**Concordia College**

**Bee Campus USA Handbook**

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**Updated as needed.**

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**Bee Campus USA Membership Requirements**

**Requirements for Membership**

* Establish/maintain a Bee Campus USA Committee or Subcommittee comprised of the landscape director and other staff, administrators, faculty and students, charged with overseeing your pollinator conservation and education efforts.
* Develop and maintain a Campus Pollinator Habitat Plan to include a locally native (indigenous to your ecoregion), pollinator-friendly plant list with regional sources for such plants and an integrated pest management (IPM) plan. The plant list and IPM plan should be publicized and available on the web to offer a valuable landscape-management model applicable to other local landscapes.
* Host an annual campus event(s) to raise awareness of the importance of pollinators and to acknowledge the institution’s certification as a Bee Campus USA institution. Events may be workshops on pollinators, planting pollinator gardens, presentations about pollinators, garden tours and guided pollinator walks, films about pollinators, etc.
* Annually sponsor and track student service-learning and/or service projects to enhance pollinator habitats on-and off-campus. Service learning projects may or may not be part of courses.
* At least biennially offer a pollinator protection course and/or workshop and/or incorporate pollinator protection topics into the curriculum. Examples of possible topics include Pollinator Ecology, Integrated Pest Management and/or Landscaping for Pollinators, etc. Workshops may provide continuing education credits for professional pesticide applicators and/or landscape designers, etc.
* Post signage regarding pollinators to educate the campus and broader community about pollinator-friendly landscaping principles. Signage may be temporary or permanent.
* Maintain a webpage on the institution’s website to share your Bee Campus USA news and activities. Some institutions allow departments or programs to control a webpage, but others restrict and centralize web changes. If your institution will not allow you to have a Bee Campus USA page or section that you can regularly update on the institution’s website, you should request a Bee Campus USA section on an appropriate webpage that links to your Facebook page or another website where you share your Bee Campus USA contact information and news.

**Bee Campus USA Committee**

**Current Bee Campus USA Members**

* Jackie Maahs
* Bryan Bishop
* Jerry Raguse
* Two Gardening Interns
* Any additional interested students

**Bee Campus USA Committee Requirements**

* Must be comprised of the landscape director or other landscaping staff, administrators, faculty and students
* Maintain regular meeting schedule
* Responsible for ensuring the college meets commitments as an affiliate
* Ensure annual renewal is completed
* Manage sponsorship of student/staff pollinator-friendly service-learning projects

**Bee Campus USA Committee Recommendations**

* Should have a chair, vice chair, and secretary to take minutes and other officers as needed
* May include a documentarian to keep records for annual reporting

**Campus Pollinator Habitat Plan**

Concordia College establishes a more pollinator-friendly environment through creation and expansion of pollinator habitat, education on the importance of pollinators through courses, workshops, and pollinator signage, and raises awareness about pollinators through annual events and activities. The college also maintains an on-campus organic garden which is open to the public and reduces its use of pesticides whenever possible. Below, a list of local native plant species nurseries and native pollinator-friendly plant species list may be found.

**Local Native Plant Species Nurseries\***

* Applied Ecological Services
  + 21938 Mushtown Road, Prior Lake, MN 55372
  + 952-447-1919
  + Email: info.mn@appliedeco.com
* Boreal Natives
  + 3943 Munger Shaw Road, Cloquet, MN 55720
  + 218-729-7001
  + Email: borealnatives@prairieresto.com
* Carlson Prairie Seed Farm, Inc.
  + 13071 260th St. NW, New Folden, MN 56738
  + 218-523-5072
  + 1-877-733-3087
* Chippewa Farms Greenhouse and Nursery
  + 10295 Nursery Lane, Brandon, MN 56315
  + 320-834-5111
* MN Native Landscapes
  + 8740 77th St NE, Otsego, MN 55362
  + 763-295-0010
  + Email: Info@MNLcorp.com
* Morning Sky Greenery
  + 44804 State Hwy 28, Morris, MN 56267
  + 320-795-6234
  + Email: info@morningskeygreenery.com
* Prairie Land Management Inc.
  + 201 S Franklin St, Glenwood, MN 56334
  + 320-634-3667
  + 1-888-479-1760
  + Email: info@habitatNOW.com
* Prairie Moon Nursery
  + 32115 Prairie Lane, Winona, MN 55987-9515
  + 507-452-1362
  + Email: info@prairiemoon.com
* Sunshine Gardens
  + 1286 Shadywood Shores Dr. NW, Pine River, MN 56474-9349
  + 218-947-3154
  + Email: sgardens@uslink.com
* Swedburg Nursery
  + Battle Lake, MN 56515, Box 218
  + 218-864-5526
* Woodland Prairie Specialties
  + 2656 320th St., Waubun, MN 56589
  + 218-473-2135

\*Contacts taken from MN DNR (https://www.dnr.state.mn.us/gardens/nativeplants/suppliers.html)

**Native Pollinator-Friendly Plant Species\*\***

T=Tree, H=Herbaceous plant, S=Shrub

FS=Full sun, PS=Part-shade, S=Shade

Early=March to May, Mid=June to July, Late=August to September

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Scientific Name | Common Name | Type | Sun | Bloom Time |
| Crataegus crus-galli | Hawthorn | T | FS | Early |
| Geranium maculatum | Wild geranium | H | S | Early |
| Penstemon grandifloras | Large beardtounge | H | FS | Early |
| Salix discolor | Pussy willow | S | FS, PS | Early |
| Coreopsis lanceolate | Lanceleaf coreopsis | H | FS, PS, S | Early to Mid |
| Hydrophyllum virginianum | Virginia waterleaf | H | FS, PS, S | Early to Mid |
| Lupinus perennis | Wild lupine | H | FS, PS | Early to Mid |
| Zizia aurea | Golden Alexander | H | FS, PS | Early to Mid |
| Amorpha fruticosa | False indigo | S | FS, PS | Mid |
| Aruncus dioecus | Goatsbeard | H | FS, PS, S | Mid |
| Echinacea angustifolia | Purple coneflower | H | FS | Mid |
| Lobelia siphilitica | Blue lobelia | H | FS, PS | Mid |
| Pycnanthemum tenuifolium | Slender mountain mint | H | FS | Mid |
| Agastache foeniculum | Anise hyssop | H | FS, PS | Mid to Late |
| Asclepias incarnata | Swamp milkweed | H | FS, PS | Mid to Late |
| Chamaecrista fasciculata | Partridge pea | H | FS | Mid to Late |
| Cirsium discolor | Bicolor thistle | H | FS | Mid to Late |
| Dalea purpurea | Purple prairie clover | H | FS | Mid to Late |
| Eupatorium maculatum | Joe-pye weed | H | FS, PS | Mid to Late |
| Helianthus spp. | Sunflowers | H | FS, PS, S | Mid to Late |
| Liatris aspera | Rough blazingstar | H | FS, PS | Mid to Late |
| Monarda fistulosa | Beebalm | H | FS | Mid to Late |
| Ratibida pinnata | Yellow coneflower | H | FS | Mid to Late |
| Vernonia fasiculata | Ironweed | H | FS | Mid to Late |
| Silphium perfoliatum | Cup plant | H | FS | Mid to Late |
| Veronicastrum virginicum | Culver’s root | H | FS, PS | Mid to Late |
| Solidago rigida | Stiff goldenrod | H | FS, PS | Late |
| Symphyotrichum lateriflorum | Calico aster | H | FS | Late |

\*\*Plant list taken from University of Minnesota (https://www.beelab.umn.edu/sites/beelab.umn.edu/files/plants\_mn\_bees.pdf)

**Integrated Pest**

**Management Plan**

**Integrated Pest Management Plan (IPM) Definition:**

“A long-term approach to maintaining healthy landscapes and facilities that minimizes risks to people and the environment by: identifying and removing the causes of the pest problem rather than only attacking the symptoms (the pests); employing pests' natural enemies along with cultural, mechanical, and physical controls when prevention is not enough; and using pesticides only when no other method is feasible or effective.”

**Concordia College Grounds Services Integrated Pest Management Program**

As a first impression a well-maintained landscape is integral to the decision of potential students choosing a college. The goal for Concordia College to provide a landscape that is attractive while using sustainable methods to control pests, resulting in a quality environment for the students, faculty and staff to learn, live and work. To achieve this goal Concordia College has adapted an Integrated Pest Management (IPM) plan.

Definition:

Integrated Pest Management (IPM) is a management decision-making process in which a sustainable approach is used to control insects, weeds, plant pathogens, and other pests utilizing cultural, biological, physical or chemical means. By using this methodology, risks from pesticides to human health and the surrounding environment can be reduced. Concordia College will follow these general principles of IPM.

* Conduct regular inspection of Concordia grounds turf and landscape areas for early detection of pests and other problems to reduce the scale of treatment.
* Utilize cultural measures to reduce chemical use.
* Conduct an ongoing evaluation of chemicals to identify new less toxic chemical options.
* Schedule treatments to minimize potential impacts on campus activities.
* Identify pest thresholds that require use of pesticides.

Coordination:

The coordination of the Concordia IPM policy will fall upon the Grounds Supervisor, Director of Facilities Management, and the Office of Sustainability.

Inspection Program:

In order to respond to pest problems using IPM, Concordia College will conduct regular monitoring of the grounds as follows:

Turf and grass areas:

During the growing season, the frequency of inspections will be a minimum of once per month. Since many pests are influenced by environmental conditions, this frequency may be increased if needed. Records of inspections and pest populations will be maintained by Concordia College Grounds Services.

Woody plants and trees:

Woody plants and trees will be inspected for pests 3 times during the growing season. The times will be dependent on environmental conditions but in general are:

1. Before the plants leaf out in the spring.
2. Between the plants leafing out and early summer.
3. Early fall before the plants go dormant.

Prioritizing the campus:

The campus is divided into two areas:

1. The main campus which includes the campus between 8th street and 5th street from 7th avenue to 12th avenue. Also included is the Advancement center, Welcome Center, Riverside and East Complex.
2. The remaining campus area is primarily between 11th Street and 8th Street excluding East Complex.

Turf management:

We will utilize best cultural management practices when maintaining turf health and appearance. Turf will be mowed to a minimum height of 2.5” or at a height as high as possible while still maintaining a groomed look. Athletic fields may be mowed at a lower height during the sporting season as required by the sport. Mowing should be done when the grass is dry to avoid spreading turf diseases. The mower blades should be maintained with a sharp cutting edge which results in clean cuts on the grass blades reducing stress on the grass plants.

Each year before fertilizer application, soil samples will be collected and analyzed to asses soil fertility. Amendments will be made to the soil as recommended by the analysis. Proper soil fertility will help prevent turf disease and increase plant vigor, reducing weed invasion. Over fertilization should be avoided to reduce the incidence of some turf-grass diseases, more frequent mowing and an increase in the thatch layer.

Organic fertilizer should be used if practical, otherwise use fertilizers with at least 50% slow release nitrogen applied at a rate not exceeding 2-2.5 lbs pre 1000 square feet unless soil fertility tests show the need for more nitrogen. The fertilizer will not contain any phosphorous. Fertilizer application should be timed when grass is actively growing, usually in late May / early June before summer heat and late August / September. Fertilizer should not be applied later than October 15th.

Managing grass clippings is important to the turf health. Grass clippings should be allowed to remain on the lawn and allowed to degrade if not excessive. Leaving the grass clippings on the lawn will return nitrogen into the soil as well as increase organic matter. Leaving grass clippings creates a thatch layer which is beneficial if it is in the ½ to ¾ inch range. Excessive thatch is undesirable and can block moisture and fertilizer reaching the roots of the grass. If it is necessary to dethatch the grass, it should be done in the summer or fall when the grass is actively growing and can quickly recover.

Weed Control:

A properly maintained lawn should have dense, thick turf-grass, which will prevent weeds from getting established. Some weed growth should be anticipated even with a healthy lawn and be tolerated. Widespread, blanket application of herbicides should not be performed in area one unless weeds species have invaded greater than 10% of the turf area. Spot applications can be applied in small areas as needed. When weeds cover 25% or more of the turf in area two, blanket spraying can be used to control the infestation. Spot applications should be used if weeds are concentrated in certain areas.

Herbicides used on campus should be either class 3 (slightly toxic labeled with “caution”) or class 4 (not toxic with no signal word required).

Ornamental beds and woody plant care:

Best cultural management practices will be used in the care of ornamental beds and woody plants on Concordia’s campus. Plants will be selected that are as resistant to diseases and insects as much as possible. Plants will be obtained from reputable nurseries and greenhouses. Prior to planting, the plants will be inspected for insects and diseases. Any plants that show infestation will be rejected to avoid introducing pests to the healthy landscape. Ornamental plants will be planted at proper depth, with proper planting techniques, as outlined in the appendix, to avoid unnecessary stress. After planting, ornamental beds as well as trees should be mulched with wood bark to a depth of 3” which will prevent weed growth as well as retain moisture in the soil. Mulch also provides a buffer, helping to prevent mechanical damage by mowers and trimmers. To help prevent disease, dead and dying vegetation should be disposed of on a regular basis. Leaves should be removed from the beds in the fall.

**Annual Pollinator Events**

**Pollinator Education Events**

* Pollinator cite visits during sustainability tour at CobbHobNob
* Pollinator film showing for Earth Week
  + *The Pollinators* (2019)
  + *Honeyland* (2019)
  + *Pollinators* *Under* *Pressure* (2018)
  + *Super* *Hummingbirds* (2016)
  + *Bat Man of Mexico* (2015)
  + *Hummingbirds: Jeweled messengers* (2015)
  + *Hive Alive* (2014)
  + *Bee People* (2014)
  + *The World of Bees* (2014)
  + *More Than Honey* (2012)
  + *Wings of Life* (2011)
* Pollinator education tabling in atrium
  + Potential tabling dates
    - Arbor Day (last Friday in April)
    - National Honey Month (September)
    - National Bat Week (last week in October)

**Examples from Other Schools**

* Welcome Week Sustainability Picnic
* Certified beekeepers as guest speakers

**Pollinator Courses and Workshops**

**Qualifications for Pollinator Courses & Workshops**

* At least biennially offered
* Pollinator protection course and/or incorporate pollinator protection topics into the curriculum

**Concordia College Pollinator Courses**

* Entomology (BIOL 311)
* Plant Taxonomy (BIOL 313)
* Conservation Biology (BIOL 327, ENVR 327)
* Ecology (BIOL 221)
* Ecosystems and Human Influence (ENVR 103)
* Mammalogy (BIOL 312)

**Campus Pollinator Signage**

**Pollinator Signage Requirements**

* Educate public on importance of pollinators or pollinator habitat
* May be temporary or permanent

**Pollinator Signage Locations**

* Integrated Science Center
  + Bee boxes (2)
  + Pollinator Garden (1)
  + Grass Garden on the South side (1)

**Bee Campus USA Webpage**

**Website Requirements**

* Contact information for Bee Campus USA Committee
* Committee list and meeting date/location
* Annual renewal reports
* Recommended Native Plant Species List
* Local Native Plant Suppliers List
* Pollinator-Friendly Integrated Pest Management Plan
* A link to the national Bee Campus USA website (https://www.beecityusa.org/faqs-and-forms-998993.html)

**Annual Renewal**

**Renewal Requirements**

* Submit required reports
  + Updating contact information
  + Provide quantitative and qualitative information about the previous year's achievements in pollinator conservation
  + Paying the annual renewal fee

**Renewal Fees by Enrollment**

* <3000 ($100)
* ​3,000 - 5,000 ($200)
* 5,001 - 10,000 ($300)
* 10,001 - 20,000 ($400)
* >20,000 ($500)

**Renewal Fee Deadline:**

* February 28th

**Renewal Form:**

* https://docs.google.com/forms/d/e/1FAIpQLSfAhBKrnN6hfPZvEHIY\_ZKZ5zOmx0nNfJGPNpT8ZXCo74Hxdw/viewform