


Piping exits



Loess Hills, Crescent, IA

2007/06/02 11:57 am





Loess in Crescent, IA – Aeolian (windblown)
Sediments – would not withstand shaking well at
all but we don't have many earthquakes here

2007/10/21 8:34 am

A photograph of a wooded hillside in the Loess Hills of Iowa. The ground is covered in brown, fallen leaves and some small green plants. Several trees are visible, with their roots exposed and spreading out across the surface of the hill. A large, thick tree trunk is prominent in the center, with its roots spreading out in all directions. In the background, more trees and a clear sky are visible. The text "Piping exits Loess Hills, Iowa" is overlaid on the right side of the image.

Piping exits
Loess Hills,
Iowa



Piping
exits
Loess
Hills,
Iowa



Hewitt's (2006) Landslide Interruption Epicycles

- Landslide complex (1)
 - Landslide event and emplacement of moved mass in stream
- Impoundment complex (2)
 - Landslide-dammed stream causes subsequent lake impoundment
- Degrading interruption complex (3)
 - Lake levels exceed dam height and freeboarding occurs
 - Landslide mass is incised by freeboarding streamflow
 - Terraces may develop in incised sediments
- Superimposed interruption complex (4)
 - Drained impoundment and incision of sediments down to bedrock (pre-landslide base level)
 - Epigenetic gorges may form (valley-in-valley forms)
- Shadow interruption complex (5)
 - Landslide deposit removed, stream base level is not affected by landslide anymore
 - Vestiges of the impoundment
 - Bedrock forms that impact drainage and valley morphology long after landslide is removed
 - Scattered remnants of the landslide
 - Lacustrine soils
 - Sediment fans

Atta Abad Landslide, January 22nd, 2010

- Buried town of Atta Abad
 - Killed 20 people
- Drowned several towns (Hullehgush, Aina Abad, and several others)
 - Displaced >6,000 people
- Dammed Hunza River
- Large lake impounded
 - ~8 km long lake
- Required large equipment to create spillway
- Blocked Karakoram Hwy (N35) for months
 - Had to rebuild road in several places (buried or drowned portions)
 - >25,000 people stranded
 - Disrupted trade through area, especially between Pakistan and China

Atta Abad Landslide-dammed Lake



Friendship Bridge on KKH

• March 17th, 2010





Pamir Times / CC BY-NC-ND)

Friendship Bridge on KKH • May 2nd, 2010

Spillway Construction

May 12th, 2010



Nanda Devi Glacier Outburst Flood, Uttarakhand, India

- Ice and debris flow from large piece of glacier that broke away
- Rishiganga Hydroelectric Project was building a dam and infrastructure at Reni, India (~300 km NE of New Dehli)
 - Construction began in 2006 (15 years ago)
 - Debris/ice flow destroyed the dam on 2-11-21
- Nearly 200 people missing
- [Video](#)

Rishiganga Hydroelectric Project and Dam



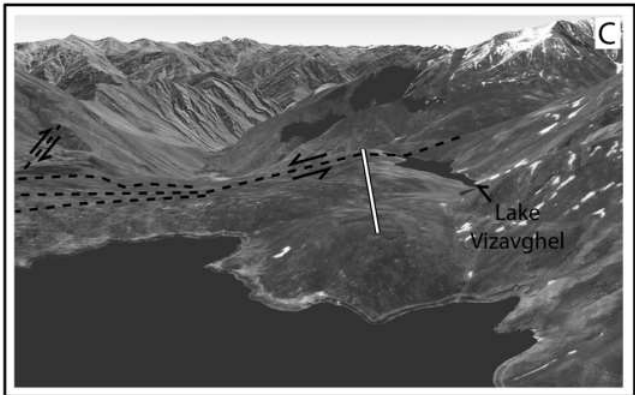
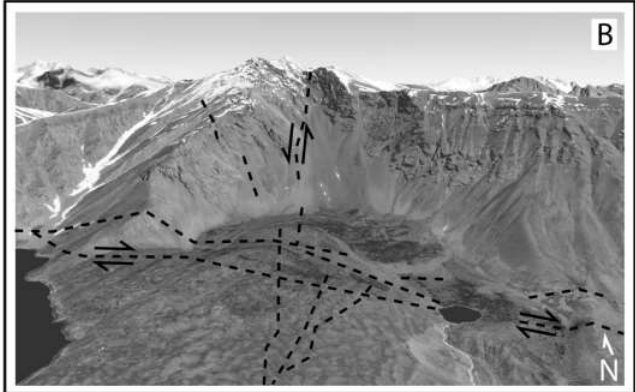
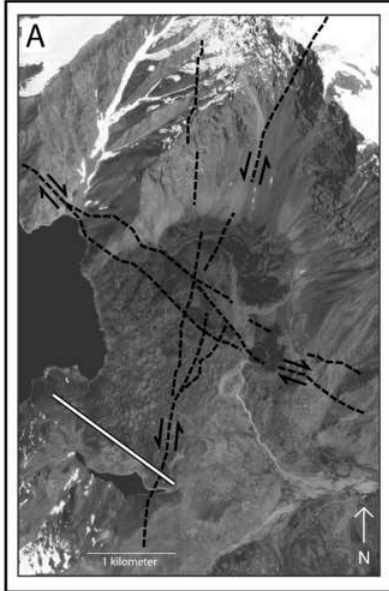
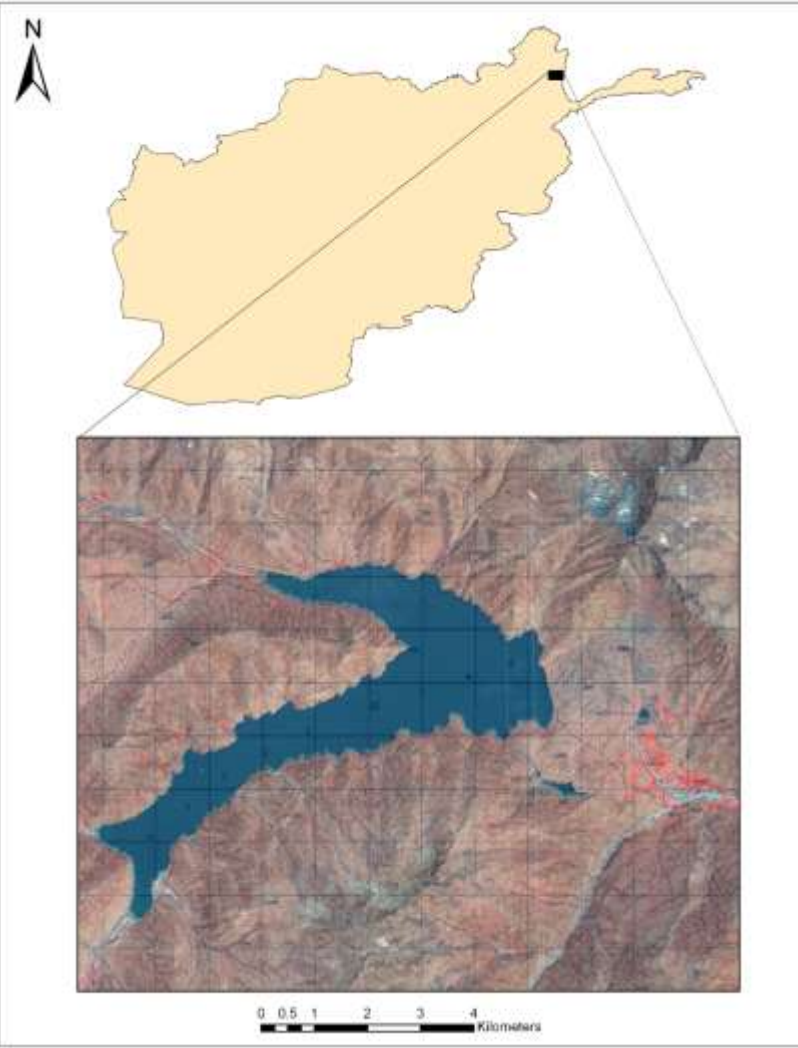
Photo from Ajay Bhatt / AFP: www.scroll.in/



Damaged Dhauliganga hydropower project after a glacier broke off in Joshimath causing a massive flood in the Dhauti Ganga river, in Chamoli district of Uttarakhand, Sunday, Feb. 7, 2021. Photo: PTI; www.thewire.in

Lake Shiva, Afghanistan





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 == Hauptanlage

Large landslide dams (not Oroville)

