UNEVEN-AGED MANAGEMENT FOR OAK AND PINE FOREST TYPES IN SOUTHERN NEW ENGLAND

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WHITE PINE and RED OAK

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  - rapid seedling growth after release
  - efficiency of even-aged system

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- **but other factors control the kind of silviculture to be used: *the objectives of the landowner***

THE QUABBIN EXPERIENCE

(Watershed forest for Quabbin Reservoir)

Applies to family forest ownerships as well

TWO MAIN CHALLENGES OF UNEVEN-AGED SILVICULTURE

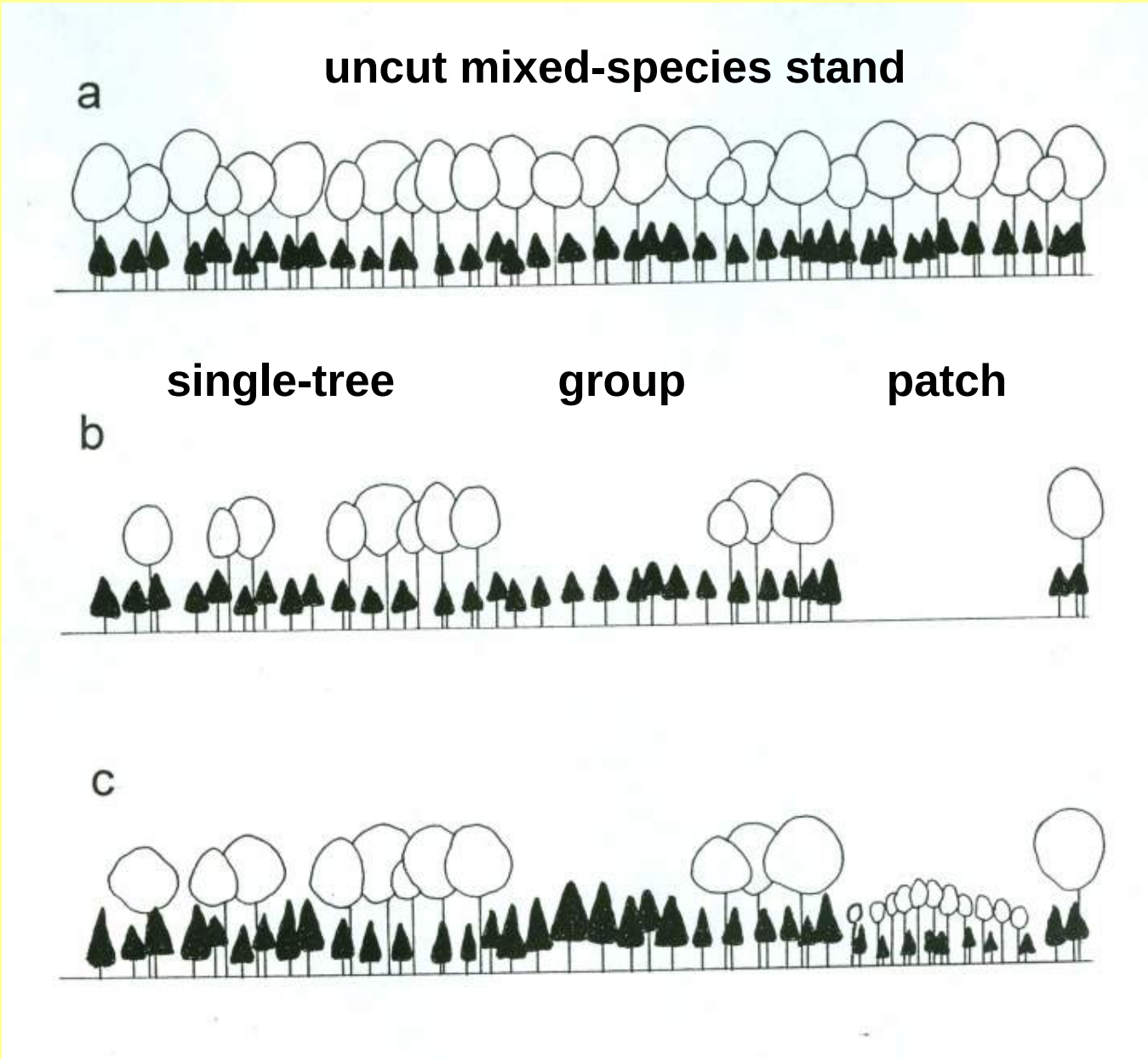
1. How to establish desirable regeneration

2. How to control the level of cutting

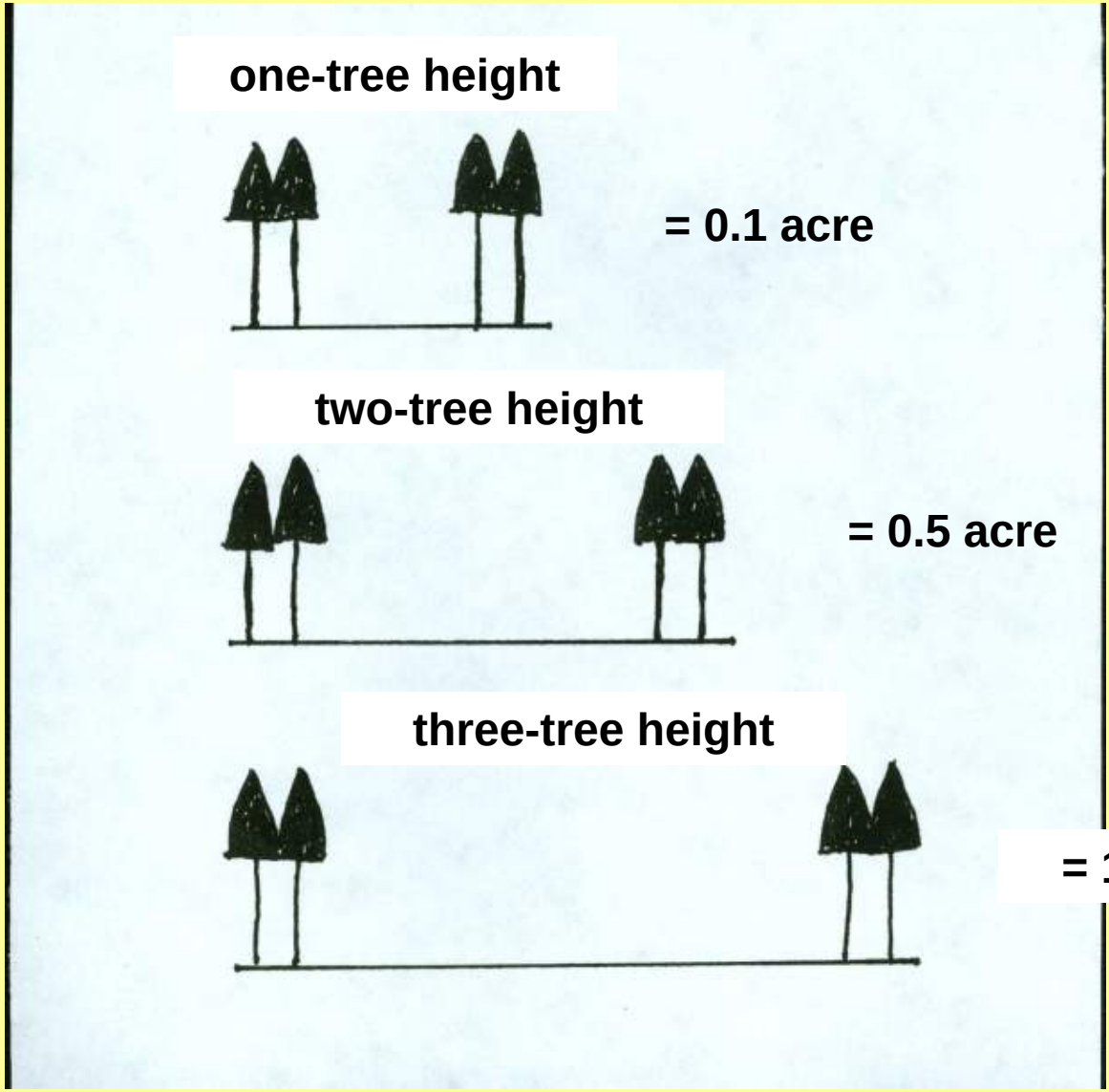
SINGLE-TREE SELECTION

Best results with this method occur in two situations:

1. **The shade-tolerant species are desirable**
2. **The site is so dry that few tree species can exist; those few species are desirable**


uncut mixed-species stand
a
single-tree
group
patch
b
c

Importance of patch size



Retain some large trees in patches

(turn them into small shelterwoods or clearcuts-with-reserves)

Oak-maple-pine stand; 5-year-old harvest

Birch, maple, blackberry dominate regeneration

Some good oak stems have developed

Same stand;

chestnut sprout clump

Chestnut sprouts already declining

White pine stand; 4-year-old harvest

Mixed patches of pine and hardwood regeneration

Hemlock-oak stand; 4-year-old adelgid salvage harvest

Same stand; black birch regeneration

Same stand; more black birch

Oak-maple-birch-pine stand; 32-year-old patch

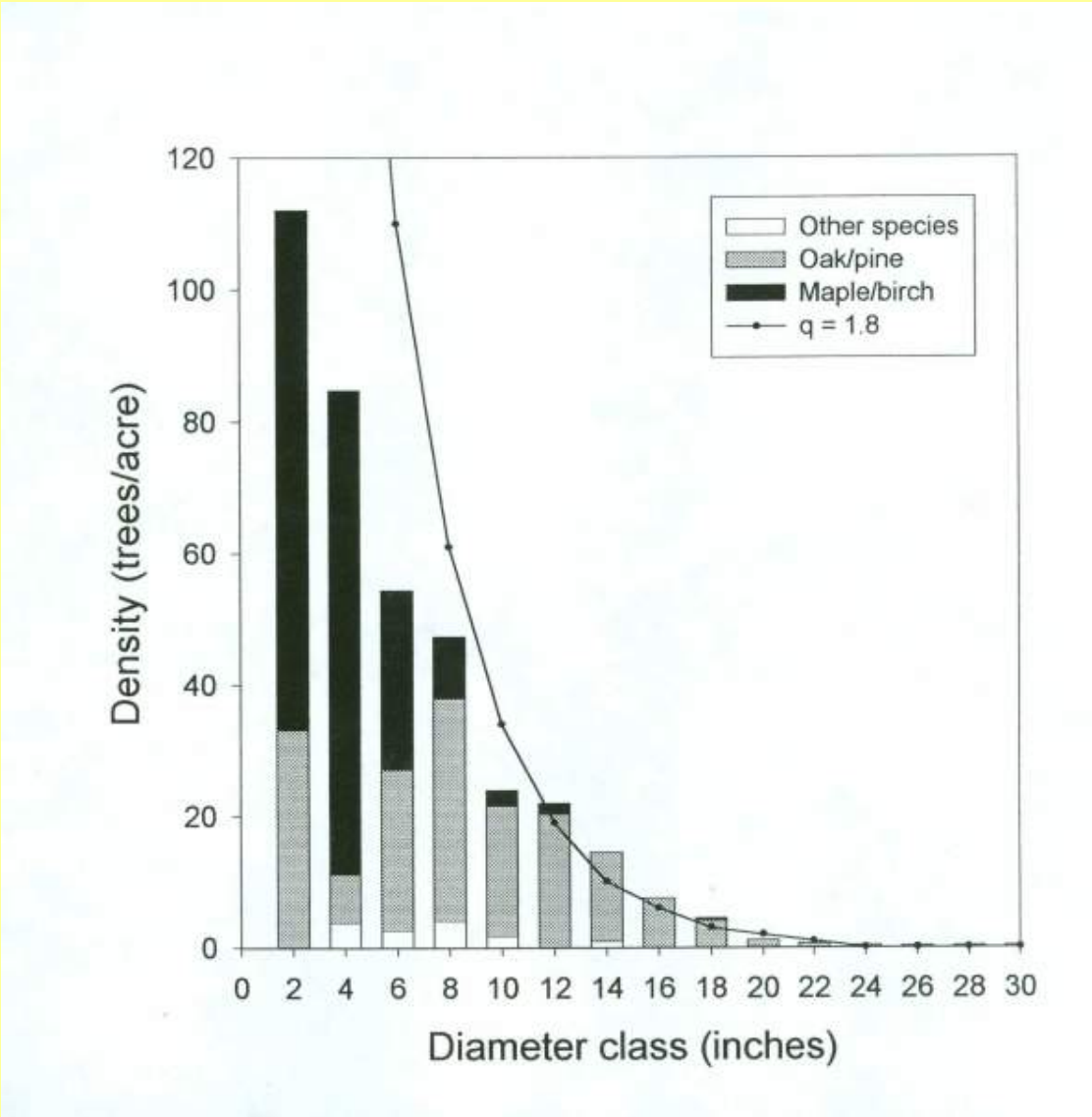
Same stand; 32-year-old oak and pine patch

4-year-old patch in same stand with 32-year-old patches

CONTROLLING THE LEVEL OF CUTTING

1. **Area control**

2. **Volume control (basal area or BDq)**


Other species
Oak/pine
Maple/birch
q = 1.8
Density (trees/acre)
120
100
80
60
40
20
0
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30
Diameter class (inches)

EXAMPLE OF MARKING GUIDE

1. **Mark patches so that total patch area equals 1/3 of stand area**

2. **Thin between patches; about 1/3 of basal area**

3. **Total harvest removes 1/2 of stand basal area**