

DRAFT DATED JAN 19, 2005

ORDINANCE NO. 05-__-__

**AN ORDINANCE REGULATING THE REMOVAL OF
PROTECTED WOODLAND IN THE VILLAGE OF RIVERWOODS**

**BE IT ORDAINED BY THE PRESIDENT AND BOARD OF TRUSTEES OF THE
VILLAGE OF RIVERWOODS as follows:**

SECTION ONE: Articles A and B of Title 9, Chapter 6 of the Village Code, are hereby deleted in their entirety and replaced with the following provisions:

**CHAPTER 6
WOODLAND PROTECTION ORDINANCE**

SECTION

- 9-6-1: Title
- 9-6-2: Findings of the Board of Trustees
- 9-6-3: Authority
- 9-6-4: Definitions
- 9-6-5: Purpose
- 9-6-6: Regulation Of Removal Of Protected Woodland
- 9-6-7: Delineation of Protected Woodland
- 9-6-8: Conflict With Other Zoning Provisions
- 9-6-9: Penalties

9-6-1: TITLE: This chapter 6 of title 9 shall be known, cited and referred to as the *Riverwoods Woodland Protection Ordinance*.

9-6-2: FINDINGS OF THE BOARD OF TRUSTEES:

- A. The Plan Commission of the Village of Riverwoods on June 3, 2004 conducted a public hearing on the question of adopting a zoning text amendment under the Riverwoods Zoning Ordinance for the purpose of protecting woodlands, and submitted its report to the Board of Trustees recommending that a woodland protection ordinance be considered to protect woodland areas in the village.
- B. The Board of Trustees conducted a public hearing and town meeting on December 7, 2004, and received testimony from Mr. Charles Stewart, President, Urban Forest Management, Inc., who has served as village forester since 1976, Dr. George Ware, Ph.D., Dendrologist Emeritus at the

Morton Arboretum; Mr. Steve Swanson, Director of the Kennecott Grove National Historic Area in Glenview, Illinois; Mr. Mark O'Leary, M.S., Senior Ecologist with Applied Ecological Services, Inc., an ecological consulting, contracting and restoration firm; and Mr. Patrick Glenn, P.E., with Gewalt Hamilton Associates, Inc., the engineering firm that serves as village engineer ("GHA"). At such town meeting, GHA presented its report entitled "Report on Woodland/Turfgrass Hydrology, Using NRCC TR-55 Hydrological Methods", dated December 2004, prepared by GHA (the "GHA Report").

- C. The urban forest research unit of the USDA Forest Service, Northeastern Research Station in Syracuse, New York, was established in 1978, to investigate the effects of urban forests and their management on human health and environmental quality, and it has developed The Urban Forest Effects (UFORE) model, which model is used to quantify the following:
- Urban forest structure by land use type (e.g., species composition, tree density, tree health, leaf area, leaf and tree biomass, species diversity, etc.);
 - Hourly amount of pollution removed by the urban forest, and its associated percent air quality improvement throughout a year. Pollution removal is calculated for ozone, sulfur dioxide, nitrogen dioxide, carbon monoxide and particulate matter (<10 microns);
 - Hourly urban forest volatile organic compound emissions and the relative impact of tree species on net ozone and carbon monoxide formation throughout the year;
 - Total carbon stored and net carbon annually sequestered by the urban forest;
 - Effects of trees on building energy use and consequent effects on carbon dioxide emissions from power plants;
 - Compensatory value of the forest, as well as the value of air pollution removal and carbon storage and sequestration;
 - Tree pollen allergenicity index;
 - Potential impact of Gypsy moth and Asian longhorned beetle infestation;
 - Tree Transpiration.

The urban forest research unit of the USDA Forest Service, Northeastern Research Station in Syracuse, New York, has modeled numerous cities in

the United States and published its results quantifying the direct, favorable ecological and financial benefits of maintaining urban forests

D. After reviewing the expert testimony and reports presented to the Board of Trustees and the published research available to quantify the economic benefits of urban forests, the Board of Trustees adopts the following findings as the basis for adoption of the Riverwoods Woodland Protection Ordinance and intends that the ordinance be interpreted in the light of such findings:

1. Approximately 90% of the areas within the village's R1, R2 and R3 single family residential zoning districts (excluding subdivisions developed as planned unit developments) are located within the mixed-hardwood forest and woodland landscape that is the characteristic natural ecological system in the village.
2. In the village's woodland ecosystem, the canopy, understory and ground plane (herbaceous) levels each have characteristic species. Characteristic ground plane plants include trillium, wild geranium, grasses, sedges and native vines such as Virginia creeper. Characteristic species in the understory level (referred to be common names) include ironwood, blue beech, hawthorn, eastern redbud and smaller trees and shrubs. The canopy level is dominated by the following species and their cultivars: red maple, sugar maple, silver maple, black cherry, hickory, elm, hackberry, eastern cottonwood and oak species. Additional canopy trees can include American basswood, ash, black locust, northern catalpa, pine, walnut, and willow trees.
3. The natural woodland ecology in the village is modified and pressured by human activity and development, the presence of deer herds, in particular, and other wildlife and insect populations, and the proliferation of non-native, invasive species, such as buckthorn and garlic mustard. Human activity in the form of replacing native understory and ground plane plants with turfgrass is also a negative factor in the maintenance of healthy woodlands because each of the three native components of the woodlands - the upperstory, understory and ground plane - is necessary for the continued regeneration of native trees and plants.
4. Since 1976, the village's woodlands have diminished in quantity and in the quality of the plant community as a result of the pressure factors that are described above. As a result, the village's woodlands have become more fragmented and have suffered a loss in the ability to regenerate the more desirable species of trees and plants of the native landscape.

5. For the natural woodland ecology in the village to remain self-sustaining, it is necessary to take steps to reduce the further loss and fragmentation of woodland areas resulting from human activity in order that the woodland trees and plants can more readily resist the pressure factors resulting from non-human factors.
6. The village should continue to monitor the work of the Lake County Forest Preserve District in maintaining the deer population at a level that can be supported by the environment; the village should continue to work with other governmental units to minimize and control infestations of gypsy moth, Asian longhorned beetles and similar pests; and the village should continue to support woodland restoration by educational efforts and by providing assistance to residents seeking to eliminate non-native, invasive species from their properties. The actions referred to in this section should be coordinated with the provisions in this ordinance regulating the removal of protected woodlands to establish the best possible conditions for the health of the woodlands.
7. The woodlands in the village, as demonstrated in the GHA Report, significantly reduce the volume and rate of stormwater runoff produced under various land use conditions in the village in comparison to the volume and rate of stormwater runoff in turfgrass lawn areas. The GHA Report is incorporated in this ordinance as if fully set forth herein. Lessening the removal of herbaceous plants and understory trees and the substitution of turfgrass in place thereof will reduce stormwater runoff and lessen the severity of local flooding in the village.
8. The maintenance of a healthy woodland environment in the village provides the following benefits: shade and cooling; control of erosion; filtering of water pollutants from stormwater; recharging of aquifers used by residents for drinking water; replenishment of the groundwater table; maintenance of flows into wetlands and streams; cleansing of air of pollutants; mitigation of global warming by absorbing greenhouse gases; and promotion of a biologically diverse community of micro-organisms, plants and animals, protecting some species from extinction while preserving genetic diversity. The Urban Forest Effects (UFORE) model developed by the urban forest research unit of the USDA Forest Service, Northeastern Research Station in Syracuse, New York, has been used to quantify the dollar benefits of urban forests, and such models indicate that there is a significant quantifiable benefit from woodlands in respect of the benefits described above, and such

(Russian Olive), *Eleagnus umbellata* (autumn olive), *Populus alba* (white poplar) and *Ulmus pumila* (Siberian elm), *Alliaria petiolata* (garlic mustard) and similar species that displace and compete with native plants and harm natural associations among native plants in the Riverwoods Woodland Plant Community.

Protected Woodland

A contiguous area, containing a stand of deciduous trees whose total combined canopy covers an area of ten thousand (10,000) square feet or more, and more generally consisting of the canopy, understory and ground plane elements characteristic of the Riverwoods Woodland Plant Community. A Protected Woodland as herein defined shall be deemed to exist notwithstanding that (a) its boundaries traverse across lot lines of different owners, (b) there is an uneven distribution of canopy, understory or ground plane elements within the area, and (c) there is a significant presence of Noxious Species which have degraded the Riverwoods Woodland Plant Community.

Remove or Removal

The physical detachment or elimination of, or the effective detachment or elimination of, one or more elements of the canopy, understory or ground plane (herbaceous) levels in Protected Woodland, through damage, cutting of major vegetation to the ground, complete extraction, killing by spraying or application of herbicides, root cutting or other material disturbance, or by improving, building upon or covering the Protected Woodland with, for example, any of the following items, so that the Protected Woodland no longer remains in a natural condition suitable for the continued propagation of the Protected Woodland: buildings, accessory buildings or structures, including swimming pools and tennis courts, decks, parking areas, including all paved areas used for parking or access to those areas, drives, aisles, sidewalks and loading areas; patios; any graveled, paved or hard-surfaced area; any turfgrass (such as Kentucky

bluegrass, fine fescue, perennial ryegrass, bentgrass roughstalk, bluegrass, tall fescue). Without limitation of the foregoing, “remove” or “removal” does not include the pruning of Protected Trees in accordance with National Pruning Standards.

Riverwoods Woodland Plant Community

The native tree and plant species indigenous to the village’s woodland ecosystem. The village’s woodland ecosystem consists of the canopy, understory and ground plane (herbaceous) levels, each of which has characteristic species and which co-exists in an interrelated plant community as a climax forest (or would co-exist as persistent layers in the potential natural vegetation but for the presence of one or more harmful factors). Characteristic ground plane plants include trillium, wild geranium, grasses, sedges and native vines such as Virginia creeper. Characteristic species in the understory level include *Capinus caroliniana* (blue beech), *Ostrya virginiana* (ironwood), *Crataegus spp.* (hawthorn), *Cercis Canadensis* (eastern redbud) and smaller trees and shrubs. The canopy level is dominated by the following species and their cultivars: *Acer rubrum* (red maple), *Acer saccharum* (sugar maple), *Acer saccharinum* (silver maple), *Prunus serotina* (black cherry), *Carya spp.* (Hickory species), *Ulmus spp.* (elm species), *Celtis occidentalis* (hackberry), *Populus deltoides* (eastern cottonwood) and *Quercus spp.* (oak species). Additional canopy trees include *Tilia Americana* (American basswood), *Fraxinus spp.* (ash), *Robinia pseudoacacia* (black locust), *Catalpa speciosa* (northern catalpa), *Juglans spp.* (walnut) and trees of the pine genus (*Pinus*) and of the willow family (*Salix*).

9-6-5: PURPOSE: The purpose of the Woodland Protection Ordinance is to preserve woodland areas within the village by regulating and limiting the Removal of Protected Woodlands in order to safeguard the benefits of the Riverwoods Woodland Plant Community for this and succeeding generations.

9-6-6: REGULATION OF REMOVAL OF PROTECTED WOODLAND:

- A. With respect to any residential lot in the village (other than a lot governed by subsection B below), it shall be unlawful for any person to cause or permit any Removal of more than thirty percent (30%) of the Protected Woodland existing on such lot as of the Effective Date, except that if such lot has never been improved with a single family dwelling (that is, if such lot exists in a native, undisturbed state), then it shall be unlawful for any person to cause or permit any Removal of more than forty percent (40%) of the Protected Woodland existing on such lot as of the Effective Date. For purposes of determining the amount of Protected Woodland on any lot, the woodland areas located in any unpaved portion of any street or street easement shall be counted.

- B. If, as of the Effective Date, any residential lot (vacant or improved) exists which may be further subdivided in accordance with the requirements of this Title 9 and which consists of sixty percent (60%) or more of Protected Woodland, then at least sixty percent (60%) of the area of the lot as a whole shall continue to be maintained as Protected Woodland regardless of whether any subsequent subdivision or development of the lot occurs. The allocation of Protected Woodland that must be maintained on each resulting lot shall be specified at the time of subdivision, to ensure compliance with the requirements of this subsection, by means of a restriction in the plat of subdivision or enforceable deed covenant which is approved and enforceable by the village. It shall be unlawful for any person to cause or permit the Removal of Protected Woodland from any lot in violation of this subsection.

9-6-7: DELINEATION OF PROTECTED WOODLAND: When any application for site development permit is made under Title 8, the applicant shall delineate the Protected Woodland, if any, located on such applicant's lot. The following criteria shall be used in judging compliance with this section:

1. The Riverwoods Woodland Plant Community consists of a plant association of canopy trees, understory trees and shrubs, and woody and herbaceous ground plane plants. It does not include grass lawns, impervious surfaces, or other man made surfaces such as a horse corral.

2. Protected Woodland shall be delineated on a lot by identifying the point where the woodland plant community meets grass lawns, impervious surfaces, or other man made surfaces.

3. The woodland delineation flags shall be placed along the edge of the woodland at a point that defines the critical root zone of the largest canopy tree or understory tree that is in the Protected Woodland and within 30 feet of the woodland edge.

4. Woodland delineation flags shall be placed as close together as necessary to define the Protected Woodland, but no farther apart than 50 feet.

5. If large canopy trees or understory trees (for this purpose, meaning trees with a diameter breast height of 12" or more) are not present within 30 feet along the outer edge of the Protected Woodland, the woodland delineation flags shall be placed a minimum of 10 feet from the edge of the woodland plant community.

The woodland edge that is delineated on the lot shall be reviewed by the Village Forester, who shall either reject or approve the proposed delineation or approve the delineation with modifications. The delineation, as approved by the Village Forester, shall be located in the field by a surveyor or engineer and the surveyed location shall be shown on the site plan. No site development permit shall be issued to any person if the proposed development would result in a violation of Section 9-6-6 of this chapter. In determining the amount of Protected Woodland on any lot, an owner may document any additions to the woodland areas located on such owner's lot after the Effective Date if the owner shall submit a reforestation plan with the village. Such plan shall contain such detail with respect to the cessation of turfgrass cultivation, the removal of other material disturbing the natural surface of the area, the minimum area to be impacted and the adoption of natural landscaping management techniques as shall be specified by the village forester. The amount of Protected Woodland on such owner's lot as of the Effective Date shall not be deemed to include the woodland areas established on such owner's lot after the Effective Date as a result of the implementation of such reforestation plan.

9-6-8: CONFLICT WITH OTHER ZONING PROVISIONS: Where conflict results between the regulations of this chapter and the provisions of the zoning districts in which any lot is located, the regulations of this chapter shall control.

9-6-9: PENALTIES. Whoever violates any of the provisions of this chapter shall be punished by a fine of up to \$750 for each such violation, and a separate and distinct violation shall be deemed to have occurred for each day that such violation exists. In addition to any fine permitted or required to be imposed hereunder, the Village may seek injunctive relief to prevent an actual or threatened violation of this chapter, and may also seek mandatory injunctive relief to require the owner of the lot in question to bring such lot into compliance with this chapter by removing any buildings, structures, landscaping or improvements such owner constructed or installed in violation of this chapter and/or by requiring such owner to prepare and implement a tree reforestation plan to re-establish woodlands on such lot to the extent required in this chapter, the corporate authorities finding that the village and the health, safety and welfare of its residents will be irreparably harmed by the failure to observe the

maximum covered area allowances set forth herein, and that the imposition of a fine alone is an inadequate remedy for such violations.

SECTION TWO: This ordinance shall be in full force and effect from and after its, passage, approval and publication in the manner provided by law.

Ayes:

Nays:

PASSED & APPROVED this 1st day of February, 2005.

Village President

ATTEST:

Village Clerk