

# Quail Covey Headquarters – Establishment from Seed

## Job Sheet

Natural Resources Conservation Service (NRCS)  
 Missouri Department of Conservation (MDC)  
 University of Missouri Extension – The School of Natural Resources

<b>For:</b>	<b>County:</b>
<b>Field(s):</b>	<b>Farm #:</b>
<b>Date:</b>	<b>Tract #:</b>
<b>Designed By:</b>	<b>Contact Information:</b>

**DEFINITION:** Covey Headquarters (CHQ) are clumps of dense shrubby/woody cover with a canopy at least 3 feet high and little vegetation at ground level. The minimum size of a CHQ is 30' x 50' totaling 1500 ft<sup>2</sup>. It takes three CHQs of this size to equal 0.1 acre. It is recommended to provide at least 0.1 to 1.0 acre of dense shrubby/woody cover per 5 to 40 acres.

**PURPOSE:** Shrubby cover is an important component of quality habitat management for bobwhite quail and other upland wildlife species. However, it is often a component that is lacking on the landscape simply because of the natural aging of the vegetation community. Quail use dense shrubby cover on a daily basis throughout the entire year and centralize their activities around these areas of woody cover. An optimal quail home range should consist of 10 to 25% shrubby cover, or 4 to 10 acres of shrubby cover per 40 acres of home range. Additionally, shrubby cover should be located adjacent to early successional vegetation, such as diverse stands of wildlife friendly grasses and forbs, food plots, or disturbed fields.



**SPECIFICATIONS:**

**Site Preparation:** For the best results, the following site preparation steps are necessary.

**Select at least a 30' x 50' area (1500 ft<sup>2</sup>) adjacent to early successional vegetation, along a woodland edge, or a disturbed area such as a food plot.** Do not select locations that are prone to erosion or show signs of active erosion as these sites often do not have sufficient nutrients to support a successful shrub planting.

**Kill the existing vegetation and prepare a CLEAN, FIRM seedbed**  
 The most important step in a direct shrub seeding is to prepare a clean, firm seedbed. The goal is to eliminate any existing vegetation that will compete with the shrub seeds for nutrients and sunlight. This includes both cool-season grasses and native warm-season grasses.

**Apply a herbicide, such as glyphosate, to kill any and all competing vegetation.** For spring seedings, begin site preparation in the previous fall with a spring follow-up application before planting. For fall seedings, begin site preparation in mid-summer with an additional early fall follow-up.



*Clean, firm seedbed*

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- Prepare a clean seedbed by disking the site with a disk or roto-tiller.** Depending on the existing stand of vegetation, several passes with a disk may be required to create a clean site.
- Firm the site by cutpacking (rolling) the seedbed before and after broadcasting the seed.**

Shrub Species: Some of the preferred native species of shrubs to use in direct seedings are American plum, *Prunus americana*, false indigo, *Amorpha fruticosa*, choke cherry, *Prunus virginiana*, common elderberry, *Sambucus canadensis*, common blackberry, *Rubus allegheniensis*, aromatic sumac, *Rhus aromatic*, and shrub dogwood, *Cornus sp.* Shrub dogwood should only be used as a component in a seeding and not as a single species planting. If deer predation is an issue, planting species such as false indigo, aromatic sumac, and blackberry may be more successful. A CHQ may be planted to a single species in order to mimic a natural shrub thicket. Two or more different shrub species can also be planted in the same CHQ to accelerate the development and diversity of the CHQ.

### Seeding Rates per CHQ (1500 ft<sup>2</sup>):

#### **Pick at least one:**

- American Plum – 1.0 lb Bulk; **Plant September 1 – October 1**
- False Indigo – 0.5 lb Pure Live Seed; **Plant April 16 – June 1**

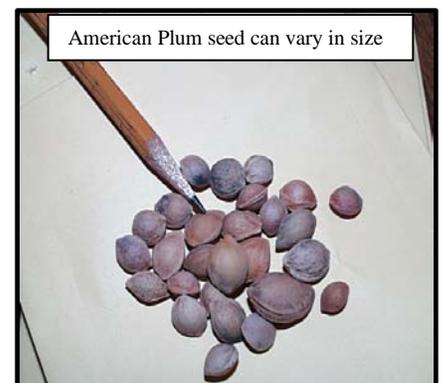
Component Species: It is recommended to add 1 - 2 of the below species to the seed mix.

#### Summer Seeding Options

- Blackberry – 0.5 lb Bulk; **Plant in July**
- Elderberry – 0.5 lb Bulk; **Plant in July - September**

#### Fall Seeding Options - Plant in September – October 1

- Aromatic Sumac – 1.0 lb Bulk
- Shrub Dogwood – 1.0 lb Bulk
- Chokecherry – 1.0 lb Bulk



### Planting Methods:

**Broadcast** - Rolling, broadcasting the seed evenly over the planting area, **and rolling again** ensures seed to soil contact and the proper placement of the seed (¼" to ½" deep). Disking causes the seed to be sowed too deep in the soil and prevents germination. **DO NOT DISK THE SEED IN.**

#### **Spot Seeding**

American Plum: Plant 2-3 seeds per spot, every 3–4 ft. Plant ½" - 1" deep with rows 3 ft apart.

#### **Machine**

Plant seeds ½" - 1" deep.

If multiple species are being used, thoroughly mix the seed prior to broadcasting to help create a diverse planting. If the seed is small, such as False Indigo seed, pellet lime or sand can be added to the seed mixture to assist in distributing the seed evenly over the entire seedbed. For the best results, use a cyclone seeder for even distribution. In other instances, when the seed is large, such as the American Plum, the seed will not flow through a cyclone seeder and will need to be broadcast or spot seeded by hand.

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### MAINTENANCE:

One of the most common reasons for direct shrub seeding failures is the lack of grass and weed control during the first two growing seasons. Competing vegetation, especially grasses, will prevent seed germination of young shrub seedlings because it blocks sunlight from reaching the newly planted area and steals nutrients and moisture from the new seed. Herbicide applications are the only consistent way to control grass competition during the growing season.

*Plum seedling with competing vegetation eliminated*



### Maintenance – Year 1 and 2:

**Apply Pre-emergent herbicide - Apply before April 1<sup>st</sup> or before grass germinates.**

Apply pre-emergent herbicides only after the shrub seedlings have at least 1 year of growth. Examples of pre-emergent herbicides include pendimethalin, oryzalin, and isoxaben which are used to control annual grasses and some small broadleaf plants before they have the opportunity to germinate.

**Apply Post-emergent herbicide**

Examples of post-emergent herbicides used to control annual and perennial grasses include clethodim, fluazifop, and sethoxydim. Two applications throughout the growing season may be required for continued grass control.

**It is important to always read and follow the herbicide label directions before applying any chemicals to a site.**

**Mowing is only useful for controlling broadleaf vegetation.** Mow above seedling height through August 15<sup>th</sup>. **Do not mow the plot shorter than 1 to 2 feet in height during the year of establishment.** In many cases, mowing twice a year will be sufficient to keep broadleaf competition in check. Mowing alone will not prevent annual or perennial grasses from dominating the seedbed.

**Mark new CHQ plantings with a permanent marker to help identify these areas when conducting management practices or weed control.**

**Exclude Livestock**

**Protect new CHQs from management practices such as prescribed burning or disking.**  
(Plantings should also be protected from non-selective herbicide applications.)

**After establishment, periodically treat invading grasses with a grass selective herbicide in order to maintain the attractiveness of this shrubby cover for wildlife.**

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### Be Patient!

Establishing a CHQ through direct seeding will take at least 3 to 5 years to develop into usable cover for quail and other wildlife. To provide shrubby cover while the direct seeding is developing, consider placing a downed deciduous tree structure near the seeding. By the time the downed tree structure decays and loses its usefulness as protective shrubby cover, the seeded shrubs will have grown tall and thick enough to provide cover. It may be necessary to periodically come back and remove invading overstory trees to prevent the shrubs from being shaded out. In addition, be prepared to periodically treat invading grasses that creep back into the CHQ in order to maintain the attractiveness of this shrubby cover for wildlife.



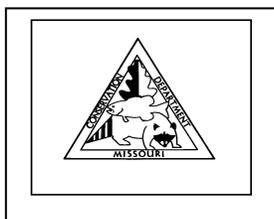
### PRIMARY HABITAT CONSIDERATIONS:

- Provide natural cover sources for quail and other wildlife.

Comment:

*For additional information on direct shrub seedings, contact your local USDA Service Center or Missouri Department of Conservation office.*

*Photos courtesy of the Missouri Department of Conservation and USDA NRCS Elsberry Plant Materials Center.*



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