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Living Collections Policy, Example : ‘University Arboretum’

活体植物引种政策：‘高校植物园’范本

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**Introduction/Purpose简介/目的**

为了更好指导植物园的发展建设，确保植物园不断引种保存更多植物种类，及更好发挥植物园现有植物资源优势，在现有植物园资源使用政策基础上，1997年，植物园专家委员会和高校权威部分联合颁布了以下的植物引种政策。

The purpose of this document is to guide the development and maintenance of the collections of the University Arboretum. The Collections Policy works with the existing approved Usage Policies to insure appropriate use of the Arboretum. This policy serves as a tool to achieve the goals of the following Mission Statement of the Arboretum, which was approved by the Arboretum Advisory Board and the University Administration in 1997.

***Mission Statement:***

***宗旨：***

作为一个名副其实的室外博物馆，高校植物园收集保存了适宜太平洋西北当地气候及土壤等生境条件的各类植物。作为主要的参考资料的收集，高校植物园以植物物种多样性和遗传多样性资源为主。植物园最大的优势是收集、引种、保育着有确切来源的丰富多彩的、千姿百态的、适应能力千差万别的、用途极其广泛的、形形色色的物种和品种。

The University Arboreta are outdoor museums maintained for the acquisition and proper curation of a living collection of native and introduced plants hardy to the Inland Pacific Northwest. As a primary reference collection, the arboreta will emphasize plant variation and genetic diversity. The highest priority of the arboreta is to develop, curate, and maintain a diverse collection of cultivars and species of known origin.

高校植物园的目标是：

As educational facilities, goals of the University Arboreta are to:

* 为植物学，园艺学，园林学，风景园林，环境科学，和其他相关学科的实习提供一个植物资源平台。
* Provide a site for instruction in botany, horticulture, forestry, landscape architecture, environmental sciences, and other fields related to the living collection.
* 有利于植物抗寒性，植物系统学，杂交育种等领域开展深入研究。
* Encourage authorized research in fields such as plant hardiness, systematics, and hybridization.
* 开展科普宣传、中小学生科普参观、公众旅游。
* Educate the public through field trips, lectures, and tours.
* 提供给公众一个宁静祥和，优美宜人空间，寓教于乐，增长植物学知识。
* Provide to the public a restful, beautiful environment for the purpose of gaining knowledge and appreciation of the importance of plants.

高校植物园通常是高校一个较为独特的分支机构，园长和园艺师负责植物园的总体运营。来自高校的师生代表，教职员工代表和周边社区居民代表组成的咨询委员会签发植物园发展方针政策。高校预算涵盖植物园运营维护费用和两类全职职工的工资；植物引种和设备更新等费用则来自高校基金会的捐赠。

The Arboretum is a separate division within the Facilities, Maintenance and Operations (FMO) Department of the University. The operation of the Arboretum is the responsibility of the Arboretum Director and the Arboretum Horticulturist (hereafter Director and Horticulturist). An Advisory Board, consisting of eleven members of the University faculty and staff, representatives from FMO, a student representative, and citizens of the community, evaluates and approves Arboretum policies. Funding for maintenance of the Arboretum and salaries for the two full-time staff members is provided through the general operating budget of the University. Funds for purchasing additions to the collections, as well as other assets within the Arboretum, are provided by private donations through the University Foundation, Inc.

植物引种方针政策包括以下六方面内容：

The Collections Policy is divided into six sections:

1. 引种政策Acquisitions
2. 植物记录/登录进册Plant records/Accessions
3. 评估/盘查Evaluations/Inventory
4. 养护管理Maintenance
5. 清楚和处理De-accessioning/Disposal
6. 访问和使用Access and Use

制定引种政策的目的是为植物园引种者提供有科学根据的行动指南。高校植物园的最终目标为得到美国博物馆协会认证。在美国博物馆协会包罗万象的收藏体系中，高校植物园的主要收集方向为活体藏品，一倍收集的活体藏品将会定期更新。依据权威收藏标准制定的方针政策会因地制宜，与时俱进，部分与形势不符合的条款会被园长和专家咨询委员会授权调整。

The purpose of the Collections Policy is to provide clear guidelines for Arboretum staff to work toward the goals of the Mission Statement. Ultimately, we seek to become accredited by the American Association of Museums, the national organization that writes the standards for quality assurance and public accountability in the field of museums and collections, including arboreta and botanical gardens. The Collections Policy is intended to be a ‘living’ document and will be updated periodically. Changes to the policy can be initiated through the Director and approved by the Arboretum Advisory Board.

**Acquisitions Policy引种政策**

引种政策规定收集植物材料的原由，一切不符合植物园发展方向的赠品会被拒收。

The goal of the Acquisitions Policy shall be to fulfill the Mission Statement of the Arboretum. Plants may be acquired for any of the following reasons:

1. 为了评价物种或品种于本气候带的经济价值和观赏性。

To evaluate species and cultivars for ornamental or economic use in this climate.

1. 为丰富当地景观目的而需要引种乡土植物和外来植物。

To enhance the beauty of the landscape using native and introduced plants.

1. 研究和科普需要的植物。

To provide research and/or educational opportunities.

1. 进行濒危或稀有等植物保育，如引入北洛基山脉的本土群落中的稀有植物以进行保育工作。

To preserve rare or unusual plants with an emphasis on populations native to the northern Rocky Mountains.

植物园有权拒绝接收需要付出极大代价或采取极端措施才能在植物园良好生长的植物。

Any plant acquisitions should show promise of being able to survive somewhere within the Arboretum without extreme measures taken for their protection.

植物引种应该量力而行，不应该为植物园人力及财物资源带来负面影响。

Plants shall be acquired only if they can be properly maintained within the current structure of the Arboretum, in terms of water, space, budget, and personnel.

一切对植物园或当地环境有可能造成不利影响的植物不能引种。如：

Plants that could harm existing collections or cause harm to the local environment will not be acquired. These potentially harmful qualities might include, but are not limited to, any of the following:

1. 极易染病的或有毁灭性病虫害寄主植物。

susceptible to or hosts and alternate hosts of damaging pathogens, insects, or other pests;

1. 已知或潜在的入侵性植物；

known and/or likely invasive plants; and

1. 致敏性强等有毒植物（如：葛藤）。
2. highly allergenic/toxic plants (e.g., poison ivy).

植物园将严格遵守所有有关植物材料引种贸易的法律法规。如:

The Arboretum will strictly adhere to all laws and regulations regarding trade or collection of plant material. These laws will include, but are not limited to, the following:

1. 美国专利法 U.S. patents
2. 美国商标法 U.S. trademarks
3. 国际贸易协定：International trade agreements/policies:
4. 植物品种保护法 Plant Variety Protection Act
5. 国际植物新品种保护公约International Convention for the Protection of New Varieties of Plants
6. 美国农业部植物检疫法规U.S. Department of Agriculture Plant Quarantine Regulations
7. 加拿大观赏植物基金会法规(COPF)Canadian Ornamental Plant Foundation (COPF)
8. 有毒植物的法规（联邦、州和地方）Noxious Plant Laws, (Federal, State, and Local)
9. 稀有和濒危物种的条约和规定Any treaties or laws dealing with rare and endangered species
10. 国际濒危野生动植物贸易公约 (CITES)Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
11. 美国濒危物种法案U.S. Endangered Species Act
12. 生物多样性保护公约 Convention on Biological Diversity.

所有植物被引入接收时，必须有一个确切的来源，无论直接或间接来自野外还是园艺品种，必须保证名实相符（如果是品种，必须是有效的名称）。如果可能，尽可能记录物种原产地或品种的培育地。

All plant acquisitions must have a known origin, either from documented wild sources or from reliable horticultural sources that guarantee their material is true-to-name (e.g., valid cultivars). Whenever possible the geographical origin of their stock should be documented.

所有野生植物的引种需要遵守相关野生植物采集有关的法律和法规，不得造成生态系统、或濒危物种、稀有物种、特有植物的损坏。

Any collections of plants from the wild shall follow all applicable laws and regulations and shall not knowingly cause the destruction of any ecosystem, or endangered, threatened, rare, or unique populations.

捐赠的资源，如不符合植物园收集政策的将不能被接收，引种部主任有最高权力拒绝任何不符合植物园发展方向的植物材料等的捐赠。

Gifts (plants or otherwise) can only be accepted if they meet the conditions of this collections policy, are given without unacceptable restrictions, and if proper maintenance can be assured (either within current practices or by additional resources sufficient to pay for required maintenance). Any gifts shall be directed through the University Foundation, Inc. and accepted in accordance with their gift acceptance policies. The Director shall have the final authority to decline any gift that is not consistent with the mission and purpose of this collections policy.

园艺师将鉴定引种的植物，引种部主任有最终的权力决定被引物种的接收。

The Horticulturist shall review all plant acquisitions and final approval of all acquisitions is the responsibility of the Director.

**Plant Records/Accessions Policy植物记录/登记入册政策**

详细精准地保存所有植物的档案是植物园的主要职责之一，在引种部主任指导下园艺师有责任和义务完成好该项任务。

Accurate and detailed records of all plant material in the Arboretum are necessary to fulfill the mission of the Arboretum of providing a properly curated living collection of native and introduced plants. The maintenance of these records shall be the responsibility of the Horticulturist under the direction of the Director.

接收的植物会配有一个永久的编号。前四位数字为引种的年份，接下来三位数字为当年接收材料的顺序。如果多个数量，则分别按字母顺序标注。如：2003年，从一个来源引种三株美洲山杨时，如果是当年引种的 第243个植物种类，那么它们的登记号码是：2003243A，2003243B，和2003243C。这些信息会以纸质版和电子版同时保存，并且备份和更新。

Every plant acquired for permanent installation will be assigned an accession number as soon as it is received. The first four digits of this number shall be the year of acquisition, followed by three-digits referring to the numerical order of that acquisition within that year. The first specimen of any accession will be assigned the letter code A. If more than one specimen of a particular accession is acquired at the same time, from the same source, they will be assigned a letter code in sequence starting with A. For example, if three quaking aspens are acquired from one source in the year 2003, and they are the 243rd plants acquired that year, their numbers would be—2003243A, 2003243B, and 2003243C. These accession numbers will be assigned and kept in a handwritten log and entered into a computerized database as soon as possible. Back-up copies of the database shall be maintained frequently enough to insure that all the data are preserved.

目前通用的数据库软件有BG-BASE™等；它是专门为植物园保存植物所涉及的管理软件。存储以下信息：

The database software currently in use is BG-BASE™, a collections management software package designed specifically for keeping records in botanical gardens and arboreta. The following information must be recorded within the database for each accession:

1. 完整的学名，包括专利号和品种登录等。Complete scientific name, including patent numbers and cultivar registrations
2. 登记号码Accession number
3. 科名Family
4. 名称Common name
5. 接收类型（种子、插穗、整株等）How received (seed, cutting, entire plant, etc.)
6. 接收日期Date received
7. 来源的名称和详细地址Name and complete address of the source
8. 栽植的地点Location where planted
9. 花费Cost.

直接从野外收集的材料，还包括：

Further information will be required for material collected from the wild, including:

1. 采集者的名字Collector’s name
2. 采集的日期Date of the collection
3. 采集地坐标，包括生境描述和海拔等信息。Geographic location of the collection, including habitat description and elevation whenever possible and any other appropriate collection data.

该软件功能强大，除上述基本信息外，还可以记载其它重要信息。如识别特征、原产地栽植编号，繁殖方法，甚至嫁接及砧木信息等。

The software also provides space for recording other significant information which will be included whenever possible. Some examples would include: identity verifications, previous accession numbers when plants are acquired from other gardens or arboreta, and propagation methods including graft compositions.

所有记录都应遵循最新命名法规：

All records will follow two current codes for nomenclature:

1. 国际植物命名法规The International Code of Botanical Nomenclature
2. 国际栽培植物命名法规The International Code of Nomenclature for Cultivated Plants.

除了将植物信息存储在电脑之外，被引入的植物还需要一个钢印标签挂牌标记。标牌上包括学名、名称、科名，植物地理或园艺来源和编号。标签通常会标记在树木北侧显眼位置，往往用钢丝连在主枝上而不能标在树干上。实在不便当连在主干上时，一定要连接上弹簧方便树干增粗。如果这一永久标签不便连接在植物上，如宿根植物，可以立标牌记载。

In addition to the computerized records, an embossed metal accession label shall be attached to each plant. The accession labels will include the scientific name, the common name, the family name, the origin of the plant (either geographical or horticultural) and the accession number. The labels will be wired to the plant as close to eye-level as practical on the north side of the plant. Care must be taken to avoid girdling trunks or branches; so, preferably the wires will be wrapped around a secondary limb rather than the main trunk. Occasionally, when labels cannot be wired to a branch, the labels will be attached directly to the trunk of the plant, using stainless steel nails or screws and springs to allow for trunk growth. If a permanent label cannot be attached to the plant (herbaceous plants, etc.), a label on a stake will be used.

**Evaluations/Inventory Policy评估和盘查政策**

保持被引种植物名册是植物园的核心任务之一。如果种类繁多，每年需要清查1/3的数量，园艺部主任和园艺师负责安排清查任务，配备足够人手，最好在三周完成。主要盘查以下三方面状况：

An accurate inventory of what is growing in the Arboretum is necessary to fulfill the mission of curating our collections. One-third of the collection should be inventoried annually. The inventory shall be the responsibility of the Horticulturist under the direction of the Director. Adequate staff must be provided to accomplish the inventory in a timely manner, ideally within a three-week period. The inventory shall consist of three components:

1. 评估植物生长状况。Evaluating the condition of the plants
2. 根据核对栽植地点。Confirming the location of the plants according to the records system
3. 确认标牌状况。Confirming that the plants are correctly labeled and monitoring the condition of the label.

所有盘查的纸质记录需要录入电脑，可以作为植物栽培养护，植物移除和植物替换的参考依据。

Written records of all the evaluations shall be maintained with the appropriate information entered into the Arboretum records database. These records shall be used to make recommendations regarding plant maintenance, de-accessioning, and plant replacements.

植物资源盘查的最目的是精确定位，准确定名。可以利用GIS或GPS技术以及标本订正，也可制作出标本。

The ultimate goal of the Arboretum inventory shall be to have every accessioned plant mapped (recorded using GIS/GPS technology), verified, and vouchered with herbarium specimens.

**Maintenance Policy养护管理政策**

植物栽培养护是植物园工作者最神圣的职责，园艺部主任和园艺师具有不可推卸的责任，栽培养护应遵循病虫害综合防治基本规律，以预防为主，注重生物防治，物理防治措施；监测到病虫危害较为严重时，选用环境友好型农药、慎用低毒农药。并准确记录农药使用情况。

Maintenance of the existing collections in the Arboretum will be the highest priority for the Arboretum staff. The Horticulturist will be directly responsible for the maintenance of the collections under the direction of the Director. Maintenance operations shall follow the general philosophy of integrated pest management for control of weeds, pathogens (fungi, bacteria, viruses, etc.) vertebrates, insects and other arthropods. Pest control efforts will combine alternatives to conventional pesticides (e.g., bio-controls, physical methods, and horticultural controls) with the responsible use of pesticides. Pesticides shall be used only when regular monitoring of the collection indicates that pest levels have risen to a point that could cause damage to the collection. Accurate records shall be maintained for all pesticide applications.

栽培养护管理主要包括：

Maintenance operations shall include, but not be limited to:

1. 灌溉—尽可能使用已被处理的污水。

Irrigation.—Using treated effluent water whenever possible.

1. 除草—主要工作放在控制有害杂草和不良外来植物上，如：加拿大蓟、田旋花、山柳菊等。综合防治结合化学、生物、和物理方法重点防控并重。

Weed control.—Primary efforts will focus on controlling noxious weeds and undesirable introduced plants, e.g., canada thistle (*Cirsium arvense),* fieldbindweed (*Convolvulus arvensis*), and yellow hawkweed (*Hieracium pratense*). Available legal and prudent methods of control may be employed, including chemical, biological, and physical methods.

1. 草坪修剪—重点景区草坪的养护管理。

Mowing.—To maintain turf, especially in high profile areas.

1. 病虫害防治——稍微影响景观但不妨碍植物健康生长的轻微病虫可以暂不处理，预防失效时，可选用环境友好型农药。病虫害防治工作应与大学内其他部门和适当的外部机构协调

Insects and other arthropods, pathogens, and vertebrate control.—Limited to insuring the survival of the collections, appropriate use of the arboretum, and the health and safety of patrons and employees. Pathogens causing only aesthetic problems will be left alone. Chemical usage will be limited to the least toxic available alternative. Control efforts shall be coordinated with other departments within the University and appropriate outside agencies.

1. 修剪—植物园较为注重树木自然树形，当密度过大，枝条过密妨碍其它植物生长时，需要适当修剪；绝大多数修剪以促进树木健壮生长为前提，部分特殊要求的需要经常修剪，如造型修剪（西方规则式园林、模纹花坛、盆景树桩、树木雕塑等）、绿篱等。

Pruning.—The goal of pruning in the Arboretum shall be to promote healthy growth within the collection, emphasizing natural shapes and growth habits. Some pruning will be required to allow access to and maintenance of other parts of the collection. Specialty collections will require intensive pruning, e.g., topiary or hedge collections.

1. 施肥—改善植物营养不足问题，在适当时候使用有机和缓释肥料。

Fertilizing.—To correct nutrient deficiencies, using organic and slow release materials when appropriate.

1. 保护桩栏设置—促进新栽植物定居，提供防护，并且保护植物免受冬季运动爱好者的无意损坏。

Staking.—To promote establishment of newly planted trees, to provide protection (especially during the winter months), and to protect individual plants from winter sports enthusiasts.

1. 防寒保护—主要适用于植物苗期。树干涂白或树干包裹可以预防光滑树皮的日灼，幼苗安装护网防止动物的啃食，边坡上安装木桩和栅栏阻挡积雪滑落。绑扎和护栏缓解积雪挤压的损坏。

Winter protection.—Primarily used to help establish young plants. Measures will include sunscald protection on smooth-barked trees and shrubs, wire rodent screens on young shrubs, and stakes and snow fence installation on vulnerable slopes to prevent sledding and skiing. Some tying and caging of individual plants may be used to reduce breakage from snow loads.

1. 标签—更换损坏的标签，将标签移动到最明显位置，松动弹簧以免刈割树木。

Labeling.—Replacing damaged labels and moving labels to maximize visibility and to prevent girdling.

**De-accessioning/Disposal移除与处理**

树木移除是植物园的一项正常管理措施。移除需要园艺部主管决定，重要树木还需要专家委员会决定。

De-accessioning is the act of formally removing an item from a managed collection. The decision to de-accession shall be the responsibility of the Director, working with the Arboretum Advisory Board in cases of de-accessioning significant specimens or collections.

树木被移除的主要原因有：

A plant may be removed from the collections for any of the following reasons:

1. 已经枯死或挣扎在死亡边缘的植物可以移除。尽可能找出死亡原因，并记录数据库保存。

The plant is dead or dying or in poor condition and unlikely to survive. Whenever possible the cause of death should be ascertained and noted in the collections database.

1. 当有关植物将会对游客、员工、或财产造成了一定危害时， 它需要被移除。

The plant poses a hazard to patrons, employees, or property.

1. 当植物成为对其他资源有潜在危害病虫寄主时， 它需要被及时移除。

The plant harbors a pathogen, insect or other arthropod that threatens other plants within the collections;

1. 植物被发现名实不符，或植物的身份不能确定，或植物不再符合植物园收集方向。

The plant is determined to be not true-to-name, or the plant’s identity cannot be determined, and the plant no longer fits other criteria for retention in the collection.

1. 当植物的生长地可以栽植更有价值树木或需要更新时。

The plant is occupying space required by other plants or for new plantings that are deemed more valuable to the mission of the Arboretum.

植物处理—依照园艺实际，通常所有移除的材料最好是销毁和处理掉。有时一些健壮被移除的植物在植物园发挥最大利益前提下，也会被拿来出售、交换、捐赠出去。但无论如何，收入需要存入植物园的基金。树木死亡原因、移除、移植记录需要存入数据库。Disposal.—Generally, all de-accessioned material shall be destroyed and disposed of according to good horticultural practices. Occasionally living, healthy plants might be de-accessioned. In those cases, the plants can be sold, donated, or exchanged by whatever means is determined to be in the best interests of the Arboretum by the Director. Any proceeds from the sale of de-accessioned plants shall be deposited in an appropriate Arboretum fund. Records of dead, de-accessioned, and removed plants will be maintained in the Arboretum’s database.

**Access and Use Policy**访问和使用政策

植物园资源应该在教育和研究中被广泛使用。植物园的资源使用应该被记录。如果在活动中有些材料需要被借出或消耗掉，园主任应该以书面方式批示。Educational and research use is strongly encouraged. As it is in the best interests of the Arboretum to document such usage, written documentation from the instructor is required. If any material is to be removed or consumed by the activities, the Director must grant written permission.

植物资源引种--植物引种受相关法律和法规保护。这些法律法规主要有：植物专利法、商标法和国际公约。植物园必须严格遵守这些规定，可能会限制未经授权个人的引种申请。因此，部分材料需要主任开具许可证在遵守法律法规的前提下方能引种；尤其基于商业开发用途的引种更是如此。任何活体材料引种必需有领导或者园艺家监督下进行，部分材料会收取合理成本费用。

Plant material collection.—Laws and regulations regarding plant propagation govern a large part of the Arboretum’s collections. These laws and regulations include plant patents, trademarks, and international treaties and regulations. The Arboretum will strictly adhere to these regulations, which may restrict the distribution of propagation material to unlicensed individuals. Therefore, written permission from the Director shall be required to take any material for propagation or other living material from the collections, especially when that material is intended for commercial use. Any collection of living material must be done in the presence of either the Director or the Horticulturist. An appropriate fee may be charged to cover the cost of staff time and materials.

植物或动物的引种—严禁植物园职工之外的人员在植物园从事植物或动物的引种。

Introduction of plants or animals.—The introduction of any plant or animal by anyone other than Arboretum staff is strictly prohibited.

公共使用权--引种政策不妨碍已经批准的政策。参观者可以自由出入植物园开放区域，大众可以进行体育项目之外的绝大多数娱乐活动。由于植物园不是体育场，园内禁止任何形式的体育项目。通常禁止任何可能会损害引种植物的活动。除非有全职职工陪同，方可进入养护工作场地。植物园的数据库和其他不对公众开放的资料（如：书籍，资料，文件等等）仅限于符合植物园发展目标的部分人群和机构出于需要方可访问。应当限于机构和个人访问这些数据的原因。而且需要主管领导批准和有关人员全程陪同下才可访问。

Public access.—The collections policy works with existing approved usage policies. Visitors have open access to the developed areas of the Arboretum. Passive recreational activities are encouraged. The Arboretum is not a sports venue and organized athletic activities of any kind are prohibited. In general, if an activity is likely to harm the collections it is prohibited. Access to maintenance areas is prohibited unless accompanied by a full-time staff member. Access to the records database and other non-public resources of the Arboretum (e.g., books, catalogs, written records, etc.) shall be limited to individuals or institutions having reasons for access consistent with the mission and purpose of the collections. Access shall be granted by the Director and may require his/her presence for any such access.