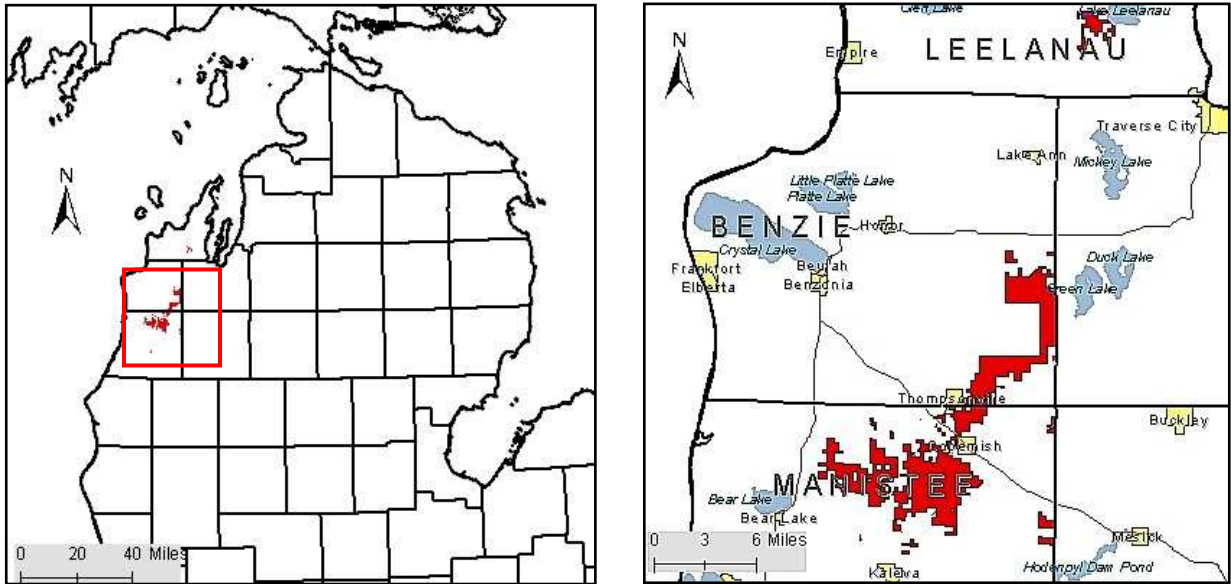


## Manistee Plains Management Area



### Attributes

The Manistee Plains Management Area is located east of Frankfort and west of Traverse City in Benzie and Manistee Counties and has 31,644 acres of scattered State Forest land. The primary attributes which were important in identifying this MA include:

- Ecological Classification – Almost the entire MA falls mostly within the Newaygo Outwash Plain Sub-region of the NLP Ecoregion as classified by Albert (1994).
- Cover Types - Well drained portions of the lake plain were originally dominated by northern hardwoods including forests of white pine mixed with other conifers, American beech, red maple, or oak. The poorly drained lake plain was dominated by conifer swamp. Currently, swamp hardwoods, aspen, upland hardwoods and red pine cover the majority of the area.
- Landforms - The landform consists of more than 49% lake plain and 24% outwash plain.
- Social and Economic - The Betsie River Trail as well as several snowmobile trails and the Healy Lake Campground are located in the MA. The Betsie River which is a Natural River as well as the Little Betsie both run through the MA. Hunting and other forms of dispersed recreation are popular. Numerous oil and gas well sites are present, particularly in the southern portion.

### Major Cover Types

- Swamp Hardwoods - Currently there are approximately 7,500 acres of swamp hardwoods on mesic to wet-mesic poor quality sites on lake plain. The age classes are skewed toward the older age classes as more than half of the acres are over 70 years of age. There are a significant number of acres (1,296 acres) in an uneven aged condition.

- Aspen – Aspen acres total 7,204 acres and is found on all landforms including lake plain, moraine ridges, moraines or till and outwash plain. The age class distribution is skewed towards the age classes less than 59 years of age.
- Northern Hardwoods/Upland Hardwoods – Upland hardwoods occupy approximately 2,700 acres. Lower quality hardwoods are mostly even aged and include red maple, birch, mixed aspen, elm, basswood and ash. Red oak is also a component of lower quality hardwood sites. Higher quality stands have a significant sugar maple component.
- Red Pine - Currently there are approximately 2,600 acres of red pine primarily on moraines or till. There is a pronounced spike of acres in the 40-59 year age classes. There has been very little regeneration as reflected by the small amount of acres (102) in the 0-39 year age classes.
- Cedar – There are over 1,600 acres (5.1%) of cedar in the MA, all of which is greater than 80 years of age. The opportunity for harvest is limited by accessibility due to wet conditions.
- White Pine – There are over 1,100 acres (3.6%) of white pine in the MA, with most of the acreage in the 40-59-year age classes. Individual white pine may be present on poorer quality hardwood sites.
- Upland Brush/Grass - Grass/Upland Brush types which function as openings in the forest account for approximately 1,900 acres. These open areas have been created through past management activities or natural disturbances along with maintenance activities which has kept areas open.

Manistee Plains			Age Class (Years)											Uneven Aged
Cover Type	Acres	%	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	
Swamp Hardwoods	7,551	24%	0	0	523	636	583	147	371	687	1,531	1,315	299	1,296
Aspen	7,204	23%	200	895	1,359	1,668	1,867	887	114	129	41	10	0	34
Upland Hardwoods	2,730	9%	21	31	0	51	72	384	13	689	458	275	69	664
Red Pine	2,639	8%	0	92	10	0	1,133	1,169	171	56	0	0	0	8
Cedar	1,618	5%	0	0	0	0	0	0	0	0	163	44	1,411	0
White Pine	1,143	4%	0	0	0	41	543	423	47	16	41	12	1	19
Mixed Swamp Conifers	1,000	3%	0	2	2	15	3	0	16	81	200	172	461	48
Jack Pine	535	2%	104	61	0	0	80	283	7	0	0	0	0	0
Lowland Poplar	892	3%	0	60	10	420	177	51	42	63	28	0	38	3
Lowland Brush	1,101	3%												
Upland Brush	980	3%												
Grass	933	0												
Water	504	0												
Other Types	2,814	0												

Total 31,644

Other Types include: Marsh, Bog, Upland Mixed Deciduous, Upland Mixed Conifers, Oak, Spruce-Fir, White Birch, and Tamarack.

### Concepts of Management

- Swamp Hardwoods (24% of the MA) – Where accessible, harvest merchantable swamp hardwoods while considering the need to leave a residual canopy to prevent increases in water table due to a lack of evapo-transpiration. Operations in wet conditions are highly likely to impact soil quality and any negative effects on soil quality should be avoided through winter operations and/or adherence to Department guidelines to protect soil

quality. Follow BMP's and Natural River Guidelines to mitigate impacts on fish habitat in riparian corridors.

- Aspen (23% of the MA) - Balance aspen age classes targeting harvests in the 40–59 year old age classes. Retain conifers which will shade trails and provide wind breaks for winter sports in selected stands adjacent to recreational trails. Retention may also be used to lessen the aesthetic impacts to the trails due to aspen final harvests. Allow a small percentage (<3%) of older aspen which is most likely inaccessible, to succeed to swamp hardwoods and lowland conifer types.
- Northern Hardwoods/Upland Hardwoods (9% of the MA) - On better quality hardwood sites use single-tree selection harvests to manage for an uneven aged distribution, targeting stands with a basal area above 111 square feet. On poorer quality hardwood stands utilize harvest methods such as group selection, and small patch clearcuts to perpetuate even aged stands. Manage for representative amounts of oak in lower quality upland hardwoods to maintain diversity and provide mast for wildlife.
- Red Pine (8% of the MA) - Red pine can be very productive in this management area and should be retained at least at the current level. Continue to manage for 80+ year rotations. Reduce the age class spike in the 40-59 year age classes by aggressively harvesting. Remove poorer quality red pine with excessive knots or poor form in these age classes and plant red pine. Thin better quality stands or selectively harvest to concentrate growth on remaining high value stems. Allow selected areas of managed red pine to reach biological maturity. Following the Within Stand Retention Guidelines allow selected individual red pines in other cover types to become super canopy specimens.
- Cedar (5% of the MA) – If practicable, manage hardwood inclusions or encourage cedar reproduction through harvests, if cuts can be done in a manner that will not adversely impact soil quality or increase deer browse.
- Upland Brush/Grass (3% of the MA) - Continue opening maintenance by prescribed burning or brush removal to maintain upland brush/grass at a level suitable for wildlife.