

TECHNICAL NOTES

U.S. DEPARTMENT OF AGRICULTURE STATE OF COLORADO SOIL CONSERVATION SERVICE

BIOLOGY TECHNICAL NOTE NO. 3

February 1993

To: All Field and Area Offices

From: Terri Skadeland, State Biologist

Re: Wildlife Habitat Considerations When Harvesting Timber

This technical note was prepared by Edward Neilson, Area 1 Biologist, Grand Junction, Colorado. This technical note replaces note #3 dated November 1985 which should be removed and destroyed.

This outline reviews practices used in timber harvesting when wildlife habitat needs are a concern. The practices accommodate the needs of many wildlife species in each forest type. These are basic guidelines, and specific circumstances can alter recommended procedures. The Colorado State Forest Service should be contacted to work with the landowner and SCS in developing timber management plans.

Forest type: Pinyon-Juniper

I. Harvest methods

- A. Selective cutting (for firewood and fence posts)
- B. Clearcut (usually chaining)

II. Extent of harvest

- A. Selective cutting – thin to D + 12 or 13; for site specific situations, contact the State Forester.
- B. Clearcut – maximum size of 300 acres..

III. Design considerations

- A. Selective cutting
 - 1. Leave three large standing dead trees/acre (snags)
 - 2. Leave two dominant live piñons standing/acre; if piñons are not available, leave two dominant junipers
- B. Clearcut
 - 1. Long and narrow clearings are the best; maximum width of 300 yards recommended
 - 2. Irregular borders
 - 3. Leave a minimum of three large standing dead trees/acre (snags)
 - 4. Leave a minimum of two dominant live piñons standing/acre; if piñons are not available, leave two dominant junipers
 - 5. Leave undisturbed areas as large and wide as cleared areas
 - 6. A minimum of 50 percent of the woodland should not be cleared

Forest type: Ponderosa pine

- I. Harvest methods
 - A. Selective cutting (for saw timber and firewood)
 - B. Clearcutting (for saw timber)
- II. Extent of harvest
 - A. Selective cutting – varies with site and objectives; consult state forester or biologist
 - B. Clearcut – recommended maximum size of 45 acres
- III. Design Considerations
 - A. Selective cutting
 - 1. Harvest plans should minimize roads
 - 2. After harvest, all roads should be closed
 - 3. Leave a minimum of two stable snags standing/acre
 - 4. A minimum of two or three over-mature trees/acre should be left undisturbed
 - 5. In wild turkey habitat, over-mature trees on east or northeast exposures should be protected
 - B. Clearcut
 - 1. Irregular shapes with a maximum width of 500 feet are recommended
 - 2. Areas as large and as wide as cleared tracts should be left undisturbed
 - 3. Leave at least two stable snags standing per acre
 - 4. A minimum of two or three over mature trees/acre should be left to replace snags
 - 5. In wild turkey habitat, over-mature trees on east or northeast exposure should be protected for roosting

Forest type: Aspen

- I. Harvest methods
 - A. Selective cut (firewood)
 - B. Clearcut (little commercial harvesting, often cut for habitat manipulation)
- II. Extent of harvest
 - A. Selective cut – usually dead standing, and fallen
 - B. Clearcut – size should be small (12-20 acres)
- III. Design considerations
 - A. Selective cut
 - 1. A minimum of two or three large snags/acre should be left standing
 - B. Clearcut
 - 1. Irregular shape (teardrop shape works well); 500 feet is the maximum recommended width
 - 2. A rotation of cutting one-third of a stand every 15 years can be used to maintain aspen stands
 - 3. To increase big game forage, a rotation of cutting 20 percent every four years is often used
 - 4. Uncut areas should be as large and as wide as cut tracts
 - 5. Aspen growing on wet sites may not revegetate, with site reverting to a wetland or wet meadow

Forest type: Lodgepole pine

- I. Harvest methods
 - A. Clearcut (poles, saw timber)
- II. Clearcut – recommended maximum size of 45 acres with smaller areas preferred
- III. Design considerations
 - A. Clearcut
 - 1. Irregular shapes with a maximum width of 500 feet are recommended
 - 2. Areas as large and as wide as cleared tracts should be left uncut
 - 3. Leave a minimum of two stable snags standing/acre
 - 4. Leave a minimum of two or three over-mature trees/ac to replace snags
 - 5. A common harvest rotation of cutting 20 to 25 percent every 20 to 30 years maintains wildlife habitat diversity

Forest type: Spruce-fir

- I. Harvest method
 - A. Clearcut (saw timber)
 - B. Three step shelterwood (saw timber). This is a selective cut with three separate entrances. The cuts are designed to prevent blowdown of remaining trees.
- II. Extent of harvest
 - A. Clearcut – recommended maximum size is 20 acres
 - B. Shelterwood – selective cut one-third of the stand
- III. Design considerations
 - A. Clearcut
 - 1. Irregular shapes with a maximum width of 500 feet are recommended, with long and narrow shapes preferred
 - 2. Areas as large and wide as cleared tracts should be left uncut
 - 3. A minimum of two or three stable snags should be left/acre
 - 4. A minimum of two or three over-mature trees/acre should be left to replace snags
 - B. Shelterwood
 - 1. Harvest plans should minimize roads
 - 2. After harvest, all roads should be closed
 - 3. A minimum of two or three stable snags should left/acre
 - 4. A minimum of two or three over-mature trees/acre should be left to replace snags

If livestock use is a concern, all clearcut and/or chained areas with slash over 1.5 feet deep should be windrowed.

REFERENCES

- 1. Kerr, R.M. 1979. Mule deer habitat guidelines. USDI, BLM Tech. Note 336. 62 pp.
- 2. Lyon, J.L. and C.E. Jensen. 1980. Management implications of clear-cuts in Montana. J. Wildl. Manage. 44(2):352-362.

3. Patton, R.P. and J.R. Jones. 1977. Managing aspen for wildlife in the southwest. USDA, For. Ser. Gen. Tech. Rep. RM-37. 7pp.
4. Perala, D.A. and R.W. Sorensen. 1979. Creating stable shrub communities for managed openings in the aspen forest. *Down to Earth* 35(2):19-24
5. 1982. Spring issue forest improvement newsletter. Colo. State For. Ser. and USDA, For. Ser. 7 pp.
6. Thomas, J.W. 1979. Wildlife habitats in managed forests – the Blue Mountains of Oregon and Washington. USDA, For. Ser. Ag. Hand. No. 533. 512 pp.
7. Thomas J.W. and D.E. Toweill. 1982. Elk of North America/ecology and management. *Wildl. Manage. Inst.* 698 pp.
8. Zarn, M. 1977. Ecological characteristics of pinyon-juniper woodlands on the Colorado Plateau. USDI, BLM Tech. Note 310. 182 pp.