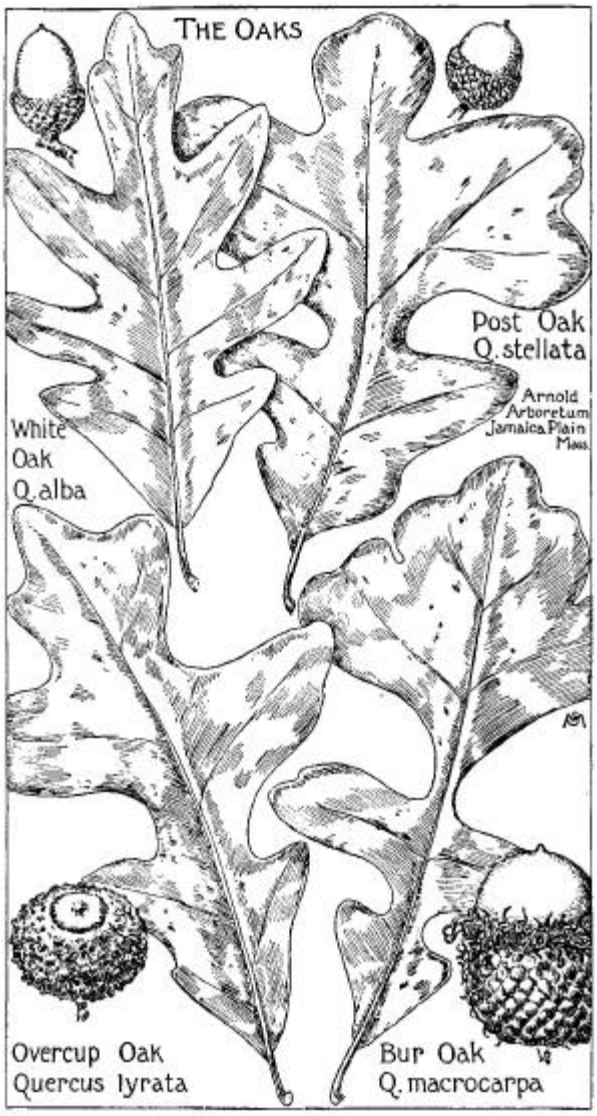
YOUR LETTERS



We welcome your letters and comments on articles printed in *The Glade* or on conservation issues throughout the state. Letters should be mailed to Michelle Boone, USGS Columbia Environmental Research Center, 4200 New Haven Road, Columbia, MO 65201, to the return address on the newsletter, or to **moscb@showme.missouri.edu**.

Floodplain Oaks

I was perusing *The Glade* and became interested in the article concerned with the floodplain of the Missouri River. I was surprised to read that Dey et al. were placing so much emphasis on restoring 'oak hardwood' forests in the bottoms and somewhat discouraging the regeneration to willow, cottonwood, elm, and such in most areas. I'm the project director of the *Missouri Lewis and Clark Historic Landscape Project* in Geography at UMC. We are reading the original General Land Office field notes (1816-1817) and all of the earlier French and Spanish survey notes (1763-1816) for the Missouri River corridor and converting this information to a digital database for GIS analysis and mapping.

Our information shows that oaks were, generally, not dominant species in the bottoms. There were patches of concentrated white oak in some of the higher areas of the bottoms as the authors note. Pin oak or hickory (also mentioned as being restored) has not shown up as frequent dominant species. Our findings are showing dominant numbers and sizes in hackberry, sycamore, elm, cottonwood, and ash, mixed in with sugar maple, boxelder, linden, and (oh yes!) willow. This early bottomland species association is generally consistent from the Grand River confluence to the Mississippi. It is also important to note that early records tell that much of the landscape of St. Louis/St. Charles was considered rather open or even prairie!

--James D. Harlan, Assistant Program Director, Geographic Resources Center, Department of Geography, University of Missouri-Columbia; email: HarlanJ@missouri.edu

A Reply

We thank Mr. Harlan for his comments. He raised a few issues that require clarification. We did not intend to imply that oaks were dominant in the Missouri and Mississippi River floodplains. On the contrary, we pointed out that some oaks, hickories, and black walnut were members of diverse bottomland forests containing cottonwood, silver maple, and willow. These oaks, hickories, and walnut occurred on higher elevations that were flooded less frequently, and that had better drained soils. We know that oak species including swamp white, bur, and pin oak, and shellbark and shagbark hickory were present in the Missouri and Mississippi River floodplains based on analyses of General Land Office (GLO) surveys conducted in the early 1800s (Bragg and Tatschl 1977, Nelson 1997, Yin et al. 1997, Nelson et al. 1998), and considering the geographic distribution and silvics of native tree species (Burns and Honkala 1990). Oaks and hickories were common enough to be recorded on about one third of the survey transects of the Missouri River floodplain in the early 1800s and oak-hickory is a recognized floodplain forest type in the Upper Mississippi River before European settlement. Oaks were also associates in other floodplain forest types.

We also did not intend to appear "discouraging" about the regeneration of willow, cottonwood, and elm. As we stated in our article, these early-successional and flood-tolerant species were, and still are abundant in bottomland forests. However, these species are naturally regenerating or recolonizing bottomlands throughout Missouri. We do not recommend the wholesale regeneration of oaks over cottonwood, willow, and elm. In fact, we advocate the selection of native bottomland species that are best adapted to the current disturbance regime, hydrology, and soil conditions. Management objectives will drive afforestation efforts and define the future role of oaks in floodplains. Additionally, environmental factors that vary in complex patterns across the floodplain will influence restoration goals.

In floodplains, managers and landowners want to improve wildlife habitat, promote biodiversity, restore ecosystem process and function, provide recreation, and produce forest products using native species that are best adapted to specific site environments. They desire to supplement natural regeneration of cottonwood, willow, silver maple, and elm by planting native bottomland oaks. Our research will provide a number of methods for regenerating native oaks in the floodplains. How much oak, and where to regenerate oak, are management decisions.

--Dan Dey[1], Dirk Burhans, John Kabrick, Brian Root, Jennifer Grabner and Mike Gold; [1]U.S. Forest Service, North Central Research Station, email: ddey@fs.fed.us.

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The Glade Vol. 4, No. 1 was edited by Michelle Boone and comma-usage was scrutinized by David Giblin. This issue was printed by Quick Copy.