



Adapting to ***Change*** at Oakwood Bottoms

Story by Eric W. Schenck

Photos by Mike Sertle

CLIMATE CHANGE has taken center stage as an international environmental concern. While global impacts of climate change, such as loss of polar icecaps and sea level rise, often are visible and recognizable, regional impacts can be less certain or intuitive, potentially leading to a false sense of security or lack of urgency to counter future impacts.

For the past decade, the U.S. Forest Service's (USFS) Northern Institute of Applied Climate Science (NIACS) has been assembling research about the potential effects of climate change on forest ecosystems. NIACS' objective was to assess regional threats arising from climate change and develop a response framework to help public and private landowners integrate climate considerations into future forest management actions. Leslie Brandt, a Climate Change Specialist for NIACS, led the assessment for the Central Hardwoods Ecosystem, a biologically diverse forested region covering 42 million acres across southern Missouri, Illinois and Indiana.

Brandt's 2014 report, which identified wet bottomland forest as being one of the habitats most vulnerable to climate change, caught the attention of Ducks Unlimited, Inc.

(DU) biologists working to improve habitat at Oakwood Bottoms, a 4,600-acre forested wetland management unit of the Shawnee National Forest located in southwest Jackson County where the Big Muddy River and Mississippi River floodplains meet.

During the fall and winter seasons, more than 35,000 waterfowl use Oakwood Bottoms, feeding on pin oak acorns and other hard mast to build fat reserves and body condition. DU biologists had hypothesized that reoccurring years of warmer winter weather, another possible climate change outcome, might be "short-stopping" the migration of waterfowl in the Mississippi Flyway, making mid-latitude bottomland hardwood sites such as Oakwood Bottoms increasingly important. The threat of future climate change has now made bottomland forest habitat conditions at Oakwood Bottoms an even more urgent concern for DU.

Working to its advantage was the greentree reservoir system of levees, pumps and water control structures at Oakwood Bottoms that USFS uses to independently manage water levels in 27 forested impoundments. This water management capability is critically important for addressing what NIACS identified as being the greatest climate-related threat to wet bottomland forests—a change in precipitation patterns that will increase the severity of both seasonal flooding and seasonal droughts across the Central Hardwoods region.

With four grants totaling nearly \$2.3 million, and supplemented by additional partner funding provided by the National Wild Turkey

A greentree reservoir is a stand of bottomland hardwood forest that is shallowly flooded in the fall and winter.

Completed opening at the USFS
Oakwood Bottoms Greentree Unit 19

Federation, DU biologist Mike Sertle and Chad Deaton, then Shawnee National Forest wildlife biologist, set to work to improve 350 acres of bottomland forest habitat by selective thinning, and to begin planting oaks and other hard mast trees on higher elevation floodplain sites located at or near Oakwood Bottoms. The on-the-ground accomplishments at Oakwood Bottoms, and adjacent wet bottomland forest sites along the Big Muddy River, resulted in a national "Wings Across the Americas" award presented by USFS to Sertle, Deaton and other project biologists in recognition of their climate focused, partnership effort.

Over the course of the next year, visitors to Oakwood Bottoms can see various habitat improvement efforts in all stages of development, including sites where work is still ongoing. Far from over, these conservation efforts only represent the beginning of the challenges that USFS and its partners face as they prepare for and adapt to future climate change. ■



BIO

Eric W. Schenck has a B.S. in Wildlife Management from the University of Idaho and a M.F.S. in Forest Science from Yale University's School of Forestry and Environmental Science. He held the position of Manager of Conservation Programs with Ducks Unlimited and currently serves as Executive Director

of the Illinois Conservation Foundation. Schenck is an advocate for the preservation of Illinois' natural areas and wildlife as a member of the Prairie State Conservation Coalition, and as a professionally certified member of The Wildlife Society.



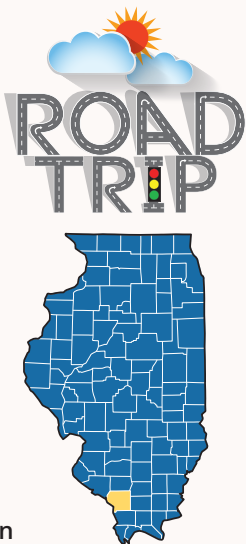
OAKWOOD BOTTOMS GREENTREE RESERVOIR

Oakwood Bottoms Road
Jackson County, Illinois
618-253-7114

Directions: Oakwood Bottoms Greentree Reservoir is located on Oakwood Bottoms Road approximately 2 miles north of Grand Tower off of Illinois Route 3.

GPS Coordinates

N 37° 40.468'
W 89° 27.729'



Evaluating Management Actions at Oakwood Bottoms

Dr. Jeff Hoover, avian ecologist with the Illinois Natural History Survey (INHS), has been monitoring avian responses to selective thinning, prescribed fire and other forest stand improvement projects at Oakwood Bottoms. Early results show a promising positive response by several forest birds, including red-shouldered hawk, red-headed woodpecker, yellow-billed cuckoo, prothonotary warbler, Kentucky warbler and yellow-breasted chat.



Conversations with Dr. Hoover and the Illinois Audubon Society (IAS) resulted in a companion DU proposal to establish an avian survey transect and monitoring protocol for Oakwood Bottoms that would allow volunteer citizen scientists to collect and report bird use data. Details of the survey design are being worked out by a network of partners that includes representatives from DU, USFS, INHS, IAS, Southern Illinois University-Carbondale, Southern Illinois Audubon and the American Bird Conservancy. See below for details on the kick-off.

Oakwood Bottoms Celebration

Calling all birding citizen scientists! Partners in the Oakwood Bottoms project are interested in help monitoring the long-term avian use and response to site habitat improvements and would appreciate having interested citizen scientists report their surveys to eBird.

Staff and volunteers from Illinois Audubon Society, Ducks Unlimited (DU) and students with the Southern Illinois University-Carbondale DU Chapter will spend a weekend this spring recording the GPS position of each of 20 survey points and installing signs explaining the project and protocols. Kiosks containing information about the habitat improvements and avian survey will be installed at the main entrance. Illinois Audubon Society will be hosting a webpage with information regarding this new birding opportunity once the new survey trail is marked and ready for use. A kick-off celebration coordinated by Southern Illinois Audubon Society is planned for this summer.

Funding for the development and purchase of materials to implement and conduct the survey route was made possible through the National Forest Foundation grant awarded to DU.

Partners participating in the design and installation of the materials are U.S. Forest Service, Illinois Audubon Society, Illinois Natural History Survey, Southern Illinois Audubon Society and Ducks Unlimited.



Brushy Bayou post project; a mixture of ~150 acres of open water, scrub-shrub, and forested wetlands



King rail by
Richard Day

Oakwood Bottoms, an Illinois Important Bird Area

Located in the Shawnee National Forest northeast of Grand Tower in Jackson County, more than 200 species of birds have been documented at Oakwood Bottoms, including breeding yellow-crowned night-heron, least tern, black-necked stilt, king rail, fish crow, Mississippi kite, Louisiana waterthrush and prairie warbler. Annually, thousands of waterfowl, shorebirds, waders and neotropical songbirds utilize the wet-mesic floodplain forest during migration. Designation as an Illinois Important Bird Area was based on the value of the area for waterfowl, shorebirds and breeding yellow-crowned night-herons.



Yellow-crowned
night-heron
by Linda Rosland

One of two new water control structures put in at Brushy and Turkey bayous to handle the Big Muddy River flooding

