

Trees for Tomorrow Toolkit

Planting urban trees today to
ensure a healthy tomorrow

University of California
Agriculture and Natural Resources

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-Janet Hartin, UCCE Area
Environmental Horticulture Advisor
-UCCE Master Gardeners of San
Bernardino County



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PLANTING URBAN TREES TODAY TO ENSURE A HEALTHY TOMORROW

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Introduction

Trees for Tomorrow Project

Purpose of the Toolkit

To provide information on developing successful UC Cooperative Extension “Trees for Tomorrow” tree education/tree giveaway projects to recreate such projects in other communities.

The project is relevant to the following UC Agriculture and Natural Resources (UCANR) priorities (Condition Changes):

Increased preparedness and resilience to extreme weather and climate changes; Increased ecological sustainability of landscapes; Improved water quality; Improved water-use efficiency; and improved community health and wellness.

Trees offer many ecosystem and societal benefits

- Climate resilient trees cool urban heat islands,
- Promote habitat and biodiversity,
- Filter pollutants from air and soil,
- Sequester carbon dioxide,
- Reduce the need for pesticides, and provide many other ecosystem and societal benefits



While enhancing tree canopy cover in all areas of California is important, urban heat islands are particularly problematic in interior valleys and desert areas of California. Dark-colored impervious surfaces such as asphalt can attain temperatures of more than 170° F in desert cities, 160° in valley cities, and 140° F in coastal cities.

The shade from a single tree can reduce these temperatures by more than 70°, 60°, and 50° F, respectively. This is important because third degree burns can occur when bare skin (including pet paws) comes in direct contact with surface temperatures as low as 120° F. In addition to the shade produced by a tree, transpiration cools the immediate environment, as well, reducing air temperatures directly around trees between 6° and 12° F.

Introduction

From Research to Greening Urban Spaces



As part of UC ANR / USFS (US Forestry Service) "Climate-Ready Trees" research, scientists found that the "Red Push" Pistache was a drought-tolerant tree that thrived despite no watering once established. (See photo on the left.) With this information and the help of partner organizations, several "Red Push" were planted in a low-shade sports park in north Redlands, CA.

2021



2023

These pictures not only show the growth that has taken place over the past two years, but also point to the increase in canopy coverage that is to come with decades of growth.



Community involvement during tree education / planting in 2021.

Starting the Project

Building the Roots

Generate interest from your Master Gardeners

The key to the success of any Master Gardener program or project begins with generating interest from the volunteers themselves and ensuring that they have adequate input throughout the process.

If you are the coordinator for your local Master Gardener program, email your volunteers and trainees describing why you think the project would be an asset to residents of your county / counties and schedule a meeting to garner their feedback. If you are a Master Gardener, discuss your interest in the project with your coordinator. Together, decide how best to move forward.



If there is enough interest among your Master Gardeners to move forward, form a “Trees for Tomorrow” committee of interested volunteers with the specific goal of enhancing tree canopy cover in disadvantaged, low-shade communities.

- Appoint or nominate a chairperson and ensure that project duties and follow-through are part of the process.
- Recruit Master Gardener volunteers from within the communities the project is intended to reach. **This is a critical component of any successful Master Gardener project.**



Consider involving grassroots community groups and other non-profit organizations at this point, especially if they include residents of the geographical areas targeted by the project. Involving trusted members of the communities where the project will be implemented is also crucial to its success.

Developing Partnerships

Some of the San Bernardino County Partners for Trees for Tomorrow Events



Building the Roots

Developing Partnerships

This element cannot be overstated. Ensuring that the project focuses on cooling urban heat islands in disadvantaged, low-shade neighborhoods is essential. Members of these communities often have disproportional low tree canopy cover, high rates of pulmonary and cardiovascular disease, and high rates of pollutants, all of which contribute to a poor quality of life and reduced life expectancy. Enhancing tree canopy cover in areas that need it most through well selected and maintained climate-resilient trees can improve the physical and mental health and well-being of community members as well as urban ecosystem health.

Along with recruiting Master Gardeners from low-shade neighborhoods, partnering with grassroots organizations successfully engaged in the targeted neighborhoods already is important. Bypassing these opportunities is a fatal flaw that weakens rather than builds a sense of trust.



How do you find out about these local community groups?

- Check with current Master Gardener volunteers that live and work in focus communities and neighborhoods. (This is also a great opportunity to recruit volunteers in underserved areas of your county who, in turn, can inform the Master Gardener program of critical needs in their communities and help address them.)
- Check with your UCCE EFNEP, CalFresh and youth and 4-H advisors and program coordinators. They are a great initial point of contact.
- Check with local non-profit health centers, Boys and Girls Clubs, urban and community development offices, food banks, urban conservation corps, neighborhood community centers, and places of worship among many others.

Identifying under-resourced, low-shade communities & neighborhoods

In addition to seeking advice from community groups mentioned above, there are several excellent (and free!) tools available to guide you in this important area.

- Cal-adapt (climate models): <https://cal-adapt.org/>
- i-Tree (ecosystem benefits in \$, species lists, tree canopy, etc.)
<https://www.itreetools.org/>
- Cal EPA (urban heat islands):
 - <https://calepa.ca.gov/climate/urban-heat-island-index-for-california/>
 - <https://calepa.ca.gov/2022/01/31/individual-maps-and-data-files>
- USDA/USFS (tree canopy cover, disease incidence, pollution):

https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd645759.html

Putting on an Event

Hosting a Tree Education/Giveaway

Finding Event Venues

It is often a partnering organization that is the best source of a venue. Venues can include city parks, library parking lots, neighborhood community centers, K-12 sites, water district offices, and UCCE offices.

Signage

Good signage is essential. Make sure you use current UC ANR and UCCE Master Gardener program logos (found on the statewide Master Gardener Program website under “branding tools”). It is also important to include logos of all project partners; ask them for high-quality, high-resolution artwork.



Binders

Get one or two sturdy three ring binders for housing all the handouts (see below for specifics) along with the Master Gardener email and telephone helpline information. It is handy to have them enclosed in plastic for durability. The front cover of the binders should have a copy of the promotional flyer for that specific event. The intent of the binders is for Master Gardeners to have all the information in one place so they can go through it with tree recipients, who will have already received the info via email.



Acquiring and Paying for Trees

In some cases, local wholesale and retail nurseries will provide trees at a discount, and, occasionally, free. With that said, it is important that the tree giveaway project does not compete with local non-box store nurseries. They should be notified of the project and included if possible.

Another source of trees can be through grants. Before writing and submitting a grant yourself, please check with your program’s academic advisor or county director. Yet another source is through partners who have acquired grants or have in-house funding for trees. In general, one or five-gallon trees work well for the tree giveaways. They are less expensive, weigh less, and most species equal or even surpass the growth of 15-gallon specimens within three or four years of being transplanted.



Putting on an Event

Hosting a Tree Education/ Giveaway

Pre-registration for tree education/giveaway

It is useful to have tree recipients pre-register prior to the event. This ensures that the right number of trees are ordered and helps gauge interest level.

The survey tool housed in UC ANR Collaborative Tools works well for pre-registration. Questions should ensure that individuals interested in receiving a tree have enough space for a tree, have permission to plant a tree if not the property owner themselves, live in the vicinity of the tree education/giveaway, have their own transportation to pick up their tree, and agree to listen to a short talk on the specific species being distributed and tree planting and care and to be contacted later to find out how their tree is doing. (See Appendix A for sample survey)

Documents

Tree planting and care guidelines (English and Spanish)

Guidelines in English and Spanish should be emailed to pre-registrants when their application for a tree is accepted. Extra copies should also brought to the event by the Master Gardeners as a backup. (Preferably, tree recipients will take a photo of the documents which saves paper and expenses.) See Appendix B for sample Tree Care Guidelines document.

Tree species descriptions (English and Spanish)

Descriptions that include photos of mature trees and their characteristics should also be emailed to pre-registrants as soon as the final list is finalized. Ideally, this is sooner rather than later, but sometimes the nursery cannot verify the exact species on the requested list of climate-resilient trees until a few days prior to the event. It's important to be flexible, yet also stay in close contact with the nursery.

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INLAND EMPIRE
RESOURCE CONSERVATION DISTRICT

Ontario Tree Giveaway
Seeds of Joy Community Garden
Saturday, January 14

CALIFORNIA CLIMATE ACTION CORPS
UNIVERSITY OF Redlands

Pink Dawn
(*Chitalpa tashkentensis*)

- Sunset zones 3-24
- Deciduous
- Grows to 35' tall
- Lovely lavender flowers in spring and summer
- Tolerates high pH

Chinese Flame Tree
(*Koelreuteria bipinnata*)

- Sunset climate zones 8-24
- Deciduous
- Grows to 40' tall
- Tolerates poor soil
- Beautiful yellow flowers in late summer
- Seed capsules resemble Chinese lanterns

Raywood Ash
(*Fraxinus angustifolia* 'Raywood')

- Sunset climate zones 2-9 and 14-24
- Deciduous
- Fast growing to 50' tall and 25' wide
- Tolerates poor soil
- Beautiful burgundy fall foliage

Have more questions about tree planting, location, or care?

Contact the Master Gardener Helpline

- 22Trees4tomorrow@gmail.com
- (909) 387 - 2182

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Tree Species Description (See Appendix C for other samples)



Day of the Event

Tree Education/Giveaway Logistics

Set up

As is the case at all Master Gardener events, it is important to arrive early and to expect the unexpected. It takes time to set up the event signs and the Master Gardener display tables/EZ ups. Some nurseries will deliver trees to the event either free or for a nominal fee. Trees can also be picked up from the nursery itself by a Master Gardener or two with trucks. (Up to 50 five-gallon trees fit relatively easily in the back of a pickup truck.)



Pre-registration check-in

Several (3-10 depending on the size of the event) copies of the list of pre-registrants should be printed ahead of time and brought to the event. (Master Gardener trainees and Master Gardeners not experienced and/or comfortable presenting talks on tree planting and care often are comfortable in the role of checking in pre-registrants.)

Tree education

What sets this project apart from other similar tree distribution projects is a strong educational component. This is vital because without long-term care, 40% of urban trees, on average, perish by their 20th year, greatly diminishing the social and ecosystem benefits they would otherwise provide at maturity decades later. Tree education can be provided formally via a slide presentation indoors or informally (“parking lot talks”). The important point is to keep the talks short (10 - 20 minutes works well) and go over the handouts and tree species, making sure to mention further help is always available via the Master Gardener helplines. (Everyone pre-registering for a tree has already agreed to listen to a short talk and was emailed the same information in handouts. The combination of the two has resulted in consistently healthy trees over the course of the three year-pilot project in San Bernardino County.)



Day of the Event

Tree Education/Giveaway Logistics

Tree distribution

It is up to the local Master Gardener program whether they request that tree recipients select the species of tree they want from the list of available species ahead of time. There are pros and cons to doing this. Pros are that it fully engages tree recipients ahead of time to choose the tree that fits their needs the best, and it can help determine how many trees of each species to order. However, anytime items (even trees!) are given away free, there are no-shows even if pre-registrants are regularly reminded via email of their commitment and asked to send a return email if they can no longer pick up a tree. Regarding loading trees in vehicles, since pre-registrants already agreed to provide their own transportation and load their own trees, Master Gardeners generally do not provide these services.



On-site registration (to distribute any remaining trees)

It's a good idea to have on-site surveys available for walk-ups and for anyone who thought they pre-registered but aren't on the pre-registration list. (See Appendix A for sample.) The customer should generally be assumed to be right if possible. Since between 20-30% of pre-registrants usually don't come, it also works well to state that any remaining trees will be given away to walk-ups completing on-site surveys towards the end of the event.





Enjoy the event!

After all the effort and build-up to the event, be sure to enjoy connecting with community members and other Master Gardener volunteers.



Follow-up

After the Event

Follow up with recipients

Email and telephone helplines (continuous)

Even though those receiving trees already were already mailed and/or provided Master Gardener helpline information onsite, it is a good idea to send a follow-up email reminding them of the availability of the email and telephone helplines.

Check-in/survey: 3 - 6 months

It is also a good idea to check on the health of the trees by emailing tree recipients a short survey or phoning them based on their preference. In addition to asking them about the health of their tree, it may be useful to ask them about the personal value of the tree to them. Please make sure you have the follow-up survey approved by the Master Gardener Coordinator and/or Academic Advisor or County Director. In some cases, depending on the nature of the questions, it may require approval of the UC Institutional Review Board (a committee that provides ethical and regulatory oversight of research that involves human subjects).

Check-in/survey: 1 year

Similar to the earlier survey, the 1-year survey provides another opportunity to check on the health of the tree and to remind recipients that the helpline is available on a continuing basis.



Appendix A: Pre-registration Survey & Flyer

APPLICATION FOR A FREE TREE

Name (Last): _____ First: _____

Address: _____

City/Zip Code: _____

Email: _____@_____



- 1. Would you like a free shade tree for your landscape and do you live in the area?
Yes ____ No ____
- 2. Do you own the property the tree will be planted on, or have permission from the land owner to plant a tree?
Yes ____ No ____
- 3. Do you have space for a new shade tree (at least 15 feet around its trunk should be free of other trees)?
Yes ____ No ____
- 4. Do you have your own vehicle to bring your new shade tree home (e.g. small pick-up truck, SUV, van, sedan trunk etc.?). We cannot deliver trees.
Yes ____ No ____
- 5. Will you listen to a short (15 min or less) talk about how to plant and care for your new shade tree? You can take your tree home after the talk.
Yes ____ No ____
- 6. Do you agree to keep the tree well watered through its establishment period and contact the Master Gardeners (22treesfortomorrow@gmail.com) if you notice problems with it?
Yes ____ No ____
- 7. Do you agree to answer a few follow-up questions via email or text in 3 months on how your tree is doing?
Yes ____ No ____

Thank you for doing your part to cool our urban heat islands through trees.



FREE SHADE TREES

Help "Green" your neighborhood

Saturday June 10, 2023
3:00 PM – 4:30 PM

Joshua Basin Water District
61750 Chollita Road, Joshua Tree, CA 92252



<https://ucanr.edu/freetreesjoshuatree>

For Joshua Tree / Yucca Valley / Morongo Valley residents as there is a limited supply of trees.

To ensure a tree, please pre-register using the link/QR code above.

Questions? Please contact UCCE Environmental Horticulturist Janet Hartin jshartin@ucanr.edu



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ÁRBOLES DE SOMBRA GRATIS

Ayude a ecologizar su vecindario

Sábado 13 de mayo, 2023
10:00 AM - 2:00 PM

Centro Comunitario de Spring Valley Lake
12975 Rolling Ridge Drive
Spring Valley Lake, CA 92395



<https://ucanr.edu/freetreesvictorville>

¿Vive en el comunidad cerca del evento y quiere un árbol gratis?

¿Tiene espacio para el árbol y su propio medio de transporte para traerlo a casa?

¿Está libre durante el evento para escuchar una breve charla de nuestros Jardineros Maestros de UCCE sobre su plantación y cuidado antes de llevar su árbol a casa?

Si es así, regístrese previamente para su árbol utilizando el enlace apropiado o el código QR:



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Appendix B: Tree Care Guidelines

Tree Care Guidelines

Why Plant Trees? Trees cool urban heat islands; filter pollutants from air and water; absorb and store carbon dioxide; enhance biodiversity and provide habitat; provide sound barriers and windbreaks; beautify neighborhoods, and more!

Planting Your Tree!

2.5

- » Dig the planting hole 2 - 2.5 times the width of the container the tree was in
- » Plant your tree at same depth it was in the container.
- » Add soil that was removed from the hole back into the hole (Do not add compost or organic matter to the planting hole.
- » Water your tree thoroughly and keep soil moist (like a wringing out sponge) the first season.

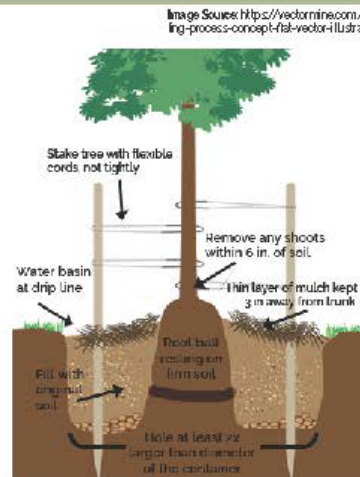


Image Source: <https://vectormine.com/Item/sapling-process-concept-161-vector-illustration/>

Image Source: www.freepermaculture.com/tree-clips/

Long Term Tree Care

- » Prune trees correctly (never top them!)
- » Keep the tree trunk dry
- » Apply mulch on top of the soil, starting 6 inches away from the tree trunk and extending outward
- » Water your tree longer and less often than the first season (promotes a deep root system to support tree as it matures).
- » Avoid spraying pesticides unless absolutely necessary. (Identify problems first! Most issues are due to other issues and spraying will reduce populations of beneficial organisms and pollinators)
- » During drought and water restrictions, water deeply 2-3 times during summer with a hose to keep your tree alive



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Image Source: <https://clipartx.com/trees-clipart-image-26068/>

Still have tree questions?
Contact the Master Gardener
helpline with the QR code



Appendix C: Tree Species Information

Spring Valley Lake Tree Give-Away

Saturday, May 13, 2023 10:00 AM - 2:00 PM



Desert Willow
Chilopsis linearis

- Sunset climate zones: 3, 7 - 14, 18 - 23
- Deciduous
- Grows to 25-30' tall
- Tolerates poor soil
- Beautiful tubular flowers



Chinese Pistache
Pistacia chinensis

- Sunset zones 4-23
- Deciduous
- Grows to 35' tall
- Lovely foliage
- Tolerates poor soil



Raywood Ash
Fraxinus angustifolia 'Raywood'

- Sunset zones: 2-11, 14-24
- Deciduous
- Grows quickly to 25' tall
- Tolerates poor soil
- Beautiful burgundy fall colors



Palo verde
Parinsonia spp.

- Sunset zones: 8 - 14, 18 - 20
- Deciduous
- Grows quickly to 15' tall
- Prolific yellow flowers in spring/summer

Questions about your trees?
22Trees4tomorrow@gmail.com

General gardening questions?
mgsanbern@ucanr.edu • 909-387-2182



CALIFORNIA CLIMATE ACTION CORPS



INLAND EMPIRE RESOURCE CONSERVATION DISTRICT



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Muscoy Tree Give-Away

Regalo de Árboles en Muscoy

Dec. 3, 2022



CALIFORNIA CLIMATE ACTION CORPS UNIVERSITY OF Redlands

Chinese Flame Tree
(Koelreuteria bipinnata)

- Sunset climate zones: 8-24
- Deciduous
- Grows to 40' tall
- Tolerates poor soil
- Beautiful yellow flowers in late summer
- Seed capsules resemble Chinese lanterns



Jabonero de la China
(Koelreuteria bipinnata)

- Zonas climáticas (al atardecer): 8-24
- Caduco
- Crece hasta 40' de altura
- Tolera tierra deficiente
- Hermosas flores amarillas a fines del verano
- Las semillas se parecen a las lanternas chinas

Pink Dawn
(Chitalpa tashkentensis)

- Sunset zones 3-24
- Deciduous
- Grows to 35' tall
- Lovely lavender flowers in spring and summer
- Tolerates high pH



Chitalpa
(Chitalpa tashkentensis)

- Zonas climáticas (al atardecer): 3-24
- Caduco
- Crece a 35' de altura
- Hermosas flores de color lila en primavera y verano.
- Tolera pH alto en la tierra

Have more questions about tree planting, location, or care?
Contact the Master Gardener Helpline
22Trees4tomorrow@gmail.com
(909) 387 - 2182



¿Tiene más preguntas sobre la plantación, la ubicación o el cuidado de árboles?
Póngase en contacto con la línea de ayuda de Master Gardener
22Trees4tomorrow@gmail.com
(909) 387 - 2182



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Appendix D: Event Hosting Timeline

Several months before a tree education/giveaway

- Build a team of volunteers/committee especially with those who are residents or connected with low-shade communities.
- Identify low-shade communities that could benefit from tree planting.
- Connect with grassroots community groups and non-profits that are working in these communities.
- Build and foster partnerships with these groups.

1-2 months before a tree education/giveaway

- Find a venue for the event (potentially in connection with partner groups).
- Acquire and pay for trees starting with local nurseries.
- Print signage and documents for the event.
- Upload survey so that people can pre-register for a tree as the event is promoted.

2-3 weeks before the event

- Create a flyer and promote the event through different community groups and social media channels.
- Have recipients pre-register and fill out the survey.
- Once tree species are known, email recipients what kinds of trees will be available at the event.
- Coordinate volunteers' roles for running the event (set-up, registration, tree pick-up, tree education, tree distribution).

1 week before the event

- Send recipients tree planting/care guidelines as well as information about tree species.
- Prepare binders with all the documents (tree care guidelines, tree species, and registration list of recipients).
- Confirm with volunteers who will be helping and especially who will pick up the trees. Also confirm the venue for the event.
- Remind recipients of the event a couple times a few days before the event.

Day of the event

- Volunteer or coordinator picks up the trees.
- Others arrive early to set up and welcome recipients and check them in.
- Tree education talk is given and then trees are distributed.
- Any extra trees can be given to walk ins if they fill out the survey questions.

After the event

- Send helpline contact information for recipients to send questions on tree care.
- Send a 3- or 6-month survey follow-up about how the tree is doing.
- Send 1 year survey follow-up about how tree is doing.

**PLANTING
URBAN
TREES
TODAY TO
ENSURE A
HEALTHY
TOMORROW**

