

Prioritization of Floodplain Forest Areas on the Paw Paw River

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Floodplain forests were selected as a priority for biodiversity conservation in the Paw Paw Watershed to represent high-quality occurrences of southern floodplain forest as part of The Nature Conservancy's ecoregional planning for the Great Lakes and North Central Tillplain ecoregions. In addition, floodplain forests along the Paw Paw River are thought to host significant populations of several declining, forest-breeding, migratory songbirds, including the prothonotary warbler, cerulean warbler, and wood thrush.

In the Conservancy's conservation plan for the Paw Paw Watershed (September 2005), floodplain forest priority areas were identified preliminarily based on data from Michigan Natural Features Inventory (MNFI). Here, these areas have been refined and prioritized for the dual purposes of increasing the specificity of the Conservancy's plan and for the benefit of a multi-partner watershed management plan. The MNFI data on floodplain forest communities includes sites identified in 1995 but which have not yet been incorporated into MNFI's database of ecologically significant areas. The results may be useful in prioritizing the work of conservation groups with landowners on management and long-term protection of significant areas, and the application for funding for such efforts.

Methods

Six floodplain forest areas were identified based on MNFI's data, and the boundaries of these areas were modified by visual inspection of aerial photographs and in some cases based on observations from site visits. (Portions of four of the six sites were visited during the 2006 field season.) Prioritization among the sites was based on five criteria:

1. Length of the largely unbroken forest corridor along the river.
2. General width of the forest corridor, based on a preferred minimum average width of 300 m. This reflects a standard based on scientific literature for the target bird species. (This may be too lenient a standard, as Southwest Michigan Land Conservancy has used a minimum of 500 m in previous planning.)
3. Quality of the forest, based on MNFI data and rankings and any site-based observations.
4. Data on bird populations (this data was limited and unequal between the sites.)
5. Potential for protection of significant blocks of forest, based on the existence of currently protected areas and the size of private parcels in the area.

Results

The prioritization of floodplain forest blocks is summarized in descending priority order, and the areas are shown in Map 1.

Priority 1: Waverly Township Forest Area. This area stands out for several factors: the greatest length of mostly continuous forest at 8000 m; greatest average forest corridor width, mostly over 500 m; high forest quality rank; and documented presence of a large population of prothonotary warblers, with at least some cerulean warblers present. The

prothonotary warbler data is old, from 1994, but at that time there were an estimated 46 pairs present in just half of the length of the corridor. MNFI ecologists gave the forest community an “A” ranking.

Priority 2: Sarett Nature Center Forest Area. This area has the second greatest length at about 6900 m; a fairly wide forest corridor, mostly between 300 – 500 m; and documented populations of prothonotary and cerulean warblers. (There may be more recent data available on bird surveys that would show larger populations.) In addition the large acreage of the Nature Center provides a significant core area of protected forest.

Priority 3: West Lawrence Forest Area. This area extends for about 4300 m along the mainstem of the river. Although the corridor width is 300-500 m for about 80% of its length, there are some open areas of pastures and home sites interrupting the corridor. There are no protected areas. Prothonotary warblers are present, but have not been censused to my knowledge. MNFI ecologists gave the forest community a “B” ranking.

Priority 4: East Lawrence Forest Area. This area extends only 2200 m along the river, and only about half of the length of the corridor is at or above 300 m in width; the rest varies from around 250 – 290 m. There are no protected areas currently. Cerulean warblers are present, but have not been censused to my knowledge. MNFI ecologists gave the forest community a “B” ranking.

Priority 5: West Hartford Forest Area. This area also extends about 2200 m along the river. While the forest corridor width is more consistently in the 300-500 m range, MNFI ecologists gave the area a lower rating at B/C, based on trails and other signs of significant use in the forest. No bird data was included for this site.

Not ranked: MNFI ecologists also mapped an additional floodplain forest community south of Lawrence along Brush Creek. The site was given a poor ecological rank of C, with half of its length with a corridor width of less than 200 m. This site was not considered significant enough to include as a floodplain forest priority. Ecologists have also previously mapped forest occurrences along the Paw Paw River in Berrien County to the east of Watervliet and to the west of Coloma. These areas have also received poor ecological rankings, and are particularly highly subdivided, making long-term prospects for forest conservation difficult. (Of these last areas, only the Brush Creek site is shown in Map 1.)

These prioritizations should be considered preliminary. It would be ideal to collect standard ecological data, including bird population data and data on invasive plant species, from all sites in a single, future year to more accurately assess their relative quality. While this summary attempts to indicate the relative priority among the best remaining forest blocks along the river, it is important to look at possibilities of maintaining and restoring as much connected forest cover along the full length of the Paw Paw River as possible, for the benefit of numerous species of native plants and wildlife. Even at the best floodplain forest sites, there is a serious threat from invasive species, because the forests here have extensive boundaries along agricultural lands offering

numerous routes for invasion. Additional buffering of these core floodplain forest areas with more native upland forest would benefit them.

Map 1. Priority of Floodplain Forest Areas

