Clarks River NWR LiDAR

FY 2011

PROJECT DESCRIPTION

For this project, controlled airborne Light Detection and Ranging (LiDAR) data was acquired for the entire refuge (18,000 acres). The LiDAR system provided 10-centimeter or better accuracy with sub meter nominal point spacing within the project and supported the development of one foot contours according to National Map Accuracy Standards and FEMA standards. This baseline data did not exist previously for refuge managers and is critical for personnel to gain accurate assessment, inventories, and implement monitoring methods.

OBJECTIVES AND ALTERNATIVES

From this project, effective management of the Clarks River watershed and its associated plant and animal communities will be achieved. This effort is outlined in all management documents for the refuge including the Comprehensive Conservation Plan and developing Habitat Management Plan. The entire Clarks River Refuge is located within an invaluable floodplain in western Kentucky. This project assisted in better protecting and managing this resource identified as the primary objective during refuge establishment.

METHODS AND PROTOCOLS

Methods and protocols were specified by contractor, however, deliverables to the refuge included the following:

- Raw pre-processed lidar data set in ASCII format (unclassified) with formatting for import into ESRI ArcMap if desired
- Post-processed lidar data set in ASCII and LAS formats (classified into 1st return, last return, and bare earth) with formatting for import into ESRI ArcMap
- A digital terrain model of the bare earth for the project area conforming to a minimal 2 foot by 2 foot on-ground pixel size with an associated elevation.
- Ground control report and accuracy assessment
- 1 foot elevation contours in shapefile format
- TIN or Terrain data
- 2 ft raster DEM
- 2 ft raster DSM
- 2 ft hill-shade raster
- 2 ft intensity image raster
- Control points in shapefile format
- Breaklines in shapefile format (if necessary)
- All pertinent metadata

DATA MANAGEMENT

All of the deliverables were stored on an external hard drive and given to the refuge. This data has been transferred onto the Refuge GIS server and the Refuge Shared Drive. We are awaiting instruction on where this can be stored with the I&M Program.

DATA ANALYSIS / MODELS

Not Applicable. However, the data is available for use and has been used for refuge planning and operations thus far.

ACCOMPLISHMENTS AND MANGEMENT IMPLICATIONS

Clarks River NWR's mission and establishing purposes are now more readily achieved with the information gained from this project. This project provided the necessary data to further all habitat management, wildlife and land acquisition goals outlined in the refuge's Comprehensive Conservation Plan and Landscape Conservation Cooperative area (GCPO), and other national initiatives. The LiDAR acquired data is now allowing for the right conservation to be applied strategically and in the right places using science as the underpinning for the refuge's future management decisions.

The project is complete and has documented the current status and assessed the topographic condition of the refuge which provided unknown hydrological information that plays the largest role in refuge fish, wildlife and plant communities. This has been a critical gap that is now filled.

MORE INFORMATION

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