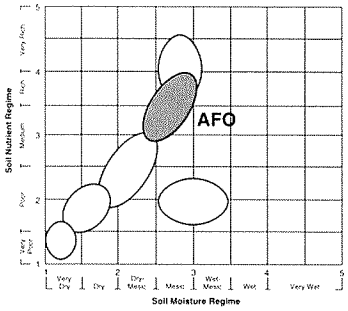
AFO and AFO-phase

Acer saccharum-Fagus grandifolia/Osmorhiza claytoni

(Sugar maple-American beech/Sweet cicely)

Distribution:
Most prevalent in the northern and western area of northern Lower Michigan but can be found sporadically throughout the region. Counties include Antrim, Benzie, Grand Traverse, Leelanau, Kalkaska, Otsego, Cheboygan, Presque Isle, Montmorency and Wexford. This area is associated with Subdistricts VII.2, VII.3, VII.4, VII.5 and VII.6 (Albert 1995).



Similar habitat types: AFOCa

Landform and soils:
Predominantly found on deep, well drained, moderately well developed loamy sand to sandy loam soils with a common coarse sand or gravelly subsurface layer. Typical soil series include Kalkaska sand and Mancelona sand. These soils correspond to coarse textured end moraines, ground moraines, outwash plans, till plains and undifferentiated end moraine – ground moraine complexes. **This type is classified as mesic/medium to rich nutrient**.

VEGETATION

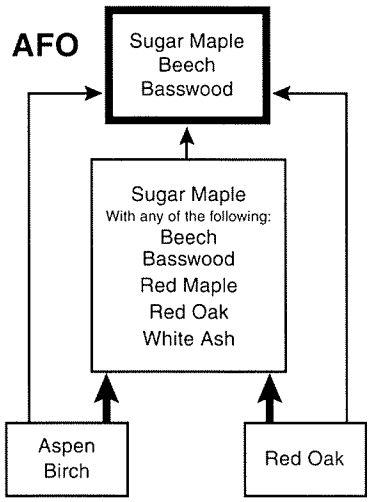
Common forest cover types: Sugar maple is the most common dominant overstory species, singly or in combination with basswood, American beech, white ash and occasionally red maple. Red oak, often of superior form, may be present, but is much less common then it is on the **PArVVb** habitat type. White pine is not well represented in current stands, although cut and charred stumps indicate its potential.

Shrub and small tree layer: The shrub layer is often poorly developed on this type, most likely due to the dense hardwood canopy. Juneberry is the most common shrub species, but has limited coverage. The presence of alternate-leaved dogwood, prickly gooseberry, red-berried elder and the absence of blueberry, witch hazel, and beaked hazelnut, differentiate this type from the drier/poorer nutrient **PArVVb** habitat type. Canopy openings often fill with thickets of blackberry and raspberry brush. Sugar maple, American beech and ironwood dominate the sapling layer often with substantial coverage.

Ground flora characteristics: Relatively few herbaceous species have extensive coverage on this type. Seedlings of sugar maple, American beech, white ash, ironwood and basswood dominate coverage of the ground layer. Some species that differentiate this type from **PArVVb** include spinulose shield fern, sweet cicely, rattlesnake fern, helleborine and trillium. Conversely, the lack of wild leek, blue cohosh and sharp-lobed hepatica differentiate this habitat type from **AFOCa**. The **AFO-phase** represents stands with a particularly sparse herb, shrub and tree seedling layers. In this condition only wild lily-of-the-valley, hairy Solomon's seal, trillium and helleborine are likely to be encountered, often in very limited numbers. The reason for such limited understory development on otherwise fertile sites remains unclear as no soil or site characteristics were found to explain this condition. The forest cover is most often even-aged pole stands of sugar maple. The canopies of these stands are usually very dense allowing virtually no direct sunlight to pass through to the forest floor. In this extreme condition, even the establishment of sugar maple seedlings is retarded. There is also evidence that in some areas herbivores may be responsible for this condition.

DISTURBANCE AND SUCCESSION

Mixed forests of beech, sugar maple, hemlock and white pine occupied these sites at time of settlement. The white pine and hemlock components were swiftly removed during initial logging and the combination of fire and grazing that followed resulted in an increase of red oak component. Current stands are composed primarily of combinations of sugar maple, beech, basswood and red oak. With the exception of red oak, this cover composition is stable and reflects the climax association for the type. The accompanying diagram depicts the common present cover types and most conspicuous directions of change in the absence of disturbance.



MANAGEMENT IMPLICATIONS

Regeneration: Sugar maple, American beech and ironwood are the most common seedlings and saplings with white ash, basswood, black cherry,

and red maple as strong associates. Red oak, white pine, and hemlock regeneration is sparse. Red oak reproduction is often limited to stump sprouting as evidenced by large diameter pairs of this species occasionally found in current stands.

Growth potential: There is high potential to grow quality stems of all native upland tree species on this type. The limiting factor for all species will be the ability to secure advanced regeneration.

Other management considerations: The common practice of selective cutting on mixed "northern hardwood" stands will lead to the elimination of the red oak component and acceleration of the rate of succession to American beech and sugar maple. In these stands red oak rarely has the advance regeneration needed to take advantage of the openings created through such management prescriptions. However, seedlings of the tolerant hardwood species normally abound, and will respond with vigor to any release. Successful oak regeneration must first be established through the creation of much larger openings and control of competing vegetation before release will be effective.