

INTERNATIONAL GLACIOLOGICAL SOCIETY

INTERNATIONAL WORKSHOP ON WORLD GLACIER INVENTORY

Lanzhou, China
20–24 September 2008



CO-SPONSORED BY

Cold and Arid Regions Environmental and Engineering
Research Institute
Chinese Academy of Sciences (CAREERI, CAS)
World Glacier Monitoring Service (WGMS)
World Glacier Inventory (WGI)
Institute of Tibetan Plateau Research
Chinese Academy of Sciences (ITP, CAS)
Global Land Ice Measurements from Space (GLIMS)
National Natural Science Foundation of China (NSFC)
Chinese Academy of Science

FIRST CIRCULAR

January 2008

Registered Charity

The **International Glaciological Society** will hold an international workshop on World Glacier Inventory in 2008. The workshop will be held in Lanzhou, People's Republic of China, during 20–24 (Saturday to Wednesday) September in 2008.

THEME

An effort to create an inventory of important features of glaciers on a global scale was launched as part of the International Hydrological Decade (1965–1974). The main motivation was to obtain information on distribution of surface area and ice volume of glaciers. Initially it was aimed at all glaciers outside the existing two ice sheets, Greenland and Antarctica. It was also planned to repeat a similar effort every 50 years to detect changes in glaciers. To date about 37% of the estimated total glacier surface is inventoried and made available through the World Glacier Monitoring Service (WGMS) in Zürich and National Snow and Ice Data Center (NSIDC) in Boulder. In the meantime, it was realized that the original inventory method was too time consuming, and some areas even lacked the information necessary for the inventory. In the early 1980s a simplified inventory method was developed mainly based on satellite images. This is outlined in Global Land Ice Measurements from Space (GLIMS) which covers 34% of the estimated glacier surface outside Greenland and Antarctica.

During the 40 years after launching the World Glacier Inventory and 25 years after introducing the simplified inventory method, both efforts made substantial progress and contributed tremendously to our knowledge in glaciology and related sciences. They are, however, not complete. The original and detailed inventory was completed by only 11 countries and one region. Viewed globally, some 63% of the estimated total surface area remains untouched. Some completed national inventories are not forwarded entirely to the world data centres. The satellite-based inventories also left 66% uncovered, although some areas are covered by both methods. Combining both inventories, 45% is dealt with, leaving 55% of glacier surfaces inaccessible. Curiously 26% of glacier surfaces is inventoried by both methods. This situation offers a chance to compare simplified methods with the original method, in order to estimate the quality of the satellite-based and semi-automatic inventory methods. Further, original and simplified methods were successfully applied beyond the regions of the original concept, namely to Greenland and Antarctica, albeit for limited areas.

A number of scientific works have been already accomplished by using inventoried data. Glacier inventory is often used to calculate changes in hydrological basin discharge. The combination with GCMs provided scenarios on future changes of the sea-level. These works have not, to date been discussed among related communities. Glaciers in certain geographic regions are inventoried but the resulting files were not always forwarded to data centres. Although not in the original plan, some areas in Greenland and Antarctica were inventoried, but data were not sent to the world data centres. All these problems make the estimation of the ice volume, a primary goal of the inventory effort, difficult. In the meantime the cryosphere itself is rapidly changing. It is of the utmost importance to complete the global inventory as soon as possible. The proposed workshop is not an occasion to present the inventoried contents. The workshop is intended to review and discuss

what has been accomplished on a global scale, and to consider how WGI data have been and will be applied and what remains to be done to complete the WGI.

TOPICS: The suggested topics include:

1. Overview of the present status of glacier inventories based on the original (WGI) and simplified (GLIMS) methods.
2. Experiences of completion of national inventories: Ex-Soviet Union, China and Iceland (These are big owners of glaciers who completed the national inventories).
3. GLIMS and GlobGlacier status: Developments in methodology for an automatic inventory; other glaciological remote sensing projects at NASA, ESA and other space agencies.
4. Comparison of satellite-based inventories with original WGI.
5. Present data availability at two main centres, NSIDC in Boulder and WGMS in Zürich.
6. Applications of WGI and GLIMS for glacier ice volume calculation, global sea-level change, hydrological cycle and water resources, energy planning and disaster monitoring; new ideas for other applications.
7. Strategy for completion of the World Glacier Inventory and GLIMS.

ABSTRACT AND PAPER PUBLICATION

Participants wishing to present a paper at the workshop are required to submit an abstract. A pre-print of submitted abstracts will be provided for all participants at the workshop. Selected papers will be refereed, edited and published by the International Glaciological Society.

ACCOMMODATION

Details will be given in the Second Circular.

FURTHER INFORMATION

If you wish to attend the symposium please return the attached form as soon as possible. The Second Circular will give further information about accommodation, the general programme, and preparation of abstracts and final papers as well as a registration form. Copies of the Second Circular will be sent to those who return the attached reply form. Members of the International Glaciological Society will automatically receive one.

WORKSHOP ORGANIZATION

Atsumu Ohmura (IGS) (Chair), Qin Dahe (CAS), Roger Barry (WGI, GLIMS), Wilfried Haeblerli (WGMS)

SCIENCE STEERING AND EDITORIAL COMMITTEE

Atsumu Ohmura, Simon Ommanney, Roger Braithwaite, Bruce Raup, Wilfried Haeblerli, Qin Dahe, Ding Yongjian, Liu Shiyin, Wang Ninglian

LOCAL ARRANGEMENTS COMMITTEE

Qin Dahe (Chair), Yao Tandong, Liu Shiyin, Ren Jiawen, Ding Yongjian, Wang Ninglian, Kang Ersi

WORKSHOP STUDY TOURS

There may be two choices for the workshop study tours: 1) tour to the Hailuogou glacier (29° 36', 101° 54'), a temperate glacier on the east slope of Mt. Minya Konka in the western Sichuan Province. A permanent observational station near the glacier has run over 20 years. To the north of the Mount, the famous Tibetan town, Kangding is located. 2) tour to the No. 12 glacier (39° 26', 96° 33'), a cold glacier in the northwest Qilian Mountains in the Gansu Province. The Dunhuang Mogao Grottos, a renowned historic site dating back to 366 AD, is within 100 miles to the west of the glacier.

FURTHER INFORMATION

If you wish to attend the workshop (also the workshop study tour) please return the attached form as soon as possible. The Second Circular will give further information about accommodation, the general scientific program and guides for workshop study tours, and preparation of abstracts and final papers. Copies of the Second Circular will be sent to those who return the attached reply form. Members of the International Glaciological Society will automatically receive one.

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Lanzhou, China, 20–24 September 2008

Family Name: _____

First Name(s): _____

Address: _____

Tel: _____ Fax: _____

E-mail: _____

I hope to participate in the Workshop in September 2008

I expect to submit an abstract

My abstract will be most closely related to the following topic(s):

I am interested in an accompanying person's programme

I am interested in the workshop study tours

PLEASE RETURN AS SOON AS POSSIBLE TO:

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