

Appendix C - Ecological Classification System Description

Landtype Associations and Ecological Landscape Classification

On the Huron-Manistee National Forests, landtype associations are contiguous areas of land delineated based on similarity in glacial land forms, overstory plant communities and soil associations. The landtype associations are an intermediate level in a national system for ecological landscape classification. The classification system, developed by the Forest Service, is based on a nested hierarchy of landscape ecosystems ranging in size from 1000's of square miles to less than one acre (see Table III-1 in Cleland et al. 1993). Landtype associations usually occur at a scale of 10s to 1,000s of acres. Bailey (1995) is an excellent source for more information on methods in ecological landscape classification and the national hierarchical system. Cleland et al. (1993) provide a specific discussion of methods used to delineate landtype associations on the Huron-Manistee National Forests. Note that the classification of landscapes is an ongoing and iterative process. The Huron-Manistee National Forests recognize that alternative systems of landtype associations and ecosystem classification have been developed and are in use, for example, Albert 1995. Time constraints have not allowed for a complete evaluation and/or assimilation of those classification systems into the Forest Plan Revision process. However, the Forests are confident that the system of landtype associations described here and used throughout the Forest Plan Revision process is appropriate for the activities and evaluations for which it was used.

Landtype Associations

Eight landtype associations occur on the Huron-Manistee National Forests; maps showing the spatial distribution of these landtype associations are available in the planning record.

Landtype Association 1 - Outwash Plains:

Landtype association 1 is characterized by dry sandy plains deposited by water from melting glaciers. Some areas have gravelly layers or layers with finer soil textures at various depths in the soil. Topography is comparatively level but may also be pitted or dissected. Vegetation is dominantly jack or red pine, black, white, or pin oak, bracken fern and blueberries. Remnants of dry sand prairie, oak-pine barrens and jack pine barrens occur in some areas. Fire is a common natural disturbance event on this landtype association.

Landtype Association 2 - Ice-Contact Hills:

Sandy hills formed in coarse- to medium-textured sandy and gravelly material. Most areas have loamy or clayey layers at various depths in the soil profile. Topography is hilly, with gently rolling to moderately steep slopes. Vegetation is dominantly red oak, red maple and white oak.

White and red pine are present in some areas. White pine regeneration is common. Understory plants include starflower, viburnum and sarsaparilla.

Landtype Association 3 - Sandy Morainal Hardwood Hills:

Landtype association 3 consists of moraines, which, in this case, are sandy hills created by the direct action of glacial ice. They are formed in sandy, gravelly and loamy material that overlies thick deposits ranging in texture from sandy loam to clay. Topography is hilly, ranging from gently rolling to steep. Vegetation includes sugar maple, beech, red oak, red maple, clubmosses and Solomon's seal.

Landtype Association 4 - Wet Sand Plains and Lake Plains:

Landtype association 4 consists of wet sand plains and lake plains, formed in coarse and medium textured sandy materials. The water table is shallow in most areas. Topography is level, with low sand ridges in some areas. Vegetation includes aspen, red maple, white and black spruce, balsam fir, paper birch, bunchberry and wintergreen.

Landtype Association 5 - Alluvial, Fluvial and Organic:

This landtype association is characterized by areas where organic soils have developed or accumulated along streams or in depressions. Water tables are close to the surface, and topography is nearly level. Vegetation is a mix of hydrophilic species. The overstory may include white cedar, balsam fir, tamarack, white and black spruce, hemlock, red maple or ash. Open wetlands may support leather leaf or grasses and sedges.

Landtype Association 6 - Clay Hills and Clayey Plains:

Landtype association 6 consists of clayey hills and plains. Soils are characterized by medium to fine textured surface layers overlying fine materials. Topography is gently rolling to moderately steep. The overstory includes sugar maple, beech, basswood, hemlock, white ash and red oak. Large areas are also managed for aspen. Ground flora is diverse, and includes violets, trillium, sweet cicely and other spring ephemerals.

Landtype Association 7 - Loamy Outwash and Ground Moraines:

Landtype association 7 consists of loamy plains and low, gently rolling hills. Surface soils may be course to medium textured but subsurface layers are usually characterized by loamy or clayey materials. Vegetation includes sugar maple, beech, basswood, red oak, red maple, trillium, viburnum and dogwood.

Landtype Association 8 - Dunes:

This landtype association is characterized by wind deposited sand dunes that occur along Lakes Michigan and Huron. Topography is rolling to very steep. The dunes may be open, shifting sand or vegetated with beech; hemlock; white and jack pine; black and red oaks and dune grasses.