**Purpose and Scope**

To establish the fine filter habitat management for all species of botrychium.

**Definitions**

| Botrychium | Moonworts are seedless vascular plants of the genus *Botrychium*, *sensu stricto*. They are small, with fleshy roots, and reproduce by spores shed into the air. One part of the leaf is sterile and fernlike, the other fertile and carrying the clusters of sporangia or spore cases. Some species only occasionally emerge above ground and gain most of their nourishment from an association with mycorrhizal fungi. In Cass County the following species are of interest: B. minganense (Mingan moonwort), B. simplex (Least moonwort), B. pallidum (Pale moonwort), B. rugulosum (St. Lawrence grapefern), B. lanceolatum (Triangle moonwort), B. matricarifolium (Matricary moonwort), B. mormo (Goblin fern), and B. oneidense (Blunt-lobed moonwort). |
| Coarse Filter | A coarse filter@ habitat management is achieved by striving to insure that all major habitats are represented on the landscape; the underlying premise is that if the habitats exist they will be capable of supporting the various species and biotic communities that depend upon them. |
| Fine Filter | A fine filter@ habitat management is undertaken through direct management for individual species when such action is required or desired |

**1. Botrychium Management**

1) Conduct search for plants as part of site appraisal. Identify areas where plants are found or are suspected to be found. If site investigations indicate the real or likely presence of Botrychium, subsequent measures listed herein are to be followed.

2) If the species which are either endangered or threatened are found, then the core area and buffer of 1-2 tree lengths are to be identified; no harvesting or disturbance is to occur in these areas.
3) Harvest operations will occur during frozen soil conditions and at least 80% crown cover (approximately 70+ BA) is retained. This is the preferred forest management approach.

4) Harvest operations occurring during non-frozen soil conditions and/or retain less than 80% crown cover should retain >5% of the site as undisturbed (i.e., legacy patches). These undisturbed areas should be located in areas with appropriate microsite characteristics or in observed Botrychium locations.

5) Individual undisturbed patches should be at least .25 acre in size. Undisturbed buffers adjacent to wetland transition areas should be >35 feet wide.

6) These guidelines should be integrated with other site-level forest management strategies for natural resource protection.