

# Arizona's Water and Food Systems

NSF-Funded GK-12 Project

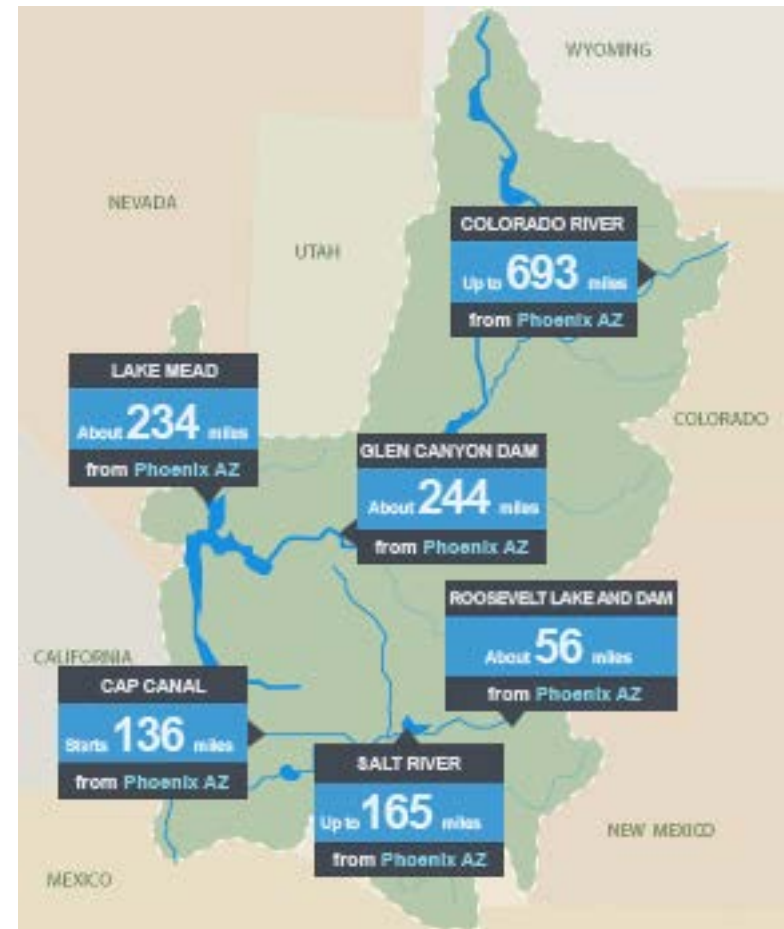
sustainability  
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sustainable  
schools

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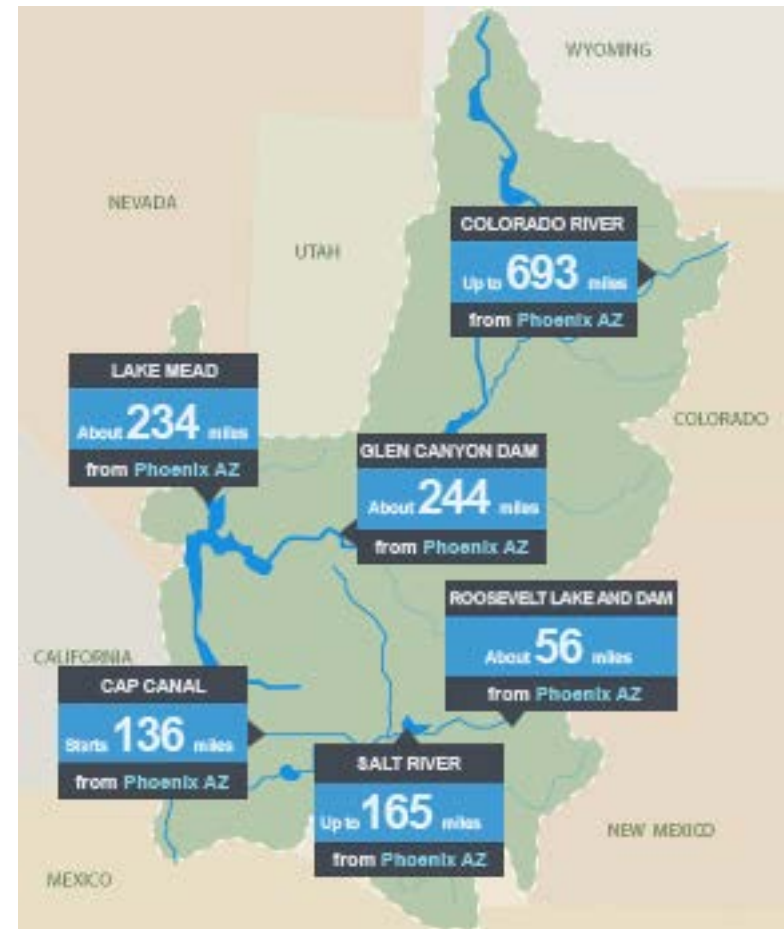
# Water in AZ

- Where does our water come from?



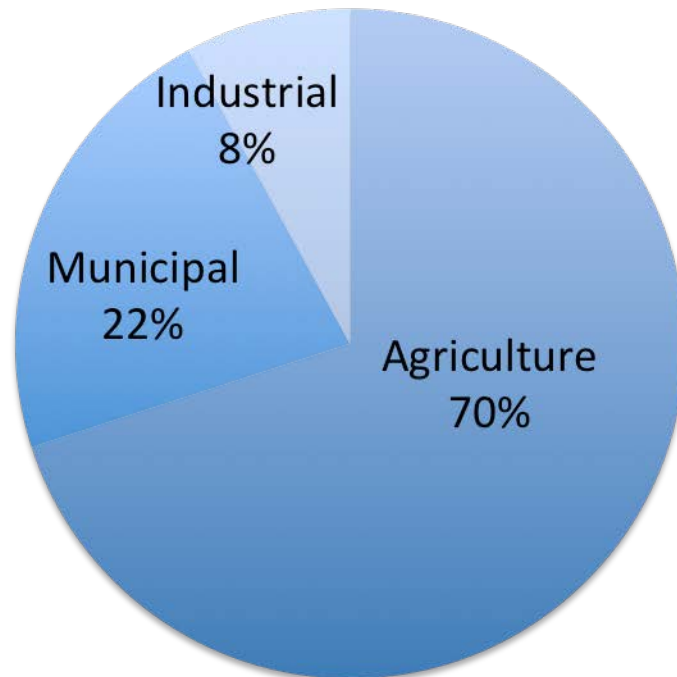
# Water in AZ

- Where does our water come from?
  - Surface water (rivers and lakes)
  - Groundwater (from underground wells)
  - Reclaimed water (used for agriculture and industrial uses)



# AZ Water Use

How do we use our water supply?



- Farming and crops
- Residential uses, such as landscaping
- Industrial needs and manufacturing

\*Information from the Arizona Department of Water Resources



# Colorado River

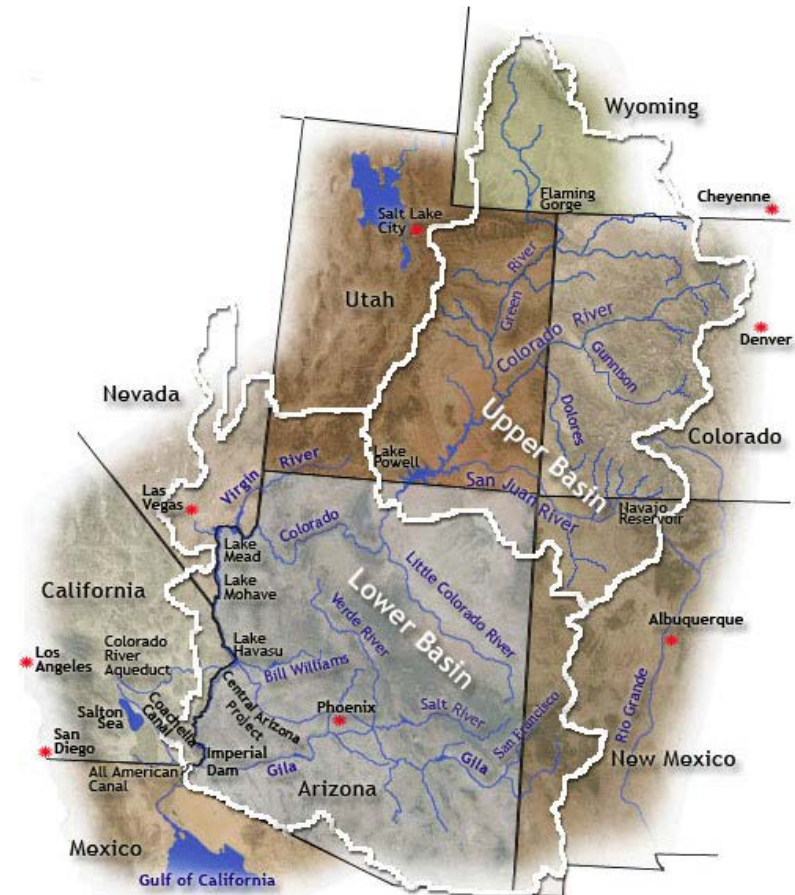
- Provides half of Phoenix's water
- Also provides water to WY, CO, UT, NM, NV, CA, and Mexico.
- Most of the water from the Colorado River is provided by melting snowpack in the mountains of CO, UT, and WY.



Lake Powell and the Glen Canyon Dam

# Rights to the Colorado River

- The Law of the River helps determine how much of the Colorado River each state has a right to use
  - Arizona has the right to 2.8 million acre feet each year
- In 1963, the Supreme Court decided Arizona has a lower priority to Colorado River water than California



# Salt and Verde Rivers

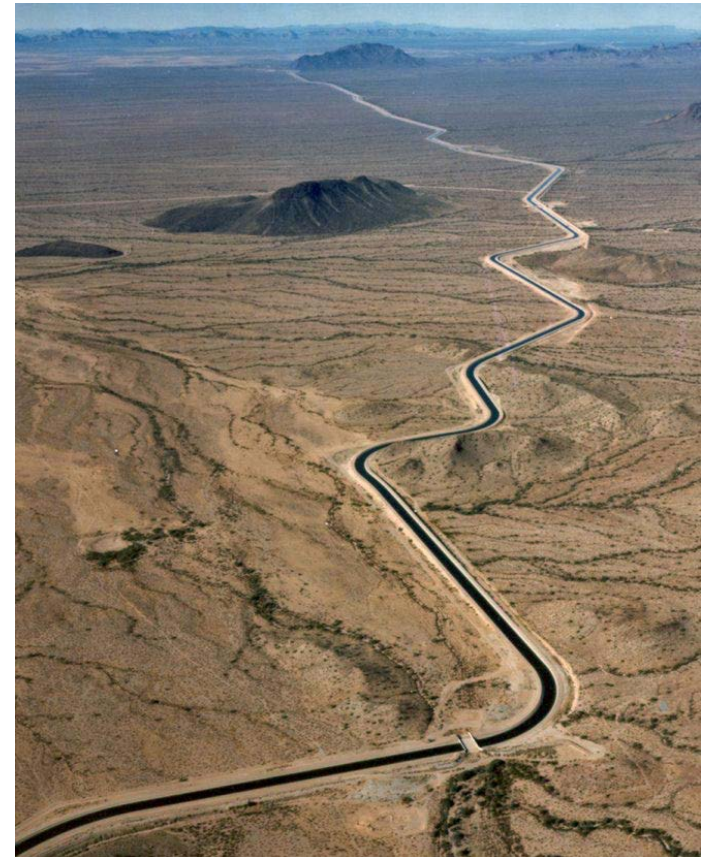
- Provide additional water to the Phoenix area
- Dams along the rivers were originally built to store water for use by farmers
- Now, the water from these rivers is used primarily for urban uses





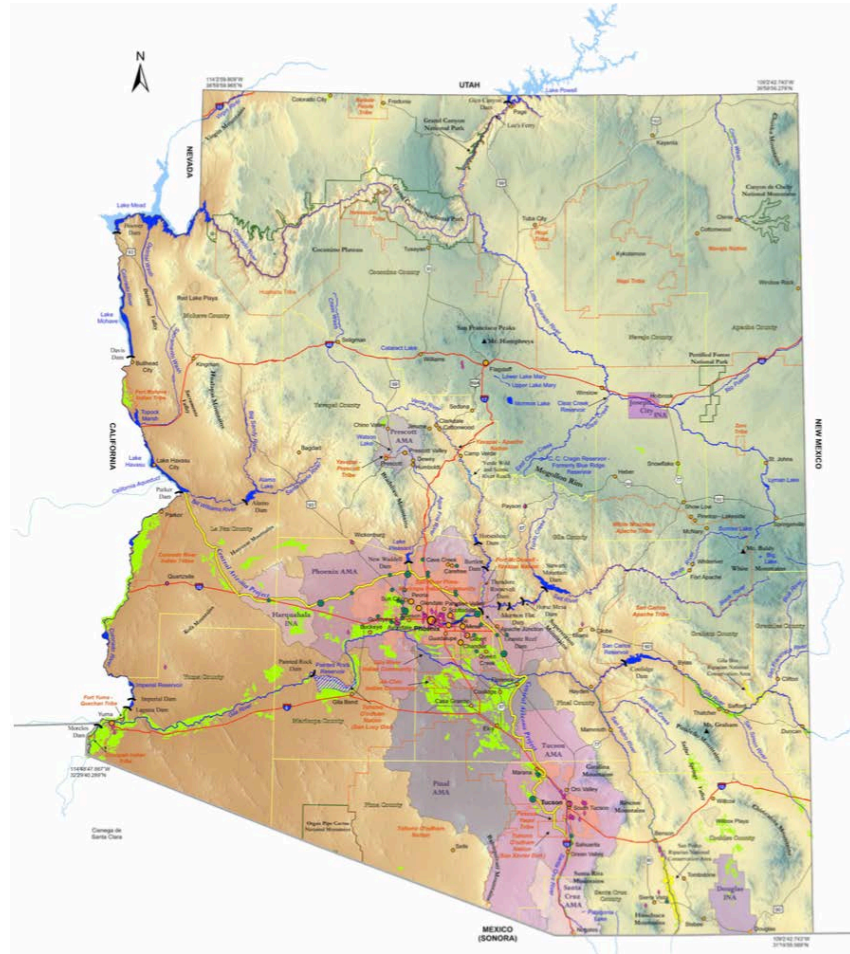
# Central Arizona Project (CAP)

- A canal system that moves and stores water from the Colorado River to central and southern Arizona
- CAP is 336 miles long, and allows Arizona to store water for droughts and shortages

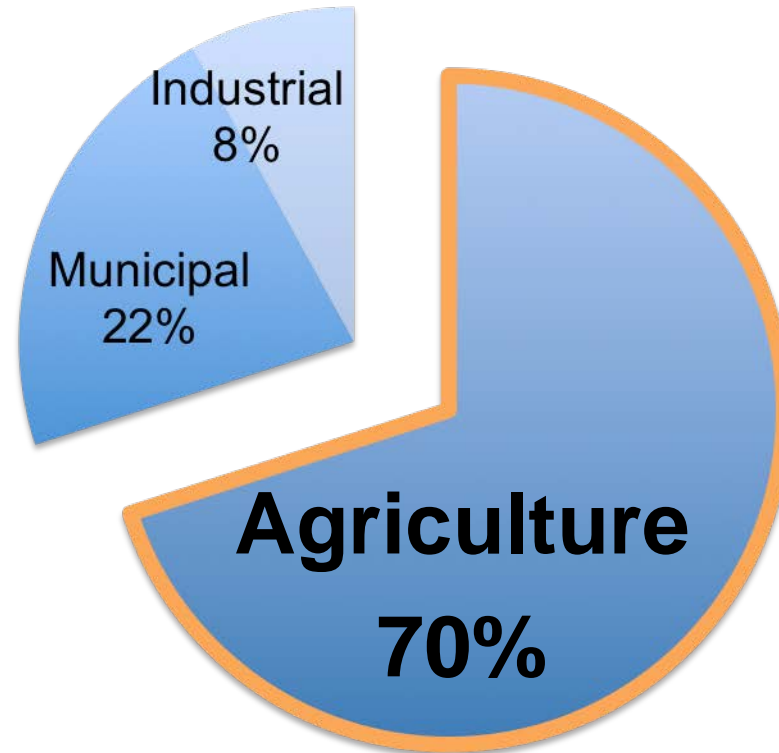




# AZ Water Map



# AZ Water Use



\*Information from the Arizona Department of Water Resources

# What Food Can We Get in AZ?

- What are the top 10 crops grown in AZ?

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Commodity	Cartons	Commodity	Cartons
1. Iceberg lettuce	23,448,232	6. Cabbage	3,785,527
2. Romaine lettuce	17,229,697	7. Broccoli	3,325,700
3. Cantaloupe	9,507,459	8. Spring Mix	3,317,097
4. Leaf Lettuce	5,392,560	9. Cauliflower	2,956,785
5. Spinach	4,760,135	10. Honeydew	2,669,039

\*Information from the Specialty Crop Guide, distributed by the AZ Department of Agriculture



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- What major livestock are raised in AZ?



Beef Cattle (and dairy)



Hogs



Sheep and Lamb

\*Information from [http://www.netstate.com/economy/az\\_economy.htm](http://www.netstate.com/economy/az_economy.htm).

# What Grows When?

With a partner, and using the Low Desert Planting & Harvest Calendar, fill out your Arizona Growing Seasons worksheet according to when the food would be found in a farmer's market.

Low Desert Planting & Harvest Calendar		KEY																								
Brought to you by the Urban Farm, Matt Suhr and Greg Peterson		= Main harvest																								
For information on classes and events offered on gardening and sustainability visit our website at <a href="http://www.urbanfarm.org">www.urbanfarm.org</a> and add yourself to our email newsletter or email <a href="mailto:Greg@urbanfarm.org">Greg@urbanfarm.org</a> or to contact Matt Suhr - <a href="mailto:happypdirt@earthlink.net">happypdirt@earthlink.net</a>		= Potential extended harvest season																								
Crop	Hardiness Temp	J	J	F	M	A	M	M	J	J	J	A	A	S	O	O	N	N	D	D	Comments					
		A	A	E	A	P	A	A	U	U	U	U	U	U	E	P	C	C	O	O		V	V			
		1	15	1	15	1	15	1	15	1	15	1	15	1	15	1	15	1	15	1	15					
Artichoke-- Globe	20														X	X	xx	X	X	*t	*t	Light frost helps first year harvest.				
-- Jerusalem	< 0	X	X	X	X	X	X	X														Can be invasive.				
Arugula	15	xxxx	x												*	X	XXXXXXXXXX	XX	XX			May be planted thickly.				
Asparagus	< 0				X	XXXX	X	X	*								t	t	t	t		Don't harvest until 3rd year.				
Basil	32	XXXXXXXXXX	X	t	X	t	X	X	X	X	X	X	X	X	X	X					X	X	Start indoors in winter.			
Bean--Blackeye	32				X	X	XXXXXXXXXX	XXXX	X	X	*												Performs well in full summer heat.			
--Fava	20																*	XXXXXX	X				Deliques heat.			
--Garbanzo	25			X	X	*													*	XXXX	X	*	Stays low to ground.			
--Green snap	32						XXXX	*					X	XX	*								Seed will rot if planted in cold soil.			
--Lentil	25			X	X	*													*	XXXX	X	*	Harvest entire plant and thresh when dry.			
--Lima	32						X	XX	X	*													Does best with trellis.			
--Pinto	32						XXXX	*					X	X	*								Harvest entire plant and thresh when dry.			
--Soy	32						XXXX	*					X	X	*								Use special varieties for edamame.			
--Yardlong	32				X	X	XXXXXXXXXX	XXXX	X	X	*												Black-seeded types do best.			
Beet	25	X	XXXX	X											*	X	XXXXXX	X					Be sure to thin if you want big beets.			
Bok Choy	22																*	X	XXXXXX	X	X	t	Bolts quickly in Spring.			
Broccoli--head	25															X	XXXXXX	X	X	t	*t	t	Light frost improves flavor.			
--Raab	25	X	X	X												*	X	XXXXXX	X	X	X		Pick frequently to maintain production.			
--Romanesco	27																		*	XXXXXX	X	t	t	Allow 15" spacing between plants.		
Brussels Sprout	22																		*	XXXX	X	*t	t	Only early hybrids do well. "Oliver" is best.		
Cabbage--Chinese	24																		*	X	XXXXXX	X	t	t	Heads form quickly. Be sure to thin.	
--standard	26																		*	X	XXXXXX	X	X	t	t	Red varieties take a little longer to head.
Carrot	23	X	XXXX	X															*	X	XXXX	X	X	X	X	Slow to sprout--mix in a few radish seeds.
Cauliflower	27																		*	X	XXXX	X	X	t	t	Fold leaves over exposed heads.
Celery	28																		*	X	X	*t	t	t	Often stringy and bitter in desert conditions.	
Cilantro	28	X	XX	X	*														*	X	XXXX	X	X	X	X	Flowers attract beneficial insects.
Collards	25	X	X	*															*	X	XXXX	X	X	X	X	Light frost improves flavor.
Corn--flour	32																								Allow to totally dry on stalk.	
--ornamental	32																								Plant in blocks for good pollination.	
--popcorn	32																								Harder kernels than flour corn.	
--sweet	32																								Supersweet var. need very warm soil to sprout.	
Cucumber--Armenian	32																								Withstands heat better than standard types.	
--standard	32																								Harvest frequently for best quality.	
Dill	27	X	X	X	*														*	X	XX	X	X	X	X	Very easy from seed. Does not transplant well.
Eggplant	32	XXXXXXXX	X	X	t	X	t	X	X	X	X	X	*												Best production in Fall.	
Endive	26																		*	X	XXXX	X	X	*	Pull leaves over center to blanch.	
Fennel--bulbing	27	X	XXXX	X	*														*	X	XXXX	X	X	X	X	Can be harvested at any size.
--herb	25	X	XX	X	*														*	X	XXXX	X	X	X	X	Flowers attract beneficial insects.

\*Planting guide from the Urban Farm

# What Grows When?

- Why might some crops grow during some seasons and in some places better than in others?





# Your Personal Food Audit

- Compare the calendar to your personal food audit.
  - What foods do you eat that you could get locally?
  - What are some items that you cannot get from AZ?
  - Are there changes in your diet that you could make to eat more locally grown foods?



# Questions?

