"	78°54'37.8"	Indus	Shyok	India	5845	5741	5848	5774	0
13	03_71C_003	NRSC		CH_396	5412	GL	29°51'59.76"	84°37'26.4"	Brahmaputra		China	49	47	49	48	0
14	01_52J_002	NRSC		JK_198	5359	WB	34°13'59.16"	78°25'34.32"	Indus	Shyok	India	67	67	60	55	0
15	01_52K_009	NRSC		JK_217	4921	WB	33°27'51.48"	78°36'39.24"	Indus	Shyok	India	203	204	193	188	0
16	03_71K_002	NRSC		CH_425	4974	WB	29°48'4.32"	86°56'44.16"	Brahmaputra		China	2319	2248	2321	2238	0

Sl. No.	Lake ID	Inventory Developed by	Rank of Vulnerability	UID	Elevation (m)	Lake Type	Latitude(N)	Longitude(E)	Basin	River	Country	Area of September 2024 (Ha)	Area of Base Year of 2011 (Ha) (i)	Average Area of Last5 Years (Ha) (ii)	Average Area of Last10 years (ha) (iii)	Change in Area (%) w.r.t maximum of (i), (ii)&(iii)
17	03_77O_001	NRSC		CH_564	3879	WB	29°55'7.68"	91°5'22.2"	Brahmaputra		China	181	181	149	154	0
18	03_77L_068	NRSC		BH_36	4764	WB	28°0'12.6"	90°54'18.36"	Brahmaputra	Kuri Chhu	Bhutan	86	86	81	75	0
19	03_77D_004	NRSC/SDC	/Very High Risk	SK_4	5287	GL	28°0'25.56"	88°42'46.08"	Brahmaputra	Teesta	India	120	106	120	111	0
20	03_91D_081	NRSC		CH_1136	3356	WB	28°30'58.32"	96°41'54.24"	Brahmaputra	Lohit	China	318	304	318	294	0
21	03_71C_011	NRSC		CH_404	4684	WB	29°13'52.32"	84°22'12"	Brahmaputra		China	165	119	166	137	0
22	02_71H_021	NRSC	76G	CH_141	4463	GL	28°28'6.6"	85°31'7.68"	Ganga	Trishuli	China	48	48	45	42	0
23	03_77L_035	NRSC		BH_14	5486	GL	28°14'58.92"	90°11'13.56"	Brahmaputra		Bhutan	68	68	60	56	0
24	03_77L_003	NRSC		CH_521	4434	WB	28°56'57.48"	90°31'1.2"	Brahmaputra		China	4061	4065	3961	3985	0
25	03_78M_010	NRSC		BH_188	4496	WB	27°52'37.92"	91°38'1.68"	Brahmaputra	Dangme Chhu	Bhutan	50	50	42	36	0
26	02_71H_002	NRSC		CH_122	4650	WB	28°43'24.96"	85°52'46.56"	Ganga	Arun Kosi	China	2524	2152	2525	2391	0

Note: G stands for Ganga, I for Indus and B for Brahmaputra under the rank of vulnerability,

" -" Inventory Data not available , "#" indicates frozen/ dried lakes.

Table 4.4: Results of Analysis of GLs & WBs with water spread area greater than 50 ha showing "Decrease" in area

Sl. No.	Lake ID	Inventory Developed by	Rank of Vulnerability	UID	Elevation (m)	Lake Type	Latitude(N)	Longitude(E)	Basin	River	Country	Area of September 2024 (Ha)	Area of Base Year of 2011 (Ha) (i)	Average Area of Last5 Years (Ha) (ii)	Average Area of Last10 years (ha) (iii)	Change in Area (%) w.r.t maximum of (i), (ii)&(iii)
1	03_62K_002	NRSC		CH_306	4858	WB	29°58'48.36"	82°35'17.16"	Brahmaputra		China	49	45	50	47	-1
2	01_62F_001	NRSC		CH_92	4571	WB	30°41'19.68"	81°13'55.2"	Indus	Sutlej	China	25210	25486	23880	24012	-1
3	03_77H_011	NRSC		BH_4	4963	GL	28°13'48.72"	89°53'15"	Brahmaputra		Bhutan	152	140	153	139	-1
4	03_77H_001	NRSC		CH_476	4275	WB	28°49'46.92"	89°51'6.48"	Brahmaputra		China	436	442	375	353	-1
5	03_62J_012	NRSC		CH_284	4883	WB	30°25'53.4"	82°21'42.12"	Brahmaputra		China	163	165	162	157	-1
6	03_77L_041	NRSC		CH_550	5214	GL	28°7'24.6"	90°34'0.12"	Brahmaputra	Kuri Chhu	China	64	56	65	58	-1
7	03_82B_008	NRSC		CH_634	4928	WB	30°53'45.96"	92°54'35.28"	Brahmaputra		China	268	254	271	255	-1
8	03_82K_017	NRSC		CH_873	4397	WB	29°55'0.48"	94°16'46.56"	Brahmaputra		China	177	151	179	163	-1
9	03_78E_029	NRSC		BH_73	4250	WB	27°38'37.68"	89°27'39.96"	Brahmaputra	Puna Tsang Chhu	Bhutan	45	45	40	35	-1
10	03_82K_077	NRSC		CH_933	4590	WB	29°30'16.2"	94°7'58.44"	Brahmaputra		China	99	100	100	91	-1
11	03_91C_078	NRSC		CH_1106	3694	WB	29°0'30.24"	96°13'4.44"	Brahmaputra	Dibang	China	47	48	43	38	-1
12	03_91C_029	NRSC		CH_1078	4229	WB	29°14'15.72"	96°49'25.32"	Brahmaputra		China	214	216	217	205	-1
13	02_77D_007	NRSC	244G	CH_262	5215	GL	28°1'23.88"	88°21'16.2"	Ganga	Arun Kosi	China	57	55	57	56	-1
14	03_82G_019	NRSC		CH_780	4460	WB	29°30'9"	93°56'12.12"	Brahmaputra		China	59	59	52	44	-1
15	02_72M_006	NRSC	349G	CH_252	5188	GL	27°57'2.16"	87°54'31.68"	Ganga	Arun Kosi	China	65	65	64	59	-1
16	03_77L_067	NRSC		BH_35	5231	GL	28°2'17.88"	90°21'50.4"	Brahmaputra	Manas Chhu & Mangde Chhu	Bhutan	82	78	83	73	-1
17	03_62K_001	NRSC		CH_305	4834	WB	29°59'8.16"	82°32'4.56"	Brahmaputra		China	390	370	392	364	-1
18	03_82E_003	NRSC		CH_721	5027	WB	31°6'12.96"	93°8'36.6"	Brahmaputra		China	97	98	95	93	-1

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19	02_53O_001	NRSC		UK_4	1968	WB	29°23'9.24"	79°27'35.64"	Ganga	Ramganga	India	45	46	43	40	-1
20	03_91C_046	NRSC		AP_92	3353	WB	29°13'32.52"	96°9'36"	Brahmaputra	Dibang	India	60	61	54	51	-1
21	03_77L_042	NRSC		CH_551	5057	GL	28°5'56.4"	90°44'23.28"	Brahmaputra	Kuri Chhu	China	71	57	71	64	-1
22	01_52L_002	NRSC		JK_226	4986	WB	32°58'54.84"	78°35'43.44"	Indus	Indus	India	436	442	426	408	-1
23	03_78M_022	NRSC		BH_197	4549	WB	27°50'2.04"	91°33'12.96"	Brahmaputra	Dangme Chhu	Bhutan	68	67	69	59	-1
24	03_82G_035	NRSC		CH_796	4386	WB	29°28'35.4"	93°37'53.04"	Brahmaputra		China	86	81	87	82	-1
25	01_52L_001	NRSC		JK_225	4523	WB	32°53'48.12"	78°18'48.6"	Indus	Sutlej	India	13970	14139	14052	14082	-1
26	03_82K_068	NRSC		CH_924	4320	WB	29°32'40.92"	94°4'0.48"	Brahmaputra		China	51	52	49	47	-1
27	01_42H_001	NRSC		JK_1	4292	WB	36°52'50.16"	73°42'4.68"	Indus	Gilgit	India	273	276	270	273	-1
28	01_43E_006	NRSC		JK_30	4186	WB	35°56'43.08"	73°21'52.56"	Indus	Gilgit	India	70	71	67	64	-1
29	02_71P_027	NRSC	82G	CH_215	5389	GL	28°11'40.2"	87°38'26.52"	Ganga	Arun Kosi	China	51	49	51	52	-1
30	01_43N_027	NRSC		JK_154	3683	WB	34°23'17.16"	75°7'6.6"	Indus	Jhelum	India	47	48	45	43	-1
31	03_77P_020	NRSC		CH_591	4649	WB	28°5'16.44"	91°15'25.92"	Brahmaputra	Kuri Chhu	China	63	63	56	52	-1
32	03_82J_008	NRSC		CH_838	4036	GL	30°27'0.72"	94°36'14.76"	Brahmaputra		China	213	156	215	188	-1
33	03_77L_014	NRSC		CH_530	5289	WB	28°26'19.32"	90°10'24.96"	Brahmaputra		China	47	48	44	43	-1
34	02_71P_015	NRSC		CH_203	4153	WB	28°34'35.76"	87°32'38.76"	Ganga	Arun Kosi	China	1052	838	1079	933	-2
35	01_61C_018	NRSC		CH_46	4291	WB	33°22'1.2"	80°33'11.16"	Indus	Indus	China	1925	1779	1974	1883	-2
36	03_82E_002	NRSC		CH_720	5008	WB	31°7'53.4"	93°10'36.48"	Brahmaputra		China	686	659	697	633	-2
37	03_77L_037	NRSC		BH_15	5139	GL	28°14'15.72"	90°6'15.48"	Brahmaputra		Bhutan	581	542	590	569	-2
38	03_82B_010	NRSC		CH_636	4990	WB	30°52'42.24"	92°52'50.16"	Brahmaputra		China	51	52	48	45	-2
39	01_43P_002	NRSC		JK_167	669	WB	32°41'48.84"	75°8'44.16"	Indus	Ravi	India	54	52	55	55	-2
40	03_82B_006	NRSC		CH_632	4837	WB	30°56'1.68"	92°46'27.84"	Brahmaputra		China	122	124	124	119	-2

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41	01_43K_014	NRSC		JK_115	3521	WB	33°30'47.16"	74°46'6.96"	Indus	Jhelum	India	133	111	135	129	-2
42	03_91H_010	NRSC		CH_1175	4433	WB	28°56'23.28"	97°15'41.04"	Brahmaputra	Lohit	China	96	79	98	79	-2
43	03_78A_013	NRSC		SK_19	5470	GL	27°55'7.68"	88°9'39.6"	Brahmaputra	Teesta	India	79	67	80	79	-2
44	03_82K_037	NRSC		CH_893	4147	WB	29°49'40.08"	94°27'43.2"	Brahmaputra		China	54	55	52	47	-2
45	02_77D_008	NRSC	266G	CH_263	5285	GL	28°1'6.24"	88°17'14.28"	Ganga	Arun Kosi	China	48	45	49	45	-2
46	01_61D_004	NRSC		CH_56	4991	WB	32°9'24.84"	80°18'11.88"	Indus	Indus	China	541	550	540	509	-2
47	01_43N_032	NRSC		JK_159	3595	WB	34°5'37.32"	75°29'52.44"	Indus	Jhelum	India	55	49	56	56	-2
48	03_82B_007	NRSC		CH_633	4964	WB	30°53'40.92"	92°57'2.52"	Brahmaputra		China	207	199	211	192	-2
49	03_82N_033	NRSC		CH_1004	4357	GL	30°13'16.68"	95°35'0.24"	Brahmaputra		China	87	89	85	78	-2
50	03_82J_017	NRSC		CH_847	3829	WB	30°7'33.24"	94°5'24"	Brahmaputra		China	277	282	280	269	-2
51	03_77L_013	NRSC		CH_529	5191	WB	28°26'56.04"	90°15'24.84"	Brahmaputra		China	346	319	353	318	-2
52	03_91C_034	NRSC		AP_84	4288	WB	29°18'6.48"	96°4'55.92"	Brahmaputra	Dibang	India	144	134	147	119	-2
53	02_71L_032	NRSC	122G	CH_187	5250	GL	28°2'40.2"	86°30'49.32"	Ganga	Sun Kosi	China	57	58	52	49	-2
54	02_62K_012	NRSC		NP_30	3653	WB	29°11'47.76"	82°56'54.6"	Ganga	Bheri	Nepal	479	469	489	450	-2
55	03_62N_004	NRSC		CH_321	5168	WB	30°40'5.16"	83°37'30.72"	Brahmaputra		China	870	878	889	891	-2
56	03_71O_009	NRSC		CH_445	4302	WB	29°18'31.68"	87°11'22.2"	Brahmaputra		China	2173	2123	2227	2107	-2
57	03_91C_045	NRSC		AP_91	3493	WB	29°13'44.4"	96°11'29.4"	Brahmaputra	Dibang	India	111	113	106	100	-2
58	01_52J_006	NRSC		JK_202	5401	WB	34°10'23.88"	78°26'16.08"	Indus	Shyok	India	108	110	104	97	-2
59	03_77D_002	NRSC		SK_2	5156	GL	28°1'33.96"	88°42'36"	Brahmaputra	Teesta	India	104	104	107	95	-3
60	03_78M_020	NRSC		BH_195	4157	WB	27°50'15.72"	91°36'18.36"	Brahmaputra	Dangme Chhu	Bhutan	65	65	67	60	-3
61	03_82D_004	NRSC		CH_710	4481	WB	28°52'54.84"	92°9'5.4"	Brahmaputra		China	378	390	376	375	-3
62	03_82K_042	NRSC		CH_898	4364	WB	29°46'44.76"	94°36'2.88"	Brahmaputra		China	198	205	182	158	-3
63	01_43A_001	NRSC		JK_22	3641	WB	35°59'42"	72°36'45.36"	Indus	Gilgit	India	202	203	209	195	-3

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64	03_91C_064	NRSC		AP_100	3972	WB	29°4'45.84"	96°8'40.92"	Brahmaputra	Dibang	India	87	89	90	75	-3
65	03_91D_107	NRSC		AP_163	3769	WB	28°12'8.64"	96°53'51.72"	Brahmaputra	Lohit	India	65	67	65	56	-3
66	03_82K_002	NRSC		CH_858	3998	WB	29°59'14.64"	94°26'7.44"	Brahmaputra		China	75	75	77	70	-3
67	01_52K_011	NRSC		JK_219	5291	WB	33°25'38.64"	78°29'16.44"	Indus	Shyok	India	181	186	175	168	-3
68	02_71H_007	NRSC		CH_127	5149	GL	28°37'25.68"	85°30'33.84"	Ganga	Arun Kosi	China	121	125	118	109	-3
69	02_71D_007	NRSC		NP_48	700	WB	28°10'31.8"	84°5'57.84"	Ganga	Trishuli	Nepal	290	300	289	270	-3
70	03_62O_024	NRSC		CH_369	4637	WB	29°51'26.64"	83°15'5.76"	Brahmaputra		China	884	721	912	823	-3
71	01_61F_002	NRSC		CH_59	5279	WB	34°17'55.32"	81°12'5.4"	Indus	Indus	China	57	59	55	49	-3
72	03_82K_039	NRSC		CH_895	4128	WB	29°48'45.72"	94°25'57"	Brahmaputra		China	218	224	203	194	-3
73	03_62N_022	NRSC		CH_339	4599	WB	30°12'15.12"	83°14'31.92"	Brahmaputra		China	192	198	192	183	-3
74	02_71L_013	NRSC	58G	CH_168	5324	GL	28°18'12.24"	86°9'27.36"	Ganga	Sun Kosi	China	62	64	58	54	-3
75	03_82J_018	NRSC		CH_848	3913	GL	30°6'54.72"	94°11'17.16"	Brahmaputra		China	95	99	93	89	-4
76	03_91C_040	NRSC		AP_87	4450	WB	29°15'19.08"	96°14'40.92"	Brahmaputra	Lohit	India	90	94	85	70	-4
77	02_71H_028	NRSC	15G	CH_148	5174	WB	28°19'49.08"	85°52'7.32"	Ganga	Sun Kosi	China	191	200	196	182	-4
78	02_72I_003	NRSC	319G	NP_59	4762	GL	27°57'3.6"	86°41'22.92"	Ganga	Sun Kosi	Nepal	43	45	41	38	-4
79	03_77B_001	NRSC		CH_452	5039	WB	30°10'5.52"	88°37'10.92"	Brahmaputra		China	50	52	47	44	-4
80	01_43A_002	NRSC		JK_23	3790	WB	35°56'42.36"	72°35'40.92"	Indus	Gilgit	India	97	91	101	96	-4
81	02_71H_003	NRSC		CH_123	4649	WB	28°41'10.32"	85°57'15.12"	Ganga	Arun Kosi	China	211	166	219	208	-4
82	03_82J_020	NRSC		CH_850	3852	WB	30°3'1.08"	94°14'53.52"	Brahmaputra		China	420	439	418	395	-4
83	01_43J_020	NRSC		JK_98	1584	WB	34°14'59.64"	74°40'10.2"	Indus	Jhelum	India	184	191	169	162	-4
84	02_72I_014	NRSC	6G	NP_67	4574	GL	27°51'41.04"	86°28'35.04"	Ganga	Sun Kosi	Nepal	168	134	175	162	-4
85	03_71G_008	NRSC		CH_417	5187	WB	29°33'30.96"	85°52'50.52"	Brahmaputra		China	58	60	54	56	-4
86	03_82K_074	NRSC		CH_930	4553	WB	29°31'33.96"	94°3'26.28"	Brahmaputra		China	85	88	81	75	-4

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87	02_78A_005	NRSC		CH_271	5376	GL	27°55'41.16"	88°0'10.08"	Ganga	Arun Kosi	China	111	89	108	117	-5
88	03_91C_025	NRSC		CH_1076	4022	GL	29°17'40.2"	96°50'3.84"	Brahmaputra		China	112	95	118	108	-5
89	03_82F_008	NRSC		CH_733	4828	WB	30°32'5.64"	93°3'29.16"	Brahmaputra		China	83	83	87	81	-5
90	03_92A_005	NRSC		AP_203	3391	WB	27°41'23.64"	96°51'38.16"	Brahmaputra	Lohit	India	48	50	50	43	-5
91	03_82G_050	NRSC		CH_811	4734	WB	29°22'57.36"	93°38'25.08"	Brahmaputra		China	42	44	40	35	-5
92	03_91D_080	NRSC		CH_1135	4295	WB	28°32'29.76"	96°37'3.36"	Brahmaputra	Lohit	China	43	45	41	35	-5
93	03_78E_006	NRSC		CH_604	4572	WB	27°58'11.64"	89°22'41.52"	Brahmaputra		China	63	67	60	56	-6
94	03_77P_019	NRSC		CH_590	4637	WB	28°3'31.68"	91°56'22.92"	Brahmaputra	Dangme Chhu	China	283	220	302	252	-6
95	03_77B_002	NRSC		CH_453	5019	WB	30°8'51.72"	88°37'36.12"	Brahmaputra		China	214	227	205	184	-6
96	02_62P_004	NRSC		NP_37	807	WB	28°13'1.2"	83°56'43.8"	Ganga	Trishuli	Nepal	380	406	389	372	-6
97	03_82F_014	NRSC		CH_739	4691	GL	30°20'52.08"	93°30'24.12"	Brahmaputra		China	46	49	44	42	-6
98	03_62O_027	NRSC		CH_372	4575	WB	29°48'47.16"	83°39'15.48"	Brahmaputra		China	44	47	39	37	-6
99	03_92E_001	NRSC		AP_206	4206	WB	27°59'23.28"	97°22'8.76"	Brahmaputra	Lohit	India	54	45	58	49	-6
100	03_62J_016	NRSC		CH_288	5303	GL	30°21'43.92"	82°3'17.28"	Brahmaputra		China	50	44	54	49	-7
101	03_82E_007	NRSC		CH_725	5043	WB	31°0'14.4"	93°5'16.08"	Brahmaputra		China	66	71	68	66	-7
102	03_82K_018	NRSC		CH_874	4168	WB	29°53'25.44"	94°34'12"	Brahmaputra		China	153	165	161	140	-7
103	02_71L_023	NRSC	39G	CH_178	5106	GL	28°11'50.64"	86°34'54.12"	Ganga	Arun Kosi	China	120	116	129	119	-7
104	03_82B_021	NRSC		CH_647	5041	WB	30°12'46.08"	92°34'15.96"	Brahmaputra		China	58	63	54	48	-7
105	03_83A_012	NRSC		AP_77	4287	WB	27°31'6.6"	92°2'2.4"	Brahmaputra	Dangme Chhu	India	58	63	61	52	-7
106	03_77H_013	NRSC		CH_484	4950	GL	28°12'32.04"	89°44'42.72"	Brahmaputra		China	45	48	46	46	-7
107	02_71H_027	NRSC	2G	CH_147	5242	GL	28°21'40.32"	85°52'12.36"	Ganga	Sun Kosi	China	464	501	458	416	-7
108	02_71P_035	NRSC		CH_223	5146	WB	28°9'7.2"	87°9'27"	Ganga	Arun Kosi	China	100	107	93	93	-7

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109	03_91C_074	NRSC		CH_1102	4258	GL	29°1'48"	96°13'22.8"	Brahmaputra	Dibang	China	43	47	46	38	-8
110	03_77H_012	NRSC		CH_483	4723	GL	28°14'25.44"	89°41'41.28"	Brahmaputra		China	70	76	72	73	-8
111	03_82K_049	NRSC		CH_905	4180	WB	29°46'31.8"	94°34'20.64"	Brahmaputra		China	46	50	42	36	-8
112	03_82K_006	NRSC		CH_862	4523	WB	29°56'25.8"	94°35'18.24"	Brahmaputra		China	48	52	47	44	-8
113	02_53P_001	NRSC		UK_9	210	WB	28°57'29.88"	79°50'32.64"	Ganga	Ganga	India	1892	2054	1509	1547	-8
114	02_71P_016	NRSC		CH_204	4182	WB	28°29'56.76"	87°27'7.92"	Ganga	Arun Kosi	China	125	137	133	132	-9
115	02_71H_012	NRSC		CH_132	5379	GL	28°33'49.68"	85°36'14.76"	Ganga	Arun Kosi	China	116	89	127	118	-9
116	03_91C_070	NRSC		CH_1098	4252	WB	29°2'37.32"	96°11'36.6"	Brahmaputra	Dibang	China	52	57	56	47	-9
117	03_82C_016	NRSC		CH_671	4679	WB	29°39'59.76"	92°23'36.6"	Brahmaputra		China	49	54	47	47	-9
118	03_77P_021	NRSC		CH_592	4749	GL	28°2'15"	91°27'6.48"	Brahmaputra	Dangme Chhu	China	55	61	55	51	-9
119	03_78E_023	NRSC		CH_612	5291	GL	27°51'17.64"	89°15'59.76"	Brahmaputra		China	56	38	55	61	-9
120	03_77D_008	NRSC		SK_8	5039	GL	28°0'26.28"	88°29'41.64"	Brahmaputra	Teesta	India	42	46	41	42	-9
121	03_71C_005	NRSC		CH_398	5551	GL	29°50'43.8"	84°40'32.16"	Brahmaputra		China	52	57	51	52	-9
122	02_53O_005	NRSC		UK_8	239	WB	29°8'6.72"	79°17'19.68"	Ganga	Ramganga	India	1376	1510	1028	1172	-9
123	03_82G_065	NRSC		CH_826	4148	WB	29°2'16.8"	93°50'8.52"	Brahmaputra		China	72	47	66	80	-10
124	03_91H_029	NRSC		CH_1194	3325	WB	28°45'44.28"	97°3'24.12"	Brahmaputra	Lohit	China	45	50	48	45	-10
125	03_77O_002	NRSC		CH_565	3806	WB	29°53'58.56"	91°10'0.12"	Brahmaputra		China	82	91	67	73	-10
126	03_78A_014	NRSC /SDC	/Very High Risk	SK_20	5234	GL	27°54'42.84"	88°11'54.96"	Brahmaputra	Teesta	India	136	123	152	130	-11
127	03_77L_032	NRSC		CH_547	4669	GL	28°14'32.64"	90°43'38.28"	Brahmaputra	Kuri Chhu	China	93	105	101	86	-11
128	03_71G_010	NRSC		CH_419	4491	WB	29°20'49.2"	85°4'58.8"	Brahmaputra		China	271	304	221	236	-11
129	01_43J_007	NRSC	6I	JK_85	3708	WB	34°49'45.12"	74°3'42.12"	Indus	Jhelum	India	98	95	111	95	-11

Sl. No.	Lake ID	Inventory Developed by	Rank of Vulnerability	UID	Elevation (m)	Lake Type	Latitude(N)	Longitude(E)	Basin	River	Country	Area of September 2024 (Ha)	Area of Base Year of 2011 (Ha) (i)	Average Area of Last5 Years (Ha) (ii)	Average Area of Last10 years (ha) (iii)	Change in Area (%) w.r.t maximum of (i), (ii)&(iii)
130	03_91H_011	NRSC		CH_1176	4494	WB	28°56'43.44"	97°5'53.16"	Brahmaputra	Lohit	China	58	50	65	50	-11
131	03_82K_009	NRSC		CH_865	4168	WB	29°56'48.84"	94°21'28.44"	Brahmaputra		China	114	116	127	104	-11
132	01_61C_021	NRSC		CH_49	4349	WB	33°6'16.56"	80°17'10.32"	Indus	Indus	China	1073	1155	1200	1082	-11
133	03_71K_003	NRSC		CH_426	4982	WB	29°45'59.04"	86°55'21.36"	Brahmaputra		China	88	72	98	80	-11
134	03_82F_016	NRSC		CH_741	4632	WB	30°19'7.68"	93°20'32.64"	Brahmaputra		China	52	49	45	59	-11
135	02_71D_008	NRSC		NP_49	639	WB	28°9'13.68"	84°6'43.56"	Ganga	Trishuli	Nepal	86	98	97	91	-12
136	01_42H_005	NRSC		JK_5	2237	WB	36°14'56.76"	73°21'41.4"	Indus	Gilgit	India	64	73	57	54	-12
137	01_62F_002	NRSC		CH_93	4592	WB	30°48'6.48"	81°33'54.72"	Indus	Sutlej	China	293	333	303	297	-12
138	03_91C_038	NRSC		AP_85	4002	WB	29°16'8.4"	96°9'24.12"	Brahmaputra	Dibang	India	100	113	94	87	-12
139	03_77L_007	NRSC		CH_523	4510	WB	28°49'27.12"	90°50'0.24"	Brahmaputra		China	1296	1478	1347	1342	-12
140	03_91H_005	NRSC		CH_1170	4123	WB	28°58'40.08"	97°12'50.76"	Brahmaputra	Lohit	China	61	58	68	70	-13
141	03_77L_006	NRSC		CH_522	4533	WB	28°53'40.2"	90°24'19.44"	Brahmaputra		China	38	44	29	32	-13
142	03_62O_043	NRSC		CH_388	5285	WB	29°28'13.44"	83°45'49.68"	Brahmaputra		China	75	86	67	65	-13
143	03_82K_060	NRSC		CH_916	4316	WB	29°32'43.44"	94°57'53.64"	Brahmaputra		China	80	93	84	76	-14
144	01_61C_012	NRSC		CH_40	4282	WB	33°32'45.24"	80°9'2.16"	Indus	Indus	China	279	290	324	309	-14
145	03_82G_009	NRSC		CH_770	4580	WB	29°37'46.2"	93°33'41.4"	Brahmaputra		China	44	51	43	46	-14
146	03_82K_103	NRSC		CH_959	3964	WB	29°17'42.36"	94°12'6.12"	Brahmaputra		China	43	50	40	35	-14
147	03_82K_040	NRSC		CH_896	4329	WB	29°48'28.44"	94°30'1.8"	Brahmaputra		China	56	66	52	48	-15
148	01_42H_003	NRSC		JK_3	3854	WB	36°38'47.4"	73°38'50.28"	Indus	Gilgit	India	105	124	110	102	-15
149	03_91D_041	NRSC		AP_135	3526	WB	28°46'32.52"	96°31'53.4"	Brahmaputra	Dibang	India	112	115	131	115	-15
150	01_43J_021	NRSC		JK_99	1582	WB	34°7'6.24"	74°51'39.6"	Indus	Jhelum	India	1052	1238	959	980	-15
151	02_71L_011	NRSC	61G	CH_166	5439	GL	28°20'7.44"	86°11'30.12"	Ganga	Sun Kosi	China	54	64	53	49	-16
152	03_77C_006	NRSC		CH_460	4514	WB	29°35'15"	88°13'54.12"	Brahmaputra		China	85	102	83	84	-16
153	03_62N_009	NRSC		CH_326	5241	WB	30°35'26.88"	83°31'7.32"	Brahmaputra		China	248	288	294	274	-16

Sl. No.	Lake ID	Inventory Developed by	Rank of Vulnerability	UID	Elevation (m)	Lake Type	Latitude(N)	Longitude(E)	Basin	River	Country	Area of September 2024 (Ha)	Area of Base Year of 2011 (Ha) (i)	Average Area of Last5 Years (Ha) (ii)	Average Area of Last10 years (ha) (iii)	Change in Area (%) w.r.t maximum of (i), (ii)&(iii)
154	03_78A_003	NRSC /SDC	/Very High Risk	SK_11	4977	GL	27°58'31.08"	88°36'59.04"	Brahmaputra	Teesta	India	57	58	57	68	-16
155	03_78M_019	NRSC		BH_194	4697	WB	27°50'49.92"	91°34'59.88"	Brahmaputra	Dangme Chhu	Bhutan	46	55	54	49	-17
156	03_71G_013	NRSC		CH_422	4543	WB	29°6'7.56"	85°5'49.56"	Brahmaputra		China	220	244	265	247	-17
157	03_82O_029	NRSC	8I	JK_197	5311	GL	29°18'17.64"	95°38'20.4"	Indus	Shyok	India	62	68	74	62	-17
158	03_78E_017	NRSC		CH_609	5253	GL	27°52'35.76"	89°17'45.96"	Brahmaputra		China	54	65	43	48	-17
159	03_82F_020	NRSC		CH_745	4110	GL	30°16'3"	93°27'22.68"	Brahmaputra		China	59	71	72	67	-18
160	03_82G_055	NRSC		CH_816	4619	WB	29°19'55.92"	93°43'17.04"	Brahmaputra		China	51	62	46	43	-18
161	03_91C_033	NRSC		CH_1079	4278	GL	29°13'46.92"	96°48'4.68"	Brahmaputra		China	138	164	170	154	-19
162	03_91H_067	NRSC		AP_185	3791	WB	28°5'44.52"	97°17'20.4"	Brahmaputra	Lohit	India	45	56	52	47	-19
163	03_77P_013	NRSC		CH_584	5155	WB	28°31'48.36"	91°33'42.84"	Brahmaputra		China	49	60	45	47	-19
164	03_82E_004	NRSC		CH_722	5049	WB	31°3'52.92"	93°17'32.64"	Brahmaputra		China	45	57	46	44	-20
165	01_52L_003	NRSC		JK_227	4985	WB	32°55'14.88"	78°36'0.72"	Indus	Indus	India	522	649	532	559	-20
166	03_77K_009	NRSC		CH_511	3937	WB	29°28'1.2"	90°10'20.28"	Brahmaputra		China	55	70	63	64	-21
167	03_78A_018	NRSC		CH_598	4880	WB	27°51'19.44"	88°56'41.28"	Brahmaputra	Amo Chhu	China	53	67	46	42	-21
168	02_72I_002	NRSC	645G	NP_58	4854	GL	27°58'30.72"	86°40'52.32"	Ganga	Sun Kosi	Nepal	54	68	55	54	-21
169	01_61D_003	NRSC		CH_55	4453	WB	32°25'23.52"	80°51'55.08"	Indus	Indus	China	54	69	51	52	-21
170	03_82D_003	NRSC		CH_709	4408	WB	28°53'37.32"	92°7'43.32"	Brahmaputra		China	39	50	43	42	-22
171	03_82G_048	NRSC		CH_809	4663	WB	29°25'15.6"	93°17'27.6"	Brahmaputra		China	43	55	45	42	-22
172	03_91C_049	NRSC		AP_95	4261	WB	29°11'46.32"	96°12'10.08"	Brahmaputra	Dibang	India	62	80	69	58	-23
173	03_71G_014	NRSC		CH_423	4606	WB	29°5'1.68"	85°11'22.56"	Brahmaputra		China	176	60	232	191	-24
174	02_53K_002	NRSC		UK_2	260	WB	29°19'9.84"	78°55'13.08"	Ganga	Ramganga	India	1196	1597	947	931	-25

Sl. No.	Lake ID	Inventory Developed by	Rank of Vulnerability	UID	Elevation (m)	Lake Type	Latitude(N)	Longitude(E)	Basin	River	Country	Area of September 2024 (Ha)	Area of Base Year of 2011 (Ha) (i)	Average Area of Last5 Years (Ha) (ii)	Average Area of Last10 years (ha) (iii)	Change in Area (%) w.r.t maximum of (i), (ii)&(iii)
175	03_77P_018	NRSC		CH_589	4707	WB	28°6'5.76"	91°56'34.44"	Brahmaputra	Dangme Chhu	China	112	154	116	118	-27
176	01_52O_002	NRSC		CH_5	5262	WB	33°58'49.08"	79°32'35.52"	Indus	Indus	China	98	135	104	102	-27
177	01_53E_001	NRSC		HP_12	921	WB	31°40'22.8"	77°4'44.76"	Indus	Beas	India	71	72	99	94	-28
178	03_78A_001	NRSC /SDC	/High Risk	SK_9	5371	GL	27°59'30.12"	88°48'55.8"	Brahmaputra	Teesta	India	184	156	185	254	-28
179	01_52O_003	NRSC		CH_6	4252	WB	33°33'43.56"	79°57'46.8"	Indus	Indus	China	206	290	207	188	-29
180	03_91C_014	NRSC		CH_1065	4033	GL	29°35'56.4"	96°8'28.68"	Brahmaputra		China	46	65	49	48	-30
181	03_71G_009	NRSC		CH_418	5032	WB	29°31'32.88"	85°38'37.32"	Brahmaputra		China	125	178	133	135	-30
182	03_62O_002	NRSC		CH_347	4587	WB	29°57'38.52"	83°16'11.64"	Brahmaputra		China	41	58	48	42	-30
183	01_62B_001	NRSC		CH_73	4526	WB	30°49'22.8"	80°44'34.8"	Indus	Sutlej	China	303	440	247	273	-31
184	01_52G_003	NRSC		JK_191	4533	WB	33°18'38.52"	77°59'49.2"	Indus	Indus	India	971	1473	1254	1249	-34
185	01_52I_003	NRSC		JK_195	5159	WB	35°24'37.8"	78°17'3.84"	Indus	Shyok	India	126	180	193	189	-35
186	03_77P_016	NRSC		CH_587	4749	WB	28°19'48.72"	91°57'47.88"	Brahmaputra	Dangme Chhu	China	162	251	197	203	-36
187	03_82F_010	NRSC		CH_735	5030	GL	30°28'13.08"	93°31'59.52"	Brahmaputra		China	27	44	17	14	-39
188	03_91D_022	NRSC		AP_118	3143	WB	28°52'33.96"	96°23'38.76"	Brahmaputra	Dibang	India	26	44	42	38	-40
189	03_77P_012	NRSC		CH_583	4975	WB	28°31'43.32"	91°39'54.36"	Brahmaputra		China	52	91	63	57	-43
190	02_77D_003	NRSC		CH_258	4364	WB	28°18'33.12"	88°19'31.08"	Ganga	Arun Kosi	China	80	119	75	141	-43
191	01_52I_004	NRSC		JK_196	5141	WB	35°23'27.96"	78°13'7.68"	Indus	Shyok	India	70	124	73	83	-43
192	03_77P_006	NRSC		CH_577	4616	WB	28°39'46.44"	91°40'46.56"	Brahmaputra		China	2524	4566	4900	4648	-48
193	03_71O_002	NRSC		CH_438	4909	WB	29°42'16.92"	87°1'0.84"	Brahmaputra		China	25	48	47	46	-48
194	02_77D_001	NRSC		CH_256	4423	WB	28°24'16.2"	88°13'42.96"	Ganga	Arun Kosi	China	2869	5831	3378	3211	-51
195	02_62B_001	NRSC		CH_106	5216	WB	30°37'4.8"	80°37'49.44"	Ganga	Karnali	China	29	67	36	39	-57
196	03_62O_028	NRSC		CH_373	4577	WB	29°47'40.92"	83°33'20.88"	Brahmaputra		China	367	887	469	563	-59

Sl. No.	Lake ID	Inventory Developed by	Rank of Vulnerability	UID	Elevation (m)	Lake Type	Latitude(N)	Longitude(E)	Basin	River	Country	Area of September 2024 (Ha)	Area of Base Year of 2011 (Ha) (i)	Average Area of Last5 Years (Ha) (ii)	Average Area of Last10 years (ha) (iii)	Change in Area (%) w.r.t maximum of (i), (ii)&(iii)
197	03_77L_010	NRSC		CH_526	4457	WB	28°48'40.68"	90°29'34.44"	Brahmaputra		China	15	47	47	43	-68
198	03_82D_010	NRSC		CH_716	5043	WB	28°11'29.4"	92°2'34.8"	Brahmaputra	Dangme Chhu	China	24	76	42	51	-69

Note: G stands for Ganga, I for Indus and B for Brahmaputra under the rank of vulnerability,

" -" Inventory Data not available , "#" indicates frozen/ dried lakes.

A Water Body of China of Lake ID: 03_71G_008 has have merged with a nearby lake. The combined area has been shown against the lake.

Table 4.5: GLs & WBs with water spread area greater than 50 ha "Not Analysed"

Sl. No.	Lake ID	Inventory Developed by	Rank of Vulnerability	UID	Elevation (m)	Lake Type	Latitude(N)	Longitude(E)	Basin	River	Country	Area of September 2024 (Ha)	Area of Base Year of 2011 (Ha) (i)	Average Area of Last5 Years (Ha) (ii)	Average Area of Last10 years (ha) (iii)	Change in Area (%) w.r.t maximum of (i), (ii)&(iii)
1	01_61D_001	NRSC		CH_53	5593	WB	32°48'5.4"	80°29'0.96"	Indus	Indus	China	#	63	55	57	#
2	01_52E_001	NRSC		JK_188	5116	GL	35°25'4.8"	77°36'16.56"	Indus	Shyok	India	#	51	6	24	#
3	03_91C_052	NRSC		CH_1085	4591	WB	29°10'28.2"	96°19'32.16"	Brahmaputra	Lohit	China	#	64	39	36	#
4	01_61G_001	NRSC		CH_62	4973	WB	33°49'12.72"	81°38'40.56"	Indus	Indus	China	#	85	62	66	#
5	02_77D_004	NRSC		CH_259	4378	WB	28°17'38.04"	88°7'15.6"	Ganga	Arun Kosi	China	425	1875	592	648	#
6	02_63M_002	NRSC		NP_41	112	WB	27°37'15.96"	83°6'6.12"	Ganga	Rapti	Nepal	#	153	91	102	#
7	03_71C_010	NRSC		CH_403	4561	WB	29°18'39.6"	84°25'49.44"	Brahmaputra		China	34	49	32	39	#
8	03_62N_003	NRSC		CH_320	5208	WB	30°42'38.16"	83°36'30.96"	Brahmaputra		China	4	57	29	35	#
9	03_77P_005	NRSC		CH_576	4619	WB	28°45'55.08"	91°40'30"	Brahmaputra		China	#	112	96	96	#
10	03_78I_023	NRSC		BH_104	5055	GL	27°56'22.56"	90°32'5.28"	Brahmaputra	Manas Chhu & Mangde Chhu	Bhutan	62	51	54	45	#
11	02_72E_001	NRSC		NP_57	1554	WB	27°36'6.48"	85°9'25.2"	Ganga	Bagmati	Nepal	192	158	148	141	#
12	02_71L_026	NRSC	73G	CH_181	5057	GL	28°11'8.52"	86°31'54.12"	Ganga	Sun Kosi	China	66	59	65	59	#
13	02_72I_025	NRSC	66G	NP_78	4884	GL	27°46'44.4"	86°36'48.96"	Ganga	Sun Kosi	Nepal	172	108	135	114	#
14	02_72M_009	NRSC	51G	NP_86	4932	GL	27°52'13.08"	87°52'3.36"	Ganga	Tamor Kosi	Nepal	67	65	65	61	#
15	03_62J_032	NRSC		CH_304	4857	GL	30°4'42.6"	82°20'32.28"	Brahmaputra		China	91	81	89	83	#
16	03_82O_042	NRSC		AP_49	3093	WB	29°10'36.48"	95°36'56.16"	Brahmaputra	Dibang	India	#	44	39	37	#
17	03_91D_010	NRSC		AP_109	3323	WB	28°55'8.4"	96°22'58.8"	Brahmaputra	Dibang	India	52	46	51	45	#
18	03_62O_030	NRSC		CH_375	5013	WB	29°43'34.68"	83°6'16.56"	Brahmaputra		China	96	97	103	101	#
19	03_91C_044	NRSC		AP_90	4230	WB	29°13'23.16"	96°16'41.16"	Brahmaputra	Lohit	India	68	63	67	59	#

Sl. No.	Lake ID	Inventory Developed by	Rank of Vulnerability	UID	Elevation (m)	Lake Type	Latitude(N)	Longitude(E)	Basin	River	Country	Area of September 2024 (Ha)	Area of Base Year of 2011 (Ha) (i)	Average Area of Last5 Years (Ha) (ii)	Average Area of Last10 years (ha) (iii)	Change in Area (%) w.r.t maximum of (i), (ii)&(iii)
20	03_82F_007	NRSC		CH_732	4801	GL	30°31'13.8"	93°26'41.28"	Brahmaputra		China	125	115	116	108	#
21	03_62O_038	NRSC		CH_383	4893	WB	29°36'16.92"	83°22'38.28"	Brahmaputra		China	143	124	134	133	#
22	01_52L_008	NRSC		CH_1	3873	WB	32°19'35.04"	78°43'25.68"	Indus	Sutlej	China	#	50	68	68	#
23	03_91C_059	NRSC		CH_1089	4303	WB	29°5'30.12"	96°12'39.24"	Brahmaputra	Dibang	China	#	98	96	82	#
24	03_78I_048	NRSC		BH_129	4169	WB	27°52'0.84"	90°48'58.32"	Brahmaputra	Manas Chhu & Mangde Chhu	Bhutan	#	52	52	45	#
25	03_82J_014	NRSC		CH_844	3703	WB	30°10'24.6"	94°20'44.52"	Brahmaputra		China	#	183	183	167	#
26	03_91C_005	NRSC		CH_1056	4926	GL	29°49'23.16"	96°21'2.52"	Brahmaputra		China	#	86	99	80	#
27	02_77D_009	NRSC	71G	CH_264	5296	GL	28°0'37.08"	88°15'29.52"	Ganga	Arun Kosi	China	#	58	60	54	#
28	03_82N_030	NRSC		CH_1001	4462	GL	30°15'2.88"	95°36'13.68"	Brahmaputra		China	#	132	133	117	#

Note: G stands for Ganga, I for Indus and B for Brahmaputra under the rank of vulnerability,
" -" Inventory Data not available , "#" indicates frozen/ dried lakes.

Table 4.6: Results of analysis of GLs & WBs as per NRSC Inventory (2011) with water spread area between 10ha - 50 ha

Sl. No.	Lake ID	Inventory Developed by	Rank of Vulnerability	Lake Type	Elevation	Latitude(E)	Longitude(N)	River	Basin	Country	Area of September 2024 (Ha)	Inventory Area 2011(Ha) (i)	Base Area Average (area of last 2 years) (Ha) (ii)	Change in Area (%) w.r.t maximum of (i)&(ii)
1	03_78A_035	NRSC		GL	4998	27° 57' 3.24"	88° 21' 15.48"	Teesta	Brahmaputra	India	42	#	8.9	372
2	03_82N_032	NRSC		GL	4384	30°13'44.4"	95°35'30.84"		Brahmaputra	China	122	28	33.4	266
3	01_43J_003	NRSC		GL	3954	34°55'36.12"	74°9'19.44"	Jhelum	Indus	India	48	20	14.9	137
4	03_77L_078	NRSC		GL	5296	28°0'44.64"	90°16'46.92"	Puna Tsang Chhu	Brahmaputra	Bhutan	33	12	14.1	134
5	02_71H_004	NRSC		GL	5239	28°39'46.08"	85°28'31.8"	Arun Kosi	Ganga	China	55	19	24.6	124
6	03_77L_048	NRSC		GL	4792	28°3'48.24"	90°54'10.08"	Kuri Chhu	Brahmaputra	China	53	21	26.4	101
7	01_62B_002	NRSC	381I	GL	4998	30°33'9.72"	80°24'6.48"	Sutlej	Indus	China	39	14	20.8	88
8	02_71P_020	NRSC		GL	4200	28°20'48.84"	87°53'6.72"	Arun Kosi	Ganga	China	210	26	121.9	72
9	02_62B_004	NRSC	232G	GL	4918	30°33'52.2"	80°10'41.16"	Sarda	Ganga	India	31	19	18.7	66
10	02_71P_038	NRSC	586G	GL	5483	28°8'33.36"	87°6'42.12"	Arun Kosi	Ganga	China	44	23	26.7	65
11	03_91C_002	NRSC		GL	4691	29°53'36.96"	96°22'40.44"		Brahmaputra	China	49	23	31.5	56
12	03_91C_019	NRSC		GL	3858	29°27'55.08"	96°30'4.32"		Brahmaputra	China	72	17	49.2	46
13	03_77L_053	NRSC		GL	4793	28°3'12.96"	90°54'8.28"	Kuri Chhu	Brahmaputra	China	53	25	38.1	39
14	01_62F_009	NRSC	387I	GL	5712	30°23'34.8"	81°57'48.6"	Sutlej	Indus	China	27	13	19.6	38
15	02_71P_026	NRSC	322G	GL	5340	28°12'23.04"	87°33'37.8"	Arun Kosi	Ganga	China	22	16	14.1	35

Sl. No.	Lake ID	Inventory Developed by	Rank of Vulnerability	Lake Type	Elevation	Latitude(E)	Longitude(N)	River	Basin	Country	Area of September 2024 (Ha)	Inventory Area 2011(Ha) (i)	Base Area Average (area of last 2 years) (Ha) (ii)	Change in Area (%) w.r.t maximum of (i)(&(ii)
16	03_78I_028	NRSC		GL	4792	27°55'32.88"	90°33'17.64"	Manas Chhu & Mangde Chhu	Brahmaputra	Bhutan	33	24	24.7	34
17	03_91G_003	NRSC		GL	5018	29°28'1.2"	97°22'29.28"	Lohit	Brahmaputra	China	24	15	18.0	33
18	03_78I_037	NRSC		GL	5159	27°55'10.2"	90°24'25.92"	Manas Chhu & Mangde Chhu	Brahmaputra	Bhutan	18	11	13.8	30
19	03_77L_071	NRSC		GL	5228	28°1'41.52"	90°16'13.44"	Puna Tsang Chhu	Brahmaputra	Bhutan	28	21	21.6	30
20	03_77L_028	NRSC		GL	4632	28°16'15.24"	90°43'19.2"	Kuri Chhu	Brahmaputra	China	16	12	12.5	28
21	03_77L_057	NRSC		GL	4897	28°3'35.28"	90°36'12.24"	Kuri Chhu	Brahmaputra		56	36	43.7	28
22	03_91C_016	NRSC		GL	4813	29°32'36.6"	96°36'57.96"		Brahmaputra	China	16	13	11.7	26
23	03_82L_006	NRSC		GL	4147	28°52'48.36"	94°2'22.92"		Brahmaputra	China	17	13	13.6	25
24	03_78A_025	NRSC		GL	4888	27°38'10.32"	88°48'57.96"	Amo Chhu	Brahmaputra		13	10	9.8	25
25	03_82J_006	NRSC		GL	3657	30°32'8.88"	94°45'38.16"		Brahmaputra	China	69	41	55.1	25

Sl. No.	Lake ID	Inventory Developed by	Rank of Vulnerability	Lake Type	Elevation	Latitude(E)	Longitude(N)	River	Basin	Country	Area of September 2024 (Ha)	Inventory Area 2011(Ha) (i)	Base Area Average (area of last 2 years) (Ha) (ii)	Change in Area (%) w.r.t maximum of (i)(&(ii)
26	03_91H_001	NRSC		GL	4429	28°59'30.84"	97°32'54.24"	Lohit	Brahmaputra	China	19	13	15.3	24
27	02_72I_013	NRSC	694G	GL	5497	27°51'24.84"	86°56'13.56"	Sun Kosi	Ganga	Nepal	22	18	17.6	24
28	03_62O_031	NRSC		GL	5381	29°41'40.2"	83°1'33.96"		Brahmaputra	China	37	28	30.1	23
29	03_71C_006	NRSC		GL	5482	29°49'4.8"	84°41'27.96"		Brahmaputra	China	27	22	17.7	23
30	02_71H_023	NRSC		GL	5595	28°26'42.36"	85°46'46.92"	Arun Kosi	Ganga	China	70	41	56.9	23
31	03_77D_007	NRSC/ SDC	/Very High Risk	GL	5015	28°0'26.28"	88°34'18.48"	Teesta	Brahmaputra	India	29	24	23.2	22
32	03_78A_027	NRSC/ SDC	/Very High Risk	GL	4888	27°32'0.6"	88°5'8.52"	Teesta	Brahmaputra	India	41	33	33.7	22
33	03_83A_004	NRSC		GL	5109	27°45'47.16"	92°25'29.64"	Dangme Chhu	Brahmaputra	India	21	17	17.4	21
34	02_71L_029	NRSC	747G	GL	5237	28°6'52.2"	86°51'45.72"	Arun Kosi	Ganga	China	60	30	50.0	20
35	02_71P_001	NRSC		GL	5498	28°50'26.88"	87°30'28.08"	Arun Kosi	Ganga	China	29	24	17.7	20
36	01_62B_003	NRSC	86I	GL	5288	30°28'36.48"	80°35'35.16"	Sutlej	Indus	India	15	12	12.0	20
37	02_62O_004	NRSC	299G	GL	5529	29°7'1.92"	83°44'18.6"	Kali Gandak	Ganga	Nepal	21	11	17.6	19
38	03_77J_002	NRSC		GL	5254	30°29'57.12"	90°56'52.8"		Brahmaputra	China	14	12	10.4	19
39	03_77H_029	NRSC		GL	5049	28°0'35.64"	89°53'0.96"	Puna Tsang Chhu	Brahmaputra	Bhutan	26	21	21.8	19

Sl. No.	Lake ID	Inventory Developed by	Rank of Vulnerability	Lake Type	Elevation	Latitude(E)	Longitude(N)	River	Basin	Country	Area of September 2024 (Ha)	Inventory Area 2011(Ha) (i)	Base Area Average (area of last 2 years) (Ha) (ii)	Change in Area (%) w.r.t maximum of (i)(&(ii)
40	03_78I_058	NRSC		GL	5041	27°52'34.32"	90°16'50.52"	Manas Chhu & Mangde Chhu	Brahmaputra	Bhutan	31	16	26.1	19
41	01_52H_003	NRSC		GL	4165	32°29'54.6"	77°32'37.32"	Chenab	Indus	India	167	28	141.0	18
42	03_62J_025	NRSC		GL	5362	30°16'55.92"	82°10'2.64"		Brahmaputra	China	23	19	19.7	17
43	02_62F_013	NRSC	256G	GL	5252	30°15'56.88"	81°20'51"	Karnali	Ganga	China	51	24	43.7	17
44	03_77L_019	NRSC		GL	5681	28°22'45.84"	90°5'41.28"		Brahmaputra	China	16	13	13.7	17
45	02_71L_017	NRSC	179G	GL	5211	28°15'11.16"	86°6'10.44"	Sun Kosi	Ganga	China	17	15	13.4	17
46	02_71L_024	NRSC	245G	GL	5263	28°11'37.68"	86°18'51.12"	Sun Kosi	Ganga	China	28	23	24.2	16
47	02_72I_022	NRSC	287G	GL	5344	27°47'33"	86°50'21.12"	Sun Kosi	Ganga	Nepal	34	16	29.2	16
48	03_78E_008	NRSC		GL	5045	27°56'27.6"	89°54'20.88"	Puna Tsang Chhu	Brahmaputra	Bhutan	14	12	11.8	16
49	03_78I_004	NRSC		GL	5194	27°59'28.32"	90°25'6.24"	Manas Chhu & Mangde Chhu	Brahmaputra	Bhutan	42	36	31.5	16
50	03_83A_007	NRSC		GL	5028	27°43'39.36"	92°26'12.48"	Jia Brali	Brahmaputra	India	16	14	13.7	15
51	03_82F_013	NRSC		GL	4761	30°21'16.92"	93°31'40.08"		Brahmaputra	China	12	10	9.0	15

Sl. No.	Lake ID	Inventory Developed by	Rank of Vulnerability	Lake Type	Elevation	Latitude(E)	Longitude(N)	River	Basin	Country	Area of September 2024 (Ha)	Inventory Area 2011(Ha) (i)	Base Area Average (area of last 2 years) (Ha) (ii)	Change in Area (%) w.r.t maximum of (i)(&(ii)
52	03_82F_011	NRSC		GL	4720	30°26'26.16"	93°37'45.84"		Brahmaputra	China	14	12	9.4	15
53	03_78E_003	NRSC		GL	5152	27°58'26.4"	89°53'44.88"	Puna Tsang Chhu	Brahmaputra	Bhutan	26	21	22.7	15
54	03_77L_073	NRSC		GL	5166	28°0'23.04"	90°34'21.36"	Manas Chhu & Mangde Chhu	Brahmaputra	Bhutan	14	12	12.2	15
55	03_78A_005	NRSC		GL	5201	27°58'31.44"	88°25'20.64"	Teesta	Brahmaputra	India	13	11	8.9	15
56	02_62K_011	NRSC	612G	GL	4673	29°14'57.12"	82°33'49.68"	Bheri	Ganga	Nepal	30	26	26.2	15
57	03_77D_006	NRSC/ SDC	/Very High Risk	GL	5084	28°0'51.84"	88°33'41.76"	Teesta	Brahmaputra	India	26	22	22.8	14
58	03_78A_006	NRSC		GL	5004	27°58'15.6"	88°25'45.84"	Teesta	Brahmaputra	India	14	11	12.3	14
59	03_77L_045	NRSC		GL	5224	28°5'7.8"	90°36'17.64"	Kuri Chhu	Brahmaputra	China	36	32	30.7	14
60	03_78I_001	NRSC		GL	5129	27°59'52.44"	90°35'33"	Manas Chhu & Mangde Chhu	Brahmaputra	Bhutan	17	15	9.8	14

Sl. No.	Lake ID	Inventory Developed by	Rank of Vulnerability	Lake Type	Elevation	Latitude(E)	Longitude(N)	River	Basin	Country	Area of September 2024 (Ha)	Inventory Area 2011(Ha) (i)	Base Area Average (area of last 2 years) (Ha) (ii)	Change in Area (%) w.r.t maximum of (i)(&(ii)
61	03_78I_026	NRSC		GL	5233	27°56'26.88"	90°23'49.2"	Manas Chhu & Mangde Chhu	Brahmaputra	Bhutan	19	17	16.2	14
62	03_91G_007	NRSC		GL	4785	29°13'47.28"	97°19'55.92"	Lohit	Brahmaputra	China	13	11	11.5	13
63	03_82F_025	NRSC		GL	4253	30°12'29.52"	93°30'44.28"		Brahmaputra	China	13	11	10.0	13
64	03_78I_020	NRSC		GL	5331	27°58'13.8"	90°19'49.8"	Manas Chhu &MangdeChhu	Brahmaputra	Bhutan	24	18	21.2	13
65	03_77L_047	NRSC		GL	4364	28°6'1.44"	90°13'49.08"	Puna Tsang Chhu	Brahmaputra	Bhutan	48	23	42.3	13
66	03_78A_017	NRSC		GL	5545	27°53'34.8"	88°11'31.92"	Teesta	Brahmaputra	India	29	19	25.8	13
67	03_82K_109	NRSC		GL	4356	29°3'7.2"	94°5'49.2"		Brahmaputra	China	25	22	21.0	13
68	01_42H_002	NRSC	162I	GL	2763	36°38'34.8"	73°24'26.64"	Gilgit	Indus	India	18	13	16.0	13
69	03_62J_010	NRSC		GL	5571	30°33'3.96"	82°57'27"		Brahmaputra	China	30	27	22.7	13

Sl. No.	Lake ID	Inventory Developed by	Rank of Vulnerability	Lake Type	Elevation	Latitude(E)	Longitude(N)	River	Basin	Country	Area of September 2024 (Ha)	Inventory Area 2011(Ha) (i)	Base Area Average (area of last 2 years) (Ha) (ii)	Change in Area (%) w.r.t maximum of (i)(&(ii)
70	03_77L_063	NRSC		GL	5183	28°2'6.36"	90°37'29.28"	Manas Chhu & Mangde Chhu	Brahmaputra	Bhutan	34	30	24.1	13
71	02_72I_030	NRSC	480G	GL	4624	27°42'41.04"	86°35'56.76"	Sun Kosi	Ganga	Nepal	12	11	6.5	12
72	03_82L_007	NRSC		GL	4163	28°50'15"	94°27'5.04"	Ding	Brahmaputra	India	18	16	14.8	12
73	02_72I_021	NRSC	764G	GL	5276	27°47'38.04"	86°54'38.52"	Sun Kosi	Ganga	Nepal	21	18	18.7	12
74	02_71H_025	NRSC	464G	GL	5303	28°24'23.4"	85°35'16.08"	Trishuli	Ganga	China	19	12	17.0	12
75	03_78E_001	NRSC		GL	5157	27°58'54.12"	89°53'47.4"	Puna Tsang Chhu	Brahmaputra	Bhutan	37	26	33.0	12
76	03_82F_026	NRSC		GL	4607	30°10'21"	93°43'5.52"		Brahmaputra	China	15	13	10.8	12
77	03_91H_003	NRSC		GL	4439	28°59'22.56"	97°16'4.08"	Lohit	Brahmaputra	China	13	10	11.7	11
78	02_78A_001	NRSC	498G	GL	5201	27°59'46.68"	88°24'7.2"	Arun Kosi	Ganga	China	22	16	19.9	11
79	02_71H_011	NRSC	775G	GL	4509	28°34'9.48"	85°27'24.12"	Trishuli	Ganga	China	28	19	25.3	11
80	03_82F_009	NRSC		GL	4712	30°29'36.6"	93°21'27.72"		Brahmaputra	China	23	20	20.7	11
81	03_82O_002	NRSC		GL	4198	29°58'57.36"	95°54'12.96"		Brahmaputra	China	21	18	18.9	11
82	03_91G_001	NRSC		GL	5147	29°42'4.32"	97°0'2.88"		Brahmaputra	China	13	12	8.3	11
83	02_71P_042	NRSC	654G	GL	5524	28°7'46.56"	87°4'55.56"	Arun Kosi	Ganga	China	22	20	19.7	11

Sl. No.	Lake ID	Inventory Developed by	Rank of Vulnerability	Lake Type	Elevation	Latitude(E)	Longitude(N)	River	Basin	Country	Area of September 2024 (Ha)	Inventory Area 2011(Ha) (i)	Base Area Average (area of last 2 years) (Ha) (ii)	Change in Area (%) w.r.t maximum of (i)(&(ii)
84	03_91H_033	NRSC		GL	4389	28°33'21.96"	97°32'51.72"	Lohit	Brahmaputra	China	14	13	10.4	11
85	02_71P_044	NRSC	557G	GL	5555	28°6'0"	87°4'34.68"	Arun Kosi	Ganga	China	13	12	8.2	11
86	03_78A_007	NRSC/ SDC	/Very High Risk	GL	4977	27°57'38.88"	88°38'57.48"	Teesta	Brahmaputra	India	19	17	16.8	10
87	02_71L_030	NRSC	242G	GL	5242	28°4'22.8"	86°31'12.72"	Sun Kosi	Ganga	China	24	19	21.9	10
88	02_71P_034	NRSC	726G	GL	5259	28°9'18"	87°36'46.44"	Arun Kosi	Ganga	China	25	23	21.4	10
89	03_82J_001	NRSC		GL	4775	30°49'51.6"	94°0'3.24"		Brahmaputra	China	34	31	28.8	10
90	03_78I_015	NRSC		GL	5116	27°58'55.2"	90°14'38.76"	Puna Tsang Chhu	Brahmaputra	Bhutan	18	16	15.2	10
91	02_71H_032	NRSC		GL	5116	28°17'55.32"	85°49'8.4"	Sun Kosi	Ganga	China	28	22	25.5	10
92	03_91H_036	NRSC		GL	4457	28°31'5.16"	97°31'35.76"	Lohit	Brahmaputra	China	22	19	20.0	10
93	03_78I_008	NRSC		GL	5252	27°59'17.88"	90°22'48.36"	Manas Chhu &MangdeChhu	Brahmaputra	Bhutan	15	14	12.1	10
94	03_78I_036	NRSC		GL	5028	27°55'51.96"	90°12'32.76"	Puna Tsang Chhu	Brahmaputra	Bhutan	13	11	11.8	10

Sl. No.	Lake ID	Inventory Developed by	Rank of Vulnerability	Lake Type	Elevation	Latitude(E)	Longitude(N)	River	Basin	Country	Area of September 2024 (Ha)	Inventory Area 2011(Ha) (i)	Base Area Average (area of last 2 years) (Ha) (ii)	Change in Area (%) w.r.t maximum of (i)(&(ii)
95	03_78I_054	NRSC		GL	5138	27°52'59.88"	90°17'53.16"	Manas Chhu &MangdeChhu	Brahmaputra	Bhutan	17	14	15.5	10
96	03_78I_005	NRSC		GL	5338	27°59'47.04"	90°17'17.16"	Puna Tsang Chhu	Brahmaputra	Bhutan	48	40	43.5	10
97	03_77L_079	NRSC		GL	5386	28°0'21.24"	90°19'40.08"	Manas Chhu & Mangde Chhu	Brahmaputra	Bhutan	37	30	33.7	10
98	03_78I_038	NRSC		GL	5143	27°55'28.56"	90°15'30.6"	Puna Tsang Chhu	Brahmaputra	Bhutan	12	11	9.7	9
99	03_77L_075	NRSC		GL	4718	28°0'11.16"	90°32'25.8"	Manas Chhu &MangdeChhu	Brahmaputra	Bhutan	25	23	20.2	9
100	02_62K_001	NRSC	329G	GL	4404	29°59'35.88"	82°11'49.2"	Karnali	Ganga	Nepal	28	26	24.2	9
101	03_82N_008	NRSC		GL	4546	30°34'19.2"	95°15'15.48"		Brahmaputra	China	35	18	32.2	9
102	03_91C_003	NRSC		GL	4703	29°52'59.88"	96°23'21.12"		Brahmaputra	China	31	24	28.4	9
103	03_83A_003	NRSC		GL	5188	27°46'12.72"	92°25'56.64"	Dangme Chhu	Brahmaputra	India	90	24	82.4	9

Sl. No.	Lake ID	Inventory Developed by	Rank of Vulnerability	Lake Type	Elevation	Latitude(E)	Longitude(N)	River	Basin	Country	Area of September 2024 (Ha)	Inventory Area 2011(Ha) (i)	Base Area Average (area of last 2 years) (Ha) (ii)	Change in Area (%) w.r.t maximum of (i)(&(ii)
104	03_91D_075	NRSC		GL	4274	28°36'28.8"	96°19'14.16"	Dibang	Brahmaputra	India	27	23	25.1	8
105	02_72I_024	NRSC	358G	GL	5165	27°47'23.28"	86°37'11.64"	Sun Kosi	Ganga	Nepal	38	35	31.4	8
106	03_71P_002	NRSC		GL	5537	28°48'13.32"	87°37'28.2"		Brahmaputra	China	17	13	15.8	8
107	03_78I_067	NRSC		GL	4918	27°50'44.16"	90°18'9"	Manas Chhu & Mangde Chhu	Brahmaputra	Bhutan	24	20	22.2	8
108	02_71L_025	NRSC	154G	GL	5357	28°11'33.72"	86°21'1.8"	Sun Kosi	Ganga	China	20	16	18.6	8
109	03_91H_034	NRSC		GL	4629	28°32'13.2"	97°37'15.6"	Lohit	Brahmaputra	China	14	13	12.9	8
110	03_77L_082	NRSC		GL	5019	28°0'11.52"	90°8'59.64"	Puna Tsang Chhu	Brahmaputra	Bhutan	15	14	12.9	8
111	02_72I_015	NRSC	814G	GL	5416	27°51'0"	86°55'42.96"	Sun Kosi	Ganga	Nepal	48	36	44.5	8
112	03_82F_005	NRSC		GL	4762	30°32'6.36"	93°31'2.28"		Brahmaputra	China	44	17	40.7	8
113	03_78I_006	NRSC		GL	5158	27°59'43.08"	90°15'38.16"	Puna Tsang Chhu	Brahmaputra	Bhutan	20	16	18.6	8
114	02_62J_002	NRSC		GL	5021	30°8'56.04"	82°9'42.12"	Karnali	Ganga	Nepal	17	16	14.2	8
115	02_72I_008	NRSC	99G	GL	5040	27°55'44.4"	86°26'0.6"	Sun Kosi	Ganga		36	32	33.2	8
116	03_77L_056	NRSC		GL	4963	28°2'46.32"	90°55'6.96"	Kuri Chhu	Brahmaputra	China	17	16	14.4	8

Sl. No.	Lake ID	Inventory Developed by	Rank of Vulnerability	Lake Type	Elevation	Latitude(E)	Longitude(N)	River	Basin	Country	Area of September 2024 (Ha)	Inventory Area 2011(Ha) (i)	Base Area Average (area of last 2 years) (Ha) (ii)	Change in Area (%) w.r.t maximum of (i)(&(ii)
117	03_82L_008	NRSC		GL	4342	28°52'12.36"	94°1'5.88"		Brahmaputra	China	13	12	10.6	8
118	02_62F_007	NRSC		GL	5179	30°20'18.96"	81°54'39.96"	Karnali	Ganga	Nepal	27	25	19.8	8
119	03_91C_071	NRSC		GL	4339	29°2'31.2"	96°13'12"	Dibang	Brahmaputra	China	38	35	35.3	8
120	03_91C_026	NRSC		GL	4305	29°20'18.24"	96°4'57.72"	Dibang	Brahmaputra	India	30	28	25.3	8
121	02_78A_007	NRSC	429G	GL	5618	27°50'11.4"	88°4'39.36"	Tamor Kosi	Ganga	Nepal	17	16	15.1	8
122	02_72M_015	NRSC	115G	GL	4969	27°47'34.08"	87°56'1.32"	Tamor Kosi	Ganga	Nepal	14	13	12.2	8
123	03_77H_027	NRSC		GL	4927	28°5'14.28"	89°28'50.16"		Brahmaputra	China	23	21	20.7	8
124	03_91H_073	NRSC		GL	4481	28°3'15.48"	97°19'47.64"	Lohit	Brahmaputra	India	27	25	25.0	8
125	03_91D_098	NRSC		GL	4197	28°24'10.44"	96°50'11.76"	Lohit	Brahmaputra	China	14	13	12.6	7
126	03_62K_006	NRSC		GL	5101	29°57'47.52"	82°30'27"		Brahmaputra	China	26	21	24.4	7
127	02_71H_020	NRSC		GL	5354	28°29'11.76"	85°44'8.88"	Arun Kosi	Ganga	China	75	29	70.4	7
128	02_71L_008	NRSC	457G	GL	5577	28°22'31.08"	86°15'27"	Sun Kosi	Ganga	China	40	24	37.5	7
129	01_52L_007	NRSC	184I	GL	5498	32°24'36.36"	78°53'56.4"	Indus	Indus	India	34	32	31.4	7
130	02_62G_002	NRSC	599G	GL	4822	29°55'17.76"	81°1'50.52"	Karnali	Ganga	Nepal	18	16	16.9	7

Sl. No.	Lake ID	Inventory Developed by	Rank of Vulnerability	Lake Type	Elevation	Latitude(E)	Longitude(N)	River	Basin	Country	Area of September 2024 (Ha)	Inventory Area 2011(Ha) (i)	Base Area Average (area of last 2 years) (Ha) (ii)	Change in Area (%) w.r.t maximum of (i)(&(ii)
131	03_78I_022	NRSC		GL	5048	27°56'32.64"	90°45'22.32"	Manas Chhu & Mangde Chhu	Brahmaputra	Bhutan	17	16	14.2	7
132	03_82F_021	NRSC		GL	4487	30°14'58.56"	93°36'49.32"		Brahmaputra	China	12	11	10.3	7
133	02_72I_019	NRSC	757G	GL	5510	27°48'20.16"	86°58'24.96"	Sun Kosi	Ganga	Nepal	18	17	16.0	7
134	03_78A_020	NRSC		GL	5219	27°52'49.44"	88°15'4.68"	Teesta	Brahmaputra	India	15	14	13.8	7
135	03_78I_040	NRSC		GL	5167	27°55'13.44"	90°15'46.44"	Puna Tsang Chhu	Brahmaputra	Bhutan	23	22	21.2	6
136	03_91G_009	NRSC		GL	4637	29°12'2.88"	97°22'8.4"	Lohit	Brahmaputra	China	17	16	15.1	6
137	03_82F_023	NRSC		GL	4354	30°13'57"	93°34'35.76"		Brahmaputra	China	12	11	10.3	6
138	03_77J_005	NRSC		GL	5766	30°4'29.64"	90°9'24.48"		Brahmaputra	China	13	12	12.3	6
139	03_77J_001	NRSC		GL	5354	30°30'7.2"	90°54'46.08"		Brahmaputra	China	28	26	25.1	6
140	02_72I_010	NRSC	263G	GL	5125	27°54'57.96"	86°28'39"	Sun Kosi	Ganga	Nepal	15	14	14.2	6
141	01_53M_003	NRSC	110I	GL	5511	31°56'16.08"	79°59'39.84"	Indus	Indus	China	13	12	8.8	5
142	03_77L_039	NRSC		GL	5457	28°12'19.44"	90°23'7.08"	Kuri Chhu	Brahmaputra	China	43	38	41.1	5

Sl. No.	Lake ID	Inventory Developed by	Rank of Vulnerability	Lake Type	Elevation	Latitude(E)	Longitude(N)	River	Basin	Country	Area of September 2024 (Ha)	Inventory Area 2011(Ha) (i)	Base Area Average (area of last 2 years) (Ha) (ii)	Change in Area (%) w.r.t maximum of (i)(&(ii)
143	03_77H_010	NRSC		GL	5518	28°14'22.92"	89°57'46.08"		Brahmaputra	China	14	13	13.3	5
144	02_71P_039	NRSC	396G	GL	5489	28°8'32.64"	87°6'19.08"	Arun Kosi	Ganga	China	19	15	18.1	5
145	02_71L_022	NRSC	715G	GL	5554	28°12'26.28"	86°37'45.84"	Arun Kosi	Ganga	China	27	24	25.7	5
146	02_62K_003	NRSC	546G	GL	4571	29°55'50.16"	82°12'22.68"	Karnali	Ganga	Nepal	45	43	41.8	5
147	03_82F_018	NRSC		GL	4554	30°17'15.72"	93°28'45.12"		Brahmaputra	China	18	17	15.5	5
148	02_71P_046	NRSC	317G	GL	4898	28°4'9.84"	87°8'1.32"	Arun Kosi	Ganga	China	27	25	25.8	5
149	03_62K_007	NRSC		GL	4911	29°56'22.56"	82°36'7.56"		Brahmaputra	China	30	25	28.5	5
150	02_71P_036	NRSC	54G	GL	5121	28°8'51.36"	87°28'6.96"	Arun Kosi	Ganga	China	40	32	38.1	5
151	03_71P_003	NRSC		GL	5360	28°47'47.76"	87°38'26.52"		Brahmaputra	China	28	23	26.6	5
152	03_91C_023	NRSC		GL	4811	29°23'8.88"	96°22'22.08"	Lohit	Brahmaputra	China	31	30	25.0	4
153	03_77K_003	NRSC		GL	5303	29°52'22.08"	90°0'28.08"		Brahmaputra	China	15	14	12.5	4
154	03_77H_032	NRSC		GL	5056	28°1'3.36"	89°26'59.64"		Brahmaputra	China	11	11	6.7	4
155	01_52C_002	NRSC	46I	GL	4092	33°52'10.2"	76°7'9.48"	Chenab	Indus	India	44	26	42.3	4
156	01_52A_004	NRSC/ SDC	/Very High Risk	GL	4619	35°4'28.2"	76°17'33.72"	Shyok	Indus	India	11	11	9.9	4
157	02_71H_030	NRSC	598G	GL	5411	28°19'28.56"	85°54'24.84"	Sun Kosi	Ganga	China	16	15	13.1	4

Sl. No.	Lake ID	Inventory Developed by	Rank of Vulnerability	Lake Type	Elevation	Latitude(E)	Longitude(N)	River	Basin	Country	Area of September 2024 (Ha)	Inventory Area 2011(Ha) (i)	Base Area Average (area of last 2 years) (Ha) (ii)	Change in Area (%) w.r.t maximum of (i)(&(ii)
158	03_71C_004	NRSC		GL	5575	29°51'22.68"	84°37'56.28"		Brahmaputra	China	16	15	13.1	4
159	03_77L_058	NRSC		GL	5016	28°2'53.88"	90°35'49.2"	Kuri Chhu	Brahmaputra		34	28	32.8	4
160	02_71H_018	NRSC	123G	GL	4787	28°30'31.68"	85°29'36.6"	Trishuli	Ganga	China	32	20	31.0	3
161	03_77L_025	NRSC		GL	5370	28°18'0.72"	90°36'29.52"	Kuri Chhu	Brahmaputra	China	15	15	14.3	3
162	03_77H_015	NRSC		GL	4801	28°12'10.44"	89°42'46.8"		Brahmaputra	China	14	12	13.6	3
163	01_53I_002	NRSC/ SDC	26I/Very High Risk	GL	4273	31°39'38.52"	78°10'1.92"	Sutlej	Indus	India	30	23	29.1	3
164	02_72M_014	NRSC	47G	GL	5217	27°47'44.16"	87°58'27.48"	Tamor Kosi	Ganga	Nepal	23	21	22.3	3
165	03_78A_012	NRSC		GL	5130	27°54'4.32"	88°46'54.84"	Teesta	Brahmaputra	India	27	26	26.0	3
166	03_78A_010	NRSC		GL	5078	27°57'0.72"	88°18'16.92"	Teesta	Brahmaputra	India	37	36	32.7	3
167	03_62K_005	NRSC		GL	4999	29°58'10.2"	82°29'39.84"		Brahmaputra	China	22	21	21.3	3
168	03_77H_024	NRSC		GL	4369	28°6'47.52"	89°54'33.12"	Puna Tsang Chhu	Brahmaputra	Bhutan	46	42	44.6	3
169	03_78A_011	NRSC		GL	5168	27°53'60"	88°55'45.84"	Amo Chhu	Brahmaputra	China	15	14	14.2	3

Sl. No.	Lake ID	Inventory Developed by	Rank of Vulnerability	Lake Type	Elevation	Latitude(E)	Longitude(N)	River	Basin	Country	Area of September 2024 (Ha)	Inventory Area 2011(Ha) (i)	Base Area Average (area of last 2 years) (Ha) (ii)	Change in Area (%) w.r.t maximum of (i)(&(ii)
170	03_83A_005	NRSC		GL	4994	27°45'20.52"	92°24'2.52"	Dangme Chhu	Brahmaputra	India	13	13	11.9	3
171	02_62G_003	NRSC	589G	GL	3603	29°53'50.64"	81°34'43.68"	Karnali	Ganga	Nepal	34	17	33.1	3
172	02_72M_011	NRSC	86G	GL	4865	27°50'39.48"	87°4'50.88"	Arun Kosi	Ganga	Nepal	44	38	42.6	3
173	03_82C_011	NRSC		GL	5242	29°45'0.72"	92°46'40.8"		Brahmaputra	China	15	12	14.6	3
174	03_78I_046	NRSC		GL	5168	27°54'21.96"	90°16'32.16"	Manas Chhu & Mangde Chhu	Brahmaputra	Bhutan	22	20	21.3	3
175	02_53N_001	NRSC	250G	GL	4688	30°54'7.92"	79°45'12.6"	Ganga	Ganga	India	23	21	22.4	3
176	03_78I_064	NRSC		GL	4976	27°51'41.04"	90°17'42.36"	Manas Chhu & Mangde Chhu	Brahmaputra	Bhutan	20	19	19.7	2
177	02_77D_010	NRSC	590G	GL	5127	28°0'23.76"	88°19'10.92"	Arun Kosi	Ganga	China	38	34	37.3	2
178	03_91H_007	NRSC		GL	4635	28°56'52.08"	97°19'11.64"	Lohit	Brahmaputra	China	28	27	27.5	2
179	03_62O_035	NRSC		GL	5256	29°39'19.44"	83°6'21.24"		Brahmaputra	China	33	29	32.3	2
180	03_62K_010	NRSC		GL	5181	29°47'45.96"	82°51'10.08"		Brahmaputra	China	66	41	64.4	2
181	02_72I_028	NRSC	146G	GL	4408	27°44'33.36"	86°50'39.48"	Sun Kosi	Ganga	Nepal	25	21	24.4	2

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182	03_77L_034	NRSC		GL	5500	28°14'31.2"	90°30'23.76"	Kuri Chhu	Brahmaputra	China	21	21	20.0	2
183	02_72I_012	NRSC	113G	GL	4409	27°52'27.84"	86°35'10.68"	Sun Kosi	Ganga	Nepal	41	40	40.1	2
184	01_52C_001	NRSC	11I	GL	4394	33°56'44.52"	76°13'53.76"	Shingo (Indus)	Indus	India	53	36	52.1	2
185	02_71H_010	NRSC		GL	5481	28°34'32.16"	85°34'59.52"	Arun Kosi	Ganga	China	28	27	23.8	2
186	02_72M_004	NRSC	336G	GL	5293	27°57'46.44"	87°48'42.12"	Arun Kosi	Ganga	China	51	35	50.2	2
187	02_71P_031	NRSC	141G	GL	5395	28°10'3.36"	87°37'23.16"	Arun Kosi	Ganga	China	22	22	18.9	2
188	02_71P_033	NRSC		GL	4888	28°9'36.72"	87°26'36.6"	Arun Kosi	Ganga	China	32	31	19.5	2
189	02_71H_031	NRSC	78G	GL	5268	28°18'54"	85°56'50.28"	Sun Kosi	Ganga	China	27	20	26.8	1
190	02_71H_022	NRSC		GL	5735	28°27'41.76"	85°40'55.92"	Arun Kosi	Ganga	China	19	17	18.8	1
191	03_78I_072	NRSC		GL	4788	27°49'7.32"	90°23'39.12"	Manas Chhu & Mangde Chhu	Brahmaputra	Bhutan	12	11	11.9	1
192	02_71P_041	NRSC	768G	GL	5064	28°6'56.16"	87°35'12.84"	Arun Kosi	Ganga	China	18	17	17.9	1
193	03_62J_004	NRSC		GL	5556	30°48'25.56"	82°44'58.92"		Brahmaputra	China	14	14	13.4	1
194	01_62F_007	NRSC		GL	5344	30°25'36.48"	81°52'13.44"	Sutlej	Indus	China	21	16	20.7	1
195	03_71P_004	NRSC		GL	5637	28°47'55.68"	87°36'12.24"		Brahmaputra	China	12	12	9.5	1
196	03_91C_012	NRSC		GL	4663	29°35'18.6"	96°40'18.84"		Brahmaputra	China	21	21	17.8	1

Sl. No.	Lake ID	Inventory Developed by	Rank of Vulnerability	Lake Type	Elevation	Latitude(E)	Longitude(N)	River	Basin	Country	Area of September 2024 (Ha)	Inventory Area 2011(Ha) (i)	Base Area Average (area of last 2 years) (Ha) (ii)	Change in Area (%) w.r.t maximum of (i)(&(ii)
197	03_71B_001	NRSC		GL	5692	30°34'48"	84°4'3.72"		Brahmaputra	China	27	27	26.0	1
198	03_91D_070	NRSC		GL	4126	28°36'36.36"	96°43'19.56"	Lohit	Brahmaputra	China	14	12	13.9	1
199	03_91G_004	NRSC		GL	5262	29°29'48.48"	97°6'10.8"	Lohit	Brahmaputra	China	28	21	27.7	1
200	03_77L_074	NRSC		GL	5324	28°0'55.44"	90°21'9.36"	Manas Chhu &MangdeChhu	Brahmaputra	Bhutan	18	18	16.1	1
201	03_62K_011	NRSC		GL	5136	29°45'46.44"	82°53'6.36"		Brahmaputra	China	45	33	44.5	1
202	03_78A_031	NRSC		GL	4305	27°26'15"	88°5'0.96"	Teesta	Brahmaputra	India	14	14	11.9	1
203	03_82N_034	NRSC		GL	4181	30°13'23.52"	95°32'32.64"		Brahmaputra	China	14	13	13.9	1
204	03_71D_002	NRSC		GL	5574	28°54'30.6"	84°30'25.56"		Brahmaputra	China	34	30	34.1	0
205	02_71L_027	NRSC	433G	GL	5234	28°9'2.88"	86°32'7.08"	Sun Kosi	Ganga	China	18	18	18.0	0
206	03_91C_007	NRSC		GL	4817	29°45'42.48"	96°22'26.76"		Brahmaputra	China	11	11	8.5	0
207	03_62K_008	NRSC		GL	4968	29°55'26.76"	82°37'4.44"		Brahmaputra	China	41	36	41.2	0
208	01_61B_002	NRSC	345I	GL	5722	34°16'54.48"	80°5'21.84"	Indus	Indus	China	26	26	23.8	0

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209	01_53M_001	NRSC	33I	GL	5576	31°59'0.96"	79°57'30.96"	Indus	Indus	China	16	11	16.0	0
210	02_72I_006	NRSC		GL	4741	27°56'32.28"	86°41'55.32"	Sun Kosi	Ganga	Nepal	18	16	18.0	0
211	03_77L_062	NRSC		GL	5295	28°2'50.64"	90°21'16.92"	Manas Chhu & Mangde Chhu	Brahmaputra	Bhutan	46	42	46.2	0
212	03_77L_023	NRSC		GL	5489	28°18'3.6"	90°38'48.84"	Kuri Chhu	Brahmaputra	China	33	33	28.4	0
213	02_72I_016	NRSC	739G	GL	5231	27°50'18.6"	86°56'7.8"	Sun Kosi	Ganga	Nepal	30	30	27.1	0
214	03_82L_004	NRSC		GL	4441	28°54'20.16"	94°0'14.04"		Brahmaputra	China	13	13	13.0	0
215	03_77H_017	NRSC		GL	4537	28°10'19.2"	89°50'54.24"	Puna Tsang Chhu	Brahmaputra	Bhutan	25	25	23.9	0
216	03_62J_028	NRSC		GL	5603	30°13'18.48"	82°13'58.44"		Brahmaputra	China	43	37	43.0	0
217	03_91C_004	NRSC		GL	4137	29°52'26.76"	96°19'29.28"		Brahmaputra	China	21	21	17.7	0
218	02_71L_005	NRSC	282G	GL	5524	28°23'33.72"	86°24'52.56"	Arun Kosi	Ganga	China	18	18	18.0	0
219	02_71L_031	NRSC	52G	GL	4682	28°4'4.8"	86°3'56.16"	Sun Kosi	Ganga	China	33	33	30.1	0
220	03_78A_023	NRSC		GL	4547	27°40'17.04"	88°30'46.44"	Teesta	Brahmaputra	India	33	33	26.7	0
221	02_71D_001	NRSC		GL	4111	28°39'46.44"	84°28'17.76"	Trishuli	Ganga	Nepal	23	20	23.2	-1
222	02_62F_009	NRSC	536G	GL	5586	30°18'7.2"	81°23'57.12"	Karnali	Ganga	China	11	11	9.6	-1

Sl. No.	Lake ID	Inventory Developed by	Rank of Vulnerability	Lake Type	Elevation	Latitude(E)	Longitude(N)	River	Basin	Country	Area of September 2024 (Ha)	Inventory Area 2011(Ha) (i)	Base Area Average (area of last 2 years) (Ha) (ii)	Change in Area (%) w.r.t maximum of (i)(&(ii)
223	03_78A_026	NRSC		GL	4736	27°33'44.28"	88°7'24.96"	Teesta	Brahmaputra	India	11	11	11.1	-1
224	03_78E_016	NRSC		GL	5004	27°53'2.04"	89°21'2.52"		Brahmaputra	China	16	16	14.8	-1
225	02_72I_026	NRSC	112G	GL	5188	27°46'39.72"	86°38'31.92"	Sun Kosi	Ganga	Nepal	30	30	26.9	-1
226	01_52A_002	NRSC		GL	4537	35°5'48.12"	76°14'0.6"	Shyok	Indus	India	23	23	19.3	-1
227	01_62E_016	NRSC	270I	GL	5528	31°10'42.6"	81°9'6.84"	Sutlej	Indus	China	21	21	19.3	-1
228	02_78A_008	NRSC	199G	GL	5032	27°32'44.88"	88°2'57.84"	Tamor Kosi	Ganga	Nepal	28	28	24.2	-1
229	03_91C_008	NRSC		GL	4899	29°42'21.6"	96°18'24.84"		Brahmaputra	China	23	23	22.1	-1
230	02_72I_009	NRSC		GL	5292	27°55'2.64"	86°27'59.04"	Sun Kosi	Ganga	Nepal	17	11	17.3	-2
231	03_77H_009	NRSC		GL	5150	28°14'54.24"	89°51'5.76"		Brahmaputra	China	15	15	15.0	-2
232	02_71P_048	NRSC	283G	GL	5094	28°3'6.84"	87°37'36.48"	Arun Kosi	Ganga	China	18	17	18.3	-2
233	02_72I_031	NRSC	14G	GL	4777	27°41'15"	86°51'29.52"	Sun Kosi	Ganga	Nepal	31	32	29.7	-2
234	03_62J_027	NRSC		GL	4781	30°15'23.76"	82°35'21.12"		Brahmaputra	China	22	19	22.4	-2
235	02_62B_006	NRSC	495G	GL	5106	30°24'8.28"	80°47'4.92"	Karnali	Ganga	China	41	42	40.4	-2
236	02_71P_023	NRSC	124G	GL	5235	28°14'8.52"	87°30'1.8"	Arun Kosi	Ganga	China	25	26	20.3	-2
237	03_77L_065	NRSC		GL	5025	28°2'18.24"	90°32'47.76"	Manas Chhu & Mangde Chhu	Brahmaputra	Bhutan	17	17	16.3	-2

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238	03_91H_006	NRSC		GL	4620	28°57'28.8"	97°20'3.84"	Lohit	Brahmaputra	China	17	17	16.3	-2
239	02_72M_013	NRSC	518G	GL	5233	27°49'44.76"	87°5'41.64"	Arun Kosi	Ganga	Nepal	12	12	10.6	-2
240	03_71C_002	NRSC		GL	5663	29°53'15"	84°32'13.2"		Brahmaputra	China	12	12	7.7	-2
241	03_78I_011	NRSC		GL	5239	27°58'54.48"	90°22'52.32"	Manas Chhu & Mangde Chhu	Brahmaputra	Bhutan	20	19	20.4	-2
242	02_71L_016	NRSC	570G	GL	5345	28°16'12.36"	86°11'12.12"	Sun Kosi	Ganga	China	13	13	11.2	-2
243	03_78E_025	NRSC		GL	4341	27°50'20.4"	89°23'16.8"	Puna Tsang Chhu	Brahmaputra	Bhutan	16	17	15.5	-3
244	02_71H_005	NRSC		GL	5010	28°38'47.4"	85°29'37.68"	Arun Kosi	Ganga	China	70	27	72.3	-3
245	03_77H_019	NRSC		GL	4804	28°10'21.36"	89°41'3.48"	Puna Tsang Chhu	Brahmaputra	Bhutan	10	10	8.0	-3
246	02_62B_005	NRSC	580G	GL	4314	30°26'44.52"	80°23'16.08"	Sarda	Ganga	India	12	12	9.0	-3
247	03_71D_001	NRSC		GL	5454	28°55'44.76"	84°18'2.52"		Brahmaputra	China	20	21	18.0	-3
248	03_83A_001	NRSC		GL	5018	27°58'51.6"	92°39'3.96"		Brahmaputra	China	50	52	46.0	-3
249	02_71L_014	NRSC	240G	GL	5364	28°17'43.08"	86°9'2.88"	Sun Kosi	Ganga	China	17	18	15.6	-3
250	03_91C_010	NRSC		GL	4712	29°39'49.32"	96°33'8.64"		Brahmaputra	China	22	23	21.3	-3

Sl. No.	Lake ID	Inventory Developed by	Rank of Vulnerability	Lake Type	Elevation	Latitude(E)	Longitude(N)	River	Basin	Country	Area of September 2024 (Ha)	Inventory Area 2011(Ha) (i)	Base Area Average (area of last 2 years) (Ha) (ii)	Change in Area (%) w.r.t maximum of (i)(&(ii)
251	03_82N_025	NRSC		GL	4764	30°22'51.24"	95°39'12.96"		Brahmaputra	China	26	27	22.9	-3
252	03_78A_002	NRSC/ SDC	/Very High Risk	GL	4952	27°58'56.28"	88°30'28.08"	Teesta	Brahmaputra	India	35	22	36.5	-4
253	03_91H_015	NRSC		GL	4553	28°51'10.08"	97°37'50.88"	Lohit	Brahmaputra	China	13	14	10.5	-4
254	03_82O_001	NRSC		GL	4348	29°59'32.64"	95°51'50.4"		Brahmaputra	China	40	42	41.7	-4
255	03_78E_027	NRSC		GL	4808	27°41'13.92"	89°24'29.88"	Puna Tsang Chhu	Brahmaputra	Bhutan	17	13	17.8	-4
256	03_78I_009	NRSC		GL	5108	27°59'6.36"	90°26'13.56"	Manas Chhu & Mangde Chhu	Brahmaputra	Bhutan	24	20	24.9	-4
257	03_77H_025	NRSC		GL	4312	28°6'19.44"	89°53'53.16"	Puna Tsang Chhu	Brahmaputra	Bhutan	25	26	23.1	-4
258	03_91C_013	NRSC		GL	4925	29°33'38.16"	96°37'40.44"		Brahmaputra	China	13	12	13.5	-4
259	03_91H_008	NRSC		GL	4755	28°56'41.28"	97°18'12.6"	Lohit	Brahmaputra	China	44	40	45.8	-4
260	03_78A_004	NRSC		GL	5456	27°57'55.44"	88°53'37.68"		Brahmaputra	China	25	26	18.8	-4
261	02_71L_015	NRSC	284G	GL	5261	28°17'38.76"	86°7'52.32"	Sun Kosi	Ganga	China	26	27	21.8	-4

Sl. No.	Lake ID	Inventory Developed by	Rank of Vulnerability	Lake Type	Elevation	Latitude(E)	Longitude(N)	River	Basin	Country	Area of September 2024 (Ha)	Inventory Area 2011(Ha) (i)	Base Area Average (area of last 2 years) (Ha) (ii)	Change in Area (%) w.r.t maximum of (i)(&(ii)
262	02_71L_019	NRSC	323G	GL	5378	28°14'56.04"	86°9'2.16"	Sun Kosi	Ganga	China	13	14	12.5	-5
263	03_78A_030	NRSC		GL	4447	27°25'12.36"	88°48'45"	Amo Chhu	Brahmaputra		16	17	14.2	-5
264	03_82N_037	NRSC		GL	4691	30°0'30.96"	95°54'54.36"		Brahmaputra	China	12	13	11.1	-5
265	03_77L_049	NRSC		GL	4716	28°6'44.28"	90°1'35.04"	Puna Tsang Chhu	Brahmaputra	Bhutan	37	39	31.4	-5
266	02_62F_006	NRSC		GL	5444	30°20'46.68"	81°51'38.88"	Karnali	Ganga	Nepal	16	17	14.6	-5
267	01_52B_012	NRSC	129I	GL	5137	34°0'19.8"	76°47'12.84"	Indus	Indus	India	16	17	13.4	-5
268	02_71L_035	NRSC	657G	GL	5091	28°1'2.28"	86°43'14.16"	Sun Kosi	Ganga	Nepal	18	19	15.4	-6
269	02_78A_006	NRSC	676G	GL	5743	27°55'39"	88°1'11.64"	Arun Kosi	Ganga	China	16	16	17.0	-6
270	03_78I_057	NRSC		GL	5060	27°52'24.24"	90°18'11.88"	Manas Chhu & Mangde Chhu	Brahmaputra	Bhutan	42	33	44.9	-6
271	02_71L_033	NRSC	408G	GL	5369	28°2'18.96"	86°42'34.56"	Sun Kosi	Ganga	Nepal	16	17	14.6	-6
272	03_62J_009	NRSC		GL	5624	30°33'45.72"	82°55'14.16"		Brahmaputra	China	26	28	22.3	-6
273	03_77H_022	NRSC		GL	4936	28°8'58.2"	89°33'52.56"		Brahmaputra	China	19	19	20.2	-6
274	03_77H_021	NRSC		GL	5135	28°8'37.68"	89°50'25.8"	Puna Tsang Chhu	Brahmaputra	Bhutan	14	15	13.3	-6
275	03_91G_005	NRSC		GL	5170	29°24'7.56"	97°0'32.4"	Lohit	Brahmaputra	China	13	14	9.7	-6

Sl. No.	Lake ID	Inventory Developed by	Rank of Vulnerability	Lake Type	Elevation	Latitude(E)	Longitude(N)	River	Basin	Country	Area of September 2024 (Ha)	Inventory Area 2011(Ha) (i)	Base Area Average (area of last 2 years) (Ha) (ii)	Change in Area (%) w.r.t maximum of (i)(&(ii)
276	02_78A_002	NRSC	668G	GL	5397	27°59'21.48"	88°13'15.96"	Arun Kosi	Ganga	China	16	17	12.4	-7
277	03_82N_001	NRSC		GL	5055	30°35'27.96"	95°33'3.24"		Brahmaputra	China	35	38	33.4	-7
278	02_72I_018	NRSC	776G	GL	5370	27°49'57.72"	86°55'1.92"	Sun Kosi	Ganga	Nepal	29	31	30.7	-7
279	02_71L_021	NRSC	438G	GL	5373	28°14'33.36"	86°11'45.6"	Sun Kosi	Ganga	China	18	19	15.8	-7
280	02_72M_012	NRSC	69G	GL	4932	27°48'57.6"	87°44'56.04"	Tamor Kosi	Ganga	Nepal	17	18	15.3	-7
281	03_77K_002	NRSC		GL	5154	29°54'43.92"	90°3'46.8"		Brahmaputra	China	35	38	37.9	-8
282	03_78E_011	NRSC		GL	4952	27°55'48.72"	89°54'2.88"	Puna Tsang Chhu	Brahmaputra	Bhutan	18	13	19.6	-8
283	02_71H_024	NRSC	155G	GL	4890	28°25'35.76"	85°33'44.28"	Trishuli	Ganga	China	23	22	24.9	-8
284	03_91D_099	NRSC		GL	4406	28°23'31.2"	96°51'28.44"	Lohit	Brahmaputra	China	28	30	27.8	-8
285	02_62F_010	NRSC		GL	5502	30°18'25.56"	81°51'55.44"	Karnali	Ganga	Nepal	10	11	9.4	-8
286	03_78A_015	NRSC/SDC	/Medium Risk	GL	4970	27°52'23.88"	88°47'22.2"	Teesta	Brahmaputra	India	11	12	8.4	-8
287	01_52B_010	NRSC/SDC	75I/Medium Risk	GL	5122	34°3'6.48"	76°43'5.16"	Indus	Indus	India	17	18	15.1	-8
288	01_62J_004	NRSC	446I	GL	5504	30°22'33.96"	82°1'6.24"	Sutlej	Indus	China	11	12	10.0	-8
289	03_82N_031	NRSC		GL	4409	30°14'17.88"	95°36'8.28"		Brahmaputra	China	16	17	15.0	-8

Sl. No.	Lake ID	Inventory Developed by	Rank of Vulnerability	Lake Type	Elevation	Latitude(E)	Longitude(N)	River	Basin	Country	Area of September 2024 (Ha)	Inventory Area 2011(Ha) (i)	Base Area Average (area of last 2 years) (Ha) (ii)	Change in Area (%) w.r.t maximum of (i)(&(ii)
290	03_82G_007	NRSC		GL	4994	29°39'28.08"	93°16'30"		Brahmaputra	China	15	16	12.1	-8
291	03_71D_003	NRSC		GL	5362	28°54'33.84"	84°20'51.72"		Brahmaputra	China	10	11	9.6	-9
292	03_91C_021	NRSC		GL	4093	29°25'15.96"	96°37'30.72"		Brahmaputra	China	32	35	29.7	-9
293	03_82O_004	NRSC		GL	4148	29°48'18.72"	95°38'33"		Brahmaputra	China	16	18	14.0	-9
294	03_78I_065	NRSC		GL	4668	27°49'18.84"	90°48'36"	Manas Chhu & Mangde Chhu	Brahmaputra	Bhutan	12	13	12.2	-9
295	03_82N_029	NRSC		GL	4492	30°16'4.8"	95°36'21.6"		Brahmaputra	China	36	35	39.6	-9
296	02_62F_011	NRSC	362G	GL	5524	30°17'49.2"	81°23'16.8"	Karnali	Ganga	China	25	27	25.5	-9
297	02_71H_036	NRSC	195G	GL	5024	28°9'50.76"	85°37'49.08"	Trishuli	Ganga	Nepal	14	15	12.5	-9
298	02_71H_006	NRSC		GL	5167	28°38'33.72"	85°28'22.8"	Arun Kosi	Ganga	China	35	38	33.5	-9
299	02_71L_020	NRSC	156G	GL	5348	28°14'23.28"	86°21'55.44"	Sun Kosi	Ganga	China	27	30	26.9	-9
300	03_82G_003	NRSC		GL	4936	29°47'24.36"	93°29'17.88"		Brahmaputra	China	16	13	17.5	-9
301	03_77H_026	NRSC		GL	5233	28°7'24.6"	89°30'47.52"		Brahmaputra	China	11	12	9.7	-9
302	02_72I_017	NRSC	49G	GL	5018	27°50'45.96"	86°27'49.32"	Sun Kosi	Ganga	Nepal	13	14	10.5	-9

Sl. No.	Lake ID	Inventory Developed by	Rank of Vulnerability	Lake Type	Elevation	Latitude(E)	Longitude(N)	River	Basin	Country	Area of September 2024 (Ha)	Inventory Area 2011(Ha) (i)	Base Area Average (area of last 2 years) (Ha) (ii)	Change in Area (%) w.r.t maximum of (i)(&(ii)
303	03_82N_011	NRSC		GL	4997	30°31'23.52"	95°42'0"		Brahmaputra	China	18	20	17.8	-10
304	02_77D_011	NRSC	393G	GL	5305	28°0'19.08"	88°14'26.88"	Arun Kosi	Ganga	China	41	39	45.4	-10
305	02_62O_002	NRSC	410G	GL	5495	29°12'3.24"	83°41'2.76"	Kali Gandak	Ganga	Nepal	22	25	21.0	-10
306	02_71P_032	NRSC	564G	GL	5190	28°9'49.32"	87°34'40.8"	Arun Kosi	Ganga	China	20	22	17.7	-10
307	03_77H_016	NRSC		GL	4929	28°11'10.32"	89°35'51"		Brahmaputra	China	34	38	35.3	-10
308	03_82G_004	NRSC		GL	4498	29°43'54.12"	93°29'52.44"		Brahmaputra	China	34	38	30.2	-10
309	02_71H_009	NRSC		GL	5448	28°34'50.16"	85°35'41.28"	Arun Kosi	Ganga	China	28	31	24.0	-10
310	03_78I_043	NRSC		GL	5000	27°53'44.88"	90°33'7.2"	Manas Chhu & Mangde Chhu	Brahmaputra	Bhutan	25	28	20.9	-11
311	02_71L_012	NRSC	96G	GL	5570	28°19'15.24"	86°9'30.96"	Sun Kosi	Ganga	China	22	25	19.9	-11
312	02_71P_024	NRSC	576G	GL	5273	28°13'41.52"	87°34'39.36"	Arun Kosi	Ganga	China	23	26	21.8	-11
313	02_72M_003	NRSC	823G	GL	5608	27°58'5.88"	87°53'3.84"	Arun Kosi	Ganga	China	18	20	17.6	-12
314	01_53M_002	NRSC	142I	GL	5468	31°56'57.12"	79°59'6.72"	Indus	Indus	China	10	11	8.6	-12
315	02_72I_001	NRSC	198G	GL	5333	27°59'55.32"	86°50'8.16"	Sun Kosi	Ganga	Nepal	11	12	12.5	-12
316	03_62O_045	NRSC		GL	5566	29°13'17.4"	83°41'9.6"		Brahmaputra	China	10	11	9.4	-12

Sl. No.	Lake ID	Inventory Developed by	Rank of Vulnerability	Lake Type	Elevation	Latitude(E)	Longitude(N)	River	Basin	Country	Area of September 2024 (Ha)	Inventory Area 2011(Ha) (i)	Base Area Average (area of last 2 years) (Ha) (ii)	Change in Area (%) w.r.t maximum of (i)(&(ii)
317	03_78A_019	NRSC/ SDC	/Very High Risk	GL	4809	27°51'52.2"	88°51'46.44"	Teesta	Brahmaputra	India	13	15	11.5	-12
318	01_52L_006	NRSC	306I	GL	5727	32°26'27.24"	78°55'29.28"	Indus	Indus	India	11	12	10.2	-12
319	03_78I_019	NRSC		GL	5224	27°58'7.68"	90°24'42.48"	Manas Chhu & Mangde Chhu	Brahmaputra	Bhutan	20	18	22.9	-13
320	02_71L_009	NRSC	520G	GL	5546	28°20'53.16"	86°29'35.16"	Arun Kosi	Ganga	China	33	38	32.5	-13
321	02_71H_016	NRSC		GL	5305	28°31'40.8"	85°38'14.64"	Arun Kosi	Ganga	China	29	33	26.7	-13
322	03_82F_001	NRSC		GL	4822	30°52'59.16"	93°49'51.24"		Brahmaputra	China	15	17	14.4	-13
323	02_71P_030	NRSC	166G	GL	5329	28°10'21.36"	87°28'44.76"	Arun Kosi	Ganga	China	19	18	22.1	-14
324	03_78I_025	NRSC		GL	5194	27°57'7.92"	90°15'18.72"	Puna Tsang Chhu	Brahmaputra	Bhutan	12	12	13.9	-14
325	03_77L_031	NRSC		GL	4698	28°14'52.08"	90°42'43.2"	Kuri Chhu	Brahmaputra	China	18	21	16.1	-14
326	01_62E_007	NRSC	437I	GL	5641	31°17'6.36"	81°1'53.04"	Sutlej	Indus	China	12	11	14.1	-15
327	03_91C_015	NRSC		GL	4421	29°34'14.88"	96°22'26.04"		Brahmaputra	China	22	26	19.0	-15
328	02_71L_007	NRSC	572G	GL	5576	28°22'54.84"	86°23'3.84"	Arun Kosi	Ganga	China	13	15	12.6	-15
329	02_62P_001	NRSC	258G	GL	4472	28°47'17.52"	83°19'51.24"	Bheri	Ganga	Nepal	44	52	42.6	-15
330	03_91D_082	NRSC		GL	4550	28°32'28.68"	96°36'5.04"	Lohit	Brahmaputra	China	26	31	29.6	-16

Sl. No.	Lake ID	Inventory Developed by	Rank of Vulnerability	Lake Type	Elevation	Latitude(E)	Longitude(N)	River	Basin	Country	Area of September 2024 (Ha)	Inventory Area 2011(Ha) (i)	Base Area Average (area of last 2 years) (Ha) (ii)	Change in Area (%) w.r.t maximum of (i)(&(ii)
331	03_77L_036	NRSC		GL	5810	28°14'17.52"	90°29'45.96"	Kuri Chhu	Brahmaputra	China	26	31	25.0	-16
332	03_78I_014	NRSC		GL	5087	27°59'13.2"	90°7'48.72"	Puna Tsang Chhu	Brahmaputra	Bhutan	18	21	17.6	-16
333	02_71H_014	NRSC		GL	4458	28°33'50.4"	85°28'3.36"	Trishuli	Ganga	China	10	12	9.1	-16
334	02_71H_034	NRSC	320G	GL	4745	28°17'32.28"	85°10'12.72"	Trishuli	Ganga	Nepal	18	21	16.6	-16
335	03_82N_035	NRSC		GL	4479	30°10'50.16"	95°51'20.88"		Brahmaputra	China	19	23	16.5	-17
336	02_72M_08	NRSC	376G	GL	4722	27°52'48.72"	87°48'17.28"	Tamor Kosi	Ganga	Nepal	36	43	35.2	-17
337	02_62K_006	NRSC	70G	GL	5053	29°49'18.48"	82°42'41.4"	Karnali	Ganga	Nepal	19	18	22.9	-17
338	03_62J_020	NRSC		GL	5603	30°20'25.8"	82°8'26.16"		Brahmaputra	China	15	18	12.7	-18
339	02_62F_008	NRSC		GL	5620	30°19'24.24"	81°49'56.28"	Karnali	Ganga	Nepal	12	15	8.7	-18
340	02_71H_019	NRSC	92G	GL	4674	28°30'36.36"	85°26'44.52"	Trishuli	Ganga	China	13	16	12.6	-19
341	03_78M_03	NRSC		GL	4232	27°53'43.08"	91°14'54.96"	Kuri Chhu	Brahmaputra	Bhutan	9	11	7.1	-20
342	03_91G_006	NRSC		GL	5028	29°23'30.48"	97°1'8.76"	Lohit	Brahmaputra	China	22	27	18.4	-20
343	03_62J_003	NRSC		GL	5553	30°48'40.32"	82°45'14.04"		Brahmaputra	China	9	11	9.0	-21
344	02_71D_002	NRSC		GL	4063	28°39'24.48"	84°27'28.8"	Trishuli	Ganga	Nepal	8	10	5.8	-21
345	03_71C_001	NRSC		GL	5543	29°54'51.84"	84°36'2.88"		Brahmaputra	China	9	11	7.2	-22
346	02_72M_01	NRSC	737G	GL	5675	27°59'21.48"	87°52'5.16"	Arun Kosi	Ganga	China	8	10	6.3	-22

Sl. No.	Lake ID	Inventory Developed by	Rank of Vulnerability	Lake Type	Elevation	Latitude(E)	Longitude(N)	River	Basin	Country	Area of September 2024 (Ha)	Inventory Area 2011(Ha) (i)	Base Area Average (area of last 2 years) (Ha) (ii)	Change in Area (%) w.r.t maximum of (i)(&(ii)
347	03_77L_020	NRSC		GL	4682	28°20'3.48"	90°40'26.4"	Kuri Chhu	Brahmaputra	China	11	14	9.9	-24
348	02_71H_013	NRSC	172G	GL	4446	28°34'0.12"	85°27'50.04"	Trishuli	Ganga	China	16	21	16.4	-24
349	03_82N_018	NRSC		GL	4333	30°31'44.4"	95°6'23.4"		Brahmaputra	China	8	11	9.5	-25
350	02_71L_018	NRSC	651G	GL	5377	28°14'44.88"	86°19'17.4"	Sun Kosi	Ganga	China	16	21	14.9	-25
351	02_71D_003	NRSC	67G	GL	3668	28°35'46.68"	84°37'39.72"	Trishuli	Ganga	Nepal	24	32	24.5	-25
352	02_62F_015	NRSC	59G	GL	5359	30°13'58.8"	81°20'57.48"	Karnali	Ganga	China	27	37	28.2	-26
353	02_62J_001	NRSC		GL	5182	30°11'46.68"	82°7'5.52"	Karnali	Ganga	Nepal	8	11	6.2	-27
354	03_82N_016	NRSC		GL	5017	30°32'24.36"	95°22'30.36"		Brahmaputra	China	8	11	4.3	-29
355	03_82F_024	NRSC		GL	4197	30°13'39.36"	93°38'11.04"		Brahmaputra	China	21	17	29.8	-30
356	02_72I_020	NRSC	763G	GL	5436	27°47'56.04"	86°57'56.52"	Sun Kosi	Ganga	Nepal	20	29	19.3	-31
357	03_82N_015	NRSC		GL	5090	30°32'44.88"	95°20'35.52"		Brahmaputra	China	7	10	5.4	-33
358	01_52A_003	NRSC		GL	4586	35°5'33.36"	76°15'7.2"	Shyok	Indus	India	16	24	16.6	-33
359	03_78A_016	NRSC		GL	5451	27°53'33.72"	88°12'47.16"	Teesta	Brahmaputra	India	9	14	10.5	-34
360	02_77D_005	NRSC	499G	GL	5738	28°3'52.92"	88°32'38.04"	Arun Kosi	Ganga	China	7	11	6.6	-34
361	02_62O_005	NRSC	609G	GL	5450	29°2'46.32"	83°40'27.48"	Kali Gandak	Ganga	Nepal	10	15	12.0	-35
362	03_78E_018	NRSC		GL	5164	27°52'45.12"	89°19'28.2"		Brahmaputra	China	16	24	16.1	-35

Sl. No.	Lake ID	Inventory Developed by	Rank of Vulnerability	Lake Type	Elevation	Latitude(E)	Longitude(N)	River	Basin	Country	Area of September 2024 (Ha)	Inventory Area 2011(Ha) (i)	Base Area Average (area of last 2 years) (Ha) (ii)	Change in Area (%) w.r.t maximum of (i)(&(ii)
363	03_77L_022	NRSC		GL	4810	28°18'14.76"	90°44'27.6"	Kuri Chhu	Brahmaputra	China	8	12	10.5	-36
364	03_82F_012	NRSC		GL	4454	30°21'27.36"	93°37'52.68"		Brahmaputra	China	25	39	17.3	-36
365	03_62J_024	NRSC		GL	5548	30°18'35.64"	82°11'58.92"		Brahmaputra	China	20	31	19.2	-36
366	02_62F_016	NRSC	591G	GL	5359	30°13'0.48"	81°48'5.04"	Karnali	Ganga	Nepal	17	29	14.4	-41
367	03_62K_013	NRSC		GL	5101	29°41'17.88"	82°59'2.4"		Brahmaputra	China	46	37	86.4	-47
368	03_91C_043	NRSC		GL	4429	29°10'44.04"	96°51'12.96"		Brahmaputra	China	13	26	10.6	-49
369	02_62F_014	NRSC	236G	GL	5481	30°14'26.88"	81°19'53.4"	Karnali	Ganga	China	6	12	5.5	-51
370	03_77L_038	NRSC		GL	5521	28°13'29.64"	90°15'26.64"		Brahmaputra	China	14	30	13.4	-54
371	03_78A_008	NRSC		GL	4998	27°57'3.24"	88°21'15.48"	Teesta	Brahmaputra	India	19	44	16.2	-57
372	03_77L_054	NRSC		GL	4717	28°5'15"	90°19'33.24"	Puna Tsang Chhu	Brahmaputra	Bhutan	6	17	3.9	-64
373	03_91C_006	NRSC		GL	5057	29°45'11.16"	96°27'48.96"		Brahmaputra	China	4	14	3.9	-71
374	03_77L_061	NRSC		GL	5038	28°2'29.4"	90°32'15.72"	Manas Chhu & Mangde Chhu	Brahmaputra	Bhutan	18	15	76.0	-76

Sl. No.	Lake ID	Inventory Developed by	Rank of Vulnerability	Lake Type	Elevation	Latitude(E)	Longitude(N)	River	Basin	Country	Area of September 2024 (Ha)	Inventory Area 2011(Ha) (i)	Base Area Average (area of last 2 years) (Ha) (ii)	Change in Area (%) w.r.t maximum of (i)(&(ii)
375	03_77L_040	NRSC		GL	4515	28°9'14.76"	90°8'54.6"	Puna Tsang Chhu	Brahmaputra	Bhutan	#	12	#	#
376	01_52P_004	NRSC		GL	5470	32°23'7.08"	79°40'43.68"	Indus	Indus	China	#	14	0.1	#
377	03_91D_096	NRSC		GL	3794	28°25'56.64"	96°55'32.52"	Lohit	Brahmaputra	China	#	38	39.5	#
378	02_62B_007	NRSC		GL	4839	30°16'42.96"	80°7'49.8"	Sarda	Ganga	India	#	19	#	#
379	02_72I_005	NRSC	483G	GL	4715	27°56'35.88"	86°42'40.68"	Sun Kosi	Ganga	Nepal	#	19	22.4	#
380	02_71P_017	NRSC		GL	4194	28°24'25.56"	87°45'54"	Arun Kosi	Ganga	China	#	17	42.6	#
381	03_77H_005	NRSC		GL	5113	28°16'48"	89°59'37.68"		Brahmaputra	China	#	37	24.5	#
382	03_82J_003	NRSC		GL	4161	30°41'4.2"	94°19'25.32"		Brahmaputra	China	#	22	27.3	#
383	03_82O_003	NRSC		GL	4180	29°54'16.92"	95°54'31.32"		Brahmaputra	China	#	15	13.8	#
384	03_91C_036	NRSC		GL	4298	29°13'6.96"	96°48'52.2"		Brahmaputra	China	#	16	54.3	#
385	03_91C_035	NRSC		GL	4283	29°13'20.64"	96°48'34.2"		Brahmaputra	China	#	24	53.2	#

Note: G stands for Ganga, I for Indus and B for Brahmaputra under the rank of vulnerability,
" -" Inventory Data not available , "#" indicates frozen/ dried lakes.

- GLs/WBs with increase in Area > 40%

- GLs/WBs with increase in Area – 0% to 40%


- GLs/WBs with no change in Area


- GLs/WBs with decrease in Area


- GLs/WBs not analysed

A Glacial Lake of China of Lake ID: 03_82N_032 has have merged with a nearby lake. The combined area has been shown against the lake.
The Glacial Lakes of China of Lake ID: 03_91C_035 & Lake ID: 03_91C_036 have with each other and combined area has been shown against each lake.
The Glacial Lakes of China of Lake ID: 03_77L_048 & Lake ID: 03_77L_053 have with each other and combined area has been shown against each lake.
The Waterbodies of China of Lake ID : 02_71P_018 has merged with nearby Glacial lakes of Lake ID: 02_71P_019 & Lake ID: 02_71P_020 and combined area has been shown against each lake.
The Glacial Lakes of India (Himachal Pradesh) of Lake ID: 01_52H_003 & Lake ID: 01_52H_004 have with each other and combined area has been shown against each lake.

Table 4.7: Results of analysis of GLs & WBs identified by SDC with water spread area between 10ha - 50 ha

Sl. No.	Lake ID	Inventory Developed by	Rank of Vulnerability	Lake Type	Elevation	State	Country	Area of September 2024 (ha)	Base Area (Average area of last 2 years (ha)	Change in Area (%) w.r.t Base Area
1	180	SDC	Very High Risk	GL	4442	JK	India	16	8.2	95
2	293	SDC	Very High Risk	GL	5048	SK	India	3	2.0	52
3	515	SDC	Medium Risk	GL	5063	SK	India	11	7.9	40
4	958	SDC	Very High Risk	GL	4103	JK	India	8	5.8	38
5	312	SDC	Medium Risk	GL	5137	SK	India	9	6.9	30
6	1805	SDC	Very High Risk/81I	GL	4775	HP	India	5	4.0	27
7	1360	SDC	Very High Risk	GL	4667	JK	India	12	9.5	26
8	237	SDC	Very Low Risk	GL	5322	SK	India	9	7.1	26
9	98	SDC	High Risk	GL	4103	JK	India	5	4.0	24
10	931	SDC	Very High Risk	GL	4082	JK	India	22	18.2	21
11	599	SDC	Very High Risk	GL	4251	SK	India	9	7.4	21
12	2207	SDC	Very High Risk	GL	4707	UK	India	12	10.1	19
13	129	SDC	Very High Risk	GL	4895	AP	India	11	9.3	19

Sl. No.	Lake ID	Inventory Developed by	Rank of Vulnerability	Lake Type	Elevation	State	Country	Area of September 2024 (ha)	Base Area (Average area of last 2 years (ha)	Change in Area (%) w.r.t Base Area
14	1774	SDC	Very High Risk	GL	4593	HP	India	8	6.8	17
15	295	SDC	Very High Risk	GL	4850	SK	India	8	6.8	17
16	173	SDC	Medium Risk	GL	5150	JK	India	9	7.7	17
17	2108	SDC	Very High Risk/347G	GL	5587	UK	India	20	17.2	17
18	569	SDC	Medium Risk	GL	5450	SK	India	33	28.5	16
19	1998	SDC	Very High Risk	GL	3857	HP	India	1	0.9	14
20	292	SDC	Medium Risk	GL	5577	SK	India	4	3.5	13
21	976	SDC	High Risk/15I	GL	4314	JK	India	18	16.2	11
22	951	SDC	Very High Risk	GL	3762	JK	India	18	16.2	11
23	2031	SDC	Very High Risk	GL	4702	HP	India	12	10.9	10
24	260	SDC	Medium Risk	GL	5253	SK	India	42	39.6	6
25	227	SDC	Very High Risk	GL	5176	SK	India	62	58.7	6
26	182	SDC	Very High Risk	GL	4304	JK	India	8	7.6	5
27	1936	SDC	Very High Risk/321I	GL	4606	HP	India	3	2.9	4
28	256	SDC	High risk	GL	4615	SK	India	14	13.5	4

Sl. No.	Lake ID	Inventory Developed by	Rank of Vulnerability	Lake Type	Elevation	State	Country	Area of September 2024 (ha)	Base Area (Average area of last 2 years (ha)	Change in Area (%) w.r.t Base Area
29	963	SDC	Medium Risk	GL	3725	JK	India	31	30.0	4
30	298	SDC	Very High Risk	GL	4508	SK	India	6	5.9	1
31	1037	SDC	Medium Risk/27I	GL	3603	JK	India	38	38.0	0
32	1032	SDC	Very High Risk	GL	4007	JK	India	1	1.0	0
33	345	SDC	Medium Risk	GL	5108	SK	India	17	17.2	-1
34	938	SDC	Very High Risk	GL	3683	JK	India	19	19.8	-4
35	1847	SDC	Very High Risk	GL	4570	HP	India	12	13.8	-13
36	27	SDC	Very High Risk	GL	3775	JK	India	11	13.7	-20
37	993	SDC	Very High Risk	GL	4148	JK	India	5	6.3	-21
38	1014	SDC	Very High Risk	GL	3989	JK	India	2	3.6	-44
39	2147	SDC	Medium Risk	GL	5688	UK	India	#	0.3	#
40	2299	SDC	Very High Risk	GL	4490	UK	India	#	#	#

Note: G stands for Ganga, I for Indus and B for Brahmaputra under the rank of vulnerability,
" -" Inventory Data not available , "#" indicates frozen/ dried lakes.

- GLs/WBs with increase in Area > 40%
- GLs/WBs with increase in Area – 0% to 40%
- GLs/WBs with decrease in Area
- GLs/WBs with no change in Area
- GLs/WBs not analysed

Table 4.8: Results of analysis of 15 GLs of size greater than 50 Ha located in India

Sl. No.	Lake ID	Agency	Rank of Vulnerability	UID	Elevation (m)	Lake type	Latitude (N)	Longitude (E)	Basin	River	Country	State/UT	Lake Area 2009 (Ha)	Lake Area September 2024 (Ha)	Area of Base Year of 2011 (Ha) (i)	Average Area of Last5 Years (Ha) (ii)	Average Area of Last 10 years (ha) (iii)	Change in Area (%) w.r.t maximum of (i), (ii)&(iii)
1	01_52C_003	NRSC	7I	JK_187	4512	GL	33° 9' 26.28"	76° 59' 3.48"	Indus	Indus	India	Ladakh	45	58	45	58	56	1
2	01_52E_001	NRSC		JK_188	5116	GL	35° 25' 4.8"	77° 36' 16.56"	Indus	Shyok	India	Ladakh	51	#	51	6	24	#
3	01_52J_001	NRSC	8I	JK_197	5311	GL	34° 27' 27.72"	78° 8' 6.36"	Indus	Shyok	India	Ladakh	97	98	65	98	90	0
4	01_52H_004	NRSC		HP_5	4155	GL	32° 29' 47.04"	77° 33' 5.76"	Indus	Chenab	India	Himachal Pradesh	46	167	46	146	132	14
5	01_52H_002	NRSC /SDC	4I/Very High Risk	HP_3	4101	GL	32° 31' 28.92"	77° 13' 5.88"	Indus	Chenab	India	Himachal Pradesh	62	102	62	99	88	3
6	03_77D_002	NRSC		SK_2	5156	GL	28° 1' 33.96"	88° 42' 36"	Brahma -putra	Teesta	India	Sikkim	105	104	104	107	95	-3
7	03_77D_004	NRSC /SDC	/Very High Risk	SK_4	5287	GL	28° 0' 25.56"	88° 42' 46.08"	Brahma -putra	Teesta	India	Sikkim	106	120	106	120	111	0
8	03_77D_005	NRSC /SDC	/Very High Risk	SK_5	5249	GL	28° 0' 32.76"	88° 41' 52.44"	Brahma -putra	Teesta	India	Sikkim	79	110	88	101	86	9
9	03_77D_008	NRSC		SK_8	5039	GL	28° 0' 26.28"	88° 29' 41.64"	Brahma -putra	Teesta	India	Sikkim	46	42	46	41	42	-9
10	03_78A_001	NRSC /SDC	/High Risk	SK_9	5371	GL	27° 59' 30.12"	88° 48' 55.8"	Brahma -putra	Teesta	India	Sikkim	156	184	156	185	254	-28
11	03_78A_003	NRSC /SDC	/Very High Risk	SK_11	4977	GL	27° 58' 31.08"	88° 36' 59.04"	Brahma -putra	Teesta	India	Sikkim	58	57	58	57	68	-16

Sl. No.	Lake ID	Agency	Rank of Vulnerability	UID	Elevation (m)	Lake type	Latitude (N)	Longitude (E)	Basin	River	Country	State/UT	Lake Area 2009 (Ha)	Lake Area September 2024 (Ha)	Area of Base Year of 2011 (Ha) (i)	Average Area of Last5 Years (Ha) (ii)	Average Area of Last 10 years (ha) (iii)	Change in Area (%) w.r.t maximum of (i), (ii)&(iii)
12	03_78A_009	NRSC		SK_16	5044	GL	27° 56' 51.72"	88° 19' 52.68"	Brahma -putra	Teesta	India	Sikkim	54	65	55	62	58	5
13	03_78A_013	NRSC		SK_19	5470	GL	27° 55' 7.68"	88° 9' 39.6"	Brahma -putra	Teesta	India	Sikkim	63	79	67	80	79	-2
14	03_78A_014	NRSC /SDC	/Very High Risk	SK_20	5234	GL	27° 54' 42.84"	88° 11' 54.96"	Brahma -putra	Teesta	India	Sikkim	94	136	123	152	130	-11
15	03_78A_021	NRSC		SK_26	5431	GL	27° 49' 28.2"	88° 14' 57.12"	Brahma -putra	Teesta	India	Sikkim	56	95	56	78	56	22

Note: " -" Inventory Data not available , "#" indicates frozen/ dried lakes.

- GLs displaying increase in area

Table 4.9: Results of analysis of 85 GLs with size between 10ha to 50ha located in India

Sl. No.	Lake ID	Agency	Rank of Vulnerability	UID	Elevation (m)	Lake type	Latitude (N)	Longitude (E)	Basin	River	Country	State/UT	Lake Area September 2024 (Ha)	Inventory Area 2011(ha)(i)	Base Area (Average Area of last 2 years) (ha) (ii)	Change in Area (%) w.r.t maximum of (i) & (ii)
1	01_42H_002	NRSC	162I		2763	GL	36° 38' 34.8"	73° 24' 26.64"	Indus	Gilgit	India	Ladakh	18	13	16	13
2	01_52A_002	NRSC			4537	GL	35° 5' 48.12"	76° 14' 0.6"	Indus	Shyok	India	Ladakh	23	23	19	-1
3	01_52A_003	NRSC			4586	GL	35° 5' 33.36"	76° 15' 7.2"	Indus	Shyok	India	Ladakh	16	24	17	-33
4	01_52A_004	NRSC /SDC	/Very High Risk		4619	GL	35° 4' 28.2"	76° 17' 33.72"	Indus	Shyok	India	Ladakh	11	11	10	4
5	01_52B_010	NRSC /SDC	75I/ Medium Risk		5122	GL	34° 3' 6.48"	76° 43' 5.16"	Indus	Indus	India	Ladakh	17	18	15	-8
6	01_52B_012	NRSC	129I		5137	GL	34° 0' 19.8"	76° 47' 12.84"	Indus	Indus	India	Ladakh	16	17	13	-5
7	01_52C_001	NRSC	11I		4394	GL	33° 56' 44.52"	76° 13' 53.76"	Indus	Shingo (Indus)	India	Ladakh	53	36	52	2
8	01_52L_006	NRSC	306I		5727	GL	32° 26' 27.24"	78° 55' 29.28"	Indus	Indus	India	Ladakh	11	12	10	-12
9	01_52L_007	NRSC	184I		5498	GL	32° 24' 36.36"	78° 53' 56.4"	Indus	Indus	India	Ladakh	34	32	31	7
10	173	SDC	Medium Risk		5150	GL	34° 45' 54"	76° 42' 36"	Indus		India	Ladakh	9		8	17
11	180	SDC	Very High Risk		4442	GL	34° 21' 10.8"	76° 4' 37.2"	Indus		India	Ladakh	16	-	8	95
12	1360	SDC	Very High Risk		4667	GL	35° 1' 37.2"	75° 43' 30"	Indus		India	Ladakh	12		10	26
13	01_43J_003	NRSC			3954	GL	34° 55' 36.12"	74° 9' 19.44"	Indus	Jhelum	India	Jammu & Kashmir	48	20	15	137
14	01_52C_002	NRSC	46I		4092	GL	33° 52' 10.2"	76° 7' 9.48"	Indus	Chenab	India	Jammu & Kashmir	44	26	42	4

Sl. No.	Lake ID	Agency	Rank of Vulnerability	UID	Elevation (m)	Lake type	Latitude (N)	Longitude (E)	Basin	River	Country	State/UT	Lake Area September 2024 (Ha)	Inventory Area 2011(ha)(i)	Base Area (Average Area of last 2 years) (ha) (ii)	Change in Area (%) w.r.t maximum of (i) & (ii)
15	27	SDC	Very High Risk		3775	GL	34° 22' 51.6"	74° 52' 33.6"	Indus		India	Jammu & Kashmir	11	-	14	-20
16	98	SDC	High Risk		4103	GL	34° 23' 31.2"	75° 5' 6"	Indus		India	Jammu & Kashmir	5		4	24
17	182	SDC	Very High Risk		4304	GL	34° 14' 2.4"	75° 19' 30"	Indus		India	Jammu & Kashmir	8	-	8	5
18	931	SDC	Very High Risk		4082	GL	33° 55' 44.4"	75° 23' 20.4"	Indus		India	Jammu & Kashmir	22	-	18	21
19	938	SDC	Very High Risk		3683	GL	33° 57' 10.8"	75° 22' 40.8"	Indus		India	Jammu & Kashmir	19	-	20	-4
20	951	SDC	Very High Risk		3762	GL	34° 4' 1.2"	75° 28' 30"	Indus		India	Jammu & Kashmir	18	-	16	11
21	958	SDC	Very High Risk		4103	GL	34° 8' 16.8"	75° 24' 57.6"	Indus		India	Jammu & Kashmir	8	-	6	38
22	963	SDC	Medium Risk		3725	GL	34° 8' 20.4"	75° 22' 33.6"	Indus		India	Jammu & Kashmir	31	-	30	4
23	976	SDC	High Risk/15I		4314	GL	34° 11' 6"	75° 22' 19.2"	Indus		India	Jammu & Kashmir	18	-	16	11
24	993	SDC	Very High Risk		4148	GL	34° 13' 37.2"	75° 13' 19.2"	Indus		India	Jammu & Kashmir	5	-	6	-21
25	1014	SDC	Very High Risk		3989	GL	34° 17' 56.4"	75° 3' 36"	Indus		India	Jammu & Kashmir	2	-	4	-44
26	1032	SDC	Very High Risk		4007	GL	34° 23' 9.6"	75° 3' 50.4"	Indus		India	Jammu & Kashmir	1	-	1	0
27	1037	SDC	Medium Risk/27I		3603	GL	34° 25' 19.2"	75° 3' 28.8"	Indus		India	Jammu & Kashmir	38	-	38	0
28	01_52H_003	NRSC			4165	GL	32° 29' 54.6"	77° 32' 37.32"	Indus	Chenab	India	Himachal Pradesh	167	28	141	18
29	01_53I_002	NRSC /SDC	26I/Very High Risk		4273	GL	31° 39' 38.52"	78° 10' 1.92"	Indus	Sutlej	India	Himachal Pradesh	30	23	29	3

Sl. No.	Lake ID	Agency	Rank of Vulnerability	UID	Elevation (m)	Lake type	Latitude (N)	Longitude (E)	Basin	River	Country	State/UT	Lake Area September 2024 (Ha)	Inventory Area 2011(ha)(i)	Base Area (Average Area of last 2 years) (ha) (ii)	Change in Area (%) w.r.t maximum of (i) & (ii)
30	1774	SDC	Very High Risk		4593	GL	32° 13' 15.6"	76° 47' 16.8"	Indus		India	Himachal Pradesh	8	-	7	17
31	1805	SDC	Very High Risk/81I		4775	GL	32° 45' 43.2"	77° 11' 42"	Indus		India	Himachal Pradesh	5	-	4	27
32	1847	SDC	Very High Risk		4570	GL	31° 54' 54"	77° 31' 37.2"	Indus		India	Himachal Pradesh	12	-	14	-13
33	1936	SDC	Very High Risk/321I		4606	GL	32° 15' 21.6"	76° 46' 37.2"	Indus		India	Himachal Pradesh	3	-	3	4
34	1998	SDC	Very High Risk		3857	GL	32° 19' 12"	76° 54' 28.8"	Indus		India	Himachal Pradesh	1	-	1	14
35	2031	SDC	Very High Risk		4702	GL	31° 20' 20.4"	78° 15' 10.8"	Indus		India	Himachal Pradesh	12	-	11	10
36	01_62B_003	NRSC	86I		5288	GL	30° 28' 36.48"	80° 35' 35.16"	Indus	Sutlej	India	Uttarakhand	15	12	12	20
37	02_53N_001	NRSC	250G		4688	GL	30° 54' 7.92"	79° 45' 12.6"	Ganga	Ganga	India	Uttarakhand	23	21	22	3
38	02_62B_004	NRSC	232G		4918	GL	30° 33' 52.2"	80° 10' 41.16"	Ganga	Sarda	India	Uttarakhand	31	19	19	66
39	02_62B_005	NRSC	580G		4314	GL	30° 26' 44.52"	80° 23' 16.08"	Ganga	Sarda	India	Uttarakhand	12	12	9	-3
40	02_62B_007	NRSC			4839	GL	30° 16' 42.96"	80° 7' 49.8"	Ganga	Sarda	India	Uttarakhand	#	19	#	#
41	2108	SDC	Very High Risk/347G		5587	GL	30° 58' 33.6"	79° 27' 32.4"	Ganga		India	Uttarakhand	20	-	17	17
42	2147	SDC	Medium Risk		5688	GL	30° 58' 48"	79° 29' 13.2"	Ganga		India	Uttarakhand	#	-	0	#

Sl. No.	Lake ID	Agency	Rank of Vulnerability	UID	Elevation (m)	Lake type	Latitude (N)	Longitude (E)	Basin	River	Country	State/UT	Lake Area September 2024 (Ha)	Inventory Area 2011(ha)(i)	Base Area (Average Area of last 2 years) (ha) (ii)	Change in Area (%) w.r.t maximum of (i) & (ii)
43	2207	SDC	Very High Risk		4707	GL	30° 54' 43.2"	78° 57' 28.8"	Ganga		India	Uttarakhand	12	-	10	19
44	2299	SDC	Very High Risk		4490	GL	30° 11' 2.4"	79° 52' 48"	Ganga		India	Uttarakhand	#	-	#	#
45	03_77D_006	NRSC /SDC	/Very High Risk		5084	GL	28° 0' 51.84"	88° 33' 41.76"	Brahma-putra	Teesta	India	Sikkim	26	22	23	14
46	03_77D_007	NRSC /SDC	/Very High Risk		5015	GL	28° 0' 26.28"	88° 34' 18.48"	Brahma-putra	Teesta	India	Sikkim	29	24	23	22
47	03_78A_002	NRSC /SDC	/Very High Risk		4952	GL	27° 58' 56.28"	88° 30' 28.08"	Brahma-putra	Teesta	India	Sikkim	35	22	36	-4
48	03_78A_005	NRSC			5201	GL	27° 58' 31.44"	88° 25' 20.64"	Brahma-putra	Teesta	India	Sikkim	13	11	9	15
49	03_78A_006	NRSC			5004	GL	27° 58' 15.6"	88° 25' 45.84"	Brahma-putra	Teesta	India	Sikkim	14	11	12	14
50	03_78A_007	NRSC /SDC	/Very High Risk		4977	GL	27° 57' 38.88"	88° 38' 57.48"	Brahma-putra	Teesta	India	Sikkim	19	17	17	10
51	03_78A_008	NRSC			4998	GL	27° 57' 3.24"	88° 21' 15.48"	Brahma-putra	Teesta	India	Sikkim	19	44	16	-57
52	03_78A_010	NRSC			5078	GL	27° 57' 0.72"	88° 18' 16.92"	Brahma-putra	Teesta	India	Sikkim	37	36	33	3
53	03_78A_012	NRSC			5130	GL	27° 54' 4.32"	88° 46' 54.84"	Brahma-putra	Teesta	India	Sikkim	27	26	26	3

Sl. No.	Lake ID	Agency	Rank of Vulnerability	UID	Elevation (m)	Lake type	Latitude (N)	Longitude (E)	Basin	River	Country	State/UT	Lake Area September 2024 (Ha)	Inventory Area 2011(ha)(i)	Base Area (Average Area of last 2 years) (ha) (ii)	Change in Area (%) w.r.t maximum of (i) & (ii)
54	03_78A_015	NRSC /SDC	/Medium Risk		4970	GL	27° 52' 23.88"	88° 47' 22.2"	Brah ma-putra	Teesta	India	Sikkim	11	12	8	-8
55	03_78A_016	NRSC			5451	GL	27° 53' 33.72"	88° 12' 47.16"	Brah ma-putra	Teesta	India	Sikkim	9	14	11	-34
56	03_78A_017	NRSC			5545	GL	27° 53' 34.8"	88° 11' 31.92"	Brah ma-putra	Teesta	India	Sikkim	29	19	26	13
57	03_78A_019	NRSC /SDC	/Very High Risk		4809	GL	27° 51' 52.2"	88° 51' 46.44"	Brah ma-putra	Teesta	India	Sikkim	13	15	12	-12
58	03_78A_020	NRSC			5219	GL	27° 52' 49.44"	88° 15' 4.68"	Brah ma-putra	Teesta	India	Sikkim	15	14	14	7
59	03_78A_023	NRSC			4547	GL	27° 40' 17.04"	88° 30' 46.44"	Brah ma-putra	Teesta	India	Sikkim	33	33	27	0
60	03_78A_026	NRSC			4736	GL	27° 33' 44.28"	88° 7' 24.96"	Brah ma-putra	Teesta	India	Sikkim	11	11	11	-1
61	03_78A_027	NRSC /SDC	/Very High Risk		4888	GL	27° 32' 0.6"	88° 5' 8.52"	Brah ma-putra	Teesta	India	Sikkim	41	33	34	22
62	03_78A_031	NRSC			4305	GL	27° 26' 15"	88° 5' 9.6"	Brah ma-putra	Teesta	India	Sikkim	14	14	12	1
63	03_78A_035	NRSC			4998	GL	27° 57' 3.24"	88° 21' 15.48"	Brah ma-putra	Teesta	India	Sikkim	42	-	9	372

Sl. No.	Lake ID	Agency	Rank of Vulnerability	UID	Elevation (m)	Lake type	Latitude (N)	Longitude (E)	Basin	River	Country	State/UT	Lake Area September 2024 (Ha)	Inventory Area 2011(ha)(i)	Base Area (Average Area of last 2 years) (ha) (ii)	Change in Area (%) w.r.t maximum of (i) & (ii)
64	227	SDC	Very High Risk		5176	GL	27° 59' 34.8"	88° 32' 49.2"	Brah ma-putra		India	Sikkim	62	-	59	6
65	237	SDC	Very Low Risk		5322	GL	27° 59' 34.8"	88° 48' 3.6"	Brah ma-putra		India	Sikkim	9	-	7	26
66	256	SDC	High risk		4615	GL	27° 48' 57.6"	88° 39' 25.2"	Brah ma-putra		India	Sikkim	14	-	13	4
67	260	SDC	Medium Risk		5253	GL	27° 53' 38.4"	88° 45' 39.6"	Brah ma-putra		India	Sikkim	42	-	40	6
68	292	SDC	Medium Risk		5577	GL	28° 0' 21.6"	88° 39' 18"	Brah ma-putra		India	Sikkim	4	-	4	13
69	293	SDC	Very High Risk		5048	GL	27° 57' 3.6"	88° 42' 18"	Brah ma-putra		India	Sikkim	3	-	2	52
70	295	SDC	Very High Risk		4850	GL	27° 55' 12"	88° 40' 19.2"	Brah ma-putra		India	Sikkim	8	-	7	17
71	298	SDC	Very High Risk		4508	GL	27° 52' 22.8"	88° 38' 16.8"	Brah ma-putra		India	Sikkim	6	-	6	1
72	312	SDC	Medium Risk		5137	GL	27° 42' 3.6"	88° 30' 50.4"	Brah ma-putra		India	Sikkim	9	-	7	30
73	345	SDC	Medium Risk		5108	GL	27° 51' 50.4"	88° 44' 49.2"	Brah ma-putra		India	Sikkim	17	-	17	-1

Sl. No.	Lake ID	Agency	Rank of Vulnerability	UID	Elevation (m)	Lake type	Latitude (N)	Longitude (E)	Basin	River	Country	State/UT	Lake Area September 2024 (Ha)	Inventory Area 2011(ha)(i)	Base Area (Average Area of last 2 years) (ha) (ii)	Change in Area (%) w.r.t maximum of (i) & (ii)
74	515	SDC	Medium Risk		5063	GL	27° 51' 14.4"	88° 48' 21.6"	Brah ma-putra		India	Sikkim	11	-	8	40
75	569	SDC	Medium Risk		5450	GL	28° 0' 7.2"	88° 38' 24"	Brah ma-putra		India	Sikkim	33	-	28	16
76	599	SDC	Very High Risk		4251	GL	27° 41' 42"	88° 42' 57.6"	Brah ma-putra		India	Sikkim	9	-	7	21
77	03_82L_007	NRSC			4163	GL	28° 50' 15"	94° 27' 5.04"	Brah ma-putra	Ding	India	Arunach al Pradesh	18	16	15	12
78	03_83A_003	NRSC			5188	GL	27° 46' 12.72"	92° 25' 56.64"	Brah ma-putra	Dangm e Chhu	India	Arunach al Pradesh	90	24	82	9
79	03_83A_004	NRSC			5109	GL	27° 45' 47.16"	92° 25' 29.64"	Brah ma-putra	Dangm e Chhu	India	Arunach al Pradesh	21	17	17	21
80	03_83A_005	NRSC			4994		27° 45' 20.52"	92° 24' 2.52"	Brah ma-putra	Dangm e Chhu	India	Arunach al Pradesh	13	13	12	3
81	03_83A_007	NRSC			5028	GL	27° 43' 39.36"	92° 26' 12.48"	Brah ma-putra	Jia Brali	India	Arunach al Pradesh	16	14	14	15
82	03_91C_026	NRSC			4305	GL	29° 20' 18.24"	96° 4' 57.72"	Brah ma-putra	Dibang	India	Arunach al Pradesh	30	28	25	8
83	03_91D_075	NRSC			4274	GL	28° 36' 28.8"	96° 19' 14.16"	Brah ma-putra	Dibang	India	Arunach al Pradesh	27	23	25	8

Sl. No.	Lake ID	Agency	Rank of Vulnerability	UID	Elevation (m)	Lake type	Latitude (N)	Longitude (E)	Basin	River	Country	State/UT	Lake Area September 2024 (Ha)	Inventory Area 2011(ha)(i)	Base Area (Average Area of last 2 years) (ha) (ii)	Change in Area (%) w.r.t maximum of (i) & (ii)
84	03_91H_073	NRSC			4481	GL	28° 3' 15.48"	97° 19' 47.64"	Brah ma-putra	Lohit	India	Arunach al Pradesh	27	25	25	8
85	129	SDC	Very High Risk		4895	GL	27°46'24.165"	92°19'1.10"	Brah ma-putra		India	Arunach al Pradesh	11		9	19

Note: " -" Inventory Data not available , "#" indicates frozen/ dried lakes.

- GLs displaying increase in area

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