



Appendix F Shortgrass Species Conservation Measures

Thunder Basin Grassland Prairie Ecosystem Association
1/08/2013 - FINAL DRAFT

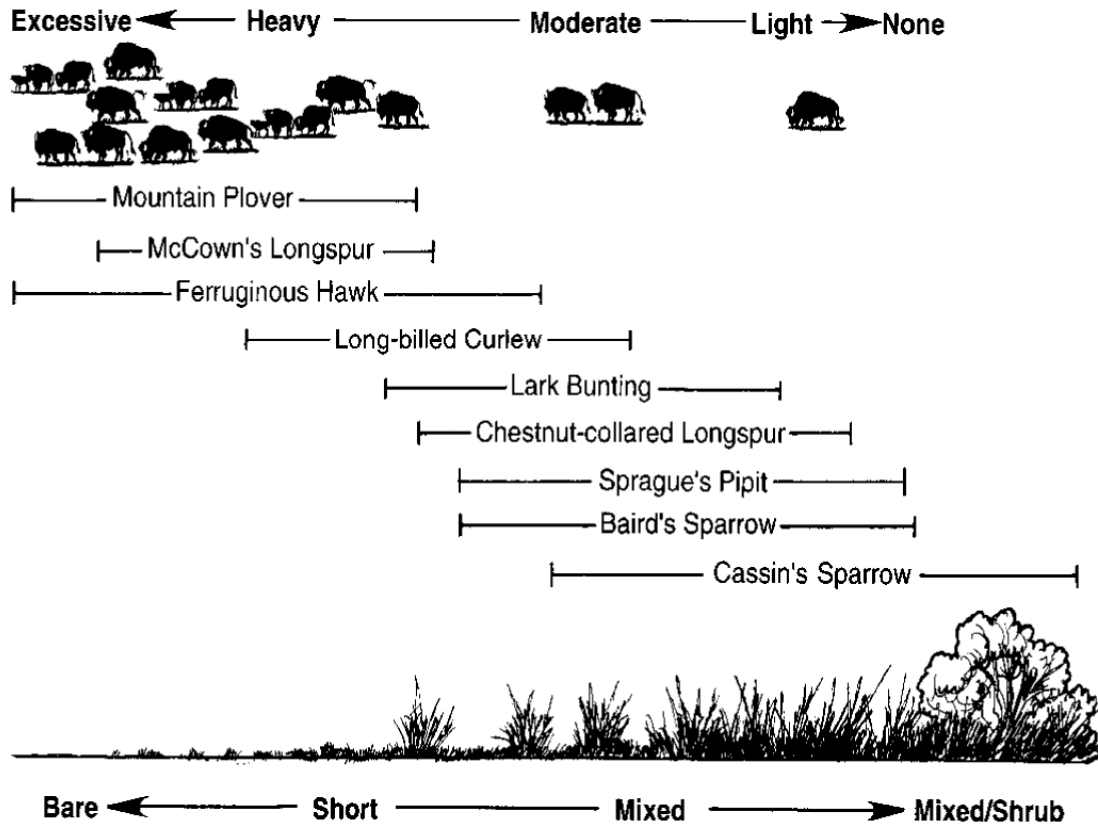
Contents

| | |
|--|----|
| FACTOR A. The Present or Threatened Destruction, Modification, or Curtailment of Habitat or Range. ... | 5 |
| Habitat Fragmentation and Destruction..... | 5 |
| Conversion of Suitable Habitat | 5 |
| Energy Development: Non-renewable | 6 |
| Facilities: Detrimental Siting Due to Lack of Information | 7 |
| Fragmentation: General..... | 8 |
| Inappropriate Livestock and Wildlife Grazing Management | 14 |
| Invasive Species | 16 |
| Power Lines | 17 |
| Roads..... | 19 |
| Subdividing Native Habitats | 20 |
| Habitat Curtailment | 20 |
| Crop Lands..... | 20 |
| Human Disturbance | 22 |
| Inappropriate / Poor Quality Reclamation..... | 24 |
| Roads..... | 25 |
| FACTOR B. Overutilization for Commercial, Recreational, Scientific, or Educational Purposes | 27 |
| FACTOR C: Disease and Predation. | 28 |
| Disease | 28 |
| Predation..... | 29 |
| FACTOR D: Inadequacy of Existing Regulatory Mechanisms. | 32 |
| Local Land Use Laws, Processes, and Ordinances..... | 32 |
| On- and Off-Road Use of Suitable Habitat | 32 |
| Split Estate | 32 |
| FACTOR E: Other Natural or Manmade Factors Affecting the Species’ Continued Existence..... | 33 |
| Control of Prey / Food Sources | 33 |
| Use of Insecticides | 35 |
| Lack of Education | 37 |

NOTE: The point value of conservation measures will be adjusted based on acreage involved and distance from occupied habitat. Conservation measures in close proximity to occupied habitat will receive the highest value while measures occurring farther away will receive proportionately reduced values. Points should be viewed as guidelines for typical situations. Species density, lack of species use, proximity to known habitat use areas, and/or suitability of existing habitat may be considered in assigning the final point value. All factors considered in assigning a reduced point value will be documented in the CI or CI/CP. Any increases to stated point values will require specific Association

Board approval. Unless otherwise noted, all conservation measures apply to the entire enrolled acreage of the CI or CI/CP holder and apply throughout the full term of the CI or CI/CP.

Endemic bird species of the Great Plains require grazing regimes that encompass a broad continuum from light utilization (mixed grass/shrub environments) to heavy utilization (short grass/bare ground environments) as the following diagram from Knopf indicates.



(from Knopf, F.L. *Prairie Legacies: Birds*. Pages 135-148 in F.B. Samson and F.L.Knopf [eds.]. *Prairie Conservation*. Island Press. Covelo, California. 1996)

It is the intent of the Association to provide for this heterogeneity on a regional level while supporting local homogeneity in specific sites across the Coverage Area. Conservation measures dealing with mixed grass/shrub species can be found in Appendix E. The conservation measures indicated below will deal primarily with species that favor short grass/bare ground environments.

FACTOR A. The Present or Threatened Destruction, Modification, or Curtailment of Habitat or Range.

Habitat Fragmentation and Destruction

Conversion of Suitable Habitat

A1 Shortgrass Species Threat: Conversion of shortgrass prairie to active agriculture use is a source of habitat fragmentation and degradation. Most of the local agriculture activity occurred during the 1920's and 1930's and a majority of these areas have been recolonized by native bunchgrasses or were reseeded with crested wheatgrass. For most sites this has created areas of fragmentation caused by tall grasses in what could otherwise be suitable shortgrass species habitat. Inappropriate habitat reduces the likelihood of colonization by prairie dogs, reduces the number of mountain plover and burrowing owl nests and nest success, and can reduce ferruginous hawk prey availability.

A1 Shortgrass Species Conservation Measure A: Conduct baseline monitoring to determine existing conditions, identify, and protect areas meeting or trending toward suitable black-tailed prairie dog habitat¹ as described below

Vegetative cover: less than 40 percent bare ground

Vegetative species: western wheatgrass (*Pascopyrum smithii*), blue grama (*Bouteloua gracilis*), buffalograss (*Buchloe dactyloides*), sand dropseed (*Sporobolus cryptandrus*), sixweeks fescue (*Vulpia octoflora*), green muhly (*Muhlenbergia viridula*), sedges (*Carex spp.*), scarlet globemallow (*Sphaeralcea coccinea*), prostrate shrub species such as birdfoot sage (*Artemisia pedatifida*), and plains pricklypear (*Opuntia polyacantha*)

Vegetative height: <6 inches

Soil depth: ≥6.5 feet

Soil composition: loamy with limited gravel; low in clay (<30 percent); low in sand (<30 percent); medium to high in silt (>70 percent) with good drainage

Slope: <20 percent; preferably ≤10 percent

[5 points per 320 collective acres of go-back lands]

CI or CI/CP Information:

- Conduct baseline soil monitoring: soil composition, verify depth is more than 6.5 feet
- Report information along with GPS location of soil sample points: 1 per 80 acres
- Conduct baseline vegetation monitoring: species height, cover by species
- Report information along with GPS location of established 100' vegetation transects: 1 per 80 acres
- Identify method of protection and map protected areas
- Baseline photo points with GPS locations: 1 per 80 acres

¹ modified from Roe and Roe (2003), Reading and Matchett (1997) and personal communication with Fritz Knopf

Performance Monitoring to Support Adaptive Management:

- Monitor vegetation species height and cover by species annually between June 15 and August 15; report to the Association by September 30 of each year or as specified in the CI
- Photograph protected areas annually within ± 2 weeks of baseline photograph anniversary date; provide digital photograph(s) to the Association by December 31 of each year or as specified in the CI or CI/CP
- Association staff will visit the site at least once every 4 years² to verify treatment area trend

A1 Shortgrass Species Conservation Measure B: Commit to no additional conversion of shortgrass prairie to cropland on enrolled lands [1 - 6 points depending on the history of conversion within the CI or CI/CP and extent of cropland currently on the CI or CI/CP; 1 additional point if area is within 5 miles of an active prairie dog colony]

CI or CI/CP Information:

- GPS prairie dog colony boundaries
- Map existing land configuration specifying existing land use
- Document likelihood of changes in land configuration or use

Performance Monitoring to Support Adaptive Management:

- Map and report any changes in land configuration or use to the Association by December 31 of each year or as specified in the CI or CI/CP
- Association staff will visit the site at least once every 3 years to verify land use

A1 Shortgrass Species Benefits: Protection of suitable native shortgrass areas will reduce fragmentation and/or degradation, thus increasing the likelihood of colonization by prairie dogs, increasing potential mountain plover and burrowing owl nests and nest success, and increasing prey availability for ferruginous hawks.

Energy Development: Non-renewable

A2 Shortgrass Species Threat: Disturbances can create shortgrass species habitat fragmentation and inhibit shortgrass species use. Shortgrass species can abandon use of fragmented habitat and nesting and brood rearing success is reduced.

A2 Shortgrass Species Conservation Measure A: Limit surface disturbance to 5% or less of suitable shortgrass species habitat per 640 acres by reducing total drill site area and density through multi-well drilling pads, directional drilling, consolidated pipeline/road/utility corridors, closed loop drilling mud recovery systems, or other appropriate methods [9 points for entire CI or CI/CP area]

CI or CI/CP Information:

- Map suitable shortgrass species habitat and existing surface disturbance areas
- Specify details of activities selected to limit surface disturbance

² This frequency is adapted from WDEQ-LQD Guideline 14 which specifies that at least two interim vegetation monitoring events occur within a 10-year period following the initial sampling to evaluate reclamation success trends.

- Document current drill site size, drilling density, and likelihood of new oil and gas facilities

Performance Monitoring to Support Adaptive Management:

- Map and report activities to limit surface disturbance to the Association by December 31 of each year or as specified in the CI or CI/CP
- Photograph each activity to limit surface disturbance annually; provide digital photograph(s) to the Association by December 31 of each year or as specified in the CI or CI/CP
- Association staff will visit the site at least once every 3 years to verify use of activities to limit surface disturbance

A2 Shortgrass Species Conservation Measure B: Commit to multi-well pads or new well pad areas in shortgrass species habitat that average less than 80 percent of average pre-CCAA pad size [4 points for entire CI or CI/CP area]

CI or CI/CP Information:

- Document current average drill site size, drilling density, and likelihood of new oil and gas facilities

Performance Monitoring to Support Adaptive Management:

- Map and report new drill site size for each well along with drilling density to the Association by December 31 of each year or as specified in the CI or CI/CP
- Association staff will visit the site at least once every 3 years to verify drill site size and drilling density

A2 Shortgrass Species Benefits: Preserving intact habitat blocks or reducing disturbance areas reduces habitat fragmentation and maintains or potentially increases nesting and brood rearing success and prairie dog colonization.

Facilities: Detrimental Siting Due to Lack of Information

A3 Shortgrass species Threat: Lack of information on shortgrass species use areas and/or shortgrass prairie habitat can result in fragmentation from inadvertent placement of roads, power lines, fences, or other detrimental infrastructure within critical distances of suitable shortgrass species habitat. This can cause shortgrass species to use marginal habitats resulting in reduced success in prairie dog colonization, nest establishment, and brood survivorship.

A3 Shortgrass species Conservation Measure A: Collect information necessary to maintain and update shortgrass species habitat maps and report to the Association at least annually. This information includes recording GPS locations of incidental sightings and recording a GPS track of outlines of all prairie dog colonies within the CI or CI/CP area. The participating member will also utilize this information for surface use purposes to avoid habitat fragmentation [2 points for entire CI or CI/CP area, additional points are possible if identified habitat use areas are protected from fragmentation]

CI or CI/CP Information:

- GPS location of known shortgrass species use areas (include any known ferruginous hawk nest sites, burrowing owl nesting areas, etc.)

- GPS track of current prairie dog colony outlines

Reporting Requirements:

- GPS location of incidental sightings including number of birds; report to the Association after each sighting (preferred) or no later than December 31 of each year or as specified in the CI or CI/CP
- GPS track of prairie dog colony outlines; report to the Association after each survey (preferred) or no later than December 31 of each year or as specified in the CI or CI/CP
- Document how information was utilized for surface use purposes; report to the Association by December 31 of each year or as specified in the CI or CI/CP

A3 Shortgrass Species Conservation Measure B: Conduct prairie dog density surveys, mountain plover nest success surveys, ferruginous hawk or burrowing owl nest surveys, environmental analysis, or other studies necessary to maintain and update shortgrass species life cycle information and habitat use maps. Where applicable, The participating member will utilize this information to avoid fragmentation of suitable habitat. The Association will share this information with appropriate agencies and will publish pertinent information in a timely manner [4 points per annual study, depending on study parameters; additional points are possible if identified habitat use areas are protected from fragmentation]

CI or CI/CP Information:

- GPS location of known shortgrass species use areas (include any known ferruginous hawk nest sites, burrowing owl nesting areas, etc.)
- GPS track of current prairie dog colony outlines
- Identify study parameters (location, timing, objectives, etc.)

Reporting Requirements:

- Participating member will provide a summary report of studies to the Association by December 31 of each year or as specified in the CI or CI/CP
- A complete report which includes all collected data will be provided to the Association within 90 days of project completion.
- Document how information was utilized for surface use purposes; report to the Association by December 31 of each year or as specified in the CI or CI/CP

A3 Shortgrass species Benefits: Active collection of shortgrass species use and shortgrass prairie habitat information will reduce fragmentation of suitable habitat by increasing the identification of suitable habitats, allowing for better planning, maintenance, and conservation of these areas. The Association will use this information to update and disseminate habitat maps to its members, thereby reducing the potential for placement of infrastructure in or near suitable shortgrass species habitats. This will improve the potential for nesting and brood-rearing success.

Fragmentation: General

A4 Shortgrass Species Threat: Disturbances can create shortgrass species habitat fragmentation and inhibit shortgrass species use and prairie dog movement between undisturbed areas. Shortgrass species can abandon use of fragmented habitat and nesting and brood rearing success is reduced.

A4 Shortgrass Species Conservation Measure A: Obtain or donate conservation easements with a minimum 10 year term (term must match CI or CI/CP term) for intact habitat to be managed specifically for shortgrass species [8 points for each 320 contiguous acres]

CI or CI/CP Information:

- Identify proposed conservation easement participants and provide map

One-time Compliance Monitoring:

- Obtain or donate conservation agreement within 5 years of CI or CI/CP signing
- Immediately upon finalization, submit a signed copy of the conservation agreement to the Association

Performance Monitoring to Support Adaptive Management:

- If the conservation easement is obtained and managed by the Participating member, report actions taken to ensure protection of intact habitat and specific management actions taken to benefit shortgrass species to the Association by December 31 of each year or as specified in the CI or CI/CP
- Association staff will visit the site at least once every 3 years to verify habitat protection and management actions

A4 Shortgrass Species Conservation Measure B: Establish buffer zones protecting prairie dogs and associated habitat, extending 75 feet from a prairie dog town periphery, to allow active prairie dog town expansion [3 points per 80 acres of buffer zone, maximum of 6 points]

CI or CI/CP Information:

- Map current prairie dog colony boundaries
- Identify planned buffer zones, grass species, and method to obtain and maintain desired grass buffer height
- Baseline photo points with GPS locations: 1 per 40 acres

Performance Monitoring to Support Adaptive Management:

- GPS prairie dog colony boundaries annually between August 1 and October 1; report to the Association by December 31 of each year or as specified in the CI or CI/CP
- Photograph prairie dog colonies and short grass buffer zones annually within ± 2 weeks of baseline photograph anniversary date; provide digital photograph(s) to the Association by December 31 of each year or as specified in the CI or CI/CP
- Association staff will visit the site at least once every 3 years to verify buffer zones

A4 Shortgrass Species Benefits: Preserving intact habitat blocks or reducing disturbance areas reduces habitat fragmentation and maintains or potentially increases nesting and brood rearing success and prairie dog colonization.

A5 Shortgrass Species Threat: Habitat destruction can create shortgrass species fragmentation and inhibit shortgrass species use and prairie dog movement between undisturbed areas. Shortgrass species will abandon use of destroyed or fragmented habitat and nesting and brood rearing success is reduced or eliminated.

A5 Shortgrass Species Conservation Measure A: Map and protect active prairie dog colonies [3 points for each 80 acres of active prairie dog colonies, maximum of 6 points]

CI or CI/CP Information:

- Map boundaries of active prairie dog colonies
- Indicate estimated level of current use by prairie dogs
- Identify protection measures
- Baseline photo points with GPS locations: 1 per 80 acres

Performance Monitoring to Support Adaptive Management:

- Photograph protected areas annually within ± 2 weeks of baseline photograph anniversary date; provide digital photograph(s) to the Association by December 31 of each year or as specified in the CI or CI/CP
- Report prairie dog use of protected areas by December 31 of each year or as specified in the CI or CI/CP
- Association staff will visit the site at least once every 3 years to verify protection measures

A5 Shortgrass Species Conservation Measure B: Light, ground disturbing activities that enhance native vegetation while maintaining rangeland health can induce the rebuilding of leveled prairie dog burrows and encourage building new burrows. Habitat enhancement projects include prickly pear control by blading and windrowing, spring tooth harrowing and aerating the range, reseeding, etc. [3 points per 320 collective acres]

CI or CI/CP Information:

- GPS location of existing prairie dog burrows
- Identify habitat enhancement project locations
- Specify details of selected enhancement methods
- Baseline photo points with GPS locations: 1 per project area, minimum of 1 per 160 acres

Performance Monitoring to Support Adaptive Management:

- Report details of enhancement activities (treatment method, date of treatment, results, GPS of active prairie dog burrows, etc.) to the Association by December 31 of each year or as specified in the CI or CI/CP
- Photograph habitat enhancement areas annually within ± 2 weeks of baseline photograph anniversary date; provide digital photograph(s) to the Association by December 31 of each year or as specified in the CI or CI/CP
- Association staff will visit the site at least once every 3 years to verify enhancement project status

A5 Shortgrass Species Conservation Measure C: Develop shortgrass species habitat by establishing artificial burrows through drilling or other means to facilitate new colonization or expansion of existing burrowing mammal colonies [4 points for each 320 acres of newly established or artificially expanded burrowing mammal colony]

CI or CI/CP Information:

- GPS location of existing prairie dog colonies
- Identify habitat enhancement project locations

- Specify details of selected enhancement methods
- Baseline photo points with GPS locations: 1 per project area, minimum of 1 per 160 acres

Performance Monitoring to Support Adaptive Management:

- Report details of enhancement activities (treatment method, date of treatment, results, GPS of active prairie dog colonies, etc.); report to the Association by December 31 of each year or as specified in the CI or CI/CP
- Photograph habitat enhancement areas annually within ± 2 weeks of baseline photograph anniversary date; provide digital photograph(s) to the Association by December 31 of each year or as specified in the CI or CI/CP
- Association staff will visit the site at least once every 3 years to verify enhancement project status

A5 Shortgrass Species Conservation Measure D: Successfully relocate prairie dogs onto appropriate rangeland or reclaimed disturbed land sites [6 points for each 320 acres of active prairie dog colonies]

CI or CI/CP Information:

- GPS location of existing prairie dog colonies
- Identify prairie dog relocation locations
- Specify details of prairie dog relocation methods and define success/failure parameters
- Baseline photo points with GPS locations: 1 per project area, minimum of 1 per 160 acres

Performance Monitoring to Support Adaptive Management:

- Report details of relocation activities (relocation method, date of relocation, number of prairie dogs moved, results, GPS of relocated prairie dog colony, etc.) to the Association by December 31 of each year or as specified in the CI or CI/CP
- Photograph prairie dog relocation areas annually within ± 2 weeks of baseline photograph anniversary date; provide digital photograph(s) to the Association by December 31 of each year or as specified in the CI or CI/CP
- Association staff will visit the site at least once every 3 years to verify relocation status

A5 Mountain Plover Conservation Measure E: Enhance or maintain active mountain plover habitat areas (< 5 degrees slope with at least 30 percent bare ground on one square yard areas surrounded by 82 foot circles of unobstructed view) keeping vegetation below 3 inches³ utilizing prescribed burns approved by the Association in early spring (mid March to mid April) followed by continuous grazing through July 10. Management plans must include ways to maintain erosional stability and rangeland health [2 points for each 320 acres of active mountain plover habitat⁴]

CI or CI/CP Information:

- GPS locations of active mountain plover habitat
- Map location of prescribed fire

³ Graul (1973), Parrish et al (1993), Plumb et al (2005), Andres and Stone (2009), Knopf (personal communication, 2011)

⁴ Knopf and Rupert (1996)

- Identify site-specific design including fire control measures
- Specify management plan details (grazing prescription, wildlife objectives, rangeland health objectives, etc.); consult with NRCS, UW Extension as necessary
- Baseline photo points with GPS locations: 1 per 40 acres

Immediate Actions:

- Notify the Association 5 days before the prescribed fire so Association staff can be on site
- Photograph area within 5 days afterprescribed fire
- GPS prescribed fire boundary within 5 days of burn

One-time Compliance Monitoring:

- Report details of prescribed fire (acres burned, wind direction and speed, air temperature, photographs, GPS of boundary, etc.) to the Association within 30 days of prescribed fire

Performance Monitoring to Support Adaptive Management:

- Photograph prescribed fire annually within \pm 2 weeks of baseline photograph anniversary date; provide digital photograph(s) to the Association by December 31 of each year or as specified in the CI or CI/CP
- Report plan details (livestock numbers, in/out dates, Grazing Response Index, anticipated plan modifications, etc.) to the Association by December 31 of each year or as specified in the CI or CI/CP
- Association staff will visit the site at least once every 3 years to verify treatment response

A5 Burrowing Owl Conservation Measure F: Construct and install artificial nest burrows where natural burrows are scarce [1 point for installing and maintaining 5 artificial nest burrows, maximum of 4 points]

CI or CI/CP Information:

- GPS location of existing prairie dog colonies
- Identify habitat enhancement project locations
- Specify details of selected enhancement methods
- Baseline photo points with GPS locations: 1 per project area, minimum of 1 per 160 acres

Performance Monitoring to Support Adaptive Management:

- Report details of enhancement activities (treatment method, date of treatment, results, etc.) to the Association by December 31 of each year or as specified in the CI or CI/CP
- Photograph habitat enhancement areas annually within \pm 2 weeks of baseline photograph anniversary date; provide digital photograph(s) to the Association by December 31 of each year or as specified in the CI or CI/CP
- Association staff will visit the site at least once every 3 years to verify enhancement project status

A5 Ferruginous Hawk Conservation Measure G: Build or enhance flat-topped rock outcrops that are located more than 1.5 miles from human activity and on slopes ranging from 10 to 70 percent. [1 point for protecting 5 qualifying existing outcrops, maximum of 3 points; 1 point for constructing 1 suitable rock outcrop, maximum of 3 points; 1 additional point if outcrops are within 5 miles of an active prairie dog town]

CI or CI/CP Information:

- GPS location of existing prairie dog colonies and areas of human activity
- Identify habitat enhancement project locations
- Specify details of selected enhancement methods including slope of treatment area
- Baseline photo points with GPS locations: 1 per project area, minimum of 1 per 160 acres

Performance Monitoring to Support Adaptive Management:

- Report details of enhancement activities (treatment method, date of treatment, results, etc.) to the Association by December 31 of each year or as specified in the CI or CI/CP
- Photograph habitat enhancement areas annually within ± 2 weeks of baseline photograph anniversary date; provide digital photograph(s) to the Association by December 31 of each year or as specified in the CI or CI/CP
- Association staff will visit the site at least once every 3 years to verify enhancement project status

A5 Ferruginous Hawk Conservation Measure H: Protect small hills and ridges that are less than 30 feet higher than the immediately surrounding topography and more than 1.5 miles from human activity; enhance grassland habitats within 5 miles of these protected areas using focused grazing [1 point for protecting 5 qualifying landforms, maximum of 3 points; 1 point per 80 acres of grassland enhancements within 5 miles of a known active nest, maximum of 3 points; 1 additional point if outcrops are within 5 miles of an active prairie dog colony]

CI or CI/CP Information:

- GPS location of existing prairie dog colonies and areas of human activity
- Identify protection and habitat enhancement project locations
- Specify details of selected protection and enhancement methods including elevation of treatment area
- Baseline photo points with GPS locations: 1 per project area, minimum of 1 per 160 acres

Performance Monitoring to Support Adaptive Management:

- Report details of enhancement activities (treatment method, date of treatment, results, etc.) to the Association by December 31 of each year or as specified in the CI or CI/CP
- Photograph habitat enhancement areas annually within ± 2 weeks of baseline photograph anniversary date; provide digital photograph(s) to the Association by December 31 of each year or as specified in the CI or CI/CP
- Association staff will visit the site at least once every 3 years to verify enhancement project status

A5 Ferruginous Hawk Conservation Measure I: Protect active or potential ferruginous hawk nesting trees (lone or peripheral) within 5 miles of active prairie dog colonies. Livestock can weaken nest trees by excessive rubbing or trampling so trees must be protected by fencing or other provisions (installing rubbing posts can be effective in some situations) to prevent these impacts [1 point for protecting 5 active or potential nesting trees, maximum 3 points]

CI or CI/CP Information:

- GPS location of existing prairie dog colonies and trees
- Identify protection and habitat enhancement project locations
- Specify details of selected protection and enhancement methods
- Baseline photo points with GPS locations: 1 per project area, minimum of 1 per 160 acres

Performance Monitoring to Support Adaptive Management:

- Report details of protection activities to the Association by December 31 of each year or as specified in the CI or CI/CP
- Photograph habitat protection areas annually within ± 2 weeks of baseline photograph anniversary date; provide digital photograph(s) to the Association by December 31 of each year or as specified in the CI or CI/CP
- Association staff will visit the site at least once every 3 years to verify protection project status

A5 Shortgrass Species Benefits: Protecting existing habitat or restoring habitat functionality maintains and potentially increases nesting and brood rearing success and prairie dog colonization. This increases the likelihood that shortgrass species will use the habitat blocks and maintains or improves the potential for nesting and brood-rearing success and/or prairie dog colonization.

Inappropriate Livestock and Wildlife Grazing Management

A6 Shortgrass Species Threat: Grazing management which is inappropriate for shortgrass species allows vegetative structure to grow above 4" providing excessive screening cover. Grazing in this manner can degrade shortgrass species habitat by allowing establishment of taller vegetation, including bunchgrasses, resulting in increased prairie dog mortality from ground predators, reduced prey availability for burrowing owl and ferruginous hawk, and reduced nesting and brood-rearing success for mountain plover.

A6 Shortgrass Species Conservation Measure A: Develop and follow an Association approved grazing management plan throughout the CI or CI/CP term to establish or enhance shortgrass species habitat (4" or less plant height, at least 30 percent bare ground on one square yard areas surrounded by 82 foot circles of unobstructed view), on 1 to 5 percent of enrolled acres utilizing appropriate tools (i.e., seeding, grazing management, prescribed fire, etc.) while protecting rangeland health. All grazing management plans will include specific ways to maintain rangeland health in low structure areas during drought [3 points per 1 percent of enrolled acres, minimum 40 collective acres]

CI or CI/CP Information:

- Specify details of selected management plans (rest and recovery periods, rotation objectives, drought mitigation plan, etc.); consult with NRCS, UW Extension as necessary

Performance Monitoring to Support Adaptive Management:

- Report plan details (livestock numbers, in/out dates, supplemental forage, Grazing Response Index for each covered pasture, anticipated plan modifications, etc.) to the Association by December 31 of each year or as specified in the CI or CI/CP

- Association staff will visit the site at least once every 3 years to discuss management plan implementation, current year objectives, and anticipated plan modifications

A6 Ferruginous Hawk Conservation Measure B: Develop and follow an Association approved grazing management plan throughout the CI or CI/CP term that, outside of the March 15 to July 15 nesting time frame, selectively focuses grazing intensity within 5 miles of known active ferruginous hawk nests to reduce residual grass height to 6 inches or less [1 point per 80 acres, maximum of 6 points; 1 additional point if nests are within 5 miles of an active prairie dog town]

CI or CI/CP Information:

- Specify details of selected management plans (rest and recovery periods, rotation objectives, drought mitigation plan, etc.); consult with NRCS, UW Extension as necessary

Performance Monitoring to Support Adaptive Management:

- Report plan details (livestock numbers, in/out dates, supplemental forage, Grazing Response Index for each covered pasture, anticipated plan modifications, etc.) to the Association by December 31 of each year or as specified in the CI or CI/CP
- Conduct at least three step pace transects between July 15 to March 15 to verify residual vegetative height; report results to the Association by December 31 of each year or as specified in the CI or CI/CP
- Association staff will visit the site at least once every 3 years to discuss management plan implementation, current year objectives, and anticipated plan modifications

A6 Shortgrass Species Conservation Measure C: Utilize attractants (salt, mineral, supplements, fly rubs, etc.) to develop and/or maintain shortgrass species habitat [3 points for entire CI or CI/CP area]

CI or CI/CP Information:

- Map areas where suitable shortgrass species habitat can be developed
- GPS existing attractant locations
- Identify sites where attractants can be located
- Baseline photo points with GPS locations: 1 per attractant site

Performance Monitoring to Support Adaptive Management:

- Photograph attractant sites annually within ± 2 weeks of baseline photograph anniversary date; provide digital photograph(s) to the Association by December 31 of each year or as specified in the CI or CI/CP
- Association staff will visit the site at least once every 3 years to verify attractant location

A6 Shortgrass Species Benefits: Appropriate grazing management and siting of attractants will maintain functional shortgrass species habitat. Decreased vegetative height will provide less cover for ground predators, increase prey availability, and maintain or improve the potential for nesting and brood-rearing success.

Invasive Species

A7 Mountain Plover Threat: Invasive species can reduce or eliminate mountain plover habitat by rapidly increasing the screening cover above the 3" or less preferred by mountain plover. This can cause mountain plover to move into more marginal habitats resulting in reduced nesting and brood-rearing success. Cheatgrass is especially detrimental as it not only destroys habitat but also increases the risk of wildfires which can cause juvenile mortality.

A7 Mountain Plover Conservation Measure A1: Treat annual bromes (cheatgrass, etc.) with imazapic or other herbicide approved by the Association within a contiguous blocked area of mountain plover habitat of at least 320 acres or 10 percent of landholdings if area is less than 1,000 acres in order to maximize treatment effectiveness and reduce edge recruitment of annual bromes. Treatments will utilize localized methodology developed by the Association including post treatment grazing management. Report success-failure to the Association and repeat treatment as necessary [1 point for 320 acres]

CI or CI/CP Information:

- Map suitable mountain plover habitat areas
- Conduct baseline vegetation monitoring: cover by species, species height
- Report information along with GPS location of established 100' vegetation transects: 1 per 80 acres
- Identify treatment areas
- Indicate herbicide application parameters
- Baseline photo points with GPS locations: 2 per 160 acres

One time Compliance Monitoring:

- Report details of spraying (map of sprayed area, acres covered, spray equipment used, chemicals used, wind speed & direction, temperature, relative humidity, etc.) to the Association within 30 days of treatment

Performance Monitoring to Support Adaptive Management:

- Report vegetation cover by species, species height
- Photograph treatment areas within \pm 2 weeks of baseline photograph
- Association will visit site to verify treatment performance

A7 Mountain Plover Conservation Measure A2: In addition to treating annual bromes with herbicide as described in conservation measure A1 above, prepare and reseed the area with native seed mix comprised of shortgrass species present in the adjacent vegetative communities; seeding must occur within 1 year of herbicide spray. Report success-failure to the Association and redo failed seeding until successful as compared to adjacent areas [2 points for 320 acres]

CI or CI/CP Information:

- Map suitable shortgrass species habitat areas
- Conduct baseline vegetation monitoring: cover by species, species height
- Report information along with GPS location of established 100' vegetation transects: 1 per 80 acres

- Identify treatment areas noting spray / reseed areas
- Indicate herbicide application and proposed seeding parameters - herbicide name, PLS rate, seed mix composition, etc.
- Baseline photo points with GPS locations: 2 per 160 acres

One time Compliance Monitoring:

- Report details of spraying (map of sprayed area, acres covered, spray equipment used, chemicals used, wind speed & direction, temperature, relative humidity, etc.) to the Association within 30 days of treatment
- Report details of seeding (map of seeded area, acres covered, seedbed preparation methods used, seeding equipment used, dates of seeding, seed invoices, seed mix tag, etc.) to the Association within 30 days of treatment

Performance Monitoring to Support Adaptive Management:

- Monitor vegetation species height and cover by species annually between June 15 and August 15; report data and seeding success / failure to the Association by September 30 of each year or as specified in the CI or CI/CP
- Photograph treatment areas annually within ± 2 weeks of baseline photograph anniversary date; provide digital photograph(s) to the Association by December 31 of each year or as specified in the CI or CI/CP
- Association staff will visit the site at least once every 4 years⁵ to verify treatment area trend

A7 Mountain Plover Benefits: Reducing or removing the loss of available mountain plover habitat will maintain or improve the potential for nesting and brood-rearing success. Treatments that appropriately utilize herbicides (including rates and time of application) will reduce the risk of extensive wildfires and help reduce the potential spread and habitat impacts of invasive plants which frequently colonize burned areas. These measures will also help to maintain or improve the potential for nesting and brood-rearing success.

Power Lines

A8 Shortgrass Bird Species Threat: Birds can suffer injuries or mortalities from flying into power lines⁶, thus reducing the overall population.

A8 Shortgrass Bird Species Conservation Measure A - Operator: Site distribution and transmission lines at least 1/4 mile from suitable shortgrass species habitat and 5 miles from active ferruginous hawk nests [3 points for entire CI or CI/CP area]

⁵ This frequency is adapted from WDEQ-LQD Guideline 14 which specifies that at least two interim vegetation monitoring events occur within a 10-year period following the initial sampling to evaluate reclamation success trends.

⁶ Johnson et. al. (2002)

CI or CI/CP Information:

- Identify suitable shortgrass species habitat and GPS ferruginous hawk nest locations
- Document likelihood of new facilities and surface disturbance activities within 1/4 mile of suitable shortgrass species habitat and 5 miles of active ferruginous hawk nests

Performance Monitoring to Support Adaptive Management:

- Map and any changes in facilities or surface disturbance activities that occur within 1/4 mile of suitable shortgrass species habitat and 5 miles of active ferruginous hawk nests; report changes or submit a "no new facilities or surface disturbance activities " statement to the Association by December 31 of each year or as specified in the CI or CI/CP
- Association staff will visit the site at least once every 3 years to verify siting of facilities

A8 Shortgrass Bird Species Conservation Measure B - Landowner: Establish surface use agreement with the Association requiring placement of distribution and transmission lines at least 1/4 mile from suitable shortgrass species habitat and 5 miles from active ferruginous hawk nests [3 points for entire CI or CI/CP area]

CI or CI/CP Information:

- Document likelihood of new power line construction
- Specify surface use agreement details or reference signed agreement

One-time Compliance Monitoring:

- Sign surface use agreement with the Association

A8 Shortgrass Bird Species Conservation Measure C: Move, bury, or retrofit or mark per current Avian Power Line Interaction Committee (APLIC) recommendations, existing distribution and transmission lines which are within 1/4 mile of suitable shortgrass species habitat or within 5 miles of active ferruginous hawk nests [5 points for entire CI or CI/CP area]

CI or CI/CP Information:

- Identify suitable shortgrass species habitat and GPS ferruginous hawk nest locations
- Identify existing distribution or transmission lines to be modified
- Baseline photo points with GPS locations: 1 per power line segment

One-time Compliance Monitoring:

- Report footage of distribution or transmission line modified to the Association by December 31
- Photograph area of modified power line; provide digital photograph(s) to the Association by December 31
- Association staff will visit site to verify distribution and transmission line status

A8 Shortgrass Bird Species Benefits: Keeping facilities at least 1/4 mile from suitable shortgrass species habitat and 5 miles from active ferruginous hawk nests will reduce injuries and mortalities from direct collisions, reduce potential for abandonment or reduced habitat use, and maintain or increase use of suitable shortgrass species habitats; thus maintaining or increasing population levels.

Roads

A9 Shortgrass Species Threat: Roads, due to their long linear nature, are significant sources of habitat fragmentation and modification. Shortgrass species can abandon use of highly fragmented habitat, reducing nest establishment and success, brood-rearing success, and prairie dog colonization. Traffic occurring close to occupied prairie dog colonies can result in significant mortalities and stress from traffic. Traffic can also cause birds in the near vicinity of the road to abandon nests.

A9 Shortgrass Species Conservation Measure A: Close, prepare seedbed, and reseed roads with native shortgrass seed mix within 1 mile of suitable shortgrass species habitat. Report success-failure to the Association and redo failed seeding until successful as compared to adjacent areas [1 point per 1/4 mile including any necessary road relocation costs; 1 additional point if birdfoot sage is included in the mix]

CI or CI/CP Information:

- Identify and GPS active prairie dog colonies and suitable shortgrass species habitat
- Indicate proposed seeding parameters - PLS rate, seed mix composition, etc.
- Map roads scheduled to be closed and relocated roads, if any
- Baseline photo points with GPS locations: 1 per 1/4 mile

One-time Compliance Monitoring:

- Association staff will visit site to verify road status

Performance Monitoring to Support Adaptive Management:

- Monitor vegetation species height and cover by species annually between June 15 and August 15; report data and seeding success / failure to the Association by September 30 of each year or as specified in the CI or CI/CP
- Photograph closed road segment annually within ± 2 weeks of baseline photograph anniversary date; provide digital photograph(s) to the Association by December 31 of each year or as specified in the CI or CI/CP
- Association staff will visit the site at least once every 4 years⁷ to verify treatment area trend

A9 Shortgrass Species Conservation Measure B: Document existing improved and two-track roads and commit to no new roads to be developed within 1/4 mile of suitable shortgrass species habitat [5 points for entire CI or CI/CP area]

CI or CI/CP Information

- Identify and map suitable shortgrass species habitat
- Map existing roads
- Document likelihood that new roads will be built

Performance Monitoring to Support Adaptive Management:

- GPS and report placement of any new roads to the Association by December 31 of each year or as specified in the CI or CI/CP

⁷ This frequency is adapted from WDEQ-LQD Guideline 14 which specifies that at least two interim vegetation monitoring events occur within a 10-year period following the initial sampling to evaluate reclamation success trends.

- Report road closures or other road access management actions to the Association by December 31 of each year or as specified in the CI or CI/CP
- Association staff will visit the site at least once every 3 years to verify road status

A9 Shortgrass species Benefits: Reducing habitat modification and fragmentation from roads can maintain and potentially increase shortgrass species use capacity by favorably affecting prairie dog colonization, nest establishment and success, and brood rearing success. Other benefits include reduction of noise and human disturbance along the road within a critical distance of prairie dog colonies and/or nesting and brood-rearing habitat.

Subdividing Native Habitats

A10 Shortgrass Species Threat: Subdividing native shortgrass habitats for development of ranchettes, housing units, or other exurban uses is a significant source of fragmentation and habitat conversion. Nest establishment and success, brood-rearing success, and prairie dog colonization are reduced with fragmentation and shortgrass species can abandon use of highly fragmented habitat. Subdivisions also create a zone of negative influence as they attract foraging predators that have an ecological association with humans. These predators include coyotes, red foxes, raccoons, ravens, and domestic pets, among others.

A10 Shortgrass Species Conservation Measure: Commit to maintaining the land configuration to benefit shortgrass species (no additional fragmentation or alteration of land use, e.g., subdivisions) [4 points for a minimum of 320 contiguous acres of important habitat areas; maximum of 10 points for entire CI or CI CP area]

CI or CI/CP Information:

- Identify and map suitable shortgrass habitat
- Map existing land configuration specifying existing land use
- Document likelihood of changes in land configuration or use

Performance Monitoring to Support Adaptive Management:

- Map and report any changes in land configuration or use to the Association by December 31 of each year or as specified in the CI or CI/CP
- Association staff will visit the site at least once every 3 years to verify land use

A10 Shortgrass Species Benefits: Maintaining intact habitat blocks will reduce fragmentation and retain or potentially increase shortgrass habitat and forage. This will favorably impact nest establishment and success, brood-rearing success, and prairie dog colonization.

Habitat Curtailment

Crop Lands

A11 Shortgrass Species Threat: Areas currently used for crop production represent potential threats to expanding prairie dog colonies as prairie dogs may attempt to colonize active fields leading to increased

direct mortality from agricultural activities. This potentially reduces prairie dog colony expansion in other, more favorable directions. Reduction in prairie dog colony extent also reduces mountain plover and burrowing owl habitat and ferruginous hawk prey availability.

A11 Shortgrass Species Conservation Measure: Establish and maintain tall grass or crop stubble to serve as a barrier between active prairie dog colonies and crop lands [1 point per 1/2 mile length of barrier; maximum of 3 points]

CI or CI/CP Information:

- Map current prairie dog colony boundaries and nearby crop lands
- Identify planned barrier zones, grass species, and method to obtain desired grass or crop stubble height
- Baseline photo points with GPS locations: 1 per 40 acres

Performance Monitoring to Support Adaptive Management:

- GPS prairie dog colony boundaries annually between August 1 and October 1; report to the Association by December 31 of each year or as specified in the CI or CI/CP
- Photograph prairie dog colonies and tall grass or crop stubble barriers annually within ± 2 weeks of baseline photograph anniversary date; provide digital photograph(s) to the Association by December 31 of each year or as specified in the CI or CI/CP
- Association staff will visit the site at least once every 3 years to verify barriers

A11 Shortgrass Species Benefits: Developing tall grass or crop stubble barriers will help restrict potential movement of prairie dogs onto active crop lands and encourage expansion in other directions. This will reduce direct mortality and increase overall production success. Increases in active prairie dog colonies also benefit mountain plover and burrowing owl by providing suitable habitat and ferruginous hawk through increasing prey availability.

A12 Mountain Plover Threat: Areas currently used for crop production represent potential threats to nesting mountain plovers when field activities occur from April 10 to July 10. Activities that conflict with the plover nesting cycle can increase unsuccessful nesting attempts destroy nests, lead to chick mortalities, and/or reduce the availability of quality habitat. These factors reduce mountain plover nest establishment, nesting success, and/or brood-rearing success.

A12 Mountain Plover Conservation Measure: Commit to foregoing active agricultural field use between April 10 and July 10⁸ in areas adjacent to mountain plover habitat [2 points per 320 acres of agricultural fields within 1/4 mile of mountain plover habitat; maximum 4 points]

CI or CI/CP Information:

- Map current agricultural use areas
- Document agriculture use during previous 5 years

⁸ USFWS (2002)

Performance Monitoring to Support Adaptive Management:

- Report dates of agricultural activities to the Association by December 31 of each year or as specified in the CI or CI/CP
- Association staff will visit the site at least once every 3 years between April 10 and July 10 to verify status of agricultural activities

A12 Mountain Plover Benefits: Restricting agricultural activities from April 10 to July 10 will reduce direct mortality and benefit nesting success.

Human Disturbance

A13 Shortgrass Species Threat: Human activities and noise in close proximity to active shortgrass species habitat areas can cause a reduction in the availability of quality habitat. For example, human disturbance during the nesting season can cause mountain plovers to abandon nests, leading to increased nest predation or chick mortality. This potentially reduces the productive capacity of the affected shortgrass species populations.

A13 Ferruginous Hawk Conservation Measure A: Avoid new surface occupancy and surface disturbance activities within 1/2 mile of known active ferruginous hawk nests from March 15 to July 31 [2 points for entire CI/CP area; 1 additional point if nests are within 5 miles of an active prairie dog colony]

CI or CI/CP Information:

- Identify and GPS active ferruginous hawk nests and active prairie dog colonies
- Map existing facilities within 1/2 mile of active ferruginous hawk nests
- Document likelihood of new facilities and surface disturbance activities within 1/2 mile of active ferruginous hawk nests

Performance Monitoring to Support Adaptive Management:

- Map any changes in facilities or surface disturbance activities that occur within 1/2 mile of active ferruginous hawk nests; report any changes or submit a "no changes to facilities or surface disturbance activities" statement to the Association by December 31 of each year or as specified in the CI or CI/CP
- Association staff will visit the site at least once every 3 years between March 15 and July 31 to verify surface disturbance activities

A13 Shortgrass Species Conservation Measure B: Establish a 1 mile radius zone of avoided or limited human activity and noise levels at facilities and infrastructure sites in occupied shortgrass species habitat between March 15 and September 15⁹ [6 points for entire CI or CI/CP area]

CI or CI/CP Information:

- Identify and GPS occupied shortgrass species habitat
- Map existing facilities within 1 mile of occupied shortgrass species habitat

⁹ based on FWS Wyoming Ecological Services Field Office's recommended spatial and seasonal buffers for ferruginous hawk and burrowing owl

- Document likelihood of new facilities and surface disturbance activities within 1 mile of occupied shortgrass species habitat

Performance Monitoring to Support Adaptive Management:

- Map any changes in facilities or surface disturbance activities of occupied shortgrass species habitat; report any changes or submit a "no changes to facilities or surface disturbance activities" statement to the Association by December 31 of each year or as specified in the CI or CI/CP
- Association staff will visit the site at least once every 3 years between March 15 and September 15 to verify siting of facilities and surface disturbance activities

A13 Mountain Plover Conservation Measure C: Establish site-specific plans (e.g., grazing / calving pastures, mine-related activities, oil & gas activity) for restricting surface disturbance activities from April 10 to July 10 within 1/4 mile of all occupied mountain plover habitat [2 points for entire CI or CI/CP area]

CI or CI/CP Information:

- Identify and GPS occupied mountain plover habitat
- Map existing facilities within 1/4 mile of occupied mountain plover habitat
- Document likelihood of new facilities and surface disturbance activities within 1/4 mile of occupied mountain plover habitat

Performance Monitoring to Support Adaptive Management:

- Map any changes in facilities or surface disturbance activities that occur within 1/4 mile of occupied mountain plover habitat; report any changes or submit a "no changes to facilities or surface disturbance activities" statement to the Association by December 31 of each year or as specified in the CI or CI/CP
- Association staff will visit the site at least once every 3 years between March 1 and June 15 to verify surface disturbance activities

A13 Shortgrass Species Conservation Measure D: Schedule topsoil stripping activities during the non-breeding or nesting season (before March 15 or after September 15¹⁰) subject to modification for existing regulatory plans, or conduct surveys documenting lack of prairie dog occurrence and/or lack of nesting birds on and within 1 mile of topsoil stripping areas prior to commencing activities [4 points for 320 acres annually of delayed topsoil stripping]

CI or CI/CP Information:

- Identify and GPS occupied shortgrass species habitat (prairie dog colonies, known ferruginous nesting areas, etc.)
- Proposed topsoil stripping areas and timeline

¹⁰ based on FWS Wyoming Ecological Services Field Office's recommended spatial and seasonal buffers for breeding raptors

Performance Monitoring to Support Adaptive Management:

- Map any changes in topsoil stripping plans or timeline; report any changes or submit a "no changes to topsoil stripping plans or timeline" statement to the Association by December 31 of each year or as specified in the CI or CI/CP
- If applicable, provide results of surveys documenting lack of prairie dog occurrence and/or lack of nesting birds on and within 1/4 mile of topsoil stripping areas to the Association by December 31 of each year or as specified in the CI or CI/CP
- Association staff will visit the site at least once every 3 years to verify surface disturbance activities

A13 Shortgrass Species Benefits: Removing or limiting human disturbance and noise near shortgrass species habitat during the prairie dog early juvenile emergence and bird breeding and nesting seasons will potentially decrease direct mortality, reduce nest abandonment risks in the nearby vicinity, and increase the overall productive capacity of the shortgrass species.

Inappropriate / Poor Quality Reclamation

A14 Shortgrass Species Threat: Since shortgrass species utilize specific vegetation communities, seeding with non-native plant species can produce poor quality reclamation results, especially if highly aggressive non-native plant species are used. Highly aggressive non-native species can establish habitat that is unusable by shortgrass species for nesting, brood-rearing, and/or prairie dog colonization.

A14 Shortgrass Species Conservation Measure: Seed disturbed and reclaimed areas with native shortgrass seed mix, birdfoot sage, etc.; seeding must occur within 1 year of site reclamation. Report success-failure to the Association and redo failed seeding until successful as compared to adjacent areas [1 point per 40 acres; maximum of 8 points, higher points if birdfoot sage is included in the mix]

CI or CI/CP Information:

- Identify and GPS disturbed and reclaimed areas
- Indicate proposed seeding parameters (PLS rate, seed mix composition, etc.)
- Conduct baseline vegetation monitoring: cover by species, species height
- Report information along with GPS location of established 100' vegetation transects: 1 per 80 acres
- Baseline photo points with GPS locations: 1 per 40 acres

One-time Compliance Monitoring:

- Report details of seeding (map of seeded area, acres covered, seedbed preparation methods used, seeding equipment used, dates of seeding, seed invoices, seed mix tag, etc.) to the Association within 30 days of treatment

Performance Monitoring to Support Adaptive Management:

- Photograph seeded area annually within + 2 weeks of baseline photograph anniversary date; provide digital photograph(s) to the Association by December 31 of each year or as specified in the CI or CI/CP

- Association staff will visit the site at least once every 4 years¹¹ to verify treatment area trend

A14 Shortgrass Species Benefits: Increasing the area of appropriate native plant communities will increase potential shortgrass species habitat. The establishment of appropriate food sources, nesting conditions, and/or brood-rearing in reclaimed areas will reduce the potential for establishment of a reclamation vegetation community that is not usable by shortgrass species and will ultimately increase the total shortgrass species habitat available.

Roads

A15 Shortgrass Species Threat: Roads, due to their long linear nature, are significant sources of habitat fragmentation and modification. Shortgrass species can abandon use of highly fragmented habitat, reducing nest establishment and success, brood-rearing success, and prairie dog colonization. Traffic occurring close to occupied prairie dog colonies can result in significant mortalities and stress from traffic. Traffic can also cause birds in the near vicinity of the road to abandon nests. Unpaved roads can modify surrounding habitat by serving as predator corridors and can be a significant source of dust which reduces the viability and vigor of vegetation in shortgrass habitat. Over time, dust can reduce the amount of effective moisture available to plants and can adversely affect several life cycle phases of insects (e.g., ants, beetles, grasshoppers, etc.) that are important food sources for mountain plovers and burrowing owls.

A15 Shortgrass Species Conservation Measure A: Implement annual chemical dust control measures for high-use unpaved roadways within suitable shortgrass species habitat [1 point per 1/4 mile; maximum 3 points]

CI or CI/CP Information:

- Identify and map suitable shortgrass species habitat and existing roads
- Identify dust control areas and map location indicating daily usage
- Specify details of selected dust control measures
- Baseline photo points with GPS locations: 1 per 1/4 mile

Performance Monitoring to Support Adaptive Management:

- Report details of selected dust control measures (when applied, how much, invoices or other documentation of dust control, etc.) to the Association by December 31 of each year or as specified in the CI or CI/CP
- Photograph dust control area(s) annually within \pm 2 weeks of baseline photograph anniversary date; provide digital photograph(s) to the Association by December 31 of each year or as specified in the CI or CI/CP
- Association staff will visit the site at least once every 3 years to verify effectiveness of dust control measures

¹¹ This frequency is adapted from WDEQ-LQD Guideline 14 which specifies that at least two interim vegetation monitoring events occur within a 10-year period following the initial sampling to evaluate reclamation success trends.

A15 Shortgrass Species Conservation Measure B: Establish formal commitments (including signage or other active management methods) to close improved and two-track within 1/4 mile of active prairie dog colonies to all internal and external use (excluding monitoring and unforeseen circumstances) from April 10 to July 10 [4 points for entire CI or CI/CP area]

CI or CI/CP Information:

- Map prairie dog colonies and roads within 1/4 mile
- Signed surface use agreement with the Association specifying road closure details

Performance Monitoring to Support Adaptive Management:

- Report details of prevention efforts (effectiveness, response to restrictions, etc.) to the Association by December 31 of each year or as specified in the CI or CI/CP
- Association staff will visit the site at least once every 3 years to verify effectiveness of recreational vehicle use prevention efforts

A15 Shortgrass Species Conservation Measure C: Place speed restrictions on vehicle traffic on roads within 1/4 mile of active prairie dog colonies during the early juvenile emergence and bird breeding and nesting seasons (April 10 through July 10) to help minimize stress and direct mortality [2 points per collective road mile, maximum of 5 points for entire CI or CI/CP area]

CI or CI/CP Information:

- Map prairie dog colonies and existing roads
- Identify speed reduction areas
- GPS location of each sign

Performance Monitoring to Support Adaptive Management:

- Report speed restriction implementation details to the Association by December 31 of each year or as specified in the CI or CI/CP
- Photograph of each speed limit sign; provide digital photograph(s) to the Association by December 31 of each year or as specified in the CI or CI/CP
- Association staff will visit the site at least once every 3 years to verify sign placement and survey road surface for prairie dog fatalities

A15 Shortgrass species Benefits: Reducing habitat modification and fragmentation from roads can maintain and potentially increase shortgrass species use capacity by favorably affecting prairie dog colonization, nest establishment and success, and brood rearing success. Other benefits include reduction of noise and human disturbance along the road within a critical distance of prairie dog colonies and/or nesting and brood-rearing habitat. These measures will also reduce dust in the vicinity of nesting habitat, potentially increasing insect availability and habitat quality.

FACTOR B. Overutilization for Commercial, Recreational, Scientific, or Educational Purposes

B1 Shortgrass Species Threat: Uncontrolled recreational shooting of black-tailed prairie dogs could result in significant stress and mortalities leading to decreased mountain plover and burrowing owl habitat along with loss of prey availability for ferruginous hawks.

B1 Shortgrass Species Conservation Measure A: Manage any recreational shooting of black-tailed prairie dogs within the CI or CI/CP area to maintain burrow densities of 10 active burrows per acre which is approximately 3 prairie dogs per acre with a minimum of 2 active burrows for every 5 inactive burrows¹² using the following standards:

- Regulate shooting pressure to maintain the minimum active burrow densities
- Commit to elimination of recreational shooting whenever the active burrow densities fall below 10 per acre or the 2:5 ratio
- Limit recreational shooting to May 15 to September 15
- Limit shooting groups to no more than 6 participants on any one prairie dog town.

[2 points per 80 collective acres managed, maximum of 4 points]

CI or CI/CP Information:

- GPS location of active/inactive prairie dog burrows
- Report burrow density parameters
- GPS location of photo points: 1 per prairie dog town

Performance Monitoring to Support Adaptive Management:

- GPS location of active prairie dog burrows; report to the Association by December 31 of each year or as specified in the CI or CI/CP
- Report hunt dates and numbers of hunters in groups to the Association by December 31 of each year or as specified in the CI or CI/CP
- Photograph managed prairie dog towns annually within \pm 2 weeks of baseline photograph anniversary date; provide digital photograph(s) to the Association by December 31 of each year or as specified in the CI or CI/CP
- Association staff will visit the site at least once every 3 years to verify burrow density

B1 Shortgrass Species Conservation Measure B: Commit to no shooting of black-tailed prairie dogs within the CI or CI/CP area [4 points for entire CI or CI/CP area]

CI or CI/CP Information:

- Map current prairie dog colony boundaries
- Baseline photo points of managed prairie dog towns with GPS location: 1 per prairie dog town
- Document likelihood of prairie dog shooting
- Document shooting of prairie dogs during previous 5 years

¹² 4W Ranch FLP Candidate Conservation Agreement with Assurances (2009)

Performance Monitoring to Support Adaptive Management:

- Map prairie dog town boundaries; report to the Association by December 31 of each year or as specified in the CI or CI/CP
- Report any plague events to the Association by December 31 of each year or as specified in the CI or CI/CP
- Submit a "no shooting" statement to the Association by December 31 of each year or as specified in the CI or CI/CP
- Photograph managed prairie dog towns annually within ± 2 weeks of baseline photograph anniversary date; provide digital photograph(s) to the Association by December 31 of each year or as specified in the CI or CI/CP
- Association staff will visit the site at least once every 3 years to verify status of prairie dog towns

B1 Shortgrass Species Benefits: Elimination or control of shooting will reduce direct mortality and stress factors and help maintain or improve prairie dog populations. This will help increase mountain plover and burrowing owl habitat and will provide increased prey availability for ferruginous hawks.

FACTOR C: Disease and Predation.

Disease

C1 Shortgrass Species Threat: Although plague is likely the most important factor adversely influencing black-tailed prairie dog population dynamics, recent information indicates populations are responsive, re-populating plague-impacted colonies (Cully and Williams 2001). Generally, the threat of plague is not within the landowner's ability to control, although management for a discontinuous, moderately dense prairie dog population may help limit the spread of plague. Any efforts to control plague are beneficial, as uncontrolled black-tailed prairie dog mortalities can lead to decreased mountain plover and burrowing owl habitat along with loss of prey availability.

C1 Shortgrass Species Conservation Measure A: Commit not to poison remaining prairie dogs while the population is at a low level following a plague event. Poisoning following plague may effectively eliminate the entire prairie dog population, since plague can induce mortality in up to 99% of a complex. Exceptions will be prairie dog colonies with plague that are located less than 1.75 miles¹³ from the nearest healthy prairie dog colony [up to 9 points for entire CI or CI/CP area based on number of active prairie dog colonies]

CI or CI/CP Information:

- Map current prairie dog colony boundaries
- Baseline photo points of managed prairie dog towns with GPS location: 1 per prairie dog town
- Document likelihood of prairie dog poisoning

¹³ WYNDD

- Document use of poison on prairie dogs during previous 5 years

Performance Monitoring to Support Adaptive Management:

- Map prairie dog town boundaries; report to the Association by December 31 of each year or as specified in the CI or CI/CP
- Report any plague events to the Association by December 31 of each year or as specified in the CI or CI/CP
- Document any poisoning; report poisoning or submit a "no poisoning" statement to the Association by December 31 of each year or as specified in the CI or CI/CP
- Photograph managed prairie dog towns annually within ± 2 weeks of baseline photograph anniversary date; provide digital photograph(s) to the Association by December 31 of each year or as specified in the CI or CI/CP
- Association staff will visit the site at least once every 3 years to verify status of prairie dog towns

C1 Shortgrass Species Conservation Measure B: Through management and protection, encourage a mixture of large and small prairie dog colonies with some more than 1.75 miles from the next colony [up to 5 points for entire CI or CI/CP area based on number of active prairie dog towns]

CI or CI/CP Information:

- Map current prairie dog town boundaries
- Specify details of management and protection methods
- Baseline photo points of managed prairie dog towns with GPS location: 1 per prairie dog town
- Document use of poison on prairie dogs during previous 5 years

Performance Monitoring to Support Adaptive Management:

- Map prairie dog town boundaries; report to the Association by December 31 of each year or as specified in the CI or CI/CP
- Photograph managed and protected prairie dog towns annually within ± 2 weeks of baseline photograph anniversary date; provide digital photograph(s) to the Association by December 31 of each year or as specified in the CI or CI/CP
- Association staff will visit the site at least once every 3 years to verify status of prairie dog towns

C1 Shortgrass Species Benefits: Reduction of poisoning after plague events will reduce direct mortality and a mixture of prairie dog colonies sizes and placement will maintain or improve prairie dog habitat. Both measures will lead to improved prairie dog populations. This will help increase mountain plover and burrowing owl habitat and will provide increased prey availability for ferruginous hawks.

Predation

C2 Shortgrass Species Threat: Predation causes the most direct mortality of shortgrass species throughout all phases of their life cycle. This is especially true where habitat quality is marginal. Common predators include ravens, crows, magpies, loggerhead shrikes, badgers, weasels, skunks, and raccoons. Additionally, domestic and feral dogs and cats are significant predators to shortgrass species in all stages of their life cycle and in all seasons, particularly in the vicinity of residential areas.

C2 Shortgrass Species Conservation Measure A: Remove or routinely burn as permitted (outside of seasonal activity restriction periods) existing dumps, landfills, or garbage piles within 4.3 miles¹⁴ of prairie dog colonies or suitable shortgrass species habitat [2 points for entire CI or CI/CP area]

CI or CI/CP Information:

- GPS active prairie dog colonies, suitable shortgrass species habitat, and existing dumps, landfills, or garbage piles within 4.3 miles
- Identify individual trash sites which will be removed or routinely burned
- Photograph of each trash site

One-time Compliance Monitoring:

- Report number of trash sites removed to the Association by December 31
- Photograph removed trash site and provide digital photograph(s) to the Association by December 31
- Association will visit site to verify trash site status

Performance Monitoring to Support Adaptive Management:

- Report trash management details (dates of routine burn, etc.) to the Association by December 31 of each year or as specified in the CI or CI/CP
- Association staff will visit the site at least once every 3 years to verify trash disposal methods

C2 Shortgrass Species Conservation Measure B: Utilize waste disposal options which do not serve as attractants for predators (commercial trash pickup services, caged trash bins, etc.), particularly for those areas within 4.3 miles of active prairie dog colonies or suitable shortgrass species habitat [3 points for entire CI or CI/CP area]

CI or CI/CP Information:

- Document existing waste disposal methods
- Specify details of selected waste disposal option

Performance Monitoring to Support Adaptive Management:

- Report the waste disposal methods being utilized including any changes in waste disposal methods to the Association by December 31 of each year or as specified in the CI or CI/CP
- Association staff will visit the site at least once every 3 years to verify waste disposal method

C2 Shortgrass Species Conservation Measure C: Remove existing brush piles and downed trees within 3 miles of active prairie dog colonies or suitable shortgrass species habitat [2 points for entire CI or CI/CP area]

¹⁴ For those predator species with an ecological association with humans (including coyotes, red foxes, and raccoons for the region covered by this CCAA), Knick et al (in press) have identified a 4.3 mile distance of influence around residential areas due to the foraging distances of human-associated predators. For this CCAA it is assumed that this distance of influence should also apply to potential impacts from domestic and feral dogs and cats around residential areas.

CI or CI/CP Information:

- GPS active prairie dog colonies, suitable shortgrass species habitat, existing brush piles, and downed trees within 3 miles
- Identify individual brush piles or trees that will be removed
- Photograph of each brush or tree removal site

One-time Compliance Monitoring:

- Report number of brush piles or trees removed to the Association by December 31
- Photograph brush or tree removal site and provide digital photograph(s) to the Association by December 31

C2 Mountain Plover Conservation Measure D: Eliminate riparian brush and thickets that could be utilized for loggerhead shrike nesting sites within 1/4 mile of occupied mountain plover habitat [1 point for entire CI or CI/CP area]

CI or CI/CP Information:

- GPS occupied mountain plover habitat, existing riparian brush and thickets
- Identify individual riparian brush and thickets that will be removed
- Photograph of each brush or thicket removal site

One-time Compliance Monitoring:

- Report number of brush piles or trees removed to the Association by December 31
- Photograph brush or thicket removal site and provide digital photograph(s) to the Association by December 31

C2 Shortgrass Species Conservation Measure E: Provide surface or aerial access to APHIS Wildlife Services for control of red fox, skunk, and badger within 3 miles of active prairie dog colonies or suitable shortgrass species habitat [2 points for entire CI or CI/CP area]

CI or CI/CP Information:

- Identify proposed access areas and provide map

One-time Compliance Monitoring:

- Submit signed surface or aerial access agreement to the Association within 60 days of finalization

C2 Shortgrass Species Benefits: Reduction of predation will increase the shortgrass species production capacity for the region. This can be accomplished through direct control of predators or through minimizing their preferred habitat.

FACTOR D: Inadequacy of Existing Regulatory Mechanisms.

Local Land Use Laws, Processes, and Ordinances

On- and Off-Road Use of Suitable Habitat

D1 Shortgrass Species Threat: Both on- and off-road vehicle use of shortgrass species habitat can cause physical disruption of shortgrass species, and noise from recreational and other vehicles can cause behavioral disruptions as well. This can cause direct mortality, can negatively impact breeding and nesting activities, and force use of habitats more prone to predation of nests, broods, or adult birds.

D1 Shortgrass Species Conservation Measure: Establish surface use agreement with the Association (including signage or other active management methods) to prevent recreational vehicle use of lands from April 10 to July 10 for important shortgrass species habitat [3 points for entire CI or CI/CP area]

CI or CI/CP Information:

- GPS ferruginous hawk nest sites and map suitable shortgrass species habitat
- Specify details of recreational vehicle use prevention efforts or reference signed agreement

One-time Compliance Monitoring:

- Sign surface use agreement with the Association

Performance Monitoring to Support Adaptive Management:

- Report details of prevention efforts (effectiveness, response to restrictions, etc.) to the Association by December 31 of each year or as specified in the CI or CI/CP
- Association staff will visit the site at least once every 3 years to verify effectiveness of recreational vehicle use prevention efforts

D1 Shortgrass Species Benefits: Reduction of access and vehicular traffic will reduce related impacts to shortgrass species behavior and life cycle, and reduce the potential for species to be forced out of optimum habitat into marginal habitats. Ultimately, this will maintain or improve the potential for nesting and brood-rearing success and/or prairie dog colonization.

Split Estate

D2 Shortgrass Species Threat: Several agencies have defined effective regulatory mechanisms to address some or all of these shortgrass species as species of concern, including the Bureau of Land Management, US Forest Service, Office of Surface Mining, and Wyoming Department of Environmental Quality, among others. However, under split estate situations the effectiveness of mechanisms regulating sub-surface mineral activities can be reduced or negated, due to surface ownership and activities that are not subject to regulation. These situations can result in surface disturbance activities that can potentially decrease the availability of quality habitat resulting in reduced nesting and brood rearing success and/or prairie dog colonization.

D2 Shortgrass Species Conservation Measure: Establish a voluntary cooperative management plan between surface owner and mineral rights owner that addresses site specific fragmentation issues and maintains or enhances shortgrass species habitats; submit that plan to the Association for review and approval [up to 7 points depending on number of species and area covered; applicable to each party]

CI or CI/CP Information:

- Identify proposed cooperative management plan participants and provide map

One-time Compliance Monitoring:

- Develop and sign a voluntary cooperative management plan between surface and mineral rights owners 5 years of CI or CI/CP signing
- Immediately upon finalization, submit a signed copy of the voluntary cooperative management plan to the Association

Performance Monitoring to Support Adaptive Management:

- Report actions taken to ensure coordination between surface and mineral right owners and specific management actions taken to benefit shortgrass species to the Association by December 31 of each year or as specified in the CI or CI/CP
- Association staff will visit the site at least once every 3 years to verify coordination and management actions

D2 Shortgrass Species Benefits: Establishing a voluntary cooperative management plan to coordinate surface owner and mineral right owner responsibilities will reduce surface disturbance activities that can potentially decrease the availability of quality habitat. This will increase nesting and brood rearing success and/or improve prairie dog colonization.

FACTOR E: Other Natural or Manmade Factors Affecting the Species' Continued Existence.

Control of Prey / Food Sources

E1 Shortgrass Species Threat: Control of prairie dogs through use of rodenticides results in direct mortality, can result in localized food shortages for ferruginous hawks and can result in loss of suitable habitat for burrowing owl and mountain plover populations.

E1 Shortgrass Species Conservation Measure: Commit to not poisoning prairie dogs on the entire CI or CI/CP acreage. A buffer of up to 1/4 mile around sites of concern (human habitations, dam faces, etc.) can be excluded from poisoning but must be documented in the CI or CI/CP and specifically approved by the Board [up to 9 points depending on the extent of prairie dog colonies in the CI or CI/CP area]

CI or CI/CP Information:

- Document likelihood of prairie dog poisoning
- Document use of poison on prairie dogs during previous 5 years
- Identify any areas that are excluded from poisoning and document reason for exclusion

Performance Monitoring to Support Adaptive Management:

- Submit a "no poisoning" statement to the Association by December 31 of each year or as specified in the CI or CI/CP
- Association staff will visit the site at least once every 3 years to verify status of poisoning programs

E1 Shortgrass Species Benefits: Eliminating poisoning of prairie dogs will reduce prairie dog mortality, improve prey availability for ferruginous hawks, and increase suitable habitat for burrowing owl and mountain plover populations.

E2 Ferruginous Hawk and Burrowing Owl Threat: Control of prey species through use of rodenticides and/or recreational shooting can result in localized food shortages for ferruginous hawks and has been identified as the primary factor in the decline of burrowing owl populations. Use of anticoagulant rodenticides such as Rozol™ and Kaput™ for prairie dog control can cause mortality or otherwise adversely impact predators. Use of lead shot for control of prey species can also adversely impact predators. A recent study of lead shot retention in recreationally shot prairie dogs in the Thunder Basin found that 87 percent of prairie dogs shot with soft point (expanding) bullets contained detectable amounts of bullet fragments. Seventy-three percent of the lead fragments in the carcasses were small, each weighing less than 25 mg. This could increase the risk of lead assimilation in secondary consumers, such as ferruginous hawks.

E2 Ferruginous Hawk and Burrowing Owl Conservation Measure A: If it is necessary to control lagomorph or rodent populations, commit to control programs that only lower the peaks of cyclic highs and that are not actively employed during cyclic lows [2 points depending on the extent of prey habitats on the CI or CI/CP area]

CI or CI/CP Information:

- Document poison control program specifics
- Document likelihood of rodent or lagomorph poisoning
- Document use of poison on rodents or lagomorphs during previous 5 years

Performance Monitoring to Support Adaptive Management:

- Provide details of any poisoning; report poisoning or submit a "no poisoning" statement to the Association by December 31 of each year or as specified in the CI or CI/CP
- Association staff will visit the site at least once every 3 years to verify status of poisoning programs

E2 Ferruginous Hawk and Burrowing Owl Conservation Measure B: For any prairie dog control poisoning, commit to use only zinc phosphide and not to use anticoagulant rodenticides such as Rozol™ or Kaput™ [up to 3 points depending on the extent of prairie dog colonies in the CI or CI/CP area]

CI or CI/CP Information:

- Map current prairie dog colony boundaries
- Document poison control program specifics

- Document likelihood of prairie dog poisoning
- Document use of poison on prairie dogs during previous 5 years

Performance Monitoring to Support Adaptive Management:

- Map prairie dog town boundaries; report to the Association by December 31 of each year or as specified in the CI or CI/CP
- Provide details of any poisoning; report poisoning or submit a "no poisoning" statement to the Association by December 31 of each year or as specified in the CI or CI/CP
- Association staff will visit the site at least once every 3 years to verify status of poisoning programs

E2 Ferruginous Hawk Conservation Measure C: Use only non-toxic and nonexpanding bullets for any prairie dog hunting conducted on the enrolled acres [1 point for entire CI or CI/CP area]

CI or CI/CP Information:

- Document non-toxic and nonexpanding bullet program specifics
- Document likelihood of non-approved bullet use
- Document use of non-approved bullets during previous 5 years

Performance Monitoring to Support Adaptive Management:

- Provide details of non-toxic and nonexpanding bullet program; report non-approved bullet use or submit a "only approved bullets used" statement to the Association by December 31 of each year or as specified in the CI or CI/CP
- Association staff will visit the site at least once every 3 years to verify status of approved bullet use program

E2 Ferruginous Hawk and Burrowing Owl Benefits: Reducing prey control programs and reducing the chance of lead assimilation and secondary poisoning from these programs will improve both quantity and quality of available prey and lead to improved burrowing owl and ferruginous hawk life cycle performance.

Use of Insecticides

E3 Shortgrass Bird Threat: Insecticides, particularly carbofuran insecticides, can result in reduced food sources, direct mortality, and reduced mountain plover and burrowing owl population productivity. Grasshoppers are a favored food of both birds so grasshopper control programs can exacerbate these threats.

E3 Shortgrass Bird Conservation Measure A: Commit to restricting large-scale insecticide application to lands outside of a 1/4 mile radius around active prairie dog colonies [3 points for entire CI or CI/CP area]

CI or CI/CP Information:

- Map current prairie dog colony boundaries
- Document insecticide program specifics
- Document likelihood of new insecticide use

- Document use of insecticides on and within 1/4 mile of active prairie dogs during previous 5 years

Performance Monitoring to Support Adaptive Management:

- Map prairie dog town boundaries; report to the Association by December 31 of each year or as specified in the CI or CI/CP
- Provide details of any insecticide use; report use or submit a "no use of insecticide" statement to the Association by December 31 of each year or as specified in the CI or CI/CP
- Association staff will visit the site at least once every 3 years to verify status of insecticide programs

E3 Shortgrass Bird Conservation Measure B: Commit to not use carbofuran insecticides on the enrolled acres [4 points for entire CI or CI/CP area with confirmed presence of burrowing owls]

CI or CI/CP Information:

- Map current burrowing owl use areas
- Document likelihood of new carbofuran insecticide use
- Document use of carbofuran insecticides on enrolled acres during previous 5 years

Performance Monitoring to Support Adaptive Management:

- Map burrowing owl use areas; report to the Association by December 31 of each year or as specified in the CI or CI/CP
- Provide details of any carbofuran insecticide use; report use or submit a "no use of carbofuran insecticide" statement to the Association by December 31 of each year or as specified in the CI or CI/CP
- Association staff will visit the site at least once every 3 years to verify status of carbofuran insecticide programs

E3 Shortgrass Bird Conservation Measure C: Commit to utilizing the Reduced Area & Application Treatments (RAATs) approach and restricting grasshopper control to lands outside of a 1/4 mile radius around active prairie dog colonies [5 points for entire CI or CI/CP area]

CI or CI/CP Information:

- Map current occupied prairie dog colonies
- Document likelihood of new grasshopper control and insecticide spraying
- Document grasshopper control and insecticide spraying on enrolled acres during previous 5 years

Performance Monitoring to Support Adaptive Management:

- Map occupied prairie dog colonies; report to the Association by December 31 of each year or as specified in the CI or CI/CP
- Provide details of grasshopper control and insecticide spraying; report use or submit a "no grasshopper control and insecticide spraying" statement to the Association by December 31 of each year or as specified in the CI or CI/CP
- Association staff will visit the site at least once every 3 years to verify status of grasshopper control and insecticide spraying programs

E3 Shortgrass Bird Benefits: Reducing the chance of secondary poisoning from prey control programs will improve quality of available prey, improve life cycle performance, and increase overall production success.

Lack of Education

E4 Shortgrass Species Threat: Many details on life cycle habitat needs of shortgrass species, and the specific locations of suitable shortgrass species habitat in the region, are not general knowledge. Without that information, well-meaning members of the public can frequently have negative impacts on shortgrass species without knowing those impacts are occurring. Potential negative impacts can include habitat fragmentation, human disturbance, and practices that decrease prey availability, among others. These impacts can cause shortgrass species to move into more marginal habitats resulting in reduced nesting and brood-rearing success and/or prairie dog colonization; and abandon nests or be forced to utilize habitats more prone to predation of nests, broods, or adult birds.

E4 Shortgrass Species Conservation Measure A: Work cooperatively with community naturalists, conservation districts, and others to develop and fund two media spots describing items of interest including the Association's CCAA commitments and conservation program, outlining shortgrass species benefits and steps for ranchette management, habitat fragmentation avoidance, road closures, impact of insecticides and rodenticides on shortgrass bird species, etc.. [1 point, maximum 3 points from all E4 options]

CI or CI/CP Information:

- Provide details of public education material (media type, target audience, subject matter, distribution methods, etc.)

One-time Compliance Monitoring:

- Submit a copy of the educational material to the Association within 60 days of finalization

Reporting Requirements

- Report details of education material dissemination (distribution locations, media impressions, target audience response, etc.) to the Association by December 31 of each year or as specified in the CI or CI/CP

E4 Shortgrass Species Conservation Measure B: Work cooperatively with conservation districts to sponsor Small Acreage Workshops or "welcome packets" focusing on shortgrass species habitat including avoiding/addressing habitat fragmentation, need for weed control, and other positive steps for ranchette owners [1 point, maximum 3 points from all E4 options]

CI or CI/CP Information:

- Provide details of public education material (media type, target audience, subject matter, distribution methods, etc.)

One-time Compliance Monitoring:

- Submit a copy of the educational material to the Association within 60 days of finalization

Reporting Requirements

- Report details of education material dissemination (distribution locations, media impressions, target audience response, etc.) to the Association by December 31 of each year or as specified in the CI or CI/CP

E4 Shortgrass Species Conservation Measure C: Commit to develop and present shortgrass species related information in classrooms, meetings, etc. [1 point, maximum 3 points from all E4 options]

CI or CI/CP Information:

- Provide details of education material (media type, target audience, subject matter, distribution methods, etc.)

One-time Compliance Monitoring:

- Submit a copy of the educational material to the Association within 60 days of finalization

Reporting Requirements

- Report details of education material dissemination (distribution locations, media impressions, target audience response, etc.) to the Association by December 31 of each year or as specified in the CI or CI/CP

E4 Shortgrass Species Conservation Measure D: Develop/sponsor programs on shortgrass species habitat including impacts of fragmentation and benefits of weed control; provide to area school agriculture and education programs with sufficient quality to be adopted by three teachers [1 point, maximum 3 points from all E4 options]

CI or CI/CP Information:

- Provide details of education material (media type, target audience, subject matter, distribution methods, etc.)

One-time Compliance Monitoring:

- Submit a copy of the educational material to the Association within 60 days of finalization

Reporting Requirements

- Report details of education material dissemination (distribution locations, media impressions, target audience response, etc.) to the Association by December 31 of each year or as specified in the CI or CI/CP

E4 Shortgrass Species Conservation Measure E: Sponsor/host outreach activities (e.g., informational meetings, workshops, school tours, etc.) dealing with shortgrass species habitat for educators and their classes and the interested public [1 point, maximum 3 points from all E4 options]

CI or CI/CP Information:

- Provide details of outreach activities (outreach type, target audience, subject matter, distribution methods, etc.)

One-time Compliance Monitoring:

- Submit a copy of any outreach materials to the Association within 60 days of finalization

Reporting Requirements

- Report details of outreach activities (locations, media impressions, target audience response, etc.) to the Association by December 31 of each year or as specified in the CI or CI/CP

E4 Shortgrass Species Benefits: Actively participating in development of shortgrass species informational messages in a form crafted for the respective audiences and partnering with entities that have a broad audience will increase the general public knowledge about shortgrass species. The messages will incorporate vital information on shortgrass species life cycle and habitat needs and will allow listeners to make educated decisions about their actions in shortgrass habitat. This will help reduce negative impacts to breeding, production, and/or prairie dog colonization.