

## EFFECTS OF FISH NESTS ON PATTERN AND ZONATION OF SUBMERSED MACROPHYTES IN A SOFTWATER LAKE

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### ABSTRACT

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Nests of centrarchid fishes maintain patches of diaspore-propagated submersed aquatic plants (principally *Elatine minima* (Nutt.) and *Isoetes braunii* Dur.) between 0.9 and 2.4 m depth in a softwater oligotrophic lake. Nests are cleared of vegetation in May–June, and abandoned by fish in June. By August, many nests are colonized by diaspore-propagated species that do not spread vegetatively on horizontal stems. About 75% of the nests are reoccupied by fish the following May, and some new nests are formed. Nests not reoccupied by fish are colonized by rhizomatous plants of 4 species that have not been observed to flower or set seed in the lake. Rhizomatous plants reach frequencies near 100% by 14 months after abandonment. Pattern analyses show that patch sizes of diaspore-propagated species correspond to the size of fish nests. Conventional explanations of macrophyte zonation based on depth, exposure, and competition are insufficient in this lake; effects of disturbance must be considered as well.