



## North-facing Slope Habitat

### Location:

The area of the Kasey Hartz Natural Area discussed here as the North-facing Slope Habitat is the section on the south side of the creek, and on the slope from the riparian habitat to the upland area. Confusingly, this is actually the south slope of the creek valley. The area concerned extends from the top of the south stairs, down the north facing slope to the floor of the creek valley where the trail is on a boardwalk.

### General Appearance:

This slope area has an interesting tree community, but one is struck by the impression that the Upland Habitat has merely moved down the slope. That is, it appears the same until one notices that no large pines are found in either the canopy or sub-canopy, and that the sub-canopy mix of species is very distinct. The shrub layer is largely composed of young trees rather than shrubs; there are no blueberries; and the herbaceous layer does not provide a strong flower display in any season; a paucity of species is apparent. Along the edges of the path disturbance is seen in the many patches of mosses; little is seen either above and/or below the path where there has been less to interrupt the natural order.



### Dominant Plants:

Some of the tree species in this area are capable of attaining large size, such as black oak (*Quercus velutina* Lam.) and white oak (*Q. alba* L.), but few here have attained the size of those same species in the Upland Habitat. By comparison, red maple (*Acer rubrum* L.) is by nature a mid-size tree, and in this habitat is seen more frequently than in the upland areas. One species common in the slope's sub-canopy, witch hazel (*Hamamelis virginiana* L.), is by nature only a very small tree; the Michigan Big Tree record shows a height of only 43' (Ehrle 2006). These last two species were what this section of the Kasey Hartz Nature Trail was originally named for: the Red Maple - Witch hazel Habitat. (At this time red maple is found throughout all areas, and witch hazel is also commonly found in the creek bed habitat). White pine (*Pinus strobus* L.) is all through this area, but only as a seedling; a gap in the canopy with the extra light it would provide, might permit further growth of these same seedlings if they aren't out-competed by more tolerant species.

The most prominent flowering species in this area are trees, not herbaceous plants as might be expected from having seen elsewhere woodlands with richer soils (see below). The reds and yellows of the flowers of red maple and witch-hazel, respectively, brighten spring and fall.

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“Wildflowers”, while present, are not prominent; among them round-lobed hepatica (*Hepatica americana* [DC] Ker [*H. triloba*]) is found on the slope in occasional colonies; wintergreen (*Gaultheria procumbens* L.) is ubiquitous but sparse compared with the Creek Bed Habitat; partridge-berry (*Mitchella repens* L.) is all along the trail, but inconspicuous; starflower (*Trientalis borealis* [Raf.]) is attractive spring and fall; and Canada mayflower (*Maianthemum canadense* Desf.) - is perhaps the most noticeable of the wildflowers, although it too is seen more often in the Creek Bed Habitat.

### Soil:

The soils in this habitat are in the Grayling series: Grayling-Rubicon sands, 12-25% slopes (Soil Survey of Muskegon County 1968) and are described as “very droughty and having very low fertility” (Soil Survey p. 16). It goes on to state that “These loose, dry soils are susceptible to soil blowing and water erosion where the vegetative cover has been removed” (Soil Survey p. 15), and these effects are readily seen along the slope where cuts had to be made to provide a level path.

Oak leaves are notoriously acidic, slow to decompose and enrich the soil, and can form mats preventing water from reaching the soil surface. These factors impact soil development. As Oosting states: “development of a soil is paralleled by vegetational changes ... and the soil controlling a progression of plant communities (1956, p. 167).

### Interesting Feature:

Ecological evaluation of wooded areas has been a difficult concept for experts to accept. The teaching has been “to think in terms of parts of the forest - vegetation, wildlife, soils, water, and climate”, but “the recognition of its interactive nature, the interconnectedness of all its parts ... is greatly welcomed: (U.S.D.A. 1993, p. ii). Certainly these factors have been recognized as aspects of soil formation “so closely interrelated in their effects that few generalizations can be made about one factor unless conditions are specified for the other four factors: (U.S.D.A. 1968, p. 82). For the Kasey Hartz Nature Trail what is the advantage? Providing a depth of understanding of dynamics of the current North-facing Slope Habitat is a complex undertaking, and providing several short-hand methods to assist is worthwhile.

What might one expect to see on the North-facing Slope Habitat? For that matter, why should we refer to it as the “North-facing Slope Habitat”, rather than the “Red Maple - Witch-hazel Habitat” as done in prior years: Many agree that it is because “the forest coverage that exists today in any given place should be viewed as a fleeting phase; sooner or later it will probably change” due to processes such as secondary succession and disturbance - natural or man-made (Dickmann and Leefers 2003, p. 18). Climax forest as a concept has been ousted (for many) by chaos theory: disturbances are to be expected and the results of any small change cannot be predicted with certainty. What can one expect to see in the North-facing Slope Habitat in years to come?