

CHAPTER 4 – NATURAL ENVIRONMENT

The greatest attraction for the residents and down-state and out-of-state visitors to Northern Michigan is the area's natural environment and the rural character. Hunting, fishing, cross-country skiing, down-hill skiing, golfing, snowmobiling, and off-road trail riding are outdoor-based recreational activities which bring thousands of visitors to Northern Michigan every year. Because of the abundance of outdoor recreation available, the natural environment of the area is a major economic base and income generator.

At the same time, the environment places constraints upon human activities. Certain sensitive parts of the natural landscape cannot be altered without creating problems that are not easily rectified. Wetlands filling and soil erosion, resulting from the clearing of land for construction, are two examples. It is essential then, that any future development respect the characteristics of the natural environment. This is important in preserving the attractiveness of this part of the State, preventing potential problems related to undue alteration of the land, and maximizing the economic benefits of the tourist and recreation industry.

Climate

Climate conditions help determine the viability of the Northeast Michigan Region, including Livingston Township, in attracting people and business, as well as the success of the agricultural industry. These factors, in turn, help determine the status of the local economy. According to Midwestern Regional Climate Center's (MRCC) historical climate statistics for the 1971-2000 period, normal annual precipitation (including snowfall converted to water equivalent) for the Gaylord area averages more than 36 inches. On average, each month July through January receives more than three inches of precipitation, while each month February through June receives more than two inches but less than three inches.

MRCC statistics for the 1971-2000 period indicate a mean July temperature of 67.5° and a mean January temperature of 17.4°. The median agricultural growing season (temperature above 32°) is 119 days. However, 90 percent of the time the growing season is 139 days.

Livingston Township is located in the Lower Peninsula's snow belt, where average annual snowfall for the area is 149 inches according to MRCC. This quantity of snow and the rural nature of the Township makes winter sports, such as snowmobiling, down-hill skiing, and cross-country skiing popular among residents and visitors alike.

Topography

The terrain of Livingston Township is more extreme in relief than most other sections of the County. Elevation ranges from 1,400 feet above sea level in the northwestern portion of the Township, to 1,000 feet above sea level along the Sturgeon River in the northeastern areas of the community. The majority of the Township has a slope of zero percent to ten percent, although there are sections, particularly in the southeastern part of the Township, where slopes of ten percent or more exist. **Figure 3** shows areas with steeply sloping terrain.

Hold Page for Figure 3
Hydric and Steep Slope Soils

These more dramatic topographic features of Livingston Township not only contribute to the attractiveness of the community, but also create a more fragile environment that needs to be protected from over use or improper use. The scenic vistas and variety in Livingston Township's landscape are some of the major reasons people are attracted to the Township. Possibly the most important goal the Township could strive for is the realization of the importance of the area's variable topography and the need to protect and wisely use this natural attribute.

Soils

Soils often define the use suitability of various sites. The suitability of a site for recreation, housing, industry, commerce, agriculture, and other uses is dependent upon the characteristics of the soil, especially where individual septic fields are involved. The permeability of soil helps determine the degree to which groundwater may be polluted. Topographical features are closely allied with soil types and their characteristics. Various soil classifications have dominant slope categories and the greater the slope, the more susceptible a soil type is to erosion and side hill seepage, especially from on-site sewage. Vegetation altering activities such as building construction, agriculture, certain forestry operations, and road construction can result in erosion on these sites.

There are five major soil associations in Livingston Township. These general associations are applicable only to large areas. Any site intended for specific use should be analyzed for impacts upon the soil on that particular site. The Otsego County Soil Survey may be referenced for site specific development.

A small portion of the southeastern part of the Township is composed of soils that have several possible management problems for field cropping, such as droughtiness, soil-blowing, and low natural fertility. Problems involved with residential development may include pollution of groundwater by effluent and difficulty in maintaining vegetative cover without irrigation.

The eastern portion of the Township is composed of soils which are level to undulating, well drained, sandy, and gravelly. These soils may create droughtiness and soil blowing problems for farmers as well. Possible groundwater pollution from effluent and difficulty in maintaining vegetative cover without irrigation are concerns for residential development.

The majority of the Township contains soils that are nearly level to undulating, well-drained, sandy, and gravelly, which tend to be fertile and able to retain moisture. These soils may create droughtiness and soil-blowing problems related to agriculture, while pollution of groundwater from effluent and difficulty in maintaining vegetation without irrigation are possible problems resulting from improper land use activities.

Soils adjacent to the Sturgeon River are primarily poorly-drained sandy soils and mucks having low natural fertility. These soils experience possible problems of wetness, soil blowing, frost hazard, and low natural fertility when used for field cropping. Residential development on these soils may experience unstable foundations, uneven settling, and high water tables. **Figure 3** illustrates soils with hydric characteristics, as well as steeply sloped soils.

Soils primarily suitable for agriculture and forestry are mapped as **Figure 4**. Prime timber land soils for Livingston Township are noted in the northwest portion, the central region, and the east-central area. Prime agricultural soils are not as extensive as prime timber land soils; scattered small pockets are shown on the map.

Hold Page for Figure 4
Prime Timber and Agricultural Land Soils

Vegetation

In addition to contributing to the scenic qualities of the Township, the existing vegetation substantially aids in protecting the surface environment of the area. Without an adequate amount of forest, brush, or grass cover, soil erosion or sedimentation would become prevalent. If there were a decrease in the amount of natural ground cover, wildlife in the Township would begin to diminish. Furthermore, the absence of a natural sound barrier would increase noise pollution generated from industry and automobile traffic.

The variety of forest species in Livingston Township contributes to the attractiveness of the community. Since there are a number of large acreages in private ownership, the potential for harvesting of these trees also exists.

The predominant forest species in Livingston Township are maple, aspen, birch, oak, and several species of pine. There is a substantial amount of acreage devoted to pine forests, especially in the southeastern sections of the Township. Because most of these plantings are too mature for harvesting as Christmas trees, they will probably remain as stands of mature red or jack pine. They may offer an aesthetic setting if selectively cleared for residential or recreational development. Indeed, in the past few years several subdivisions and residences have been developed in these areas.

In order to protect wildlife, soils, and aesthetic values in the area, the promotion of orderly and wise development of forest resources should be encouraged. With educational and technical programs this can be achieved. It would benefit the Township to insure that its residents, particularly owners of larger parcels of forest land, are aware of constructive forestry practices. Such practices will help to maintain and improve the environmental qualities of the community.

Wildlife

Closely associated with the amount and type of vegetation common to Livingston Township and its surrounding area, the community has a wide variety of natural wildlife. As the human population of the Township increases, the areas available for natural wildlife habitat become more confined. The clearing of trees and brush, the filling of wetlands, and erosion of cleared grassland all contribute to the lessening of the variety of forage on which wildlife survive. In order to accommodate an optimum balance between human and animal populations (whereby infringement of one upon the other is minimized) a more detailed study should be made of the forage and habitat characteristics of the various animal species in the Township. Measures should be taken to minimize the encroachment of residential activity upon these habitats.

As previously mentioned, forestry practices affect the overall quality of the environment, including the capacity of the land to accommodate wildlife species. Controlled cutting of timber enables younger trees to survive and mature and low-lying vegetation to grow, supporting wildlife more adequately. In addition, proper tree harvesting increases watershed supplies, since more snow and rain water gradually run into streams and lakes. Such water then becomes part of the water supply used by wildlife as well as humans.

Small game in the Township include birds and mammals, such as grouse, woodcock, turkey, cottontail rabbits, snowshoe hare, squirrel, raccoon, fox, and coyote. Waterfowl include ducks and geese of various species. Chickadees, pine siskin, numerous varieties of finches, grosbeaks, sparrows, robins, blue jays, warblers, and numerous other bird species reside in or migrate through the Township.

Finally, it should be mentioned that in 2001, a select committee of the Pigeon River County Advisory Council identified part of the northeast Livingston Township as an important wildlife corridor and bufferland for the Pigeon River County State Forest.

All facets of the natural environment of Livingston Township - soils, climate, topography, vegetation, and wildlife - are important as separate entities. When combined they interact in a manner that creates a balance which defines the natural community character. This character needs to be understood and measures taken to minimize any negative impact that human development may create. Livingston Township's environment should be an important consideration in any future decision making affecting any part of the community.