

# **From the Forester: Even-Aged and Uneven-Aged Management**

## **Drukker Scout Reservation: Camp Turrell and Camp Kluge for Forestry Merit Badge Requirement 4c**

(insert map here)

Temporary forest canopy openings are caused by various natural processes including wind events, ice storms, fire, and insect and disease outbreaks. Such disturbances are neither good nor bad, but merely inevitable. Silvicultural techniques seek to simulate these natural processes in order to release or stimulate the growth of the next cohort of trees to fill that canopy opening. By repeating this process over time in increments across a large forest, a mosaic of various age classes and ecological characteristics is developed, which should serve the habitat needs of the largest number of fauna and flora. Ecological integrity is enhanced by biodiversity.

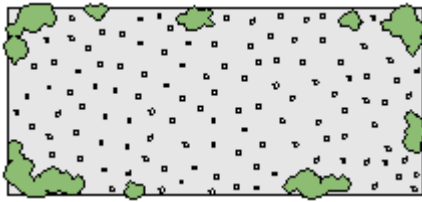
### **Even-Aged Management**

The silvicultural techniques most closely associated with even-aged management in oak and white pine forests include shelterwood and clearcut systems. Clearcutting involves the cutting of all trees within the harvest area, perhaps leaving a certain number of standing trees for wildlife purposes. A clearcut exposes any seedlings or saplings present before the harvest and the litter layer to the maximum amount of available sunlight. Certain seeds present within the soil will germinate and produce new seedlings, and stumps of cut trees may resprout, sending forth new saplings. Under this system, rapidly growing shade-intolerant tree species are favored, such as oak, aspen, black birch, red maple, and tulip poplar.

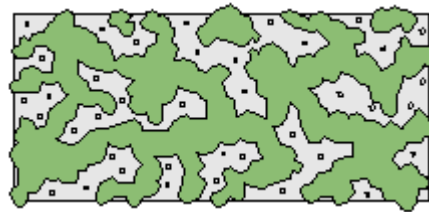
The shelterwood system is slightly more complicated. The first harvest of a shelterwood system involves the partial removal of the trees within a site. The geometry of the trees to be harvested versus the trees to remain is carefully planned. The desired effect is to create large enough gaps in the forest canopy in order to promote existing seedlings and saplings, and to promote growth of new seedlings and saplings. However, enough canopy must be retained in order to partially shade the new growth at intervals during the day.

Once enough seedlings and saplings (also called regeneration) are present, the second harvest of a shelterwood system can be accomplished. Here, the remainder of the original forest canopy is removed, with certain trees left behind for wildlife purposes. The geometry of the original harvest is especially important, so that little or no regeneration is damaged during the second harvest. Shelterwood harvests favor mildly shade-intolerant species, but not strictly shade-intolerant species. Shelterwood harvests will regenerate oak, white pine, birch, and maple.

*Clearcut*



*Shelterwood (First Harvest)*

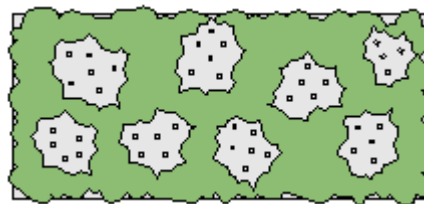


Even-aged management has many positive attributes. First, certain species require sizeable areas of young forest for their habitat. Ruffed grouse, for example, needs at least five acres of young forest (aged 0 to 20 years), in order to reproduce. Secondly, larger regeneration harvest areas are more likely to succeed when deer browse is a problem. Deer consume a very large amount of leaves each year, particularly from seedlings of trees that foresters consider to be valuable or desirable. In areas of mild to moderate overpopulation of deer, small regeneration harvests may have the seedlings killed off by excessive deer browse, whereas the same number of deer may not be able to kill off all of the seedlings if a larger area is harvested.

### **Uneven-Aged Management**

The silvicultural techniques most closely associated with uneven-aged management in this region are individual tree selection, group selection, and strip clearcuts (less than 2 acres). On this reservation, group selection was selected for use. Under group selection, a small area (usually between 0.1 acre and  $\frac{1}{4}$  acre) is completely cut. By cutting this group of trees, a forester can create the conditions where existing or future seedlings and saplings can create a new group of trees. By selecting the acreage of a group selection, the forester can control the species composition of the resulting forest. For example, larger group openings will allow a larger amount of sunlight and will favor very shade-intolerant species, such as tulip poplar. Smaller group openings allow less sunlight and will favor mildly shade-intolerant species, such as oaks and white pine. The smallest of group openings will allow a limited amount of sunlight and will favor shade-tolerant species such as sugar maple.

*Group Selections*



Uneven-aged management has its own set of positive attributes. At the reservation, uneven-aged management is used in areas considered to be sensitive. For example, near most marked trails, uneven-aged management is used to reduce the visual impact of forest harvesting. In addition, near streams, wetlands, and vernal ponds, uneven-aged management is used in order to limit the amount of sunlight reaching open water. In this way, forestry can be practiced without causing harmful increases in water temperature, or severe alterations to amphibian habitat.