Food Security Act 1984

- Farm bill
- Swampbuster provisions
  - Designed to discourage destruction of wetlands for farming (not eligible for aide)
- Conservation Reserve Program
  - Contracts to remove highly erodible cropland from production, in return for annual fees
- Wetlands Reserve Program
  - Enrolls wetlands for protection & restoration through permanent & temporary (30 yr) easements

Management Philosophies

Preservation VS Conservation

Preservation

- Nature is allowed to take its course without human intervention
- Pros: widely accepted concept & retain resources
- Cons: not always practical
  - Natural balance has been disrupted
  - Active management may be necessary
- John Muir, Sierra Club, National Park Service (most of the time)

Conservation

- Wise use of resources without adverse impact
- Multiple-use concept
- Sustainability
- Direct and indirect manipulation
- Pros: satisfy many needs
  - protect resource (damage & disease)
- Cons: stakeholder conflict
  - requires extensive monitoring
- Gifford Pinchot, The Wildlife Society, Forest Service

Wetland Management

- Preservation is the best tool
  - Natural wetlands are far superior to artificial
- Build vernal ponds
- Water impoundments (often done for hunting waterfowl; Phelps WMA)
  - Levees, water control structures, and pumps
- Moist soil management

Moist Soil Management

- Draw down water level
  - Timing of draw down influences the plant community that establishes
  - How quickly the water is released also influences establishment of plant communities
- Flooding
  - Timing of the flooding is dependent on species of interest
  - Water depth will influence the food availability of various species

Grassland Management

- Goal is often to set back succession
  - Remember the majority of Piedmont wants to become a forest when it grows up
- Setting back succession
  - Discing
  - Herbicide application (targets particular plant groups; fesuce and woody species)
  - Mowing
  - Prescribed burn

Fire and Grasslands

- Why does fire favor grasslands?
  - Growing points of grasses lie near or below ground
  - Most woody species growing points are well above ground & killed by fire
  - Grasses rapidly regrow after burning and go on to produce seed in same year; not the case for woody species
  - 1-2 years growth of grasses are removed by fire as opposed to several years for woody species

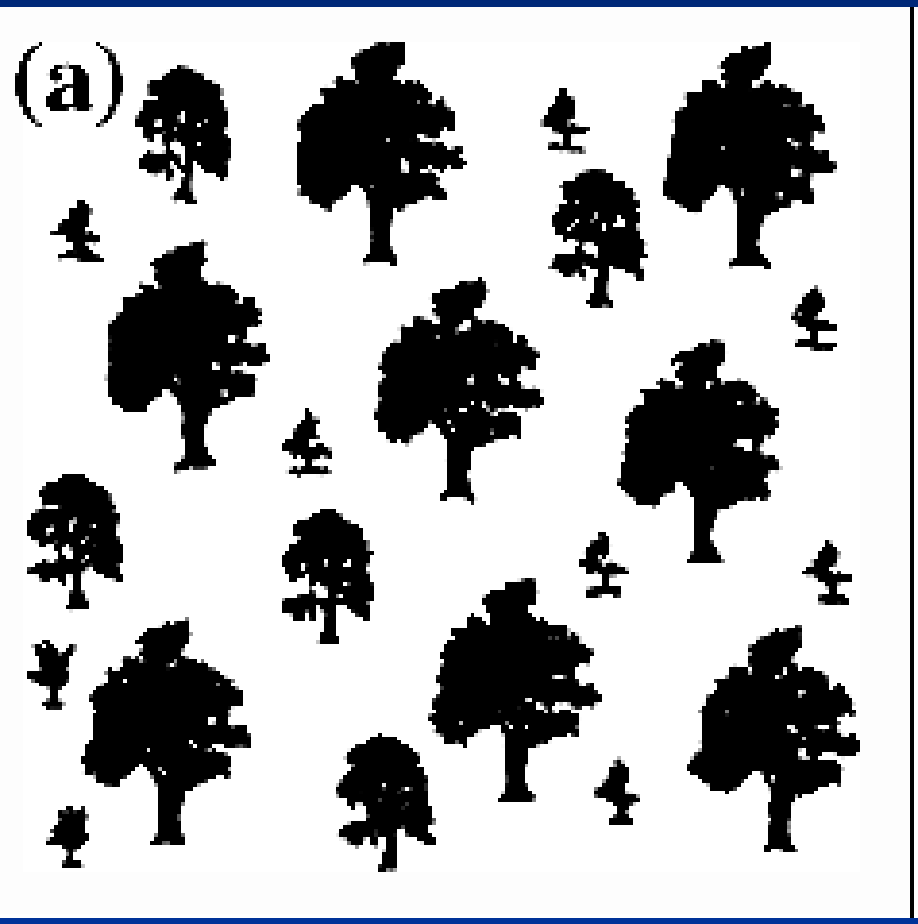
Silviculture

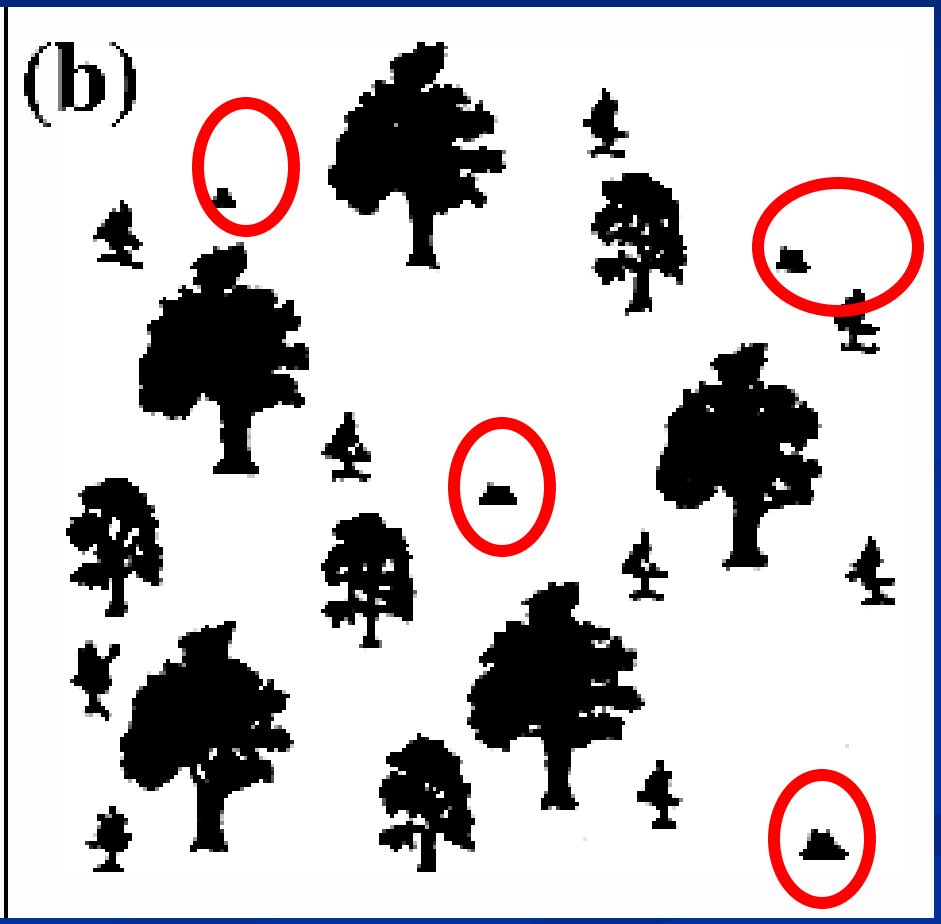
- Science of forestry and the management of forest products
- Major silvicultural practices
  - Selection method
  - Shelterwood method
  - Seed tree method
  - Clear cut method
- Above list is in order of size of the opening created by the respective method with selection being the smallest

Selection Method

- Single tree or Group selection (<1/2 acre)
- Should only be done in all age stands
- Pros: avoid site prepping
  - Aesthetically pleasing
  - Regeneration is reliable
  - Sustained yield
  - Minimal erosion
- Cons: residual tree damage can be high
  - Little benefit for wildlife
- Best for shade tolerant species

Single Tree Selection Method

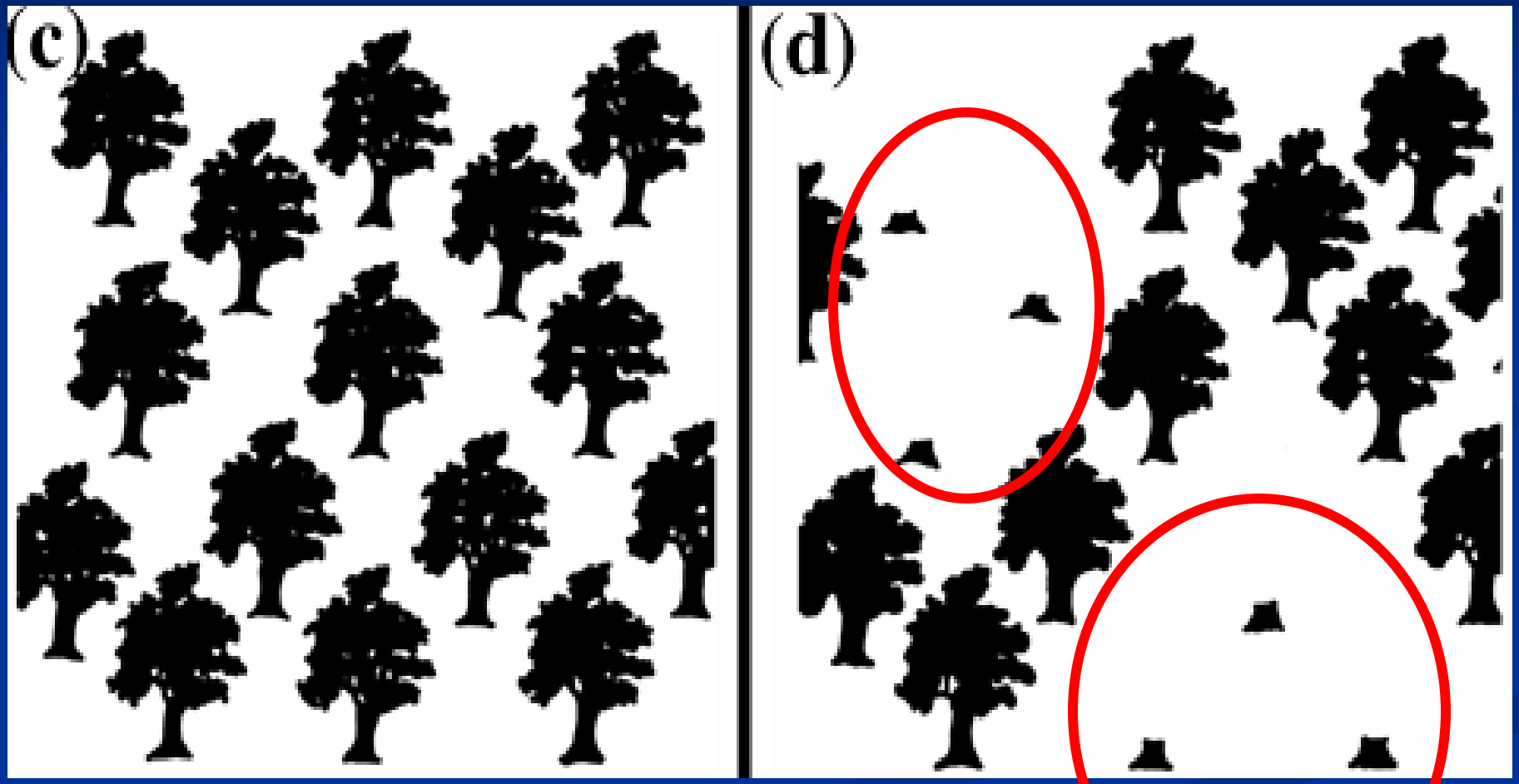




a) before harvest

b) after harvest

Group Selection Method



before

after

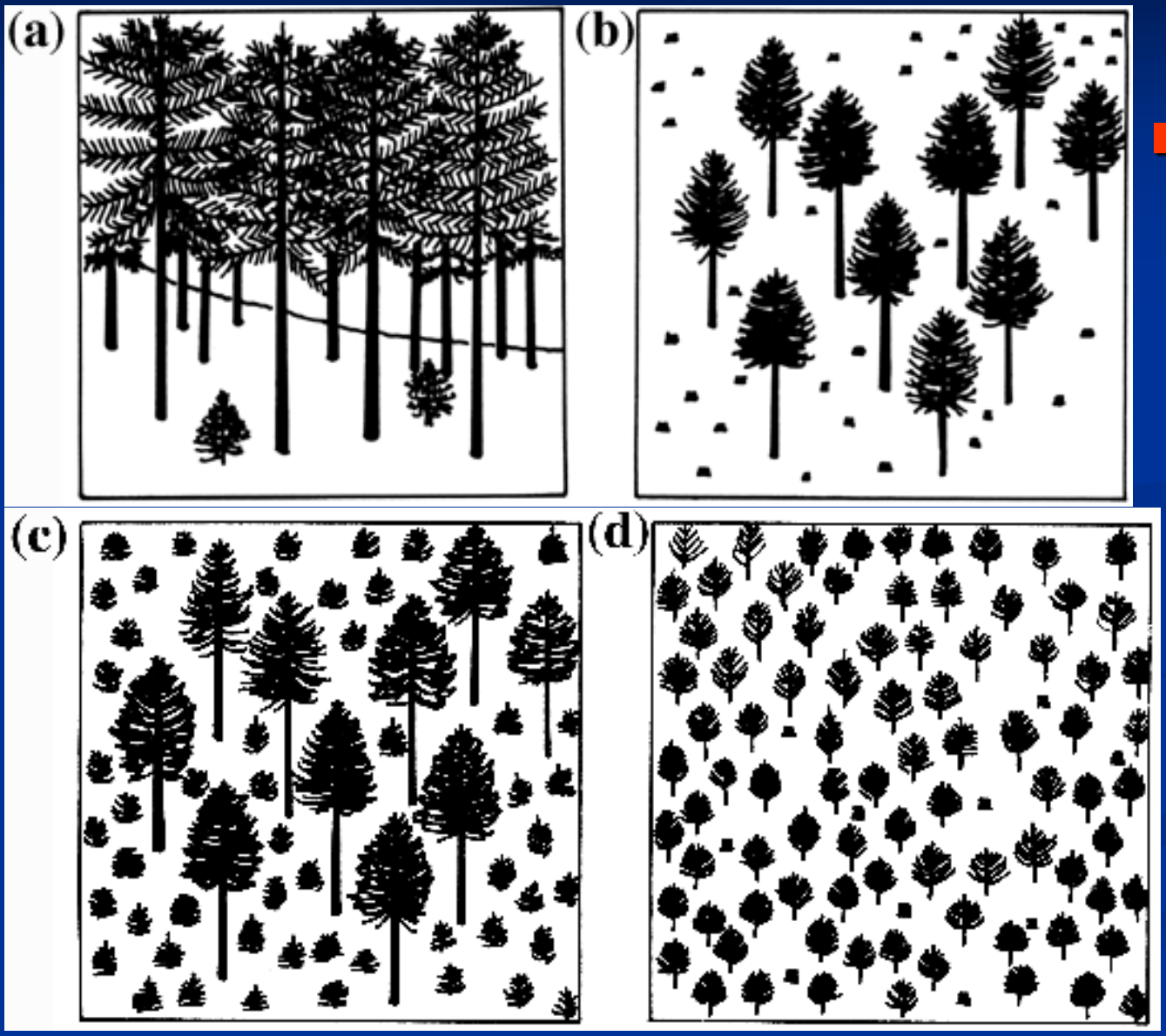
Shelterwood Method

- Purpose is to obtain reproduction under partial shade & protection of crop trees
- Pros: aesthetically pleasing
  - Protect regeneration
  - Release target trees increasing their value
  - Benefits species that require partial shade and wildlife
- Cons: damage to new crop at final cut
  - Difficult to implement
  - Requires substantial time to implement (10-20 yrs)

Shelterwood Steps

- Steps in a shelterwood cut
  - Preparatory cut: light harvest (30%), undesirable trees removed correcting stand
  - Seed cut: leave only most desirable trees (50%), opens canopy to allow for regeneration and a pulse in growth of target trees
  - Removal cut: wait 1- 2 years after new crop is established and remove the target trees

Shelterwood

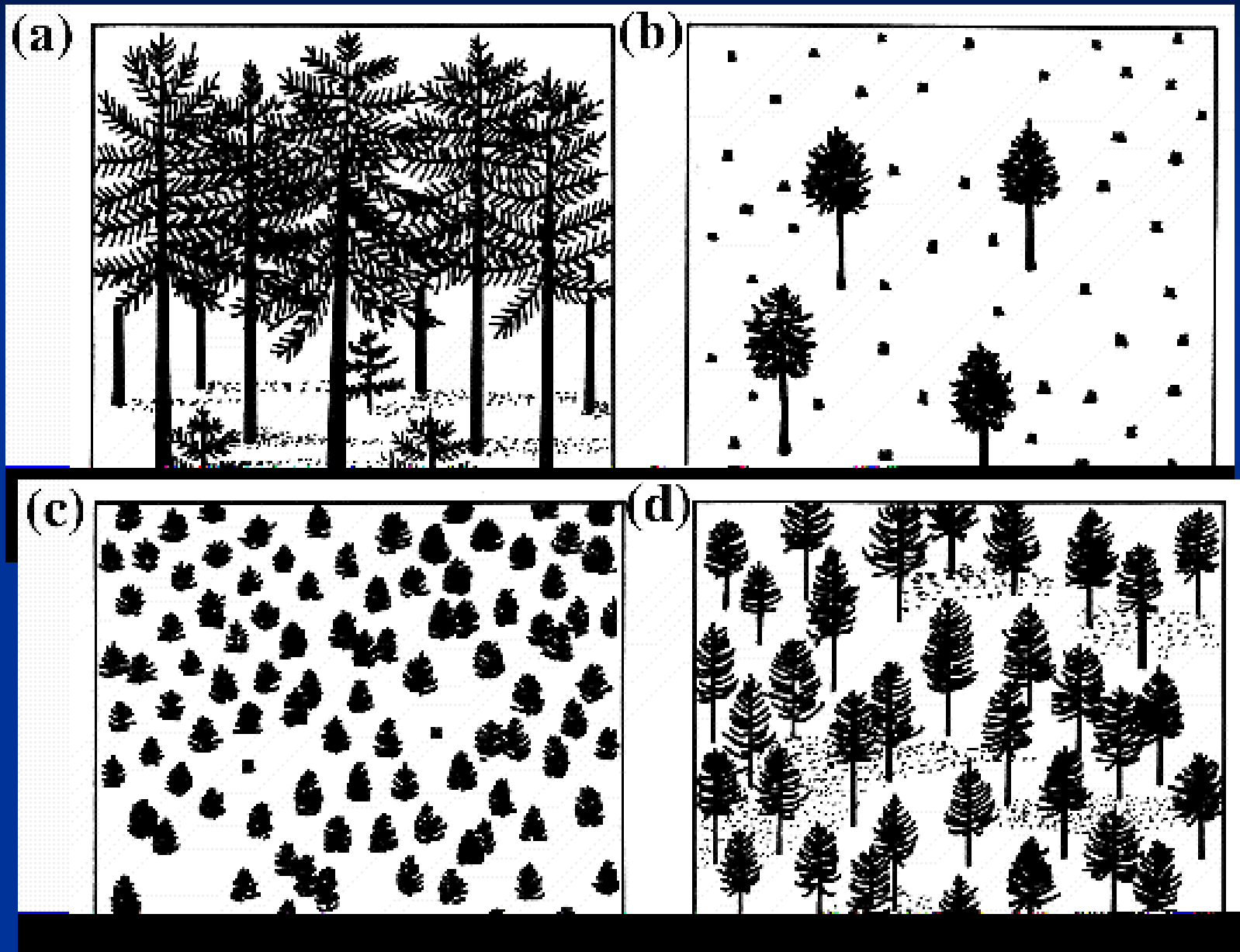


- Note preparatory and seed cuts were combined in part (b)

Seed Tree Method

- Remove most trees but leave good individuals for future seed source
- Pros: has potential to improve stand quality over years
  - Benefits wildlife
  - Benefits shade intolerant species
- Cons: difficult to retrieve seed trees without severe damage to regeneration
  - Blowdown
  - Assume regeneration will come from seed trees

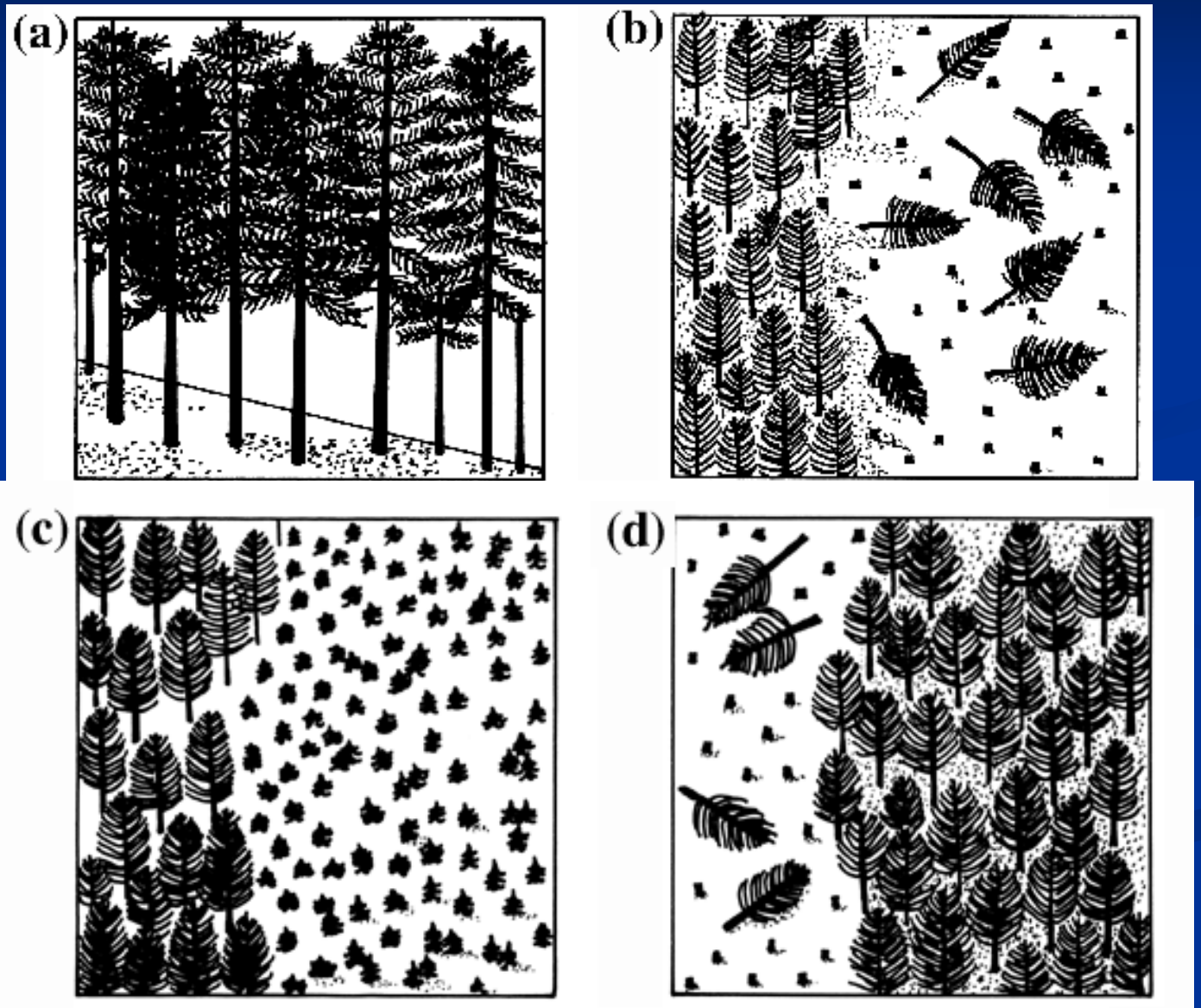
Seed Tree Method



Clear Cut Method

- Remove all trees and shrubs
- Pros: naturally seeds but offers benefit of planting
  - Benefits wildlife
  - No potential for high grading
- Cons: Not aesthetically pleasing
  - High potential for erosion
- Good for shade intolerant species
- Maximum size of 40-50 acres is recommended

Clear Cut Method

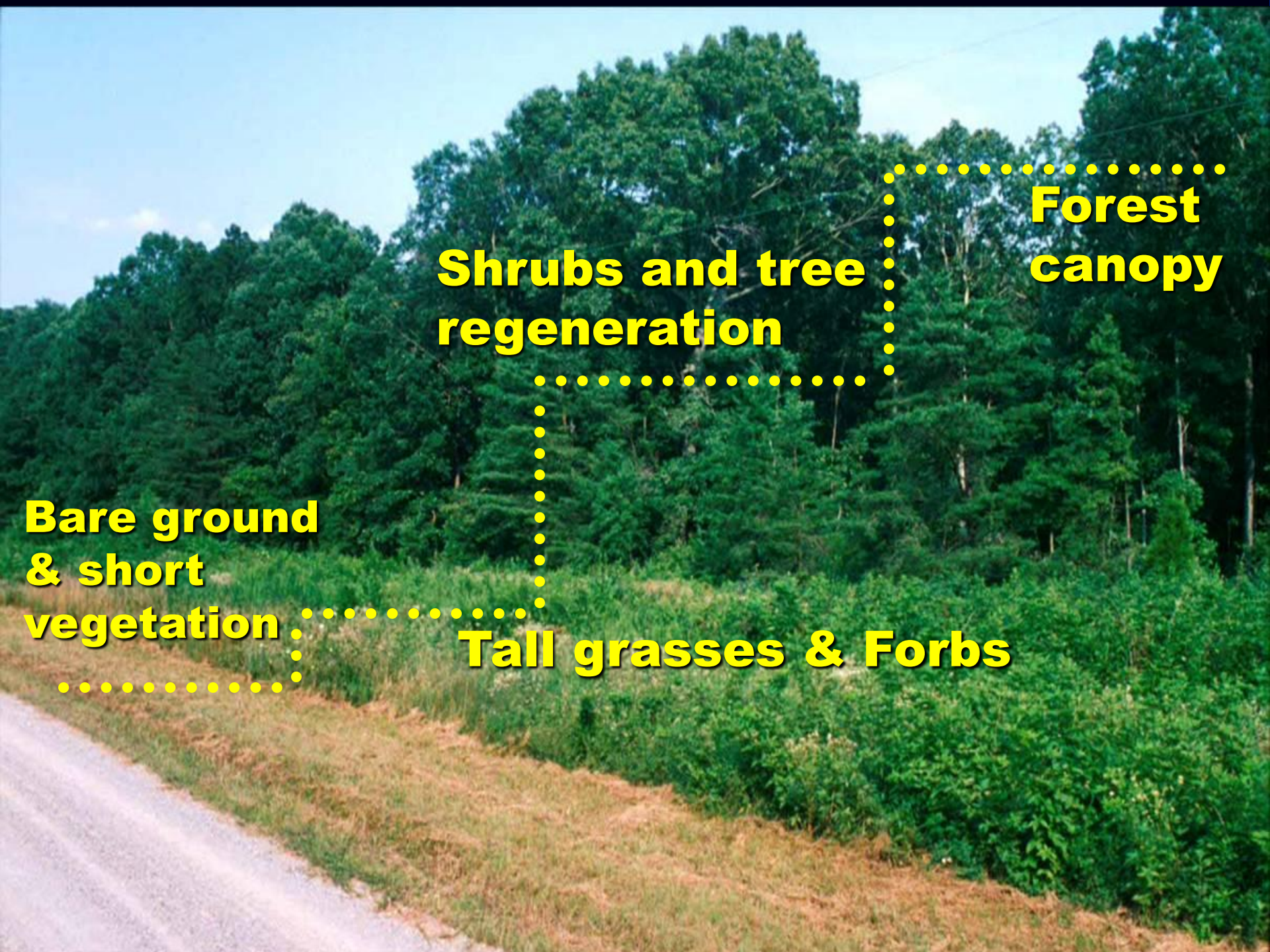


Final Forestry Notes

- High grading – the biggest and most valuable trees are cut and poor quality, undesirable, weak trees remain
  - Results in weak regeneration and a stand that is made up of poor quality trees with little potential for the future
- Shape and size of cut influences edge
- http://www.ext.vt.edu/pubs/forestry/420-405/420-405.html

Wildlife Management

- Habitat management
  - Animals need food, water, and cover
  - Interspersion of these elements is important
  - Use farming, forestry, wetland practices already discussed
- Monitoring population
  - Trends not absolute counts


Forest canopy
Shrubs and tree regeneration
Bare ground & short vegetation
Tall grasses & Forbs

Wildlife Management

- Population Regulation
  - Season length and timing of season
  - Bag limits
  - Control access
  - Establish quotas
- Public technical assistance