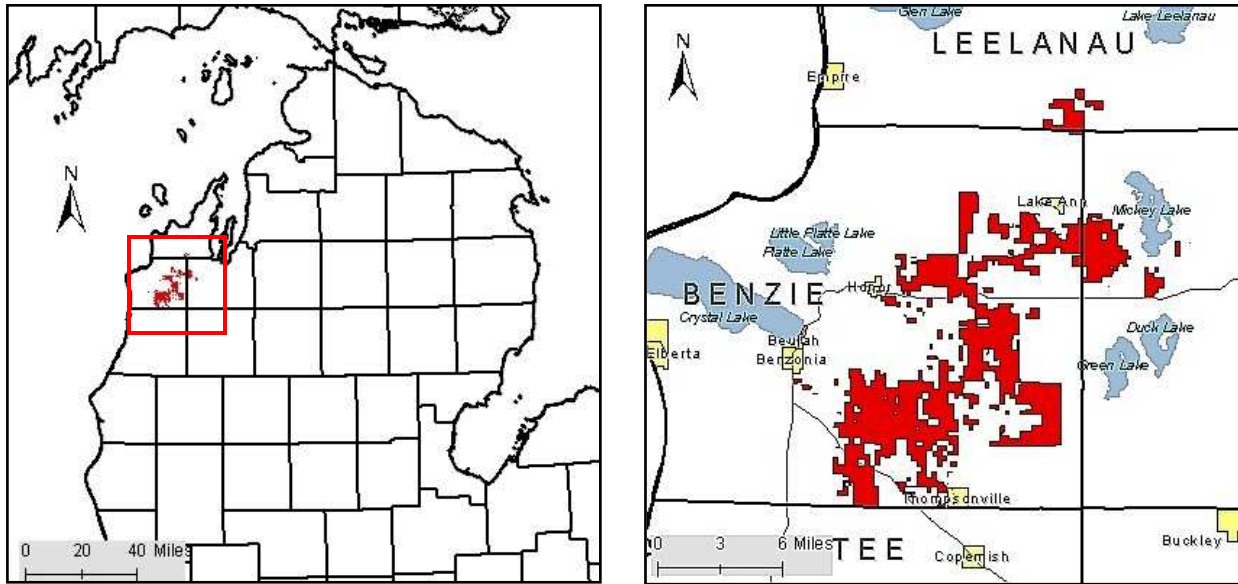


Benzie Outwash Management Area



Attributes

The Benzie Outwash Management Area which contains 43,192 acres of state forest land is located in the southeast corner of Benzie County with the towns of Honor, Lake Ann and Thompsonville around the perimeter. The primary attributes which were important in identifying this MA include:

- Ecological Classification - The MA falls mostly within the Newaygo Outwash Plain Sub-region of the NLP Ecoregion as classified by Albert (1994).
- Cover Types – Historically, this area has been American beech- sugar maple with isolated and relatively inaccessible lowland conifer swamps. Currently, aspen, upland hardwood and red pine respectively cover the majority of the area.
- Landforms – Outwash plain accounts for more than 96% of the landforms within the management area.
- Social and Economic – Campgrounds include Lake Ann, Lake Dubbonet Trail Camp. Pathways include the Platte Springs Pathway and the Lake Ann Pathway. Dispersed recreation in the form of hunting and mushroom hunting is significant.
- Ownership size and connectivity – The majority of the state land in this area is composed of connected compartments, however these compartments are interspersed with private lands. There are several isolated compartments which are not connected to the bulk of the management area.

Major Cover Types

- Aspen - Aspen (most commonly bigtooth aspen) covers over 13,000 acres of the management area. Acres are fairly evenly distributed across age classes with a slightly larger amount of aspen (3,246 acres) in the 30-39 year old age class. 1,200 acres is older than the normal 50 year rotation age. Three-hundred acres of aspen is in mixed, uneven-aged stands.

- Northern Hardwoods/Upland Hardwoods – Upland hardwoods cover more than 11,600 acres of the MA on moraine ridges, including dry-mesic to mesic/poor-medium to very rich nutrient sites. Nearly half of the upland hardwood acres are in stands with a basal area between 81-110 square feet indicating recent selection harvesting. Slightly more than 2,000 acres of upland hardwood can be found in denser stands of 111-170 square feet of basal area.
- Red Pine – Within the management area red pine is located on high quality moraines of dry to dry-mesic/poor to mesic/medium moisture and medium/rich nutrients. Of the approximately 4,400 acres of red pine in the management area nearly three quarters is in the 40-69 year old age classes. There is a moderate amount of regeneration in younger age classes; however, there is very little representation in older age classes.
- Grass/Upland Brush - Grass and upland brush totals approximately 3,800 acres (7.7% of the MA). This is a result of the past management practices or natural processes of fire, frost or other disturbances which create openings in the forest canopy along with maintenance treatments to keep areas open.
- White Pine – There are over 1,600 acres of white pine in the MA, with a large spike in the 40-49-year age class which reflects an era of active planting.
- Oak - Most of the oak is good quality red oak and covers approximately 1,400 acres of the MA. The age classes are heavily skewed toward the older ages – with more than 1,000 acres over 80 years of age.

Benzie Outwash			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+	
Aspen	13,128	31%	959	1,052	2,865	3,246	2,400	1,022	512	233	356	130	49	304
Upland Hardwoods	11,644	27%	88	128	302	150	151	393	964	1,548	2,376	1,047	445	4,052
Red Pine	4,436	10%	68	246	587	24	1,106	1,738	492	22	8	82	31	0
White Pine	1,655	4%	92	0	131	54	791	154	115	143	58	15	0	102
Swamp Hardwoods	1,517	4%	0	0	137	188	71	49	45	148	249	294	126	210
Oak	1,452	3%	0	0	0	1	83	99	33	53	201	603	255	124
Jack Pine	740	2%	44	35	0	0	0	545	27	9	80	0	0	0
Upland Brush	857	2%												
Grass	2,946	7%												
Water	620	1%												
Other Types	3,944	9%												
Total		42,939												

Other Types include: Cedar, Upland Mixed Deciduous, Spruce-Fir, Mixed Swamp Conifers, Marsh, Lowland Brush, Upland Mixed Conifers, Bog, Lowland Poplar, Hemlock, Tamarack, Sand Dune, and Black Spruce.

Concepts of Management

Aspen (31% of the MA) – Aspen management should continue to maintain aspen at current levels for wildlife habitat and fiber production. Some aspen is most likely inaccessible due to steep slopes or other constraints and should be allowed to succeed to upland hardwoods or other types based on habitat suitability. Where aspen in the 60-89 year age classes is accessible it should be targeted for harvest.

Northern Hardwoods/Upland Hardwood (27% of the MA) – Where suitable, selectively harvest almost all of the stands of greater than 111 square feet of basal area and in selected stands in the 81-110 basal area range. This is essentially a maintenance condition and will allow continued management through selective harvesting as dictated by growth.

Red Pine (10% of the MA) – Follow the Red Pine Management Guidelines to balance the age class distribution by aggressively harvesting in the 40-59 year age classes and regenerating red pine. 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 trees.

Grass/Upland Brush (8.8% of the MA) - Continue opening maintenance by prescribed burning and brush removal to sustain grass/upland brush at a level between 5-10% of the management area during this management cycle.

White Pine (4% of the MA) Due to poor quality as a result of white pine weevil damage, planted stands of white pine should be thinned and allowed to convert to mixed pine/oak/hardwood stands or clearcut and converted to red pine.

Oak (3% of the MA) – Utilize shelterwood harvests and prescribed burning in order to begin needed regeneration of red oak for quality timber and wildlife values.