



BHUTAN GLACIER INVENTORY 2026



NATIONAL CENTRE FOR HYDROLOGY AND METEOROLOGY

ROYAL GOVERNMENT OF BHUTAN

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Prepared by: Karma, Specialist II
Tshewang Jamtsho, Hydromet Officer
Arun Puri, Hydromet Officer
Amar Bahadur Rana, Hydromet Technician

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Foreword

The glaciers of Bhutan are among the country's most important natural assets, serving as vital freshwater reserves and providing essential ecosystem services that sustain downstream communities, agriculture, hydropower generation, and biodiversity. As sensitive indicators of climate change, these glaciers are undergoing rapid transformations, making their continuous monitoring and assessment increasingly important for understanding environmental change and supporting evidence-based decision-making.

The National Centre for Hydrology and Meteorology (NCHM) published the first nationally led Bhutan Glacier Inventory in 2018, providing a comprehensive assessment of glacier distribution and characteristics across the Bhutanese Himalayas using contemporary satellite imagery and geospatial techniques. The inventory documented 700 glaciers covering an area of approximately 630 km² and established an important baseline for cryospheric research, glacier monitoring, water resource assessment, and glacier lake outburst flood (GLOF) risk management.

The present updated glacier inventory marks another significant milestone in Bhutan's cryosphere monitoring efforts. While maintaining the objective of systematically documenting the nation's glacier resources, this inventory incorporates important advancements in geospatial analysis and earth observation technologies. A key distinction from the 2018 inventory is the application of emerging Machine Learning (ML) and Deep Learning (DL) techniques for glacier mapping and glacier boundary delineation. These advanced approaches have enhanced the efficiency, consistency, and accuracy of glacier identification, enabling improved representation of glacier boundaries across Bhutan's complex mountain terrain.

The adoption of ML and DL technologies reflects NCHM's commitment to embracing innovative scientific methods and keeping pace with the rapidly evolving field of cryospheric research. As satellite data availability and computational capabilities continue to improve, such technologies offer unprecedented opportunities to strengthen glacier monitoring and generate high-quality datasets required for climate adaptation and disaster risk reduction planning.

This updated inventory will serve as an important reference for researchers, planners, policymakers, and development partners working on climate change, water resources, hydrology, and mountain hazards. More importantly, it provides an updated benchmark against which future glacier changes can be assessed, thereby contributing to a better understanding of the impacts of climate change on Bhutan's fragile mountain environment.

I want to commend the dedication and hard work of the CSD team and all collaborating institutions and experts who contributed to the development of this inventory. Their efforts have strengthened Bhutan's capacity to monitor and understand its cryosphere and reaffirm our commitment to advancing scientific knowledge for the benefit of present and future generations.

I am confident that this publication will serve as a valuable resource for research, policy formulation, and informed decision-making to enhance climate resilience and sustainable development in Bhutan.



(Karma Dupchu)
DIRECTOR GENERAL

Acknowledgement

The Bhutan Glacier Inventory 2026 was prepared as part of the annual work plan activities of the Cryosphere Service Division (CSD) for the Fiscal Year 2025–2026. The team gratefully acknowledges the support and contributions of various institutions, organizations, and individuals whose assistance made this publication possible.

We would like to express our sincere appreciation to Dr. Sonam Wangchuk of the International Centre for Integrated Mountain Development (ICIMOD), Nepal, for his valuable guidance and mentorship to the young officers of the Division in the application of Deep Learning (DL) techniques. The use of DL-based approaches for glacier delineation represents a significant methodological advancement incorporated in this updated inventory.

The team also acknowledges the European Space Agency (ESA) for providing free and open access to Sentinel satellite imagery, which served as the primary source of data for glacier mapping and analysis in this publication.

We are deeply grateful to the management of the National Centre for Hydrology and Meteorology (NCHM) for their continued support, encouragement, and guidance throughout the implementation of this activity.

Finally, we extend our sincere appreciation to all individuals and institutions who have contributed to this publication, directly or indirectly. Their support and cooperation have been instrumental in the successful completion of the Bhutan Glacier Inventory 2026.

Executive Summary

The Bhutan Glacier Inventory 2026 (BGI 2026) represents the third comprehensive national assessment of glacier resources in Bhutan and provides an updated benchmark for evaluating cryospheric changes under the changing climate. Building upon the Bhutan Glacier Inventory 2018, the present inventory incorporates recent advances in Earth observation and artificial intelligence by applying Deep Learning (DL) techniques for automated glacier delineation, thereby improving the efficiency, reproducibility, and consistency of glacier mapping.

The inventory was developed using a combination of Sentinel-2 optical imagery and Sentinel-1 Synthetic Aperture Radar (SAR) data acquired during the post-monsoon period of 2025. A five-channel composite comprising Sentinel-2 bands B11, B8 and B4 together with Sentinel-1 VH and VV backscatter layers was processed within the Google Earth Engine platform. Glacier extraction was performed using a DeepLabv3+ semantic segmentation model with a ResNet101 backbone, trained using glacier outlines from the Bhutan Glacier Inventory 2018. Automated outputs were subsequently refined through manual quality control in a GIS environment to improve the delineation of debris-covered glaciers, glacier divides, and complex topographic features.

The updated inventory identified 673 glaciers with a total glacierized area of 571.86 km², distributed across nine major sub-basins of the Wang Chhu, Punatsang Chhu and Manas river systems. Compared with the 700 glaciers covering 629.55 km² reported in BGI 2018, the current inventory indicates a net reduction of 27 glaciers and a loss of 57.69 km² of glacier area, representing an overall decrease of 9.16% over a nine-year period. Most sub-basins experienced declines in both glacier number and area, reflecting the ongoing response of Bhutan's glaciers to changing climatic conditions. An increase in glacier number observed in the Mangde Chhu sub-basin is attributed to fragmentation of larger glaciers into smaller ice bodies rather than glacier growth.

Among the glacierized regions, the Pho Chhu sub-basin remains the most glacier-rich area, containing 200 glaciers with a total area of 232.49 km², while the Punatsang Chhu basin accounts for the largest proportion of glacier coverage in the country. Glacier hypsometry shows that the majority of glacier area is concentrated between 5,000 and 5,700 m above sea level, consistent with observations from the previous inventory.

The uncertainty associated with glacier boundary delineation was estimated at ± 0.0033 km², equivalent to 0.374% of the mean glacier area, indicating high mapping reliability resulting from the use of high-resolution imagery and favourable image acquisition conditions.

The Bhutan Glacier Inventory 2026 provides an updated and scientifically robust dataset for glacier monitoring, climate change assessments, water resource management, and glacier lake outburst flood (GLOF) risk reduction. Furthermore, the successful integration of deep learning methodologies demonstrates the potential of artificial intelligence to strengthen long-term cryosphere monitoring and support evidence-based climate adaptation and disaster risk management in Bhutan.

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Abbreviations and Acronyms:

BGI	Bhutan Glacier Inventory
CSD	Cryosphere Services Division
DL	Deep Learning
ESA	European Space Agency
GAMDAM	Glacier Area Mapping for Discharge from the Asian Mountains
GEE	Google Earth Engine
GIS	Geographic Information System
GLIMS	Global Land Ice Measurements from Space
GLOF	Glacier Lake Outburst Flood
ICIMOD	International Centre for Integrated Mountain Development
IoU	Intersection over Union
ML	Machine Learning
MSI	Multispectral Instrument
NCHM	National Centre for Hydrology and Meteorology
SAR	Synthetic Aperture Radar
WGI	World Glacier Inventory
WGMS	World Glacier Monitoring Service

1 Introduction

The first glacier inventory of Bhutan was published in 2001 through a collaborative effort between the International Centre for Integrated Mountain Development (ICIMOD), Nepal, and the Department of Geology and Mines, Bhutan. The inventory was prepared using topographic maps from the 1950s and 1960s together with 30 m resolution Landsat satellite imagery, following the methodology recommended by the World Glacier Inventory (WGI) and the World Glacier Monitoring Service (WGMS) (Müller et al., 1977; WGMS, 1989). Glacier boundaries were delineated primarily through conventional interpretation techniques and manual mapping approaches. A total of 677 glaciers were identified in the Bhutan Himalaya, providing the first comprehensive baseline dataset on the country's glacier resources.

After nearly two decades, the inventory was updated in 2018 by the National Centre for Hydrology and Meteorology (NCHM) following the establishment of its national mandate for cryosphere monitoring. The updated inventory, published as the Bhutan Glacier Inventory 2018 (BGI 2018), utilized higher-resolution Sentinel-2 Multispectral Instrument (MSI) imagery of 2016 with a spatial resolution of 10 m provided by the European Space Agency (ESA), together with advanced geospatial techniques for glacier delineation and analysis. Compared with the 2001 inventory, the improved spatial resolution and digital processing methods enabled more accurate mapping of glacier extents and the identification of smaller glacier bodies. The inventory identified 700 glaciers across the Bhutan Himalaya and established an updated benchmark for assessing glacier changes in the country.

One of the key recommendations of BGI 2018 was to update the glacier inventory regularly to provide more accurate and up-to-date information on glacier changes. Regular updates are essential for improving the understanding of glacier dynamics and addressing existing data gaps. Such information is crucial for supporting climate change studies, water resource assessments, disaster risk reduction, and the planning and implementation of development activities in Bhutan.

In response to this recommendation and taking advantage of recent advances in Earth observation and artificial intelligence, the current glacier inventory introduces Machine Learning (ML) and Deep Learning (DL) techniques as a major methodological advancement over the previous inventories. Unlike the 2001 and 2018 inventories, which relied largely on conventional image interpretation and geospatial analysis, the present inventory employs data-driven approaches for automated glacier mapping. Multi-source satellite datasets, including Sentinel-2 optical imagery and Sentinel-1 Synthetic Aperture Radar (SAR) data of 2025, were integrated to improve the detection of glacier surfaces under varying terrain and illumination conditions.

The core methodology of the current inventory is based on Deep Learning semantic segmentation models, which are capable of learning complex spatial and spectral characteristics of glaciers from previously mapped glacier outlines. Training datasets derived from the Bhutan Glacier Inventory 2018 were used to develop and optimize the model, enabling automated extraction of glacier boundaries from satellite imagery. Machine Learning and Deep Learning approaches significantly enhance the efficiency, consistency, and reproducibility of glacier delineation compared with traditional manual methods. These techniques are particularly effective in identifying complex glacier features and reducing subjectivity associated with manual interpretation.

The incorporation of ML and DL methodologies represents the most significant difference between the current inventory and the earlier inventories. By combining high-resolution satellite observations with artificial intelligence-based image analysis, the present inventory provides a more robust and scientifically advanced framework for monitoring glacier changes in Bhutan. This methodological transition not only improves the accuracy and reliability of glacier mapping but also establishes a foundation for regular and efficient updates of glacier inventories, thereby supporting long-term cryosphere monitoring, climate change assessments, water resource management, and glacier-related hazard studies in Bhutan.

2 Objective

The main objectives of this updating activity on the Bhutan Glacier Inventory are:

1. To update the Bhutan Glacier Inventory using recent satellite data and advanced geospatial and deep learning techniques.
2. To assess changes in glacier extent and distribution since the Bhutan Glacier Inventory 2018 (BGI 2018).
3. To strengthen the national cryosphere monitoring programme by generating an accurate and standardized glacier database.
4. To provide scientific information for climate change studies, water resource management, and glacier-related hazard assessment and risk reduction.

3 Study Area

The study area consists of all glacierized regions located within the northern Himalayan belt of Bhutan. Glacier mapping for the Bhutan Glacier Inventory 2026 was restricted to glaciers situated within the internationally recognized administrative boundaries of Bhutan. For inventory and analysis purposes, the glacierized terrain was organized according to the country's major hydrological framework, comprising three principal river basins further subdivided into nine sub-basins. This basin-based approach facilitates systematic assessment, spatial analysis, and comparison of glacier characteristics across different hydrological units of Bhutan.

4 Data Set

The last inventory of glaciers in Bhutan published in 2018 as Bhutan glacier inventory used sentinel 2 imageries of 2016 as the base material. Glacier polygons from the ICIMOD 2001, ICIMOD updated inventory 2014 and GAMDAM inventory 2015 were also used as reference for delineating glacier boundary.

In the current activity on updating the Bhutan Glacier Inventory 2018, similar to the previous work Sentinel-2 imagery of 2025 was used as the primary optical dataset. Sentinel-2 provides multi-spectral data at 10 m and 20 m spatial resolution with a revisit time of approximately 5 days, making it suitable for monitoring glacier extent under varying environmental conditions.

To minimize the influence of cloud cover and seasonal snow, images acquired during the post-monsoon period (September–November) were selected, as this period typically provides relatively clear atmospheric conditions and scenes with cloud cover less than 15% were considered. Multiple Sentinel-2 scenes within this time window were combined using a mean compositing approach. This reduces residual cloud contamination and stabilizes pixel values across observations, resulting in a more consistent representation of surface conditions.

Sentinel-2 bands B11 (Shortwave Infrared), B8 (Near Infrared), and B4 (Red) were selected for the optical composite due to their effectiveness in distinguishing glacier ice from surrounding terrain. The SWIR band is particularly sensitive to moisture content, while the NIR and Red bands enhance contrast between snow/ice and non-glacier surfaces.

To improve glacier detection in shadowed and debris-covered areas, Sentinel-1 synthetic aperture radar (SAR) data of the same period were incorporated. Sentinel-1 VH and VV polarization backscatter layers were used, as radar data are less affected by cloud cover and illumination conditions compared to optical imagery. The integration of SAR data provides complementary information on surface roughness and structure, which enhances glacier distinction in complex terrain.

All datasets were accessed and processed within the Google Earth Engine (GEE) platform. Sentinel-2 surface reflectance products were used, which are atmospherically corrected. Sentinel-1 Ground Range Detected (GRD) data were used, for which radiometric calibration and terrain correction are applied within the GEE preprocessing framework. The optical and radar datasets were co-registered and resampled to a common spatial resolution of 10 m to ensure spatial consistency. The resulting five-channel composite (B11, B8, B4, VH, VV) was used as input for the deep learning model.

5 Methodology

The basic difference in the methodological approach between the current work and last inventory (BGI 2018) lies in the utilization of Deep Learning (DL) technique in the current work. The BGI 2018 was prepared mostly relying on traditional method of using different tools for corrections, classification and post processing of the satellite data. Such traditional method has number of associated challenges which demanded further rectification through manual processes in mapping of the product using other geoinformatics platforms and references such as contours lines and high-resolution satellite imageries from google earth.

In the current work the team used Google Earth Engine (GEE) platform to preprocess input data for Deep Learning (DL) technique to prepare glacier inventory for the 2025. A five-channel composite image was created using Sentinel 2 (B11, B8, B4) and Sentinel 1 (VV, VH) and used as input for the deep learning model. Data from BGI 2018 was used as a glacier mask for training the model. The details of the model parameters and settings are given in Table 1. The advantage of utilizing DL technique is the full automation process which is reproducible, transferable while maintaining consistency in similar future works.

The description on systematic steps followed under the deep learning model is presented in the following sections and the schematic work flow is shown in figure 1.

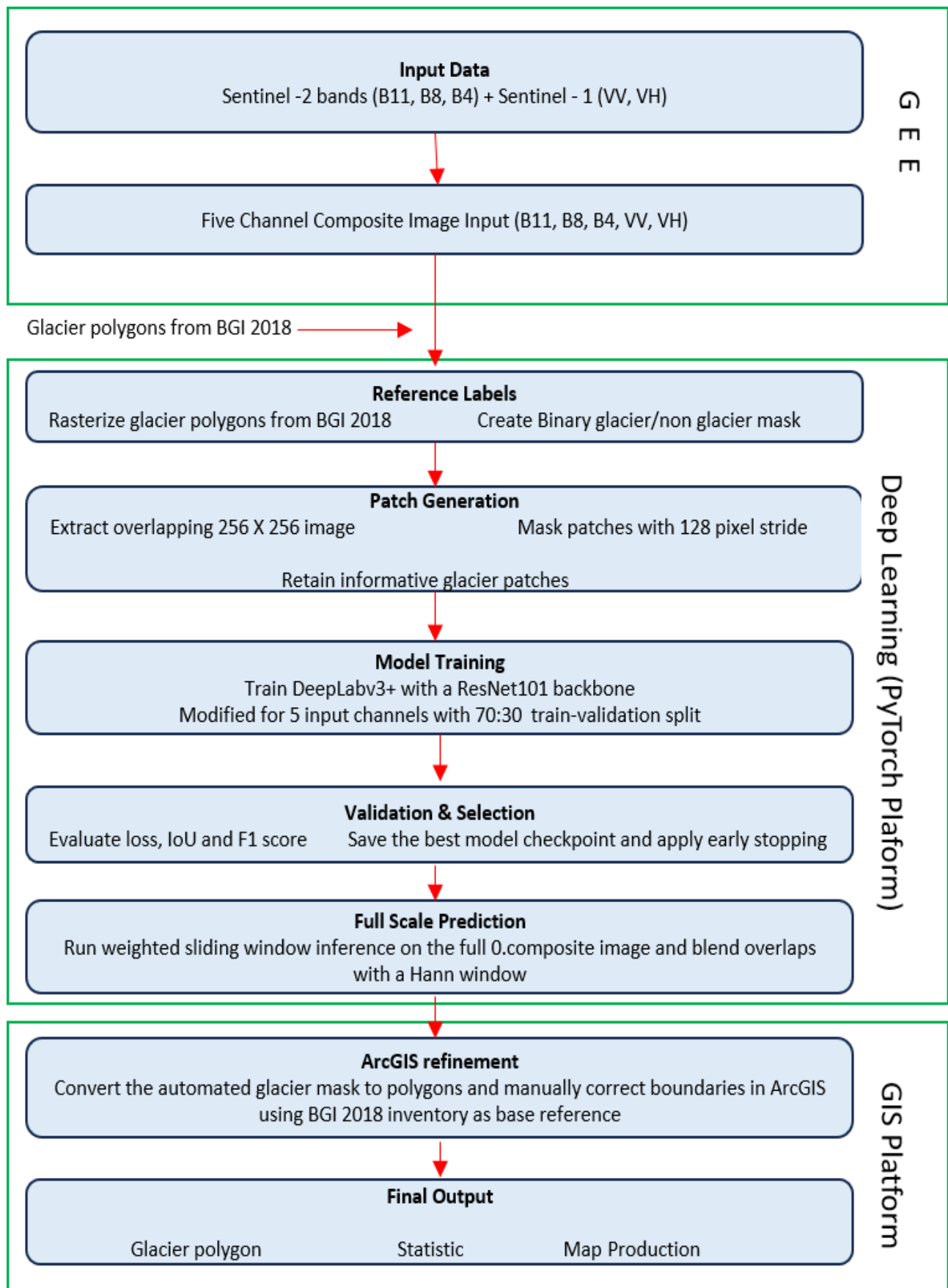


Figure 1: Schematic work flow chart for glacier-mapping using deep learning and manual correction

Table 1: Summary of the deep learning workflow and parameter settings used for automated glacier mapping

Parameter	Value used
Input composite	Sentinel-2 B11, B8 and B4 + Sentinel-1 VH and VV
Reference labels	2018 Bhutan Glacier Inventory glacier polygons
Input channels	5
Patch size	256 × 256 pixels
Stride	128 pixels
Dataset split	70% training / 30% validation
Batch size	16
Model	DeepLabv3+ with ResNet101 backbone
Output classes	2 (glacier and non-glacier)
Loss function	CrossEntropyLoss
Optimizer	Adam
Learning rate	1×10^{-4}
Maximum epochs	100
Early stopping	Patience = 3
Selection metric	Best mean validation F1-score
Inference method	Weighted sliding-window prediction with Hann blending
Probability threshold	0.5
Post-processing	Manual ArcGIS correction using the 2018 inventory as base
Final output	Updated Bhutan glacier polygons / inventory-ready mask

5.1 Input data and composite preparation

A five-channel composite image was prepared by stacking Sentinel-2 bands B11, B8 and B4 together with Sentinel-1 VH and VV backscatter layers. The optical and radar layers were co-registered to a common grid and exported as a single raster for model input. The resulting five-channel raster preserves both spectral and backscatter information, which improves glacier discrimination in clean-ice, shadowed and debris-influenced terrain.

5.2 Reference labels and target-mask generation

Reference glacier polygons from the 2018 Bhutan Glacier Inventory were used as the initial training labels. These polygons were checked for null or invalid geometries and reprojected to the raster coordinate reference system where necessary. The glacier outlines were then rasterized to the image grid to generate binary target masks, where glacier pixels were coded as 1 and non-glacier pixels as 0.

5.3 Patch extraction and sample preparation

The five-channel image and its corresponding binary glacier mask were divided into overlapping patches of 256×256 pixels with a stride of 128 pixels. Overlapping extraction was adopted to improve spatial continuity and to avoid losing information near patch edges. Patches containing no glacier information were excluded from the training pool, so the dataset retained only informative samples. Channel-wise mean and standard deviation values were computed from the retained patches and used to normalize all input samples during training and inference.

5.4 Model architecture and training

Semantic segmentation was performed using DeepLabv3+ with a ResNet101 backbone. The first convolutional layer was adapted from the standard three-channel configuration to accept five input channels, and the final classifier head was modified to output two classes: glacier and non-glacier. The extracted patch dataset was split into 70% training data and 30% validation data. Model optimization used cross-entropy loss and the Adam optimizer with a learning rate of 1×10^{-4} . Training was run for a maximum of 100 epochs, while early stopping with a patience of three epochs was used to prevent overfitting.

5.5 Model evaluation and checkpoint selection

During training, both training loss and validation loss were monitored for each epoch. Validation predictions were additionally assessed using Intersection over Union (IoU) and F1-score derived from the confusion matrix. The best model checkpoint was selected on the basis of the highest mean validation F1-score.

5.6 Full-scene prediction

The best-performing checkpoint was reloaded and applied to the full five-channel composite using sliding-window inference. The same patch size (256 pixels) and stride (128 pixels) used for training were also used during prediction. A two-dimensional Hann window was applied to each probability patch so that overlapping predictions could be blended smoothly. A probability threshold of 0.5 was then applied to generate the binary automated glacier mask.

5.7 ArcGIS-based post-classification refinement

After automated segmentation, the glacier mask was converted to vector polygons and reviewed in ArcGIS. Manual correction was carried out using the 2018 glacier shapefile as the base reference to maintain consistency while refining glacier boundaries, removing obvious false positives, reconnecting or separating fragmented polygons where necessary, and improving divides and margins in complex terrain. The ArcGIS refinement step formed the final quality-control stage before preparation of the updated Bhutan glacier inventory.

5.8 Final outputs

The final deliverables consisted of corrected glacier polygons for the updated inventory, together with derived attribute information and summary products. These outputs can be used for glacier statistics, terrain analysis, basin-wise summaries, and comparison with earlier Bhutan glacier inventories.

6 Attribute data

All attributes for the glaciers mapped under this activity remains same with the BGI 2018 where protocol set by Global Land and Ice Measurement from Space (GLIMS) community was applied. Glacier ID number was assigned as per the World Glacier Inventory (WGI) guidelines (Cogley, 2009) where the numbering of glacier starts from the mouth of major stream and continues in clockwise direction in the basins/subbasins.

7 Performance and Limitation of using Deep Learning approach in glacier mapping

Deep learning technique provides a highly convenient method in mapping of glaciers for preparing glacier inventory at all levels of scale. It provides a seamless fully automated process in mapping of glaciers which is reproducible, transferable and maintains consistency for similar works in the future. However, it is pertinent to highlight that the technique is not devoid of limitations and there are challenges associated with such approaches.

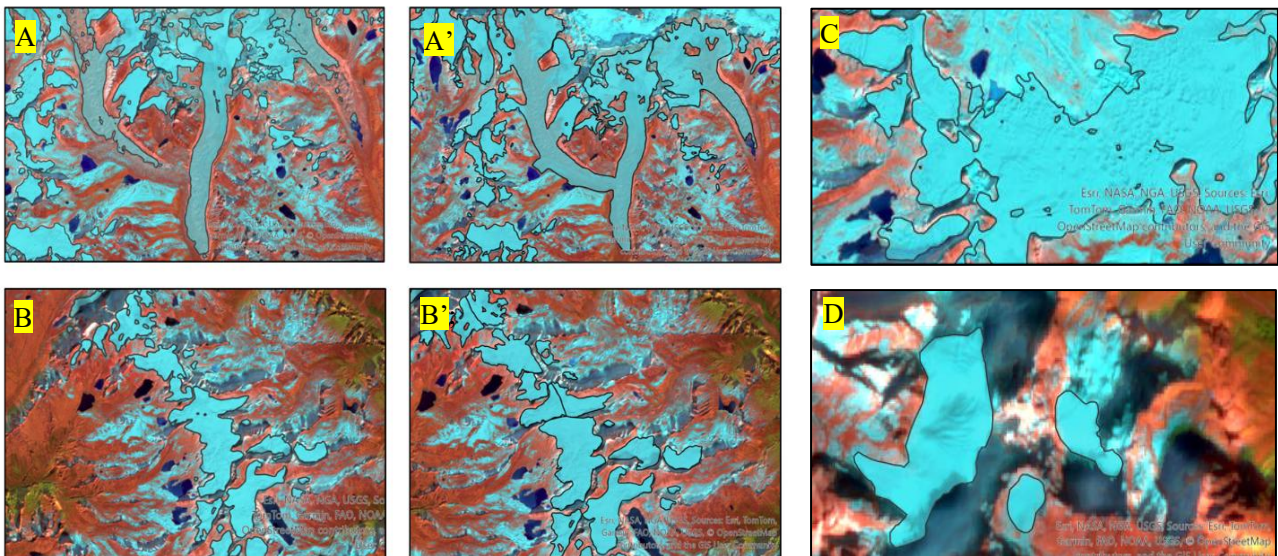


Figure 2: Examples showing the performance and limitations of deep learning-based automatic glacier delineation: (A) Partial delineation of debris-covered glacier; (A') manually corrected of the partially delineated debris covered glacier (B) failure to detect ice divides; (B') manually mapping of ice divide (C) & (D) Clear delineation and distinction of clean glacier from seasonal snow in the surrounding.

The deep learning-based glacier delineation model performs well over clean ice glacier surface where spectral and textural contrast is relatively distinct (Fig.2. (C)&(D)). The model was found to have several limitations in detecting other features on the glaciers. One of the main challenges in using DL in mapping of glacier is its limitation in identifying ice divides (Fig.2 (B) & (B')). Although the model can clearly delineate a glacier area but fails to distinguish the ice divide which results in

merging of two separate glacier and identifying as one single glacier. Another major issue encountered during the mapping was uncertainty associated with delineating debris covered glacier boundary. Although the model was able to capture the debris cover glacier area, the boundary detected by the model remains uncertain since debris cover on glacier surface exhibits similar spectral characteristics to the surrounding non glacierized terrain (Fig.2 (A) & (A')). The model was also found to be highly sensitive to image conditions such as cloud cover, shadow, seasonal snow cover and local terrain complexity which can lead to omission or misclassification.

Considering the above limitations a manual refinement and topographic interpretation was carried out in the GIS environment before finalizing and output glacier map.

8 Accuracy

Accuracy of glacier polygon outlines depends mainly on image resolution, seasonal snow cover, shadow, and the contrast between glacier surfaces and the surrounding terrain in satellite imagery. Previous studies have shown that high-resolution imagery provides a reliable basis for glacier boundary delineation. Therefore, high-resolution Sentinel-2 imagery was used in the present study. Scenes with less than 15% cloud cover, covering the glacierized area of Bhutan, were selected for the delineation. In order to minimize the influence of seasonal snow, images from September to October, representing the period with little or no seasonal snow cover were used.

The delineated glacier boundaries were affected mainly by shadow and cloud cover. Glacier area uncertainty was therefore estimated in the same method which has been followed in the BGI 2018, by comparing the area derived from the delineated glacier polygons with the pixel-based area calculation. The pixel-based area was calculated as the product of the total number of pixels enclosed within each glacier boundary and the area of a single pixel. The total uncertainty of glacier area was calculated using:

$$\sqrt{\frac{\sum_{i=1}^n (a_i - \hat{a}_i)^2}{n}}$$

where a_i is the glacier area derived from the glacier polygon, $\hat{a}_i$ is the pixel-based glacier area, and n is the total number of glaciers.

For this study, a total of 673 glaciers were assessed. The reference raster had an effective pixel size of approximately 9.70 m × 9.70 m, corresponding to a pixel area of 94.06 m². The resulting glacier area uncertainty was estimated at ±0.0033 km², which is equivalent to 0.374% of the mean glacier area. The mean absolute difference between polygon-derived area and pixel-based area was 0.0011 km², while the maximum absolute difference observed for an individual glacier was 0.0390 km². These results indicate that the uncertainty associated with glacier boundary delineation is low, reflecting the use of high-resolution imagery acquired during a period of minimal seasonal snow, with low cloud cover over the glacierized area of Bhutan.

9 Result

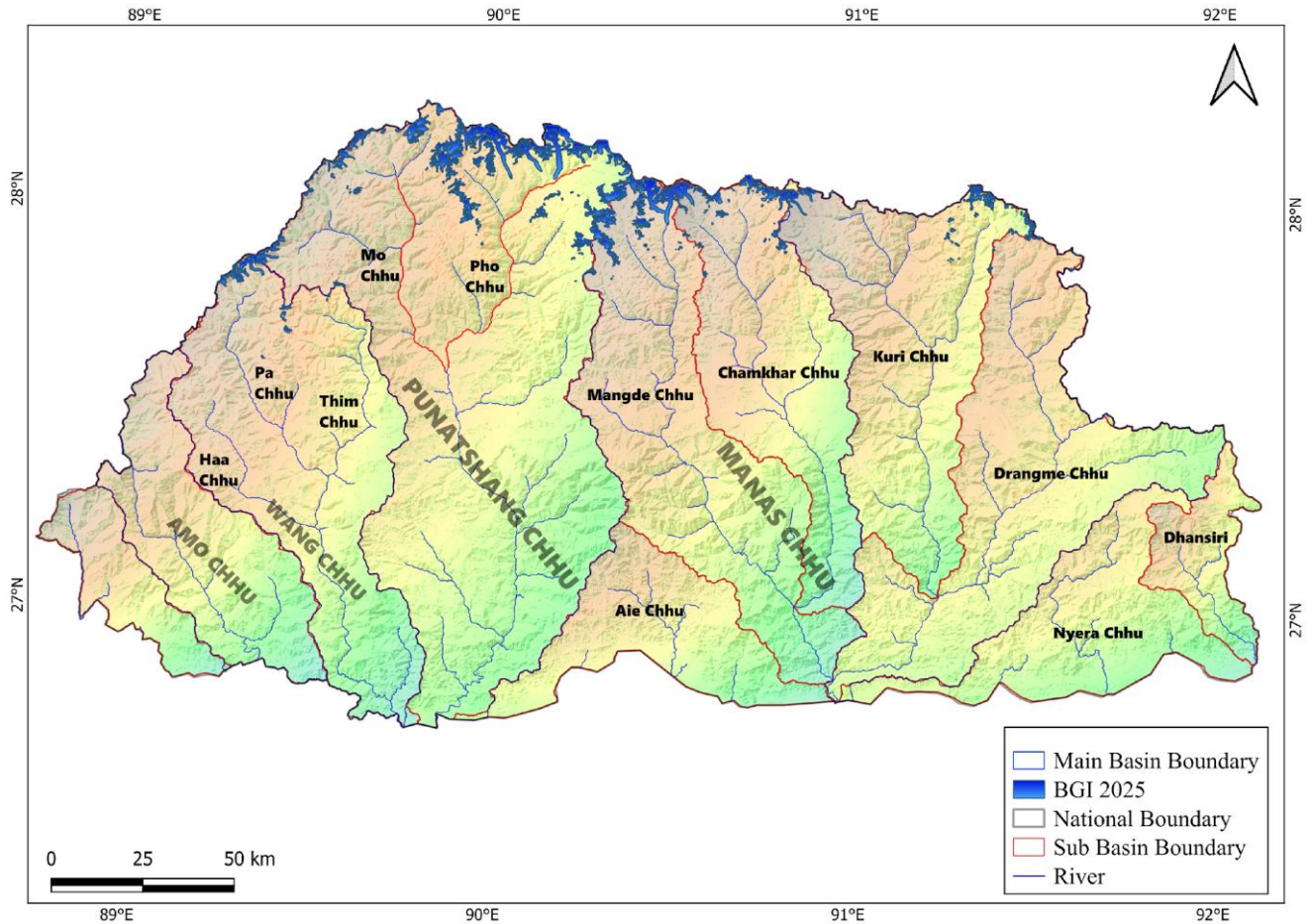


Figure 3: Glacier map of Bhutan

During this current work on updating the BGI 2018, there are 673 glaciers mapped occupying an area of 571.86 km². The glaciers are located in various headwaters of three major river basins which expands to nine different sub basins (Fig 3).

Figure 4 shows subbasin wise comparison of glacier numbers between BGI 2018 and BGI 2026 in Bhutan. Among the sub basins Pho Chu subbasins has the highest number of glaciers (200 glaciers) and Ha chu subbasin has the least number of glaciers (3).

Area occupied by glaciers in different subbasins are shown in Figure 5. Pho Chu subbasin has the largest glaciated area among the subbasins which is mainly attributed the highest number of glaciers present.

Figure 6 represents the glacier area hypsography in the country. Similar to the BGI 2018 the maximum area covered by glaciers is found between the elevation band of 5000 -5700 masl

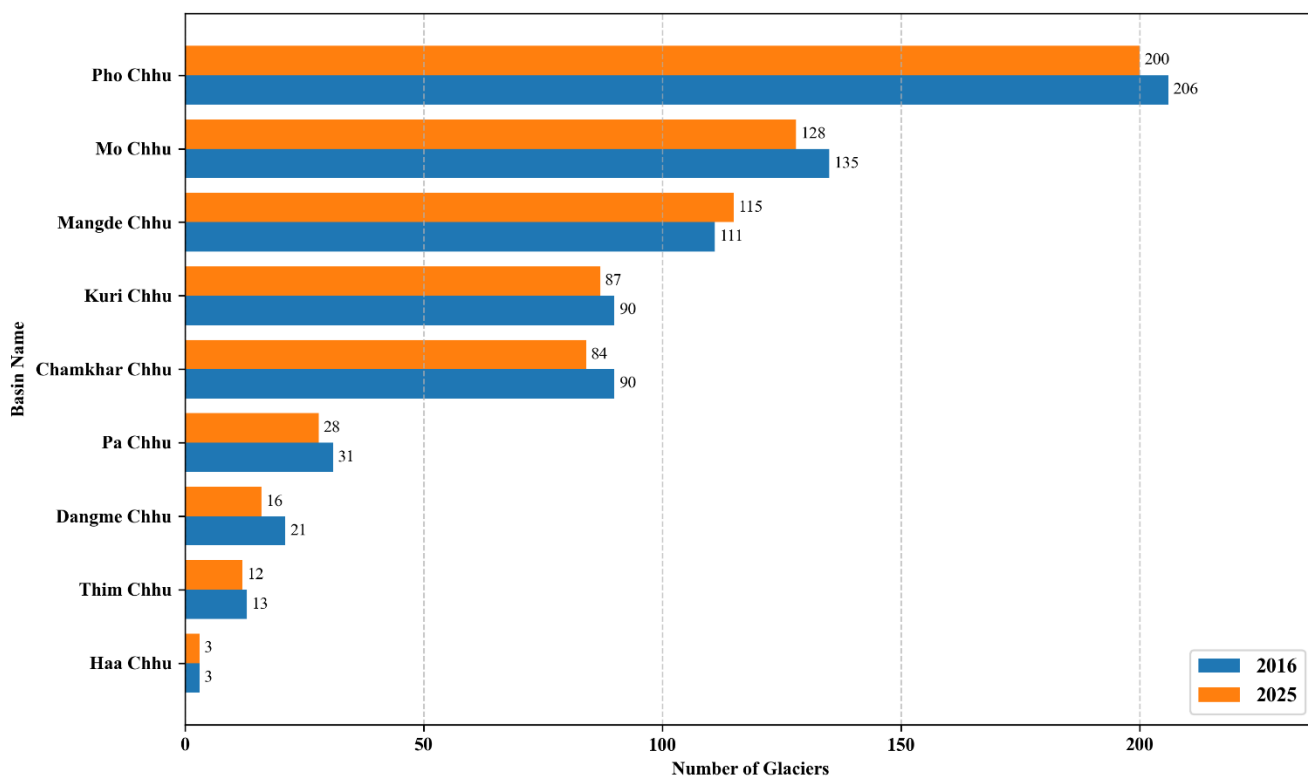


Figure 4: Comparison of glacier numbers in different sub basins between BGI 2018 and BGI 2026

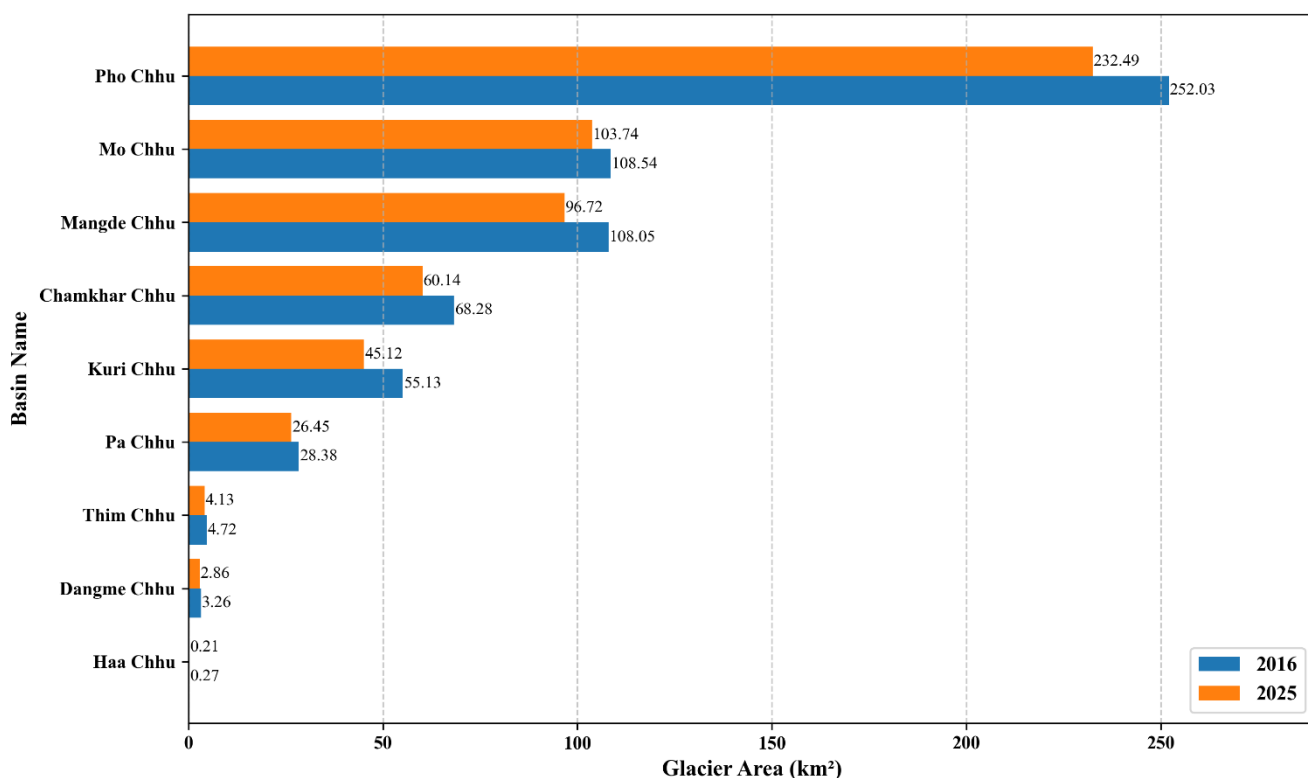


Figure 5: Comparison of glacier area in different sub basins between BGI 2018 and BGI 2026

(NOTE: comparison in the above figures was done based on the year of the data used and not on the year of publication)

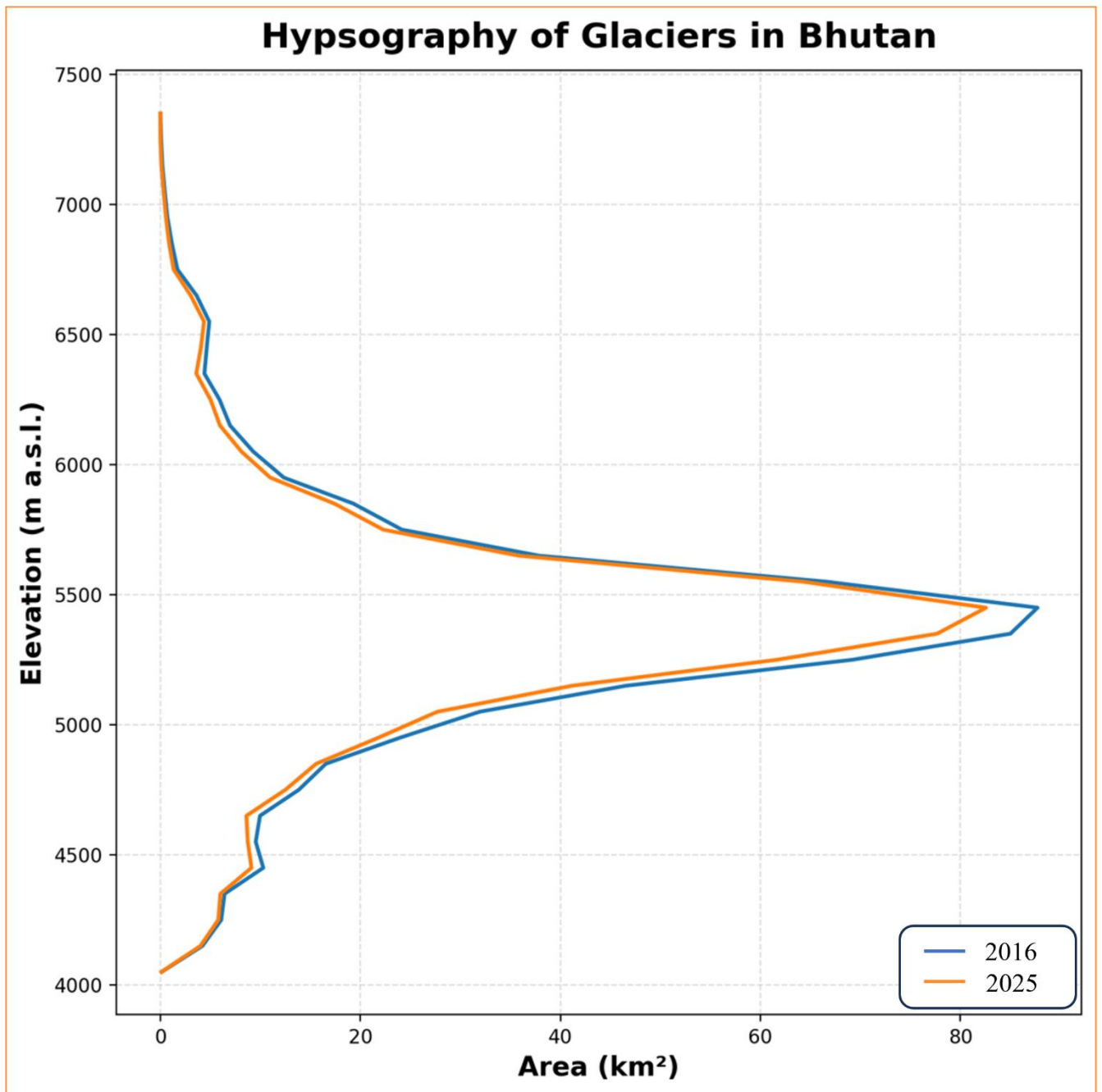


Figure 6: Comparison of BGI 2018 and BGI 2026 Hypsography of the glaciers in Bhutan

10 Basin and Su basin wise description of glaciers

The total 673 glaciers in Bhutan are distributed in three basins and nine sub basins. A comprehensive description of the glaciers in each basin/subbasin are given in the following sections.

10.1 Wang Chhu Basin

The Wang Chhu basin in the BGI 2026 glacier inventory comprises of Pa Chhu, Ha Chhu and Thim Chhu sub-basins. Together, these three sub-basins contain a total of 43 glaciers covering an area of 30.79 km². Among them, Pa Chhu contains 27 glaciers with a total glacierized area of 26.29 km², Thim Chhu contains 12 glaciers covering 4.13 km² while Ha Chhu sub basin has 3 glaciers with an area of 0.21 km². Thus, Pa Chhu has both the highest glacier number and glacier area within the

Wang Chhu basin. The detail description of the glaciers in individual sub basins under Wang Chhu basin is given below:

10.2 Pa Chhu sub-basin

The Pa Chhu sub-basin is the highest glacierized sub-basin within the Wang Chhu basin in the 2026 inventory. It contains 28 glaciers covering a total area of 26.45 km². The largest glacier in this sub-basin is Jichu Drake (WPagr25_019) with an area of 8.99 km², while the smallest glacier covers 0.01 km². The minimum glacier elevation in Pa Chhu ranges from 4340 m to 6947 m a.s.l.

10.3 Thim Chhu sub-basin

The Thim Chhu sub-basin contains 12 glaciers with a total area of 4.13 km² in the updated 2026 inventory. The largest glacier in this sub-basin is WThgr25_031, covering 1.27 km², whereas the smallest glacier has an area of 0.03 km². The minimum glacier elevation ranges from 4939 m to 5482 m a.s.l.

10.4 Ha Chhu sub basin

Ha Chhu sub basin has 3 glaciers with a total area of 0.21 km²

10.5 Punatsang Chhu Basin

The Punatsang Chhu basin consists of the Mo Chhu and Pho Chhu sub-basins in the BGI 2026 glacier inventory. Together, these two sub-basins contain a total of 328 glaciers covering 336.23 km², making Punatsang Chhu the most glacierized basin in Bhutan in terms of both glacier number and area in the current dataset. Mo Chhu sub basin contains 128 glaciers covering an area of 103.74 km², while Pho Chhu sub basin has 200 glaciers covering 232.49 km². Thus, Pho Chhu sub basin has the highest number of glaciers as well as the largest glacierized area among all sub-basins in Bhutan. The largest glacier in the Punatsang Chhu basin is PPhgr25_276 in the Pho Chhu sub-basin, covering 32.06 km², while the smallest glacier in the basin has an area of 0.01 km². The minimum glacier elevation in this basin ranges from 4072 m to 6353 m a.s.l.

10.5.1 Mo Chhu sub-basin

The Mo Chhu sub-basin is one of the two major glacierized tributaries of the Punatsang Chhu basin. In the updated 2025 inventory, it contains 128 glaciers covering a total area of 103.74 km². The largest glacier in this sub-basin is PMogr25_145, with an area of 9.34 km², while the smallest glacier covers 0.02 km². The minimum glacier elevation ranges from 4072 m to 6292 m a.s.l.

10.5.2 Pho Chhu sub-basin

The Pho Chhu sub-basin contains 200 glaciers with a total area of 232.49 km², making it the most glacierized sub-basin in the updated BGI 2026 inventory. The largest glacier in this sub-basin is PPhgr25_276, covering 32.06 km², whereas the smallest glacier has an area of 0.01 km². The minimum glacier elevation ranges from 4082 m to 6353 m a.s.l. Owing to its high glacier concentration and large glacierized area, Pho Chhu sub basin remains one of the most important cryospheric regions in Bhutan.

10.6 Manas Basin

The Manas basin is represented in the BGI 2026 glacier inventory by the Mangde Chhu, Chamkhar Chhu, Kuri Chhu, and Dangme Chhu sub-basins. Together, these sub-basins contain a total of 302 glaciers covering an area of 204.85 km², making Manas the second most glacierized basin in Bhutan in the present dataset. Among the sub-basins, Mangde Chhu contains 115 glaciers covering 96.72 km², Kuri Chhu contains 87 glaciers covering 45.12 km², Chamkhar Chhu contains 84 glaciers covering 60.14 km², and Dangme Chhu contains 16 glaciers covering 2.86 km². The largest glacier in the Manas basin is MMagr25_463 located in the Mangde Chhu sub-basin, covering an area of 40.32 km², while the smallest glacier in the basin has an area of 0.01 km². The minimum glacier elevation in this basin ranges from 4565 m to 5696 m a.s.l.

10.6.1 Mangde Chhu sub-basin

The Mangde Chhu sub-basin contains 115 glaciers covering a total area of 96.72 km² in the updated 2025 inventory, making it the largest glacierized sub-basin within the Manas basin in terms of glacier number and area. The largest glacier in this sub-basin is MMagr25_463, covering 40.32 km², while the smallest glacier covers 0.01 km². The minimum glacier elevation ranges from 4630 m to 5696 m a.s.l.

10.6.2 Chamkhar Chhu sub-basin

The Chamkhar Chhu sub-basin contains 84 glaciers with a total glacierized area of 60.14 km². The largest glacier in this sub-basin is MChgr25_501, covering 14.65 km², whereas the smallest glacier has an area of 0.03 km². The minimum glacier elevation ranges from 4693 m to 5473 m a.s.l.

10.6.3 Kuri Chhu sub-basin

The Kuri Chhu sub-basin contains 87 glaciers covering a total area of 45.12 km² in the updated 2026 inventory. The largest glacier in this sub-basin is MKugr25_604, with an area of 10.94 km², while the smallest glacier covers 0.02 km². The minimum glacier elevation ranges from 4565 m to 5583 m a.s.l.

10.6.4 Dangme Chhu sub-basin

The Dangme Chhu sub-basin contains 16 glaciers covering a total area of 2.86 km², making it the smallest glacierized sub-basin within the Manas basin in the current dataset. The largest glacier in this sub-basin is MDagr25_664, covering 0.51 km², whereas the smallest glacier has an area of 0.02 km². The minimum glacier elevation ranges from 4773 m to 5203 m a.s.l.

11 Discussion

A comparison of glacier statistics between the Bhutan Glacier Inventory 2018 (BGI 2018) and the Bhutan Glacier Inventory 2026 (BGI 2026) reveals a substantial decline in both glacier number and glacierized area across most sub-basins of the country. Glacier numbers decreased in all sub-basins except the Mangde Chhu sub-basin (Fig. 4). The largest reduction was observed in the Mo Chhu sub-basin, where the glacier count decreased by seven glaciers between the two inventory periods.

At the national scale, the total number of glaciers declined from 700 in BGI 2018 to 673 in BGI 2026, representing a net loss of 27 glaciers over the nine-year period (2016–2025). Similarly, the total glacierized area decreased from 629.55 km² to 571.86 km², corresponding to a reduction of 57.69

km² or 9.16% of the glacier area recorded in the previous inventory. These results indicate a continued trend of glacier recession and ice mass loss across Bhutan's glacierized regions.

Detailed examination of the inventory datasets revealed that one feature previously classified as a glacier in BGI 2018 was, upon reassessment using higher-quality imagery and improved mapping techniques, identified as a seasonal snow patch rather than a perennial glacier. Consequently, this feature was excluded from the current inventory. Excluding this correction, the remaining 26 missing glaciers are interpreted as having disappeared during the inventory period. Their disappearance is likely associated with sustained glacier retreat and progressive ice loss driven by ongoing climatic warming and enhanced ablation in the Himalayan region.

In contrast to the general pattern of glacier decline, the Mangde Chhu sub-basin exhibited an increase in glacier number, with the inventory recording four additional glaciers compared to BGI 2018 (Fig. 4). However, despite the increase in glacier count, the total glacierized area within the sub-basin decreased from 108.05 km² to 96.72 km². This apparent discrepancy can be explained by glacier fragmentation, a process commonly observed during glacier melting whereby larger glaciers become disconnected and separate into multiple smaller glacier units. As glacier thinning and recession progress, tributary sections or formerly contiguous ice bodies may become detached and subsequently mapped as individual glaciers. Therefore, the increase in glacier number in the Mangde Chhu sub-basin is most likely a consequence of glacier fragmentation rather than glacier growth, consistent with the overall reduction in glacier area observed within the basin and the broader trend of glacier recession across Bhutan.

12 Conclusion

The Bhutan Glacier Inventory 2026 provides an updated and reliable assessment of glacier distribution and extent in Bhutan using recent satellite imagery and deep learning techniques. The inventory identified **673 glaciers** covering a total area of **571.86 km²**, compared with **700 glaciers** covering **629.55 km²** in the Bhutan Glacier Inventory 2018. This represents a loss of **27 glaciers** and a reduction of **57.69 km² (9.16%)** in glacier area over the 2016–2025 (data year) period. The results clearly indicate that glacier retreat and area loss are continuing across Bhutan, consistent with the earlier findings of glacier receding at an accelerated rate as an impact of a warming climate.

Most river sub-basins experienced reductions in both glacier number and glacier area. Although the Mangde Chhu sub-basin showed an increase in glacier number, the total glacierized area decreased, indicating glacier fragmentation rather than glacier growth or expansion. The Pho Chhu sub-basin remains the most glacierized region in Bhutan in terms of both glacier number and area, while the majority of glacier area continues to be concentrated between **5,000 and 5,700 m above sea level**, similar to the previous inventory.

The application of deep learning significantly improved the efficiency, consistency, and reproducibility of glacier mapping. However, manual refinement was still required to accurately delineate debris-covered glaciers, identify ice divides, and correct misclassified features. The low mapping uncertainty (± 0.0033 km², equivalent to 0.374% of the mean glacier area) demonstrates the high reliability of the result in this inventory.

Overall, the Bhutan Glacier Inventory 2026 establishes a new national baseline for glacier monitoring and provides an important scientific dataset for assessing climate change impacts,

supporting water resource management, and strengthening glacier-related hazard and GLOF risk assessments. The successful integration of artificial intelligence with conventional GIS methods also demonstrates a practical approach for future regular updates of Bhutan's glacier inventory.

References

- Bajracharya, S.R., Maharjan, S.B. & Shrestha, F., 2014. The status and decadal change of glaciers in Bhutan from the 1980s to 2010 based on satellite data. *Annals of Glaciology*, 55(66), pp.159–166.
- NCHM, 2018. Bhutan Glacier Inventory 2018 (BGI 2018)
- Cogley, J.G., 2009. A more complete version of the World Glacier Inventory. *Annals of Glaciology*, 50(53), pp.32–38.
- Maslov, K. A., Persello, C., Schellenberger, T., & Stein, A. (2025). Globally scalable glacier mapping by deep learning matches expert delineation accuracy. *Nature Communications*, 16, Article 43. <https://doi.org/10.1038/s41467-024-54956-x>
- Kingma, D. P., & Ba, J. (2015). Adam: A method for stochastic optimization. In Proceedings of the 3rd International Conference on Learning Representations (ICLR 2015). <https://arxiv.org/abs/1412.6980>
- Xu, X., Liu, L., Huang, L., & Hu, Y. (2024). Combined use of multi-source satellite imagery and deep learning for automated mapping of glacial lakes in the Bhutan Himalaya. *Science of Remote Sensing*, 10, Article 100157. <https://doi.org/10.1016/j.srs.2024.100157>

Appendix

Sl.No.	GLIMS_ID	Glacier_ID	Longitude	Latitude	Area_sqKM	Elev_Max(m)	Elev_Min(m)	Elev_Mean(m)	Slope_Max(degree)	Slope_Min(degree)	Slope_Mean(degree)	Aspect(degree)	Basin
HAA CHHU SUB BASIN													
1	G089111E27542N	WHagr25_1	89.111	27.542	0.053	5348	5070	5248	66	2	36	278	Haa Chhu
2	G089116E27549N	WHagr25_2	89.116	27.549	0.069	5579	5317	5460	63	4	34	203	Haa Chhu
3	G089116E27574N	WHagr25_3	89.161	27.574	0.090	5624	5377	5524	67	3	40	283	Haa Chhu
PA CHHU SUB BASIN													
4	G089229E27784N	WPagr25_001	89.229	27.784	0.280	5784	5250	5491	72	3	33	254	Pa Chhu
5	G089249E27775N	WPagr25_002	89.249	27.775	0.014	5360	5245	5309	64	3	34	204	Pa Chhu
6	G089242E27789N	WPagr25_003	89.242	27.789	2.091	6046	5026	5472	73	0	23	128	Pa Chhu
7	G089238E27800N	WPagr25_004	89.238	27.800	0.141	5952	5601	5754	73	0	33	220	Pa Chhu
8	G089251E27799N	WPagr25_005	89.251	27.799	0.324	6068	5286	5622	69	3	39	148	Pa Chhu
9	G089253E27804N	WPagr25_006	89.253	27.804	0.131	6198	5757	5981	72	9	51	143	Pa Chhu
10	G089356E27605N	WPagr25_007	89.356	27.605	0.293	5549	5017	5304	65	0	31	316	Pa Chhu
11	G089268E27808N	WPagr25_008	89.268	27.808	2.243	7192	4885	5873	74	0	35	179	Pa Chhu
12	G089274E27799N	WPagr25_009	89.274	27.799	0.092	5382	5184	5266	68	0	29	209	Pa Chhu
13	G089281E27797N	WPagr25_010	89.281	27.797	1.473	5932	5095	5499	75	0	27	213	Pa Chhu

14	G089270E27827 N	WPagr25_0 11	89.270	27.827	0.203	7270	6947	7076	75	3	40	150	Pa Chhu
15	G089275E27818 N	WPagr25_0 12	89.275	27.818	1.094	7051	5915	6460	74	0	37	150	Pa Chhu
16	G089289E27794 N	WPagr25_0 13	89.289	27.794	0.637	5656	5162	5463	73	0	23	180	Pa Chhu
17	G089288E27803 N	WPagr25_0 14	89.288	27.803	0.459	5876	5143	5471	74	0	31	102	Pa Chhu
18	G089284E27816 N	WPagr25_0 15	89.284	27.816	1.147	6435	4876	5502	76	3	38	115	Pa Chhu
19	G089295E27792 N	WPagr25_0 16	89.295	27.792	0.289	5618	5264	5407	65	0	26	167	Pa Chhu
20	G089293E27829 N	WPagr25_0 17	89.293	27.829	2.729	6409	5009	5518	83	0	37	140	Pa Chhu
21	G089302E27810 N	WPagr25_0 18	89.302	27.810	1.262	4792	4387	4534	72	0	20	148	Pa Chhu
22	G089323E27834 N	WPagr25_0 19	89.323	27.834	8.988	6599	4340	5118	85	0	29	183	Pa Chhu
23	G089342E27836 N	WPagr25_0 20	89.342	27.836	0.980	6538	5271	5823	81	0	37	158	Pa Chhu
24	G089405E27707N	WPagr25_0 21	89.405	27.707	0.180	5315	4996	5097	60	3	25	302	Pa Chhu
25	G089407E27713N	WPagr25_0 22	89.407	27.713	0.077	5305	5117	5212	49	3	25	302	Pa Chhu
26	G089416E27674N	WPagr25_0 23	89.416	27.674	0.332	5551	5041	5273	73	0	32	337	Pa Chhu
27	G089406E27725N	WPagr25_0 24	89.406	27.725	0.376	5597	4998	5268	66	0	27	277	Pa Chhu
28	G089420E27675N	WPagr25_0 25	89.420	27.675	0.082	5531	5335	5439	67	0	35	233	Pa Chhu
29	G089420E27679N	WPagr25_0 26	89.420	27.679	0.206	5570	4993	5253	65	0	34	335	Pa Chhu
30	G089410E27732N	WPagr25_0 27	89.410	27.732	0.166	5671	5384	5553	63	0	29	327	Pa Chhu

31	G089169E27577N	WPagr25_0 28	89.169	27.577	0.160533	5394	4934	5187	61	0	34	260	Pa Chhu
THIM CHHU SUB BASIN													
32	G089413E27698N	WThgr25_0 28	89.413	27.698	0.475	5291	5093	5182	71	0	17	37	Thim Chhu
33	G089413E27713N	WThgr25_0 29	89.413	27.713	0.534	5348	5073	5178	68	0	17	49	Thim Chhu
34	G089427E27670N	WThgr25_0 30	89.427	27.670	0.791	5581	4939	5265	71	0	26	43	Thim Chhu
35	G089421E27728N	WThgr25_0 31	89.421	27.728	1.266	5607	5124	5282	65	0	13	87	Thim Chhu
36	G089481E27770N	WThgr25_0 32	89.481	27.770	0.025	5349	5241	5307	44	0	25	298	Thim Chhu
37	G089530E27749N	WThgr25_0 33	89.530	27.749	0.130	5404	5192	5293	59	0	29	279	Thim Chhu
38	G089535E27758N	WThgr25_0 34	89.535	27.758	0.107	5311	5186	5231	41	0	13	41	Thim Chhu
39	G089555E27787N	WThgr25_0 35	89.555	27.787	0.167	5662	5318	5508	61	0	31	187	Thim Chhu
40	G089560E27787N	WThgr25_0 36	89.560	27.787	0.200	5704	5403	5563	83	3	40	172	Thim Chhu
41	G089566E27787N	WThgr25_0 37	89.566	27.787	0.098	5611	5448	5526	83	0	34	225	Thim Chhu
42	G089575E27786N	WThgr25_0 38	89.575	27.786	0.277	5777	5482	5647	74	3	36	188	Thim Chhu
43	G089576E27782N	WThgr25_0 39	89.576	27.782	0.063	5487	5232	5368	71	4	42	234	Thim Chhu
MO CHHU SUB BASIN													
44	G089594E27742N	PMogr25_0 40	89.594	27.742	0.150	5248	5073	5172	61	0	23	18	Mo Chhu
45	G089532E27760N	PMogr25_0 41	89.532	27.760	0.068	5391	5163	5248	41	0	21	357	Mo Chhu

46	G089535E27764N	PMogr25_0 42	89.535	27.764	0.084	5256	5121	5185	57	3	23	309	Mo Chhu
47	G089559E27792N	PMogr25_0 43	89.559	27.792	0.186	5539	5230	5437	73	3	29	57	Mo Chhu
48	G089551E27788N	PMogr25_0 44	89.551	27.788	0.158	5560	5190	5380	70	3	34	284	Mo Chhu
49	G089552E27791N	PMogr25_0 45	89.552	27.791	0.277	5576	5118	5406	57	3	26	291	Mo Chhu
50	G089554E27794N	PMogr25_0 46	89.554	27.794	0.152	5539	5268	5447	63	0	26	304	Mo Chhu
51	G089482E27773N	PMogr25_0 47	89.482	27.773	0.097	5305	5158	5230	39	0	21	331	Mo Chhu
52	G089350E27842N	PMogr25_0 48	89.350	27.842	1.706	6123	4913	5489	82	0	27	112	Mo Chhu
53	G089357E27853N	PMogr25_0 49	89.357	27.853	3.991	6388	4215	5055	83	0	28	98	Mo Chhu
54	G089351E27862N	PMogr25_0 50	89.351	27.862	0.055	5502	5343	5411	68	3	35	159	Mo Chhu
55	G089359E27866N	PMogr25_0 51	89.359	27.866	0.520	5681	5210	5434	75	0	26	178	Mo Chhu
56	G089372E27869N	PMogr25_0 52	89.372	27.869	0.256	6509	5734	6096	73	3	43	165	Mo Chhu
57	G089380E27871N	PMogr25_0 53	89.380	27.871	1.168	6495	4546	5527	71	3	42	98	Mo Chhu
58	G089367E27870N	PMogr25_0 54	89.367	27.870	0.086	6506	5951	6212	68	21	50	227	Mo Chhu
59	G089385E27882N	PMogr25_0 55	89.385	27.882	1.232	6024	4830	5349	72	0	29	84	Mo Chhu
60	G089405E27891N	PMogr25_0 56	89.405	27.891	0.183	5384	5070	5205	61	8	28	97	Mo Chhu
61	G089399E27897N	PMogr25_0 57	89.399	27.897	1.539	5730	5013	5344	67	0	21	22	Mo Chhu
62	G089464E28008N	PMogr25_0 58	89.464	28.008	0.409	5718	5169	5399	62	0	25	220	Mo Chhu

63	G089475E28017N	PMogr25_0 59	89.475	28.017	0.451	5750	5276	5464	72	0	23	139	Mo Chhu
64	G089482E28016N	PMogr25_0 60	89.482	28.016	0.082	5329	5099	5228	62	3	24	68	Mo Chhu
65	G089479E28020N	PMogr25_0 61	89.479	28.020	0.246	5359	5064	5204	61	0	25	43	Mo Chhu
66	G089469E28029N	PMogr25_0 62	89.469	28.029	0.127	5490	5061	5346	64	3	30	54	Mo Chhu
67	G089467E28039N	PMogr25_0 63	89.467	28.039	0.062	5619	5486	5556	62	0	24	132	Mo Chhu
68	G089480E28048N	PMogr25_0 64	89.480	28.048	0.211	5374	5161	5231	59	0	14	67	Mo Chhu

69	G089484E28061N	PMogr25_0 65	89.484	28.061	0.102	5769	5505	5646	59	3	32	152	Mo Chhu
70	G089487E28062N	PMogr25_0 66	89.487	28.062	0.043	5723	5406	5582	62	4	39	94	Mo Chhu
71	G089492E28061N	PMogr25_0 67	89.492	28.061	0.089	5361	5205	5269	59	0	26	54	Mo Chhu
72	G089534E28056N	PMogr25_0 68	89.534	28.056	0.303	5295	5145	5215	52	0	18	272	Mo Chhu
73	G089540E28051N	PMogr25_0 69	89.540	28.051	0.204	5252	5059	5152	55	3	17	35	Mo Chhu
74	G089512E28085N	PMogr25_0 70	89.512	28.085	0.446	5835	5245	5452	63	0	25	176	Mo Chhu
75	G089538E28059N	PMogr25_0 71	89.538	28.059	0.038	5346	5244	5293	53	0	22	75	Mo Chhu
76	G089525E28077N	PMogr25_0 72	89.525	28.077	0.816	5840	4754	5146	72	0	24	193	Mo Chhu
77	G089585E28015N	PMogr25_0 73	89.585	28.015	0.152	5392	5090	5229	58	0	29	275	Mo Chhu
78	G089578E28026N	PMogr25_0 74	89.578	28.026	0.098	5355	5181	5261	55	0	21	303	Mo Chhu
79	G089539E28076N	PMogr25_0 75	89.539	28.076	0.081	5541	5303	5407	62	11	31	139	Mo Chhu
80	G089578E28030N	PMogr25_0 76	89.578	28.030	0.061	5307	5156	5223	57	0	26	331	Mo Chhu
81	G089585E28023N	PMogr25_0 77	89.585	28.023	0.034	5312	5166	5248	59	4	29	22	Mo Chhu
82	G089536E28088N	PMogr25_0 78	89.536	28.088	0.160	6520	6287	6424	67	0	27	98	Mo Chhu
83	G089545E28080N	PMogr25_0 79	89.545	28.080	0.162	5571	5179	5386	67	9	34	169	Mo Chhu
84	G089597E28014N	PMogr25_0 80	89.597	28.014	0.100	5426	5163	5310	56	3	24	303	Mo Chhu
85	G089550E28079N	PMogr25_0 81	89.550	28.079	0.055	5501	5252	5400	68	4	35	200	Mo Chhu

86	G089552E28077N	PMogr25_0 82	89.552	28.077	0.048	5542	5278	5437	68	3	42	216	Mo Chhu
87	G089555E28075N	PMogr25_0 83	89.555	28.075	0.030	5561	5354	5486	61	6	36	200	Mo Chhu
88	G089602E28013N	PMogr25_0 84	89.602	28.013	0.069	5369	5166	5277	66	0	24	121	Mo Chhu
89	G089559E28075N	PMogr25_0 85	89.559	28.075	0.094	5262	5153	5220	66	0	21	27	Mo Chhu
90	G089556E28089N	PMogr25_0 86	89.556	28.089	3.861	6478	4316	5242	81	0	33	115	Mo Chhu
91	G089603E28021N	PMogr25_0 87	89.603	28.021	1.096	5454	5019	5234	65	0	20	311	Mo Chhu

92	G089607E28017N	PMogr25_088	89.607	28.017	0.377	5409	5133	5233	65	0	15	78	Mo Chhu
93	G089613E28021N	PMogr25_089	89.613	28.021	0.068	5340	5169	5260	53	3	23	135	Mo Chhu
94	G089568E28109N	PMogr25_090	89.568	28.109	2.887	6196	4072	5136	78	0	29	103	Mo Chhu
95	G089616E28027N	PMogr25_091	89.616	28.027	0.046	5402	5271	5334	59	4	28	78	Mo Chhu
96	G089580E28122N	PMogr25_092	89.580	28.122	0.681	6051	4827	5383	76	3	42	111	Mo Chhu
97	G089591E28135N	PMogr25_093	89.591	28.135	2.827	5997	4213	5126	75	0	33	126	Mo Chhu
98	G089601E28146N	PMogr25_094	89.601	28.146	0.383	5765	4915	5273	70	0	33	129	Mo Chhu
99	G089612E28155N	PMogr25_095	89.612	28.155	4.528	5862	4321	5075	80	0	27	158	Mo Chhu
100	G089631E28165N	PMogr25_096	89.631	28.165	0.418	5598	4958	5329	72	3	31	86	Mo Chhu
101	G089638E28170N	PMogr25_097	89.638	28.170	0.369	5324	5034	5177	60	0	17	177	Mo Chhu
102	G089647E28171N	PMogr25_098	89.647	28.171	0.211	5399	5255	5318	51	0	18	57	Mo Chhu
103	G089671E28165N	PMogr25_099	89.671	28.165	0.306	5466	4952	5221	67	3	28	266	Mo Chhu
104	G089676E28172N	PMogr25_100	89.676	28.172	0.431	5257	4971	5125	72	0	18	62	Mo Chhu
105	G089713E28171N	PMogr25_101	89.713	28.171	0.694	5661	4792	5211	70	3	35	295	Mo Chhu
106	G089751E28170N	PMogr25_102	89.751	28.170	7.916	6641	4400	5307	78	0	33	271	Mo Chhu
107	G089750E28145N	PMogr25_103	89.750	28.145	0.935	5961	5138	5428	67	0	29	236	Mo Chhu
108	G089762E28153N	PMogr25_104	89.762	28.153	1.409	6006	5017	5620	72	0	27	123	Mo Chhu

109	G089796E28245N	PMogr25_1 05	89.796	28.245	0.331	6299	5689	6046	67	3	38	193	Mo Chhu
110	G089778E28195N	PMogr25_1 06	89.778	28.195	3.628	6146	4898	5491	75	0	23	24	Mo Chhu
111	G089769E28170N	PMogr25_1 07	89.769	28.170	0.270	6701	6292	6531	70	0	36	75	Mo Chhu
112	G089768E28157N	PMogr25_1 08	89.768	28.157	0.252	5665	5322	5457	72	0	29	123	Mo Chhu
113	G089764E28145N	PMogr25_1 09	89.764	28.145	0.069	5453	5219	5336	69	3	36	122	Mo Chhu
114	G089774E28162N	PMogr25_1 10	89.774	28.162	0.350	6430	5270	5604	70	0	39	157	Mo Chhu

115	G089782E28179N	PMogr25_1 11	89.782	28.179	2.292	6488	4860	5504	78	0	29	84	Mo Chhu
116	G089781E28168N	PMogr25_1 12	89.781	28.168	0.640	5886	5102	5482	74	0	31	135	Mo Chhu
117	G089795E28194N	PMogr25_1 13	89.795	28.194	0.165	5464	5251	5354	73	0	24	40	Mo Chhu
118	G089801E28192N	PMogr25_1 14	89.801	28.192	0.167	5575	5235	5364	65	3	27	19	Mo Chhu
119	G089827E28229N	PMogr25_1 15	89.827	28.229	2.428	6019	5151	5613	77	0	21	253	Mo Chhu
120	G089821E28216N	PMogr25_1 16	89.821	28.216	0.027	5604	5523	5573	62	3	29	72	Mo Chhu
121	G089826E28224N	PMogr25_1 17	89.826	28.224	0.057	5588	5346	5457	76	12	53	269	Mo Chhu
122	G089823E28216N	PMogr25_1 18	89.823	28.216	0.025	5529	5436	5482	62	6	33	92	Mo Chhu
123	G089829E28221N	PMogr25_1 19	89.829	28.221	0.097	5763	5627	5691	63	0	27	167	Mo Chhu
124	G089826E28213N	PMogr25_1 20	89.826	28.213	0.215	5471	5269	5345	61	0	17	53	Mo Chhu
125	G089836E28223N	PMogr25_1 21	89.836	28.223	0.203	5910	5491	5735	70	0	31	185	Mo Chhu
126	G089846E28225N	PMogr25_1 22	89.846	28.225	0.061	5706	5530	5611	59	3	30	195	Mo Chhu
127	G089802E28110N	PMogr25_1 23	89.802	28.110	0.116	5259	4971	5096	71	3	30	3	Mo Chhu
128	G089813E28123N	PMogr25_1 24	89.813	28.123	0.430	5224	4822	4993	66	0	20	289	Mo Chhu
129	G089830E28131N	PMogr25_1 25	89.830	28.131	2.971	6201	4697	5290	74	0	26	347	Mo Chhu
130	G089815E28108N	PMogr25_1 26	89.815	28.108	0.762	6232	5251	5535	79	0	24	241	Mo Chhu
131	G089821E28116N	PMogr25_1 27	89.821	28.116	0.319	6268	5535	5810	77	3	48	324	Mo Chhu

132	G089883E28202N	PMogr25_1 28	89.883	28.202	0.492	5846	5348	5587	73	0	25	295	Mo Chhu
133	G089882E28198N	PMogr25_1 29	89.882	28.198	0.378	5871	5275	5569	72	0	32	273	Mo Chhu
134	G089794E28076N	PMogr25_1 30	89.794	28.076	0.047	5279	5101	5194	54	6	28	296	Mo Chhu
135	G089798E28080N	PMogr25_1 31	89.798	28.080	0.069	5366	5210	5296	61	4	29	47	Mo Chhu
136	G089815E28098N	PMogr25_1 32	89.815	28.098	1.520	5846	5119	5451	74	0	26	264	Mo Chhu
137	G089888E28191N	PMogr25_1 33	89.888	28.191	0.421	6189	5388	5680	72	0	36	261	Mo Chhu

138	G089851E28142N	PMogr25_1 34	89.851	28.142	0.832	5751	5206	5476	72	0	24	347	Mo Chhu
139	G089845E28133N	PMogr25_1 35	89.845	28.133	1.341	6000	5111	5419	79	0	26	351	Mo Chhu
140	G089888E28185N	PMogr25_1 36	89.888	28.185	0.794	6355	5205	5621	78	0	32	284	Mo Chhu
141	G089885E28177N	PMogr25_1 37	89.885	28.177	1.523	6288	5252	5641	81	0	25	285	Mo Chhu
142	G089815E28088N	PMogr25_1 38	89.815	28.088	0.249	5803	5059	5542	69	3	34	221	Mo Chhu
143	G089826E28097N	PMogr25_1 39	89.826	28.097	0.122	5729	5388	5554	64	3	34	124	Mo Chhu
144	G089883E28166N	PMogr25_1 40	89.883	28.166	1.415	5936	5304	5550	73	0	21	267	Mo Chhu
145	G089882E28157N	PMogr25_1 41	89.882	28.157	0.855	5744	5292	5541	72	0	21	284	Mo Chhu
146	G089824E28086N	PMogr25_1 42	89.824	28.086	0.128	5429	5119	5308	63	3	28	210	Mo Chhu
147	G089879E28150N	PMogr25_1 43	89.879	28.150	0.479	5756	5299	5524	61	0	24	268	Mo Chhu
148	G089868E28134N	PMogr25_1 44	89.868	28.134	8.741	6385	4658	5489	78	0	18	346	Mo Chhu
149	G089841E28100N	PMogr25_1 45	89.841	28.100	9.338	6415	4623	5441	79	0	17	185	Mo Chhu
150	G089827E28081N	PMogr25_1 46	89.827	28.081	0.093	5387	5166	5324	63	0	29	256	Mo Chhu
151	G089826E28075N	PMogr25_1 47	89.826	28.075	0.169	5353	5166	5263	61	0	24	246	Mo Chhu
152	G089857E28085N	PMogr25_1 48	89.857	28.085	1.420	5974	4975	5341	76	0	23	218	Mo Chhu
153	G089857E28072N	PMogr25_1 49	89.857	28.072	0.268	5493	5030	5280	68	0	28	266	Mo Chhu
154	G089856E28066N	PMogr25_1 50	89.856	28.066	0.257	5549	4966	5316	76	0	35	283	Mo Chhu

155	G089853E28063N	PMogr25_1 51	89.853	28.063	0.066	5267	5114	5187	54	3	27	247	Mo Chhu
156	G089844E28047N	PMogr25_1 52	89.844	28.047	0.174	5300	5028	5104	63	0	24	319	Mo Chhu
157	G089858E28056N	PMogr25_1 53	89.858	28.056	0.502	5640	4988	5230	66	0	23	252	Mo Chhu
158	G089868E28039N	PMogr25_1 54	89.868	28.039	0.788	5529	4769	5041	66	0	21	262	Mo Chhu
159	G089878E28037N	PMogr25_1 55	89.878	28.037	0.046	5852	5801	5822	60	0	16	212	Mo Chhu
160	G089863E28023N	PMogr25_1 56	89.863	28.023	0.124	5454	5200	5360	59	0	21	239	Mo Chhu

161	G089869E28025N	PMogr25_157	89.869	28.025	0.288	5615	5193	5386	57	0	20	191	Mo Chhu
162	G089876E28027N	PMogr25_158	89.876	28.027	0.572	5880	5145	5533	67	0	27	200	Mo Chhu
163	G089889E28019N	PMogr25_159	89.889	28.019	1.306	5588	5213	5369	62	0	16	212	Mo Chhu
164	G089896E28010N	PMogr25_160	89.896	28.010	0.461	5645	5216	5406	62	0	22	236	Mo Chhu
165	G089900E28004N	PMogr25_161	89.900	28.004	0.714	5658	5121	5372	54	0	18	244	Mo Chhu
166	G089909E27993N	PMogr25_162	89.909	27.993	2.803	5590	5220	5415	69	0	14	246	Mo Chhu
167	G089906E27974N	PMogr25_163	89.906	27.974	0.682	5605	5212	5368	61	0	23	268	Mo Chhu
168	G089910E27971N	PMogr25_164	89.910	27.971	0.040	5532	5405	5469	58	0	27	176	Mo Chhu
169	G089907E27959N	PMogr25_165	89.907	27.959	2.103	5523	5061	5228	66	0	19	279	Mo Chhu
170	G089895E27950N	PMogr25_166	89.895	27.950	0.029	5245	5151	5196	54	8	29	311	Mo Chhu
171	G089896E27949N	PMogr25_167	89.896	27.949	0.091	5384	5188	5272	51	0	23	233	Mo Chhu
PHO CHHU SUB BASIN													
172	G089956E27897N	PPhgr25_168	89.956	27.897	0.287	5243	5039	5141	62	0	19	278	Pho Chhu
173	G089939E27919N	PPhgr25_169	89.939	27.919	0.054	5144	5042	5100	50	0	25	331	Pho Chhu
174	G089944E27927N	PPhgr25_170	89.944	27.927	0.025	5171	5104	5133	57	6	26	275	Pho Chhu
175	G089945E27937N	PPhgr25_171	89.945	27.937	0.225	5210	5024	5127	59	0	19	283	Pho Chhu
176	G089949E27942N	PPhgr25_172	89.949	27.942	0.169	5169	4932	5078	51	0	18	14	Pho Chhu
177	G089941E27945N	PPhgr25_173	89.941	27.945	0.154	5385	5185	5294	53	0	22	243	Pho Chhu
178	G089914E27956N	PPhgr25_174	89.914	27.956	0.270	5406	5240	5323	49	0	16	197	Pho Chhu
179	G089945E27946N	PPhgr25_175	89.945	27.946	0.047	5271	5100	5192	63	3	28	42	Pho Chhu
180	G089941E27948N	PPhgr25_176	89.941	27.948	0.013	5351	5257	5303	64	19	40	284	Pho Chhu
181	G089940E27951N	PPhgr25_177	89.940	27.951	0.439	5450	5143	5288	64	0	25	263	Pho Chhu
182	G089940E27952N	PPhgr25_178	89.940	27.952	0.015	5355	5278	5315	59	14	35	271	Pho Chhu

183	G089944E27953N	PPhgr25_179	89.944	27.953	0.084	5481	5254	5360	52	3	25	336	Pho Chhu
184	G089923E27963N	PPhgr25_180	89.923	27.963	0.718	5502	5165	5345	71	0	14	166	Pho Chhu
185	G089940E27957N	PPhgr25_181	89.940	27.957	0.077	5255	5072	5173	57	0	24	3	Pho Chhu
186	G089929E27962N	PPhgr25_182	89.929	27.962	0.053	5233	5130	5196	50	0	19	19	Pho Chhu
187	G089920E27980N	PPhgr25_183	89.920	27.980	1.996	5647	5304	5458	66	0	13	35	Pho Chhu
188	G089937E27981N	PPhgr25_184	89.937	27.981	0.097	5409	5307	5361	50	0	21	192	Pho Chhu
189	G089939E27984N	PPhgr25_185	89.939	27.984	0.056	5223	5116	5177	46	0	17	33	Pho Chhu
190	G089929E27994N	PPhgr25_186	89.929	27.994	0.791	5630	5138	5321	67	0	23	6	Pho Chhu
191	G089911E28006N	PPhgr25_187	89.911	28.006	0.733	5650	5190	5399	64	0	16	80	Pho Chhu
192	G089919E28001N	PPhgr25_188	89.919	28.001	0.037	5302	5219	5276	40	0	16	61	Pho Chhu
193	G089882E28031N	PPhgr25_189	89.882	28.031	0.810	5910	5189	5556	69	0	27	106	Pho Chhu
194	G089908E28013N	PPhgr25_190	89.908	28.013	0.053	5271	5189	5220	49	0	18	47	Pho Chhu
195	G089900E28019N	PPhgr25_191	89.900	28.019	0.207	5438	5182	5306	56	0	21	122	Pho Chhu
196	G089942E27993N	PPhgr25_192	89.942	27.993	0.557	5381	5072	5235	56	0	14	53	Pho Chhu
197	G089884E28036N	PPhgr25_193	89.884	28.036	0.235	5912	5369	5660	70	3	32	133	Pho Chhu
198	G089884E28039N	PPhgr25_194	89.884	28.039	0.083	5851	5547	5718	74	3	37	116	Pho Chhu
199	G089880E28047N	PPhgr25_195	89.880	28.047	0.764	5792	4985	5294	79	0	25	335	Pho Chhu
200	G089890E28042N	PPhgr25_196	89.890	28.042	0.408	5530	5279	5396	74	0	21	113	Pho Chhu
201	G089886E28049N	PPhgr25_197	89.886	28.049	0.050	5765	5434	5578	78	6	44	336	Pho Chhu
202	G089897E28041N	PPhgr25_198	89.897	28.041	0.052	5311	5177	5240	52	3	28	339	Pho Chhu
203	G089891E28048N	PPhgr25_199	89.891	28.048	0.111	5580	5280	5454	73	3	36	113	Pho Chhu
204	G089867E28070N	PPhgr25_200	89.867	28.070	0.995	5451	4820	5218	73	0	18	43	Pho Chhu
205	G089902E28041N	PPhgr25_201	89.902	28.041	0.113	5383	5228	5322	55	0	25	166	Pho Chhu

206	G089898E28045N	PPhgr25_202	89.898	28.045	0.093	5118	4999	5047	49	0	14	16	Pho Chhu
207	G089863E28078N	PPhgr25_203	89.863	28.078	0.418	5426	5124	5265	68	0	22	63	Pho Chhu
208	G089890E28055N	PPhgr25_204	89.890	28.055	0.063	5231	5087	5155	62	3	28	319	Pho Chhu
209	G089876E28068N	PPhgr25_205	89.876	28.068	0.505	5294	5018	5153	64	0	19	16	Pho Chhu
210	G089864E28097N	PPhgr25_206	89.864	28.097	0.890	6154	4937	5601	77	0	33	161	Pho Chhu
211	G089867E28097N	PPhgr25_207	89.867	28.097	0.082	5737	5254	5495	72	0	41	169	Pho Chhu
212	G089873E28098N	PPhgr25_208	89.873	28.098	0.278	5864	5189	5441	71	3	33	171	Pho Chhu
213	G089878E28093N	PPhgr25_209	89.878	28.093	0.137	5393	5168	5274	60	0	28	190	Pho Chhu
214	G089879E28101N	PPhgr25_210	89.879	28.101	0.702	5880	4856	5268	74	0	31	116	Pho Chhu
215	G089879E28116N	PPhgr25_211	89.879	28.116	3.530	6243	4634	5285	79	0	26	93	Pho Chhu
216	G089893E28131N	PPhgr25_212	89.893	28.131	0.488	5557	5104	5320	68	0	25	111	Pho Chhu
217	G089889E28146N	PPhgr25_213	89.889	28.146	1.033	5727	5168	5455	67	0	17	46	Pho Chhu
218	G089888E28151N	PPhgr25_214	89.888	28.151	0.123	5576	5288	5402	66	0	24	74	Pho Chhu
219	G089928E28095N	PPhgr25_215	89.928	28.095	0.054	5356	5150	5244	56	3	29	254	Pho Chhu
220	G089929E28103N	PPhgr25_216	89.929	28.103	0.509	5435	5123	5271	63	0	26	260	Pho Chhu
221	G089938E28096N	PPhgr25_217	89.938	28.096	1.686	5785	5083	5377	67	0	17	171	Pho Chhu
222	G089895E28165N	PPhgr25_218	89.895	28.165	0.047	5534	5388	5476	62	3	28	100	Pho Chhu
223	G089918E28136N	PPhgr25_219	89.918	28.136	0.111	5413	5187	5294	52	3	27	234	Pho Chhu
224	G089916E28143N	PPhgr25_220	89.916	28.143	0.468	5585	5075	5260	66	0	24	281	Pho Chhu
225	G089924E28136N	PPhgr25_221	89.924	28.136	0.232	5525	5228	5379	58	0	24	181	Pho Chhu
226	G089929E28133N	PPhgr25_222	89.929	28.133	0.121	5430	5213	5317	53	3	25	247	Pho Chhu
227	G089945E28106N	PPhgr25_223	89.945	28.106	1.080	5598	5232	5391	72	0	18	89	Pho Chhu
228	G089926E28145N	PPhgr25_224	89.926	28.145	0.622	5876	5214	5474	71	0	27	114	Pho Chhu

229	G089971E28069N	PPhgr25_225	89.971	28.069	0.382	5413	5081	5199	73	0	19	270	Pho Chhu
230	G089922E28168N	PPhgr25_226	89.922	28.168	13.154	7118	4686	5742	80	0	26	259	Pho Chhu
231	G089929E28156N	PPhgr25_227	89.929	28.156	1.100	6355	5294	5715	70	0	35	138	Pho Chhu
232	G089976E28066N	PPhgr25_228	89.976	28.066	0.029	5391	5215	5308	53	14	37	212	Pho Chhu
233	G089954E28109N	PPhgr25_229	89.954	28.109	0.105	5388	5268	5335	50	0	24	201	Pho Chhu
234	G089972E28075N	PPhgr25_230	89.972	28.075	0.116	5652	5346	5494	62	3	30	211	Pho Chhu
235	G089971E28080N	PPhgr25_231	89.971	28.080	0.236	5608	5187	5349	71	0	26	289	Pho Chhu
236	G089969E28091N	PPhgr25_232	89.969	28.091	1.472	5662	5030	5384	70	0	23	255	Pho Chhu
237	G089982E28067N	PPhgr25_233	89.982	28.067	0.146	5163	5044	5085	65	0	15	81	Pho Chhu
238	G089965E28103N	PPhgr25_234	89.965	28.103	1.086	5724	5110	5442	64	0	25	247	Pho Chhu
239	G089939E28158N	PPhgr25_235	89.939	28.158	0.586	5713	5175	5414	71	0	31	159	Pho Chhu
240	G089981E28078N	PPhgr25_236	89.981	28.078	0.787	5637	5183	5415	65	0	21	97	Pho Chhu
241	G089949E28150N	PPhgr25_237	89.949	28.150	3.892	6220	4613	5262	78	0	26	224	Pho Chhu
242	G089980E28084N	PPhgr25_238	89.980	28.084	0.488	5580	5181	5364	64	0	23	57	Pho Chhu
243	G089978E28091N	PPhgr25_239	89.978	28.091	0.353	5621	5269	5445	68	0	25	96	Pho Chhu
244	G089969E28114N	PPhgr25_240	89.969	28.114	0.993	5746	4930	5313	72	0	35	324	Pho Chhu
245	G089975E28102N	PPhgr25_241	89.975	28.102	0.334	5658	5263	5443	66	0	29	82	Pho Chhu
246	G089978E28097N	PPhgr25_242	89.978	28.097	0.447	5599	5220	5390	64	0	23	76	Pho Chhu
247	G089975E28110N	PPhgr25_243	89.975	28.110	0.379	5615	5236	5454	71	0	25	101	Pho Chhu
248	G089964E28142N	PPhgr25_244	89.964	28.142	1.562	5657	5116	5356	66	0	18	205	Pho Chhu
249	G089973E28122N	PPhgr25_245	89.973	28.122	0.238	5354	4998	5168	69	11	36	292	Pho Chhu
250	G089979E28107N	PPhgr25_246	89.979	28.107	0.185	5367	5077	5178	56	0	22	102	Pho Chhu
251	G089975E28130N	PPhgr25_247	89.975	28.130	0.398	5339	5046	5195	60	0	28	269	Pho Chhu

252	G089973E28138N	PPhgr25_248	89.973	28.138	0.157	5472	5196	5350	54	0	26	204	Pho Chhu
253	G089982E28114N	PPhgr25_249	89.982	28.114	0.228	5383	5048	5213	64	0	30	55	Pho Chhu
254	G089979E28125N	PPhgr25_250	89.979	28.125	0.518	5398	5071	5241	64	3	27	103	Pho Chhu
255	G089975E28140N	PPhgr25_251	89.975	28.140	0.054	5468	5300	5377	52	10	29	113	Pho Chhu
256	G089970E28156N	PPhgr25_252	89.970	28.156	0.524	6010	5057	5329	75	0	35	82	Pho Chhu
257	G089974E28145N	PPhgr25_253	89.974	28.145	0.208	5500	5137	5330	68	0	30	45	Pho Chhu
258	G089976E28142N	PPhgr25_254	89.976	28.142	0.040	5393	5275	5330	60	14	35	82	Pho Chhu
259	G089979E28135N	PPhgr25_255	89.979	28.135	0.137	5306	5040	5179	58	3	27	19	Pho Chhu
260	G089996E28145N	PPhgr25_256	89.996	28.145	26.179	7200	4375	5204	82	0	24	188	Pho Chhu
261	G090016E28136N	PPhgr25_257	90.016	28.136	0.601	5694	5070	5343	71	0	29	237	Pho Chhu
262	G090028E28124N	PPhgr25_258	90.028	28.124	0.049	5404	5228	5318	65	3	31	220	Pho Chhu
263	G090031E28124N	PPhgr25_259	90.031	28.124	0.095	5523	5259	5377	67	0	35	155	Pho Chhu
264	G090040E28097N	PPhgr25_260	90.040	28.097	0.076	5390	5103	5200	69	0	25	104	Pho Chhu
265	G090041E28125N	PPhgr25_261	90.041	28.125	2.296	6243	4672	5342	79	0	36	203	Pho Chhu
266	G090045E28104N	PPhgr25_262	90.045	28.104	0.157	5320	5054	5210	72	0	30	275	Pho Chhu
267	G090045E28108N	PPhgr25_263	90.045	28.108	0.084	5270	5098	5191	62	3	30	273	Pho Chhu
268	G090046E28100N	PPhgr25_264	90.046	28.100	0.038	5414	5285	5348	61	0	29	140	Pho Chhu
269	G090048E28102N	PPhgr25_265	90.048	28.102	0.035	5462	5326	5400	64	0	34	136	Pho Chhu
270	G090070E28156N	PPhgr25_266	90.070	28.156	0.053	6691	6353	6481	86	14	40	167	Pho Chhu
271	G090072E28154N	PPhgr25_267	90.072	28.154	0.284	6744	6130	6431	88	18	53	188	Pho Chhu
272	G090076E28126N	PPhgr25_268	90.076	28.126	16.790	7035	4109	5047	87	0	29	157	Pho Chhu
273	G090108E28131N	PPhgr25_269	90.108	28.131	4.462	6890	4668	5631	88	0	36	181	Pho Chhu
274	G090119E28122N	PPhgr25_270	90.119	28.122	0.744	6043	4792	5544	77	0	36	247	Pho Chhu

275	G090125E28118N	PPhgr25_271	90.125	28.118	0.727	6220	4903	5666	78	0	39	186	Pho Chhu
276	G090122E28108N	PPhgr25_272	90.122	28.108	0.266	5474	5151	5306	70	0	29	179	Pho Chhu
277	G090129E28112N	PPhgr25_273	90.129	28.112	0.372	5615	5095	5374	69	0	31	190	Pho Chhu
278	G090135E28120N	PPhgr25_274	90.135	28.120	1.049	6192	4799	5448	78	0	39	104	Pho Chhu
279	G090133E28110N	PPhgr25_275	90.133	28.110	0.100	5587	5256	5443	72	3	44	164	Pho Chhu
280	G090153E28142N	PPhgr25_276	90.153	28.142	32.062	6642	4082	4891	87	0	23	173	Pho Chhu
281	G090181E28170N	PPhgr25_277	90.181	28.170	6.686	7034	6043	6532	87	0	27	255	Pho Chhu
282	G090088E27959N	PPhgr25_278	90.088	27.959	0.032	5251	5151	5209	51	6	27	337	Pho Chhu
283	G090194E28129N	PPhgr25_279	90.194	28.129	1.201	6435	4862	5573	82	0	39	219	Pho Chhu
284	G090092E27962N	PPhgr25_280	90.092	27.962	0.023	5331	5257	5297	54	4	28	82	Pho Chhu
285	G090107E27985N	PPhgr25_281	90.107	27.985	0.092	5340	5170	5253	50	3	21	274	Pho Chhu
286	G090089E27955N	PPhgr25_282	90.089	27.955	0.073	5266	5061	5178	63	0	28	290	Pho Chhu
287	G090096E27965N	PPhgr25_283	90.096	27.965	0.255	5421	5190	5328	63	0	19	127	Pho Chhu
288	G090103E27974N	PPhgr25_284	90.103	27.974	0.065	5478	5327	5397	61	0	25	88	Pho Chhu
289	G090218E28133N	PPhgr25_285	90.218	28.133	8.980	6874	4310	5437	88	0	26	156	Pho Chhu
290	G090135E28015N	PPhgr25_286	90.135	28.015	0.824	5532	5200	5371	75	0	18	162	Pho Chhu
291	G090116E27988N	PPhgr25_287	90.116	27.988	0.512	5685	5192	5384	66	0	23	27	Pho Chhu
292	G090109E27978N	PPhgr25_288	90.109	27.978	0.649	5451	5169	5328	69	0	18	153	Pho Chhu
293	G090125E27999N	PPhgr25_289	90.125	27.999	0.172	5444	5233	5351	69	0	27	28	Pho Chhu
294	G090143E28023N	PPhgr25_290	90.143	28.023	0.063	5487	5332	5408	63	3	28	10	Pho Chhu
295	G090149E28023N	PPhgr25_291	90.149	28.023	0.225	5405	5099	5256	73	3	27	342	Pho Chhu
296	G090146E28019N	PPhgr25_292	90.146	28.019	0.321	5523	5291	5408	68	0	23	174	Pho Chhu
297	G090107E27968N	PPhgr25_293	90.107	27.968	0.599	5478	4971	5206	69	0	23	75	Pho Chhu

298	G090245E28132N	PPhgr25_294	90.245	28.132	2.785	6230	4424	5197	76	0	29	180	Pho Chhu
299	G090164E28031N	PPhgr25_295	90.164	28.031	0.092	5337	5118	5216	70	3	35	347	Pho Chhu
300	G090158E28024N	PPhgr25_296	90.158	28.024	0.306	5637	4998	5310	81	0	30	271	Pho Chhu
301	G090122E27982N	PPhgr25_297	90.122	27.982	1.095	5587	5134	5427	75	0	22	48	Pho Chhu
302	G090278E28144N	PPhgr25_298	90.278	28.144	8.281	6666	4561	5771	86	0	28	190	Pho Chhu
303	G090119E27974N	PPhgr25_299	90.119	27.974	0.480	5452	5128	5280	75	0	19	208	Pho Chhu
304	G090167E28025N	PPhgr25_300	90.167	28.025	0.299	5568	5315	5442	77	0	23	128	Pho Chhu
305	G090300E28138N	PPhgr25_301	90.300	28.138	2.216	6409	5690	6144	86	0	24	176	Pho Chhu
306	G090124E27968N	PPhgr25_302	90.124	27.968	0.057	5270	5125	5194	57	0	24	212	Pho Chhu
307	G090130E27973N	PPhgr25_303	90.130	27.973	0.491	5502	5082	5314	75	0	25	69	Pho Chhu
308	G090176E28012N	PPhgr25_304	90.176	28.012	0.158	5409	5195	5297	56	0	26	291	Pho Chhu
309	G090202E28029N	PPhgr25_305	90.202	28.029	0.204	5392	5184	5282	61	0	28	339	Pho Chhu
310	G090305E28114N	PPhgr25_306	90.305	28.114	1.656	5596	4665	5140	74	0	23	204	Pho Chhu
311	G090132E27967N	PPhgr25_307	90.132	27.967	0.027	5452	5298	5379	65	4	34	118	Pho Chhu
312	G090327E28114N	PPhgr25_308	90.327	28.114	4.319	5924	4622	5317	83	0	23	164	Pho Chhu
313	G090221E28022N	PPhgr25_309	90.221	28.022	0.095	5448	5300	5401	56	0	19	262	Pho Chhu
314	G090345E28098N	PPhgr25_310	90.345	28.098	0.273	5567	5226	5386	78	0	19	185	Pho Chhu
315	G090291E28051N	PPhgr25_311	90.291	28.051	0.056	5463	5227	5326	66	6	38	339	Pho Chhu
316	G090351E28087N	PPhgr25_312	90.351	28.087	3.825	5560	4713	5206	78	0	17	256	Pho Chhu
317	G090281E28042N	PPhgr25_313	90.281	28.042	1.410	5562	5188	5368	66	0	19	340	Pho Chhu
318	G090280E28032N	PPhgr25_314	90.280	28.032	0.490	5675	5326	5491	65	0	19	271	Pho Chhu
319	G090318E28050N	PPhgr25_315	90.318	28.050	0.583	5516	5229	5341	54	0	17	317	Pho Chhu
320	G090329E28053N	PPhgr25_316	90.329	28.053	0.639	5490	5086	5279	80	0	19	20	Pho Chhu

321	G090356E28064N	PPhgr25_317	90.356	28.064	2.536	6268	5001	5603	75	0	20	238	Pho Chhu
322	G090281E28025N	PPhgr25_318	90.281	28.025	0.387	5687	5235	5505	63	0	21	259	Pho Chhu
323	G090243E28005N	PPhgr25_319	90.243	28.005	0.777	5477	5179	5302	59	0	19	301	Pho Chhu
324	G090342E28054N	PPhgr25_320	90.342	28.054	0.507	5370	5157	5271	60	0	20	347	Pho Chhu
325	G090324E28042N	PPhgr25_321	90.324	28.042	1.029	5792	5370	5524	58	0	17	266	Pho Chhu
326	G090244E27997N	PPhgr25_322	90.244	27.997	0.923	5613	5182	5427	61	0	17	260	Pho Chhu
327	G090289E28017N	PPhgr25_323	90.289	28.017	0.665	5683	5337	5500	67	0	15	250	Pho Chhu
328	G090313E28024N	PPhgr25_324	90.313	28.024	8.706	5834	5353	5545	79	0	13	329	Pho Chhu
329	G090296E28016N	PPhgr25_325	90.296	28.016	0.060	5734	5571	5649	65	6	35	30	Pho Chhu
330	G090286E28010N	PPhgr25_326	90.286	28.010	0.366	5660	5278	5436	52	0	17	288	Pho Chhu
331	G090253E27995N	PPhgr25_327	90.253	27.995	0.081	5523	5365	5454	62	3	23	68	Pho Chhu
332	G090250E27990N	PPhgr25_328	90.250	27.990	0.426	5616	5294	5472	69	0	22	239	Pho Chhu
333	G090293E28007N	PPhgr25_329	90.293	28.007	0.090	5695	5467	5594	65	0	25	217	Pho Chhu
334	G090298E28009N	PPhgr25_330	90.298	28.009	0.508	5772	5439	5566	73	0	19	157	Pho Chhu
335	G090256E27986N	PPhgr25_331	90.256	27.986	0.352	5631	5312	5463	64	3	26	77	Pho Chhu
336	G090253E27984N	PPhgr25_332	90.253	27.984	0.136	5619	5281	5484	65	0	29	269	Pho Chhu
337	G090245E27976N	PPhgr25_333	90.245	27.976	0.962	5464	5087	5282	56	0	20	343	Pho Chhu
338	G090252E27978N	PPhgr25_334	90.252	27.978	0.081	5555	5332	5441	60	16	36	303	Pho Chhu
339	G090275E27983N	PPhgr25_335	90.275	27.983	3.657	5647	5151	5371	67	0	16	335	Pho Chhu
340	G090301E27984N	PPhgr25_336	90.301	27.984	1.264	5774	5338	5525	66	0	15	24	Pho Chhu
341	G090268E27965N	PPhgr25_337	90.268	27.965	1.581	5759	5211	5453	68	0	21	266	Pho Chhu
342	G090264E27952N	PPhgr25_338	90.264	27.952	0.602	5585	5197	5387	59	0	18	270	Pho Chhu
343	G090263E27942N	PPhgr25_339	90.263	27.942	1.208	5509	5180	5342	62	0	16	293	Pho Chhu

344	G090218E27929N	PPhgr25_340	90.218	27.929	0.298	5366	5163	5290	54	0	20	278	Pho Chhu
345	G090261E27934N	PPhgr25_341	90.261	27.934	0.340	5570	5292	5430	57	0	18	251	Pho Chhu
346	G090228E27927N	PPhgr25_342	90.228	27.927	0.133	5505	5147	5366	58	3	25	305	Pho Chhu
347	G090276E27927N	PPhgr25_343	90.276	27.927	4.350	5750	5140	5434	79	0	14	220	Pho Chhu
348	G090226E27920N	PPhgr25_344	90.226	27.920	1.878	5512	5160	5363	68	0	12	288	Pho Chhu
349	G090251E27912N	PPhgr25_345	90.251	27.912	0.073	5416	5248	5327	63	3	27	330	Pho Chhu
350	G090222E27910N	PPhgr25_346	90.222	27.910	1.066	5563	4932	5275	69	0	21	295	Pho Chhu
351	G090241E27909N	PPhgr25_347	90.241	27.909	1.737	5573	5146	5297	65	0	18	11	Pho Chhu
352	G090249E27903N	PPhgr25_348	90.249	27.903	0.284	5474	5175	5332	59	0	19	151	Pho Chhu
353	G090214E27902N	PPhgr25_349	90.214	27.902	0.101	5408	5140	5248	60	0	26	255	Pho Chhu
354	G090256E27900N	PPhgr25_350	90.256	27.900	0.038	5322	5254	5276	43	3	18	208	Pho Chhu
355	G090234E27900N	PPhgr25_351	90.234	27.900	0.568	5519	5227	5378	68	0	21	134	Pho Chhu
356	G090224E27900N	PPhgr25_352	90.224	27.900	1.165	5604	5089	5358	75	0	22	242	Pho Chhu
357	G090211E27898N	PPhgr25_353	90.211	27.898	0.088	5256	4987	5109	55	6	27	320	Pho Chhu
358	G090206E27896N	PPhgr25_354	90.206	27.896	0.106	5273	5097	5170	50	0	18	322	Pho Chhu
359	G090226E27889N	PPhgr25_355	90.226	27.889	0.081	5463	5214	5363	56	3	29	294	Pho Chhu
360	G090223E27887N	PPhgr25_356	90.223	27.887	0.037	5344	5190	5273	53	4	25	246	Pho Chhu
361	G090235E27879N	PPhgr25_357	90.235	27.879	0.125	5288	5161	5229	55	0	18	347	Pho Chhu
362	G090227E27880N	PPhgr25_358	90.227	27.880	0.151	5202	5057	5118	54	0	15	295	Pho Chhu
363	G090211E27867N	PPhgr25_359	90.211	27.867	0.238	5315	5101	5192	59	3	23	346	Pho Chhu
364	G090206E27866N	PPhgr25_360	90.206	27.866	0.081	5281	5127	5198	57	3	24	295	Pho Chhu
365	G090262E27839N	PPhgr25_361	90.262	27.839	0.749	5393	5005	5198	62	0	19	313	Pho Chhu
366	G090253E27837N	PPhgr25_362	90.253	27.837	0.041	5234	5108	5177	61	3	25	37	Pho Chhu

367	G090249E27835N	PPhgr25_363	90.249	27.835	0.133	5248	5073	5167	48	0	19	322	Pho Chhu
368	G090244E27832N	PPhgr25_364	90.244	27.832	0.063	5185	5048	5105	64	3	27	352	Pho Chhu
369	G090241E27828N	PPhgr25_365	90.241	27.828	0.028	5144	5078	5105	53	0	22	301	Pho Chhu
370	G090237E27824N	PPhgr25_366	90.237	27.824	0.047	5155	5049	5093	60	8	26	294	Pho Chhu
371	G090217E27811N	PPhgr25_367	90.217	27.811	0.071	5108	4930	5012	69	3	30	317	Pho Chhu
MANGDE CHHU SUB BASIN													
372	G090261E27833N	MMagr25_368	90.261	27.833	0.195	5336	5086	5240	64	0	18	263	Mangde Chhu
373	G090266E27831N	MMagr25_369	90.266	27.831	0.103	5337	5143	5250	43	0	19	171	Mangde Chhu
374	G090269E27832N	MMagr25_370	90.269	27.832	0.226	5425	5168	5281	63	0	19	184	Mangde Chhu
375	G090270E27836N	MMagr25_371	90.270	27.836	0.131	5350	5046	5240	66	3	22	139	Mangde Chhu
376	G090266E27843N	MMagr25_372	90.266	27.843	0.043	5302	5205	5259	40	6	21	27	Mangde Chhu
377	G090256E27907N	MMagr25_373	90.256	27.907	0.261	5577	5226	5431	57	0	26	68	Mangde Chhu
378	G090317E27819N	MMagr25_374	90.317	27.819	0.104	5310	5130	5199	61	3	20	263	Mangde Chhu
379	G090321E27825N	MMagr25_375	90.321	27.825	0.031	5259	5166	5206	62	4	26	50	Mangde Chhu
380	G090284E27905N	MMagr25_376	90.284	27.905	0.026	5433	5354	5401	43	3	22	182	Mangde Chhu
381	G090283E27908N	MMagr25_377	90.283	27.908	0.032	5442	5280	5367	64	8	38	270	Mangde Chhu
382	G090280E27916N	MMagr25_378	90.280	27.916	0.154	5455	5304	5390	64	0	14	257	Mangde Chhu
383	G090285E27913N	MMagr25_379	90.285	27.913	0.748	5521	5157	5402	50	0	14	237	Mangde Chhu
384	G090321E27851N	MMagr25_380	90.321	27.851	0.051	5271	5126	5182	72	4	32	315	Mangde Chhu

385	G090272E27949N	MMagr25_ 381	90.272	27.949	0.128	5633	5407	5531	60	0	25	97	Mangde Chhu
386	G090275E27946N	MMagr25_ 382	90.275	27.946	0.038	5560	5417	5492	70	6	33	44	Mangde Chhu
387	G090281E27936N	MMagr25_ 383	90.281	27.936	0.170	5684	5385	5512	66	0	21	123	Mangde Chhu
388	G090299E27904N	MMagr25_ 384	90.299	27.904	3.819	5694	5177	5423	75	0	15	220	Mangde Chhu

389	G090312E27882N	MMagr25_ 385	90.312	27.882	1.419	5495	5129	5302	55	0	12	282	Mangde Chhu
390	G090326E27858N	MMagr25_ 386	90.326	27.858	0.644	5396	5140	5259	77	0	12	261	Mangde Chhu
391	G090292E27925N	MMagr25_ 387	90.292	27.925	0.652	5682	5232	5420	67	0	20	10	Mangde Chhu
392	G090322E27868N	MMagr25_ 388	90.322	27.868	0.336	5464	5255	5369	49	0	15	204	Mangde Chhu
393	G090310E27892N	MMagr25_ 389	90.310	27.892	0.375	5483	5244	5390	46	0	16	194	Mangde Chhu
394	G090319E27876N	MMagr25_ 390	90.319	27.876	0.343	5516	5199	5397	61	0	21	231	Mangde Chhu
395	G090320E27884N	MMagr25_ 391	90.320	27.884	0.087	5410	5214	5302	47	4	23	41	Mangde Chhu
396	G090334E27857N	MMagr25_ 392	90.334	27.857	0.201	5338	5208	5254	80	0	13	203	Mangde Chhu
397	G090280E27965N	MMagr25_ 393	90.280	27.965	1.510	5785	5314	5518	63	0	16	161	Mangde Chhu
398	G090334E27861N	MMagr25_ 394	90.334	27.861	0.376	5392	5112	5276	80	0	14	85	Mangde Chhu
399	G090324E27881N	MMagr25_ 395	90.324	27.881	0.056	5360	5242	5316	55	0	23	20	Mangde Chhu
400	G090314E27901N	MMagr25_ 396	90.314	27.901	0.927	5661	5302	5444	64	0	18	142	Mangde Chhu
401	G090307E27915N	MMagr25_ 397	90.307	27.915	2.300	5686	5159	5374	67	0	18	74	Mangde Chhu
402	G090329E27872N	MMagr25_ 398	90.329	27.872	0.966	5448	5139	5271	75	0	14	88	Mangde Chhu
403	G090300E27952N	MMagr25_ 399	90.300	27.952	0.602	5657	5336	5523	55	0	14	229	Mangde Chhu
404	G090293E27967N	MMagr25_ 400	90.293	27.967	2.478	5791	5301	5578	80	0	15	204	Mangde Chhu
405	G090304E27948N	MMagr25_ 401	90.304	27.948	0.357	5656	5388	5541	54	0	19	243	Mangde Chhu

406	G090310E27959N	MMagr25_ 402	90.310	27.959	1.801	5681	5386	5531	61	0	11	126	Mangde Chhu
407	G090309E27979N	MMagr25_ 403	90.309	27.979	2.311	5812	5302	5563	77	0	15	3	Mangde Chhu
408	G090318E27966N	MMagr25_ 404	90.318	27.966	1.266	5792	5359	5495	73	0	14	54	Mangde Chhu
409	G090324E27955N	MMagr25_ 405	90.324	27.955	0.058	5576	5449	5519	47	3	23	223	Mangde Chhu
410	G090316E27996N	MMagr25_ 406	90.316	27.996	0.441	5671	5412	5504	50	0	16	37	Mangde Chhu
411	G090333E28018N	MMagr25_ 407	90.333	28.018	0.915	5836	5466	5620	66	0	16	223	Mangde Chhu

412	G090338E28017N	MMagr25_ 408	90.338	28.017	0.214	5803	5529	5662	69	0	26	166	Mangde Chhu
413	G090343E28021N	MMagr25_ 409	90.343	28.021	0.162	5564	5432	5508	59	0	14	119	Mangde Chhu
414	G090345E28029N	MMagr25_ 410	90.345	28.029	1.559	5825	5431	5620	65	0	15	83	Mangde Chhu
415	G090372E27956N	MMagr25_ 411	90.372	27.956	0.022	5402	5340	5370	65	3	21	336	Mangde Chhu
416	G090343E28041N	MMagr25_ 412	90.343	28.041	2.316	5834	5314	5583	82	0	14	78	Mangde Chhu
417	G090383E27934N	MMagr25_ 413	90.383	27.934	0.118	5489	5294	5382	54	0	20	177	Mangde Chhu
418	G090382E27939N	MMagr25_ 414	90.382	27.939	0.087	5467	5291	5386	51	3	23	296	Mangde Chhu
419	G090377E27954N	MMagr25_ 415	90.377	27.954	0.130	5654	5326	5484	64	0	22	229	Mangde Chhu
420	G090390E27918N	MMagr25_ 416	90.390	27.918	0.052	5360	5216	5309	46	0	18	292	Mangde Chhu
421	G090378E27957N	MMagr25_ 417	90.378	27.957	0.016	5732	5618	5667	61	14	42	209	Mangde Chhu
422	G090377E27962N	MMagr25_ 418	90.377	27.962	0.233	5654	5325	5478	64	0	23	310	Mangde Chhu
423	G090381E27955N	MMagr25_ 419	90.381	27.955	0.165	5877	5466	5660	64	3	30	210	Mangde Chhu
424	G090389E27931N	MMagr25_ 420	90.389	27.931	0.023	5465	5376	5421	63	3	33	282	Mangde Chhu
425	G090369E27994N	MMagr25_ 421	90.369	27.994	0.018	5591	5526	5561	51	6	28	50	Mangde Chhu
426	G090394E27919N	MMagr25_ 422	90.394	27.919	0.031	5355	5283	5319	57	0	18	63	Mangde Chhu
427	G090385E27947N	MMagr25_ 423	90.385	27.947	0.173	5596	5331	5427	64	0	21	301	Mangde Chhu
428	G090369E27997N	MMagr25_ 424	90.369	27.997	0.030	5424	5310	5359	58	11	24	336	Mangde Chhu

429	G090393E27925N	MMagr25_ 425	90.393	27.925	0.112	5656	5474	5560	73	0	31	161	Mangde Chhu
430	G090390E27937N	MMagr25_ 426	90.390	27.937	0.265	5535	5301	5425	65	0	21	23	Mangde Chhu
431	G090385E27956N	MMagr25_ 427	90.385	27.956	0.092	5875	5696	5784	62	0	22	243	Mangde Chhu
432	G090394E27931N	MMagr25_ 428	90.394	27.931	0.459	5527	5181	5378	72	0	22	14	Mangde Chhu
433	G090402E27905N	MMagr25_ 429	90.402	27.905	0.031	5329	5199	5261	58	8	31	280	Mangde Chhu
434	G090373E27999N	MMagr25_ 430	90.373	27.999	0.171	5846	5441	5617	64	4	28	208	Mangde Chhu

435	G090383E27972N	MMagr25_ 431	90.383	27.972	0.028	5462	5377	5422	54	0	24	336	Mangde Chhu
436	G090400E27926N	MMagr25_ 432	90.400	27.926	0.246	5483	5265	5373	78	0	22	180	Mangde Chhu
437	G090408E27901N	MMagr25_ 433	90.408	27.901	0.055	5351	5296	5311	41	0	10	161	Mangde Chhu
438	G090408E27904N	MMagr25_ 434	90.408	27.904	0.280	5361	5159	5256	59	0	15	17	Mangde Chhu
439	G090377E28007N	MMagr25_ 435	90.377	28.007	0.364	5706	5290	5489	59	3	26	348	Mangde Chhu
440	G090412E27900N	MMagr25_ 436	90.412	27.900	0.059	5296	5260	5277	24	0	10	140	Mangde Chhu
441	G090388E27988N	MMagr25_ 437	90.388	27.988	0.044	5472	5372	5409	57	4	19	258	Mangde Chhu
442	G090397E27959N	MMagr25_ 438	90.397	27.959	4.318	5637	5225	5434	71	0	15	39	Mangde Chhu
443	G090386E27999N	MMagr25_ 439	90.386	27.999	0.847	5634	5345	5511	67	0	17	220	Mangde Chhu
444	G090417E27893N	MMagr25_ 440	90.417	27.893	0.178	5225	5105	5176	68	0	14	10	Mangde Chhu
445	G090376E28034N	MMagr25_ 441	90.376	28.034	0.091	5857	5568	5686	63	0	27	182	Mangde Chhu
446	G090377E28031N	MMagr25_ 442	90.377	28.031	0.077	5642	5495	5596	59	0	23	72	Mangde Chhu
447	G090392E27981N	MMagr25_ 443	90.392	27.981	0.878	5662	5303	5463	50	0	15	272	Mangde Chhu
448	G090371E28055N	MMagr25_ 444	90.371	28.055	3.877	6053	5278	5686	69	0	18	220	Mangde Chhu
449	G090396E27990N	MMagr25_ 445	90.396	27.990	0.435	5603	5279	5405	48	0	13	79	Mangde Chhu
450	G090382E28041N	MMagr25_ 446	90.382	28.041	0.624	5837	5425	5608	68	0	18	169	Mangde Chhu
451	G090409E27951N	MMagr25_ 447	90.409	27.951	0.216	5499	5267	5397	68	0	19	224	Mangde Chhu

452	G090391E28018N	MMagr25_ 448	90.391	28.018	2.029	5668	5275	5456	63	0	17	302	Mangde Chhu
453	G090395E28004N	MMagr25_ 449	90.395	28.004	1.385	5726	5345	5480	63	0	13	160	Mangde Chhu
454	G090402E27982N	MMagr25_ 450	90.402	27.982	0.340	5538	5322	5416	60	0	14	121	Mangde Chhu
455	G090433E27874N	MMagr25_ 451	90.433	27.874	0.073	5167	5038	5101	51	3	18	60	Mangde Chhu
456	G090413E27949N	MMagr25_ 452	90.413	27.949	0.037	5482	5426	5449	58	0	19	112	Mangde Chhu
457	G090413E27955N	MMagr25_ 453	90.413	27.955	0.013	5496	5429	5461	61	9	36	28	Mangde Chhu

458	G090416E27948N	MMagr25_ 454	90.416	27.948	0.036	5418	5371	5395	29	3	12	201	Mangde Chhu
459	G090390E28047N	MMagr25_ 455	90.390	28.047	2.602	6027	5343	5625	73	0	14	171	Mangde Chhu
460	G090400E28011N	MMagr25_ 456	90.400	28.011	0.351	5705	5363	5507	59	0	22	41	Mangde Chhu
461	G090417E27953N	MMagr25_ 457	90.417	27.953	0.454	5532	5259	5355	83	0	17	35	Mangde Chhu
462	G090407E28004N	MMagr25_ 458	90.407	28.004	0.013	5483	5393	5436	47	14	26	45	Mangde Chhu
463	G090401E28030N	MMagr25_ 459	90.401	28.030	0.141	5731	5475	5580	69	0	25	58	Mangde Chhu
464	G090421E27965N	MMagr25_ 460	90.421	27.965	0.177	5500	5363	5424	81	0	27	123	Mangde Chhu
465	G090428E27967N	MMagr25_ 461	90.428	27.967	0.187	5356	5231	5297	56	0	14	8	Mangde Chhu
466	G090440E28028N	MMagr25_ 462	90.440	28.028	0.129	5762	5490	5611	68	0	23	221	Mangde Chhu
467	G090442E28023N	MMagr25_ 463	90.442	28.023	40.320	6778	4630	5424	76	0	18	180	Mangde Chhu
468	G090450E28013N	MMagr25_ 464	90.450	28.013	0.615	5561	5207	5334	80	0	17	166	Mangde Chhu
469	G090452E28019N	MMagr25_ 465	90.452	28.019	0.069	5856	5584	5689	66	4	40	189	Mangde Chhu
470	G090454E28020N	MMagr25_ 466	90.454	28.020	0.072	5951	5605	5784	61	3	38	185	Mangde Chhu
471	G090457E28010N	MMagr25_ 467	90.457	28.010	0.090	5370	5155	5250	61	0	19	230	Mangde Chhu
472	G090494E27894N	MMagr25_ 468	90.494	27.894	0.033	5287	5218	5254	54	0	16	225	Mangde Chhu
473	G090502E27895N	MMagr25_ 469	90.502	27.895	0.143	5329	5170	5227	58	3	16	171	Mangde Chhu
474	G090490E28017N	MMagr25_ 470	90.490	28.017	0.139	5622	5396	5504	61	0	28	189	Mangde Chhu

475	G090502E27912N	MMagr25_ 471	90.502	27.912	0.077	5302	5153	5232	65	3	20	319	Mangde Chhu
476	G090505E27901N	MMagr25_ 472	90.505	27.901	0.060	5243	5141	5187	45	3	22	308	Mangde Chhu
477	G090507E27911N	MMagr25_ 473	90.507	27.911	0.065	5376	5242	5311	49	0	23	347	Mangde Chhu
478	G090510E27900N	MMagr25_ 474	90.510	27.900	0.143	5306	5186	5255	52	0	15	107	Mangde Chhu
479	G090518E27931N	MMagr25_ 475	90.518	27.931	0.427	5529	5166	5333	55	0	20	289	Mangde Chhu
480	G090519E27936N	MMagr25_ 476	90.519	27.936	0.053	5441	5274	5356	50	6	26	279	Mangde Chhu

481	G090545E27900N	MMagr25_ 477	90.545	27.900	0.074	5312	5172	5242	42	0	20	109	Mangde Chhu
482	G090548E27898N	MMagr25_ 478	90.548	27.898	0.057	5156	5086	5123	24	0	12	144	Mangde Chhu
483	G090560E27904N	MMagr25_ 479	90.560	27.904	0.242	5383	5141	5276	59	0	16	184	Mangde Chhu
484	G090572E27837N	MMagr25_ 480	90.572	27.837	0.081	5281	5162	5216	51	0	21	39	Mangde Chhu
485	G090573E27826N	MMagr25_ 481	90.573	27.826	0.050	5239	5043	5143	68	3	28	307	Mangde Chhu
486	G090574E27832N	MMagr25_ 482	90.574	27.832	0.167	5321	5135	5243	57	0	19	231	Mangde Chhu
CHAMKHAR CHHU SUB BASIN													
487	G090578E27830N	MChgr25_4 83	90.578	27.830	0.074	5369	5239	5300	52	3	21	84	Chamkhar Chhu
488	G090575E27839N	MChgr25_4 84	90.575	27.839	0.222	5229	5092	5169	54	0	17	345	Chamkhar Chhu
489	G090580E27836N	MChgr25_4 85	90.580	27.836	0.095	5307	5161	5220	51	3	19	100	Chamkhar Chhu
490	G090587E27843N	MChgr25_4 86	90.587	27.843	0.275	5265	5136	5195	43	0	15	353	Chamkhar Chhu
491	G090527E27929N	MChgr25_4 87	90.527	27.929	0.349	5491	5137	5338	56	0	18	108	Chamkhar Chhu
492	G090550E27907N	MChgr25_4 88	90.550	27.907	0.104	5446	5199	5296	51	0	25	2	Chamkhar Chhu
493	G090559E27909N	MChgr25_4 89	90.559	27.909	0.316	5425	5029	5213	66	0	28	4	Chamkhar Chhu
494	G090565E27904N	MChgr25_4 90	90.565	27.904	0.032	5416	5301	5360	49	9	28	144	Chamkhar Chhu
495	G090568E27902N	MChgr25_4 91	90.568	27.902	0.138	5276	5122	5206	60	0	20	52	Chamkhar Chhu
496	G090502E28006N	MChgr25_4 92	90.502	28.006	0.053	5459	5322	5399	45	3	18	37	Chamkhar Chhu
497	G090501E28008N	MChgr25_4 93	90.501	28.008	0.044	5438	5292	5370	62	3	31	46	Chamkhar Chhu

498	G090506E28001N	MChgr25_4 94	90.506	28.001	0.563	5553	5276	5391	55	0	14	213	Chamkhar Chhu
499	G090497E28014N	MChgr25_4 95	90.497	28.014	0.226	5622	5363	5519	72	0	26	76	Chamkhar Chhu
500	G090521E27985N	MChgr25_4 96	90.521	27.985	0.038	5375	5305	5336	45	3	24	268	Chamkhar Chhu
501	G090518E27993N	MChgr25_4 97	90.518	27.993	0.064	5496	5352	5421	44	0	19	212	Chamkhar Chhu
502	G090521E27990N	MChgr25_4 98	90.521	27.990	0.059	5421	5353	5393	56	0	17	244	Chamkhar Chhu

503	G090515E27999N	MChgr25_4 99	90.515	27.999	0.258	5483	5254	5398	46	0	15	74	Chamkhar Chhu
504	G090523E27993N	MChgr25_5 00	90.523	27.993	0.061	5399	5233	5315	55	3	20	76	Chamkhar Chhu
505	G090510E28038N	MChgr25_5 01	90.510	28.038	14.648	6373	4693	5272	87	0	25	122	Chamkhar Chhu
506	G090535E28050N	MChgr25_5 02	90.535	28.050	0.313	5757	5213	5473	85	0	33	149	Chamkhar Chhu
507	G090572E27986N	MChgr25_5 03	90.572	27.986	0.060	5411	5257	5338	56	3	27	287	Chamkhar Chhu
508	G090573E27991N	MChgr25_5 04	90.573	27.991	0.074	5445	5283	5356	56	3	20	298	Chamkhar Chhu
509	G090548E28045N	MChgr25_5 05	90.548	28.045	0.779	6022	5000	5258	86	0	22	213	Chamkhar Chhu
510	G090594E27960N	MChgr25_5 06	90.594	27.960	0.121	5520	5349	5436	59	0	24	271	Chamkhar Chhu
511	G090578E27992N	MChgr25_5 07	90.578	27.992	0.093	5496	5370	5430	46	3	20	85	Chamkhar Chhu
512	G090560E28041N	MChgr25_5 08	90.560	28.041	0.950	5724	5190	5501	80	0	20	228	Chamkhar Chhu
513	G090570E28030N	MChgr25_5 09	90.570	28.030	0.376	5537	5281	5410	65	0	15	243	Chamkhar Chhu
514	G090584E28003N	MChgr25_5 10	90.584	28.003	0.099	5546	5403	5480	69	3	26	47	Chamkhar Chhu
515	G090568E28037N	MChgr25_5 11	90.568	28.037	0.263	5597	5407	5513	63	0	18	217	Chamkhar Chhu
516	G090579E28024N	MChgr25_5 12	90.579	28.024	0.423	5552	5288	5433	69	0	18	204	Chamkhar Chhu
517	G090584E28020N	MChgr25_5 13	90.584	28.020	1.313	5768	5300	5538	70	0	14	206	Chamkhar Chhu
518	G090606E27981N	MChgr25_5 14	90.606	27.981	0.127	5385	5216	5301	61	0	23	325	Chamkhar Chhu
519	G090589E28018N	MChgr25_5 15	90.589	28.018	0.091	5598	5473	5537	40	0	16	187	Chamkhar Chhu

520	G090593E28018N	MChgr25_5 16	90.593	28.018	0.123	5587	5390	5521	48	0	18	188	Chamkhar Chhu
521	G090609E27988N	MChgr25_5 17	90.609	27.988	0.649	5560	5235	5373	80	0	22	246	Chamkhar Chhu
522	G090615E27983N	MChgr25_5 18	90.615	27.983	0.401	5477	5253	5370	57	0	18	173	Chamkhar Chhu
523	G090621E27980N	MChgr25_5 19	90.621	27.980	0.517	5595	5219	5428	69	0	18	193	Chamkhar Chhu
524	G090619E27989N	MChgr25_5 20	90.619	27.989	0.163	5410	5282	5354	52	0	18	77	Chamkhar Chhu
525	G090607E28022N	MChgr25_5 21	90.607	28.022	3.489	5738	5302	5483	62	0	11	114	Chamkhar Chhu

526	G090622E27989N	MChgr25_5 22	90.622	27.989	0.091	5430	5223	5313	64	0	25	28	Chamkhar Chhu
527	G090626E27987N	MChgr25_5 23	90.626	27.987	0.035	5313	5142	5219	66	6	33	29	Chamkhar Chhu
528	G090629E27984N	MChgr25_5 24	90.629	27.984	0.181	5402	5051	5230	71	0	27	51	Chamkhar Chhu
529	G090610E28034N	MChgr25_5 25	90.610	28.034	0.346	5619	5346	5488	81	0	17	103	Chamkhar Chhu
530	G090634E27982N	MChgr25_5 26	90.634	27.982	0.034	5457	5308	5378	72	3	37	34	Chamkhar Chhu
531	G090636E27983N	MChgr25_5 27	90.636	27.983	0.044	5272	5159	5219	51	0	25	354	Chamkhar Chhu
532	G090638E28017N	MChgr25_5 28	90.638	28.017	0.158	5406	5271	5324	58	0	15	4	Chamkhar Chhu
533	G090645E28047N	MChgr25_5 29	90.645	28.047	0.042	5343	5246	5296	56	3	17	70	Chamkhar Chhu
534	G090649E28044N	MChgr25_5 30	90.649	28.044	0.032	5313	5245	5289	45	0	18	5	Chamkhar Chhu
535	G090652E28043N	MChgr25_5 31	90.652	28.043	0.048	5316	5132	5222	57	3	35	354	Chamkhar Chhu
536	G090667E28057N	MChgr25_5 32	90.667	28.057	0.050	5460	5374	5423	56	0	19	205	Chamkhar Chhu
537	G090671E28056N	MChgr25_5 33	90.671	28.056	0.033	5427	5355	5399	41	0	20	184	Chamkhar Chhu
538	G090679E28063N	MChgr25_5 34	90.679	28.063	1.766	5629	5111	5353	78	0	16	136	Chamkhar Chhu
539	G090695E28062N	MChgr25_5 35	90.695	28.062	5.063	6100	4889	5551	85	0	17	179	Chamkhar Chhu
540	G090704E28042N	MChgr25_5 36	90.704	28.042	0.092	5391	5264	5324	54	0	18	70	Chamkhar Chhu
541	G090719E28055N	MChgr25_5 37	90.719	28.055	3.792	5948	4973	5338	77	0	20	205	Chamkhar Chhu
542	G090739E27919N	MChgr25_5 38	90.739	27.919	0.163	5310	5179	5260	43	0	18	305	Chamkhar Chhu

543	G090732E28006N	MChgr25_5 39	90.732	28.006	0.187	5374	5201	5297	49	3	21	339	Chamkhar Chhu
544	G090743E27923N	MChgr25_5 40	90.743	27.923	0.170	5365	5231	5288	51	0	17	17	Chamkhar Chhu
545	G090733E28039N	MChgr25_5 41	90.733	28.039	0.310	5669	5348	5527	63	0	23	200	Chamkhar Chhu
546	G090736E28035N	MChgr25_5 42	90.736	28.035	0.072	5641	5348	5508	62	3	30	228	Chamkhar Chhu
547	G090753E27923N	MChgr25_5 43	90.753	27.923	0.070	5235	5115	5171	52	0	22	329	Chamkhar Chhu
548	G090748E28015N	MChgr25_5 44	90.748	28.015	0.039	5257	5172	5220	46	0	20	327	Chamkhar Chhu

549	G090751E28020N	MChgr25_5 45	90.751	28.020	0.028	5468	5385	5433	45	3	24	196	Chamkhar Chhu
550	G090754E28036N	MChgr25_5 46	90.754	28.036	7.800	6283	4973	5575	75	0	16	207	Chamkhar Chhu
551	G090756E28022N	MChgr25_5 47	90.756	28.022	0.196	5516	5292	5394	56	0	18	149	Chamkhar Chhu
552	G090766E27964N	MChgr25_5 48	90.766	27.964	0.050	5385	5275	5329	52	0	21	285	Chamkhar Chhu
553	G090768E27939N	MChgr25_5 49	90.768	27.939	1.316	5502	5135	5301	64	0	13	280	Chamkhar Chhu
554	G090769E27931N	MChgr25_5 50	90.769	27.931	0.300	5397	5185	5296	52	0	15	225	Chamkhar Chhu
555	G090769E28024N	MChgr25_5 51	90.769	28.024	0.057	5522	5387	5455	49	11	27	115	Chamkhar Chhu
556	G090773E28031N	MChgr25_5 52	90.773	28.031	0.251	5655	5335	5473	64	0	25	154	Chamkhar Chhu
557	G090777E27904N	MChgr25_5 53	90.777	27.904	0.371	5432	4973	5198	63	0	22	312	Chamkhar Chhu
558	G090779E27967N	MChgr25_5 54	90.779	27.967	0.106	5375	5212	5309	45	3	24	347	Chamkhar Chhu
559	G090780E27912N	MChgr25_5 55	90.780	27.912	0.047	5350	5106	5177	55	4	24	323	Chamkhar Chhu
560	G090781E27955N	MChgr25_5 56	90.781	27.955	0.034	5359	5272	5318	56	3	23	291	Chamkhar Chhu
561	G090782E27915N	MChgr25_5 57	90.782	27.915	0.031	5292	5193	5254	41	3	21	278	Chamkhar Chhu
562	G090782E27900N	MChgr25_5 58	90.782	27.900	0.076	5433	5229	5324	69	0	32	182	Chamkhar Chhu
563	G090784E27970N	MChgr25_5 59	90.784	27.970	0.117	5297	5168	5225	58	0	22	317	Chamkhar Chhu
564	G090788E28028N	MChgr25_5 60	90.788	28.028	5.500	6193	4856	5324	70	0	17	199	Chamkhar Chhu
565	G090792E27908N	MChgr25_5 61	90.792	27.908	2.476	5442	5028	5255	74	0	12	93	Chamkhar Chhu

566	G090796E27989N	MChgr25_5 62	90.796	27.989	0.030	5324	5203	5248	50	3	26	2	Chamkhar Chhu
567	G090800E27993N	MChgr25_5 63	90.800	27.993	0.029	5363	5228	5288	60	12	35	299	Chamkhar Chhu
568	G090805E28003N	MChgr25_5 64	90.805	28.003	0.104	5323	5190	5263	50	0	25	309	Chamkhar Chhu
569	G090806E28010N	MChgr25_5 65	90.806	28.010	0.102	5339	5222	5274	36	3	19	242	Chamkhar Chhu
570	G090799E27893N	MChgr25_5 66	90.799	27.893	0.262	5278	5035	5172	50	0	18	49	Chamkhar Chhu
KURI CHHU SUB BASIN													

571	G090785E27920N	MKugr25_5 67	90.785	27.920	0.293	5384	5081	5289	52	0	16	60	Kuri Chhu
572	G090773E27933N	MKugr25_5 68	90.773	27.933	0.099	5468	5184	5326	51	3	21	128	Kuri Chhu
573	G090774E27939N	MKugr25_5 69	90.774	27.939	0.248	5463	5286	5378	47	0	18	82	Kuri Chhu
574	G090779E27946N	MKugr25_5 70	90.779	27.946	0.381	5489	5285	5367	68	0	15	138	Kuri Chhu
575	G090791E27973N	MKugr25_5 71	90.791	27.973	0.050	5196	5127	5159	44	0	17	356	Kuri Chhu
576	G090811E28006N	MKugr25_5 72	90.811	28.006	0.250	5287	5139	5216	41	0	12	139	Kuri Chhu
577	G090807E28011N	MKugr25_5 73	90.807	28.011	0.066	5419	5297	5353	46	0	24	244	Kuri Chhu
578	G090806E28017N	MKugr25_5 74	90.806	28.017	0.224	5320	5188	5264	45	0	12	344	Kuri Chhu
579	G090821E28024N	MKugr25_5 75	90.821	28.024	7.884	6053	4565	5226	69	0	15	148	Kuri Chhu
580	G090839E28040N	MKugr25_5 76	90.839	28.040	0.763	5577	5125	5299	61	0	18	153	Kuri Chhu
581	G090840E28048N	MKugr25_5 77	90.840	28.048	0.249	5860	5583	5756	74	0	30	304	Kuri Chhu
582	G090862E28040N	MKugr25_5 78	90.862	28.040	4.328	5867	4665	5296	72	0	19	156	Kuri Chhu
583	G090924E28038N	MKugr25_5 79	90.924	28.038	0.029	5057	4939	4974	70	0	24	63	Kuri Chhu
584	G090925E28043N	MKugr25_5 80	90.925	28.043	0.307	5320	5147	5218	57	0	17	271	Kuri Chhu
585	G091254E27979N	MKugr25_5 81	91.254	27.979	0.673	5168	4859	5018	56	0	13	351	Kuri Chhu
586	G091242E27933N	MKugr25_5 82	91.242	27.933	0.140	5111	4887	4966	77	0	30	318	Kuri Chhu
587	G091272E28011N	MKugr25_5 83	91.272	28.011	0.073	5262	5093	5173	67	3	28	269	Kuri Chhu

588	G091246E27940N	MKugr25_5 84	91.246	27.940	0.242	5397	5034	5181	66	0	22	333	Kuri Chhu
589	G091262E27980N	MKugr25_5 85	91.262	27.980	0.168	5338	5005	5217	65	0	32	62	Kuri Chhu
590	G091250E27944N	MKugr25_5 86	91.250	27.944	0.428	5238	4988	5081	50	0	12	351	Kuri Chhu
591	G091277E28011N	MKugr25_5 87	91.277	28.011	0.016	5229	5164	5191	47	8	30	159	Kuri Chhu
592	G091251E27936N	MKugr25_5 88	91.251	27.936	0.094	5325	5114	5213	67	4	35	66	Kuri Chhu
593	G091251E27933N	MKugr25_5 89	91.251	27.933	0.159	5400	5202	5291	63	0	25	52	Kuri Chhu

594	G091260E27954N	MKugr25_5 90	91.260	27.954	0.416	5240	4808	5010	71	0	22	29	Kuri Chhu
595	G091294E28027N	MKugr25_5 91	91.294	28.027	0.130	5429	5178	5290	69	0	26	169	Kuri Chhu
596	G091265E27951N	MKugr25_5 92	91.265	27.951	0.046	5287	5116	5209	66	4	31	184	Kuri Chhu
597	G091268E27954N	MKugr25_5 93	91.268	27.954	0.086	4952	4748	4849	73	3	32	20	Kuri Chhu
598	G091257E27927N	MKugr25_5 94	91.257	27.927	0.042	5204	5036	5139	70	4	30	19	Kuri Chhu
599	G091301E28026N	MKugr25_5 95	91.301	28.026	0.174	5587	5309	5463	62	0	25	132	Kuri Chhu
600	G091310E28039N	MKugr25_5 96	91.310	28.039	0.025	5341	5211	5272	60	3	29	119	Kuri Chhu
601	G091262E27924N	MKugr25_5 97	91.262	27.924	0.115	5166	4964	5028	69	0	25	6	Kuri Chhu
602	G091309E28027N	MKugr25_5 98	91.309	28.027	0.622	5502	5023	5314	74	0	19	113	Kuri Chhu
603	G091316E28028N	MKugr25_5 99	91.316	28.028	0.403	5325	4970	5121	62	0	18	86	Kuri Chhu
604	G091313E28017N	MKugr25_6 00	91.313	28.017	0.081	5160	5070	5112	60	0	17	243	Kuri Chhu
605	G091270E27921N	MKugr25_6 01	91.270	27.921	0.077	5168	5024	5095	51	0	22	2	Kuri Chhu
606	G091250E27879N	MKugr25_6 02	91.250	27.879	0.061	5223	4988	5078	65	6	29	314	Kuri Chhu
607	G091315E28011N	MKugr25_6 03	91.315	28.011	0.177	5144	4964	5059	51	0	18	271	Kuri Chhu
608	G091332E28045N	MKugr25_6 04	91.332	28.045	10.938	5576	4770	5204	79	0	15	158	Kuri Chhu
609	G091313E28006N	MKugr25_6 05	91.313	28.006	0.206	5267	4928	5044	55	0	20	310	Kuri Chhu
610	G091275E27919N	MKugr25_6 06	91.275	27.919	0.191	5221	5076	5125	47	0	14	276	Kuri Chhu

611	G091258E27883N	MKugr25_6 07	91.258	27.883	0.170	5089	4823	4946	61	0	30	335	Kuri Chhu
612	G091279E27916N	MKugr25_6 08	91.279	27.916	0.118	5329	5072	5171	66	0	28	50	Kuri Chhu
613	G091258E27876N	MKugr25_6 09	91.258	27.876	0.069	5287	5106	5193	60	3	26	215	Kuri Chhu
614	G091325E27995N	MKugr25_6 10	91.325	27.995	0.170	5038	4853	4937	58	0	19	309	Kuri Chhu
615	G091325E27990N	MKugr25_6 11	91.325	27.990	0.201	5198	4904	5021	57	0	23	290	Kuri Chhu
616	G091265E27880N	MKugr25_6 12	91.265	27.880	0.052	4885	4766	4818	55	3	22	40	Kuri Chhu

617	G091349E28028N	MKugr25_6 13	91.349	28.028	0.104	5369	5027	5206	61	3	29	275	Kuri Chhu
618	G091331E27994N	MKugr25_6 14	91.331	27.994	0.065	5032	4907	4980	53	0	22	70	Kuri Chhu
619	G091351E28029N	MKugr25_6 15	91.351	28.029	0.032	5409	5275	5348	57	3	30	253	Kuri Chhu
620	G091352E28024N	MKugr25_6 16	91.352	28.024	0.075	5443	5089	5295	71	3	33	267	Kuri Chhu
621	G091352E28018N	MKugr25_6 17	91.352	28.018	0.212	5340	4988	5162	63	0	28	263	Kuri Chhu
622	G091355E28016N	MKugr25_6 18	91.355	28.016	0.055	5278	5095	5190	76	0	35	212	Kuri Chhu
623	G091369E28034N	MKugr25_6 19	91.369	28.034	1.807	5469	4745	5170	83	0	18	104	Kuri Chhu
624	G091360E28015N	MKugr25_6 20	91.360	28.015	0.066	5236	5090	5168	80	0	19	147	Kuri Chhu
625	G091280E27884N	MKugr25_6 21	91.280	27.884	0.136	4830	4732	4777	47	0	11	64	Kuri Chhu
626	G091364E28013N	MKugr25_6 22	91.364	28.013	0.027	5238	4992	5118	84	0	26	239	Kuri Chhu
627	G091368E28019N	MKugr25_6 23	91.368	28.019	1.563	5574	4843	5170	80	0	18	63	Kuri Chhu
628	G091370E28007N	MKugr25_6 24	91.370	28.007	0.156	5246	4974	5122	80	0	22	90	Kuri Chhu
629	G091372E28010N	MKugr25_6 25	91.372	28.010	0.037	5217	5015	5123	78	0	21	114	Kuri Chhu
630	G091401E28018N	MKugr25_6 26	91.401	28.018	0.114	5189	4889	5031	79	0	23	287	Kuri Chhu
631	G091412E28017N	MKugr25_6 27	91.412	28.017	0.034	5473	5324	5408	72	3	38	177	Kuri Chhu
632	G091411E28013N	MKugr25_6 28	91.411	28.013	0.685	5510	5057	5279	79	0	24	124	Kuri Chhu
633	G091428E28011N	MKugr25_6 29	91.428	28.011	0.137	5273	4880	5049	60	0	27	250	Kuri Chhu

634	G091438E28002N	MKugr25_6 30	91.438	28.002	0.030	5623	5495	5560	65	8	39	188	Kuri Chhu
635	G091378E27929N	MKugr25_6 31	91.378	27.929	0.056	5138	5003	5066	77	0	23	317	Kuri Chhu
636	G091442E28002N	MKugr25_6 32	91.442	28.002	0.071	5487	5258	5396	60	3	35	131	Kuri Chhu
637	G091446E28003N	MKugr25_6 33	91.446	28.003	0.043	5290	5233	5258	43	3	17	216	Kuri Chhu
638	G091453E27998N	MKugr25_6 34	91.453	27.998	0.181	5269	4991	5118	76	0	25	257	Kuri Chhu
639	G091376E27908N	MKugr25_6 35	91.376	27.908	0.063	5063	4923	5003	60	0	26	302	Kuri Chhu

640	G091375E27905N	MKugr25_6 36	91.375	27.905	0.062	5216	4952	5086	72	0	31	333	Kuri Chhu
641	G091423E27955N	MKugr25_6 37	91.423	27.955	0.418	5236	4889	5078	60	0	20	22	Kuri Chhu
642	G091429E27957N	MKugr25_6 38	91.429	27.957	0.035	5238	5092	5160	56	6	31	34	Kuri Chhu
643	G091465E27992N	MKugr25_6 39	91.465	27.992	1.003	6125	5121	5638	84	0	33	204	Kuri Chhu
644	G091465E27978N	MKugr25_6 40	91.465	27.978	0.763	5427	4965	5165	72	0	26	306	Kuri Chhu
645	G091439E27951N	MKugr25_6 41	91.439	27.951	0.206	5104	4869	5009	51	0	21	24	Kuri Chhu
646	G091445E27945N	MKugr25_6 42	91.445	27.945	0.041	5147	4995	5064	48	4	23	95	Kuri Chhu
647	G091476E27973N	MKugr25_6 43	91.476	27.973	1.569	5840	5008	5412	78	0	27	190	Kuri Chhu
648	G091370E27872N	MKugr25_6 44	91.370	27.872	0.028	5141	5021	5083	57	4	30	286	Kuri Chhu
649	G091367E27868N	MKugr25_6 45	91.367	27.868	0.091	5241	4944	5090	60	3	32	333	Kuri Chhu
650	G091362E27859N	MKugr25_6 46	91.362	27.859	0.107	5276	4950	5096	68	6	35	263	Kuri Chhu
651	G091483E27962N	MKugr25_6 47	91.483	27.962	1.431	5720	4970	5316	81	0	29	278	Kuri Chhu
652	G091466E27942N	MKugr25_6 48	91.466	27.942	0.253	4870	4693	4777	60	0	16	4	Kuri Chhu
653	G091478E27950N	MKugr25_6 49	91.478	27.950	0.750	5563	5041	5214	70	0	27	277	Kuri Chhu
654	G091472E27942N	MKugr25_6 50	91.472	27.942	0.070	5044	4913	4965	64	0	26	278	Kuri Chhu
655	G091467E27936N	MKugr25_6 51	91.467	27.936	0.129	5245	4877	5052	64	3	32	334	Kuri Chhu
656	G091476E27942N	MKugr25_6 52	91.476	27.942	0.473	5319	5037	5148	66	0	26	274	Kuri Chhu

657	G091471E27937N	MKugr25_6 53	91.471	27.937	0.205	5277	4914	5093	63	0	29	346	Kuri Chhu
DANGME CHHU SUB BASIN													
658	G091364E27858N	MDagr25_6 54	91.364	27.858	0.033	5355	5144	5279	69	0	36	261	Dangme Chhu
659	G091368E27851N	MDagr25_6 55	91.368	27.851	0.153	5274	4970	5101	79	0	29	80	Dangme Chhu
660	G091370E27860N	MDagr25_6 56	91.370	27.860	0.405	5143	4773	4932	78	0	28	88	Dangme Chhu
661	G091378E27906N	MDagr25_6 57	91.378	27.906	0.075	5156	4972	5062	64	0	25	37	Dangme Chhu
662	G091378E27914N	MDagr25_ 658	91.378	27.914	0.033	5028	4917	4975	61	3	25	10	Dangme Chhu
663	G091419E27949N	MDagr25_ 659	91.419	27.949	0.016	4994	4954	4976	33	3	17	191	Dangme Chhu
664	G091428E27953N	MDagr25_ 660	91.428	27.953	0.042	5154	5042	5097	57	3	21	185	Dangme Chhu
665	G091430E27948N	MDagr25_ 661	91.430	27.948	0.218	5083	4813	4924	54	0	19	224	Dangme Chhu
666	G091470E27932N	MDagr25_ 662	91.470	27.932	0.034	5199	5078	5135	64	3	28	208	Dangme Chhu
667	G091474E27933N	MDagr25_ 663	91.474	27.933	0.253	5290	5069	5168	58	0	20	108	Dangme Chhu
668	G091485E27938N	MDagr25_ 664	91.485	27.938	0.511	5422	4973	5175	68	0	27	179	Dangme Chhu
669	G091488E27939N	MDagr25_ 665	91.488	27.939	0.017	5302	5203	5257	67	4	38	190	Dangme Chhu
670	G091501E27936N	MDagr25_ 666	91.501	27.936	0.471	5483	4985	5299	70	0	25	128	Dangme Chhu
671	G091604E27897N	MDagr25_ 667	91.604	27.897	0.129	5293	5002	5140	52	3	24	285	Dangme Chhu
672	G091594E27860N	MDagr25_ 668	91.594	27.860	0.408	5231	4900	5055	67	0	25	332	Dangme Chhu
673	G091610E27896N	MDagr25_ 669	91.610	27.896	0.060	5342	5163	5269	53	3	26	84	Dangme Chhu



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