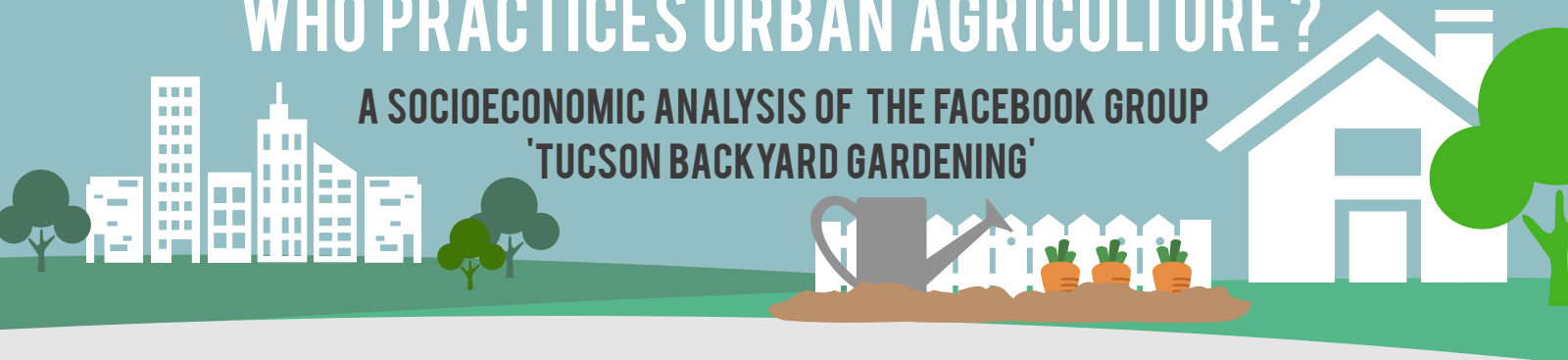


WHO PRACTICES URBAN AGRICULTURE?

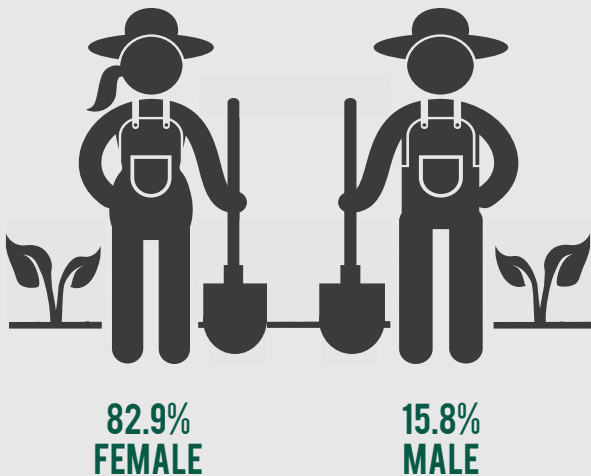
A SOCIOECONOMIC ANALYSIS OF THE FACEBOOK GROUP 'TUCSON BACKYARD GARDENING'



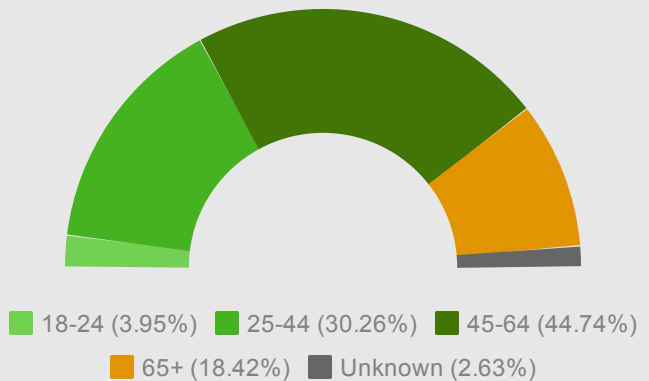
A public Facebook group, 'Tucson Backyard Gardening' provides a virtual space for local residents to connect and share their experiences of gardening in a desert climate. From posts forwarding dates of planting sales to photos requesting pest management strategies, 'Tucson Backyard Gardening' serves as a social network for individuals interested in gardening.

GARDENER DEMOGRAPHICS /OUT OF 76 RESPONDENTS

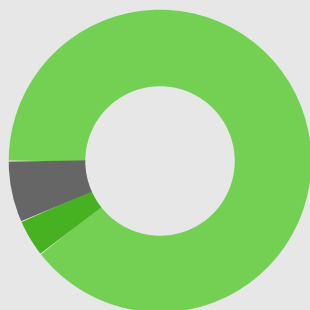
GENDER



AGE



ETHNICITY*



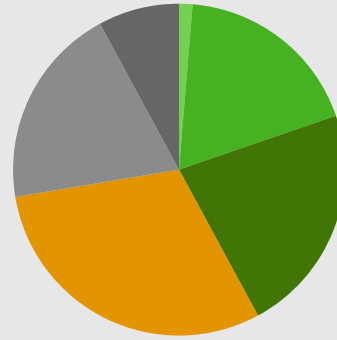
15 (19.2%) GARDENERS INDICATED THAT THEY HAVE A PHYSICAL BARRIER THAT LIMITS THEIR ABILITY TO PARTICIPATE IN GARDENING ACTIVITIES

*To reaffirm, zero gardeners identified as African American or Native American.

**1 GARDENER
REPORTED
THAT THEY ARE A
RECENT MIGRANT***

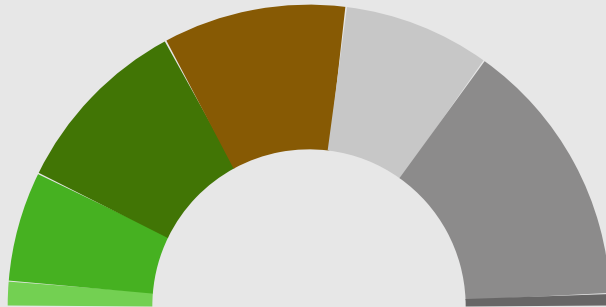


EDUCATION LEVEL



■ No High School Diploma (1.32%)
 ■ High School Diploma/GED (18.42%)
■ Associates (22.37%)
 ■ Bachelors (30.26%)
 ■ Masters (19.74%)
■ PhD (7.89%)

HOUSEHOLD INCOME LEVEL**

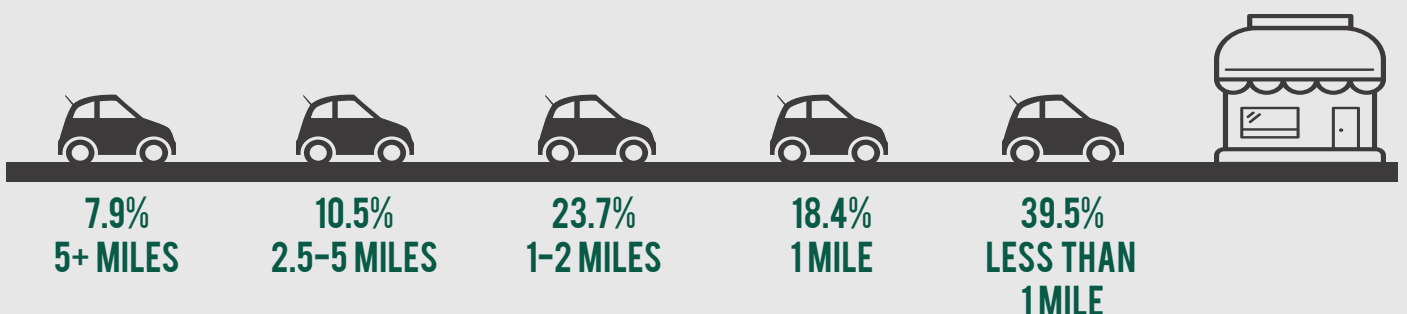


■ \$0-\$12,000 (2.63%)
 ■ \$12,001-\$24,000 (11.84%)
■ \$24,001-\$36,000 (19.74%)
 ■ \$36,001-\$48,000 (0%)
■ \$48,001-\$60,000 (19.74%)
 ■ \$60,001-\$72,000 (15.79%)
■ \$72,001+ (28.95%)
 ■ Unknown (1.32%)



**96.1%
OF BACKYARD
GARDENERS
DRIVE TO THE
SUPERMARKET**

DISTANCE OF HOUSEHOLD TO SUPERMARKET

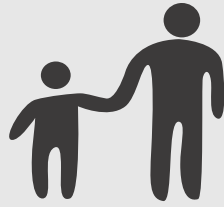


*Gardener reported having migrated to the United States in last 10 years.

**Does not factor in number of persons living in household; to reaffirm, zero gardeners reported their household income level within the range of \$36,001-\$48,000.

GARDENING SOCIAL NETWORKS

"I LOVED HAVING FOOD RIGHT IN MY OWN BACKYARD AS A CHILD!"



50 (65.8%) GARDENERS STATED THAT A MEMBER OF THEIR FAMILY HAD A GARDEN WHILE THEY WERE GROWING UP

"I GREW UP WITH FRESH FOOD GROWN AT HOME; IT TASTES BETTER & IS FRESHER!"



WHY COMMUNITY MEMBERS JOIN 'TUCSON BACKYARD GARDENING':

"I TEACH GARDENING [&] WANT TO SEE WHAT CONCERNS THE PUBLIC HAS."



21 (27.6%) BACKYARD GARDENERS REPORTED BEING MEMBERS OF GARDENING-RELATED ORGANIZATIONS PRIOR TO JOINING 'TUCSON BACKYARD GARDENING'



4 BACKYARD GARDENERS ARE ALSO MEMBERS OF A SCHOOL OR COMMUNITY GARDEN

WHY COMMUNITY MEMBERS JOIN 'TUCSON BACKYARD GARDENING':

"WE HAVE A UNIQUE ENVIRONMENT, AND [I] WANTED TO FIND A GOOD RESOURCE TO LEARN MORE."



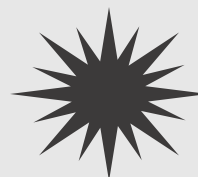
70 (92.1%) SURVEY RESPONDENTS* IDENTIFY THEMSELVES AS MEMBERS OF THE TBG FACEBOOK GROUP



OF THE 70, 48 (68.6%) DESCRIBE THEMSELVES AS ACTIVE TBG MEMBERS

WHY COMMUNITY MEMBERS JOIN 'TUCSON BACKYARD GARDENING':

"I LOVE TUCSON & IT'S GROWING OPTIONS. WE HAVE BEEN ATTEMPTING TO GARDEN FOR YEARS & LOVE THE IDEA OF HAVING LOCAL HELP."

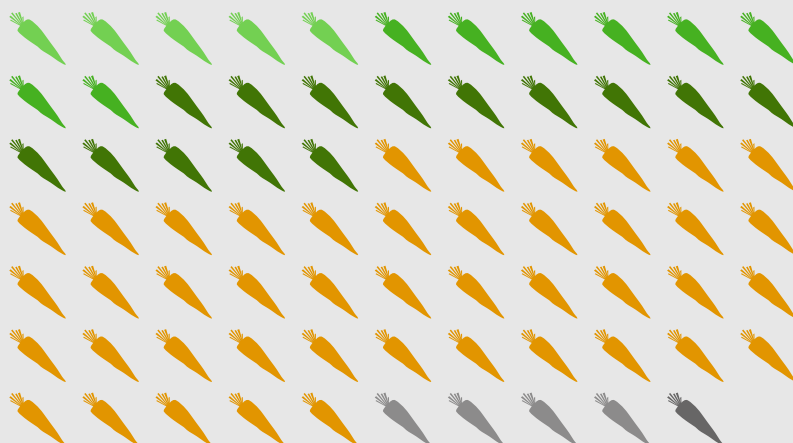


WHY COMMUNITY MEMBERS JOIN 'TUCSON BACKYARD GARDENING':

"I NEEDED ASSISTANCE & ADVICE WITH MY GARDEN, & A FRIEND TOLD ME SHE HAD HEARD OF A LOCAL GROUP THAT I SHOULD LOOK IN TO."



LENGTH OF TBG MEMBERSHIP



■ 0-2 months (6.58%)
 ■ 3-6 months (10.53%)
 ■ 6-12 months (18.42%)
■ 1-3 years (57.89%)
 ■ Not a Member (5.26%)
 ■ Unknown (1.32%)

HOW GARDENERS INTERACT THROUGH THE TBG FACEBOOK PAGE



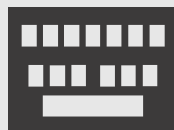
40 (52.6%) SEARCH FOR RELEVANT POSTS



39 (51.3%) POST PHOTOS



40 (52.6%) POST QUESTIONS



47 (61.8%) ANSWER QUESTIONS



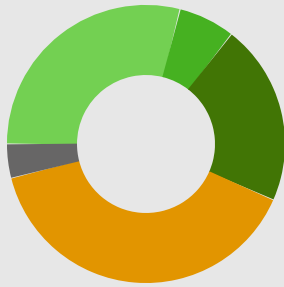
16 (21.1%) CONNECT DIRECTLY WITH MEMBERS



21 (27.6%) ATTEND LOCAL EVENTS

*Although some survey respondents did not identify as members of the TBG Facebook page, the survey was available to the public through TBG's Facebook page.

NUMBER OF IN-PERSON GARDENING MEETINGS ATTENDED IN 2016



1-2 (28.95%) 3 (6.58%) 4 or more (21.05%)
None (39.47%) Unknown (3.95%)

OF THE 43 (56.6%) GARDENERS THAT PARTICIPATED IN A GARDENING-RELATED MEETING, 28 (65.1%) FOUND THE INFORMATION PROVIDED USEFUL



21 (27.6%) SURVEY RESPONDENTS STATED THAT THEY INVITE OTHER GARDENERS TO THEIR GARDEN

WHY COMMUNITY MEMBERS INVITE OTHER GARDENERS TO THEIR GARDEN:

"[TO] SHARE MY ACCOMPLISHMENTS, DISCUSS CHALLENGES, GET NEW IDEAS, [&] SHARE OUR LOVE OF GARDENING."

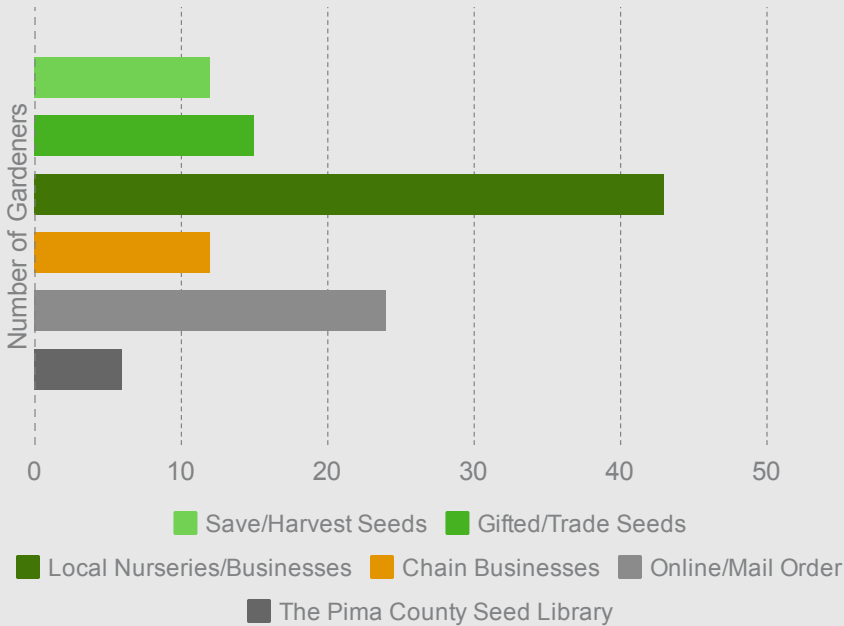


GARDENING INPUTS & OUTCOMES

WHAT GARDENERS USE TO PLANT THEIR GARDEN WITH



HOW GARDENERS OBTAIN SEEDS & SEEDLINGS



HOW GARDENERS CHOOSE WHAT TO PLANT:

"WHAT GROWS BEST IN THIS CLIMATE & SOIL, WITH [THE] LEAST WATER & LEAST CARE, OR A FEW THAT ARE GOOD FOR NUTRIENTS OF SOME KIND."

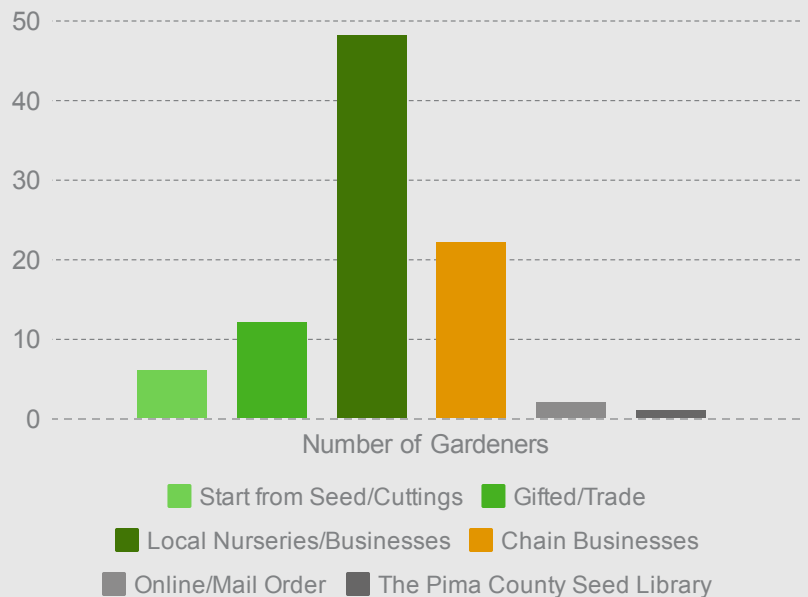


HOW GARDENERS CHOOSE WHAT TO PLANT:

"I LIKE TRYING NEW VARIETIES EACH YEAR AS WELL AS PLANTING MY FAVORITES."

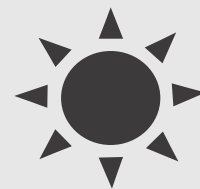


HOW GARDENERS OBTAIN PLANTS



HOW GARDENERS CHOOSE WHAT TO PLANT:

"I TYPICALLY LOOK FOR VARIETIES DEVELOPED IN OTHER HOT, ARID REGIONS, OR ONES THAT SHOW HEAT & DROUGHT RESISTANCE."



TOP 15 VEGETABLES PLANTED*

TOMATOES: 61/80.3%
LETTUCE: 58/76.3%
SPINACH: 48/63.2%
SQUASH: 48/63.2%
CHILI PEPPER: 45/59.2%
ONIONS: 43/56.6%
CARROTS: 39/51.3%
RADISH: 38/50.0%
BROCCOLI: 35/46.1%
SWEET PEPPER: 34/44.7%
SWISS CHARD: 34/44.7%
EGGPLANT: 32/42.1%
BEANS: 30/39.5%
CUCUMBER: 29/38.2%
PEAS: 29/38.2%



PRODUCTION CHALLENGES BACKYARD GARDENERS FACE:

"PROBLEMS HAVE INCLUDED
NUTRIENT IMBALANCE,
WATERING PROBLEMS, &
INCORRECT SUN EXPOSURE.
I'VE ALSO HAD PROBLEMS WITH
SQUASH VINE BORERS."

PRODUCTION CHALLENGES BACKYARD GARDENERS FACE:

"I WOULD GROW A LOT MORE,
BUT THE COSTS OF WATERING
EVEN WHAT I DO GROW NOW IS
NEARLY PROHIBITIVE."

PRODUCTION CHALLENGES



6 (7.9%)
WEEDS



8 (10.5%)
LACK OF INFORMATION



13 (17.1%)
COST OF INPUTS



24 (31.6%)
IRRIGATION
PROBLEMS



27 (35.5%)
LACK OF TIME



29 (38.2%)
CRITTERS



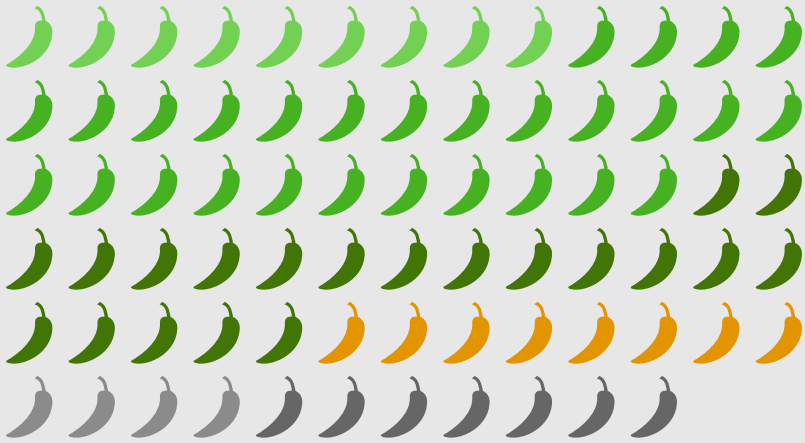
47 (61.8%)
PESTS



54 (71.1%)
TEMPERATURE
EXTREMES

*Vegetables are listed in order of most reported, followed by the number and percent of backyard gardeners that selected the vegetable.

FREQUENCY OF HARVEST

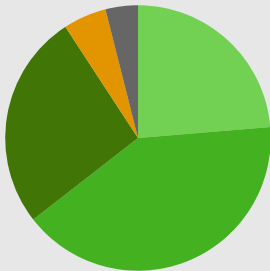


■ Daily (11.84%)
 ■ Weekly (36.84%)
 ■ Several Times a Month (26.32%)
■ Monthly (10.53%)
 ■ Once per Season (5.26%)
 ■ Unknown (9.21%)

**60 (78.9%)
BACKYARD GARDENERS
SHARE PRODUCE
GROWN FROM
THEIR GARDEN WITH THE
LOCAL COMMUNITY**

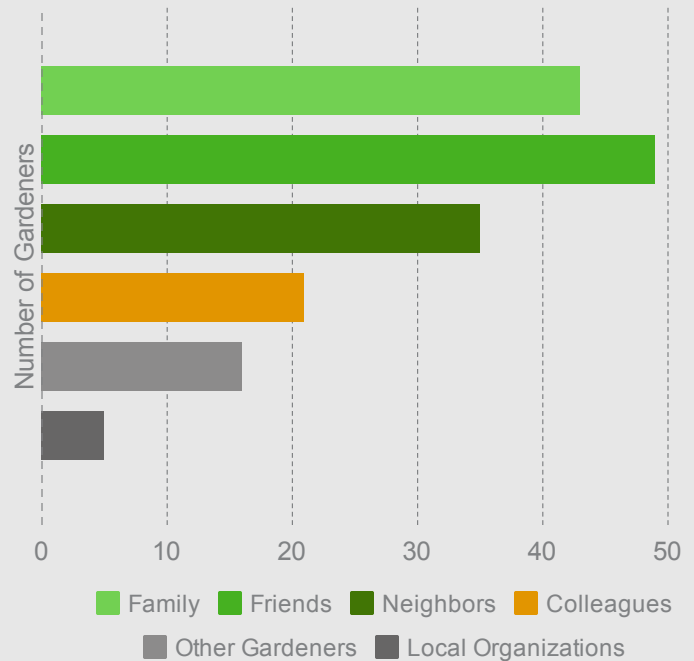


ESTIMATE OF THE NUMBER OF PEOPLE THAT GARDENERS SHARE THEIR GARDEN'S PRODUCE WITH EACH MONTH



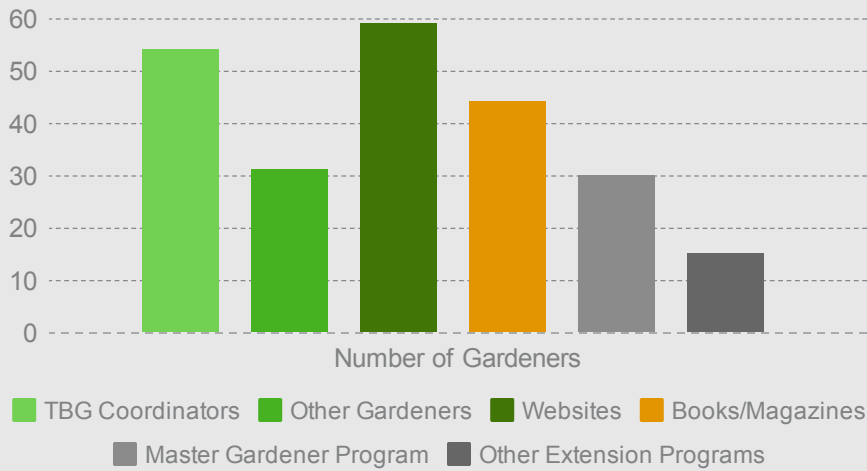
■ 1, Myself (23.68%)
 ■ 2-4 (40.79%)
■ 5-9 (26.32%)
 ■ 10+ (5.26%)
■ Unknown (3.95%)

WITH WHOM GARDENERS SHARE THEIR GARDEN'S PRODUCE



**37 (48.7%) BACKYARD GARDENERS
REPORTED THAT OTHER GARDENERS
SHARE SEEDS WITH THEM**

SOURCES OF INFORMATION GARDENERS REFER TO



**41 (53.9%)
BACKYARD GARDENERS
READ GARDENING-RELATED
NEWSLETTERS & ARTICLES**

ENVIRONMENTAL SUSTAINABILITY

**57 (75.0%) GARDENERS
REPORTED THAT THERE IS
NATURAL VEGETATION IN &/OR
NEAR THEIR GARDEN**



**51 (67.1%) GARDENERS STATED
THAT THE NATURAL VEGETATION
SURROUNDING THEIR GARDEN
ATTRACTS POLLINATORS
TO THEIR PLANTS**

POLLINATORS OBSERVED IN BACKYARD GARDEN



**50 (65.8%)
BIRDS**



**56 (73.7%)
BUTTERFLIES**



**57 (75.0%)
BEES**



46 (60.5%) GARDENERS STATED THAT THE WATER REQUIREMENTS OF A PLANT FACTOR INTO THEIR DECISION AS TO WHAT TO GROW IN THEIR GARDEN

WATER CONSERVATION STRATEGIES USED BY GARDENERS:

" [I] HAVE WOOD-LINED RAISED BEDS TO HOLD RUNOFF & HAVE MULTIPLE WATER CHANNELS SENDING RUNOFF TO NATIVE TREES FOR EXCESSIVE WATER. "

WATER CONSERVATION STRATEGIES USED BY GARDENERS:

" I USE OLLAS BURIED IN THE SOIL UP TO THEIR NECKS. I USE COCO COIR & COMPOST TO IMPROVE THE SOIL'S WATER-HOLDING CAPABILITIES. "

63 (82.9%) SURVEY RESPONDENTS USE WATER CONSERVATION STRATEGIES IN THEIR BACKYARD GARDEN



WATER CONSERVATION STRATEGIES USED BY BACKYARD GARDENERS* :

MULCH/COMPOST: 21/27.6%
RAINWATER HARVESTING: 19/25.5%
DRIP/SOAKER IRRIGATION: 18/23.7%
TIME-SENSITIVE WATERING : 13/17.1%**
REUSE OF HOUSEHOLD WATER* : 8/10.5%**
OLLAS: 7/9.2%
SOIL BASIN: 5/6.6%

WATER CONSERVATION STRATEGIES USED BY GARDENERS:

" MULCHING & SOON TO START USING OLLAS. ALSO, I WATER JUST AFTER THE SUN GOES BEHIND THE MOUNTAINS SO I DON'T HAVE AS MUCH EVAPORATION. "

*Strategies are listed in order of most reported, followed by the number and percent of backyard gardeners that reported the water conservation technique.

**To clarify, time-sensitive watering factors in the length of time spent watering and when (i.e., time of day, year).

***To clarify, reuse of household water includes the collection of water used in the home and backyard.

PERSPECTIVES ON BACKYARD GARDENING

BENEFITS OF GARDENING



37 (48.7%)
EXERCISE



41 (53.9%)
LEARN ABOUT GARDENING



54 (71.1%)
A SENSE OF PURPOSE



60 (78.9%)
RELAX



69 (90.8%)
EAT NUTRITIOUS FOOD



69 (90.8%)
ENJOY THE OUTDOORS

CHALLENGES OF GARDENING



3 (4.0%)
LACK OF PARTICIPATION
BY FAMILY/FRIENDS



18 (23.7%)
WEEDS/BERMUDA
GRASS



20 (26.3%)
COST OF INPUTS



23 (30.3%)
INSUFFICIENT
KNOWLEDGE



30 (39.5%)
TIME REQUIRED



47 (61.8%)
PESTS/CRITTERS



48 (63.2%)
UNABLE TO
PRODUCE YIELDS



57 (75.0%)
TEMPERATURE
EXTREMES

BACKYARD GARDENER RECOMMENDATIONS FOR THE CITY: HOW TO SUPPORT URBAN AGRICULTURE IN TUCSON

"Add demonstration gardens to parks. Add gardening and cooking to Leisure Classes curriculum. Use City spaces and auditoriums for garden related lectures."

"Water bill break for people growing food. Assistance with water catchment and delivery systems."

"More community gardens, or teach how to create one."

"Free tarp plant covers in winter! Keep frost down and spirits up."

"Subsidize composting of landscape waste from roadways and such, and provide to gardeners on an affordable, not-for-profit basis."

"Perhaps a website dedicated to gardening."

"Lower water rates."

"Keep regulations so that people can continue to garden in front yards."

"Start a compost program like the City of Tempe has. Encourage/require restaurants and grocery stores to compost their waste rather than throw it in the trash."

"Stop raising the water costs and incentivize local gardeners with discounts."

"Tool/equipment sharing or low cost rentals. Water collection incentives and lower cost supplies. Lower HOA restrictions."

"Keep helping folks harvest rain water, perhaps donate mulch from parks, provide curbside shipping services to turn tree trimmings into mulch or composting materials."

"More community gardens and outreach education."

"Better online advertising of events/classes and on how to utilize seed library."

"Free community gardens."

"PSAs regarding benefits of gardening could improve community's attitude about that use of water and could encourage more people to get involved in growing food and supporting local produce."

"Decrease water cost."

"Not enough people know about Trees for Tucson and Watershed Management Group or seed libraries or just how beneficial the shade trees are and how easy to grow/maintain."

"More information on low water use and native, edible plants...Information that has to do with how the [temperature] extremes here impact gardening...and it would be really useful to have information on anything that is specific to our area and different from normal gardening knowledge."

"Urban garden crew to help teach about gardens at your house. "

"Maybe a tax credit for systems that would promote water conservation, such as efficient irrigation or olla balls."

"Promote low cost composting, add more gardens/plots where people need them, have a regular swap for people's produce."

"Not wasting the food in community gardens."

"Help with water costs -- or help with costs in harvesting rainwater (for low income people...the programs I've seen are out of reach for most of my friends)."

"Possibly hosting a potluck lunch with dishes made from food grown in local gardens."

"A city compost program, I saw a video about one recently."

"Water-saving education!"

"Provide a discount to pay for water used to grow food."

"Make community garden plots available."

"Offer free wood chips, mulch, and/or compost like Tempe."

Survey completed as a component of the project 'Greening the Food Deserts of Tucson, Arizona' in collaboration with the Facebook group 'Tucson Backyard Gardening'

Research Team: Stephanie Buechler, Daoqin Tong, Ashley Erbe, & Emily Marderness

Project Website: geography.arizona.edu/greeningfooddeserts

Funded By: University of Arizona Agnese Nelms Haury Program in Environment & Social Justice