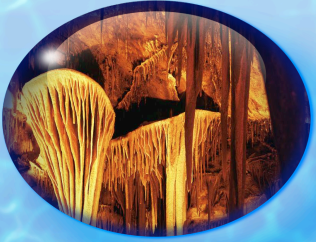


# Groundwater



1

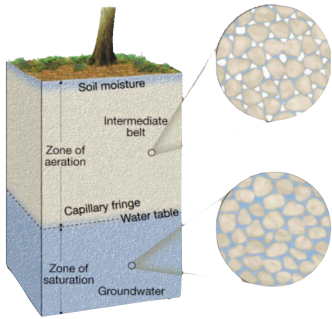
# Groundwater

**TABLE 17.1** Fresh Water of the Hydrosphere

Parts of the Hydrosphere	Volume of Fresh Water (c.m.)	Share of Total Volume of Fresh Water (percent)	Rate of Water Exchange
Ice sheets and glaciers	24,000,000	84.945	8000 years
Lakes and reservoirs	155,000	0.549	7 years
Soil moisture	83,000	0.294	1 year
Water vapor in the atmosphere	14,000	0.049	9.9 days
River water	1,200	0.004	11.3 days
Total	28,253,200	100.000	

Source: U.S. Geological Survey Water Supply Paper 2220, 1967  
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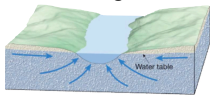
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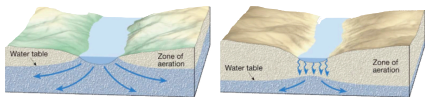
3

# Lakes & Streams

## Gaining Stream



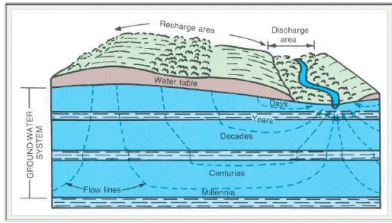
## Loosing Stream (disconnected)



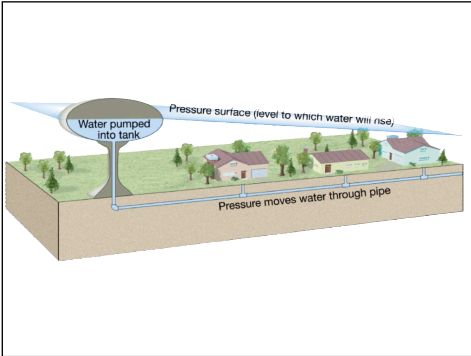
## Loosing Stream (connected)

4

### Water Flow and Residence



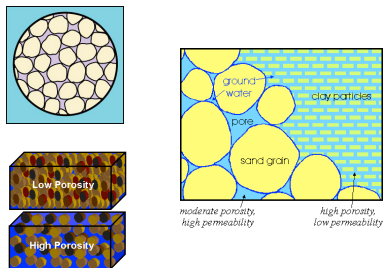
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6

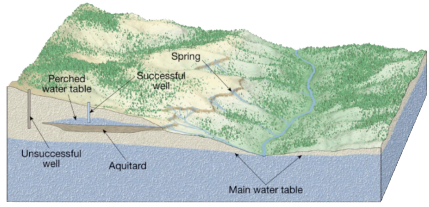
### Rock Properties that affect the flow of ground water

7



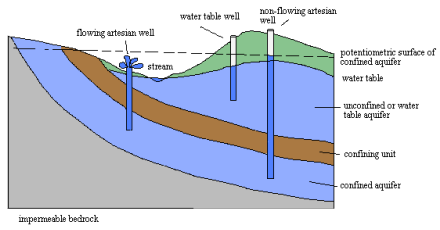
8

# Aquifers and Aquitards



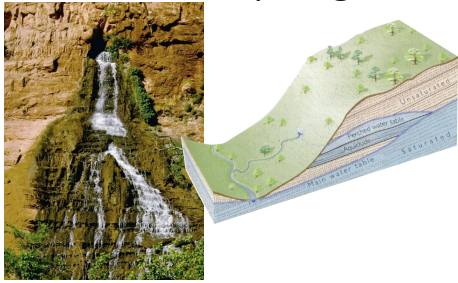
9

# Aquifers



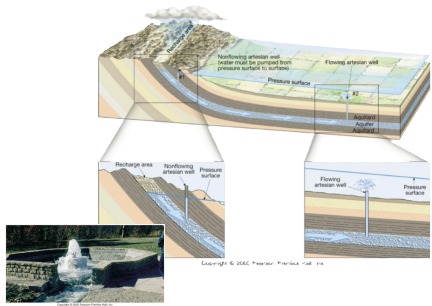
10

# Wells & Springs



11

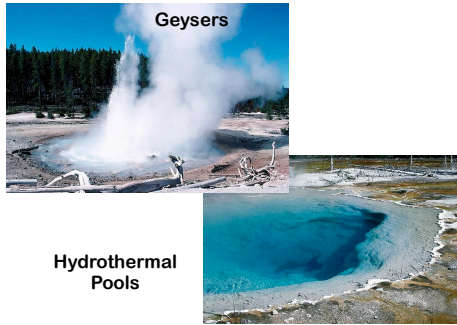
# Artesian Well



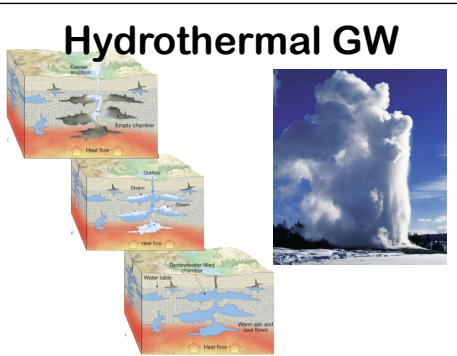
12

# Hot Underground Water

13



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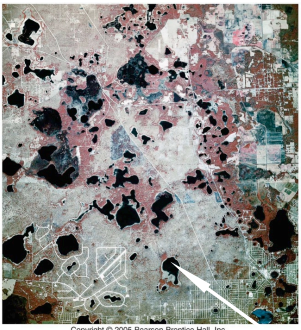


15

# Karst: Groundwater in soluble rocks

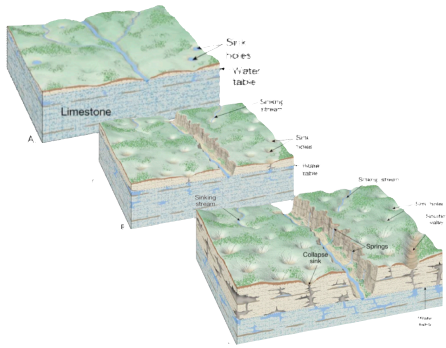


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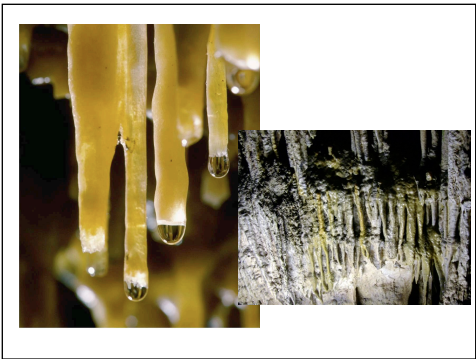
**Caverns**



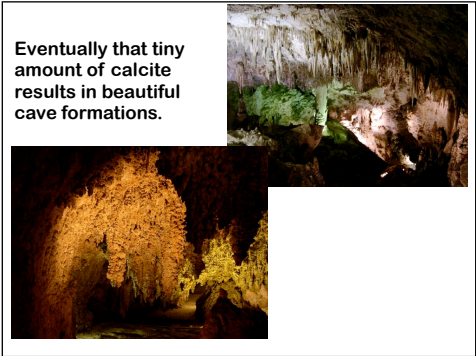
**Carlsbad Caverns**



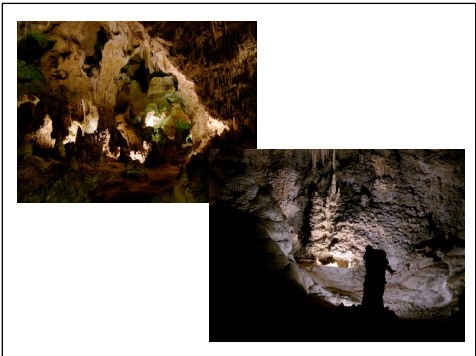
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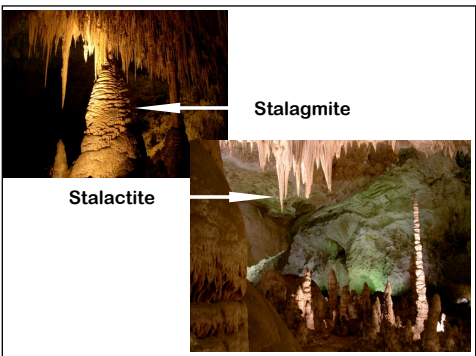
21



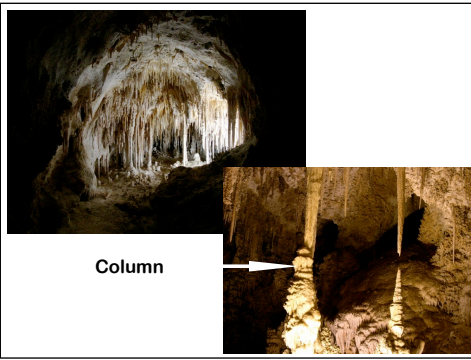
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23



24

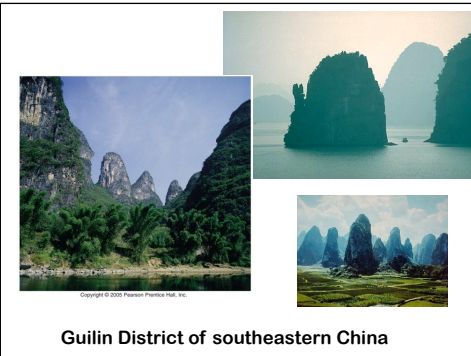


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## Caves of Texas



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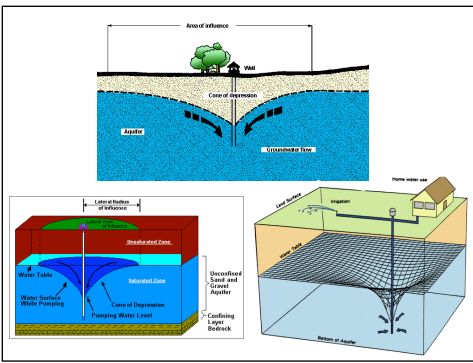
Guilin District of southeastern China

27

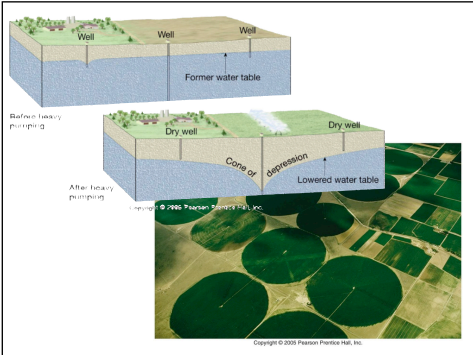
## Humans and Groundwater



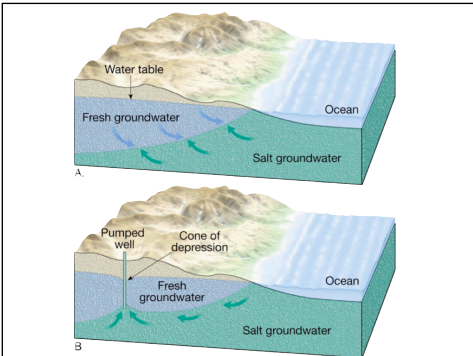
28



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30

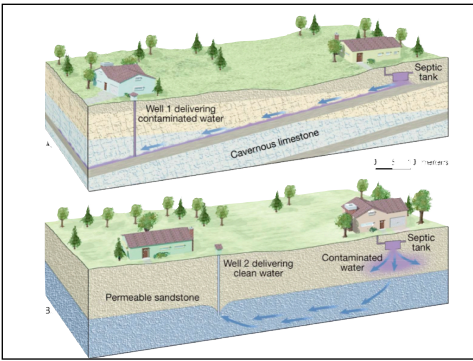


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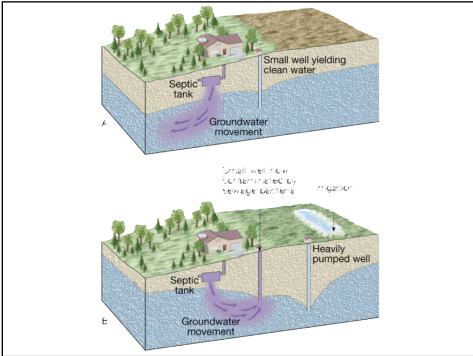


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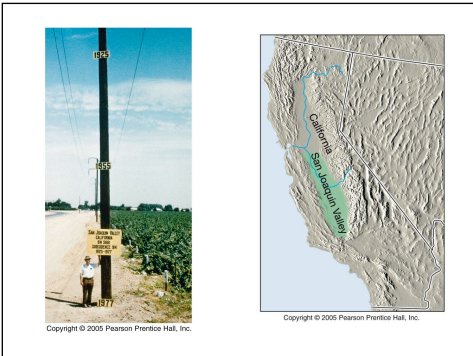




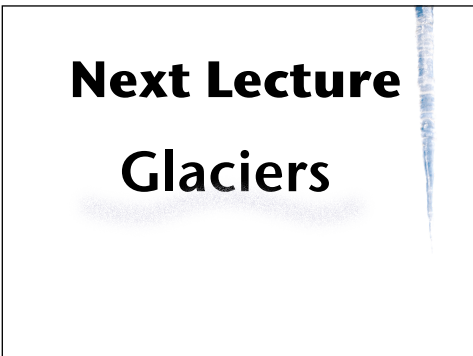
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