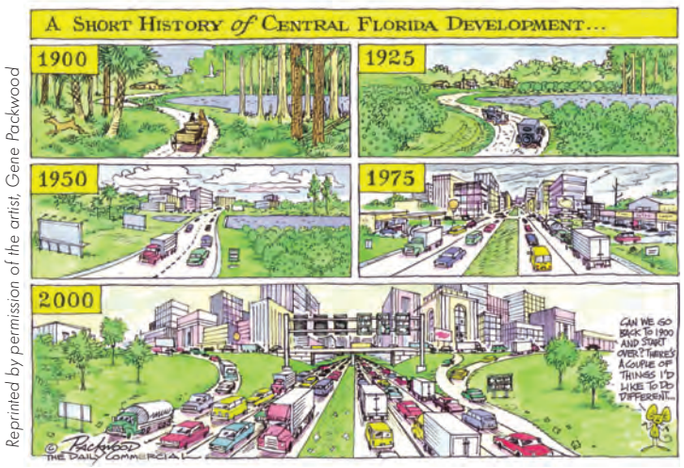
Photo Courtesy of David Moynahan Photography

Chapter 3

Envisioning and Planning Wildlife Friendly Communities

One of the best ways to ensure a future for wildlife is to work toward developing an integrated mix of connected parcels or patches within and near to our communities that are planned, designed and managed for their habitat values.



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A green infrastructure and wildlife friendly vision can provide many benefits to a community and its residents. One of the best ways to ensure a future for wildlife is to work toward developing an integrated mix of connected parcels or patches within and near to our communities that are planned, designed and managed for their habitat values. Impacts to wildlife habitat in a local community occur, for the most part, as a result of development approvals given incrementally over time. To sustain wildlife and biodiversity within, or in close proximity to, "developed" land, sustained efforts must involve limiting and managing disturbance to habitats and enhancing connectivity. Very little will happen at the level of the community to conserve, integrate or enhance wildlife habitats unless people understand, plan, design and manage for this purpose.

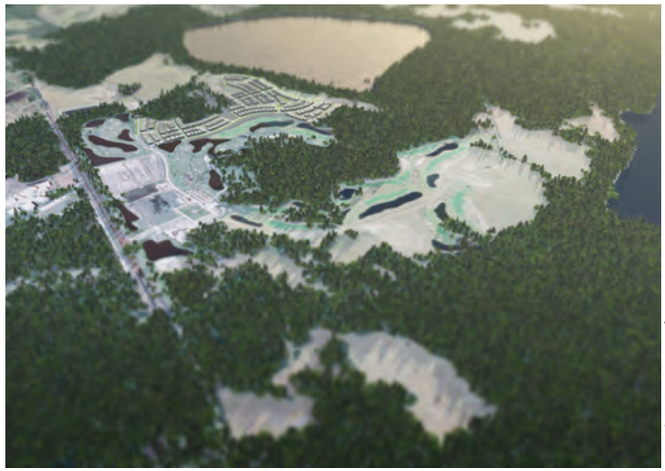
GOALS FOR PLANNING WILDLIFE-FRIENDLY COMMUNITIES

From the perspective of planning a wildlife-friendly community, there are a number of goals around which an effective local effort can be formulated, keeping in mind that each species requires a particular mix of food, cover, water, living and reproductive space and limits on disturbances.

Goal 1 – Plan and maintain an overall habitat framework with identified ecological corridors, linked to larger patches of habitat managed around systematic efforts to minimize habitat loss and its fragmentation. Supportive actions may include:

- Linking (where possible) community and regional parks, mitigation areas, greenways and forests against the backbone of local watershed features (streams, bayous, wetlands, rivers, sink holes, etc.).
- Integrating transportation and stormwater infrastructure development to capture wildlife supporting and enhancement opportunities.
- Incorporating private green areas into the larger green infrastructure network (e.g., golf courses, botanical gardens, large parcel easements and set-asides).
- Planning a hierarchy of open spaces. For example, one layer might include parks, another larger stormwater infrastructure components that function as buffers to create planned separation of human and wildlife communities (this may be of particular importance in the planning of large new developments that come up against large managed environmental areas, especially those that support larger species such as Florida black bear, panther, alligators, crocodiles, beaver. Such separation conversely discourages intrusion of domestic cats and dogs into the managed protected areas).

Goal 2 – Preserve and enhance waterbody and riverine native green edges (create combined upland buffer and in-water littoral edges that further link to larger habitat patches). Where possible, do not subdivide properties down to the water's edge; instead, maintain a common community shoreline corridor with an upland component that links to larger habitat patches. Following a tiered landscape conservation approach, a community can enhance or maximize buffer variety and size



Graphic Courtesy of Benjamin Pennington

Significant forested riparian edge has been left alongside this lake in Harmony in Osceola County. Even within the community, sizable tracts of forest wrap through the developed areas and golf course. Water quality and wildlife benefit, as do the community residents that share the common natural land and lake resources.

by leveraging connectedness to existing conservation areas. Importantly, wildlife linkage benefit is available across jurisdictions when upland and riparian habitats are conserved through corridors and buffers.

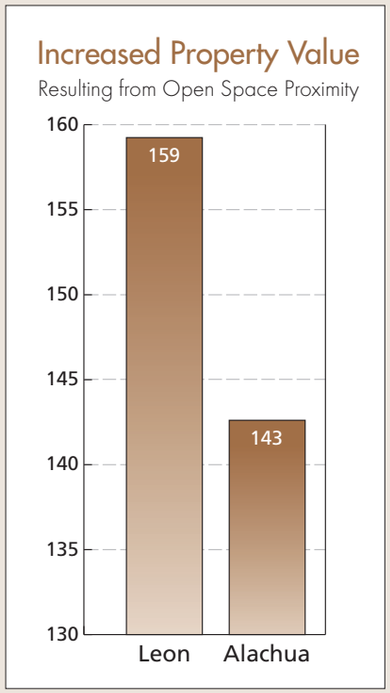
Goal 3 – Carefully weigh the impacts of the pattern of development when planning for larger areas or multiple smaller parcels (cities, counties, large landowners). Sprawl results in proportionately more fish and wildlife habitat loss and habitat fragmentation than compact patterns of development. Compact development patterns allow a linking of undeveloped parcels through developed landscapes. In addition, sprawl's dispersed development pattern leads to a greater reduction of water quality and quantity by increasing runoff volume and stormwater treatment and facility maintenance costs, altering regular stream and/or wetland flow, lessening water height and duration, and affecting watershed hydrology by reducing groundwater recharge and groundwater levels.

MANAGED ENVIRONMENTAL LANDS ADD TO THE QUALITY OF LIFE AND REAL MARKET VALUE

In most instances the value of land adjacent to parks, greenways and other environmental managed lands increases due to the permanence and desirability of having assured natural lands as a neighbor. According to a study conducted for the Trust for Public Land in 2004, proximity to open space has a significant effect on land values in Leon County and Alachua County. In densely settled portions of Leon and Alachua Counties, the report found buyers could expect to pay $14,400 and $8,200 more respectively for single-family homes if they were within 100 feet of open space. The study also found that proximity to open space raised the value of vacant land. In Leon County, vacant parcels within 100 feet of open space commanded a premium of $31,800. Leon had about 5,900 parcels close enough to open space to have their values enhanced; Alachua had 8,100. The study estimated that the aggregate impact on land values in Leon County was $159 million, and in Alachua County, $143 million. At 2004 tax rates, the additional land values brought in an additional $3.5 million in property taxes for each county.

In recognition of this value, local governments should consider working hand-in-hand with the land managers of managed environmental areas to establish buffered overlay areas (sometimes called Greenline areas or overlay zones) wherein new development or redevelopment receives an "up front" review to addresses and resolve compatibility issues.

Source: E. Moscovitch, (2004). Open Space Proximity and Land Values, Trust for Public Land study by Cape Ann Economics



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Habitat is impacted by a progression of spatial deterioration advanced by poor land development choices overtime. Broadly these include: dissection, fragmentation, perforation, shrinkage and eventual attrition.

THE PATTERN OF LAND DEVELOPMENT RELATIVE TO HABITAT SPATIAL PROBLEM

Land development patterns affect existing habitat areas. As an area is being planned for development or redevelopment, actions can be taken to reduce or minimize the habitat-damaging effects. First and foremost is to limit (or at least direct and manage) sprawling, low density patterns of development. Look for opportunities to concentrate development in more compact formats while permanently setting aside linked habitat within common open space areas. This can be promoted using planning tools such as conservation subdivision, rural land stewardship areas, traditional neighborhood design patterns, sector plans and Developments of Regional Impact.

Habitat is impacted by a progression of spatial deterioration advanced by poor land development choices overtime. Broadly these include: dissection, fragmentation, perforation, shrinkage and eventual attrition.

Sources: 1) Soule, Michael. Land Use Planning and Wildlife Maintenance _ Guidelines for Conserving Wildlife in an Urban Landscape, 1991; 2) Forman, R. T. T. Land Mosaics: The Ecology of Landscapes and Regions, 1995; and, 3) Ecological Design Manual for Lake County, 2001.

Graphic Courtesy of Benjamin Pennington

Habitat dissection (a road through it), fragmentation (multiple roads), dissection with perforations (roads and development sites), habitat dissection with shrinkage and finally attrition (overall loss or reduction of habitat).

Goal 4 – Where present, strive to maintain the rural character and rural economic base. Sustain agriculture areas, infrastructure and working rural landscapes.

Goal 5 – Recognize and plan for natural ecological maintenance events such as floods and fires. These events are a part of natural ecosystem dynamics and are important to native habitat health and continued existence. Plan communities to incorporate and sustain the flood prone areas as undeveloped common areas. Also, plan land uses around the ecological realities of smokesheds incorporating "firewise" community designs (see Chapter 7, "Management and Design Factors").

Goal 6 – Preserve a background matrix of predominate native vegetation and habitat types. These features are adapted to local climate and soil conditions, support wildlife and likely require less maintenance and water.

Goal 7 – Preserve forested areas and the understory and native soil associations. Minimize disturbance of such areas and remember that larger forested patches have a better chance of preserving localized micro-climate features supportive of unique plant and animal species (e.g., consider light and humidity).

Goal 8 – Identify and avoid activities that dehydrate or alter the seasonal water flows or duration of inundation to wetlands, hammocks or waterbodies (e.g., diversions, drawdown, or damming effects from roads and berms, etc.).

Goal 9 – Preserve and use natural systems (or even linked fragments of natural systems) within a community to enhance, add value and distinction.

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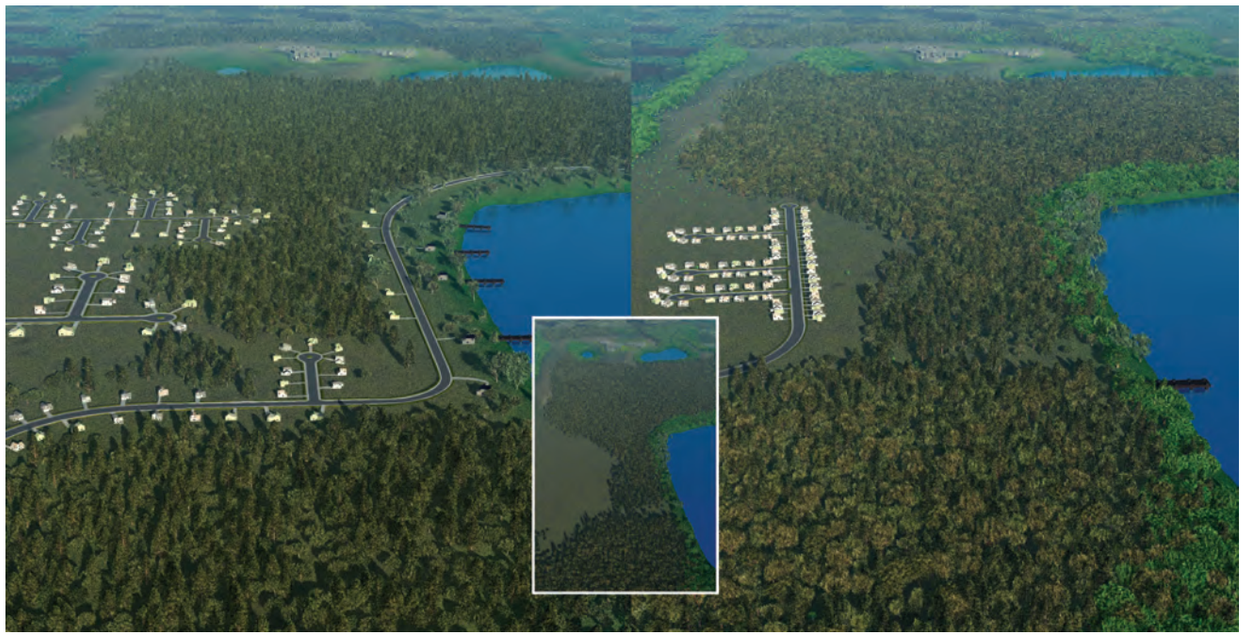

Graphic Courtesy of Benjamin Pennington

Comparative scenario between two forested, lakeside development plans. Left shows a common Florida development pattern that removes or reduces the lakeside forest, places multiple piers into the lake and, segments the lake frontage into multiple individual lots. Right side shows a more wildlife friendly approach that clusters homes and roads away from the lake to preserve the forested edge, places one common community pier in the lake (accessible by a community trail) and, keeps the lake frontage un-segmented allowing linkage between aquatic and upland environments.

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Graphic by Benjamin Pennington using a FDEP, Land Boundary Information System (LABINS) photo

Oscar Scherer State Park (outlined), like many managed environmental areas, is feeling the impact from neighboring developments

CASE STUDY

The Good Neighbor Approach: Oscar Scherer State Park in Sarasota County

As with many other managed environmental areas, Oscar Scherer State Park in Sarasota County has faced development pressures from surrounding properties that affect the sustainability of the park itself. A comprehensive plan amendment for an increased density development on a parcel adjacent to the park served as a catalyst for a partnership between the local government, the developer and area citizens. The resulting local Blackburn Point Sector Plan was adopted by Sarasota County through an ordinance.

The plan provides guidance on how new development can be designed to be habitat and wildlife friendly. One of the most critical elements is the "Notice of Proximity," which is recorded in the deeds and rental agreements on all properties within the Sector Plan boundaries. It puts all property owners on notice that the park is within close proximity and that there are certain practices such as prescribed fire, pesticide usage, heavy machinery usage, and removal of exotic plants and animals that take place in the park. The notice states that these property owners or renters shall be deemed to have knowledge of and to have consented to these resource management practices. The State's Division of Forestry routinely requires such notice for properties bordering its lands.

Further, the plan emphasizes that:

- Adjacent developments use materials and colors that help to camouflage the appearance of buildings, fences and other structures to reduce their visual impact on park visitors.
- Stormwater ponds be designed along the park boundary to minimize the impact of feral and domestic cats and, conversely, discourage intrusion of wildlife into the backyards of residents.
- Native vegetation buffer zones be used, and be maintained to be free of exotic vegetation.
- Consideration be given to wildlife friendly lighting, known as "Dark Skies Lighting."

Such a cooperative approach could also be used to promote:

- Clustering homes and development away and reducing the number of individual lot lines that directly abut the park boundary, providing greater buffer between wildlife and people.
- Expanded perimeter buffers of native vegetation to help address noise, light and other wildlife disturbance issues.
- Interconnections between the park and adjoining development greenways and open spaces.
- Development-wide use of native vegetation and landscaping that blends with the native habitat but includes consideration of fire and smokesheds and firewise development.
- Water conservation, use of reclaimed water, energy conservation and environmentally benign building materials.
- Elimination or reduction of the use of pesticides and fertilizers.
- Homeowner involvement in park management and educational programs.

Adjacent developments use materials and colors that help to camouflage the appearance of buildings, fences and other structures to reduce their visual impact on park visitors.

Graphic by Benjamin Pennington using a LABIN photo

Stormwater management facilities for developments backing-up to managed environment areas can be strategically placed to create a barrier to developmental impacts such as lights, domestic cats, and children.

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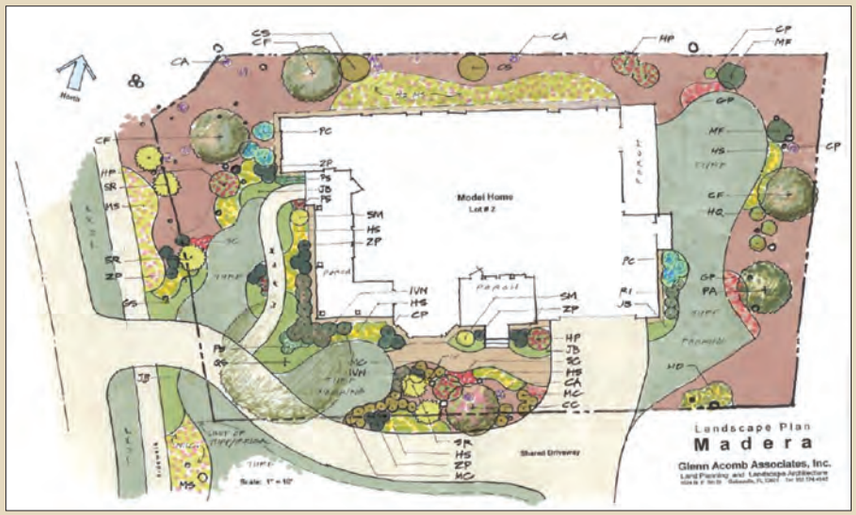
ADDRESS ALL PHASES OF A DEVELOPMENT

Once a site has been chosen, developers must consider three phases of development when creating a neighborhood: design, construction, and post-construction. The design phase is typically where, lot size, roads, open spaces and wildlife patches and corridors are laid out on paper and distributed throughout the site. During construction, contractors and sub-contractors implement the design on the ground, constructing streets and homes and providing landscaped and conserved natural areas. Post-construction is where buyers purchase the homes, move into the community, and manage their own homes, yards, neighborhoods, and common areas.



The construction and post-construction phases have a huge impact on how functional wildlife habitat is over the long term (Hostetler and Drake 2008). During the construction phase, without trained or knowledgeable contractors and landscapers, many things can happen that could impact the viability of future wildlife populations. For example, even if the most important large trees and natural areas are preserved across the subdivision and built areas are designed around them, the placement of fill dirt, upkeep of silt fences, and management of heavy construction vehicles routes during construction is critical to the survival of these sensitive areas. Further, once homes are built and people move into a neighborhood, additional problems can arise if residents are not knowledgeable about the habitat and wildlife friendly design. Imagine homeowners moving in and planting invasive exotics in their yards and allowing their cats and dogs to run about the various conserved natural areas. It is typical for many "green" developments to leave out or de-emphasize the construction and post-construction phases, and these two phases (along with design) are critical when creating communities that are meant to conserve wildlife populations.

Local wildlife and habitat issues need to be a part of design, construction and post construction issues and actions.

For additional information see: University of Florida, Program for Resource Efficient

Communities at: **www.buildgreen.ufl.edu** and Living Green at: **www.livinggreen.ifas.ufl.edu.**

Goal 10 – Plan for and recognize the importance of addressing wildlife issues during the design, construction and post-construction phases of development.

THE FIRST STEPS

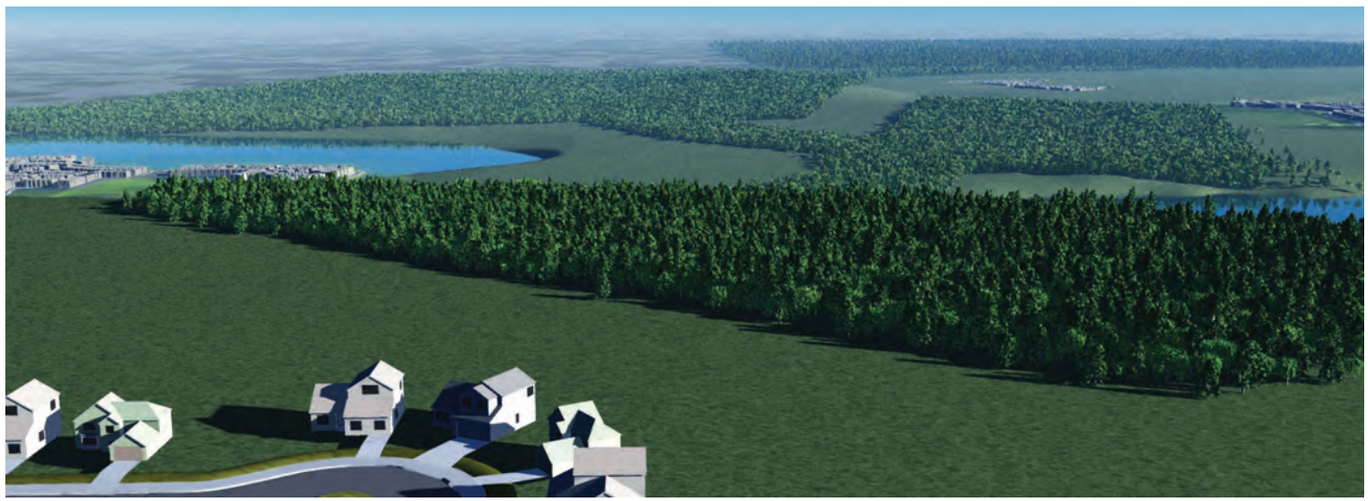
Green infrastructure and associated wildlife habitat already exist in our communities but often go unrecognized and undervalued. Some portions of this infrastructure are publicly owned, other portions may be established as easements, exist through management agreements, or by thoughtful land stewardship on private properties. Establishing a formal green infrastructure framework assigns value and a hierarchy of natural green spaces within a community and identifies the varieties of ecological services and benefits they provide.

There is no right way toward development of a formal green infrastructure and wildlife habitat network at the local community level. Nevertheless, a variety of steps are suggested below that may help guide an effort.

1. Begin with existing local government departmental organizational structure. What local government departments do, or do not do, links back to local elected officials, administrators, staff and the directives of the adopted comprehensive plan and land development code. To develop a wildlife-friendly community, the jurisdiction's officials and departments need to be a part of the plan. It is very important to ensure that sufficient cross-departmental project review occurs and to have both staff and decision-makers understand the "Big Picture" as well as site specific linkage considerations.

It is important for commissioners, planners, landowners and other local decision makers to understand the importance of "scale" in wildlife planning. It is most helpful to think in terms of at least two different scales and the particular linkages between scales: (1) the landscape scale, such as a city, county or a region; and, (2) the site scale such as an individual subdivision or development project. Different approaches to planning and different tools or combination of tools may be necessary depending on the scale of the project being considered.

It is important for commissioners, planners, landowners and other local decision makers to understand the importance of "scale" in wildlife planning. It is most helpful to think in terms of at least two different scales and the particular linkages between scales: (1) the landscape scale, such as a city, county or a region; and, (2) the site scale such as an individual subdivision or development project.



Graphic by Benjamin Pennington

Local wildlife and habitat conservation planning should strive to provide linkage. Pictured a forested habitat patch in the foreground that retains corridor linkage to distance habitat patches.

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CASE STUDY

Capital Cascades Greenway, Tallahassee: Integrating "Hard" and "Green" Infrastructures

Tallahassee, like many cities in Florida, has experienced significant growth in recent years. Natural wildlife habitats and waterways have been developed and converted to impervious surfaces at an alarming rate. Over time, economic and environmental interests began to clash, making it difficult for new development or community improvement projects to take place. To help solve this dilemma community leaders and environmental groups came together and formed the Economic and Environmental Consensus Committee (EECC). Members of the EECC cooperatively developed Blueprint 2000– a series of recommendations for balancing healthy economic growth and conservation of natural resources, habitat, and green space. In order to fund the critically needed BP 2000 initiatives identified by the committee, voters approved a one-cent sales tax extension (for 2004 through 2019).

One of the most important projects to come out of Blueprint 2000 is the Capital Cascades Park Greenway–an urban redevelopment project linking a major thoroughfare with a downtown revitalization area. This multi-use greenway will enhance transportation options, business redevelopment and recreational opportunities by:

- Creating a more park-like atmosphere and forming a continuous walking park around downtown Tallahassee.
- Providing needed flood control using a combination of engineered and restored natural features.
- Making strategic intersection improvements to facilitate traffic flow and alleviate safety concerns.
- Enhancing values of adjoining properties, thus promoting redevelopment options and revitalizing what has been an economically depressed area of the City.
- Providing a continuous green-space corridor for native wildlife habitat.
- Replacing existing drainage ditches with park-like urban wetlands for stormwater treatment and water storage for flood control.
- Creating a series of smaller, cascading urban wetlands for stormwater treatment and connecting them with attractive flow-ways, moving water through Cascades Park during dry weather and smaller, more frequent rain events via the naturally restored "green" infrastructure. More highly engineered conveyances will improve flood relief for larger, less frequent events, and protect the natural system from erosion when the channel capacity is exceeded.

The Capital Cascades Greenways Project promotes the restoration of dwindling urban wildlife habitat and revitalization priorities while at the same time addressing two of Tallahassee's most serious stormwater pollution problem areas. The two watersheds that are the focus of the Capital Cascades Greenway project drain an area of 4477 acres. The overall project involves the creation of a greenway corridor with bike/pedestrian trails and includes development of a park and restoration of water features in the Cascades area adjacent to the downtown business district of Tallahassee, the construction of 5 new park-like areas and a total of 73 acres of open space along the riparian corridor. Other work will involve stabilization of the entire 4.1 miles of highly eroded stormwater channels that traverse the Old St Augustine Branch and the Central Drainage Ditch watersheds.

These improvements, funded gradually by sales taxes, are underway. Several of the new stormwater ponds and wetland areas that have been built are regularly included in the local Audubon chapter's "hot spots" for bird-watching activities. Once complete, the project will be an example of an urban greenway and park system that also provides stormwater treatment, wildlife habitat, flood control, and urban recreation opportunities. The project will also enhance economic development and property value in the area, and promote exercise and community gatherings.

Tallahassee, like many cities in Florida, has experienced significant growth in recent years. Natural wildlife habitats and waterways have been developed and converted to impervious surfaces at an alarming rate. Over time, economic and environmental interests began to clash, making it difficult for new development or community improvement projects to take place.

Graphics courtesy of City of Tallahassee

The Cascades Park portion of the Blueprint 2000 riparian corridor

2. Cross-train administrators and staff regarding linkage and integration of green infrastructure to other infrastructures. On a project-by-project basis, land development and infrastructure provision are made through the guidance of the local comprehensive plan, capital budgeting processes and implementing land development regulations. Only through purposeful cross-departmental integration can money, time and efficiencies be advanced and wasteful or duplicative actions minimized.

   A good example of cross-connection benefits to be gained by having an official underlying green infrastructure framework is the linkages between planning transportation, stormwater and recreation facilities. Money savings, safety and public facilities efficiencies are advanced when development and budgeting review processes are integrated to capture or enhance existing green infrastructure benefits and multi-use facility development. Each local government should examine its existing development review processes (the local planning agency, planning department, city county administrator reviews, etc.) for opportunities to incorporate and build upon the green infrastructure network.

3. Perform a wildlife and habitat assessment and context study. Know what resources you have, where they are located, their extent and their existing or potential linkage to other resources. This involves identifying and mapping landscape and habitat characteristics relative to existing or potential species occurrence and extent (also see Chapter 4 – Data and Analyses Development).

   - Identify and map the existing green infrastructure, noting the historic and current use and condition. Features to include may encompass parks, major water/drainage ways, pedestrian paths, canopy or parkway roads and highways, street trees, existing greenways, mitigation areas and lands under conservation or stormwater easements, cultural resources, etc.

Consider All Species

A basic tenet is always to inventory the habitats present on your land and surrounding lands, so that you know what you have to work with and what species you might expect to be present. Endangered, threatened and other listed species represent wildlife of particular planning interest, nevertheless, focusing just on those species is inadequate. The goal must be planning and managing to prevent wildlife from becoming endangered, threatened or listed and to keep existing common species common.

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Use citizen committees to help develop possible green infrastructure components. Just about every community has a variety of un-tapped citizen resources that can contribute if called upon. Neighborhood workshops can be used to establish a vision of creating a wildlife friendly community and develop implementation tools and programs. They can also help build public support and consensus for adoption of wildlife-friendly efforts.

- Identify and map distinctive and environmentally sensitive features, such as ravines, sinkholes, lakes, springs, rookeries, fish nesting areas and wetlands.
- Identify and map the various wildlife community landscapes types, and both common and protected species habitats types.
- Identify existing regional and/or neighboring wildlife areas, parks, conservation lands, potential corridors, linkage needs, fire management needs and efforts of adjacent local governments and state and regional entities.
- Identify and map possible wildlife and habitat integration/enhancement opportunities into transportation and stormwater infrastructure projects and networks. These facilities are often very large budget items which can incorporate multi-use habitat and wildlife enhancements or design features.

4. Consider preparing a formal resolution or statement of intent. The local governing body can consider and possibly adopt a resolution supporting the value of a green infrastructure approach. Adoption of such a resolution or statement of intent by local elected officials acknowledges the values of these resources to the community health, safety ecological, recreational and aesthetics services provided. The resolution helps frame a community's intent to understand what green infrastructure ecological resources exist within the jurisdiction and nearby, and what values or ecological services they provide.
5. Use citizen committees to help develop possible green infrastructure components. Just about every community has a variety of un-tapped citizen resources that can contribute if called upon. Neighborhood workshops can be used to establish a vision of creating a wildlife friendly community and develop implementation tools and programs. They can also help build public support and consensus for adoption of wildlife-friendly efforts.
6. Develop specific and integrated conservation and management goals, objectives and policies to integrate into the local government comprehensive plan. Each city and county in Florida adopts a legally-binding comprehensive plan to direct future growth and development. This is the logical place to begin incorporating wildlife-friendly provisions into a community's design. Please remember, however, that any final action to adopt, or not adopt, is always in the hands of elected public representatives.
7. Identify and incorporate other appropriate planning tools to develop an integrated habitat network. These may include large-scale greenway, habitat and wildlife corridor plans, wildlife-friendly community design standards, and community-wide "Dark Skies" ordinances for wildlife-friendly lighting.

Further, Florida-specific planning tools such as the rural lands stewardship areas, sector plans, or developments of regional impact (DRI) can be applied in a wildlife and habitat attentive fashion. Other important options include the use of buffers to protect sensitive features, conservation subdivisions, clustering and conservation easements. Additionally, incentives for landowners and developers, and development of a local environmental lands acquisition program to fund and leverage funding for significant lands, can be explored. Finally, measures should be incorporated into basic local government permitting and development approval review processes to keep development out of inappropriate areas, such as those prone to recurrent floods, and allow for special needs such as fire to maintain native fire dependent ecological communities.

CASE STUDY

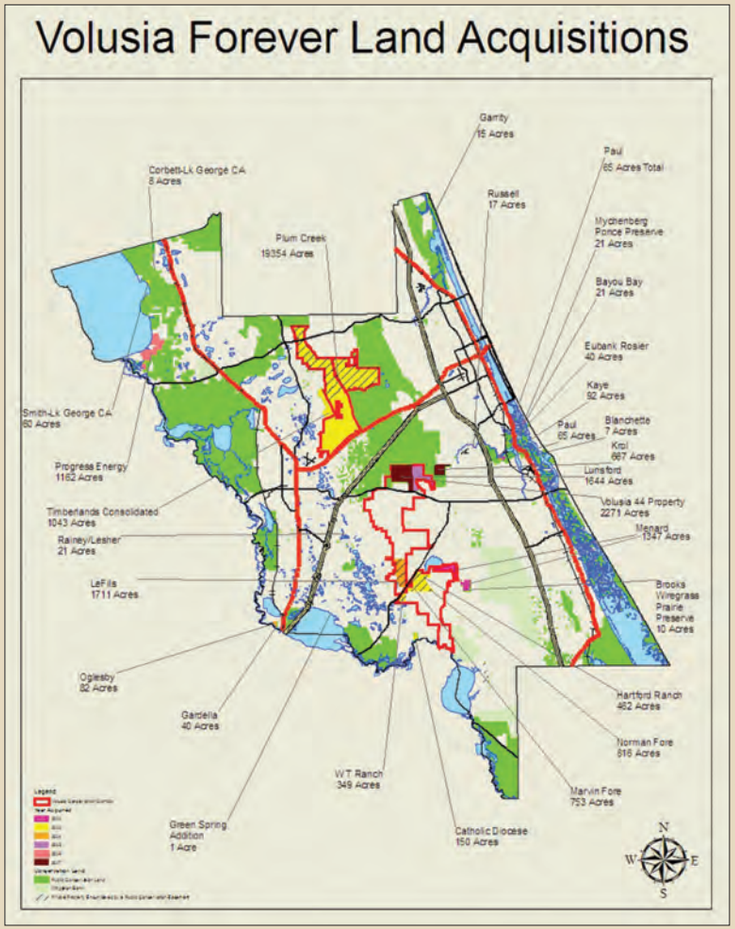
Volusia Forever Program

The Volusia Forever program is a twenty-year, ad valorem tax funded program for the acquisition and improvement of environmentally sensitive, water resource protection, and outdoor recreation lands. The key project of this program is the Volusia Conservation Corridor. The corridor is a mosaic of contiguous parcels of land, approximately 55,000 acres in size, which sits essentially in the middle of the county. The acquisition of this area is highly suitable due to its large size, relatively intact natural systems, extensive wetlands and water resources, and critical habitat for migrating waterfowl, black bear and other important species. The area has excellent recreation potential, which should increase over time due to its close proximity to large urban areas and major transportation corridors.

Volusia Forever was established in 2000. In 2005, the Volusia Smart Growth Implementation Committee issued its final report on the vision of how the county should grow, following the principles of smart growth. It includes a map which includes the Volusia Conservation Corridor among lands that should receive the greatest degree of protection. The map has received almost unanimous support from all sixteen municipalities in the county.

To date, Volusia County has acquired almost 30,000 acres of land by both fee simple and conservation easements. Of these acres, 26,000 acres has been in the Volusia Conservation Corridor. Approximately 16,000 of the 26,000 acres have been protected through conservation easements, helping to stretch limited financial resources and keeping the property on the tax rolls.

Volusia County's program has become a model for the region, with staff working with Flagler County and Lake County to structure their respective conservation lands acquisition programs. The program also participated in visioning for a regional partnership of counties in northeast Florida, similar to myregion.org, called Naturally Central Florida. The Volusia Forever program was recognized nationally in 2006, as one of six recipients of the County Leadership in Conservation Award, sponsored by the Trust for Public Land and the National Association of Counties. In 2008 the program received a *Better Community Award* from 1000 Friends of Florida.



Volusia Forever project, planning map

Graphic courtesy of Volusia County