Wildcat Creek: A Valuable Natural Resource Threatened by Urban Expansion

Eagle Audubon Society Conservation Committee | Little Manatee South Watershed Assessment

Introduction: Urban Expansion into the Little Manatee River Watershed

As reported last month, the EAS Conservation Committee has been collecting, analyzing, and mapping environmental data associated with a major proposed expansion of Hillsborough County's Urban Service Area (USA) into the **Little Manatee River (LMR)** watershed. This planning initiative, known as **Little Manatee South (LMS)**, encompasses approximately 12,000 acres in southern Hillsborough County, reaching to the north side of the LMR, the core area being primarily south of the river and southeast of the main stem of Wildcat Creek at the confluence of the creek and the river.

Given the scale of the proposed development and its proximity to our communities, EAS conservation members have undertaken an unofficial baseline environmental assessment of the affected landscape. This effort includes compiling a biogeographic database documenting natural resources, hydrological characteristics, ecological communities, and sensitive habitats within the proposed development footprint. Current residential and commercial land use – land cover data is also considered.

Over the coming year, we will highlight several of these important ecological resources and discuss their significance to the environmental integrity of the Little Manatee River watershed and consider impact of urbanization of the affected parcels.

The Little Manatee River and Its Tributaries

The Little Manatee River extends approximately 40 miles from its headwaters in Polk County to its confluence with Tampa Bay. Published descriptions commonly identify 14 major tributaries along its course.

Three of these tributaries **Wildcat Creek, Curiosity Creek, and Wild Creek** traverse the Little Manatee South planning area. Additional hydrologic features include Cockroach Creek, which drains independently into Tampa Bay west of U.S. Highway 41, and an approximately three-mile-long linear wet-dry wetland system paralleling U.S. 41. In addition, there are dozens of obligate and facultative wet and dry prairie features including extinct and extant cypress domes.

Together, these waterways and wetlands form an interconnected landscape of freshwater, transitional, and estuarine habitats that contribute to regional biodiversity, water storage, nutrient cycling, and ecological connectivity.

This article focuses on one particularly valuable component of that landscape: **Wildcat Creek**.

Wildcat Creek: A Relatively Undisturbed Tributary

Wildcat Creek (WCC) is a tributary of the Little Manatee River whose watershed remains predominantly agricultural and naturally vegetated. Urban development is largely confined to small portions of the downstream watershed, particularly along the northern side of the creek near its confluence with the Little Manatee River. Existing development in this area includes medium-density residential neighborhoods and a golf course.

Unlike many streams affected by extensive channelization, ditching, and engineered drainage modifications, Wildcat Creek retains relatively natural channel characteristics. Its gently sloping banks, broad vegetated buffers, and limited apparent hydrologic alteration contribute to its ecological value.

Wildcat Creek flows generally from south to north originating in the lower marshes and wetlands of south Hillsborough County and north Manatee County, ultimately entering the Little Manatee River approximately 4.5 miles upstream of Middle Tampa Bay. Before reaching the river, it passes through approximately 20 acres of marsh habitat, providing an important ecological transition between freshwater drainage systems and downstream estuarine environments. Along its path it is subject to agricultural activities. The watershed is distinctive among Little Manatee River tributaries because agricultural and natural land uses continue to dominate much of its landscape.

Measuring Human Disturbance: The Landscape Development Intensity Index

One method used to evaluate the ecological condition of a watershed is the **Landscape Development Intensity (LDI) Index**.

The LDI Index quantifies the relative intensity of human land use and provides a standardized measure of potential anthropogenic disturbance. Lower values generally represent less-intensive land uses, while higher values indicate greater development intensity and associated environmental pressures.

Wildcat Creek has an estimated watershed LDI value of **3.8**, reflecting its predominantly agricultural and naturally vegetated landscape.

Of particular significance is the creek's **riparian buffer LDI value of 1.5**, among the lowest reported for tributaries of the Little Manatee River. This relatively low value suggests that substantial portions of the stream corridor retain natural or minimally disturbed vegetative cover.

These riparian buffers are ecologically important because they help stabilize streambanks, intercept sediments and nutrients, moderate water temperatures, provide wildlife habitat, and maintain connections between aquatic and terrestrial ecosystems.

Reference: Florida Department of Environmental Protection, Landscape Development Intensity guidance.

https://floridadep.gov/sites/default/files/ldi-hdg-bcg.pdf

Ecological Diversity and Habitat Significance

Wildcat Creek supports a diverse assemblage of aquatic, wetland, and terrestrial habitats. Its ecological importance derives in part from the transition between upstream freshwater environments and downstream tidal and estuarine systems.

Vegetation associated with the creek corridor, adjacent wetlands, and transitional halophytic zones includes needle rush, mangroves, cypress, and giant leather fern. These plant communities contribute to habitat complexity, shoreline stability, nutrient processing, and wildlife shelter.

The surrounding landscape also supports a wide variety of wildlife, including white-tailed deer, bobcats, river otters, raccoons, opossums, alligators, and gopher tortoises.

Birdlife includes wood storks, sandhill cranes, great blue herons, and numerous egret species. Downstream aquatic habitats also provide potential habitat for manatees and a diverse assemblage of fishes and aquatic invertebrates.

Of particular ecological importance is the role of Wildcat Creek and its downstream wetland habitats as potential nursery and refuge areas for freshwater and estuarine fishes and crustaceans. These transitional environments can provide shelter, feeding opportunities, habitat connectivity during critical life-history stages, and recreational opportunities.

The combination of intact riparian vegetation, marsh habitat, and freshwater-to-estuarine connectivity makes Wildcat Creek an important component of the larger Little Manatee River Corridor ecosystem.

Potential Impacts of Urban Expansion

The proposed expansion of the Urban Service Area into Little Manatee South raises significant concerns about the long-term ecological integrity of Wildcat Creek and its surrounding watershed.

Conversion of agricultural and natural landscapes to more intensive urban uses could substantially alter the physical, chemical, and biological characteristics of the stream system. Installation of acres of impervious structure will impair recharge capability of the region for the superficial and carbonate aquifers.

Potential consequences include:

- **Altered hydrology:** Increased impervious surface coverage and stormwater runoff could change natural streamflow patterns, increase peak discharges, and modify seasonal water availability.
- **Degradation of water quality:** Urban runoff may increase sediment, nutrient, pesticide, hydrocarbon, and other contaminant loads entering the creek.
- **Loss of riparian habitat:** Removal or fragmentation of natural vegetation could reduce wildlife habitat, destabilize streambanks, and diminish ecological connectivity.
- **Wetland alteration:** Changes in surface-water drainage and groundwater interactions could affect downstream marsh habitats and their ecological functions.
- **Declining aquatic biodiversity:** Changes in water quality, flow regimes, and habitat structure could adversely affect fish, crustacean, and other aquatic communities.

Although the precise magnitude of these impacts will depend on future land-use decisions, development design, and environmental protections, the potential consequences warrant careful scientific evaluation before substantial landscape alteration occurs.

Wildcat Creek represents a valuable opportunity to conserve a relatively intact stream corridor within a rapidly developing region of southern Hillsborough County. Its low riparian development intensity, broad natural buffers, diverse wetland habitats, and connection to the Little Manatee River make it an important resource for maintaining watershed health and regional biodiversity.

The EAS Conservation Committee's ongoing environmental mapping and biogeographic database development will help document these resources, identify sensitive habitats, and provide scientific information relevant to future land-use planning.

Protecting Wildcat Creek is not simply a matter of preserving an individual tributary. It is an opportunity to maintain the ecological connectivity, natural hydrology, and biological diversity of the larger Little Manatee River watershed.

As planning for Little Manatee South progresses, these environmental resources deserve careful consideration, informed public discussion, and meaningful conservation safeguards.

Summary Slide

