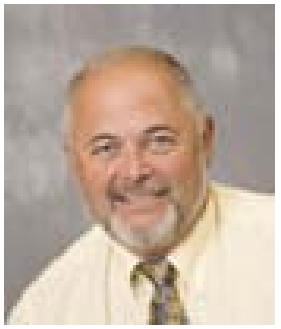
EAPS 10000 Y01
Online Course
Planet Earth
Prof. Lawrence Braile

Welcome to the EAPS 10000 Y01 online course
Planet Earth *(also known as EAPS 100)!*



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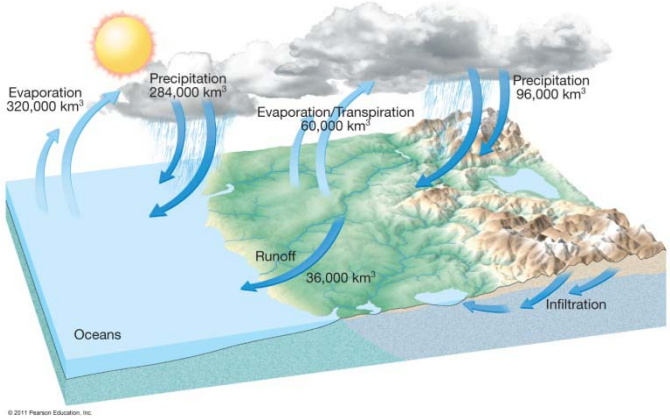
PURDUE UNIVERSITY

Earth Atmospheric Planetary Sciences

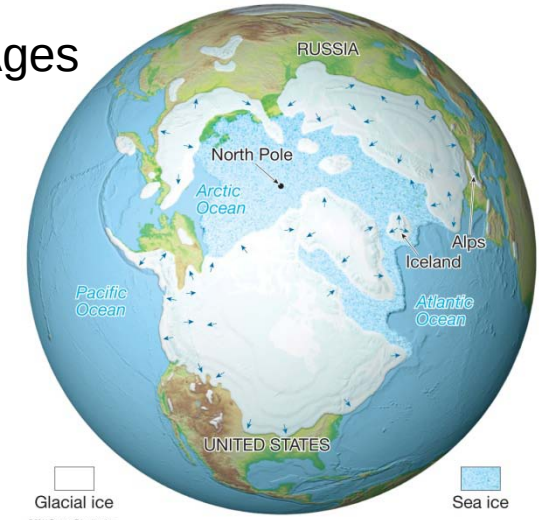
EAPS 10000 Y01 – Planet Earth (online course)
Week 2, Chapters 3 & 4 (see pages below, text)

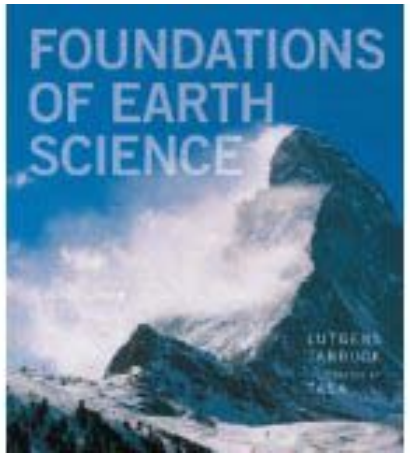
Week	Chapter	Assigned Pages	Major Concepts	Important Terms
2	**3 – Landscapes Fashioned by Water**	76 – 83, 98 – 110	Hydrologic cycle, groundwater	Grand canyon, Mississippi river delta, aquifer
2	**4 – Glacial and Arid Landscapes**	118 – 135	Glaciers, ice ages	Ice sheets, till, moraine, glacial erratic, striations



The Water Cycle

Ice Ages





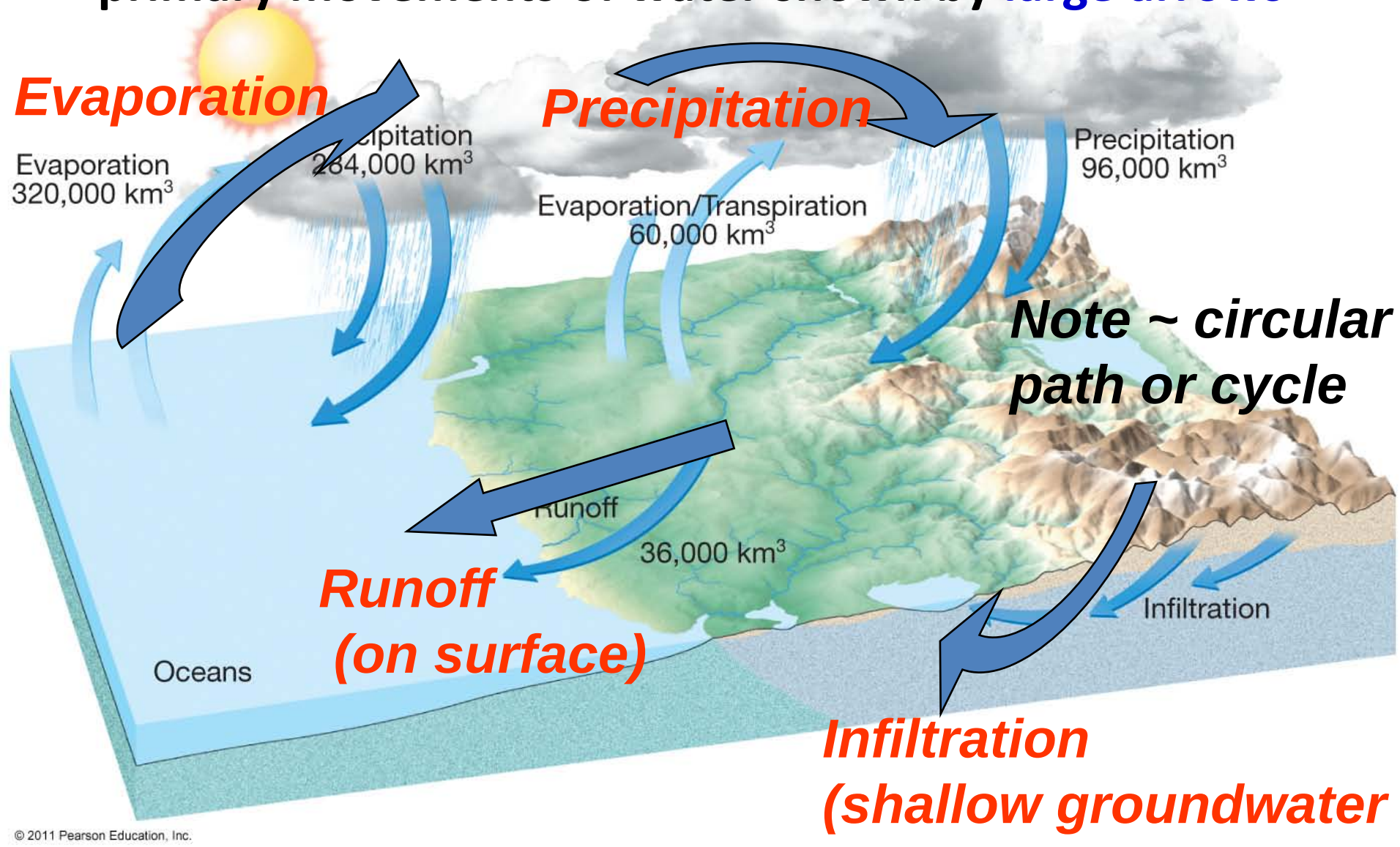
EAPS 10000 Y01 – *Planet Earth* (online course)
Week 2, Chapter 3 (pages 76 – 84, 98 – 110, text) and Chapter 4 (pages 118 – 135, text)

When you have finished reading Chapters 3 and 4 (assigned pages only) and viewing the weekly PowerPoint file for Week 2 Chapters 3 and 4, take the weekly quiz (Qz 3; be sure to read the Syllabus for more information on quizzes). You can use your book, notes, etc. during the quiz.

The PPT files (converted to PDF files) are best viewed with the Full Screen view in browsers.

The following slides illustrate some of the important concepts and topics of Chapters 3 and 4 (assigned pages).

Earth's Water Balance – the *Water Cycle* (Figure 3.7, text); primary movements of water shown by large arrows



Fresh Water (only ~2.5% of all the water on Earth)

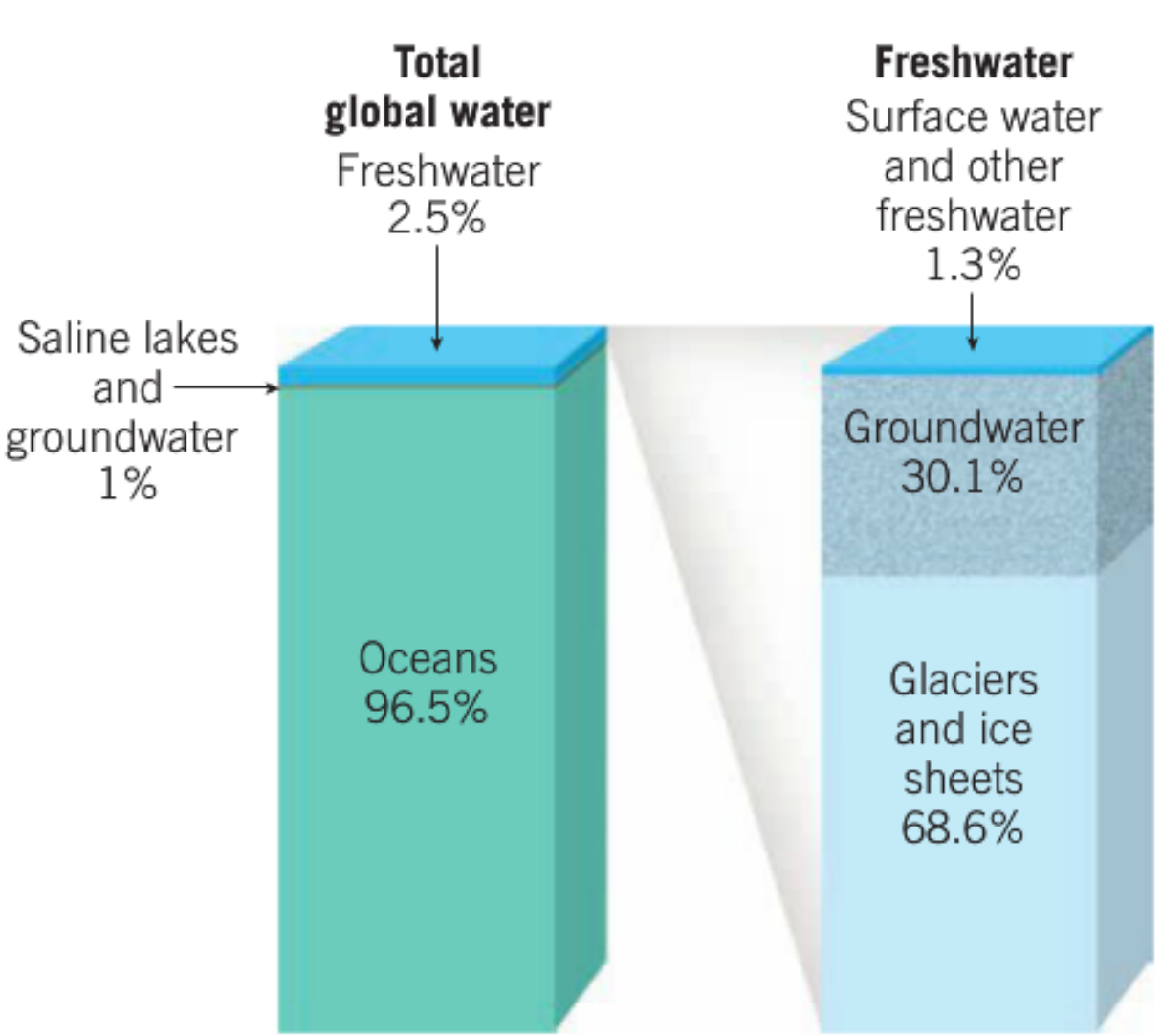
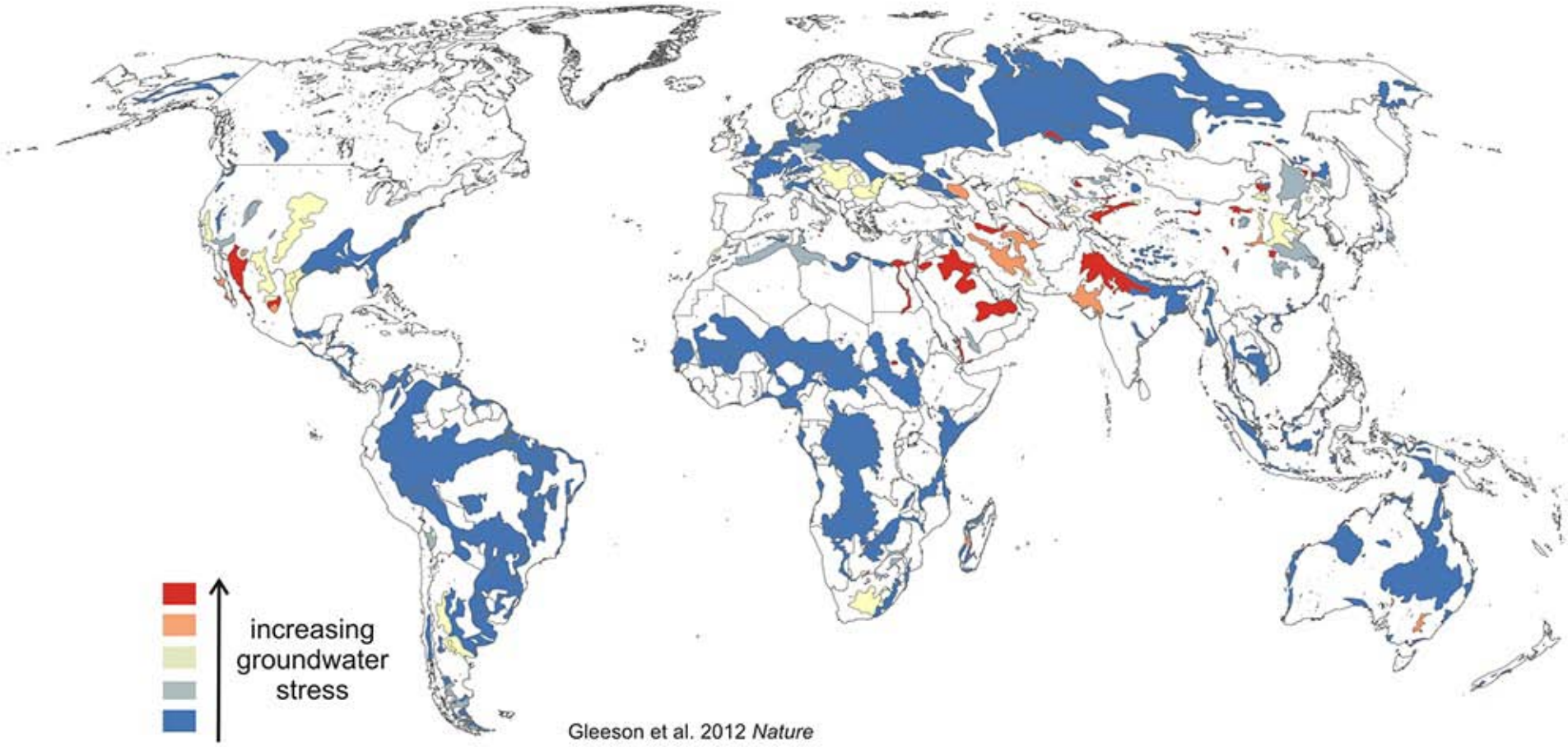


Figure 3.31, text

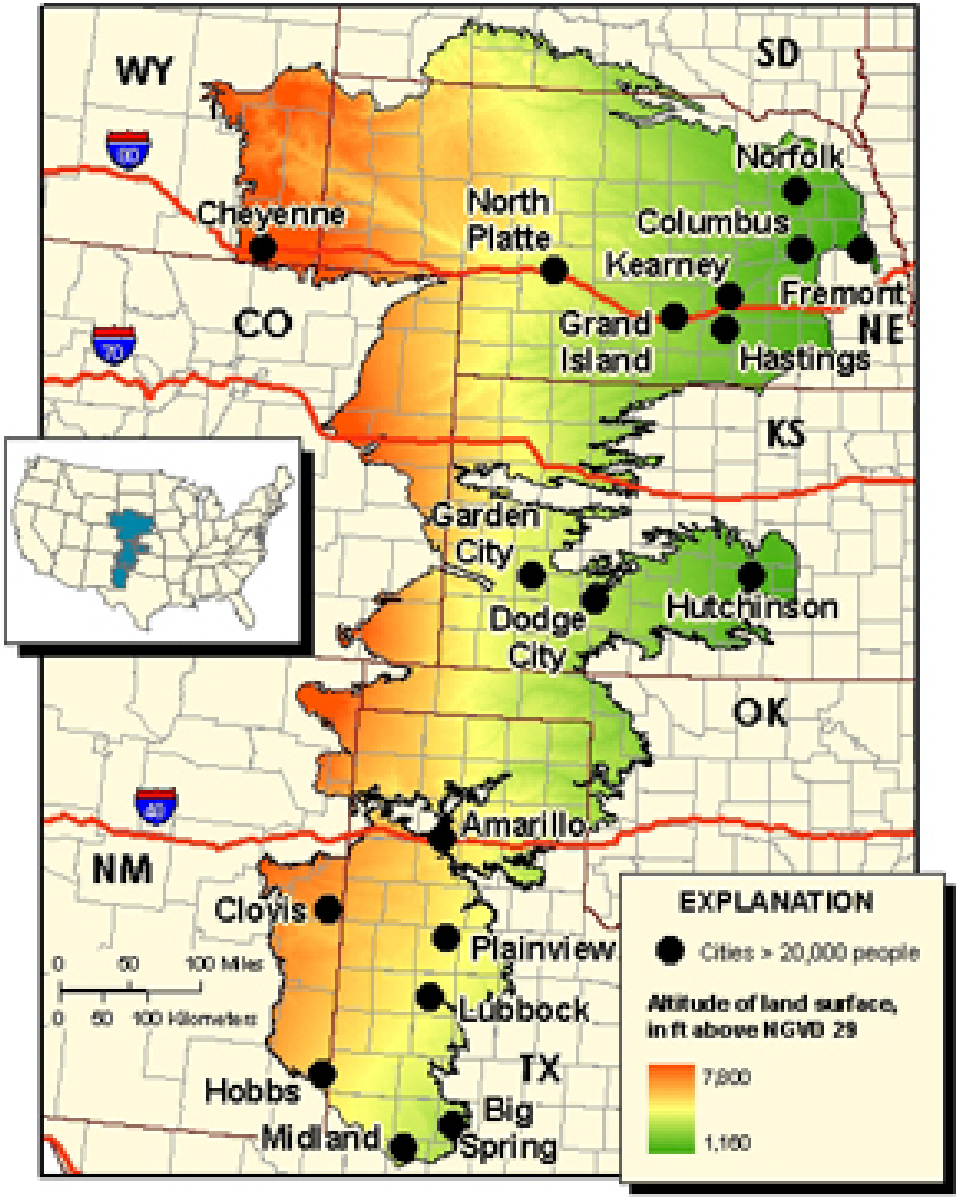
Fresh water in the world (2.5% of *all* water; remainder is sea water – of the fresh water, only ~30% is groundwater, our primary source of drinking water; much of groundwater is saline or otherwise not pure enough for drinking)

Several areas of the world are using fresh water supply faster than it is being replenished.



http://www.nature.com/news/demand-for-water-outstrips-supply-1.11143

The Ogallala (or “high plains”) aquifer is a vast water supply used for drinking water and irrigation for agriculture in the great plains area. **It supplies about 30% of all the irrigation water used in the U.S.** The aquifer is being **depleted at a rate of about 8 times the rate of replenishment.** A 2013 report by the USGS states that the aquifer is about **30%** depleted and could have an **additional 39%** depletion in the next 50 years.



http://earthdesk.blogs.pace.edu/tag/ogallala-aquifer/
http://www.csmonitor.com/Environment/Latest-News-Wires/2013/0827/Ogallala-aquifer-Could-critical-water-source-run-dry

Alpine (mountain) glacier – “A river of ice”

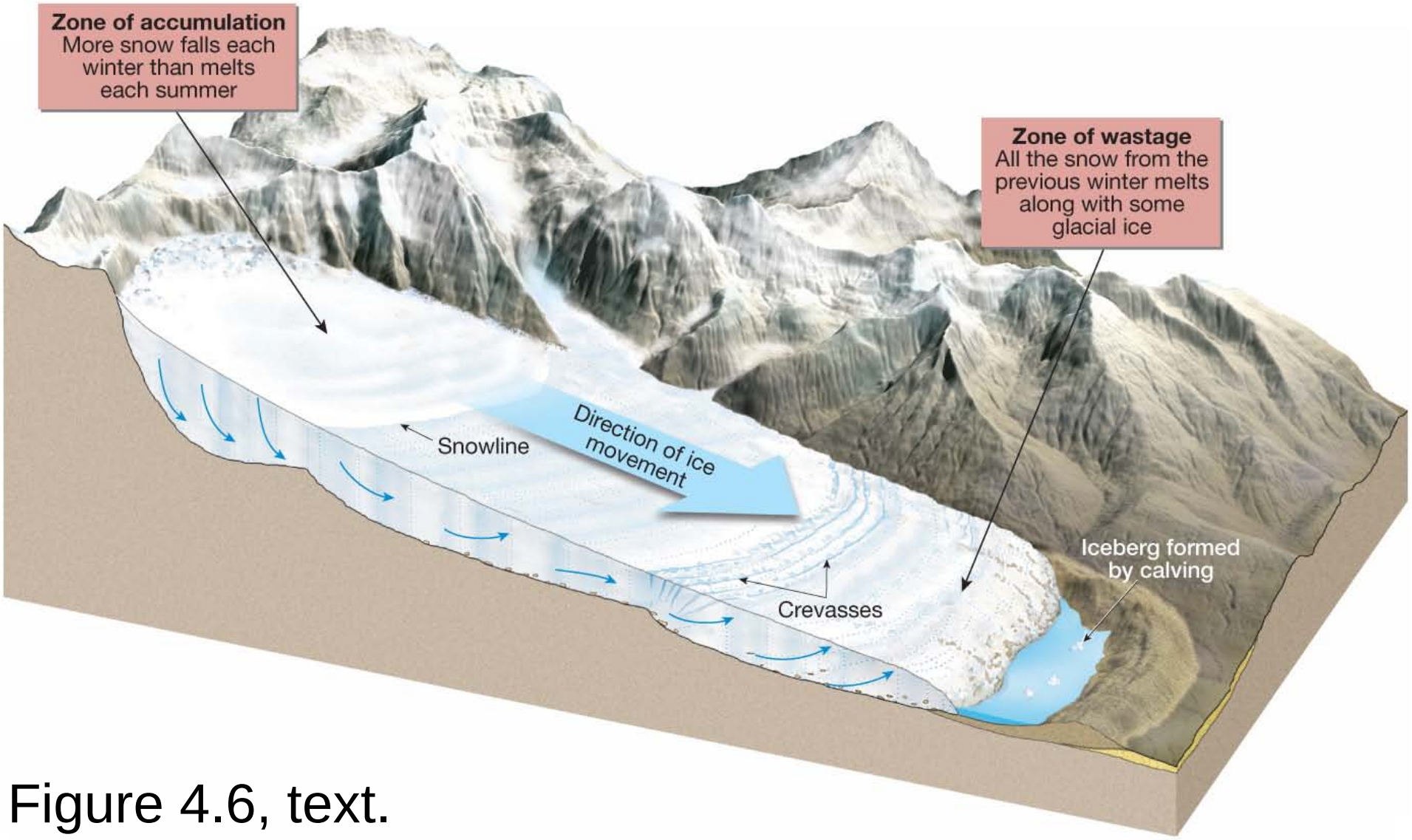


Figure 4.6, text.

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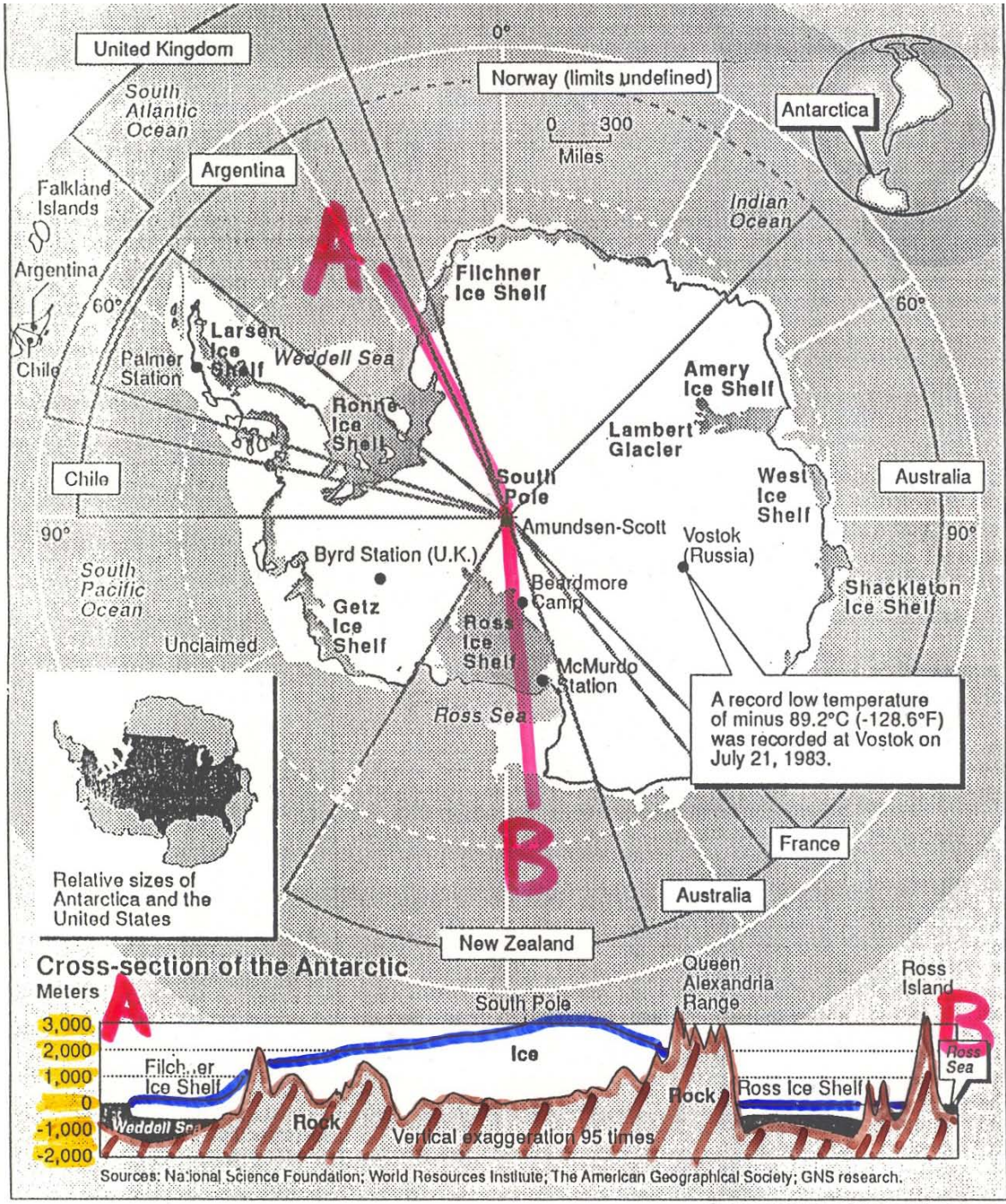
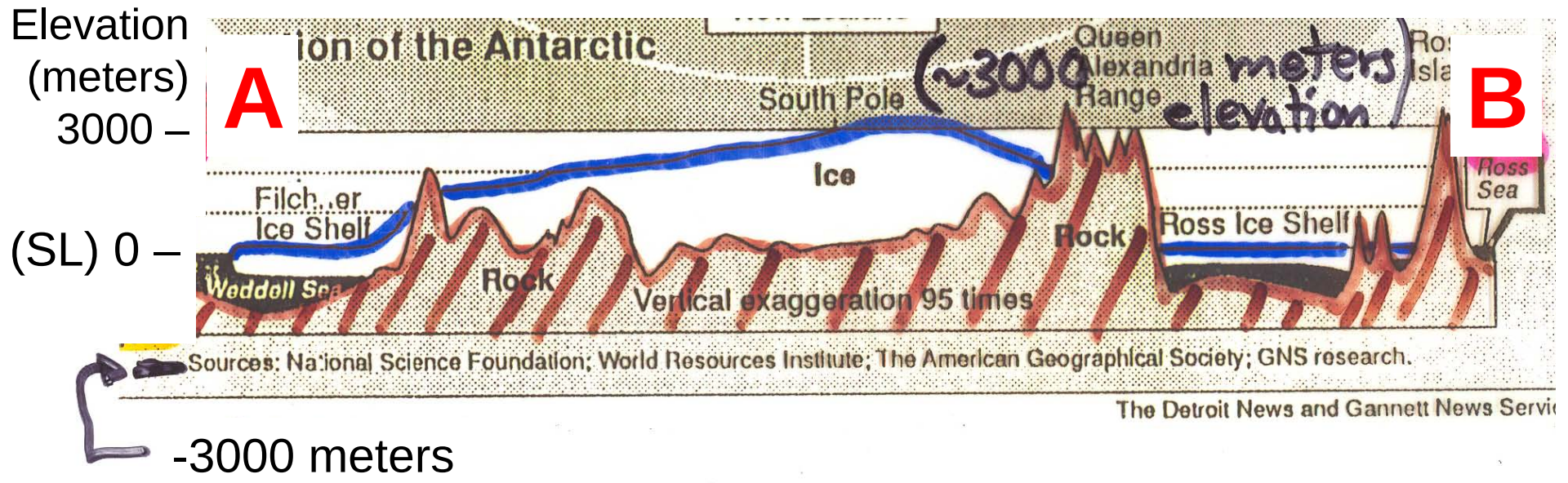
A modern day ice sheet – Antarctica (the Greenland ice sheet and mountain glaciers around the world are also examples of today's glaciers that were much more extensive in recent ice ages).

Antarctic ice sheet, profile location (A-B) and cross-section, below.



A modern day ice sheet - Antarctica

Cross-section (like slicing through a layer cake) through the Antarctic ice sheet – note that the ice sheet is almost 3 km thick.



(Vertical exaggeration makes slopes look much greater than they actually are)

Ice Ages

Maximum extent of continental glaciers (ice sheets), Northern hemisphere, last ice age (~20,000 years ago). (Figure 4.22, text)