

# Water: Sources, Use, and Conservation

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# What do our youth need to know about water?



# What is **new** in the Water book?

- ❖ Graphs about Earth's water
  - ❖ Hydrologic Cycle
  - ❖ Watershed map, water tables
  - ❖ NASA and NOAA Partnership for mapping of snowpack
  - ❖ Link to Agriculture
    - ❖ Ag use of technology to increase the efficient use of water
  - ❖ Activities for teachers and students
  - ❖ Challenge to students – What will they do in the future?
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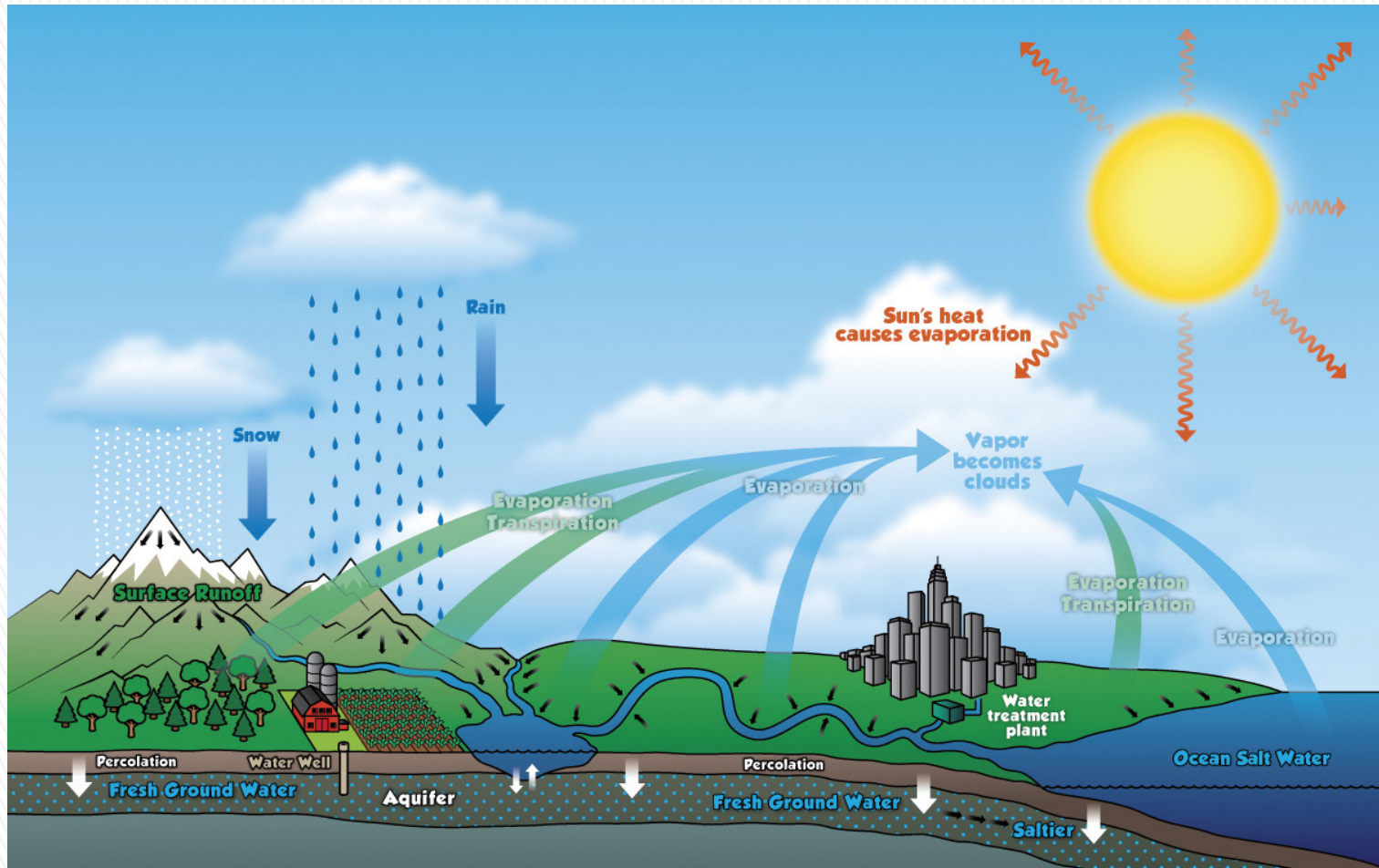


**Water in, on and above the Earth!**

# Earth's water, what is available?



# New Hydrologic Cycle



# **Saturation: Water table demonstration**

What happens when it rains?





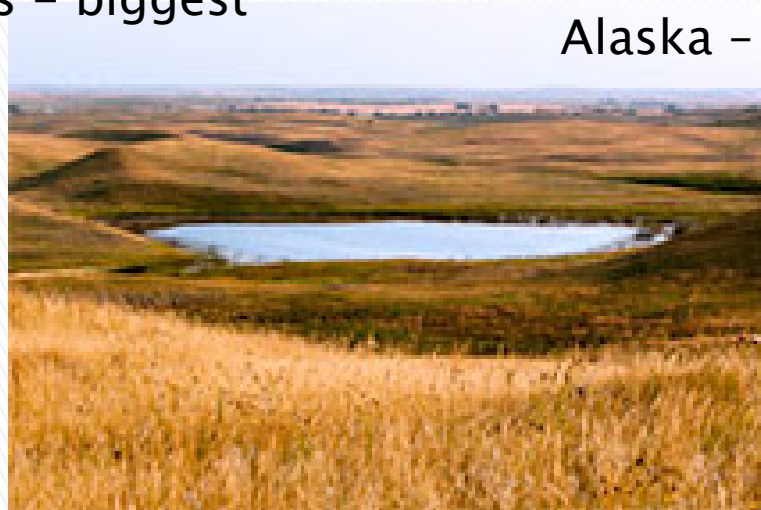
# Wetlands are important!



Florida Everglades – biggest



Alaska – 2/3 of US Wetlands



Prairie Pothole

**Water always runs down hill!**



# US Watersheds



What happens when it rains or snows  
too much or too little?

**FLOODS**

**Drought**

**When you hear the word river, what picture is in your mind?**

**❖ How wide is your river?**

**❖ How deep is your river?**

**❖ How many people depend on your river?**

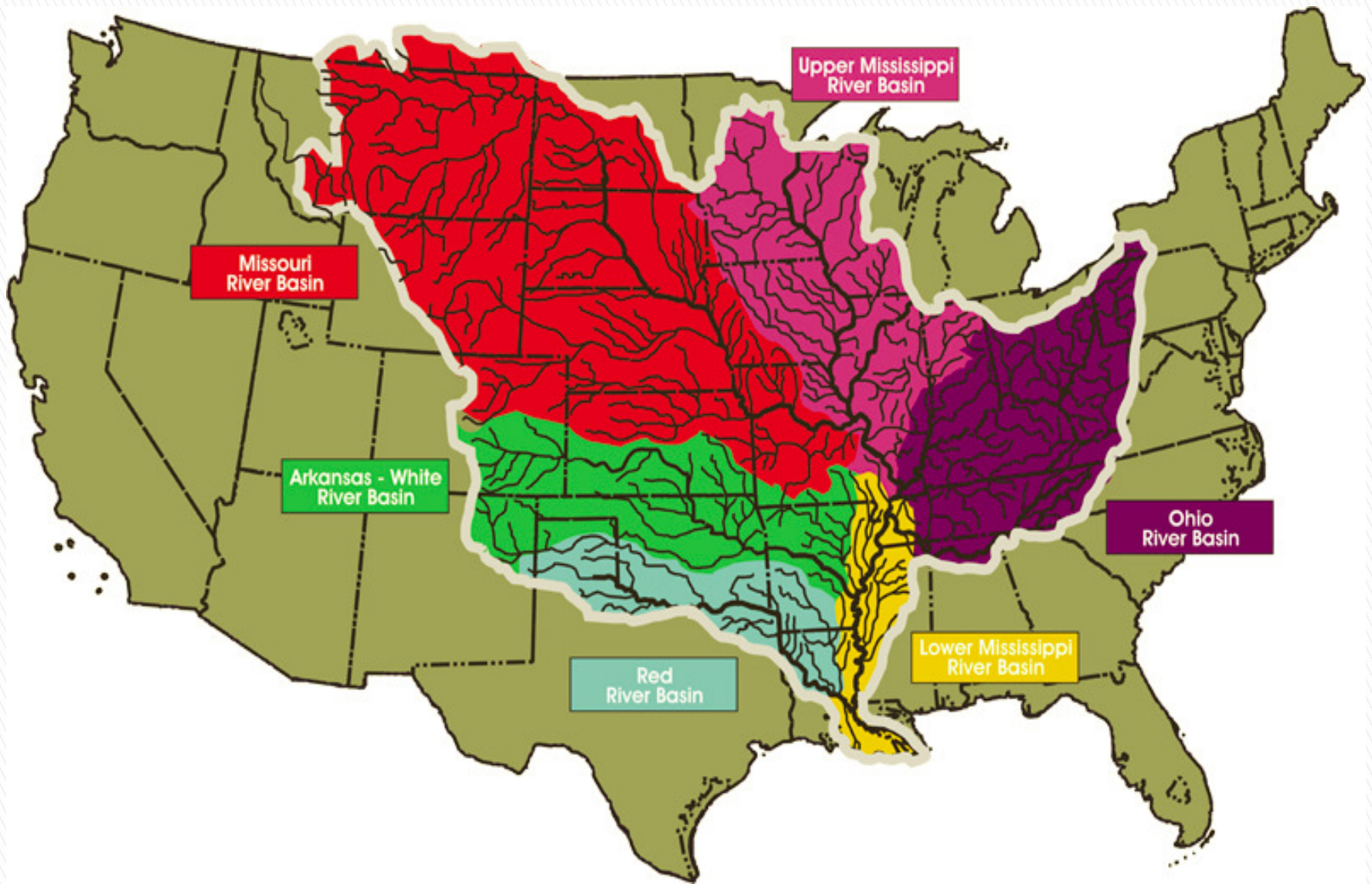
**Food**

**Fiber**

**Drinking water**

**Domestic water – household use**

**Recreation**



Mississippi River Basin



Mississippi River above the confluence in Cairo, IL



Ohio River above the confluence in Cairo, IL





Confluence of the Ohio and Mississippi Rivers, Cairo, IL

# Colorado River Basin





Green River in Utah



## **Colorado River in Colorado**



**Confluence of the Green and Colorado Rivers.**

# Colorado River Basin Mat

Mat is 12' x 54"



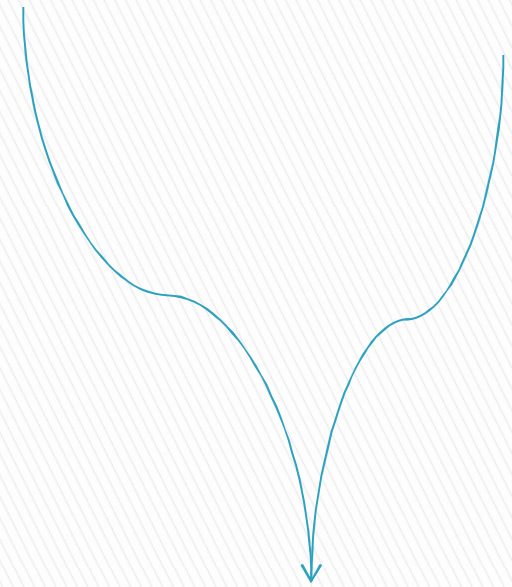
I use beads for the inside presentations.





**Colorado River Basin Activity outside with water and sand pails.**





Confluence of the  
Green River and  
the Colorado River  
(visual of **Green**  
Bucket, **Purple**  
bucket pouring  
into the **Blue**  
bucket.)

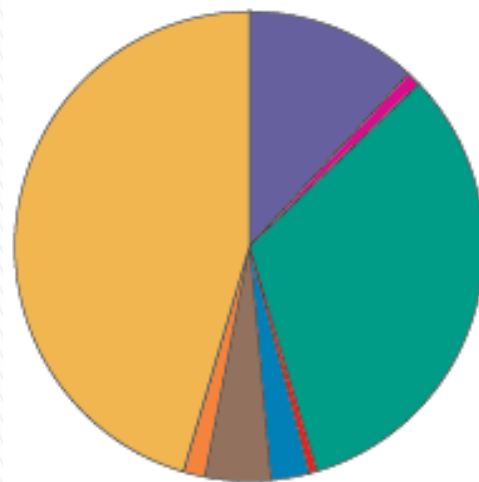


The group is out of water south of the Mexico border.

# Who uses the most water? How do people in the US use water?

Total water withdrawals, top states, 2010  
 [percentages calculated from unrounded values]

State	Percentage of total withdrawals	Cumulative percentage of total withdrawals
California	11%	11%
Texas	7%	18%
Idaho	5%	23%
Florida	4%	27%
Illinois	4%	30%



2010 withdrawals by category, in million gallons per day

Public supply	42,000
Self-supplied domestic	3,600
Irrigation	115,000
Livestock	2,000
Aquaculture	9,420
Self-supplied industrial	15,900
Mining	5,320
Thermolectric power	161,000

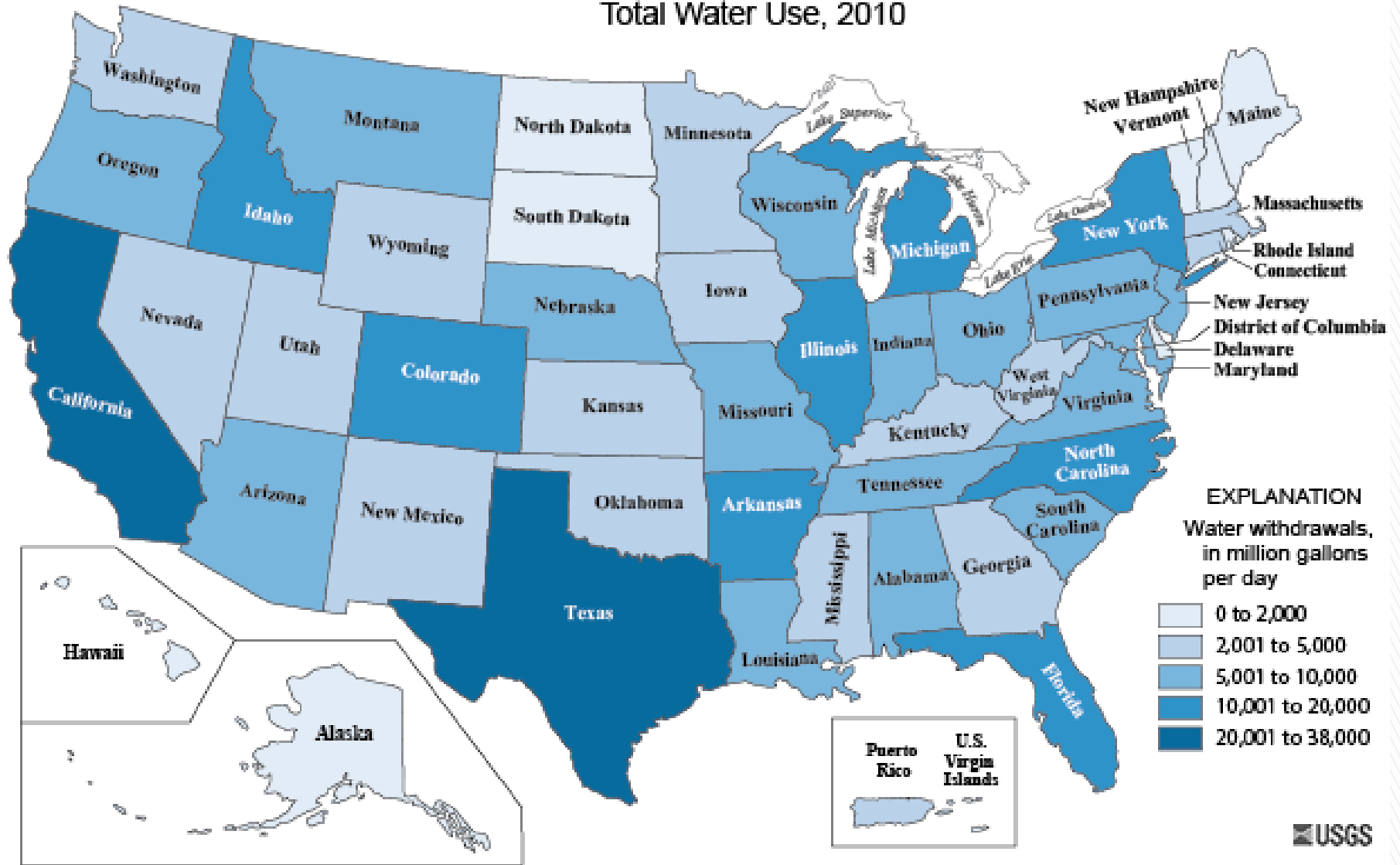
Values do not sum to 355,000 Mgal/d because of independent rounding

United States Geological Survey <http://water.usgs.gov/watuse/wuir.html>

**Irrigation water use includes water that is applied by an irrigation system to sustain plant growth in all agricultural and horticultural practices. Irrigation also includes water that is used for pre-irrigation, frost protection, application of chemicals, weed control, field preparation, crop cooling, harvesting, dust suppression, and leaching salts from the root zone.** Estimates of irrigation withdrawals include water that is lost in conveyance prior to application on fields as well as water that may subsequently return to a surface-water body as runoff after application, water consumed as evapotranspiration (ET) from plants and ground surfaces, or water that recharges aquifers as it seeps past the root zone.

**Irrigation of golf courses, parks, nurseries, turf farms, cemeteries, and other self-supplied landscape-watering uses also are included in the estimates.** Irrigation water use includes self-supplied withdrawals and deliveries from irrigation companies or districts, cooperatives, or governmental entities. Some irrigation water is reclaimed wastewater from nearby treatment facilities or industries. Reclaimed wastewater use for irrigation was last reported for 1995. All irrigation withdrawals are considered freshwater. Irrigated acres are reported by three types of irrigation methods: sprinkler, micro-irrigation, and surface (flood) systems.

# Total Water Use, 2010





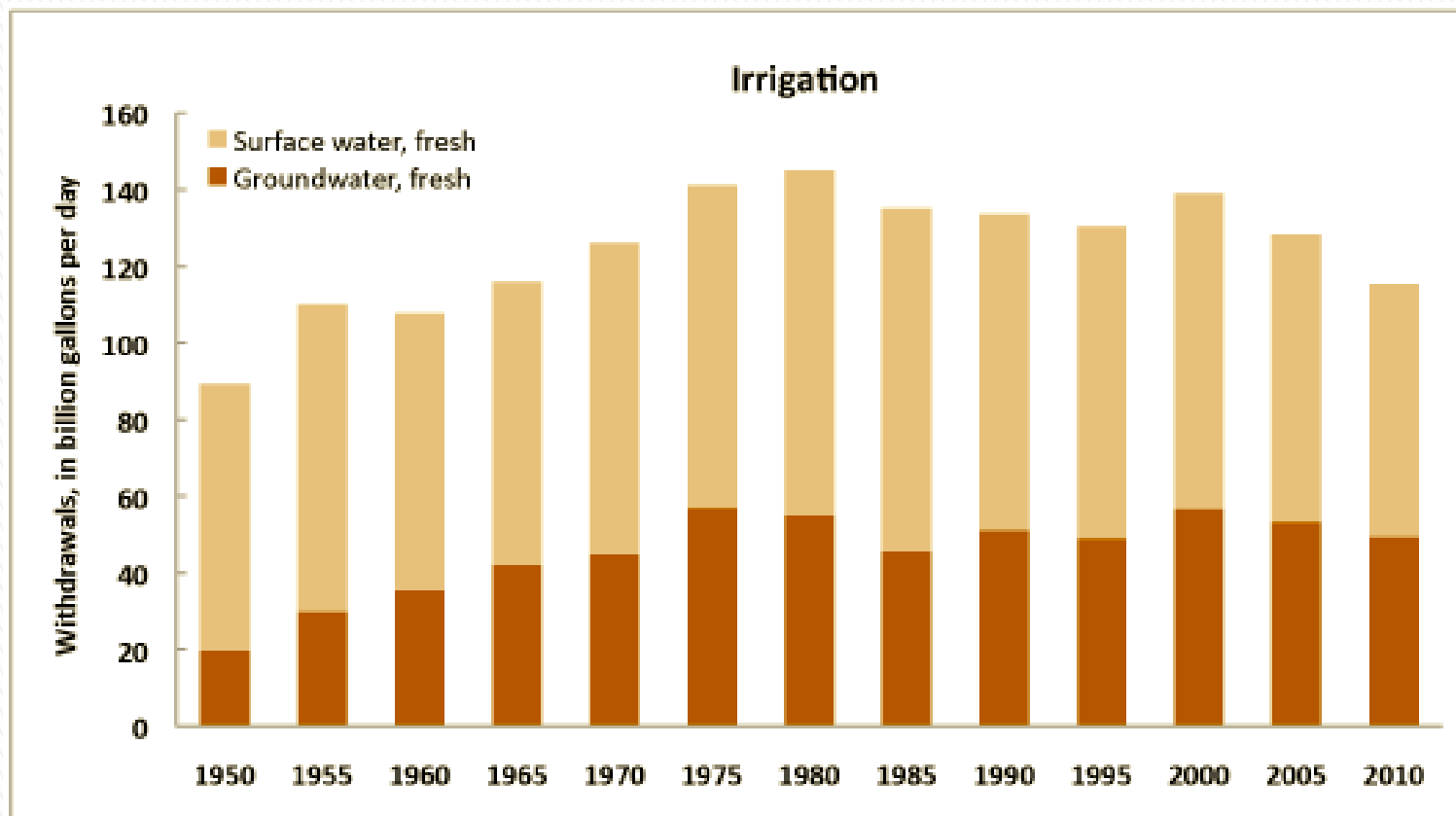
Golf Course, Palm Springs CA. [www.airphotona.com](http://www.airphotona.com)

# Agriculture using technology to increase water use efficiency.



## Graph of irrigation water use from 1950–2010

Irrigation withdrawals were 9 percent less between 2005 and 2010, a level not reported since before 1965, although total irrigated acres increased 2 percent. The use of more water-efficient irrigation systems continued to increase with nearly 3 percent more irrigated acres using sprinkler systems in 2010 than in 2005.





# Water for our food.



# Water for our fiber.



# agbooksforkids.com

