

A toolkit for the evaluation of land parcels for green space planning



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Introduction

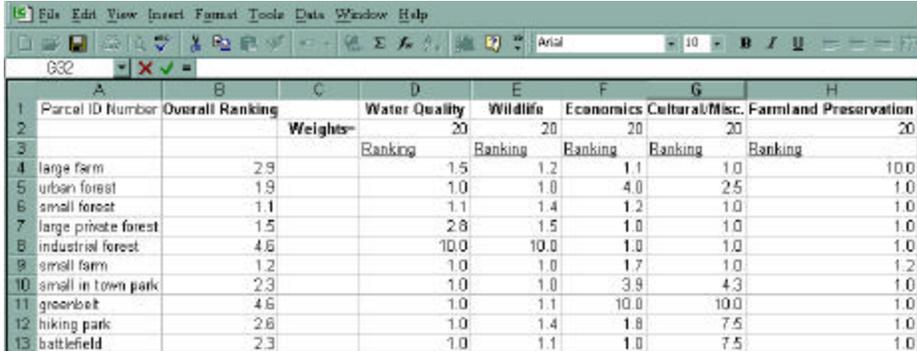
The process of green space planning requires a multipurpose focus. An optimal planning process will be multidisciplinary, and should include a high level of public involvement. Green spaces serve to provide multiple functions, including water resource protection, wildlife and biodiversity protection, recreation, historic and cultural protection, quality of life enhancement, and development control. Designing a green space plan that focuses on only one or a few of these functions can produce conflicting results which will make the site selection process more difficult. Therefore, one of the key functions of green space planning is to develop methods for measuring the benefits different land types and land uses contribute to a green space plan recognizing that some parcels will further only one goal within the broad range of objectives that green space can serve, where as the selection of a different parcel may do a better job of furthering multiple goals. This toolkit was developed to facilitate the selection of land parcels to complete the county green space planning process.

The toolkit has two goals 1) to provide communities with an overview of concepts that are used in the planning process and 2) to develop a tool that will allow communities to prioritize their rankings of individual properties for incorporation into a green space plan. The accompanying spreadsheet is designed to select parcels that will meet multiple objectives for green space planning. It does this by weighting the various goals of a green space plan and ranking parcels based upon this weighting.

How to use this toolkit

The toolkit provides information on 5 categories: water quality, farmland protection, economic impact, wildlife protection, and cultural

protection. Members of the community should begin the process by determining how to weight each of the categories for final rankings. The figure below is from the Demo spreadsheet. In the demo spreadsheet each of the categories have been weighted equally. Weights can be changed to reflect community values and priorities for each of the categories. Simply change the percentages of the weights in the rankings section of the worksheet.



1	Parcel ID Number	Overall Ranking	Weights	Water Quality	Wildlife	Economics	Cultural/Misc.	Farmland Preservation
2				20	20	20	20	20
3				Ranking	Ranking	Ranking	Ranking	Ranking
4	large farm	2.9		1.5	1.2	1.1	1.0	10.0
5	urban forest	1.9		1.0	1.0	4.0	2.5	1.0
6	small forest	1.1		1.1	1.4	1.2	1.0	1.0
7	large private forest	1.5		2.8	1.5	1.0	1.0	1.0
8	industrial forest	4.6		10.0	10.0	1.0	1.0	1.0
9	small farm	1.2		1.0	1.0	1.7	1.0	1.2
10	small in town park	2.3		1.0	1.0	3.9	4.3	1.0
11	greenbelt	4.6		1.0	1.1	10.0	10.0	1.0
12	hiking park	2.6		1.0	1.4	1.8	7.5	1.0
13	battlefield	2.3		1.0	1.1	1.0	7.5	1.0

For example, if your community determines that water quality and enhanced economic returns should both be given a weight of 30 percent, and wildlife and farmland should both be given a weight of 10 percent, and cultural and miscellaneous will be given a weight of 20 percent for the ranking, simply change the percentages in the weights columns. Because these represent percentages the sum of the weights should equal 100 percent; however, the spreadsheet automatically adjusts if the sum of the weights is not 100 percent. A description of the components of each of the rankings can be found in the accompanying text.

Either concurrent with the selection of weights or after the weighting process is complete, a member of the planning team can fill out the columns of the data entry section of the spreadsheet. There are 40 questions that should be answered for each of the tax parcels. The information can be obtained from the county GIS system or from

topographic maps, aerial photographs, tax parcel maps and tax digests. The table that follows describes the information needed for each category.

Table 1. A description of the information necessary to complete the data entry section of the toolkit. The heading is the column heading in the spreadsheet. The attribute in the parentheses represents the value that you enter into the spreadsheet.

Heading	Description
Parcel ID Number	The Tax Parcel ID Number from the county database or other identifier
Total # acres	Parcel acreage (acres)
# ac contig grsp	Number of acres of green space that this parcel and neighboring parcels will contribute to the green space plan (acres)
# ac wetlands	Number of acres of wetlands within the parcel (acres)
# ac hardwoods	Number of acres of hardwood forest within the parcel (acres)
# ac pine	Number of acres of pine forest within the parcel (acres)
# ac trees > 70 years	Number of acres of mature forests within the parcel (acres)
#ac regrowth	Number of acres of recently cleared land (cut within the last 7 years) that has been regenerated to forest. (acres)
# ac comm. ag	Number of acres of any type of active agriculture including, row crops, horticulture crops, pasture, and animal production (acres)
# ac contg ag	Number of continuous acres of agriculture that this parcel and neighboring parcels will contribute to a green space plan (acres)

contg forest >100ac	Does the forest make up a continuous patch that is greater than 100 acres? (1 = yes, 0 = no)
contg forest >500ac	Does the forest make up a continuous patch that is greater than 500 acres? (1 = yes, 0 = no)
contg forest >1000ac	Does the forest make up a continuous patch that is greater than 1000 acres? (1 = yes, 0 = no)
Belt or park?	Is the parcel part of an existing recreation area or green belt? (1 = yes, 0 = no)
Connect belt/park	Does the parcel <i>connect</i> to an existing recreation area or green belt? (1 = yes, 0 = no)
Recharge area?	Is there a recharge area on the parcel? (1 = yes, 0 = no)
W/in 7mi intake	Is the parcel within an area 7 mile upstream from a drinking water intake or water supply reservoir? (1 = yes, 0 = no)
Floodplain?	Is there a 100-year floodplain on the parcel? (1 = yes, 0 = no)
Water present?	Is there a water source on the parcel? (1 = yes, 0 = no)
Slope >10%?	Is the parcel slope greater than 10 percent? (1 = yes, 0 = no)
Adj to prot land?	Is the parcel adjacent to a parcel of land that is currently in permanent conservation protection? (1 = yes, 0 = no)
Mang forest?	Are the forests on the parcel being actively managed for forest products? (1 = yes, 0 = no)
Provide 25' buffer?	Is the parcel within 25 feet of a river or stream? (1 = yes, 0 = no)
Provide 50' buffer?	Is the parcel within 50 feet of a river or stream? (1 = yes, 0 = no)

Provide 100' buffer?	Is the parcel within 100 feet of a river or stream? (1 = yes, 0 = no)
Provide 150' buffer?	Is the parcel within 150 feet of a river or stream?
Public access?	Does or will the owner of the parcel allow for public access? (1 = yes, 0 = no)
Battlefield?	Was this parcel part of a historic battlefield?
Other cultural?	Does the parcel have the potential for providing a cultural resource? (1 = yes, 0 = no)
Scenics?	Does the parcel have a scenic value? (1 = yes, 0 = no)
Adj to act rec?	Is the parcel adjacent to an active recreation site? (1 = yes, 0 = no)
Ajd to lib/shops/etc?	Is the parcel adjacent to a library, school or other amenities such as shopping? (1 = yes, 0 = no)
Opp pass rec?	Does this parcel provide an opportunity for passive recreation? (1 = yes, 0 = no)
Lin ft of streams	What is the length of streams or rivers that flow within the parcel? (feet)
# springs	How many springs are found on this parcel? (number)
# wellheads	How many wellheads are found on this parcel? (number)
#res <1/4mi	Number of residences within a quarter of a mile of this parcel (number)
#res<1/2mi	Number of residences within a half a mile of this parcel (number)
# bus loc<1/4mi	Number of businesses within a quarter mile of this parcel (number)

The final section of the spreadsheet includes the calculations for each of the green space categories. It is recommended that you not change

these calculations. However, if you feel it necessary to modify these calculations we recommend that you first copy the spreadsheet.

We have included a demo spreadsheet that contains a number of examples of parcels that might be evaluated for your green space plan. They do not represent an exhaustive list but rather some of the more common types of land uses that planners will be working with. The following table describes the example land use parcels.

Table 2. Overview of the parcels selected for the demonstration.

Current land use category	Description
Large farm	This parcel represents a large acreage farm, with a small percentage in forest. The property has the potential for providing water quality benefits if the farmer uses best management practices
Urban forest	This parcel represents a small old growth forest surrounded by urban (or suburban) residential areas. It serves as an undeveloped park or open space.
Small forest	This parcel represents a larger track of forested land in a low-density suburban or rural area. This type of property is valuable for connecting green space in conservation subdivision can be utilized.
Large private forest	This represents a large tract of privately held forested land that is being actively managed for either hunting or forestry.
Industrial forest	This tract represents land that is being cultivated for commercial forestry activities.

Small farm	This tract represents a small farm that is becoming surrounded by residential development, although at low density.
Small in town park	This tract represents a publicly owned park that provides passive and unorganized recreational opportunities.
Greenbelt	This tract represents a greenbelt, which runs behind a number of residential neighborhoods.
Hiking park	This tract of land is a small botanical garden that has some natural area and provides amenities for passive recreation.
Battlefield	This tract is a small Civil War battlefield that has been previously maintained as an open area.

Understanding green space attributes

Green space can be valued for different reasons and services it can provide. These include:

- Water quality protection;
- Wildlife habitat;
- Economic benefits,
- Protection of cultural, visual, and other amenities; and,
- Farmland preservation.

Water quality protection

Green space helps to protect water quality when it:

- Provides buffers around streams
- Includes springs, wellheads, wetlands, recharge areas, or drinking water intakes
- Is in the floodplain
- Is highly sloped or erodible land

- Includes wetlands and floodplains

Maintaining naturally vegetated green space along water bodies helps to protect water quality. Riparian areas, those areas next to a water body that interacts with the water body, filter pollutants. In addition, riparian forests help maintain the stability of riverbanks and reduce the amount of sediment and nutrients deposited in streams. A recent analysis of the scientific literature on riparian buffers found that 100 foot buffers along all river and streams is sufficient to protect water quality. However, the ideal width should be determined by stream size, slope, floodplain width, and soil type. Therefore, the distance of a green space parcel from a river determines the value. Not only is buffer width important, but the continuity of the buffer is important. Breaks in the natural vegetation, such as roads and bridges act as entry points for sediment and other pollutants into streams and rivers. Therefore, the more linear feet of streams and rivers found in a parcel of green space the better the water quality protection.

Protecting water quality goes beyond protecting the land immediately adjacent to streams, rivers, and water supplies. The activities that take place in a waterbody's entire watershed have an impact on water quality and quantity. Human activities in water supply watersheds often disrupt natural processes that help maintain the quality of water that drains into a water supply intake. For example, natural vegetation acts to slow down water flow and trap sediment and other contaminants carried in runoff before they reach streams. Removal of the natural vegetation in a watershed, through development of land, agricultural practices etc, increases water pollution. Covering land within a watershed with impervious surfaces contributes to rapid runoff and the pollution problems associated with it. If left unchecked these sorts of activities in a water supply watershed can lead to severe water contaminations problems at the intake water supply.

In addition, floodplains and wetlands provide area for storage of excess water and the filtering of contaminants. Green space can be used as flood control and hazard mitigation and reduce the costs for storm water control for communities. Floodplains and wetlands act as natural filters of contaminants and sediment, thereby reducing the cost associated with purification of water supply systems.

Wildlife habitat

Green space provides wildlife habitat when:

- Green and open space protects natural vegetation
- Forestland is protected, especially large tracts
- Open and green spaces are connected
- A mix of trees and stand ages are present
- Mature forest (older than 70 years) is protected
- Water sources are present

The greatest threat to wildlife is the alteration of habitat by human activity. Habitat is an environment in which the life-needs of an organism are supplied. These life-needs include food, shelter, protection from predators, etc. Alteration of habitat include the complete removal, such as, clear-cutting of forests, draining of wetlands, building shopping malls and parking lots, or the degradation of habitats through fragmentation of a large area into bits and pieces. By preserving larger tracts of native vegetation and communities we preserve not only wildlife habitat but also the natural ecosystem functions that help to maintain clean air and water, and the modification of urban heat island effects. There will be cases where a particular rare species will require specialized habitat to survive. Most species, however, are protected by adding an appropriate mix of common habitat types to green space plans.

In order to maximize the potential of green space for wildlife diversity we should view the county as a mosaic of different habitat types,

patches or landscape elements. These mosaics are ever changing. The landscape mosaic changes in two ways. First, individual patches of habitat may arise, change size or shape, or disappear. In addition, the internal structure, function or composition of these habitat patches may also change. For instance - a small stand of pine trees in a forest patch is attacked by pine beetles – dies - and falls over leaving a large gap in the forest canopy. Young hardwood trees that had been in the understory quickly fill in the open area left by the gap, taking advantage of the newly available sunlight. This forest patch may now be less favorable to woodpeckers, who prefer older pine trees, and more favorable to turkeys who prefer the acorns from the new oaks.

These habitat patches interact with one another. For example, animals and materials flow openly between habitat patch types. Certain bird species need dense older forest for nesting but their food, such as seeds and grasses, are found in open fields. These birds move both themselves and materials between these two types of habitat patches.

We should therefore design green space with these concepts in mind. This includes maintaining a good mix of habitat types and preserving patches large enough to meet the needs of a dynamic landscape. Connectivity between habitat patches must be maintained to allow for organisms and materials to flow between them.

Economic Benefits

Green space provides economic benefits when:

- It is near houses and business locations
- It is welcoming to people (parks and greenbelts)
- It connects to other green spaces
- It connects to places people want to go (shops, libraries, recreation areas)

Green space and open space can provide important economic benefits to the community. While only certain types of green and open space provide such benefits, they can be important nonetheless and a good green space plan should include some parcels that can provide this type of benefit to the community. In discussing these economic benefits we are focusing on economic benefits that are measured in the marketplace directly, not on environmental improvements that might actually provide indirect cost savings that could be included in economic benefits. These amenities are already accounted for in the other categories, so we don't want to double count benefits. Therefore, the category for economic benefits focuses on three main impacts that green and open spaces can have on a community. First and most important, green spaces raise the property values of adjacent and nearby properties. Various studies around the nation suggest the average increase is 5%. Thus, it is important to include some parks, greenways, greenbelts, and other developed or semi-developed elements within the green space plan that are in or near residential and light commercial districts. The more homes or business sites within one-quarter mile of the green spaces, the better. Second, connectivity is also important as the more connected these types of green spaces can be, both with each other and with neighborhoods or other destinations, the greater the increase in property values. Planners should strive to include such people-usable green spaces in their plans and to work for connectivity, continuity, and linkages both between neighborhoods and such other destinations as libraries, local shopping areas, recreation sites, and schools. The third major economic benefit from green and open spaces is in business attraction and retention. A national poll found that being near open space and recreational opportunities was the number one factor in small business owners' location decisions. Thus, creating parks and other open spaces near existing business sites or potential future ones can bring businesses and jobs to a community. These types of green and open spaces should be designed with small businesses in mind, including both retail shopping and professional services. If they can be linked to greenbelts or greenways that connect to residential

neighborhoods, the business-attraction effect can be increased even more.

Visual, cultural, and recreational amenities

Green space protects cultural and visual amenities when:

- Historic and/or cultural sites are protected within the green space
- Areas around historic and/or cultural sites are protected to maintain a consistent feel to the sites
- Scenic vistas or features are protected
- They provide public access, although it is not necessary

A community defines itself by many of its cultural and historic resources. These include scenic byways, battlefields, rural character, etc. Often what draws new residents to a community is the feel of the community and local area. These benefits are often referred to as measures of "quality of life". Quality of life measures are often difficult to quantify because they represent the values of members of the community.

Alternative transportation such as multiuse trails for biking, walking, and equestrian activities contribute to mobility, access, social equity, the environment and quality of life within a community. Greenways have become an important part of transportation planning in many communities. Greenway trails are appealing because they separate the user from automobile traffic, providing enhanced safety and a sense of escape from an urban environment. Greenways also provide opportunities for recreation, exercise, interface with nature, and interactions with other people in the community by providing connectivity between neighborhoods. Federal agencies such as USDOT, the Federal Highway Administration (FHWA), and EPA provide funds for multi-modal transportation systems such as greenways and trails.

Although the Georgia Community Green Space Program funds may not be used towards purchase of historic buildings, the funding can be used to protect the areas surrounding cultural and historical sites. Historic preservation creates jobs, enhances property values, revitalizes communities, and attracts tourists.

Farmland Preservation

Green space preserves farmland when:

- Farmland is protected
- The farmland is surrounded by other farms or green space
- Few residential subdivisions are near farmland

Farmland preservation is a goal that relates to values held by many communities in America, dating back to Colonial days and the Jeffersonian ethic that there is something noble and worthwhile in being connected to the land and producing food. This category is included so that communities can include this value for farmland preservation and account in a simple manner for the value; either environmental, aesthetic, or philosophical, of farmland remaining in or near their communities. Forestland is not accounted for along with farmland as forestland is valued in the categories for water quality and wildlife habitat.

Farmland is valued mainly by the acre as this value is likely to be a simple function of acres of farmland preserved because of its roots in community values more than in environmental sciences. However, in seeking farmland to permanently protect, planners should work to choose acreage that does not include excessive slopes (>10%) and that is not too closely surrounded by many houses. Farmland with excessive slopes can contribute to soil erosion and a deterioration in water quality and thus we should not encourage these lands to remain in commercial farming. Also, farming near a large number of houses tends to create tensions on both sides and is not as economically nor politically viable in the long run. So planners should instead look for

farms that are still relatively remote (over 1/2 mile) from housing, contiguous to other farms or open spaces (such as forestland), and relatively flat. If the farmland is contiguous to other parcels to be protected, that is ideal as it boost wildlife habitat benefits, and buffers the farmland from pressure from nearby residents.

Appendix A

Calculating the Rankings by Category

1. Each ranking begins with a raw formula. The formula for each category is below. Exponents are represented by ^.

Water quality protection

$$R_{wq} = (100*(25' \text{ buffer}) + 100*(50' \text{ buffer}) + 200*(100' \text{ buffer}) + 100*(150' \text{ buffer}) + 500*(\text{ac wetlands}) + 100*(\# \text{ springs}) + 25*(\text{recharge area}) + 10*(\# \text{ wellheads}) + 100*(\text{w/in 7mi intake}))*(\text{linear ft of streams})*(1.25^{\text{in-floodplain}})$$

Wildlife habitat

$$R_w = ((\text{acres of green space})*(1.1^{(\text{contg}>100\text{ac})})*(1.1^{(\text{contg}>500\text{ac})})*(1.05^{(\text{contg}>1000\text{ac})} + 100*(\text{adj to prot land}) + 100*(\text{water present}))*((1 + \text{hardwood ac}/\text{total ac})*(1 + \text{pine ac}/2*\text{total ac})*(1.1^{(25' \text{ buffer})})*(0.9^{(\text{managed forest})})*(1 + 2*\text{old growth}/\text{forested ac})*(1 - \text{ag ac}/\text{total ac}))$$

Economic Benefits

$$R = (0.05*(\text{value resid} < 1/4\text{mi})/1000 + (\#\text{resid} < 1/4\text{mi}) + 10*(\#\text{businesses}) + 50*(\text{park/greenbelt}))*((1 + \text{contg green})$$

$$\frac{ac}{100}^{\text{(connect to other green space)}} * (1 + 0.1 * \text{park/greenbelt}) * (1 + 0.1 * (\text{act rec.} + \text{lib/shops} + \text{pass rec})) * (1 + 0.5 * (\text{managed forest}))$$

Cultural/Scenic/Misc.

$$R = (10 * \text{battlefield} + 5 * \text{other cultural} + 5 * \text{act rec} + 10 * \text{lib/shop} + 3 * \text{scenics}) * (1.5^{\text{scenics}}) * (50^{\text{public access}})$$

Farmland Preservation

$$R = (\text{ag ac} + 0.5 * \text{contg ag ac}) * (1 - 0.02 * \text{min}(\#\text{resid} < 1/4\text{mi}; 50)) * (0.7^{\text{slope} > 10\%})$$

2. Then after each parcel has a raw formula score for a category, each score is scaled by dividing all of the scores by the maximum score for that category. Call these scaled scores R.

Finally, scaled scores are changed to rankings by the equation: $RS = 1 + 9 * r$. This results in all rankings in a category being between 1 and 10 and the best parcel in a category always receiving a ranking of 10.

Glossary of Useful Terms for Green Space Planning

Active recreation: recreation such as golf, organized baseball, etc. that depends on developed facilities.

Aquifer: underground rock unit capable of containing or producing water from a well.

Amenities: anything that increases physical or mental comfort.

Best Management Practices (BMPs): Sound conservation and engineering practices to control erosion and sedimentation; or systems designed to reduce the adverse effect of land development on stormwater runoff and receiving water bodies. BMPs may include a range of structural and nonstructural procedures, technologies, activities, and prohibitions. Nonstructural BMPs include restrictions on the density or location of development, prohibition or restriction of highly impervious land uses, land acquisition, and buffer zones. Structural controls include detention ponds, grassed swales, constructed wetlands, or sand filters.

Buffer: an area designed to separate and/or serve as a protective barrier between conflicting land uses.

Community green space: permanently protected green space in urban or suburban areas which, in addition to the attributes associated with green space in general, provides alternative transportation benefits and enhances the sense of community and neighborhood in a more natural, green setting.

Conservation easement: a legally binding agreement between a property owner and a governmental body or a land trust that restricts the type and amount of development and use that may take place on the property.

Conservation subdivision: a subdivision that features permanently protected greenspace and housing clustered away from sensitive environmental resources.

Contiguous: sharing an edge or boundary; touching.

Corridor: adjoining land forming a passageway or connection between land areas.

Easement: a legal right of use over the property of another. An easement may be granted for numerous purposes including access, recreation, light and air, and flow of water.

Easement holder: the entity (usually nonprofit or governmental) that is responsible for maintaining permanent protection for a tract of land.

Ecosystem: living organisms and their non-living environment.

Environmental overlay zoning: Special use and building standards overlay the various use districts on a standard zoning map in order to protect sensitive environmental resources.

Exaction: Requirement that a developer dedicate land for use for parks, recreation, schools and/or streets.

Fee simple: Ownership of land itself (vs. rights pertaining to the use of that land).

Floodplain: low areas next to rivers, streams, lakes and oceans that are occasionally inundated with water.

100-year Floodplain: area likely to be inundated at least once in a hundred years.

Geographic Information Systems : a computer system capable of assembling, storing, manipulating, and displaying geographically referenced information, i.e. data identified according to their locations. Data can be combined and manipulated in a GIS to address planning and natural resource issues. The way maps and other data have been stored or filed as layers of information in a GIS makes it possible to perform complex analyses. Practitioners also regard the total GIS as including operating personnel and the data that go into the system.

Green space: permanently protected land in natural or un-built condition that is protective of water resources; and/or is proximate and easily accessible to residences, schools, and work places; and/or is legally and physically accessible to the public on a regular basis; and/or serves as alternative transportation or recreational paths or trails for people; and/or is protective of natural habitat or corridors for wildlife.

Greenbelt: a belt of parkways, parks, farmlands, and open space that is often at the edge of, or passing through, an urban area or community.

Greenway: a corridor of protected, undeveloped land in or near a city that is designed for conservation and recreational use, which often connects parks, nature preserves, and cultural and historical sites within residential areas. Their purpose is to expand the opportunities for urban recreation, to provide alternate ways to move through the city and to enhance the experience of nature and city life.

Greenway Trail: a pedestrian/bicycle trail within a greenway, which serves as a transportation, recreation, and environmental corridor.

Groundwater: any and all water that either fills the spaces between soil particles or penetrates the cracks and spaces within rocks beneath the earth's surface.

Habitat: environments in which the life-needs of an organism (including food, shelter, protection from predators, etc.) are supplied.

Impact fees: fees charged to developers to offset the cost of providing the public service infrastructure to new developments.

Impervious surfaces: a surface that rainwater cannot penetrate, or be absorbed by, such as a parking lot, road, or building.

Intake: the point at which water is withdrawn from a stream or lake to be sent to a treatment plant.

Inundated: flooded

Land trust: nonprofit corporation whose purpose includes acquiring, retaining, and protecting land and interests in land for conservation purposes, must be recognized as a publicly supported charitable organization by the IRS.

Mature forests: forests equal to or greater than 70 years old.

Open space: undeveloped land

Part 5 criteria: criteria for the protection of river corridors, groundwater recharge areas, drinking water supplies, wetland, and steep slopes that state law mandates local governments adopt.

Passive recreation: recreation in the form of boating, hiking, camping, fishing, hunting, running, jogging, biking, walking, skating, birding, riding horses, observing or photographing nature, picnicking, playing non-organized sports, or engaging in free play in undeveloped or slightly developed areas.

Performance-based zoning: zoning that does not prescribe specific practices or uses but that limits the impacts of a development at its borders.

Permanent protection: any method that ensures the land will be protected, regardless in changes of ownership, and maintained as green space.

Purchasable development rights (PDR): a program in which a governmental body purchases development rights from property owners and enters the property into conservation easements.

Recharge: the process by which aquifers are replenished with water from the surface. This process occurs naturally when precipitation filters down through the soil or rock into an aquifer.

Recharge Zone: the surface land area where recharge occurs.

Riparian: relating to or living or located on the bank of a natural watercourse.

Riparian buffer: areas of land alongside streams, rivers, and lakes, where the natural vegetation is left intact to help maintain clean water and a healthy aquatic community. They are also known as stream buffers or protected river corridors.

Setback: an established minimum distance from the stream or lake banks that any type of structure or impervious surface may be located.

Special purpose local option sale tax: voters may choose to levy an additional local sales tax (usually less than 1%) in order to pay for special needs or projects

Storm water utility: a fee based on the amount of impervious surface on a property.

Transferable development rights (TDR): A system for severing development rights from land that meets certain criteria (environmentally, historically or culturally sensitive) and using those development rights in an area with infrastructure necessary to sustain increased development.

Watershed: the area in which all water, sediments, and dissolved materials flow or drain from the land into a common river, lake, ocean or other body of water.

Water Supply Watershed: the area in which all water, sediments, and dissolved materials flow or drain from the land into a public drinking water intake.

Wellhead: the surface land area surrounding a well from which the well's ground water is drawn.

Wellhead Protection: protection of all or part of a wellhead.

Wetland: areas that are flooded or saturated by surface or groundwater often and long enough to grow vegetation adapted for life in water-saturated soils. Wetlands generally include swamps marshes, bogs, and similar areas.