

**Office of the President
California State University, Chico**



Executive Memorandum 18-010

May 10, 2018

From: Gayle E. Hutchinson, President

Subject: Establishment of the Campus Vegetation and Arboretum Committee

Upon the recommendation of the Academic Senate and the concurrence of the Provost, I approve the Establishment of the Campus Vegetation and Arboretum Committee (CVAC) policy, effective immediately.

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| Policy Title: | EM 18-010 Establishment of the Campus Vegetation and Arboretum Committee (CVAC) |
| Contact: | Academic Senate Office |
| Supersedes: | |
| Revision: | |
| Enabling Legislation or Executive Order: | |

POLICY

To provide the University with guidance and expertise concerning planning, policy, and maintenance of the campus vegetation and urban ecosystem. This policy is provided to assure the proper protection of a valuable University resource, trees, and to restore and maintain some degree of ecosystem function within a working urban environment.

SCOPE

The primary mission of the Campus Vegetation and Arboretum Committee (CVAC) is to help create and review policies that seek to maintain and enhance the educational and aesthetic value of the CSU, Chico Arboretum and associated vegetation. To this effect, the committee is dedicated to 1.) Preservation of historic trees and planning for future plantings, 2.) Enhancement of the natural beauty and character of the campus, 3.) Enhancement of vegetative structure to maximize ecosystem services and functions such as air quality, soil stabilization, carbon sequestration, microhabitat modifications, wildlife habitat, and campus biodiversity and 4.) Providing an extended classroom and living laboratory that serves the educational mission of the University. The establishment of these guidelines are to facilitate long-term planning to maximize the use and future of the campus vegetation and arboretum as a historical, aesthetic, ecological, and educational resource.

In addition to the day-to-day observations and recommendations made by Facilities Management and Services (FMS) grounds staff, FMS proposes a recurring visual assessment and maintenance program that takes place every 6-9 months. Each formal assessment will be conducted with a certified arborist who will provide recommendations to be discussed with CVAC, and if in agreement, tree maintenance work or removals will be conducted by FMS.

RESPONSIBILITIES

Committee Structure:

Due to the specialized nature of the committee, the members of the committee will consist of the following. Faculty members are appointed by the Academic Senate Executive Committee with CVAC consultation.

1. A faculty member from the Department of Biological Sciences whose specialty is plant diversity.
2. A faculty member from the College of Behavioral and Social Sciences
3. A faculty member from the College of Agriculture.
4. A faculty member for the College of Communication and Education.
5. A faculty member from the Department Geological and Environmental Sciences with a specialty in applied ecology (restoration).
6. An additional faculty member with professional experience in botany or a related field.
7. An emeritus faculty member from the Department of Biological Sciences (This position can remain un-filled if there are no appropriate nominees.)
8. The Supervisor of Grounds and Landscaping.
9. A staff member appointed by the Chair of Staff Council.
10. A representative from the Associated Students Sustainability Committee.
11. The Campus Architect.
12. A student with interest in botany or a related field appointed by the Associated Students.
13. A representative from the Chico community with interest in botany or a related field.

Terms: Faculty and staff serve staggered three-year terms. The student member serves a one year term.

Meetings: The committee will meet at least twice per semester to discuss issues and planning associated with the campus vegetation.

Officer Positions:

Chairperson: CVAC will be chaired by a faculty member elected by the committee from its membership, every three years.

Secretary: A secretary will be elected by the committee from its membership, every three years. Notes of each meeting will be provided to the Academic Senate office within

one week following each meeting.

This policy establishes that the CVAC will:

- Work with the academic departments that utilize the Arboretum and campus vegetation.
- Provide direction for the management of existing plant collections, their development and expansion, and the addition of new specimen collections.
- Work to provide long range planning which aligns the ecological and educational functions of the campus vegetation with both the Physical and Academic Master Plans.
- Work cooperatively with the City of Chico regarding recommendations for tree and vegetation plantings surrounding campus.
- Evaluate and make recommendations regarding service-learning proposals.

The Campus Vegetation and Arboretum Committee (CVAC) establish the arboretum and landscaping guidelines as described below for all of the vegetation on the main California State University, Chico campus. The implementation of the plan shall be carried out primarily by FMS.

To further inform the policies surrounding vegetation on this campus, CVAC shall develop and maintain a tree plan that describes the location, type, age, and condition of each tree on campus. All trees will be mapped using GPS. The tree plan shall be used to develop short range (6-12 months) and long-range (5-10 years) maintenance schedules specific to the needs of each species/location and a long-range budget plan for tree maintenance and replacement.

The purpose of this plan is to establish a clear set of policies and procedures for campus vegetation management that are consistent with the vision established via shared governance between University administration and the campus community.

Trees must be managed in urban environments to provide all of the inherent benefits while minimizing hazards. Implementation of this plan will maximize the health of individual trees and the vegetation as a whole. Specific objectives include:

1. Develop consistent strategic policies for tree maintenance, including pruning, planting, removals, and preservation.
2. Establish guidelines for the CVAC.
3. Optimize the benefits of carbon sequestration, water use efficiency, energy conservation, and air pollutant removal provided by campus trees.
4. Augment the use of the campus arboretum and vegetation as an educational and outreach tool for the campus and surrounding community.
5. Restore native vegetation along Big Chico Creek riparian corridor, including replanting when large trees need to be removed for safety purposes, and the regular removal of non-native vegetation, except where existing historical plantings are preserved.
6. Develop a dynamic tree inventory for more efficient and comprehensive maintenance of the campus arboretum.
7. Develop interpretive signage, tree identification tags, and a mapped, self-guided arboretum/vegetation tour.

8. Reduce the extent of lawns on campus for water-use efficiency, educational gardens, and native plant species, where appropriate, and as aligned with Physical Master Plan.

DYNAMIC TREE INVENTORY

A complete inventory of trees on the CSU, Chico campus shall be developed and subsequently updated on a yearly basis by FMS personnel.

Once fully inventoried and databased, a critical evaluation will need to be conducted for:

- age class distribution
- total canopy coverage in each section of campus
- species diversity
- distribution of native and non-native trees
- location of any invasive, non-native trees
- wildlife habitat features (e.g. holes in branches and trunks, granary tree, etc.)
- number and location of trees in need of short range (6-12 mo.) or long-range (5-10 yr.) maintenance

PRIORITIES FOR PLAN IMPLEMENTATION

This policy balances three overarching goals within a well-managed campus arboretum:

1. Maintenance of native species along the Big Chico Creek riparian corridor and native species habitat “islands” for pollinators and native habitat diversity.
2. Management of a healthy, stable, diverse arboretum.
3. Management for education and aesthetic purposes.

Native Species: Increase the prevalence of native tree species to a minimum of 20% native tree species across campus. Separately, the Big Chico Creek riparian corridor, as established by the Physical Master Plan, should contain 100% native species with the exception of existing historical plantings. The Big Chico Creek riparian corridor serves as a reservoir of native biodiversity connecting native habitat planted around campus. Greater emphasis on native plantings along Big Chico Creek and throughout campus will increase water use efficiency and reduce invasive species propagule pressure along the creek. An increase in native species prevalence will be accomplished by replacing dead, dying, or diseased non-native tree species with native tree species. Doing so will afford CSU, Chico the benefits of an increased native population, such as resistance to native pests and reduced maintenance. It may be difficult to increase numbers much above this point because of the amount of trees already on campus. An increase in native species prevalence will be accomplished by replacing dead, dying, or diseased exotic species with native ones. The U.S. EPA lists three characteristics to define a native plant: 1. They have evolved within a particular region over thousands of years. 2. They have adapted to the geography, hydrology, and climate of their particular region. 3. They have typically evolved within communities, adapted to each other and to the complement of native animal species that cohabitate with them.

Age Class Structure: Manage for a minimum of 10% and optimally a 20% presence for each age class (young, semi-mature, mature, over-mature). A diverse age class structure will reduce catastrophic tree losses to a single age class.

Education and Outreach: The CSU, Chico campus arboretum and vegetation presents an excellent opportunity to educate students, visitors, and the community about the benefits of trees in urban areas, agriculture, sustainable horticulture, ecology, and botany. CSU, Chico shall continue to use the campus vegetation in the following ways:

Service learning projects

Service learning projects present an excellent opportunity for students and community members to get hands-on experience in improving the campus forest. **All service-learning projects associated with the campus vegetation must be approved in writing by CVAC.** Subsequent maintenance of the project will be the responsibility of FMS.

Examples of potential service learning projects include (but are not limited to):

- Establishment of a medicinal herb demonstration garden
- Establishment of vegetable garden to be utilized by campus food services
- Establishment of a small tree fruit orchard
- Removal of non-native vegetation along the Big Chico Creek riparian corridor

Maintenance: FMS is responsible for the maintenance of all University trees. FMS shall perform all tree trimming, surgery, or other maintenance services; or supervise a licensed and International Society of Arborists (ISA) certified tree service company performing such services with the exception of areas designated as agricultural plots. The Supervisor of Grounds and Landscaping, shall review all plans for the cutting, trimming, and/or removal of any University tree prior to such activities occurring. The Supervisor of Grounds and Landscaping shall also be responsible for determining which tree roots may be cut, trimmed, and/or removed during routine building maintenance and construction, following established Best Management Practices. If the Supervisor of Grounds and Landscaping determines that a tree must be removed, s/he shall consult with CVAC prior to removal.

The City of Chico retains the right to perform all tree services with city staff on trees located on city property or city rights of way. *All* trees located on City property or in the City right of way shall not be cut, trimmed, or removed without the prior and specific approval of the City's official responsible for tree maintenance. Ideally, CVAC and the City of Chico will work cooperatively for aesthetic consistency on the trees and vegetation surrounding campus.

The California State Park system similarly retains the right to perform all tree services on the ground of Bidwell Mansion. No state-owned trees located on Bidwell Mansion property shall be cut, trimmed, or removed without the prior and specific approval of the park staff responsible for tree maintenance.

All tree maintenance shall conform to ANSI A300 standards in order to promote the health and structural integrity of trees. The safety of the campus community should be the top priority in

managing campus trees. Therefore, maintenance tasks should first be performed to ensure that no trees present a hazard. Maintenance for tree health and aesthetic purposes may proceed after this has been accomplished.

Tree Pruning: All pruning shall conform to ANSI A300 standards. All pruning cuts should be made to ensure the health and safety of the target tree. Cuts should be made so that only branch tissue is cut, with no damage to stem tissue. If a portion of a branch is removed, the branch should be cut back to a point where the remainder of the branch can assume dominance. No more than 25% of live branches should be removed from a healthy tree in one growing season. A live crown ratio of at least 66% should be maintained for all trees. As is allowed by budgetary constraints, tree pruning should be preventative rather than reactionary to minimize structural and safety issues. Proper pruning can reduce future storm damage and safety issues. Trees should be pruned on a regular cycle. Pruning priority should be given to trees based on age class. Priority should be given in the following order:

1. Young trees. The first priority in pruning should be given to young trees. Pruning young trees frequently will help prevent structural problems in the future. The goals of young tree pruning include promoting a strong central leader and proper branch spacing.
2. Semi-mature trees. Semi-mature trees should be pruned to promote proper structure and to alleviate safety and aesthetic concerns. Trees may need to be raised or reduced to provide proper clearance to infrastructure or neighboring plants.
3. Mature trees. Mature trees should be pruned to remove large dead limbs and alleviate other safety issues. Structural pruning may be needed to correct problems that have developed over the tree's lifetime, or to provide proper clearance to infrastructure or neighboring plants.
4. Over-mature Trees. Pruning of over-mature trees should only take place to mitigate a hazardous situation. This might involve the removal of large dead or cracked limbs, limbs overhanging a parking lot, etc.

Tree Selection and Planting: All trees species must be carefully selected with respect to cultural requirements and location with respect to other plantings, microhabitat, and infrastructure to ensure that they will have the best chance of providing maximum potential benefits over their lifespan. Tree planting can be used as a tool to draw attention to the campus forest and its benefits. Planting can also be used as a tool for educating the campus on proper tree care through service projects. Planting is justified when such benefits, coupled with the benefits of the planted trees over their expected lifespan far outweigh the cost of planting. See Appendix for a list of appropriate tree species. Additional species may also be appropriate for educational purposes, provided they are not considered invasive in our climate and are not known to cause infrastructure problems (e.g. sidewalk heaving or aggressively compromising water lines).

Trees should be planted where they will have the best opportunity to survive, while providing maximum potential benefits as part of the campus forest. They should not be planted too close to buildings, or otherwise where natural canopy height or spread would be obstructed. Trees should be planted with sufficient soil space for roots to grow and anchor properly. Selecting a tree with the proper form and size for its location minimizes future pruning, and maintenance costs. Potential services of trees should also be considered in selecting a location for planting, for

instance, to reduce erosion and improve soil percolation.

Planting should occur in the fall or early winter, soon after the rainy season begins to improve establishment success. Planting may occur at other times of the year if plants are regularly irrigated. Temporary water basins should be constructed around shrubs and trees and left in place until the plants are established generally within the first one to two years after planting. Mulch should be maintained around, but not touching the trunk, to at least three inches deep to help increase soil moisture and reduce weed seed germination.

Sources: The University should strive to purchase trees from sources that use locally grown, native trees or non-native trees of educational value. This has the double benefit of receiving trees adapted to the local environment and reduction of tree transportation costs. Local is considered a native species typically considered within 120 miles within the planting sight, as recommended by LEED standards.

Fertilization/Soil Amendments: In the case where tree health is impacted by the quality and content of its soil, amendments to the soil may be made to improve the condition of the tree. However, native trees should not be fertilized. Amendments may include fertilization, pH modification, drainage improvement, etc. Soil sampling should be performed before any amendments are made to determine the soil characteristics of the site and amendments needed.

Watering Trees: Trees should be watered to ensure their health and vigor. Any trees showing signs of water stress (leaf browning, wilting, etc.) should be watered as resources allow. If the prevalence of drought increases as a result of climate change, CSU, Chico must be prepared to respond accordingly, however the planting of native trees, should minimize this problem.

Protection and Preservation: All trees should be evaluated for their potential to be preserved when located in an area planned for construction. Trees should only be removed for construction when the cost to preserve them is too significant to justify the loss of potential future benefits. Therefore, benefits such as aesthetics, energy savings, carbon sequestration and pollutant removal, among others should be closely weighed against the cost of preservation. Tree removal decisions shall be made by FMS, with assistance from the CVAC.

Tree Damage Assessment: Assessment of tree damage caused by any contractor will be the responsibility of FMS, with assistance from the Campus Vegetation and Arboretum Committee. Assessment will include determination of the cause of damage and appropriate remedies to return the damaged tree to health, if possible. Any contractor found to be responsible for damage to trees during construction or other activity shall be held liable. They will be required to fund the replacement cost of any trees lost, or to fund the cost to repair damage to any trees that can be saved. Replacement cost shall be determined using the valuation method established by the Council for Tree and Landscape Appraisers (CTLA). Any individual or entity wishing to appeal a tree damage penalty may request a meeting with FMS, where they can explain why they should not be held liable.

Tree Risk Assessment: A risk assessment should be performed on trees deemed to be a potential hazard. The assessment should be performed by a qualified employee of FMS or member of the Campus Vegetation and Arboretum Committee. A visual assessment should first

be performed to determine the general hazard potential of the tree and if further inspection is necessary. Further assessment may be performed if necessary, including a climbing inspection and/or drilling of the tree stem to determine the amount of decay present, etc. Trees located in high traffic areas, with historical significance and those that provide a large amount of other benefits should be favored for inspection over others.

Safety Issues: When responding to an event, it is important to resolve safety issues first. Trees that have been damaged to an extent that they are no longer structurally sound and present a potential hazard should be immediately removed. Large hanging branches should also be removed to eliminate the potential for them to fall and cause injury.

Tree Health Issues: Any event that causes damage to trees could potentially affect their health. These issues should be taken care of as time and expense permit, with trees of high value receiving priority.

Forest Product Utilization and Debris Re-use: When trees are pruned or removed, the resulting debris is generally chipped to ease its disposal. In order to promote overall sustainability on the campus, forestry debris should be kept on campus whenever possible. Leaves and other material with high organic matter content can be turned into mulch, which can then be utilized in a number of landscape applications. When entire trees or large limbs are removed, or have fallen, there is the potential to lumber the wood for re-use. This wood can be made into products such as benches, works of art, signs, tables or other wood products for the campus.

Fruit Production: The idea of eating locally-grown, organic produce has gained much popularity in recent years. Such food offers the benefit of knowing one's food source, reducing the distance food must travel to reach the end consumer and reduction in the use of pesticides. CSU, Chico could take advantage of these benefits by establishing a small orchard of fruit trees on its campus. Such an initiative could be part of a larger overall effort to establish urban agriculture on the campus. Fruit and nut trees that could be successfully grown on the CSU, Chico campus might include various species of cherry, plum, walnut, pecan, etc

Besides serving as a source of locally grown food, establishing an orchard on campus would have several benefits. Management of the trees, including pruning, soil amendments and harvesting fruit could provide volunteer opportunities for students. Students from the campus and surrounding schools could visit the orchard to learn about local food production and orchard operations.

Recommended and Prohibited Species: Trees recommended for planting are those generally considered to be native northern California that do not have a known potential for invasiveness. Those especially beneficial for benefits to wildlife, aesthetics, or other reasons are also favored. Tree species selection for planting should be based on several factors in addition to those listed in the planting guidelines, above. Trees should also be avoided that have the potential for major disease contraction in the near future. A comprehensive list of recommended species is listed in the Appendix. These lists are general for the campus as a whole. However, the specific characteristics of a planting site must be considered in determining an appropriate species. The

campus shall keep a current list of prohibited species. No species on this list is to be planted anywhere on campus. Reasons for a species being placed on the list might include invasive nature or extreme susceptibility to insect or disease, among others. The current list of prohibited species as of the printing of this report is shown in the Appendix.

Prohibited Practices: Certain practices are known to be detrimental to individual trees and the campus forest as a whole and may interfere with proper management of the campus forest. The following is a list of such practices that shall be prohibited:

1. No tree shall be planted without permission of the CVAC (by any campus department or group) and coordination with FMS. This prevents the planting of prohibited species and species not suited for a particular location, and allows those managing the campus forest to be up-to-date on the status of all trees planted on campus.
2. No tree maintenance, such as pruning or removal, shall be conducted without the approval of FMS. This prevents maintenance detrimental to the health and safety of trees and maintenance not performed in accordance with ANSI standards.
3. Vandalism of trees is prohibited. This includes the attachment of any type of sign, bicycle or other object to a tree in such a way that may be harmful to the tree.
4. Tree topping involves the improper pruning or removal of limbs without regard for the structure or growth pattern of the tree. This leads to several problems, including:
Reduction in potential for the tree to heal -Creation of improper crown balance -Weak growth of new branches, which can lead to structural and safety issues.

Trees will be dealt with based on the following criteria:

Emergency work (life/safety issues):

Trees that pose immediate threats to people should be dealt with immediately after noticing the problem. The area will be cordoned-off to prevent any pedestrian or vehicular traffic. In order to move quickly, we should consider having a backup contractor in place in the event that our 'go-to' contractor is unavailable for service.

- Trees that have sustained heavy damage due to storms, mechanical damage or 'acts of god' that threaten public areas or buildings
- Trees with 'hangers'* or visibly dead limbs that threaten public areas or buildings
*'hangers' is a term used for broken limbs that have not fallen to the ground, but are hanging in the tree canopy. The potential hazards of a hanging limb varies with the size of the limb, distance to the ground and proximity to public spaces

Priority work- (building at risk, potential risk to people):

For instances where a building is at risk from a tree, the problem should be addressed as soon as possible with the understanding that each instance will likely be unique and will require input from several key managers on campus. Decisions on Priority work in this category, as well as the charge for implementation, are the responsibility of the Executive Director of FMS. Mainly, infrastructure concerns with regard to tree roots and exterior concerns such as broken windows, damaged roofs and damage to the façade etc.

- Trees that have very large scaffold branches growing over walkways, seating areas, and doorways.
- Trees that have grown outward from buildings, creating a steep angle.
- Trees that have become overgrown with invasive plants such as Ivy or Wild Grape,

where the health of the tree is in decline, and therefore poses a risk to pedestrian traffic.

- Trees that hang over rooflines.
- Trees that lean against buildings, or obstruct building functions such as ventilation, intake, or other.
- Trees that are buckling sidewalks and creating trip hazards.
- Trees that are threatening to disrupt power lines or underground utilities such as gas, steam, irrigation, and electrical.
- Trees that have overgrown and impeded access to underground utilities such as manhole covers and valve boxes.

Sick Trees – (visibly unhealthy, but pose little risk):

Typically, these trees have been noticed months or weeks prior, and are on a ‘watch list’. In these instances, an arborist would be contacted as soon as the problem arises. In conjunction, members from the Campus Vegetation and Arboretum Committee would be contacted.

- Trees that may be suffering from root rot.
- Trees that have visible dieback on the upper canopy.
- Trees that are in decline due to disease, mechanical damage, or insect damage.
- Trees that have had several branches broken or lost over the years that now have contracted disease and are in decline.

Annual tree work / aesthetic maintenance pruning:

- Trees that pose little to no risk to people or buildings.
- Trees that will be overgrown, and un-slightly but are non-threatening.
- Trees that need routine thinning and end-weight reduction.

Trees to also consider are those that are within the Riparian Corridor that runs through campus. At this time, those trees are under management by the Central Valley Flood Protection Board. FMS has been able to do very little to these trees. As a result, many have become overgrown with vines, some have died and several have fallen into Big Chico Creek. All tree work along the creek must comply with the parameters mandated by state and federal agencies.

Considering the right tree for the right location:

Define proposed tree site – boundaries, area use, landscape type (other trees and plants), and level of maintenance, irrigation & drainage, soil, clearance needed for lighting, traffic, building, or power lines, need for a tree.

Define function or use of tree to be installed, including anticipated mature size of tree (e.g. shade, flowering specimen, architectural landscape, memorial)

Select tree based upon qualities of adaptability to site and desirability.

Select site based upon viability as a tree planting area.

Check list of questions:

What are the limitations of the site to supporting healthy growth and adequate room for a tree?

What clearances are required? (below, above, beside tree)

Will a tree obstruct a view or contribute to a safety or security problem?

Are there overhead wires or underground utilities in the root zone?

Is the site protected from, or exposed to, future construction activity?

Is the soil profile suitable for the rooting needs of the tree?
Is there a soil compaction issue at the site due to foot traffic or vehicles?
Will the irrigation system have to be modified?
Are there any drain intakes (DI) in the area?
Does the area receive runoff from building or surface drainage?
What is the natural light exposure to the area, including reflected light & heat?
Is there adequate vertical and horizontal space for a tree?
Will it be difficult to access the tree for maintenance?
Will a tree impede access to maintain other infrastructure?
If the area requires a high level of maintenance, will a tree contribute to the work load or detract from the usefulness of the area due to messiness?
Are there any other trees nearby that will affect the growth of the tree over time?
Will a tree need protection from mowing operations?
Will the tree receive optimum light for healthy growth?
Are the irrigation needs of the tree compatible with the other landscape?
Will the tree negatively affect the light available to any other plants as it grows?
Will the tree overhang a sidewalk, street, or parking area?
Are there any drain intakes (DI) within the mature drip line of the tree?
What will be the mature size and shape of the tree at maturity?
Is tree known to be especially messy, attractive to pests, or have invasive roots or seeds?
Does the tree need to be resistant to vandalism?
Will the tree have to compete with turf?

APPENDIX

Approved planting list for the CSU, Chico campus. This list is not all inclusive, but particular attention should be to planting native species whenever possible for consistency with the EM.

| Common Name | Scientific Name |
|----------------------------------|-------------------------------------|
| Large Trees | |
| Valley Oak | <i>Quercus lobata</i> |
| Big Leaf maple | <i>Acer macrophyllum</i> |
| Magnolia | <i>Magnolia grandiflorum</i> |
| Magnolia | <i>Magnolia soulangiana</i> |
| Pine | <i>Pinus ponderosa</i> |
| Interior Live Oak | <i>Quercus wislizenii</i> |
| Incense cedar | <i>Calocedrus decurrens</i> |
| McNab Cypress | <i>Cupressus macnabiana</i> |
| Oregon Ash | <i>Fraxinus latifolia</i> |
| California sycamore | <i>Platanus racemosa</i> |
| Black oak | <i>Quercus kelloggii</i> |
| California nutmeg | <i>Torreya californica</i> |
| Fremont's cottonwood | <i>Populus fremontii</i> |
| Coastal redwood | <i>Sequoia sempervirens</i> |
| Bald Cypress | <i>Taxodium distichum</i> |
| Northern California black walnut | <i>Juglans hindsii</i> |
| Fremont's cottonwood | <i>Populus fremontii</i> |
| Medium Trees | |
| Ginkgo | <i>Ginkgo biloba</i> |
| Bay laurel | <i>Umbellularia californica</i> |
| Blue oak | <i>Quercus douglasii</i> |
| Madrone | <i>Arbutus menziesii</i> |
| California Juniper | <i>Juniperus californicus</i> |
| Mountain mahogany | <i>Cercocarpus betulifolia</i> |
| Pacific dogwood | <i>Cornus nuttallii</i> |
| Red Osier dogwood | <i>Cornus sericea</i> |
| White alder | <i>Alnus rhombifolia</i> |
| Arroyo willow | <i>Salix lasiolepis</i> |
| Bittercherry | <i>Prunus emarginata</i> |
| California Bay | <i>Umbellularia californica</i> |
| Blue Oak | <i>Quercus douglasii</i> |
| Garry oak | <i>Quercus garryana</i> |
| Box elder | <i>Acer negundo</i> |
| Shrubs | |
| Western Redbud | <i>Cercis occidentalis</i> |
| California buckeye | <i>Aesculus californicus</i> |
| Flannel bush | <i>Fremontodendron californicum</i> |
| Manzanitas | <i>Arctostaphylos</i> spp. |
| California fuschia | <i>Epilobium canum</i> |

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| Sticky monkey flower | <i>Diplacus aurantiacus</i> |
| Chamise | <i>Adenostoma fasciculatum</i> |
| Spice bush | <i>Calycanthus occidentalis</i> |
| California lilac | <i>Ceanothus intergerrimus</i> |
| Blue bush | <i>Ceanothus thrysiflorus</i> |
| Bush poppy | <i>Dendromecon rigida</i> |
| Toyon | <i>Heteromeles arbutifolia</i> |
| Silk tassel | <i>Garrya elliptica</i> |
| California rose | <i>Rosa californica</i> |
| Elderberry | <i>Sambucus mexicana</i> |
| Blood current | <i>Ribes sanguinem</i> |
| Clematis | <i>Clematis ligusticifolia</i> |
| Sulphur buckwheat | <i>Eriogonum umbellatum</i> |
| California buckwheat | <i>Eriogonum fasciculatum</i> |
| Wooly sunflower | <i>Eriophyllum lanatum</i> |
| Oregon wintergreen | <i>Gaultheria ovatifolia</i> |
| Silver bush lupine | <i>Lupinus albifrons</i> |
| Saltbush | <i>Atriplex lentiformis</i> |
| Creeping sage | <i>Salvia sonomensis</i> |
| Tree anemone | <i>Carpenteria californica</i> |
| Chaparral whitethorn | <i>Ceanothus leucodermis</i> |
| California coffeeberry | <i>Frangula californica</i> ssp. <i>californica</i> |
| Antelope bitterbrush | <i>Purshia tridentata</i> |
| Yerba santa | <i>Eriodictyon californicum</i> |
| Hazelnut | <i>Corylus cornuta</i> var. <i>californica</i> |
| Coffeeberry | <i>Frangula californica</i> |
| Styrax | <i>Styrax redivivus</i> |
| Dwarf mahonia | <i>Berberis aquifolium</i> var. <i>repens</i> |

Herbaceous Vegetation including grasses (all perennial)

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| Yarrow | <i>Achillea millefolium</i> var. <i>lanulosa</i> |
| Columbine | <i>Aquilegia formosa</i> |
| Paint brush | <i>Castilleja affinis</i> |
| Tufted hair grass | <i>Deschampsia caespitosa</i> |
| Deer grass | <i>Muhlenbergia rigens</i> |
| Purple needle grass | <i>Nasella pulchra</i> |
| Rice grass | <i>Achnatherum hymenoides</i> |
| Dudleya | <i>Dudleya cymosa</i> |
| Balsamroot | <i>Balsamorhiza sagittata</i> |
| Wild oat grass | <i>Danthonia californica</i> |
| Rabbitbrush | <i>Ericameria nauseosa</i> spp. <i>nauseosa</i> |
| Chinquapin | <i>Chrysolepis sempervirens</i> |
| California fescue | <i>Festuca californica</i> |
| Blue flax | <i>Linum lewisii</i> var. <i>lewisii</i> |
| Mountain spray | <i>Holodiscus discolor</i> |
| Foothill bearded tongue | <i>Penstemon heterophyllus</i> |

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|-------------------------|---------------------------------|
| Blue wild rye | <i>Elymus glauca</i> |
| Silver bush lupine | <i>Lupinus albifrons</i> |
| Mugwort | <i>Artemisia douglasiana</i> |
| White root | <i>Carex barbarae</i> |
| Bleeding heart | <i>Dicentra formosa</i> |
| Baltic rush | <i>Juncus balticus</i> |
| Mariposa lilies | <i>Calochortus</i> spp. |
| Etherial spear | <i>Tritelia</i> spp. |
| Milkweeds (native ONLY) | <i>Asclepias cordifolia</i> |
| Blue dicks | <i>Dicholastemma capitata</i> |
| Soap plant | <i>Chlorogalum pomeridianum</i> |
| California pipevine | <i>Aristolochia californica</i> |

Annuals

| | |
|--------------------|---------------------------------|
| California poppies | <i>Eschscholzia californica</i> |
| Farewell to spring | <i>Clarkia amoena</i> |
| Red ribbons | <i>Clarkia concinna</i> |
| Elegant clarkia | <i>Clarkia unguiculata</i> |
| Chinese houses | <i>Collinisa heterophylla</i> |
| Tufted poppy | <i>Eschscholzia caespitosa</i> |
| Birdseye Gilia | <i>Gilia capitata</i> |
| Goldfields | <i>Lasthenia glabrata</i> |
| Creamcups | <i>Platystemon californicus</i> |
| Annual lupine | <i>Lupinus bicolor</i> |
| Monkeyflower | <i>Mimulus guttatus</i> |

Classic palette (Legacy Landscape)

Captures the types of plants and landscape themes that are around the campus core buildings (Kendall, Trinity, Laxson), examples are:

| | |
|--|--------------------------------|
| Azaleas | <i>Rhododendron</i> species |
| Hydrangeas | <i>Hydrangea</i> species |
| Japanese Maples | <i>Acer palmatum</i> varieties |
| Camellias | <i>Camellia</i> species |
| New Zealand Flax | <i>Formium tenax</i> |
| Roses (hybrid tea, floribunda, rugosa, etc.) | <i>Rosa</i> species |

Drought tolerant palette

Non-native/non-invasive plants that can be planted alongside or near native plantings.

Specimen palette

Specific one-of-a-kind plants that would be part of the Arboretum collection, but have been lost due to removals or plants exceeding their life expectancy. Other examples may be considered

after consultation with the Campus Vegetation and Arboretum Committee.

| | |
|----------------------------|-------------------------------------|
| American Chestnut | <i>Castanea dentata</i> |
| Dawn Redwood | <i>Metasequoia glyptostroboides</i> |
| Contorted Pines | <i>Pinus strobus</i> "contorta" |
| Cork Oak | <i>Quercus suber</i> |
| Burning Bush | <i>Euonymus alatus</i> |
| Palo Verde | <i>Parkinsonia</i> 'Desert Museum' |
| Cherry trees / fruit trees | <i>Prunus</i> species |
| Atlas Cedars | <i>Cedrus atlantica</i> |
| No-mow-fescues | <i>Festuca</i> species |
| Little Bluestem | <i>Schizachyrium scoparium</i> |

Prohibited list/Invasives list

Those plants that are not welcome or that the campus is working to eliminate are included in the following list. In addition any species on the California Invasive Plant Council invasive species lists are prohibited.

| | |
|-----------------------|------------------------------------|
| Liquidambar | <i>Liquidambar styraciflua</i> |
| Chinese Pistache | <i>Pistacia chinensis</i> |
| London Plane Tree | <i>Platanus x hispanica</i> |
| Chinese Elm | <i>Ulmus parvifolia</i> |
| Mexican Feather Grass | <i>Stipa tenuissima</i> |
| Lindens | <i>Tilia</i> species |
| Hackberry | <i>Celtis occidentalis</i> |
| Sheoak | <i>Casuarina equisetifolia</i> |
| Acacias | <i>Acacia</i> species |
| Privets | <i>Ligustrum</i> species |
| Eucalyptus | <i>Eucalyptus globulus</i> |
| Figs | <i>Ficus carica</i> |
| Nandinas | <i>Nandina domestica</i> varieties |