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Abstract

Bottom samples were collected in each of two semi-permanent prairie marshes in Stutsman County, North Dakota, to determine the accuracy of the seedling emergence method in assessing seed-bank composition. Samples were divided into two equal portions and placed under moist and submerged soil conditions in the greenhouse. Emerged seedlings were identified and counted. To check the results of this technique, a portion of the field samples were sieved and seeds were isolated and identified.

The seedling emergence method was generally accurate in determining wetland seed bank composition. The same five species (*Scirpus* spp., *Chenopodium rubrum* L., *Typha* spp., *Rumex maritimus* L., and *Ranunculus sceleratus* L.) accounted for 92.6% and 93.4% of the total number of seedlings and seeds, respectively. The rank-

order of all species was also significantly correlated between methods. Only *Utricularia vulgaris* L. failed to germinate well in the emergence flats (0.13% emerged seedlings versus 3.19% isolated seeds). Providing conditions in the submerged-soil treatment that are more conducive to the germination of open water species would improve the method. A modification of the flotation method used for separating seeds in recommended in wetlands with relatively large seeds.

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