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12.001 Introduction to Geology  
Spring 2008

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## Cirque glacier, Switzerland

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Even a small firn bank can form a cirque (a rounded basin, partially surrounded by steep slopes, cut into a mountainside) by acting as a water source for freeze-thaw cycles. Material broken by frost wedging is removed by mass wasting (together called *nivation*) and forms a cirque.

# Kleine Matterhorn glacier



## Glacial bedforms: Roche moutonnee (“mutton tallow”)

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Abrasion produces small grains that often adhere to the ice, causing striations in bedrock and being released by meltwater as *rock flour*, perhaps later being blown by the wind as *loess*.

## Loess

Wind-blown silt deposits (~4 - 64 micron particles)

Silt sources: Glacial (Pleistocene outwash deposits), Deserts

Strong when dry, weak when wet: can be a problem.

Loess Plateau, China: deposits >200 m thick

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## Glen Coe, Scotland



# Western Brook Pond, Gros Morne, Newfoundland



# Matterhorn





# Phanerozoic glacial periods

Name N. American	Inter/Glacial	Period (ka)	Epoch
	interglacial	present – 12	Holocene
Wisconsinian	glacial period	12 – 110	Pleistocene
Sangamon	interglacial	110 – 130	
Illinoian	glacial period	130 – 200	
Yarmouth	interglacial(s)	200 – 300/380	
Kansan	glacial period(s)	300/380 – 455	
Aftonian	interglacial(s)	455 – 620	
Nebraskan	glacial period	620 – 680	

## Flooding as sea level rises

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Low-lying deltaic  
regions in  
Bangladesh  
would be subject  
to catastrophic  
flooding if global  
warming were to  
result in a global  
rise in sea level