

## **IFMAP Stage 1 Inventory for the Waterloo Game Unit at Waterloo Recreation Area**

**Prepared by:** Jeffrey G. Lee and Michael A. Kost, Michigan Natural Features Inventory  
P.O. Box 30444, Lansing, MI 48909-7944

**For:** Michigan Department of Natural Resources, Wildlife Division

November 30, 2009

Report Number 2009-20

### **Introduction**

IFMAP Stage 1 Inventory for the Waterloo Game Unit of Waterloo Recreation Area began in April 2009 and concluded in September 2009. This particular area of the Waterloo Recreation Area is bounded by M-52 (North Territorial) to the north, Portage Lake Road to the west, Riethmiller and Waterloo-Munith roads to the south, and the Jackson-Washtenaw County border to the east. A portion of the unit extends south of Riethmiller Road in T1S R2E sections 26 and 27. Primary goals of the project were to 1) delineate non-forested and forested stands prior to field work using aerial photographs in ArcGIS; 2) verify and adjust stand boundaries in the field while recording specified inventory data for non-forested and forested stands; 3) transfer the final pre-inventory layer to the Stage 1 non-forested and forested stand layers in the IFMAP GDSE; 4) suggest improvements in the protocol for future inventory work.

### **Methods**

Two weeks of office work delineating stand boundaries occurred in April 2009 prior to field visitation. These preliminary stands underwent central review courtesy of Michael Donovan, Michigan DNR Wildlife. Field work was conducted from 21 May to 3 September. An average of 8 to 12 stands was completed per day. Though inventory protocol allowed for remote and edge calls, all stands were field visited and thoroughly evaluated within reason. Data collection followed procedures outlined in chapters 3 and 4 of the IFMAP manual for forested and non-forested inventory, respectively.

Following completion of field work, stand boundaries in the pre-inventory layer were adjusted based on findings in the field, data from DISCO was checked back into the IFMAP GDSE, and all pre-inventory stands were transferred to the Stage 1 non-forested and forested stand layers after central review by Michael Donovan. These procedures followed those outlined in chapter 6 of the IFMAP manual.

### **Results**

In total, 330 stands were established within the 5,621 acre Waterloo Game Unit (222 non-forested, 108 forested) (see attached map). Generally, stand boundaries delineated in the office were validated in the field. On occasion, boundaries were adjusted, new stands were created, or adjacent stands were merged. Common non-forested stands were sedge- and grass-dominated wet meadows and shrub-carr. Rarely, bogs and fens were discovered. Problematic invasive species in these wetlands included common reed (*Phragmites australis*), reed canary grass (*Phalaris arundinacea*), purple loosestrife (*Lythrum salicaria*), and narrow-leaved cattail (*Typha angustifolia*). Several conspicuous and surprisingly circular stands of cattail occur and are

surrounded by wet-meadow sedges and grasses. These areas support cattail reaching 10 feet tall and often growing in deep water.

Common forested communities included oak-hickory, black oak with white oak, mixed deciduous uplands (usually with a strong black cherry component), and lowland maple. Most oak stands were composed of log-sized overstory trees but with little understory oak regeneration. Problematic invasive shrubs were common, including multiflora rose (*Rosa multiflora*), Eurasian honeysuckle (*Lonicera* spp.), autumn-olive (*Elaeagnus umbellata*), and buckthorn (*Rhamnus cathartica*).

Terrain and vegetation cover for this part of Waterloo Recreation Area make traversing and following transects difficult. Most of this unit was occupied by southern wet meadow and southern shrub-carr with sporadic upland oak islands. Future work in this area should be done in waist-high waders, especially when wet spring conditions exist. Emergent wetlands dominated by swamp loosestrife (*Decodon verticillatus*) and wild rice (*Zizania aquatica* var. *aquatica*) proved to be the most treacherous as the water was deepest in this community.

### **Discussion and Conclusions**

IFMAP Stage 1 inventory from beginning to end was surprisingly a very smooth and straightforward process. The protocol for data collection was easy to follow and did not pose problems. Using the NOMAD facilitated easy communication between IFMAP DISCO and IFMAP Mobile. Even though recording data in the field with the NOMAD was slower than with pencil and paper forms, much time was saved by avoiding having to enter data manually from field notes to an electronic database. Additionally, the NOMAD proved to be a reliable and durable field recording device. Only on one occasion did the software crash, but this was easily remedied back in the office. Resolution on aerial photos uploaded to the NOMAD's Solo Forest software was adequate but stand lines were hard to discern, especially with full sun glare. We recommend carrying paper maps in protective plastic sleeves as a backup for navigating and easy viewing of stand lines. The greatest challenge in the field was hiking through thick shrub-carr or deep emergent wetlands.

In IFMAP Mobile, adding a "floating aquatic" or "road" stand designation in the drop-down menu for non-forested cover type would save field time and improve accuracy of the dataset. These stands were entered as "unspecified," and a comment was noted in the appropriate section. Additionally, making plant scientific names available for non-forested stands and alphabetically organizing the common names that are available would also save time and improve accuracy.

IFMAP Stage 1 inventory is a good preliminary process for identifying potential high quality natural areas. It forces surveyors to conduct a complete and broad survey of a particular area. Data gathered during the inventory process can help guide future, more detailed surveys. Because cover type designations in IFMAP are often broader than the natural communities recognized by MNFI, all potential natural community element occurrences must be noted in the comments section for each stand. For example, the IFMAP cover type, fen, may include fens that may not be recognized as such by MNFI. At present, a fen under IFMAP definition must have at least 60% total cover of shrubby cinquefoil, dogwood, willow, sedges, or sphagnum peat. However, no percentage is specified for each of these components. Thus, some fens that meet the IFMAP definition may be more appropriately classified as southern shrub-carr by MNFI.

