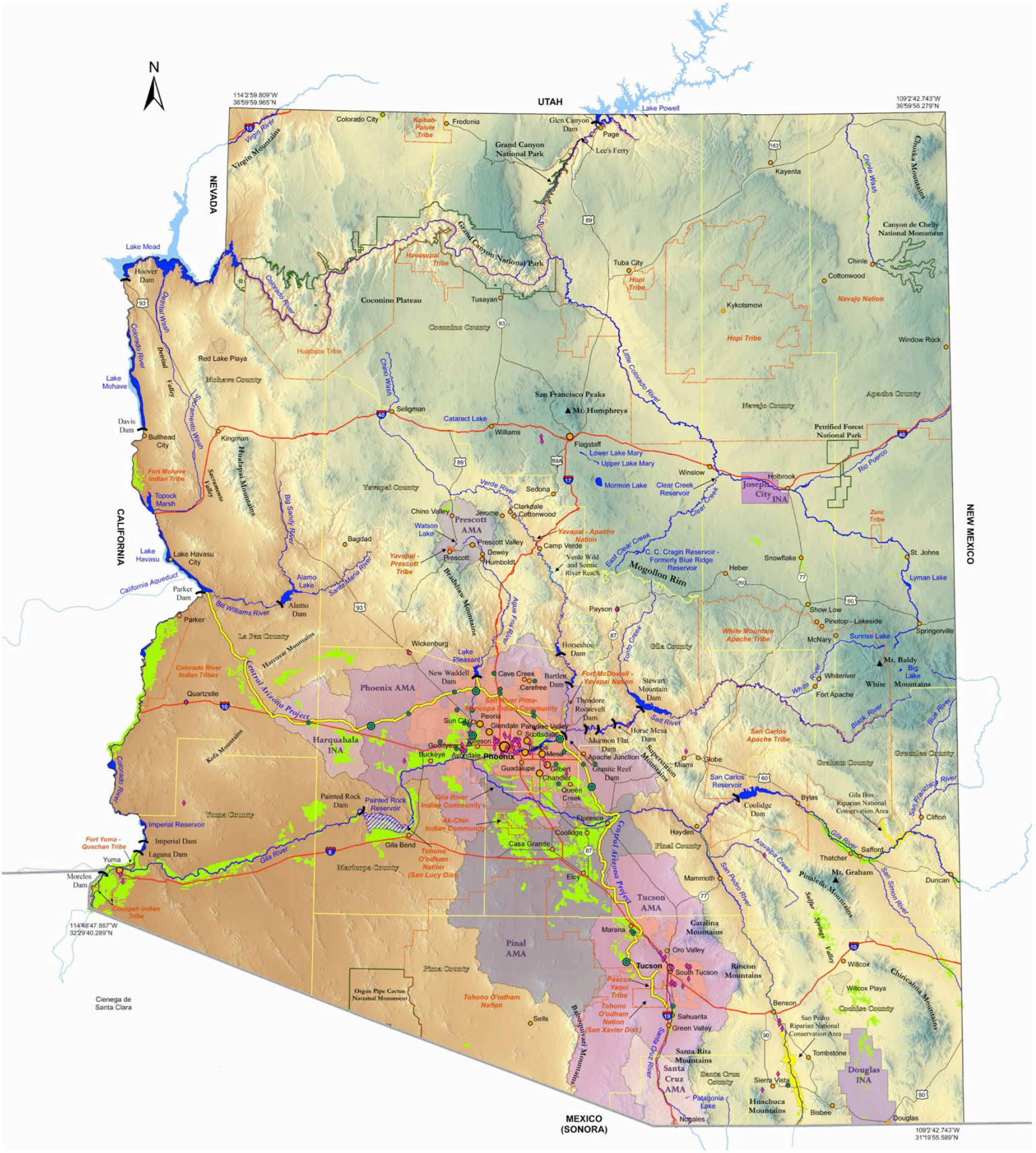
Arizona Water Map

sustainability science for sustainable schools



Arizona Water Map

The importance of water is never more evident than in this semi-arid to arid state known as the heart of the desert southwest. It is a land of extremes. Topography varies across the state from snowy mountaintops to scorching deserts, providing for great biodiversity. On the map, low elevations are delineated in brown moving to forest green for the highest elevations. Lime green areas are agricultural lands. Pink areas designate the Phoenix and Tucson greater metropolitan areas and cities are marked with orange circles, though not all cities are included. Other map features include counties, mountain ranges, National Parks, Native American Reservations and Riparian Conservation Areas.

Reservoirs, important surface water supplies across the state, are dark blue on the map. The reservoirs on the Colorado River and the 6 reservoirs around the Phoenix metro area, part of the Salt River Project water supply, account for most of the surface water used in the state. The Central Arizona Project (CAP) canal is delineated with a thick yellow line from Lake Havasu on the western boundary of Arizona to south of Tucson. Lake Pleasant is a CAP storage reservoir north of Phoenix.

Groundwater is as important to the state as any other water source. The withdrawal, use, and transportation of groundwater in the state are highly regulated in five designated active management areas (AMAs), where management goals and conservation are mandated. On the Arizona Water Map, these areas are shown in shades of purple and include the Phoenix, Pinal, Prescott, Santa Cruz and Tucson AMA's. The magnitude of overdraft in these AMAs led to their designation. Outside AMAs, persons may generally withdraw and use groundwater for any reasonable and beneficial use, subject to the groundwater transportation laws.

In areas designated as irrigation non-expansion areas (INAs), irrigation acreage expansion is prohibited and metering and reporting requirements apply to certain groundwater withdrawals. There are three INAs: the Douglas INA, Joseph City INA and Harquahala INA, also shown in shades of purple on the map.

Arizona currently uses its entire allocation of Colorado River water by storing some of the CAP water in the ground. This is done by allowing CAP water to flow to recharge basins where it can percolate into permeable ground. Groundwater recharge facilities are designated with green bulls-eye symbols.

Source: University of Arizona Extension, Arizona Water Map Curriculum
http://cals.arizona.edu/pubs/water/az1501/az1501a.pdf

Arizona Growing Seasons Worksheet

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Name: _____ Class Period: _____ Date: _____

Directions: Use the planting & harvest calendar to discover what grows when in AZ. Look up the ***main harvest*** period for each of the fruits and vegetables in the list below, and write their name during the appropriate month(s).

Arugula Asparagus Lentils Pinto beans Beet Broccoli (head) Chinese cabbage Carrot Cauliflower

Cilantro Sweet corn Eggplant Garlic Jicama Kale Lettuce (head) Melons Mustard greens

Onion (bulb) Peas (snow) Potato Pumpkin Radish Spinach Summer squash Swiss Chard Tomato Watermelon

Arizona Food Calendar

January	February	March	April	May	June	July	August	September	October	November	December

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Arizona Food Calendar

January	February	March	April	May	June	July	August	September	October	November	December
Arugula Lentils** Beet Broccoli Chinese Cabbage Carrot Cauliflower Cilantro Kale Mustard Greens Peas** Radish Spinach Swiss Chard	Arugula Asparagus Lentils Beet Broccoli Chinese Cabbage Carrot Cauliflower Cilantro Kale Lettuce** Mustard Greens Peas Radish Spinach Swiss Chard	Arugula* Lentils Beet Broccoli Carrot Cauliflower* Cilantro Kale Lettuce Mustard Greens* Peas Radish* Spinach Swiss Chard	Beet Carrot Lettuce Onions** Peas* Spinach* Swiss Chard	Garlic Onions Potato** Summer Squash** Tomato**	Pinto** Sweet Corn Eggplant Garlic* Melons Onions* Potato Summer Squash Tomato Water-melon	Pinto Sweet Corn* Eggplant Melons Pumpkin Summer Squash Tomato* Water-melon	Eggplant Jicama** Melons Pumpkin* Summer Squash Water-melon	Eggplant Jicama Melons Summer Squash Watermelon	Sweet Corn** Eggplant Jicama Melons Pumpkin Summer Squash Water-melon	Arugula Sweet Corn Eggplant Jicama Kale** Pumpkin* Radish** Summer Squash* Tomato	Arugula Beet Broccoli** Chinese Cabbage Carrot Cilantro Kale Mustard Greens Radish Spinach

* = beginning of the month

** = end of the month

Low Desert Planting & Harvest Calendar

Brought to you by the Urban Farm

For information on classes and events offered on gardening and sustainability visit our website at www.urbanfarm.org and add yourself to our email newsletter

K E Y

	= Main harvest
	= Potential extended harvest season
XX	= Ideal planting time
X	= Good planting time
*	= Can be planted (with protective measures)
t	= Set out transplants

Crop	Hardiness Temp (unprotected)	JAN 1	JAN 15	FEB 1	FEB 15	MAR 1	MAR 15	APR 1	APR 15	MAY 1	MAY 15	JUN 1	JUN 15	JUL 1	JUL 15	AUG 1	AUG 15	SEP 1	SEP 15	OCT 1	OCT 15	NOV 1	NOV 15	DEC 1	DEC 15	Comments
Artichoke -- Globe	20	* t	* t	t	t													X	X	XX	X	X	* t	* t	* t	Light frost helps first year harvest.
-- Jerusalem	< 0	X	X	X	X	X	X	X																		Can be invasive.
Arugula	15	XX	XX	X	X	X	X	X	X	*	*					*	*	X	X	XX	XX	XX	XX	XX	XX	May be planted thickly. Gets spicier in warm weather.
Asparagus	< 0			*	X	XX	XX	X	X	*									t	t	t	t				Don't harvest until 3rd year. Best planted from transplant.
Basil	32	*	*	*	*	X t	X t	X t	X t	X	X	X	X	X	X	X	X	*	*	*	*	*	*	*	*	Start indoors in winter. Very frost tender, cover in winter.
Bean--Blackeye	32					X	X	XX	XX	XX	XX	XX	XX	X	X	X	*									Performs well in full summer heat.
--Fava	20																		*	XX	XX	XX	X			Dislikes heat.
--Garbanzo	25	*	X	X	*														*	XX	XX	X	X	*	*	Stays low to ground.
--Green snap	32				*	XX	XX	*								X	XX	*								Seed will rot if planted in cold soil.
--Lentil	25	*	X	X	*														*	XX	XX	X	X	*	*	Harvest entire plant and thresh when dry.
--Lima	32				*	X	XX	X	*					*	X	X	X									Does best with trellis.
--Pinto	32				*	XX	XX	*	*						X	X	*									Harvest entire plant and thresh when dry.
--Soy	32				*	XX	XX	*	*						X	X	*									Use special varieties for edamame.
--Yardlong	32					X	X	XX	XX	XX	XX	XX	XX	X	X	X	*									Black-seeded types do best.
Beet	25	X	XX	XX	X	X											*	X	XX	XX	XX	X	X	X	X	Be sure to thin if you want big beets.
Bok Choy	22	X t	X t	* t	* t												*	X	XX	XX	XX	X t	X t	X t	X t	Bolts quickly in Spring.
Broccoli--head	25																X	XX	XX	X t	X t	X t	t	t		Light frost improves flavor.
--Raab	25	X	XX	X													*	X	XX	XX	XX	X	X	X	X	Pick frequently to maintain production.
--Romanesco	27																*	XX	XX	X t	X t	t	t			Allow 15" spacing between plants.
Brussels Sprout	22															*	XX	XX	X	t	t	t				Only early hybrids do well."Oliver" is best.
Cabbage--Chinese	24																*	X	XX	XX	XX	X t	X t	t		Heads form quickly. Be sure to thin.
--standard	26	t															*	XX	XX	XX	XX	X t	X t	t	t	Red varieties take a little longer to head.
Carrot	23	X	XX	XX	X												*	X	XX	XX	X	X	X	X	X	Slow to sprout--mix in a few radish seeds.
Cauliflower	27																*	XX	XX	X t	X t	t	t			Fold leaves over exposed heads.
Celery	28															*	X	X	X	* t	t	t				Often stringy and bitter in desert conditions.
Cilantro	28	X	XX	X	*													*	X	XX	XX	X	X	X	X	Flowers attract beneficial insects.
Collards	25	X	X	*													*	X	XX	XX	X	X	X	X	X	Light frost improves flavor.
Corn--flour	32				*	XX	XX	X	*				*	X	X	XX	X								Allow to totally dry on stalk.
--ornamental	32				*	XX	XX	X	*				*	X	X	XX	X								Plant in blocks for good pollination.
--popcorn	32				*	XX	XX	X	*				*	X	X	XX	X								Harder kernals than flour corn.
--sweet	32				*	XX	XX	X	*					*	X	XX	XX	*								Supersweet var. need very warm soil to sprout.
Cucumber--Armenian	32				*	XX	XX	X	X	X	X	X	X	X	X	X	*									Withstands heat better than standard types.
--standard	32			*	*	XX	X	X	*						*	XX	X									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	XX	XX	XX	X	X t	X t	X t	X	X	X	X	X	X	*									*	X	Best production in Fall.
Endive	25															*	*	X	XX	XX	X	X	*			Pull leaves over center to blanch.
Fennel--bulbing	27	X	XX	XX	X	*											*	*	X	XX	XX	X	X	X	X	Can be harvested at any size.
--herb	25	X	XX	X	*													*	X	XX	XX	X	X	X	X	Flowers attract beneficial insects.

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Garlic	10																	*	X	XX	XX	XX	X	*	*	Harvest when tops die back.
Jicama	32				*	X	XX	XX	X	X	X	X	X	X	*											Does well with trellis.
Kale	22	X	XX	XX	X												*	X	XX	XX	XX	XX	X	X	X	Pick outer leaves for continual harvest.
Lavender	0			t	t	t												*	X	XX	X	*				Needs sandy soil.
Leek	15	X	X	X	*													*	XX	XX	XX	X	X	X	X	Pile dirt over stalks to blanch.
Lettuce--head	28	X	XX	X	*														*	X	XX	XX	X	X	X	Allow 8-12" per plant for big heads.
--leaf	28	X	XX	XX	X	*													*	XX	XX	XX	XX	X	X	Won't sprout in hot soil.
Melons	32				*	XX	XX	XX	X	X	X	X	X	X	X	*										Rich soil, lots of H2O, lots of room.
Mint	< 0	t	t	t	t	t	t													t	t	t	t	t	t	Can be invasive. Doesn't come true from seed.
Mizuna	25	X	X	*	*													*	X	XX	XX	XX	XX	X	X	Good as baby greens or full-size.
Mustard Greens	27	X	X	*														*	X	XX	XX	XX	X	X	X	Light frost improves flavor.
Okra	32					X	XX	XX	XX	X	X	X	X	X	X	X	*									Pick frequently to maintain production.
Onion--bulb	15	t	t															*	X	XX	XX	X	X t	* t	t	Harvest when tops die back. Use short-day type.
--multiplier	15	t	t	t	t	t												t	t	t	t	t	t	t	t	Don't produce seed. Divide to propagate.
--scallion	15	X	X	X	X	*													*	XX	XX	X	X	X	X	Use long-day type.
Oregano	<0	t	t	t	t														t	t	t	t	t	t	t	Keep flowers trimmed for best leaf production.
Parsley	20	X	XX	X	*														*	XX	XX	XX	X	X	X	Very slow to germinate. Otherwise easy.
Parsnip	25	*																	*	XX	XX	X	X	X	X	Dig root before flower stalks form.
Pea--English	26	X	XX	XX	*													*	X	XX	XX	XX	XX	X	X	Does best with trellis. Blooms are frost-tender.
--Snap	26	X	XX	XX	*													*	X	XX	XX	XX	XX	X	X	Does best with trellis. Blooms are frost-tender.
--Snow	26	X	XX	XX	*													*	X	XX	XX	XX	XX	X	X	Does best with trellis. Blooms are frost-tender.
Pepper	32	XX	XX	X	X	X	X	X	X	X	X	X	X	X	*									*	X	Start indoors in winter. Best harvest in Fall.
Potato	32	*	t	t	t	*																				Harvest when in full bloom. Red potatoes do best.
Pumpkin	32				*	XX	XX	XX	X	X	X	X	X	XX	X	*										Plant June 15 for Halloween.
Radish	25	XX	XX	X	X	*													*	X	XX	XX	XX	XX	XX	Do best when day-length is short.
Rutabaga	26																	*	X	XX	XX	X	X	*		Harvest before flower stalks form.
Sage	< 0			X t	X t	t											*	X	X	X t	X t	X t				Many varieties with different requirements.
Spinach	22	XX	XX	X	X	*													*	X	XX	XX	XX	XX	XX	Bolts quickly in Spring.
Squash--summer	32				*	XX	XX	XX	XX	X	X	X	X	X	X	XX	XX	*								Pick frequently to maintain production.
--winter	32				*	XX	XX	XX	X	X	X	X	X	XX	X	*										The longer they are left on the vine, the sweeter.
Sunflower	32				X	XX	XX	X	X	X	X	X	X	X	X	XX	XX	*								Quite drought-tolerant
Sweet Potato	32					*	t	t	t	t	t	t	t	t	t											Cure tubers in warm place before storage.
Swiss chard	26	X	XX	XX	X	*											*	*	X	XX	XX	XX	X	X	X	Pick outer leaves for continual harvest.
Thyme	< 0	t	X t	X t	t	t												*	X t	X t	X t	t	t	t	t	Prefers sandy soil.
Tomatillo	32	X	XX	XX	X	X t	X t	X t	X	X	X	X	X	X	X	XX	*									Easy.
Tomato	32	XX	XX	X	t	t	t	t				X	X	X										*	X	Do best with 30-50% shade cloth.
Turnip	25	XX	XX	XX	X											*	*	*	X	XX	XX	XX	XX	XX	XX	Best flavor in cool weather.
Watermelon	32				*	XX	XX	XX	X	X	X	X	X	X	X	*										Rich soil, lots of H2O, lots of room.

Hardiness Note — **Hardiness temperature, in degrees Fahrenheit, is the point at which damage occurs in exposed plants. Extent of damage depends on length of exposure, as well as micro-environmental factors. Covering plants with frost cloth can give anywhere from 2 to 10 degrees of extra protection. Coverings are most effective when suspended close to, but not in contact with, the plant.**

Microclimates — **The exact season of growing depends greatly on your particular microclimate. A microclimate is any area of your yard that is warmer or cooler than the rest of the yard such as planting next to a block wall that retains heat into the night. Many frost sensitive plants can be grown through the winter in milder Valley locations, though with slower growth rates. Likewise with appropriate shading many heat sensitive crops can be grown into the summer months in outlying areas with cooler nights, though quality and vigor will be reduced.**

Food Audit Comparison

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Name: _____ Class Period: _____ Date: _____

Directions: Using the Food Harvest Calendar you filled out, and your personal food audit, compare the two and answer the following questions:

1. What foods do you eat that you could get locally?

_____

_____

_____

_____

2. What are some items that you eat that you cannot get in Arizona?

_____

_____

_____

_____

3. What are some changes that you could make to your diet to try to eat more locally grown foods? **Please give at least 2 examples.**

1) _____

_____

_____

2) _____

_____

_____