

MIAMI WOODS 2012 UPDATE

Conditions, trends, and long term work efforts within Miami Woods are presented in last year's report, *Miami Woods and Prairie Ecological Restoration 2011 Annual Report & 10 Year Review* which is available on line at northbranchrestoration.org. This report provides a brief update covering 2012.

During 2012, restoration in Miami Woods and Prairie reached an important milestone. The last buckthorn was removed from the site except where it was retained to provide a visual and acoustic buffer along portions of the boundary streets: Dempster, Caldwell, and Oakton. Also, initial thinning of fire-sensitive tree species was completed allowing a minimum of 20% coverage of sunlight to reach herbaceous vegetation on the floor of the woods, everywhere except in portions of management unit FO05. Continued thinning in most units will be necessary to maintain this level of sunlight. Some woodland units are becoming significantly sunnier as ash trees are dying as a result of emerald ash borers. Some are changing from woodland to savanna.

As in past years, the site stewards continued to monitor invasive species and spent many hours applying herbicide. The Audubon interns also provided assistance on two days by applying herbicide to gray dogwood in the prairie.

As described in the 2011 Report, the health of Miami Woods depends on many factors, but five are dominant and support it like columns under a building. They are: 1. availability and dispersal of *seed*; 2. control of *invasive plant species*; 3. availability of *adequate sunlight*; 4. beneficial influence of periodic *natural fire*; and 5. control of *excessive animal populations*, especially deer.

During 2012 volunteers continued to provide needed *seed*, controlled *invasive species*, thinned fire sensitive trees to provide needed *sunlight*, and supported FPDCC burning to replicate *natural fire*, but were not able to get action to control the *excessive deer population*.

Workdays were concentrated in the southern woodland portion of the site where 21 workdays focused on removal of buckthorn and excessive shade. Work was also conducted to pull garlic mustard throughout the site and seed was gathered from the higher quality areas. A total of 27 workdays were conducted as summarized in tables #1, and #2.

Brush clearing work by school groups, the Wednesday Wood Choppers, and a corporate group were shifted to the east side of the river in St Paul Woods. Winter season work by the Woodchoppers during 2012 and 2013 has been shifted to Watersmeet Woods to address high priority restoration work on that site. Work in Watersmeet by the Woodchoppers is limited to the dormant season. Work in St Paul is concentrated along the river to the west and north of shelter #2 and is summarized in table 3. It is focused on removing buckthorn and thinning of fire sensitive trees to return light to herbaceous vegetation. The unmanaged deer population is the critical limiting factor in St Paul as well as in Miami.

Seed: Gathered during all or part of four workdays plus one day by the Wednesday Seed Pickers. It was processed and mixed with seed from other sites during North Branch seed processing events. Miami received a share of the North Branch mixes which were distributed by the stewards, primarily in recently cleared areas.

Invasive species: Buckthorn removal was completed in the southern management area except where it has been retained in buffer areas by the streets. Broad-leafed herbicide was applied to brush re-sprouts & seedlings and to herbaceous invasives (thistles, teasel, crown vetch & lesser celandine buttercup) by spraying using a backpack sprayer or application using wands. Invasive grasses (reed canary grass & phragmites) were sprayed with broad spectrum herbicides. Application was conducted by the stewards in three rounds: spring, summer and early fall. Additionally the Audubon interns sprayed gray dogwood on two days.

Sunlight and Thinning: Initial thinning of fire sensitive tree species was completed in the southern management area except for the southern portion of management unit FO05. This completed initial thinning throughout virtually all of Miami Woods. As noted in the *Chicago Wilderness Biodiversity Recovery Plan*, the target percentage for sunlight on the ground layer in woodland communities range from 20% to 50%. Most of Miami's woodlands are close to 20%. Some areas are a bit short of that amount and will need additional thinning. Continued thinning will also be needed if controlled burning does not maintain sufficient sunlight. Some management units contain large numbers of ash trees, and as they die, sunlight will cover substantially more than 20% of the ground layer. The ground layer is responding to the removal of buckthorn and thinning of fire sensitive trees with the result that, with the exception of the most recently cleared areas, all of Miami is now covered with native herbaceous vegetation.

Controlled burning: Controlled burning is conducted by FPDCC staff with assistance by trained volunteers. In addition to assistance during burns, volunteers facilitate controlled burning by removing excess woody fuel. Excess fallen woody material inhibits the movement of fire and adds to time and effort needed for "mopping up" burning wood. In Miami Woods, the past and continuing die-off of elms due to Dutch elm disease and the current die-off of ash trees as the result of emerald ash borers, has resulted in massive amounts of fallen trees. Rotting logs are retained as useful habitat for invertebrates, but recently fallen material is considered to be excess. Volunteers have cut and burned much of the excess material to facilitate controlled burning. The long term goal is to use controlled burning as the principal management tool.

During 2012 part or all of nine management units were burned. This included the two prairie management units east of the bike path (PR02 and 03) together with part of savanna unit SA03. All or portions of 6 woodland units were burned (WO07, 09, 11, 12, 13 & 14) four of them for the first time in more than ten years. Before this year only two woodland units had been burned since before 1966 making this year's burn a milestone event.

Animal control: Control of excess animal populations is the sole responsibility of the FPDCC. In Mimi Woods the unmanaged population of deer is preventing the recovery of ecological health and is continuing to erode it as reported in the 2012 report and summarized in appendix 3. The very large population of raccoons is also probably having a negative impact on amphibian and bird populations, but remains undocumented.

During 2012 a survey was made to compare the intensity of deer browsing on woody vegetation in Miami Woods and other North Branch sites. The results were combined with multiyear observations of browsing on broad-leafed vegetation (forbs) in Miami Woods and elsewhere. The results show that Miami and St Paul Woods are the most severely impacted North Branch sites, as summarized in attachment #4.

Deer Exclosures: Exclosures demonstrate the impact of deer and allow the growth of vegetation, preserve local sources of seed, and form visual and acoustic buffers. The three existing Miami exclosures are described in the 2011 report. Authorization of a fourth exclosure has been requested for the area between the bike path and Caldwell Avenue just south of the entrance to the parking lot.

Monitoring: Stewards and others continuously observe conditions within Miami Woods. Additionally in the prairie, vegetation is monitored using transects. The Audubon Habitat Project has been very helpful in organizing monitoring of the transects. During 2012 the long-standing transects in the prairie were sampled and two new transects were established in the southern one third which was cleared of unassociated woody growth in recent years. Monitoring was also conducted in the prairie and woodland exclosures which both showed significantly higher quality within the exclosures. Overall, results show that the quality of herbaceous vegetation in the prairie continues to slowly improve, primarily due to improvements among species not consumed by deer. Unfortunately, species consumed by deer are declining in abundance and some are being completely eliminated as reported in attachments 3 and 4.

ST PAUL WOODS

In many respects St Paul is an eastern mirror image of Miami. The major differences are that there is no prairie on the St Paul side and relatively little restoration work has been done there. St Paul is not an approved restoration management site, but work has begun based on permits rather than an approved management plan. The Hawthorn School has been removing buckthorn from an oak woodland at the southern end for several years. At the northern end during 2012, students from the Carl Shurz High School and the Chicago City Day School worked removing buckthorn from the Grove #2 area near the river. The Veridian Energy group also removed buckthorn from that area as did the North Branch "Wednesday Woodchoppers". During 2012, fourteen workdays were held in the north area involving 344 volunteer visits and where 644 hours were devoted to brush removal and 306 hours to educational activity.

Detailed information on various aspects of this report are contained in its 4 attachments.