

Forest Preserve District of Will County Land Stewardship Policy



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Forest Preserve District of Will County Land Stewardship Policy

I. Introduction

The Forest Preserve District of Will County (District) was established in 1927 under the Downstate Forest Preserve Act (70 ILCS 805/). This Act establishes the District's statutory purpose "*...to create forest preserves, and for that purpose shall have the power to acquire.....and hold lands containing one or more natural forests or parts thereof or land or lands connecting such forests or parts thereof, or lands capable of being forested, or capable of being restored to a natural condition, for the purpose of protecting and preserving the flora, fauna, and scenic beauties within such district, and to restore, restock, protect and preserve the natural forests and such lands together with their flora and fauna, as nearly as may be, in their natural state and condition, for the purpose of the education, pleasure, and recreation of the public.*"

The District's statutory purpose is reflected in its mission to protect, conserve, enhance and promote Will County's natural heritage for the educational, recreational and environmental benefit of present and future generations. Central to the District's mission is the concept of our natural heritage, which encompasses the variety of living organisms, including people, and their relationship with and dependence on the environment. Our natural heritage is the environmental legacy we inherited from previous generations and the responsibility we have to steward it for future generations. The forest preserve system is part of that environmental legacy; it is through land stewardship that the scenic, ecological, recreational and historic values in the preserve system are maintained for the inspiration, use and enjoyment by the general public.

Land stewardship activities, and their resulting benefits, flow from an ethic that is demonstrated by the responsible management of our natural resources. Several existing policies guide the acquisition, planning and management of forest preserves including the; *Preserve Planning & Land Use Policy; Land Acquisition & Protection Policy; Cultural Resource Preservation & Management Policy; Agricultural Use Policy, Prescribed Burn Policy and Volunteer-Steward Program Policy*. This Land Stewardship Policy (Policy) is intended to be the comprehensive framework for these existing policies, future policies, and administrative procedures that collectively guide the management of ecosystems and natural communities contained, or partially contained, on District lands.

The Policy will be administered through a variety of stewardship activities aimed at supporting a diverse and sustainable system of forest preserves through the protection, documentation, maintenance, restoration and/or reconstruction of natural habitats and native plant communities. These activities are organized into a series of stewardship programs (outlined in Section VI of this Policy) that stem from the concepts of promoting biodiversity, recognizing and restoring habitat structure, and understanding and re-establishing natural disturbance regimes critical to maintaining healthy ecosystems.

II. Policy Foundation and Goal

At nearly 850 square miles in size, Will County encompasses a geologically and biologically rich environment that supports a diversity of plants, animals and habitats. This richness is the result

of our recent geological past – the last glacial advance and retreat – as well as the bedrock, climate and the resulting soils that provided the raw canvass for the development of the ecosystems originally found in Will County. These ecosystems included forests, woodlands, savannas, prairies, barrens and wetlands.

Ecosystems develop in response to intrinsic processes such as climate, hydrology, plant-animal interactions, energy and nutrient cycling within the system, and natural disturbance cycles. These processes vary in intensity and frequency, directly influencing the biological diversity and structure of ecosystems. For example, the dispersal success of a wide range of species is closely tied to natural disturbance events such as fires, flooding, and windstorms.

Prior to European settlement (pre-settlement in Will County is prior to 1832), natural disturbance regimes would have been influenced locally by the indigenous human population in response to changing procurement patterns and population densities. For example, large Native American villages would have had some agriculture and localized over-hunting. Historic accounts indicate that Native Americans intentionally set landscape scale fires to improve land for grazing.

The pre-settlement landscape was described through the maps and notes of the first land surveyors (General Land Surveyors), which for Will County occurred from 1821-1838. By integrating this historical information with modern data from aerial photographs, soil surveys, geology, topography and hydrology maps, and examination of any remaining in-situ natural area remnants, District staff have an excellent historic reference point for establishing realistic land stewardship goals. A report and associated mapping based on these information sources was completed for Will County in 2001 [Bowles, M. L., and J. McBride. *Historic Landscape Vegetation Pattern, Composition and Structure of Will County, Illinois, as Recorded by the U.S. Public Land Survey (1821-1838). The Morton Arboretum, Lisle, Illinois.*].

After European settlement, the landscape was radically altered on a large scale in a short period of time: clearing land; conversion to row crops; draining and filling of wetlands; altering the flow pattern or volume of water; increasing impervious surfaces (buildings and pavement) that in turn increases runoff; erosion; sedimentation; grazing; mining; the discharge of wastes onto land and into water; and the introduction of non-native invasive species. Ecosystems that were once continuous across the landscape have become increasingly smaller and fragmented, and natural processes sustaining these ecosystems have been disrupted or altered resulting in the loss of species and habitats.

In the mid-1970s, the Illinois Department of Natural Resources completed a state-wide inventory to find any relicts or remnants of intact, in-situ natural communities. Less than 1% of the original Illinois landscape was found to remain, and most of the state's biological diversity was found in these remaining natural communities, also called natural areas or natural area remnants. Natural areas became the major focus for land preservation efforts, however, by the late 1980s it was clear that setting aside land as preserves was not enough to protect them. Some form of management was necessary to sustain the natural communities and features in preserves over time. This is especially relevant to small areas or preserves that are fragmented within an extensively modified landscape that is primarily used to meet other human needs.

Given this historical context, the primary goal of this Policy is to restore, enhance and conserve the biodiversity and integrity of ecosystems and natural communities in forest preserves

appropriate to the Will County landscape, as nearly as may be in their natural state and condition, by reestablishing and maintaining ecological processes, structure and composition. On some sites, or portions of sites, land stewardship goals will encourage the conservation or enhancement of native biota already supported by the land or water in its post-settlement state, especially if limitations imposed by land use history or other expectations exist.

Stewardship activities will be accomplished by developing comprehensive plans with clear management goals and objectives that are based on best available scientific evidence, and accepted ecological theory, or conservation practice. Once actions are implemented, results will be monitored and evaluated so that strategies and actions can be adjusted relative to stated goals and objectives (i.e., adaptive management). Land stewardship goals also will be integrated with the site educational and recreational goals that may be identified through application of the *Preserve Planning & Land Use Policy*.

III. Application

The District's *Preserve Planning & Land Use Policy* outlines a process of land evaluation and classification to identify high quality natural areas (Sanctuary Areas) and other areas of significant ecological importance (Resource Areas) that are prioritized for restoration or reconstruction to more natural conditions. These areas contain natural plant communities, physical features and/or habitats that harbor state endangered or threatened species, and/or species, habitat or features that are uncommon, rare or unique to Will County. They may also include areas that buffer these resources or areas where human-induced landscape changes can be modified or reversed to create and enlarge ecosystems. Stewardship activities may also appropriate for District lands identified as Special Use Areas or Recreation Areas, where stewardship activities benefit and can be integrated with ongoing or planned recreational or educational functions as identified through the *Preserve Planning & Land Use Policy* process.

IV. Stewardship of Natural Communities

As used here, stewardship is the application of restoration and management techniques designed to protect, maintain or restore populations of native biota, rare species, natural processes and ecosystem structure, function and composition. These techniques include, but are not limited to, prescribed fire, native and non-native invasive species control through clearing and/or herbiciding, water table restoration, and the re-establishment of native species. The District is involved in four levels of ecosystem management.

- A. **Community Maintenance.** The minimum level of intervention needed to maintain the existing ecological integrity and diversity of a site. The primary management activity is the reestablishment of natural disturbances such as prescribed fire (see VI.B). Typically the habitat or community has a very high natural quality, low level of human disturbance or because of staffing or financial limitations, maintenance is the only level of management that can be allocated to a site.
- B. **Community Enhancement.** The restoring and restocking of species to enhance the ecological integrity and diversity of high quality natural areas. In addition to community maintenance, and where maintenance has stabilized the natural community, rare plants and animals appropriate to the natural community may be re-stocked to enhance genetic

diversity, or species that may have been lost due to past human disturbances may be restored to enhance biodiversity.

- C. Community Restoration. Sites or portions of sites that have undergone some past human alteration that has reduced the number and extent of conservative or indicator plant or animal species, but continue to support a matrix of native biota. Typically these sites require use of more aggressive management such as exotic brush and weed removal, herbicide applications, seed collections/plantings and frequent prescribed fire.
- D. Community Reconstruction. The re-creation of natural communities on sites or portions of sites that have been significantly or completely altered by human activity. Reconstruction projects require intensive planning and management. Examples include reforestation, re-creation of prairie from farmland and re-grading or re-establishing hydrology for wetland re-creation.

Pre-settlement conditions reflect the ideal natural state for ecosystems and thus provide a historic benchmark; however, the degree to which ecosystems have been altered, fragmented and degraded by past events or ongoing land uses will determine the extent to which they can be realistically recovered and sustained over time with the resources available. These changes may have occurred within the boundaries of forest preserves or on adjacent lands, and must be taken into consideration when preparing management plans and establishing appropriate target goals and objectives.

V. Stewardship Plans

Preserves or portions of preserves where any of the four levels of stewardship are being implemented shall have a written Natural Resource Management Plan incorporating the management programs outlined below, and associated mapping that establishes management goals, objectives and schedules. The management plan will integrate a site's cultural, physical and biological data with planned management, interpretive and recreational activities whenever known. The District will generally focus management planning at the ecosystem or community level, however, elements of population level management activities may be warranted for certain rare species.

Natural Resource Management Plans are prepared in accordance with the District's *Preserve Planning & Land Use Policy* and incorporate opportunities for public review. These plans shall include:

- Identification and analysis of available site cultural, physical and biological data (i.e., natural resource inventory);
- Identification and analysis of all natural resource elements to be managed;
- Identification and analysis of any past or present land uses within, or adjacent to, the site that continue to impact an identified natural resource element or management strategy;

- Development of management goals, objectives and strategies to preserve or restore identified natural resource elements. This includes current or accepted management techniques, research or monitoring programs, and cost and/or time estimates where appropriate.

In instances where an entire site is a state nature preserve or District Sanctuary Area, the management plan may become the site's master plan. Resource management staff will be responsible for determining the priority of completing resource management plans or interim management schedules until final plans are developed.

VI. Stewardship Programs

The stewardship programs and activities described below shall adhere to existing Board adopted policies where applicable or to administrative guidelines/procedures approved by the Executive Director in the absence of specific policy direction. These programs will be conducted by forest preserve staff that have obtained any required or appropriate certifications, licenses and training or by contractors possessing the same. Administrative guidelines/procedures may be modified as necessary to address changes in general practices, available materials, regulatory requirements and laws.

Stewardship activities shall be based on the current Best Management Practices (BMPs) available at the time of their application, and are guided by monitoring to determine the effectiveness of the practices. BMPs are guidelines, strategies and techniques that are developed to better define specific types of management, restoration, or control work that may be required on District lands, while allowing flexibility to experiment with cutting edge techniques. BMPs are intended to provide a specific framework to guide management decisions, establish appropriate responses and actions, or identify other alternatives relative to the management of a particular population, species, natural community or ecosystem type. They are based on the "best available" scientific knowledge and "best accepted" management practices.

A. Inventory and Monitoring

An inventory of existing biological and natural resource data shall be conducted to guide the development of the goals and objectives of a Natural Resource Management Plan and to assist in the development of site Master Plans. Ideally, initial biological inventories are completed prior to the completion of any interim management actions to document baseline conditions. In addition, the District shall utilize an environmental monitoring system that includes specific repeatable natural community or population inventories and a long-term inventory schedule. This system shall be used to update and modify ecological management activities and assessments and to minimize adverse environmental impacts.

B. Prescribed Fire

Fire was a naturally occurring, powerful landscape-shaping force in Will County for thousands of years. Fire strongly influenced the composition, structure, function and distribution of ecosystems and natural communities in the landscape. While there is

some debate on the frequency (also known as return interval) of fire in different ecosystems, in the past all prairie, wetland and forest ecosystems in Will County burned with regularity. Fire has several ecological benefits; ash from fires acts as a soil fertilizer, promoting plant growth and reproduction. Fire stabilizes soils; promotes seed germination; removes the built up of dried and dead vegetation thereby increasing the light level on the ground which in turn provides increased solar energy for plant growth; and fire reduces siltation by increasing the deep- and fine-rooted herbaceous layer.

The intentional exclusion of fire from the landscape since settlement has caused unnatural and damaging changes to the Will County biota and their requisite habitats. Since District land stewardship goals are to restore authentic and diverse ecosystems by reestablishing their intrinsic natural processes, then the same formative force of fire must be reintroduced to develop and sustain these restorations or natural areas. By managing preserves with fire and monitoring its impacts, District staff can alter the timing and frequency of fire that is optimal for sustaining the structure, function and biodiversity in each ecosystem type.

Prescribed fire may also be an important tool used in other District resource or recreation areas to achieve specific maintenance objectives. The District's use of prescribed fire is administered through the Board adopted *Prescribed Burn Policy and Guidelines*.

C. Invasive Species Control

Invasive species are a major factor in the displacement and loss of the native flora and fauna of the Midwest. Control of non-native or invasive native species is warranted when biodiversity and ecosystem integrity will be harmed without management intervention. Existing non-native and invasive native populations will be identified and the appropriate control technique(s) will be applied to remove these species from the habitat based on the potential deleterious impact on natural or restored communities. Control of exotics will follow all applicable regulations, including the *Rules for Management of Nature Preserves*, state laws regulating herbicide usage and the District's *Herbicide Guidelines*.

There may be specific circumstances in which an exotic species is not removed, providing it is non-invasive and does not displace native species. For example, an exotic may be utilized for educational or recreational purposes, or it may provide valuable habitat structure for rare species. Exotic species in these circumstances will be considered on a case by case basis.

D. Agricultural Land Conversion

Agricultural properties newly acquired, leased or managed by the District are eligible for continued agricultural usage in conformance with the District's *Agricultural Use Policy* adopted by the Board. Agricultural use of any District property is considered interim until alternate land uses are identified and implemented according to the site Master Plan or Natural Resource Management Plan.

When converting District lands from agricultural use, an evaluation will consider the on-site existing vegetation cover types, the pre-settlement vegetation and any similar extant

natural communities nearby, soils, hydrology and adjacent land uses. From this assessment, restoration recommendations will be made. The principle objective is to reduce fragmentation of habitat while restoring the appropriate native plant communities into a unified block of land as large as possible.

E. Mitigation Programs

Current federal and state regulations require public agencies and private entities to mitigate damage or impact to natural resources resulting from their past, current or future land use decisions, improvements or business practices. These impacts may affect air quality, water quality, wetlands, forested areas, populations of state or federal protected species, state inventoried natural areas, or other natural resource elements in our region.

Due to the nature of lands protected by the District, our mission and our ongoing commitment to land stewardship, the District can often provide mitigation opportunities to these agencies or entities through our land stewardship practices outlined in Section IV. When these opportunities arise, the District will engage potential partners and regulatory agencies in determining if and how the needed mitigation could be accomplished on District lands.

The proposed design and implementation of a mitigation project will be evaluated for its consistency with the District's mission and this Policy, and whether it meets the goals established in the selected site's Natural Resource Management Plan or Interim Management Plan. If a management plan does not exist, then the District or the requesting agency/entity will complete an initial assessment as described above in Section VI, Subsections A and D. If these conditions are met, then a mitigation project shall be codified through a specific Intergovernmental Agreement, Memorandum of Agreement or other legal mechanism binding the partners to the funding, implementation and maintenance of the project, and approved by the Board of Commissioners.

F. Endangered, Threatened and Watch Species

The United States, under the Federal Endangered Species Act, and the State of Illinois, under the Illinois Endangered Species Protection Act, have the regulatory authority to designate plant and animal species as endangered or threatened, and take actions that provide legal protections. State endangered plant or animal species are in danger of extinction in the wild in Illinois, while federal endangered plant or animal species are in danger of extinction in the wild throughout the United States. State or federal threatened plant or animal species are likely to become endangered in the wild in Illinois or throughout the United States, respectively. Plants or animals designated as a watch species may become threatened or endangered with extinction in all or part of their known range, but there is a lack of reliable scientific information to assess their status.

The District shall strive to protect, monitor, and enhance any endangered, threatened, or watch species and associated habitats within its holdings. Specific objectives of restoration shall identify the importance of endangered, threatened and watch species

populations reported from District holdings relative to the overall population status of the species throughout its known range; provide maps and descriptions of the locations of species populations and their associated habitats; identify known and existing threats to the species habitat, reproduction or other life history characteristics; make recommendations for the management of these populations and habitats; and develop a monitoring program designed to quantify and routinely assess the status of populations over time to guide decision making for adaptive management based on the best available scientific data.

In specific circumstances, the District may implement or participate in state or federal recovery programs that provide for the re-introduction of an endangered or threatened species into District preserves if: the species was known to have occurred in Will County; reasonably could have occurred in Will County based on the species' natural range and presence of the appropriate environmental conditions; and enough suitable habitat exists in District preserves to support a viable population.

The District shall cooperate with the U.S. Fish and Wildlife Service, the Illinois Department of Natural Resources and other conservation agencies in the implementation of endangered, threatened and watch species recovery plans and regular assessments of known occurrences of these species. The District will also provide element occurrence reports to the Illinois Department of Natural Resources upon documentation of new populations of endangered, threatened or watch species.

G. Wildlife Management

Wildlife management has a dual role in regulating unbalanced animal populations to promote biodiversity and in protecting property from nuisance wildlife impacts. When appropriate, wildlife management goals and objectives will be incorporated into Natural Resource Management Plans.

District wildlife management activities shall be primarily concerned with conservative flora and fauna species. Conservative species have restricted or unique habitat requirements pertaining to patch size, community type, quality, connectivity to other habitat areas, and ecosystem integrity, and often exhibit a narrow range of environmental tolerances and reduced ability to adapt to environmental changes (or ecological amplitude). On the contrary, less conservative species are more ubiquitous in their habitat occurrences, have large ranges of environmental tolerances and ecological amplitude. Single species management activities for conservative species shall focus on maintaining current habitat conditions and removing or limiting stresses that could negatively impact the habitat or individuals within the population.

A significant wildlife management concern is over-abundant white-tailed deer populations and associated browse impacts that can severely alter community structure and composition. Documenting the extent of browse impacts may also indicate deer densities are at levels susceptible to disease such as EHD (epizootic hemorrhagic disease) or CWD (Chronic wasting Disease). Management plans for natural areas and community restoration sites shall also include regular monitoring of the site's white-tailed deer

population, and population reduction when warranted to reduce the stress of preferential or excessive browse damage and to maintain the health of the herd.

Other indigenous animals can also become a threat to ecosystem or natural community structure and composition, and in severe cases public safety, physical improvements and private properties, as a result of unbalanced predator/prey relationships, fragmented landscapes, and current societal expectations. These animals are often referred to as nuisance wildlife. Management actions focused on specific instances of nuisance wildlife will be developed and implemented when at least one of the following criteria are satisfied, documented to originate on District property, and when other regulatory restrictions do not take precedence:

- Damage, threat or negative impact to significant ecosystems, natural community types, or threatened, endangered and watch species;
- Damage, threat or substantial negative impact to adjacent private or public property or structures including agricultural lands;
- Compromise to public health and safety.

H. Species Reintroduction

The District will reintroduce native plant and animal species into a natural community only when evidence exists that such a community either supported, or reasonably could have supported, the species in pre-settlement times. For state nature preserves, any applicable regulation or policy will be observed.

Sources for reintroduction stock for native plant species shall be based on the best available scientific knowledge and best accepted management practices to promote both population integrity and genetic diversity. Generally, the best suitable reintroduction stock will be from the nearest available populations within the same natural division. Animal reintroductions may be from the best available source. Reintroduction stock for endangered and threatened species will be considered on a case by case basis (see Subsection F). Commercial cultivars shall not be used except in landscaped developed areas when native plant species are not appropriate or available, and only if the cultivar does not represent a risk for colonizing nearby natural areas.

I. Volunteer Program

Stewardship of District lands is augmented by the donation of thousands of hours every year from dedicated Prairie People Volunteers. The volunteers participate in many aspects of the natural resource management programs. The District will continue to utilize, support and encourage their ongoing assistance in the stewardship of its lands.

VII. Glossary

Abiotic Factors. Characterized by the absence of life, including temperature, humidity, pH, and other physical and chemical influences.

Biological Diversity or Biodiversity. The variety in composition, abundance and function of nature in all its forms and at different levels of ecological organization including genetic, species, community and ecosystem.

Biota. The combined flora and fauna of a region.

Biotic Factors. Environmental influences caused by plants or animals.

Community. Group of plants and animals in a given place; it is the ecological unit used in a broad sense to include groups of various sizes and degrees of integration.

Climatic community (climax). A community capable of perpetuation under the prevailing climatic and soil conditions.

Natural community. Group of inter-acting plants and animals found living together in a healthy ecosystem with a defined area.

Plant community. Assemblage of interacting plants species found living together in predictable associations in response to habitat conditions. Plant communities are characterized by dominant and indicator plant species (see Species).

Community Quality. See Natural Quality.

Conservative. A plant or animal species having a restricted or limited range of occurrence as a result of narrow or unique ecological or habitat requirements, and are typically found in high quality natural communities.

Disturbance. A temporary change in average environmental conditions that causes a pronounced change in an ecosystem.

Natural or ecological disturbances or natural disturbance regime. Characterized by the pattern and dynamics of intrinsic processes that changes or molds the structure and species composition of an ecosystem. Natural disturbances are often cyclic and at an intensity and frequency that create and maintain habitat structure, the keystone element for biodiversity in natural communities. Examples include fires, flooding and windstorms, as well as anthropogenic disturbances that mimic natural disturbances such as prescribed fire.

External or anthropogenic disturbances. These are human-induced changes or events that vary in intensity and frequency and are out of sync with natural disturbances. Anthropogenic disturbances can greatly alter the natural community by removing large amounts of biomass, reducing species diversity and degrading the habitat. Examples include grazing, forest clearing and the introduction of exotic species.

Ecology. The scientific study of living organisms in relation to each other and their environment.

Landscape Ecology. The study of the interrelationships between the physical environment and living organisms over a broad geographic area, and how these respond to changes over space and time to impact the viability of habitats, and plant and animal populations.

Ecological Amplitude. Refers to the degree of adaptation of a living organism to changes in its environment. Those with more restricted amplitudes have a lower ability to adapt to changes.

Ecological Resilience. The capacity of ecosystems to absorb disturbances without undergoing fundamental change.

Ecosystem. An assemblage of interacting plants and animals and the physical environment they inhabit. An ecosystem has three fundamental attributes: composition, structure and function.

Composition. The components (e.g. species) that inhabit the ecosystem.

Structure. The spatial arrangement or pattern of the components.

Function. The processes that result from interactions between components, and result in transfer of energy and cycling of nutrients within the system.

Ecosystem or Ecological Integrity. The amount, structure and level of organization of biological diversity that is present, but also the degree to which function and processes that sustain it remain intact and resilient to disturbance or external influence.

Environment. All of the biotic and abiotic factors that actually affect an individual organism at any point in its life cycle.

Fragmentation or Habitat Fragmentation. A landscape-scale disturbance process that causes the break-up of once continuous habitat into multiple smaller habitats, thereby altering the habitat size and shape, the distance between remaining habitat patches and the amount of habitat edge present. Fragmentation often results in lower habitat quality and lower population viability.

Genetic Diversity. Variation in the genetic composition of individuals in a population.

Habitat. The physical environment of a plant or animal.

Habitat structure. The spatial arrangement of the physical environment that supports plant and animal life.

Hydrology. The science of water. It is concerned with the occurrence and circulation of surface and ground water, the physical and chemical properties of water, and the relationship between water and other parts of the environment.

Land Use Classes. The District's *Preserve Planning & Land Use Policy* establishes a land use classification system used to determine the intensity of development, educational and recreational programming, and natural resource management appropriate to a preserve's environmental conditions. There are four land uses classes, and more than one can be assigned to a preserve.

Sanctuary Area. A land use class designated to protect, preserve, manage, enhance, and restore unique or rare natural and culture resources.

Resource Area. A land use class designated to utilize or actively manage natural or cultural resources that provide benefits to humans, wildlife and the environment.

Recreation Area. A land use class designated to accommodate a wide variety of development and associated educational and recreational activities in areas characterized by early successional or highly disturbed vegetation and that do not contain any unique or rare natural or cultural resource that would be negatively impacted.

Special Use Area. A land use class designated to accommodate specific educational and recreational activities with limited and controlled public access to areas characterized as having the natural and cultural resources that are the focus of the offered activities.

Management. References both the process and action intended to protect and sustain ecosystems and biodiversity within preserves over time through the protection, maintenance, restoration or reconstruction of natural habitats and native plant communities.

Natural Area. A relatively intact, undisturbed natural community with the flora and fauna that reflect, as nearly as possible, the historic conditions that were present prior to settlement.

Natural Division. Regions of the state defined on the basis of topography, glacial history, bedrock, soil and natural range (distribution) of native plant and animals.

Natural Quality or Natural Area Quality. An assessment of the relative authenticity or ecological integrity of a natural community based on the diversity and abundance of dominant, indicator and rare plant and animal species, and the lack of destabilizing anthropogenic disturbances.

High natural or community quality. Characterized by high species diversity predominated by species intolerant of degraded environmental conditions, the presence of rare species, absence of exotic species, low external disturbances, and stable disturbance cycles (natural or applied through management) that promote health and sustainability of the ecosystem.

Low natural or community quality is characterized by low species diversity predominated by species tolerant of intense or frequent external disturbances that create unstable and degraded environmental conditions, and the presence and abundance of exotic species.

Population. A local group of organisms of the same species that freely interbreed.

Restoration. The repair of damaged, altered or degraded ecosystems.

Species. The basic biological unit of taxonomic classification containing a group of related, physically similar organisms that is able to interbreed freely.

Native or indigenous species. A plant or animal species that is indigenous to a defined area.

Exotic or non-native or alien or non-indigenous species. A plant or animal species introduced, either intentionally or accidentally, to a new region or ecosystem outside of its natural range. Exotic species lack the natural predators and parasites that would naturally limit growth in their places of origin. Once introduced, exotic species can displace native species and alter the structure and function of communities and ecosystems over time. Exotic species are the most serious form of biological pollution undermining biodiversity.

Invasive or aggressive species. A native or exotic species that can rapidly disperse, reproduce and reach high abundances in environments of varying quality as a result of anthropogenic disturbances or the loss/alteration of natural disturbance regimes.

Dominant species. One or more plant species, by means of their number, coverage or size have considerable influence on the community or control of the conditions that determine the existence of associated species.

Characteristic or indicator species. Species that are rigidly limited to certain communities and this can be used to identify a particular type of community.

Stability. Ability to withstand disturbances without large changes in composition.

Succession. The replacement of one kind of community by another kind; the progressive changes in vegetation and animal life that may culminate in the climax community.

Sustainability. Refers to our ability to enjoy and make use of natural communities in a manner that does not compromise future generations' ability to do the same.