

Introduction

The University of Idaho, with its two arboreta and extensive campus plantings has a diverse tree canopy representing over 350 distinct species. This Campus Tree Care Plan applies to nearly 450 acres of land and includes both arboreta as well as the main campus core. It does not address the 64-acre UI Golf Course or the over 300 acres of agricultural fields.

The Campus Tree Care Plan is an important aspect of becoming a Tree Campus USA through the Arbor Day Foundation and supporting the University's sustainability goals.

The University of Idaho Master Plan (2000) states as a goal: "Preserve and enhance campus open space and landscape as a signature characteristic of the University of Idaho". It further specifically calls for an increase in campus-wide tree plantings and the development of greenbelts. The urban tree canopy within is vital to the aesthetically pleasing dynamic of the main campus core and both arboreta.

Purpose and Goals

The purpose of the University of Idaho Campus Tree Care Plan is to identify the policies, procedures, and practices that are used in establishing, protecting, maintaining, and removing trees on the Moscow campus of University of Idaho. The overall goal of the Plan is to ensure a safe, attractive, and sustainable campus urban forest.

Goals and Targets

Campus Arborist. A campus arborist is critical to maintaining the health of the campus tree canopy. The University of Idaho has historically had a certified arborist on staff, though it does not at present. Refilling this position is crucial for Facilities Services to have a proactive, rather than reactive, approach to tree management. Hiring an arborist and conducting a campus-wide assessment of tree hazards is a top priority goal.

Design Standards. The University of Idaho Design Guidelines and Construction Standards were designed primarily for contractors working on planning and installing large-scale project plantings. Standards that are more accessible and applicable to Facilities Services staff would be beneficial. Facilities Services will work with Architectural and Engineering Services to further develop the Design Guidelines.

Tree Loss Tracking and Replacement. Every year there is a certain amount of attrition through natural causes of the tree canopy. Replacing the tree canopy lost annually is a vital part of maintaining overall canopy coverage. Facilities Services

will devise and implement a system of tracking lost trees so that they can be appropriately replaced within the next growing season.

Arboretum. Continued development of the University of Idaho Arboretum and Botanical Garden collection is an important aspect of its core goals of being an educational space as well as fulfilling the mission statement of “providing a restful, beautiful environment for the purpose of gaining knowledge and appreciation of the importance of plants”. Planting new trees every year, including participation in the J.F. Schmidt Nursery Trial Pack program, and pursuing other sources for new trees, is a vital part of that continued development.

Student Involvement. Students will be provided multiple opportunities throughout the academic year to engage in native tree plantings and other service-learning volunteer events that focus on native tree care and establishment. Other specific student-led project opportunities include:

- Create an updated Campus Tree Inventory
- Draft maps of significant trees on campus
- Assist in maintaining arboreta through service-learning events
- Engage with Arbor Day Observance activities

Responsible Authority/Department -

The Campus Tree Care Plan for University of Idaho will be handled by Landscape and Exterior Services under auspices of Facilities Services, which reports to the Vice President of Finance. The point person is the Campus Landscape Manager and the Arboretum Horticulturist/Superintendent as appropriate.

Campus Tree Advisory Committee,

The Committee’s mission is to provide invaluable depth and breadth of insight into the overall campus tree canopy discussion and to forge links between campus Facilities Services and the student body and greater community.

While responsibility for campus trees is assigned to UI Facilities Services, the Campus Tree Advisory Committee assists by providing guidance for future planning, education of the campus community about the benefits of trees, development of a community connection related to campus trees, and organizes campus and community outreach, Arbor Day observance, and student service-learning projects. The Campus Tree Advisory Committee may also weigh in on specific potentially controversial tree removals.

The committee is required to have permanent representation from the following positions:

- University Director of Sustainability
- Sustainability Manager
- Environmental Horticulturist
- Campus Arborist
- Campus Landscape Manager
- Representative from Architectural and Engineering Services
- Representative from arboreta management

The committee will also have faculty, student, and community representation. Faculty, student, and community appointments are volunteer positions with no term requirements or limits.

The Campus Tree Advisory Committee is headed and organized by the Office of Sustainability.

Campus Tree Care Policies

Planting and Landscaping

Campus tree plantings are addressed in Section 32.93.00 (Plantings) of the University of Idaho Design Guidelines and Construction Standards. These standards address: plant placement, basic design guidelines, plant requirements, planting restrictions, and plant maintenance during construction.

All tree planting shall be completed to ANSI A300 standards.

Genus and species diversity of the campus tree canopy is an important protection mechanism against future tree loss. Where appropriate, planting projects shall include a variety of species with varying sizes and lifespans. Preference is given to species that are resistant to damage from drought and insect, disease, and storm damage.

The University of Idaho had a Memorial Tree Program. Tree selection and location shall be determined by Architectural and Engineering Services and Facilities Services. All planting projects must also be reviewed by Architectural and Engineering Services to ensure locations are appropriate and not located near sewer lines or other utilities.

Maintenance and Removal

Tree maintenance and removal is conducted by Facilities Services. Where Facilities Services does not have the equipment or staff necessary to safely conduct necessary pruning or tree removal, an outside arborist will be contracted. All pruning shall be done to ANSI A300 standards. Attempts will be made to correct defects in tree structure by judicious pruning prior to entire tree removal.

The following tree maintenance will be completed to ANSI A300 standards:

- Canopy thinning to decrease structural stress load or increase light to understory.
- Deadwooding to maintain tree health and reduce hazards.
- Pruning to correct tree form.
- Bracing to provide lateral support.
- Raising canopy to increase sight lines and accessibility or to accommodate understory plantings.
- Pest management when pests threaten overall tree health or pest presence creates an adverse environment for campus users (e.g., aphids in parking lots).

Tree maintenance priority, from highest to lowest, is as follows: mitigate hazardous conditions; provide access and visual clearance; tree health; and improve aesthetics and form.

The following situations will prompt tree removal:

- Insect and/disease infestations are so advanced that recovery is unlikely.
- Construction or renovation on campus necessitates removal. Trees of historical significance will be given top priority for protection and retention.
- Tree has shown continued decline over several years and shows signs of being hazardous.
- Damage from people, wildlife, or weather necessitates removal, emergency or otherwise.

Any non-emergency tree removal within the main portion of campus shall be approved by Facilities Services, with possible consultation with Architectural and Engineering Services. Any tree removed because of unexpected damage shall be replaced with a similar canopy coverage within one year of removal. Facilities Services shall track annual tree loss and create a tree canopy loss mitigation plan annually.

Recommended and Problematic Species

The tree needs of the main campus are distinct from that of the two arboreta. Specifically, the Arboretum and Botanical Garden strives to showcase a wide diversity of trees from around the world. This serves to test growing zone patterns, acts as a living classroom, and provides an isolated seed bank for endangered tree varieties. The Arboretum will continue to maintain and expand its comprehensive tree collection.

On the main portion of campus, preference is given to trees with the following characteristics: native, pest and disease resistance, hardiness to this area taking into consideration wind and humidity, and drought tolerance. Certain species will thrive or suffer in different environments due to a variety of factors. Selection of species should be mindful of growing environment to ensure trees will have the highest chance of survival (i.e., educational core with high traffic walkways and buildings, parking lots, floodplain, naturalized areas, recreational fields, etc.). **Any trees planted as part of a campus development project must be approved by Architectural and Engineering Services and Facilities Services.**

The following list is a selection of trees proven to thrive on the University of Idaho Moscow campus. New plantings are not limited to this list as diversity is important to protect against loss of all trees within a given area at one time.

Abies concolor, white fir

Betula nigra, river birch ^N

Acer circinatum, vine maple ^{N*}

Calocedrus decurrens, California incense cedar ^{N*}

Acer japonicum, full moon maple

Carpinus betulus, European hornbeam

Acer negundo, boxelder maple ^{N+}

Cedrus, cedar

Acer palmatum, Japanese maple

Celtis, hackberry ^N

Acer platanoides, Norway maple

Cercidiphyllum, katsura

Acer rubrum, red maple ^N

Cercis canadensis, eastern redbud ^N

Aesculus hippocastanum,
European horse chestnut

Chamaecyparis, false cypress ^N

Aesculus x carnea, red horse chestnut

Cladrastis kentukea, American yellowwood ^N

Alnus, alder ^{N+}

Cornus florida, flowering dogwood ^N

Balfouriana, bristlecone pine

Flowering Group: apple ^{N*}, plum ^{N*}, cherry ^{N*},
hawthorn ^{N*}, magnolia ^N

Fraxinus americana, white ash ^N
Fraxinus pennsylvanica, green ash ^N
Ginkgo biloba, ginkgo
Gleditsia triacanthos, honey locust ^N
Juniperus, juniper ^{N*}
Koelreuteria paniculata, golden raintree
Larix occidentalis, western larch ^{N+}
Liquidambar styraciflua, sweetgum ^N
Liriodendron, tulip tree ^N
Nyssa sylvatica, black tupelo ^N
Picea abies, Norway spruce
Picea engelmannii, Englemann Spruce ^{N*}
Picea glauca 'Pendula',
weeping white spruce ^N
Picea omorika, Serbian spruce
Picea pungens, blue spruce ^N
Pinus contorta, lodgepole pine ^{N+}
Pinus flexilis, limber pine ^N
Pinus glabra, spruce pine ^N
Pinus monticola, western white pine ^{N*}
Pinus mugo, mountain pine ^N

Pinus nigra, Austrian pine
Pinus ponderosa, ponderosa pine ^{N+}
Pinus strobus, eastern white pine ^N
Populus tremuloides, quaking aspen ^{N+}
Pseudotsuga menziesii, douglas fir ^{N+}
Quercus coccinea, scarlet oak ^N
Quercus imbricaria, shingle oak ^N
Quercus robur, English oak
Quercus rubra, red oak ^N
Sorbus aucuparia, European mountain ash
Sorbus, mountain ash ^{N+}
Styphnolobium japonicum, Japanese pagoda
tree
Taxodium distichum, bald cypress ^N
Thuja, *Arborvitae* ^N
Tilia, linden ^N
Tsuga, hemlock ^N
Zelkova serrata, zelkova

^N - Native to US

^{N*} - Native to Pacific Northwest

^{N+} - Native to Palouse Prairie

The following trees are potentially problematic and should be considered carefully before planting unless located within an appropriate setting:

- *Acer saccharinum*, silver maple^N – as they age limbs can be severely weakened and break; can cause infrastructure damage (sidewalks, sewer/water lines)
- *Ailanthus altissima*, tree of heaven – invasive, aggressive roots
- *Acer ginnala*, Amur maple – Invasive into prairie and grasslands
- *Elaeagnus*, Russian olive – potentially invasive
- *Ornamental pear trees* – disease, decline over lifespan
- *Platanus x acerifolia*, London plane tree – dust creates maintenance complications and potentially hazardous work conditions
- *Populus*, poplar^N – highly susceptible to breakage
- *Robinia pseudoacacia*, black locust^N – toxic to wildlife and humans
- *Salix*, willow^{N+} – highly susceptible to breakage
- *Tamarix*, salt cedar – invasive, prohibited by the State of Idaho
- *Taxus*, yew^{N+} – most varieties are poisonous for animals and humans
- *Ulmus americana*, American elm^N – high disease susceptibility

Note: A special recognition tree to note is the *Ulmus glabra* ‘*Camperdownii*’, Camperdown elm. They were planted in 1917 in a row along Campus Drive leading up to the new Administration Building. While elms are susceptible to multiple diseases, many have survived due to the great care provided over the years. The Camperdowns contribute to the historical landscape of the University of Idaho Moscow campus. Due to their slow growth, majestic growth pattern, and the nostalgia they provide in their current location, any new plantings are required to be approved through Facilities Management and Architectural and Engineering Services to ensure the current trees are not devalued in any way.

Managing for Catastrophic Events

Storm response and recovery are generally accomplished in-house. The first priority is to identify and restrict access to hazardous trees. Facilities Services then removes tree debris that blocks campus thoroughfares, disrupts campus operations, or poses hazards to the campus community. Trees requiring specialized equipment not available in-house are addressed by outside contractors. Once these critical needs are addressed, a prioritized recovery plan is implemented during which unsalvageable trees are systematically removed and salvageable trees are pruned to restore their health and structure. Timely debris clean-up is an integral part of this process and is primarily dealt with on-site.

Trees lost to storm damage shall be replaced with a tree or trees commensurate in mature canopy size as deemed appropriate by Facilities Services and located as deemed appropriate by the Campus Landscape Manager and the Arboretum Horticulturist/Superintendent.

Protection and Preservation Policies and Procedures

Campus tree protection and preservation is addressed in detail in *Section 32.91.00 (Tree and Plant Protection)* of the University of Idaho Design Guidelines and Construction Standards. Section 32.91.00 addresses the following: an overall scope and goals associated with tree preservation during construction projects; coordination between contractors and University representatives throughout the site development process; processes for implementing tree protection; protection of soil, tree/turf root systems and underground irrigation; protection of tree trunks and branches; and landscape restoration.

All work on landscape areas must be approved by the University of Idaho Construction Manager or Landscape Representative.

There are numerous individual trees and stands of trees on campus with significant importance to the University. The following trees shall be afforded a higher priority for both protection and maintenance:

- 'Idaho Endurance' Giant Sequoia in Shattuck Arboretum
- Camperdown Elms along Campus Drive
- American Beech trees (4) in Shattuck Arboretum
- Trees that are a part of the Presidential Grove

Tree Damage Assessment

Damages to trees on campus are assessed by Facilities Services. The party who damaged the tree is expected to find a suitable replacement, equal to or greater than the value of the original tree. Law enforcement may assist in this process.

Prohibited Practices.

The following activities and practices are prohibited on the Moscow campus of the University of Idaho:

- Topping, pollarding, stubbing, damaging or mutilation of any tree.
- Using trees for support of signs, tags, or posters except for plant identification as authorized by Facilities Services.
- No tree shall be planted or removed without prior authorization from Facilities Services.
- To cut roots except as deemed necessary by Facilities Service.

Definitions

- ANSI A300 -The tree care industry standard of care in the USA. It was developed by the Tree Care Industry Association and maintained by consensus of various industry stakeholders through periodically reviewing and updating the guidelines.
- Bracing - Installing rigid or cable support among branches within the tree canopy to provide support where needed.
- Deadwooding - The selective removal of dead, dying, diseased and weak branches from a tree's crown.
- Pollarding - A pruning system involving the removal of the upper branches of a tree by cutting the central leader and all lateral

branches to the same general height within a few feet of the tree crown.

- Stubbing - Pruning major branches at an arbitrary length without regard to side branches or tree form.
- Thinning - Selectively removing branches within the canopy to increase air and light flow.
- Topping - The drastic removal, or cutting back, of large branches in mature trees. This can leave large, open wounds which subject the tree to disease and decay.

Communication strategy

These tree care and protection standards are detailed in various standards and procedures developed and maintained by Facilities Management Services and Ar. Engineering Service and are shared with developers, designers, and project managers through the University of Idaho Design Guidelines and Construction Standards.

Facilities Services staff utilizes the Campus Tree Care Plan to actively manage and maintain and develop the campus tree canopy.

The Campus Tree Advisory Committee actively promotes campus tree awareness to the greater college community.