

## **Danaher-Kingston Outwash Management Area Preliminary DRAFT Example 8-3-07**

The following provides an example of how Management Areas (MAs) will conceptually be applied in the Eastern Upper Peninsula Regional State Forest Management Plan to provide direction to field level decisions regarding cover type management.

### ***Danaher-Kingston Outwash Descriptive Narrative***

The Danaher-Kingston Outwash Management Area (Figure 1) is located within one of three large sandy outwash plains in the eastern Upper Peninsula (Figure 2). Soils are primarily Rubicon and Grayling Sands which are classed as very to extremely droughty. With deep sands and low rainfall patterns (30-32 inches on average annually) the area is subject to frequent drought. Air drainage in parts of the area is poor resulting in large frost pockets largely devoid of trees.

Historical information shows that the Kingston and Danaher plains were comprised of mixed pine, hemlock and hardwoods which were logged heavily in the late 1800's starting with the white pine. Severe wildfires were common in the extensive slash fields from the early 1900's into the mid 1930's, damaging soil resources over a significant acreage of the MA. The area began to come into state ownership in the 1930's. In the early 1950's the MA was essentially open plains with widely scattered patches of immature jack pine, red pine and aspen. A major planting program was started by the Department of Conservation in 1955 and the Kingston and Danaher plains were replanted on an experimental basis. Jack pine and red pine were planted in strips that were interspersed with grassy openings, resulting in a landscape with a patchwork appearance (Figure 3). This program had limited success due to the impaired soil resources of the MA. Work over the past 40 years has emphasized the maintenance of sizable areas of the complex as grassland to enhance open-land wildlife species habitat and to preserve the historical stump fields in the Kingston area.

High quality trout water exists in the Tahquamenon River to the east, the Fox and East Branch of the Fox to the southwest and the Driggs River to the west. Many projects have been done to improve habitat for stream trout. There are also two trout ponds in association with these sand plains.

### ***MA Selection Criteria used***

#### **Ownership Criteria**

- Large blocks of concentrated SF ownership
- Multiple compartments (36) 86,151 acres
- Older existing "management plan" for part of the proposed MA
- Large Commercial Forest Act acreage adjacent
- Pictured Rocks National Lake Shore to the north.

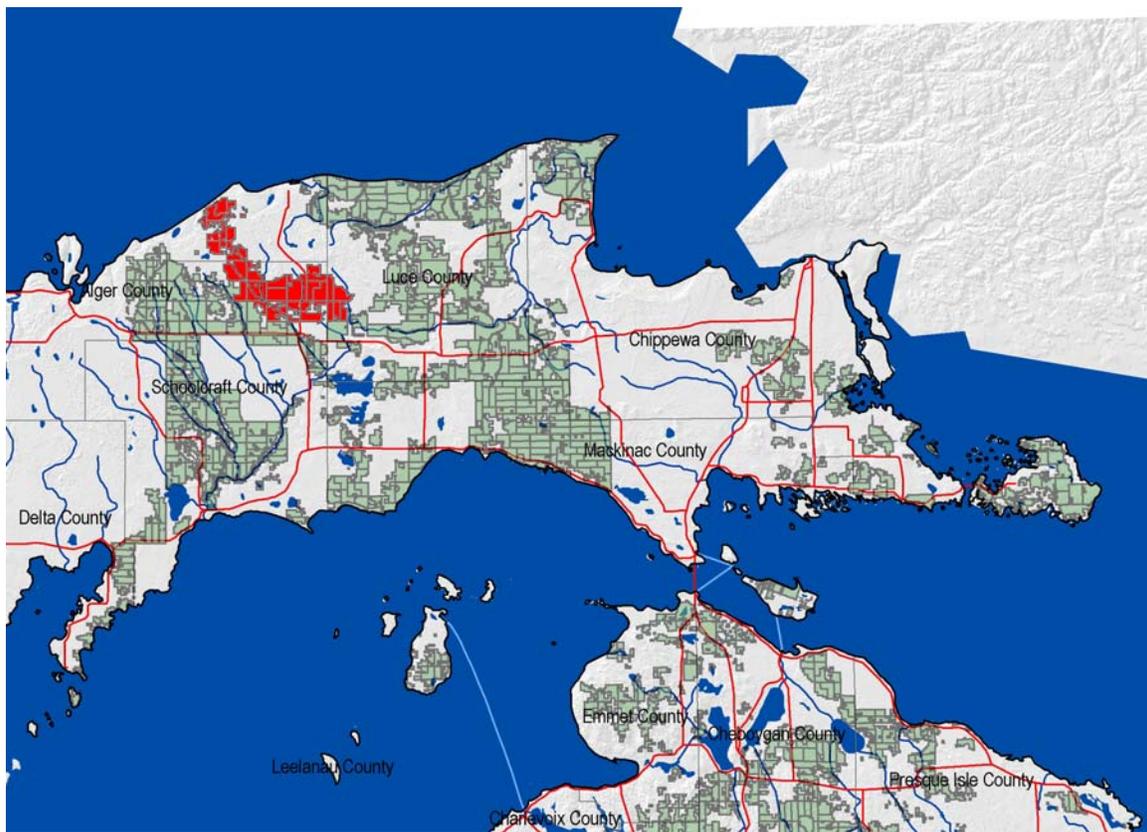
#### **Social/Economic Criteria**

- Historical/cultural sites- Kingston stump fields
- Important wood fiber source for local economy

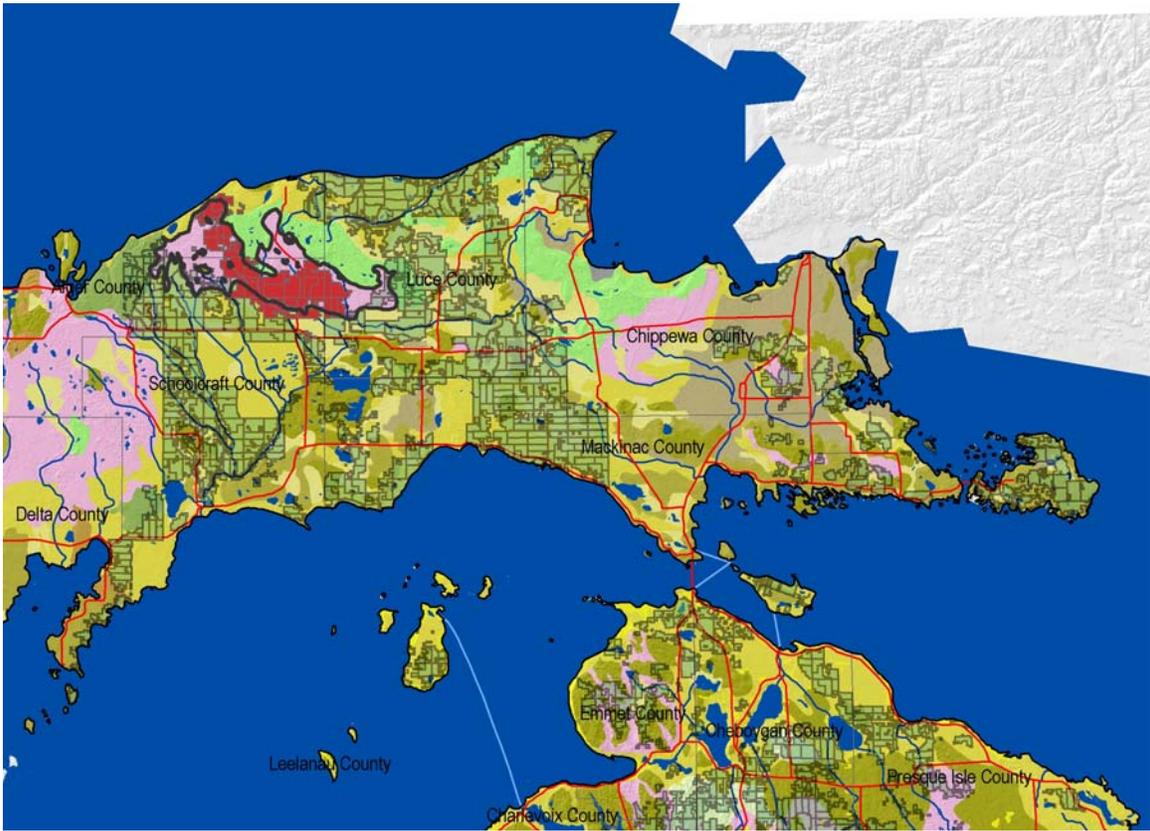
- Close proximately to M-77 and M-28.
- Important recreation resource to trout fishermen, hunters, berry pickers, bird watchers, photographers, campers and motorized trail users (there are two SF campgrounds, and snowmobile and ORV trails within the MA).

### **Ecological Criteria**

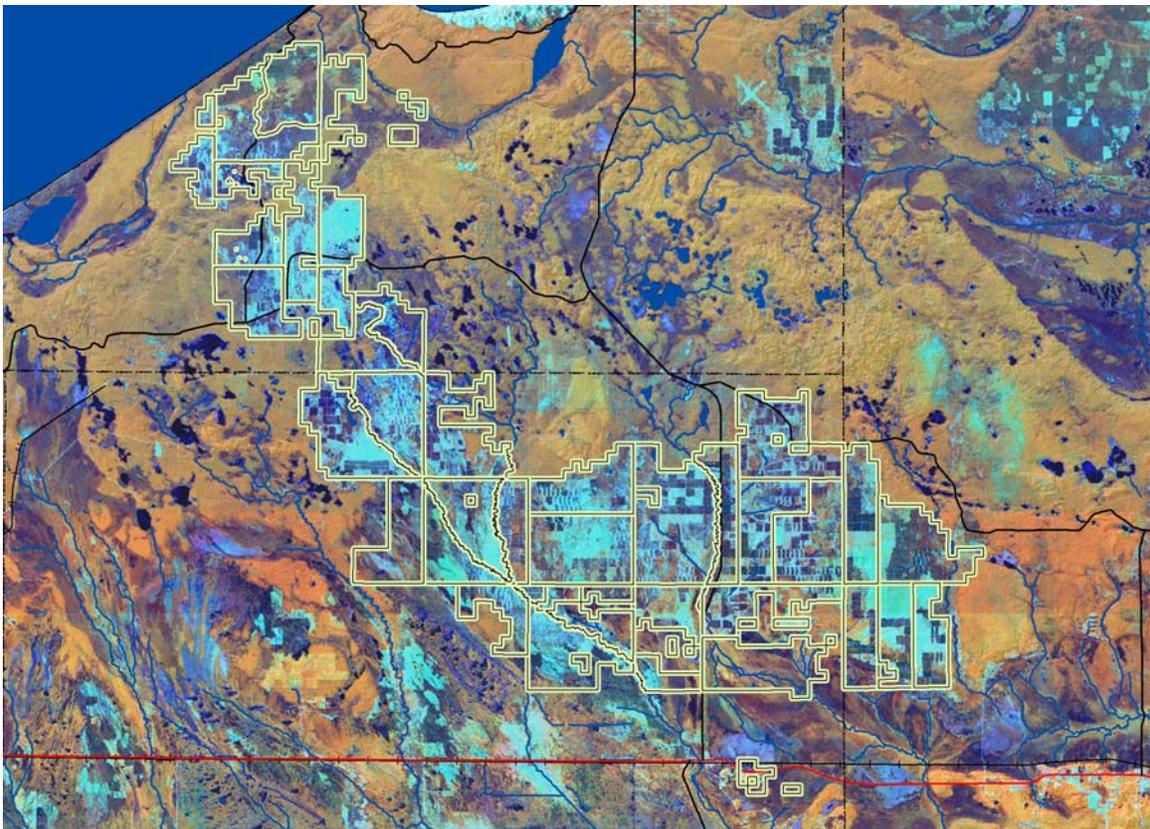
- Geomorphology layer primary layer used; correlates strongly with outwash plains.
- Low rainfall patterns (30-32 inches average annually)
- Areas of poor cold air drainage results in frost pockets
- Current vegetation is highly altered from what existed prior to the harvesting and burning of the late 1800's and early 1900's.
- Open-land wildlife species, such as sharp-tailed grouse, savannah sparrow and upland sandpiper are more common here than in other potential MA's.
- Fragmented landscape- intermixed 40's of plantation and openings



**Figure 1.** Location of draft example of the Danaher-Kingston Outwash Management Area (red) in relation to MDNR State Forest lands (green) in EUP Eco-region, Michigan.



**Figure 2.** The Danaher-Kingston Outwash Management Area in relation to quaternary geology. Pink polygons denote the excessively drained glacial outwash plains, EUP Eco-Region, Michigan.



**Figure 3.** The Danaher-Kingston Outwash Management Area overlain on satellite imagery. The light blue hue represent open areas, dark blue/red hues represent pine types, and yellow/orange hues represent upland hardwoods in the EUP Eco-Region, Michigan.

### ***Danaher-Kingston Outwash Management Area Characterization***

The present cover type distribution on state forest land in the MA is approximately 21% (18,000 acres) red pine, 19% (16,000 acres) upland grass, 16% (13,000 acres) jack pine, 11% (10,000 acres) white pine, 8% (7,000 acres) aspen, and 7% (6,000 acres) northern hardwoods, with the remaining 18% (16,000 acres) a mixture of other types (each comprising 3% or less of the total 86,000 acres in the MA). Approximately 5,000 acres of red pine is currently located on xeric soils that are more suited to the jack pine cover type, based on the Kotar Habitat Classification System.

Recent efforts have emphasized consolidation of harvested pine stands and openings as to increase both the size and effectiveness of the habitat types. Open-land species such as sharp-tailed grouse, upland sandpiper, eastern bluebird and savannah sparrow utilize these larger openings, and Kirtland's warblers find large regenerating stands of jack pine more attractive than smaller patches. Black bear, white-tailed deer and some other furbearers benefit from this practice as well. Older pine stands in the landscape are attractive to many species including spruce grouse, pine grosbeak, and red cross-bills.

### ***Danaher-Kingston Outwash Management Area Direction***

This section in the Regional State Forest Management Plan will provide management direction for each MA. Forest Management Unit staff foresters and biologists will use this direction to guide management decisions that are made during the compartment review process. Note that the Kotar habitat classification system is based on each type containing a range of growing conditions. The judgment of the field staff will be as important as habitat type boundaries in making management decisions.

For red pine, jack pine and open-lands within the Danaher-Kingston Outwash Management Area management direction is to:

1. Convert red pine occurring on xeric sites (site index less than 50 and Kotar type PVE) to jack pine or openings.
2. Increase the acreage of red pine on suitable dry sites (Kotar types (PArV and PArV-Ao) and dry-mesic sites (Kotar type ParVAa), where site index exceeds 50.
3. Consolidate small blocks of planted jack pine into larger units.
4. Consolidate small blocks of grass openings into larger units.
5. Manage merchantable jack pine in large (> 100 acres) cutting units, to replicate stand replacing fires and enhance suitable open-land and jack pine dependent wildlife habitat.
6. Strive for a balanced age class distribution of jack pine across the management area to provide consistent blocks of suitable habitat for early successional, late successional, and open-land species.
7. Use natural regeneration methods where there is probability of success.

8. Retain dead snags, wherever possible. Where snags are considered deficient, they should be created. Dead wood felled for safety purposes shall not be processed.
9. Retain areas of live vegetation wherever possible to mimic natural disturbance events (i.e. roll vertices in jack pine) and provide structural and compositional diversity.
10. Retain down wood and brush in stands. Where stands are considered to be deficient in large woody debris, whole trees should be felled.
11. Within 300 ft of the banks of the Tahquamenon, Fox, East Branch of the Fox, and the Drigg's Rivers, timber harvests should be planned to discourage aspen or birch regeneration and to convert the riparian zone to coniferous vegetation.