SOME EFFECTS OF LAND-USE MANAGEMENT PRACTICES ON SEED SET OF CYPRIPEDIUM CANDIDUM

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ABSTRACT

During the summer of 2003, three different Cypripedium candidum (small white ladyslipper orchid) populations were examined during seed-set and ovary development stages of the life cycle for sexual reproduction success in relation to surrounding vegetation environments. Populations at Cottonwood WPA (Roberts Co), private land near Ortley (Roberts Co), and Lake Cochrane WPA (Deuel Co) grow in diverse micro-environments, particularly with respect to height and density of surrounding flora. By midsummer, flowers were senescing and ovary development in pollinated individuals was evident. The Ortley and Lake Cochrane sites have not been cut or grazed for many years resulting in dense shade and competition for the intermingled orchids. The Cottonwood site, by contrast, was mowed late the previous fall (2002) so the orchids were growing in a much more exposed environment. To compare the pollination success between these different growing conditions, ovary development (successful pollination) vs. ovary abortion (no pollination) was recorded for every flower located. The Ortley and Lake Cochrane sites demonstrated only 22% (n=74) and 18% (n=615) seed set, respectively, while at the more open Cottonwood location, successful seed set was 44% (n=258). While orchids also reproduce vegetatively by underground rhizomes, sexual reproduction provides the critical genetic diversity to insure survival. Further study of flower pollination and cultural needs of this native orchid, in relation to land-use management practices, will be useful.