

The Conservation Fund

Restoring a Forest Legacy at Mingo National Wildlife Refuge: *A Forestland Partnership Between the US Fish and Wildlife Service and The Conservation Fund's Go Zero® Program*

CCBA Criterion B3.3, Biodiversity Impact Monitoring -- Monitoring Update

5.11.2011

Original Plan

In order to monitor the changes in bird species richness over time, the Refuge will set up survival plots and monitoring plots across the Tracts. There will be three survival plots per 100 acres of newly planted area, and each plot will have 100 trees (these will be used to determine the survival rates of the trees). Monitoring plots will be installed in these same locations and bird point counts will be conducted to determine bird species richness. These point counts will begin in 2010 after planting occurs and continue annually for the first five years. After that, Refuge staff will conduct point counts every five years to continue monitoring changes in bird species richness over time.

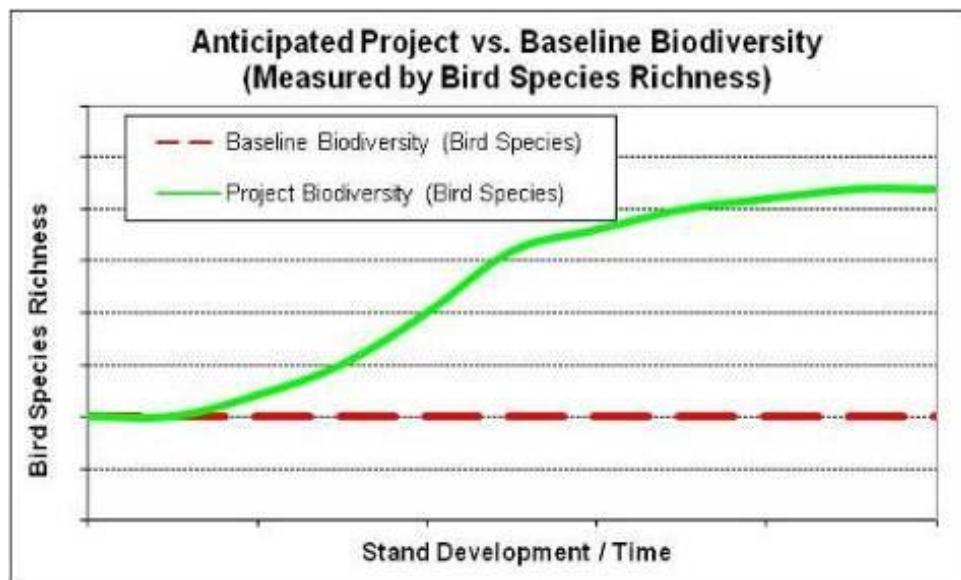
Standard point count methodology will be used to monitor the changes in the avian population. Sampling design and protocols will follow the standard operating procedures and guidelines outlined in *Landbird Monitoring Protocol for the U.S. Fish and Wildlife Service, Midwest and Northeast Regions*.¹ Point count locations were randomly selected by the Service within afforestation units; only points greater than 100 meters from an edge were selected. All birds seen or heard during 10-minute point count duration will be recorded. Bird detections will be separated out into 1, 3, 5, and 10 minute intervals. In addition, bird detection distances will be estimated and recorded for each individual less than 50 meters from the point center. Flyovers will not be recorded since their specific habitat association to the restored sites cannot be determined. Each point count will be visited three times starting in mid-May through June. To facilitate comparison of the overall biodiversity effects between afforestation sites and existing agriculture, random control plots will be established in agriculture units and follow the same sampling protocol. Data will be analyzed using the program DISTANCE.

¹ Knutson, M. G., N. P. Danz, T. W. Sutherland, and B. R. Gray. 2008. Landbird Monitoring Protocol for the U.S. Fish and Wildlife Service, Midwest and Northeast Regions, Version 1. Biological Monitoring Team Technical Report BMT-2008-01. U.S. Fish and Wildlife Service, La Crosse, WI. 25 pages + 11 Standard Operating Procedures pp. (<http://www.fws.gov/bmt/protocols.htm>)

Monitoring Update

The above plan, as stated in our original Project Design Document, is intended to be the project's full biodiversity monitoring plan and follows official USFWS protocol for conducting bird count point surveys. As outlined in our original plan, USFWS established three monitoring plots per 100 acres of newly planted area in order to monitor bird species richness. A total of sixteen plots were established, with 11 plots on the Go Zero Tracts and 5 plots on other agricultural lands to serve as a baseline for comparison.

The first round of point counts was conducted in June 2010. The plots were sampled three times apiece over the month of June and a total of 98 detections were made consisting of 12 species. Bird use and species richness was minimal on all of the plots because the newly planted Go Zero Tracts were still basically bare agricultural lands. As discussed in section B1.1 of our Project Design Document, biodiversity on the Go Zero Tracts will likely be low at the beginning of the project and increase steadily over time, as illustrated by the graph below.



The second round of point counts will be conducted this June 2011. More bird detections are anticipated since the tree seedlings have grown significantly over the past year.

All USFWS data, including point count results, is publicly available. After the June 2011 bird counts are completed, Mingo NWR staff plan to draft a summary of the first two years of results and will disseminate them on their website and Facebook page. The Conservation Fund will also publish the results on its Go Zero site. A second year of data sets is critical to a summary update so that USFWS can show comparisons and changes over time.