VII. NATIVE VEGETATION

Introduction

Integral components of any natural system are the plants that live within them. The **native plants** that grow in a community are very important because they uniquely perform environmental functions that keep our natural environment working.

What are native plants? Native plants are the trees, shrubs, flowers, grasses and ferns that have evolved in a particular area, such as Southeast Michigan, over thousands of years, and existed in the area before European settlement. Over this long period of time, these plants have adapted to the particular growing conditions present here, including temperature, rainfall, winds, soils, slopes and fauna. Benefits of using native plants include the following:

- Native plants are well-adapted to local conditions, therefore requiring little maintenance once established. They eliminate or significantly reduce the need for fertilizers, pesticides, water and lawn maintenance equipment. They also often attract beneficial insects, which prey upon pests, decreasing the need for pesticides.

- Native plants are less expensive to maintain. U.S. EPA reports that a prairie or wetland costs approximately $150 a year per acre to maintain, while the same amount of lawn costs $1,000 per year per acre to maintain.

- Native plants reduce air pollution, improve water quality and reduce soil erosion. Using native vegetation, unlike cultivated landscapes, does not require the use of lawn maintenance equipment, a major contributor to air pollution. They improve water quality by filtering contaminated storm water, and reduce soil erosion by stabilizing soils with their deep root systems.




- Most native species are perennial, or self-seeding biennial plants.

- Native plants attract our native songbirds and butterflies. Just as the plants have evolved and adapted to our area over time, the local wildlife has evolved along side them, depending on these plants for food and shelter.

- Using native plants promotes biodiversity. Planting a small meadow that once was lawn replaces one plant species with many, increasing the opportunities for beneficial wildlife and insects to live.

- Native plants maintain our natural heritage and our community's character.

Regulatory Considerations

State and Federal laws do not support the use of native vegetation in exclusion of all **non-native** plant material. However, prohibitions on using non-native, ***invasive*** **plants** may be established based on the interest of the health, safety, and general welfare of the residents within a particular community in keeping with Article IV, Section 52 of the Michigan Constitution of 1963. The intent of the Michigan Natural Resources and Environmental Protection Act, PA 451 of 1994 can also be cited as a purpose for establishing prohibitions on using non-native invasive plants. The remainder of the ordinance language includes guidelines that direct the use of native vegetation for those who choose to do so.

Protection of existing native plants can also be affected by the Federal Endangered Species Act of 1973. If a threatened or endangered species is located within a specific area, this could result in limited disturbance and additional protection. Also, native vegetation could also be protected if it is located within a state- or locally-regulated wetland area.

Native plant guidelines integrate quite easily into most landscaping ordinances because they cover new ideas in landscaping, and often do not conflict with existing provisions. The most common conflict is most likely with any "**noxious weed**" ordinance language a community may currently have. These rules often limit the height of plants in a yard, and do not specifically define what species of plants are "noxious weeds." This can be addressed by using the State's definition of noxious weeds, which include plants that are either introduced from other countries, or are toxic to people (such as poison ivy) and that cause serious problems for farmers. The height issue can be addressed by requiring that all plants be cut to a height of no more than 18" at least once a year (see Section 4.2 below).

Example Ordinance Language

Most native plant ordinances include some regulations, and a considerable number of guidelines for the use of native plants. Because this is a relatively new field, the guidelines help to educate development professionals about the possibilities of using native plants.

The main regulation within the native plant ordinance is the prohibition on using non-native (or exotic), *invasive* plants. These plants are not native to the area, have no natural controls and are able to out-compete and gradually displace native plants. By reducing or

eradicating the native species, the functions they perform are no longer accomplished. Because exotic invasive plant species could potentially harm the environment, there is justification to regulate the use of these plants.

The provisions in the following ordinance language cover a wide range of topics and circumstances. However, many of these provisions can be individually incorporated into a landscaping ordinance if the community is not ready or interested in a full range of native plant provisions. For instance, prohibiting "invasive" plants would be a basic provision to start with. If a community wanted to go further, it could encourage the use of natives, and if they are not available, the use of non-native, non-invasive plants. While some introduced plants are harmful, or invasive, not all non-natives behave this way. An important rule of thumb is to "do no harm." Therefore, if native species are not available, then non-invasive non-native species are the second best choice. Also, a community could allow cultivars of native species. Again, it is important that a community choose provisions that will advance their goals and fit in with their existing ordinances.

The remainder of most native plant ordinances is guidelines, or suggestions as to ways native plants can be used.

NATIVE VEGETATION

(COMMUNITY NAME), MICHIGAN
Ordinance No. _____

SECTION I. GENERAL

1.1 Intent:

SIDEBAR TEXT

- Native plant provisions are generally part of the landscaping section of the Zoning Ordinance.
- The "Intent" section of the landscaping ordinance should outline the benefits of preserving and using native vegetation in landscaping.
- As for any ordinance, support for the use of native vegetation should be included in the community's Master Plan.

It is the intent of this section to encourage the use of desirable native species of plants for all landscaping and to maximize the use of native plant species in landscaping all areas of a site, including but not limited to, foundation plantings, lawn areas, screening and greenbelt areas, and surface storm water conveyance features.

Encouraging the use of native plants in this ordinance is based on the following:

A. Native plants are a necessary part of the proper functioning of natural ecosystems within (Community Name) and perform tasks including, but not limited to, storm water attenuation, uptake and purification, air purification, wildlife food and habitat, and community character and aesthetics; and

B. Landscaping with native plants encourages environmentally-sound maintenance practices by requiring little or no pesticide or fertilizer use, and minimal watering once plants are established, which, in turn, reduces the threat of environmental degradation; and

C. The (Community Name) has stated in its Master Plan the goal to preserve the natural features and character of (Community Name) lands and protect the quality of vital (Community Name) air, land and water resources; and to encourage the uses of desirable native species of vegetation.

SECTION 2 – DEFINITIONS

2.1 Definition of Terms:

CULTIVAR means a certain variant of a species that is propagated for ornamental use. The cultivar name is always enclosed in single quotation marks or designated "cv."; it is not italicized. Example: Acer rubrum 'Sunset'.

ENVIRONMENTALLY-SOUND LANDSCAPE MANAGEMENT PRACTICES means landscape management practices that use appropriate native plant species for the site conditions, reduces the need for irrigation, eliminates the use of chemical pesticides and fertilizers, and significantly reduces or eliminates the use of gasoline-powered landscaping equipment.

EXOTIC PLANT SPECIES means a plant species that has evolved in a country or region other than Macomb County and has been introduced by human activity.

EXOTIC INVASIVE PLANT SPECIES means an exotic plant species that has no natural controls and is able to out-compete and gradually displace native plants. A list of prohibited exotic invasive plant species is included in this ordinance.

FLORISTIC QUALITY ASSESSMENT is a method for evaluating the relative significance of tracts of land in terms of their native floristic composition. This method was developed by the Michigan Department of Natural Resources. The plant list that results from this process provides information about the ecosystems on the site, the condition of those systems, and gives guidance as to what native plant species would be appropriate to use in landscaping the site after development has occurred.

NATIVE PLANT SPECIES means a plant species that has naturally evolved in a certain area over thousands of years under certain soil, hydrologic, and other site conditions. Where "native plant species" is used in the text, this means a straight species, not a cultivar of a species.

SIDEBAR TEXT

Common native plant species that are readily available in the landscaping trade include:

- Trees – Red Maple (*Acer rubrum*), Sugar Maple (*Acer saccharum*), Basswood (*Tilia americana*), Red Oak (*Quercus rubra*), Swamp White Oak (*Quercus bicolor*), Bur Oak (*Quercus macrocarpa*), Redbud (*Cercis Canadensis*), Flowering Dogwood (*Cornus florida*).
- Shrubs – Chokeberry (*Aronia melanocarpa*), Alternate-leaf Dogwood (*Cornus alternifolia*), Red-osier Dogwood (*Cornus stolonifera*), American Hazelnut (*Corylus americana*), Michigan Holly (*Ilex verticillata*), Serviceberry (*Ameranchier laevis or arborea*), Spicebush (*Lindera benzoin*), American Cranberry Viburnum (*Viburnum trilobum*).
- Perennials – New England Aster (*Aster novae-angliae*), Beebalm (*Monarda fistulosa*), Black-eyed Susan (*Rudbeckia hirta*), Wild Geranium (*Geranium maculatum*), Showy goldenrod (*Solidago speciosa*), Jack-in-the-pulpit (*Arisaema triphyllum*), Michigan Lily (*Lilium michiganese*), Common Milkweed (*Ascleias syriaca*), Trillium (*Trillium grandiflorum*).

NATIVE PLANT COMMUNITY is a collection of plant species native to Macomb County that have evolved together under similar site conditions.

NATURAL LANDSCAPING refers to a property that is landscaped so as to exhibit the deliberate and conscious decision to plant, cultivate and maintain those native species identified as wildflower, grass, shrub, or tree in commonly accepted publications, including "Michigan Flora" by Edward Voss, all volumes. This landscaping tries to capture the character and spirit of nature in a designed landscape by arranging plants in a community context, similar to their arrangement in nature.

NOXIOUS WEED refers to any plant species listed by the State of Michigan under Regulation 715, Seed Law Implementation, and under Act 359 of 1941 – Noxious Weeds.

SECTION 3 – PROHIBITED PLANT SPECIES

Section 3.1 Prohibited Plant Species

The following plants are prohibited for use in landscaping activities. Most of these plants are not native to the area, reproduce profusely and have potentially harmful effects on natural ecosystems. They are known as "exotic invasive species."

> **SIDEBAR TEXT**
>
> ⋕ To ensure that the proposed plant species on a site plan are not the same as a plant on the "Prohibited Plant Species" list, common and botanic names (English and Latin) should be provided on the site plan. A plant species can have several common names, but it will only have one botanic name.

Common Name (Botanic Name):

Trees:
Norway Maple (Acer platanoides)
Amur Maple (Acer ginnala)
Tree of Heaven (Ailanthus altissima)
European Alder (Alnus glutinosa)
Goldenraintree (Koelruteria paniculata)
Amur Cork Tree (Phellodendron amurense)
White Poplar (Populus alba)
Siberian Elm (Ulmus pumila)

Shrubs and Vines:
Porcelainberry (Ampelopsis brevipendunculata)
Japanese barberry (Berberis thunbergii)
Common barberry (Berberis vulgaris)
Butterfly Bush (Budlia davidii)
Oriental Bittersweet (Celastrus orbiculatus)
Cotoneaster (Cononeaster microphyllus)
Cotoneaster (Cotoneaster pannosus)
Cotoneaster (Cotoneaster lacteus)
Autumn Olive (Eleagnus umbellata)
Russian Olive (Eleagnus angustifolia)
Burningbush (Euonymus alatus)
Wintercreeper (Euonymus fortunei)
English Ivy (Hedra helix)
Privet (Ligustrum vulgare)
Japanese Honeysuckle (Lonicera japonica)
Amur Honeysuckle (Lonicera maackii)
Morrow Honeysuckle (Lonicera morrowi)
Tartarian Honeysuckle (Lonicera tatarica)

White Mulberry (Morus alba)
Common Buckthorn (Rhamnus cathartica)
Glossy Buckthorn (Rhamnus frangula)
Multiflora Rose (Rosa multiflora)
Japanese Spiraea (Spiraea japonica)
Japanese Yew (Taxus cuspidata)
Guelder Rose (Viburnum opulus var. opulus)

Grasses and Grass-Like Plants:
Pampas Grass (Cortaderia selloana, C. jubata)
Chinese Silver Grass (Miscanthus sinensis)
Giant Reed (Phragmites communis)
Reed Canary Grass (Phalaris arundinacea)
Ribbon Grass (Phalaris picata)

Flowers and Groundcovers:
Creeping Bugleweed (Ajuga reptans)
Garlic Mustard (Alliaria officinalis)
Spotted Knapweed (Centaurea maculosa)
Crown Vetch (Coronilla varia)
Foxglove (Digitalis purpurea)
Japanese Knotweed (Fallopia japonica)
Dame's Rocket (Hesperis matronalis)
Purple Loosestrife (Lythrum salicaria)
Pachysandra (Pachysandra terminalis)
Myrtle, or Periwinkle (Vinca minor)

SECTION 4 – NATIVE VEGETATION GUIDELINES

SIDEBAR TEXT

∉# Many landscape ordinances have weed laws that prohibit the growth of plants or grasses taller than a certain height (usually 18" – 24"). However, this same ordinance could be interpreted to prohibit growing native wildflowers and the like. Therefore, existing regulations may need to be modified to permit native landscaping. (See the Introduction to this section for a discussion of this topic.)

Section 4.1 Noxious Weeds.

Noxious weeds are those defined per the Michigan Seed Law, P.A. 329 of 1965, as amended, Regulation No. 715, Rule 7. The noxious weeds are not native plants.

They are introduced species. These plants are also prohibited from being used in any natural landscaping.

It shall be the responsibility of the owners of all subdivided lots to adequately control the growth of noxious weeds on their lot. The control of such weeds shall be by cutting said weed on a regular basis during the growing season so as to limit the height of said weeds to no more than six (6) inches. In the event the lot owner does not comply with this section of the ordinance, the (Community Name) shall, after written notice to the owner of record on the latest assessment roll, have the right to enter upon said lot or lots and cut said weeds in compliance with this ordinance. The cost of such action by the (Community Name) shall only apply to lots in subdivision and not to any other land within the (Community Name).

Section 4.2 Private Naturally Landscaped Lots

A private, "naturally landscaped" lot is a privately-owned lot where the landscaping exhibits the deliberate and conscious decision to plant, cultivate and maintain native plant species. A naturally landscaped lot often has a significantly different character than a traditionally landscaped lot, as it generally does not include much mown lawn, but is made up of relatively tall plants, often in an arrangement that emulates nature.

Naturally landscaped lots must be maintained so that herbaceous plants are mown or cut to 18" or less at least once prior to June 1 of each calendar year.

Natural landscaping on private lots shall not be located within two (2) feet of the front property line or at corner side property lines of lots having a public sidewalk, or within four (4) feet of any other property line; provided, however, no rear or side yard setback shall be required where the natural landscaping material is separated from adjacent lots by fencing or bushes, or where the natural landscaping material abuts permitted natural landscaping material on an adjacent lot. An intervening path or sidewalk shall not be deemed to prevent natural landscape materials from "abutting" for purposes of this section.

Section 4.3 Plant Rescue and Transplantation

In the development of many sites, there are appropriate native plant species that exist on the site that will be destroyed by development, but could be transplanted to other areas on the site. If this is the case, the following suggested guidelines should be followed:

Standards:

A. Where native plant species are being displaced by development, herbaceous and woody plants should be rescued to the extent possible before all land clearing operations begin. Plants that can be successfully transplanted should be designated by a qualified botanist during the site plan review process. These plants should be protected from construction activity and maintained in a healthy condition on site until they can be transplanted to other areas of the site.

B. Woody native plant species that are rescued from developed areas of a site may be used to fulfill landscaping requirements. Plants of a size smaller than the sizes outlined in this landscape ordinance are allowed as long as the plants are no less than one-half the required size, and that the total number of plants used adds up to the size requirements for a single species. For example, two, rescued 1-1/4" caliper Oaks can be used instead of one, 2-1/2" caliper Oak.

C. Native plant species should not be removed for transplanting or for other purposes from undisturbed areas of the site, or areas designated as preservation or conservation areas. Federal and state laws protecting native plant species designated as endangered, threatened or of special concern must be adhered to and under no circumstances shall these plants be damaged, destroyed or removed from the site.

D. Plants that will otherwise be destroyed through construction activities can be rescued from one site for transplanting to another site as long as permission for removing the plants is granted, in writing, by the land owner, and that the plants are inspected by the Michigan Department of Agriculture Pesticide and Plant Pest Division. Inspection is also necessary if the plants are moved across a public road, even if the road is on the same property as the plant's original location.

SIDEBAR TEXT

- Communities can encourage the use of native plants through preservation and/or restoration of native plant communities, or by landscaping with native plants.
- "Restoration" of native plant communities differs from landscaping in that the plants are chosen to mimic the plant community being restored, and they are arranged as they would be in nature, rather than in a "garden" arrangement.

Section 4.4 Exotic Invasive Species Removal
Recommended standards for removing exotic invasive species are described below:

Standards:

A. Where possible, exotic invasive plant species should be removed where they exist within native plant communities to remain after development is complete. Tested methods for removal of specific species should be employed to ensure that the invasive species do not return in the same or increased numbers.

Section 4.5 Native Plants in Landscaping
If native species are to be used in landscaping and plantings, the following guidelines should be considered:

Standards:

A. Native plant species chosen for a site should be based on the existing vegetation and site conditions. The woodland, wetland or meadow species that currently grow on a site indicate the native species to be used in landscaping the site.

B. For traditional (or "garden") landscaping arrangements, it is recommended that native plant species rated a 0 through 7 in the Michigan Floristic Quality Assessment Plant Database be used. Rational for this recommendation is that the rarest plants (rated 8 – 10) are not readily available from local genetic stock and that common species (rated 0 – 2) are readily available through local nurseries. Endangered, threatened or special concern plants should be avoided altogether. Listing of these plants are available from the (Community Name).

C. For natural landscaping arrangements, such as open spaces or storm water systems, it is recommended that native plant species rated 3 through 7 in the Michigan Floristic Quality Assessment Plant Database be used. Rationale for this recommendation is that the rarest plants (rated 8 – 10) are not readily available from local genetic stock, and the most common plants (rated 0 – 2) will most likely be in the seed bank in existing topsoil or come in on their own. Endangered, threatened or special concern plants should be avoided altogether. Listings of these plants are available from the (Community Name).

D. In entryways or other areas where aesthetics is of primary importance, cultivars of native plant species may be considered to ensure, to a certain degree, the plant's appearance.

E. Plantings installed in areas of storm water conveyance, infiltration, or retention/detention should be planted with native species that specifically perform the necessary runoff attenuation, filtration, water uptake and purification functions needed in such areas. Both herbaceous and woody species should be incorporated into the plant mix, where the desired function dictates.

SIDEBAR TEXT

- Preserving native vegetation along undeveloped reaches of stream or river banks is an easy and cost effective way of protecting water quality from polluted runoff. A natural feature or riparian buffer ordinance could be included in the Best Management Practices (BMPs) to meet Phase II storm water permit requirements.
- Another way to meet Phase II requirements is using native vegetation in storm water BMPs, such as vegetated swales and wet ponds. The plants will help to filter the water of pollutants before it is outlet to a natural system.

F. The arrangement of native species can be designed in both conventional arrangements, or more "natural" arrangements. Natural arrangements emulate the arrangements found in nature within the particular plant community being used for landscaping purposes. Natural arrangements should be used for landscaping open space, such as surface storm water systems, street tree plantings, and/or parks. If natural arrangements are used, plant spacing requirements can be relaxed as long as the function that the plants are to serve is accomplished.

G. The number of native species used in a natural arrangement should be more complex, and somewhat representative of the plant community being emulated, than would be used in a conventional planting arrangement.

Section 4.6 Maintenance

One purpose of using native vegetation is to reduce the amount of maintenance and watering required, eliminate the use of chemical fertilizers and pesticides, and reduce emissions from gasoline-powered landscaping equipment. These guidelines provide suggestions about how this can be accomplished.

Standards:

A. All ecosystem types should be maintained using environmentally-sound practices that will keep the plants in a healthy and thriving condition

without the use of toxic chemicals. Maintenance programs should be based on the ecosystem type. For instance, prairie plantings require annual or biannual mowing or burning to encourage new, vigorous growth.

B. If a native planting is installed in a landscape bed that would otherwise require irrigation, the governmental body responsible for site plan approval may waive this requirement if the plants selected are drought-tolerant species, and that the planting will be regularly watered for the first full growing season so that the plants can become well established.

C. Residential landscapes that use native plants in a natural arrangement must be maintained to keep a mown edge three (3) feet wide and not higher than six (6) inches along all public sidewalks, and a strip not less than three (3) feet wide adjacent to neighboring property lines unless waived by the abutting property owner on the side affected. Vegetation must not interfere with site distances from driveways and roads.

Additional Resources

1) **Springfield Township Native Vegetative Enhancement Project**. This project includes printed information sheets for the homeowner and development professionals, and an interactive native plants CD that lists more than 230 plants native to southeastern Michigan. Contact the Township at 248-846-6510.

2) **Wild Ones Natural Landscapers.** National, non-profit organization dedicated to educating the public about native plants. www.for-wild.org.

3) **Environmental Protection Agency (EPA).** www.epa.gov/glnpo/ Under "Other Topics of Interest" at the bottom of the page, hit the "Landscaping with Native Plants (Greenacres) button.

4) **Michigan Native Plant Producers Association**. Professional association in south Michigan. Plant and seed guide available at the following link: www.nohlc.org/MNPPA.htm.

5) **Macomb Land Conservancy**. www.savingplaces.org.

6) **Books:**

Barnes, B.V. and Wagner, W.H., Jr. *Michigan Trees. A Guide to the Trees of Michigan and the Great Lakes Region*. University of Michigan Press, 1981.

Hightshoe, Gary L. *Native Trees, Shrubs, and Vines for Urban and Rural America*. Van Nostrand Reinhold Co., 1988.