

# Changing Landscapes: Glaciated Landscapes

What impacts do human activity and glacial landscapes have on each other?

# What you need to know

- a. Impacts of glacial processes, landforms and landscapes on human activity including glacial lake outburst floods (GLOFs)
- b. Impacts of human activity on glacial processes, landforms and landscapes including extraction of sands and gravels and creation of reservoirs
- c. A case study of one management strategy to manage either the impacts of glacial processes/landforms /landscapes on human activity **or** human activity impacts on glacial processes/landforms/landscapes
- d. Permafrost degradation through human activity

# Research tasks

1. Use the internet to help you describe:
  - a. How glacial processes, landforms and landscapes can have an impact on human activity.  
*Include details about glacial lake outburst floods (GLOFs) – what they are, why they happen and their impacts - best done through one or more recent examples (see 2 below)*
  - b. How human activity can affect glacial processes, landforms and landscapes.  
*Include details about the extraction of sands and gravels (i.e. from glacial/fluvioglacial deposition) and the creation of reservoirs (from tarns, ribbon lakes...)*
  - c. How human activity can lead to the degradation of permafrost.

The textbook is a useful resource, but avoid simply copying it!

The textbook also has useful information about different approaches to managing glaciated environments. It also has a case study of the impact of human activity on the glacial landforms of the Alps. Make sure you have read these and made appropriate notes.

2. Produce a detailed case study of one strategy to manage the impacts of glacial processes/landforms/landscapes on human activity.  
*Managing the threat of GLOFs is probably the best starting point for this.*

*There are suggestions for starting points on the next page*

# Resources

Have a look through the resources on the school website in the Additional Reading folder

<http://glacierhub.org/> useful starting point with a variety of resources about interactions between people and glacial environments.

<http://www.cardigansand.co.uk/pages/about-us> provides interesting details about the geological history of deposits at the Cardigan Sand and Gravel Company in Wales

<http://geology.teacherfriendlyguide.org/index.php/non-mineral-resources/glacial-deposit-resources> provides details about the glacial deposits of North-eastern USA

<https://onlinegeography.wikispaces.com/Glacial+tourism> one of many sites giving details about tourism in glaciated areas (here it's Chamonix) – but be careful as not all of it's relevant to this task

<http://ngm.nationalgeographic.com/geopedia/Permafrost> an interesting link to a variety of brief articles on a range of aspects relating to permafrost

<https://nsidc.org/cryosphere/frozenground/people.html> useful info about how permafrost affects human activity – have a look at some of the additional links on the left-hand side, too.

<https://www.youtube.com/watch?v=2Itb2K6oTgo&list=PLcayrWRIfU0cxTapM-sTfMulri9zxDSpz&index=14> Short video about GLOF – have a look at some of the other videos, e.g. the ones about Lake Missoula

<http://glaciers.uoregon.edu/hazards.html> a useful site that also includes two interesting videos about GLOFs in Peru and Bhutan

<http://www.bbc.co.uk/news/science-environment-34540414> article about melting permafrost