

BOX 2.1 Himalaya glaciers: Case study on the performance of IPCC's report review process

Perhaps the most talked-about error in the fourth assessment was this statement in the Working Group II report:

'Glaciers in the Himalaya are receding faster than in any other part of the world (see Table 10.9) and, if the present rate continues, the likelihood of them disappearing by the year 2035 and perhaps sooner is very high if the Earth keeps warming at the current rate. Its total area will likely shrink from the present 500,000 to 100,000 km² by the year 2035 (WWF, 2005).'

To determine the extent to which the error might reflect weaknesses in the IPCC review processes, the Committee examined the draft text and relevant reviewer comments. The detailed record of all the review comments and author responses maintained by the IPCC made such an analysis possible.^a The Committee's analysis showed that six experts reviewed this section in the first draft and that none of their comments were critical. However, of the 12 expert reviewers' comments on the second draft (see Table 2.2), two were related to the erroneous statement. Comment E10-466 pointed to a contradiction in the text: one sentence read 'if the present rate continues, the likelihood of them [Himalayan glaciers] disappearing by the year 2035 and perhaps sooner is very high if the Earth keeps getting warmer at the present rate,' and the next read 'Its total area will shrink from the present 500,000 km² to 100,000 km² by the year 2035.' However, **the authors did not change the text.**

The other reviewer (comment E10-468) questioned the statement, providing references with different conclusions. Had the authors and/or Review Editors consulted the references, they would have found two peer-reviewed articles, which, at the very least, were more cautious about the disappearance of the Himalayan glaciers. Hewitt (2005) states:

Table 2.2 Reviewer comments on the rate of Himalayan glacier retreat

Comment number	Comment	Writing team notes
<i>Expert reviewer comments on the second draft</i>		
E10-466	100,000? You just said it will disappear. (David Saltz, Desert Research Institute, Ben Gurion University)	Missed to clarify this one
E10-468	I am not sure that this is true for the very large Karakoram glaciers in the western Himalaya. Hewitt (2005) suggests from measurements that these are expanding—and this would certainly be explained by climatic change in precipitation and temperature trends seen in the Karakoram region (Fowler and Archer, J Climate in press; Archer and Fowler, 2004) You need to quote Barnett et al.'s 2005 Nature paper here—this seems very similar to what they said. (Hayley Fowler, Newcastle University)	Was unable to get hold of the suggested references will consider in the final version (sic)
E10-471	only 3 references in the last 6 pages (Clair Hanson, IPCC TSU)	More references added
E10-472	only one reference in this whole section (Clair Hanson, IPCC TSU)	More references added
<i>Government reviewer comment on the summary for policymakers</i>		
GSPM-643	This is a very drastic conclusion. Should have a supporting reference otherwise should be deleted (Government of India)	Boxes removed and statements reworded and reduced to just around 8-10 lines per sector/region – see SPM FGD pages 6-10

'In the late 1990s widespread evidence of glacier expansion was found in the central Karakoram, in contrast to a worldwide decline of mountain glaciers. The expansions were almost exclusively in glacier basins from the highest parts of the range and developed quickly after decades of decline. Exceptional numbers of glacier surges were also reported.'

The article by Fowler and Archer (2006) was in press at the time. The abstract states:

'The observed downward trend in summer temperature and runoff is consistent with the observed thickening and expansion of Karakoram glaciers, in contrast to widespread decay and retreat in the eastern Himalayas.

This suggests that the western Himalayas are showing a different response to global warming than other parts of the globe.'

In this example, IPCC's review process failed in two ways:

- 1. Failure of the authors to carefully consider thoughtful review comments (E10-466 and E10-468), which would have improved the quality of the report**
- 2. Failure of the Review Editors to ensure that reviewer comments were adequately addressed** and that controversies are reflected adequately in the text of the report (E10-468)

This example also points to insufficient evaluation of non-peer-reviewed literature by the Lead Authors.

^a See <http://ipcc-wg2.gov/publications/AR4/ar4review.html>.