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Current Status of Texas Wild Rice (*Zizania texana* Hitchc.)

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Reviewed work(s):

Source: *The Southwestern Naturalist*, Vol. 22, No. 3 (Jun. 15, 1977), pp. 393-394

Published by: [Southwestern Association of Naturalists](#)

Stable URL: <http://www.jstor.org/stable/30054808>

Accessed: 10/01/2012 14:02

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LITERATURE CITED

- BERRY, E. W. 1928. Fossil nutlets of the genus *Lithospermum*. United States Nat. Mus. Proc. 73: art. 13, pp. 1-3, 1 pl.
- BROOKS, B. P. 1928. A new species of hackberry (*Celtis*) from the "Loup Fork" Miocene of Philips (*sic*) County, Kansas, Annals, Carnegie Mus. (Pittsburgh) 18:299, pl. 17, fig. 1.
- COCKERELL, T. D. A. 1933. The name of a fossil boraginaceous plant. *Torreyana* 33: no. 1, pl. 15.
- ELIAS, M. K. 1931. The geology of Wallace County, Kansas. State Geol. Surv. Kansas, Bull. 18:1-254, 41 pls.
- . 1932. Grasses and other plants from the Tertiary of Kansas and Colorado. Univ. Kansas Sci. Bull. 33:333-367, pls. 28-30.
- . 1942. Tertiary prairie grasses and other herbs from the High Plains. Geol. Soc. America, sp. paper no. 41, 1-176, 1 fig., 6 tabs., 17 pls.
- LEONARD, A. B. 1958. Two new fossil plants from the Pliocene of northwestern Texas. Univ. Kansas Sci. Bull. 38:1393-1403, pl. 1.
- SEGAL, R. 1966. *Biorbia* (Boraginaceae) in the central U. S. Pliocene. Univ. Kansas Sci. Bull. 46:495-508, 8 figs., 2 graphs.
- WATT, B. P. 1928. A new species of fossil hackberry (*Celtis*) from the lower Pliocene of Philips (*sic*) County, Kansas. Pennsylvania Acad. Sci., Proc. 2:54.
- A. Byron Leonard, *State Biological Survey of Kansas, 2045 Avenue A, Campus West, Lawrence, Kansas 66044.*

CURRENT STATUS OF TEXAS WILD RICE (*ZIZANIA TEXANA* HITCHC.).—The decline and threatened extinction of Texas Wild Rice was reported (Emery, W. H., *Southwestern Nat.* 12:203-204, 1967) approximately ten years ago. At that time several factors were cited as having a probable effect on the rapid decline of this very localized endemic grass. Floating debris, bottom plowing, plant collection and sewage pollution were listed as contributing factors in the accelerated disappearance of this rare aquatic species from Spring Lake and the upper portion of the San Marcos River.

Currently, the impact of these factors has significantly abated and the rate of decline in amount and distribution of wild rice has become less rapid. Vegetative debris is regularly collected from the lake and upper river. The bottom plowing of the upper river to remove weedy vegetation has been discontinued. One aquatic plant firm formerly operating on the river has closed, resulting in fewer plant collectors, a smaller area of harvest and lessened eradication of the wild rice. Finally, the enlargement and upgrading of city sewerage facilities has lowered the pollution of the river habitat in the critical area of wild rice production.

While abatement of the physical factors cited has slowed the rate of wild rice decline, it has not resulted in the restoration of sexual reproduction, nor has there been any appreciable spread from existing clones via asexual reproductive mechanisms. It appears that improvements effected to date have simply postponed the ultimate disappearance of this grass.

Repeated attempts to culture the Texas Wild Rice outside its natural habitat have been tried without success. Thus any critical studies that might have yielded vital information and understanding of this unique plant have been long delayed.

During the spring of 1975, four clones of wild rice were removed from the river to a spring-fed, cement sluice, on the campus of Southwest Texas State University. These clones in the protected environment of the aquatic nursery, adapted quickly, with vigorous growth and abundant foliage. Their growth form changed from the decumbent culms and submerged leaves of the river plants, to erect and tufted culms with aerial or emergent leaves. Flowers and inflorescences formed and were exerted from the end of nearly every culm. As the male flowers opened, pollen was collected and transferred to maturing pistillate inflorescences to insure pollination. Later observations revealed that natural pollination was equally as effective in the production of seed and that manual transfer of the pollen was unnecessary.

During the summer and early fall, more than 1500 seed were collected. These seed are believed to represent the only sexual reproduction by Texas Wild Rice in more than 20 years. Following a dormant period of three to four months, seeds have been germinated and seedlings transplanted and grown to maturity. More than 300 sexual clones of wild rice are being cultured in our aquatic nursery at this time.

The availability of nursery grown sexual clones, together with cited improvements in the river habitat, now offer the opportunity to reestablish colonies of this wild rice in areas from which it has been eradicated over the past 40 years. Initial plantings have been successfully established and the planning for a large scale effort during the spring and summer of 1976 is well advanced.

To gauge the long term effect this project may have on the wild rice population, it was vital to know both the size and distribution of the existing wild rice population. Beaty (Texas Horticulturist 2:9-11, 1975) had reported a size estimate of 2580 square feet (approx. 240 m²) of basal area for the remaining population. A more recent survey to measure both the size and distribution of the species was carried out by the author in January, 1976. Utilizing a floating meter-square frame the "area of vegetative dominance" was computed at 1131 square meters of river habitat.

The distribution of the wild rice was recorded and plotted on large scaled maps of the upper San Marcos River.

Future surveys of *Z. texana* Hitchc. will provide data to evaluate the relative effectiveness of the reestablishment project. They will also enable a more careful and accurate monitoring of this rare and endangered species.—Wm. H. P. Emery, Department of Biology, Southwest Texas State University, San Marcos, Texas 78666.

THE GENUS *TALINARIA*.—In a recent revision of the classification of the Portulacaceae (McNeill 1974), I suggested that the genus *Talinaria* Brandegee should be included within *Talinum* Adanson. Since then, Dr. M. C. Johnston of The University of Texas, Austin, has allowed me to examine four collections from Mexico of an unidentified member of the Portulacaceae. These plants turn out to belong to the species that Brandegee (1906) described as *Talinaria palmeri*. Although apparently closely related to members of the genus *Talinum*, this species does exhibit a number of distinctive features. So much so that, given the present