

A probable native extant population of *Cyperus flavicomus* in Missouri

PAUL M. MCKENZIE¹

ABSTRACT. — *Cyperus flavicomus* is reported from a new site, in Henry County, Missouri; this is the first documented report of the species in Missouri in more than 25 years. Identifying characteristics and putative nativity of this population are discussed.

Cyperus flavicomus Mich. (White-edged Flat Sedge) is native from New York and Pennsylvania south along the Atlantic Coast, west to California, and inland to Arkansas, Kentucky, Missouri and Tennessee (Godfrey & Wooten 1979; Yatskievych 1999; Kartesz 2015). In the states where the species is tracked by Natural Heritage programs, it is ranked as S3S4 (vulnerable) in Kentucky, S2 (imperiled) in Mississippi, S1 (critically imperiled) in Missouri, and S4 (apparently secure) in Virginia (NatureServe 2020). In Missouri, the species was historically known solely from Ripley and Stoddard counties (Dunn & Knauer 1975; Yatskievych 1999).

The Stoddard County site was documented by two collections from the same moist soil unit on the Mingo National Wildlife Refuge made 20 years apart, in 1973 and 1993 (Tropicos 2020). The other historical site, in Ripley County, was apparently in a flooded agricultural field in 1994 (Tropicos 2020). The most recent collection was made by the author from a moist soil unit on the Swan Lake National Wildlife Refuge, in Chariton County in 1999 (McKenzie 2000, Tropicos 2020). Due to its occurrence on disturbed sites managed for waterfowl, and its occurrence in an agricultural field, all previous records of *Cyperus flavicomus* in Missouri were considered to be introductions (Yatskievych 1999; Ladd & Thomas 2015).

On 6 October 2020, while conducting a bird survey on the north shore of Truman Reservoir in Henry County, I discovered several culms of *Cyperus flavicomus* (Fig. 1). After exploring a few hundred meters east and west of the initial location, I estimated that there were a few hundred flowering plants along the lake shore. *Cyperus flavicomus* was scattered in a vegetated band that had become established during the receding of the shoreline (Fig. 2). The species was associated with several species typical of receding reservoir and large river shorelines including *Ammania coccinea*, *Cyperus odoratus*, *C. squarrosus*, *Echinochloa muricata* var. *muricata*, *Eragrostis hypnoides*, *Fimbristylis autumnalis*, *F. vahlii*, *Leptochloa panicea* ssp. *mucronata*, *L. panicoides*, *Persicaria lapathifolia*, *P. pensylvanica*, *Rorippa palustris* var. *fernaldiana*, and *Xanthium strumarium* (nomenclature and authorities follow Yatskievych [1999, 2006, 2013]).

¹ PAUL M. MCKENZIE — 2311 Grandview Circle, Columbia, MO 65203. email: paulbeckymo@mchsi.com

Voucher specimens: U.S.A. MISSOURI: HENRY CO.: ca. 5 mi. SSE of Clinton, and ca. 1 mi. SW of the intersection of state highway 13/52 and Henry County Rd. SW450; 38.28880°N, 93.768231°W, 6 Oct 2020, *McKenzie 2660* (ANHC, MICH, MO, VSC).



Figure 1. *Cyperus flavicomus* showing with purplish-red spikelets with white-edged scales. Photo by the author, October 2020.



Figure 2. Vegetation band along shore of Truman Reservoir containing *Cyperus flavicomus*. Photo by the author.

Along with *Cyperus bipartitus*, *C. diandrus*, *C. difformis*, and *C. fuscus*, *C. flavicomus* is striking in appearance due to the purple to reddish-purple or reddish-brown color of the spikelet scales. It is easily distinguished from *C. bipartitus*, *C. diandrus*, and *C. fuscus*, however, by its much taller culms and its diagnostic white margins to the spikelet scales (Fig. 1). *Cyperus difformis* is also erect and has some white edging on the spikelet scales, but the inflorescence is in compact, dense, globose, umbellate heads, and it has brown to pale brown triangular achenes that are 0.6-0.8mm long and minutely papillose. The achenes of *Cyperus flavicomus* are noticeably larger (1.2-1.6mm long), biconvex, and minutely punctate.

The associated plants listed at the Truman Reservoir site are common species that occur on river banks and receding reservoir shorelines in Missouri. There are no active waterfowl management or disturbance activities occurring at this site. While the location is part of the Missouri Department of Conservation's 15-year Management Plan for Truman Reservoir (Missouri Department of Conservation 2014), there are no listed activities to affect lake shore vegetation. Consequently, the large population of *Cyperus flavicomus* along the lake shore of Truman Reservoir should be judged to be of native occurrence despite the artificial construction of the reservoir that has been in existence since the Osage River was dammed in 1979. With the exception of the exotics like *Leptochloa panicoides*, it is likely that the vast majority of plants that currently occur along the lake shore of Truman Reservoir are the same ones that would have been found along the river historically prior to reservoir construction and alteration of riverine habitats by humans.

Kartesz (2015) listed *Cyperus flavicomus* as native in the United States, including Missouri and adjacent states that have documented records of the species. Public lands associated with Truman Reservoir encompass 58,113 acres (Missouri Department of Conservation 2014) and 958 miles of shoreline that would provide limitless opportunities for botanical surveys. Surveys for *Cyperus flavicomus* and other species of conservation concern should be undertaken in the future, especially during years when lower water levels on the reservoir provide an abundance of shoreline habitat.

LITERATURE CITED

- Dunn, D.B. and D.F. Knauer. 1975. Plant introductions by waterfowl to Mingo National Wildlife Refuge, Missouri. Transactions of the Missouri Academy of Science 9:27-28.
- Godfrey, R.K. and J.W. Wooten. 1979. Aquatic and Wetland Plants of the Southeastern United States. Volume 1. Monocotyledons. Athens: University of Georgia Press.
- Kartesz, J.T. 2015. The Biota of North America Program (BONAP). *North American Plant Atlas*. (<http://bonap.net/napa>). Chapel Hill, N.C. [maps generated from Kartesz, J.T. 2015. Floristic Synthesis of North America, Version 1.0. Biota of North America Program (BONAP)].
- Ladd, D. and J.R. Thomas. 2015. Ecological checklist of the Missouri flora for Floristic Quality Assessment. Phytoneuron 2015-12: 1-274.

Missouriensis, **38**: 4-7. 2020.

*pdf effectively published online 28 December 2020 via <https://monativeplants.org/missouriensis>

McKenzie, P.M. 2000. Significant range extensions in Missouri for *Echinochloa walteri* (Poaceae) and *Cyperus flavicomus* (Cyperaceae). *Missouriensis* 21:21-25.

Missouri Department of Conservation. 2014. Harry S. Truman Reservoir Management Lands Area Plan, Fifteen Year Area Management Plan, FY 2013-2028. Jefferson City: Missouri Department of Conservation.

NatureServe. 2020. NatureServe Explorer [web application]. NatureServe, Arlington, Virginia. <https://explorer.natureserve.org/>. Accessed 16 October 2020.

Tropicos.org. Missouri Botanical Garden. <http://www.tropicos.org/Name/9904860>. Accessed 15 October 2020.

Yatskievych, G. 1999. Steyermark's Flora of Missouri. Vol. 1. Jefferson City: Missouri Department of Conservation.

Yatskievych, G. 2006. Steyermark's Flora of Missouri. Vol. 2. St. Louis: Missouri Botanical Garden Press.

Yatskievych, G. 2013. Steyermark's Flora of Missouri. Vol. 3. St. Louis: Missouri Botanical Garden Press.