

Final

Appendix D

Shortgrass Prairie Conservation Measures

for

Black-tailed Prairie Dog (*Cynomys ludovicianus*)

Mountain Plover (*Charadrius montanus*)

Burrowing Owl (*Athene cunicularia*)

Ferruginous Hawk (*Buteo regalis*)

Developed in partnership by

U.S. Fish and Wildlife Service

Bureau of Land Management

U.S. Forest Service

Thunder Basin Grasslands Prairie Ecosystem Association

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The Association has developed a Strategy intended to purposefully place conservation effort within the Coverage Area where it is most likely to achieve durable conservation benefit. The Strategy includes Conservation Measures which are consistent with the US Fish & Wildlife approved *Greater Sage-grouse Umbrella CCAA for Wyoming Ranch Management* (Statewide CCAA), while also addressing the multiple threats, including energy development, identified in the final report of the Greater Sage-grouse Conservation Objectives Team (COT). The following Shortgrass Prairie Assemblage threats and associated Conservation Measures are listed below using the FWS's five threat factors to categorize the treats and their respective Conservation Measures:

Factor A: The present or threatened destruction, modification, or curtailment of habitat or range;

Factor B: Overutilization for commercial, recreational, scientific, or education purposes;

Factor C: Disease and predation;

Factor D: Inadequacy of existing regulatory mechanisms; and

Factor E: Other natural or manmade factors affecting the species' continued existence.

It is the intent of the Association to provide for heterogeneity on a landscape level while supporting local homogeneity in specific sites across the Coverage Area. The Conservation Measures indicated below deal with species that primarily favor the Shortgrass Prairie ecotype. See Appendix E for specific details on required point values, timing, and other information on implementation of Conservation Measures.

Conservation Measures Sorted by Threat Factor

The below table is provided as a table of contents for the Conservation Measures described in detail following the table.

The table is not intended to fully describe the requirements of each Conservation Measure.

Item	Conservation Measures Summary	Point Value	Page
A: The Present or Threatened Destruction, Modification, or Curtailment of Habitat or Range			
Habitat Fragmentation & Destruction			
Conversion of suitable habitat			
A1a	bring disturbed lands to desired condition, encourage shortgrass species	5	6
A1b	commit to no new conversion of short grass prairie to cropland	6	7
Energy development: Non-renewable			
A2a	limit surface disturbance to 5% of suitable habitat per 640 acres	9	7
A2b	decrease new well pad size by average 20% in shortgrass habitat	4	8
Facilities: Detrimental Siting Due to Lack of Information			
A3a	collect sighting & prairie dog colony extent information & provide to TBGPEA for dissemination	2	8
A3b	conduct studies and other research on shortgrass prairie species & provide to TBGPEA	4	9
Fragmentation: General			
A4a	develop 1,500 acres of active prairie dog colonies and allow for introduction of black-footed ferrets	10	10
A4b	obtain or donate conservation easements with minimum 10 year term	8	10
A4c	establish low structure buffer zones around prairie dogs colonies to encourage expansion	3	11
A5a	map and protect active prairie dog colonies	3	11
A5b	encourage rebuilding of burrows utilizing light, ground disturbing activities	3	12
A5c	facilitate new prairie dog colony establishment or expansion using artificial burrows	4	12
A5d	successfully relocate prairie dogs onto suitable lands	6	12
A5e	enhance or maintain active habitat areas using prescribed fire and grazing	2	13
A5f	construct and install artificial nest burrows	1	14
A5g1	protect, build, or enhance flat-topped rock outcrops for use as nest sites	1	14
A5g2	protect, build, or enhance flat-topped rock outcrops for use as nest sites	1	14
A5h1	protect small hills and ridges and use focused grazing to maintain low structure	1	14
A5h2	protect small hills and ridges and use focused grazing to maintain low structure within 5mi of nests	1	14
A5i	protect active or potential nesting trees within 5mi of active prairie dog colonies	1	15
Inappropriate livestock & wildlife grazing management			
A6a	establish low ($\leq 4"$) plant structure with a minimum of 30% bare ground on 1-5% of enrolled acres	3	16
A6b	develop and follow an approved grazing management plan that develops suitable habitat	1	16
A6c	utilize attractants to develop and/or maintain shortgrass species habitat	3	17
Invasive species			
A7a1	control cheatgrass within a 320 acre block or 10% of CI or CI/CP area if less than 1,000 acres	1	17
A7a2	control cheatgrass (A7a1) and reseed with native shortgrass species	2	18
Power Lines			
A8a	site power lines $\geq 1/4$ mi from suitable habitat and > 5 mi from active FEHA nests (operators)	3	19
A8b	sign agreement with operators that meets specifications of A8a (landowners)	3	19
A8c	move or bury existing power lines within 1/4mi of suitable habitat & 5mi of active FEHA nests	5	20
Roads			
A9a	close & reclaim existing roads within 1mi of suitable habitat	1	20
A9b	avoid building new roads within 1/4mi of suitable habitat	5	21
Subdividing Native Habitats			
A10	commit to preserving existing land configuration, no new subdivisions, etc.	6	21
Habitat Curtailment			
Crop lands			
A11	establish tall grass buffers between prairie dog colonies and active crop lands	1	22
A12	forego field activities from 4/10 - 7/10 in areas within 1/4mi of suitable habitat	2	23
Human Disturbance			
A13a	avoid new surface occupancy & disturbance within 1mi of active nests from 3/15 - 7/31	2	23
A13b	avoid or limit activity & disturbance within 1mi of occupied habitat from 3/15 - 9/15	6	24
A13c	avoid human disturbance within 1/4mi of occupied habitat from 4/10 - 7/10	2	24
A13d	commit to topsoil stripping from 9/15 - 3/15	4	25
Inappropriate / Poor Quality Reclamation			
A14	use shortgrass seed mixes for reclaiming disturbed areas	1	25
Roads			
A15a	implement annual dust control within suitable habitat	1	26
A15b	close roads within 1/4mi of active prairie dog colonies from 4/10 - 8/31	4	27
A15c	place speed restrictions on roads within 1/4mi of active prairie dog colonies from 4/10 - 8/31	2	27
B: Overutilization for Commercial, Recreational, Scientific, or Educational Purposes			
Recreational shooting			
B1a	manage recreational shooting of prairie dogs to maintain ≥ 10 active burrows per acre	2	28

Conservation Measures Sorted by Threat Factor

The below table is provided as a table of contents for the Conservation Measures described in detail following the table.

The table is not intended to fully describe the requirements of each Conservation Measure.

Item	Conservation Measures Summary	Point Value	Page
B1b	commit to no shooting of prairie dogs within CI or CI/CP area	10	29
C: Disease and Predation			
Disease			
Plague			
C1a	encourage a mixture of large and small prairie dog colonies	5	30
C1b	provide annual 1/2mi boundary control for prairie dog colonies	2	30
C1c	commit to not poison prairie dogs while the population is at a low level following a plague event	9	30
C1d	participate in efforts to control sylvatic plague	5	31
Predation			
C2a	remove or routinely burn existing dumps, landfills, or garbage piles within 4.3mi suitable habitat	2	32
C2b	utilize non-attractant waste disposal methods within 4.3mi of suitable habitat	3	32
C2c	remove brush piles and downed trees within 3mi of suitable habitat	2	33
C2d	remove riparian brush and thickets with documented shrike nests within 1/4mi of occupied habitat	1	33
C2e	allow APHIS access for removal of great horned owls within 5mi of ferret introduction areas	2	33
D: Inadequacy of Existing Regulatory Mechanisms			
Local Land Use Laws, Processes, and Ordinances			
On- and Off-road Use of Suitable Habitat			
D1	sign surface use agreement that prevents recreational use from 4/10 - 8/31	3	34
Split Estate			
D2a	sign a cooperative management plan between surface and mineral rights owner	7	35
D2b	sign a cooperative management plan between grazing permittee & federal land management agency	7	35
D2c	federal grazing permittee members agree not to protest black-footed ferret recovery plans	4	36
E: Other Natural or Manmade Factors Affecting the Species' Continued Existence			
Control of Prey / Food Sources - CMs for control associated with a management plan			
E1	commit to not poisoning prairie dogs except within 1/4 mile of human habitations/sites of concern	9	36
E2a	commit to rodent control programs that lower cyclic highs and aren't employed during lows	2	37
E2b	no use of anticoagulant rodenticides for prairie dog control - REQUIRED	8	37
E2c	use only non-toxic and nonexpanding bullets for prairie dog hunting	1	38
Use of Insecticides			
E3a	apply insecticide only to those lands outside of 1/4mi radius around active prairie dog colonies	3	38
E3b	commit to not using carbofuran insecticides	4	39
E3c	commit to RAATs and avoid grasshopper control within 1/4mi of all occupied prairie dog colonies	5	39
Lack of Education			
E4a	develop and fund two media spots describing conservation programs	1	40
E4b	work with Conservation Districts to sponsor two Small Acreage Workshops	1	40
E4c	develop and present shortgrass species related information in classrooms	1	41
E4d	develop material on impacts of fragmentation and benefits of weed control and provide to teachers	1	41
E4e	sponsor outreach activities for educators and their classes along with interested public	1	41

Conservation Measures dealing with sagebrush steppe species can be found in Appendix C. The Conservation Measures indicated below deal with species that primarily favor the shortgrass prairie ecotype.

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

Habitat Fragmentation and Destruction

Conversion of Suitable Habitat

A1 Shortgrass Prairie 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 Prairie 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 Prairie 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
- Commit to protect areas that are identified for protection
- 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 or CI/CP
- Photograph protected areas annually within \pm 2 weeks of baseline photograph anniversary date; provide digital photograph(s) to the Association within 2 weeks of taking 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 Prairie 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 if not for the agreement to implement the Conservation Measure
- Commit to not convert additional shortgrass prairie to cropland on enrolled land

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 Prairie 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 Prairie Threat: Disturbances can create shortgrass prairie 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 Prairie Conservation Measure A: Limit surface disturbance to 5 percent or less of Suitable Shortgrass Prairie 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 Prairie Habitat and existing surface disturbance areas
- Specify details of activities selected to limit surface disturbance
- Commit to limit all surface disturbance to 5 percent or less of Suitable Shortgrass Prairie Habitat per 640 acres

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 if not for the agreement to implement the Conservation Measure

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 within 2 weeks of taking 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 Prairie Conservation Measure B: Commit to multi-well pads or new well pad areas in shortgrass prairie habitat that average less than 80 percent of average pre-Agreement 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 if not for the agreement to implement the Conservation Measure
- Commit to construct any new well pads constructed in shortgrass prairie as a multi-well or average less than 80 percent of average pre-Agreement pad size.

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 Prairie 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 Prairie 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 Prairie 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 Prairie Conservation Measure A: Collect information necessary to maintain and update shortgrass prairie habitat maps and report to the Association at least annually. This information includes recording GPS locations of incidental sightings and mapping all prairie dog colonies within the CI or CI/CP area. The participating member will utilize shortgrass prairie mapping and prairie dog colony information for surface use purposes to avoid new habitat fragmentation and/or remove existing infrastructure that may cause habitat fragmentation [2 points for entire CI or CI/CP area, additional points are possible if identified habitat use areas are permanently protected from fragmentation through a conservation easement]

CI or CI/CP Information:

- Collect information necessary to maintain and update shortgrass prairie habitat maps and report to the Association at least annually.

- Commit to protect shortgrass prairie habitat areas from new fragmentation and/or remove existing infrastructure that may cause habitat fragmentation
- GPS location of known shortgrass species use areas (include any known ferruginous hawk nest sites, burrowing owl nesting areas, etc.)
- Map current prairie dog colony boundaries

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
- Map prairie dog colony boundaries; 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 Prairie Conservation Measure B: Collect information necessary to maintain and update shortgrass species life cycle information and habitat use maps. This includes such items as prairie dog active/inactive burrow surveys, mountain plover nest success surveys, ferruginous hawk and/or burrowing owl nest surveys, resource selection functions, environmental analysis, or other studies. Where applicable, the participating member will utilize this information to avoid new fragmentation of suitable habitat and/or remove existing infrastructure that may cause habitat fragmentation. 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 permanently protected from fragmentation through a conservation easement]

CI or CI/CP Information:

- Collect information necessary to maintain and update shortgrass species life cycle information and habitat use maps. This includes such items as prairie dog active/inactive burrow surveys, mountain plover nest success surveys, ferruginous hawk and/or burrowing owl nest surveys, resource selection functions, environmental analysis, or other studies.
- Commit to avoid new fragmentation and/or remove existing infrastructure that may cause habitat fragmentation where applicable
- GPS location of known shortgrass species use areas (include any known ferruginous hawk nest sites, burrowing owl nesting areas, etc.)
- Map current prairie dog colony boundaries
- 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 Prairie 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 Prairie Habitats. This will improve the potential for nesting and brood-rearing success and prairie dog colonization.

Fragmentation: General

A4 Shortgrass Prairie Threat: Disturbances can create shortgrass prairie 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 Prairie Conservation Measure A: Through management and protection, encourage or maintain a mixture of large and small prairie dog colonies with some more than 1.75 miles from the next colony resulting in 1,500 acres at a burrow density of 10 active burrows per acre with a minimum of 2 active burrows for every 5 inactive burrows and allow for introduction of black-footed ferrets under the experimental, non-essential population designation (ESA, Section 10(j), 16 U.S.C. 1531 et seq.). Partnering with other private landowners or Federal land management agencies is strongly encouraged. Item E2B (no use of anticoagulant rodenticides) must be chosen in conjunction with this Conservation Measure. Boundary control measures (see Item C1B) must be reviewed and approved by the Board [10 points for entire CI or CI/CP area, up to 26 points if boundary control measures are included, based on number of active prairie dog colonies]

CI or CI/CP Information:

- Commit to encourage or maintain a mixture of large and small prairie dog colonies.
- Map current prairie dog colony boundaries and property boundaries
- Specify details of management, protection methods at a larger landscape scale, and boundary control plan
- Baseline photo points of managed prairie dog colonies with GPS location: 1 per prairie dog colony
- Document use of poison on prairie dogs during previous 5 years

Performance Monitoring to Support Adaptive Management:

- Map prairie dog colony boundaries; report boundaries and management details to the Association by December 31 of each year or as specified in the CI or CI/CP
- Photograph managed and protected prairie dog colonies annually within ± 2 weeks of baseline photograph anniversary date; provide digital photograph(s) to the Association within 2 weeks of taking 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 colonies

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

CI or CI/CP Information:

- Identify proposed conservation easement participants and provide map
- Commit to obtain or donate conservation easements

One-time Compliance Monitoring:

- Obtain or donate conservation easement within 5 years of CI or CI/CP signing
- Immediately upon finalization, submit a signed copy of the conservation easement 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 Prairie Conservation Measure C: Establish buffer zones protecting prairie dogs and associated habitat, extending 75 feet from a prairie dog colony periphery, to allow active prairie dog colony 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
- Commit to establish buffer zones and protect prairie dogs and associated habitat within those zones.
- Baseline photo points with GPS locations: 1 per 40 acres

Performance Monitoring to Support Adaptive Management:

- Map 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 within 2 weeks of taking 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 Prairie Benefits: Preserving intact habitat blocks, encouraging appropriate prairie dog colonization, and reducing disturbance areas reduces habitat fragmentation and maintains or potentially increases nesting and brood rearing success, prairie dog colonization, and potential black-footed ferret habitat.

A5 Shortgrass Prairie 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 Prairie 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 active prairie dog colony boundaries
- Indicate estimated level of current use by prairie dogs
- Identify and commit to implement protection measures which may include restricting fragmentation, modifying grazing, and redistributing nearby attractants, etc.
- 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 within 2 weeks of taking 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 Prairie 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 (Talon Environmental 2007). 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
- Commit to implement 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 \pm 2 weeks of baseline photograph anniversary date; provide digital photograph(s) to the Association within 2 weeks of taking or as specified in the CI or CI/CP
- Association staff will visit the site at least once every year to verify enhancement project status

A5 Shortgrass Prairie Conservation Measure C: Develop shortgrass prairie habitat by establishing artificial burrows in suitable habitat 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
- Commit to establish and maintain artificial burrows
- 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 \pm 2 weeks of baseline photograph anniversary date; provide digital photograph(s) to the Association within 2 weeks of taking 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 Prairie 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 and identify property boundaries
- Demonstrate compliance with applicable Wyoming Game and Fish policies on translocation of prairie dogs
- Commit to successfully relocate prairie dogs and protect areas where relocation occurred
- 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 \pm 2 weeks of baseline photograph anniversary date; provide digital photograph(s) to the Association within 2 weeks of taking 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
- 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
- Commit to implement management activities
- 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 after prescribed 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:

³ Graul (1973), Parrish et al. (1998), Plumb et al. (2005), Andres and Stone (2009), Knopf (personal communication, 2011)

⁴ Knopf and Rupert (1996)

- Photograph prescribed fire annually within \pm 2 weeks of baseline photograph anniversary date; provide digital photograph(s) to the Association within 2 weeks of taking 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, install, and maintain artificial nest burrows in suitable habitat 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
- Commit to construct, install, and maintain artificial nest burrows
- 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 within 2 weeks of taking 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: Protect, 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 colony]

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
- Commit to protect, build, and enhance flat-topped rock outcrops identified

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 within 2 weeks of taking 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
- Commit to protect small hills and ridges identified and enhance grassland habitats within 5 miles of these protected areas using focused grazing
- 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 within 2 weeks of taking 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
- Commit to protect active or potential ferruginous hawk nesting trees within 5 miles of active prairie dog colonies
- 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 \pm 2 weeks of baseline photograph anniversary date; provide digital photograph(s) to the Association within 2 weeks of taking 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 Prairie 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 Prairie 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 prairie 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 Prairie Conservation Measure A: Develop and follow an Association approved grazing management plan throughout the CI or CI/CP term to establish or enhance shortgrass prairie 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
- Commit to implement grazing management according to grazing management plan

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 colony]

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
- Commit to implement grazing management according to grazing management plan

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

CI or CI/CP Information:

- Map areas where Suitable Shortgrass Prairie Habitat can be developed
- GPS existing attractant locations
- Identify sites where attractants can be located
- Commit to utilize attractants (salt, mineral, supplements, fly rubs, etc.) to develop and/or maintain shortgrass prairie habitat
- 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 within 2 weeks of taking 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 Prairie Benefits: Appropriate grazing management and placement of attractants will maintain functional shortgrass prairie 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) 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 cheatgrass. 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
- Commit to treat annual bromes with imazapic or other herbicide approved by the Association in identified 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 to the Association by December 31 of each year or as specified in the CI or CI/CP
- Photograph treatment areas within ± 2 weeks of baseline photograph
- Association will visit site to verify treatment performance

A7 Mountain Plover Conservation Measure A2: In addition to treating cheatgrass 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 Prairie 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, pure live seed rate, seed mix composition, etc.
- Commit to prepare and reseed the area with native seed mix and monitor to ensure success.
- 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 within 2 weeks of taking 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

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.

A7 Mountain Plover Benefits: Reducing or removing threats to 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 Prairie Habitat and 5 miles from active ferruginous hawk nests [3 points for entire CI or CI/CP area]

CI or CI/CP Information:

- Identify Suitable Shortgrass Prairie Habitat and GPS ferruginous hawk nest locations
- Document likelihood of new facilities and surface disturbance activities within 1/4 mile of Suitable Shortgrass Prairie Habitat and 5 miles of active ferruginous hawk nests if not for the agreement to implement the Conservation Measure
- Commit to site distribution and transmission lines at least ¼ mile from Suitable Shortgrass Prairie Habitat and 5 miles from 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 Prairie 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 Prairie 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 if not for the agreement to implement the Conservation Measure
- Specify surface use agreement details or reference signed agreement
- Commit to implement surface use agreements

One-time Compliance Monitoring:

- Sign surface use agreement with the Association

Performance Monitoring to Support Adaptive Management:

- Association staff will visit the site at least once every 3 years to verify siting of facilities

⁶ Johnson et al. (2002)

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 Prairie 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 Prairie 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 within 2 weeks of taking or as specified in the CI or CI/CP
- 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 Prairie 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 Prairie Habitats; thus maintaining or increasing population levels.

Roads

A9 Shortgrass Prairie 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 Prairie Conservation Measure A: Close, prepare seedbed, and reseed roads with native shortgrass seed mix within 1 mile of Suitable Shortgrass Prairie 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 Prairie Habitat
- Indicate proposed seeding parameters - pure live seed rate, seed mix composition, etc.
- Map roads scheduled to be closed, reseeded, and relocated roads, if any, and the any existing easements
- Commit to close, prepare seedbed, and reseed roads with native shortgrass seed mix within 1 mile of Suitable Shortgrass Prairie Habitat and monitor reseeded areas to ensure success.
- 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 within 2 weeks of taking 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 Prairie 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 Prairie Habitat [5 points for entire CI or CI/CP area]

CI or CI/CP Information

- Identify and map Suitable Shortgrass Prairie Habitat
- Map existing roads and existing easements
- Document likelihood that new roads will be built if not for the agreement to implement the Conservation Measure
- Commit to not building roads within ¼ mile of Suitable Shortgrass Prairie Habitat.

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
- 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 Prairie 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 Prairie 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 Prairie Conservation Measure: Commit to maintaining the land configuration to benefit shortgrass species (no additional fragmentation or alteration of land use, e.g., subdivisions) [6 points for a minimum of 320 contiguous acres of important habitat areas; maximum of 10 points for entire CI or CI/CP area]

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.

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 if not for the agreement to implement the Conservation Measure
- Commit to maintain the land configuration to benefit shortgrass species

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 Prairie 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 Prairie 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 Prairie Conservation Measure: Establish and maintain tall grass or crop stubble or other suitable materials 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
- Commit to establish and maintain tall grass or crop stubble or other suitable materials to serve as a barrier between active prairie dog colonies and crop lands.

Performance Monitoring to Support Adaptive Management:

- Map 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 \pm 2 weeks of baseline photograph anniversary date; provide digital photograph(s) to the Association within 2 weeks of taking 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 Prairie Benefits: Developing tall grass, crop stubble, or other suitable 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
- Commit to forego active agricultural field use between April 10 and July 10 in areas adjacent to mountain plover habitat

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 Prairie Threat: Human activities and noise in close proximity to active shortgrass prairie 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 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
- Commit to avoid new surface occupancy and surface disturbance activities within 1 mile of known active ferruginous hawk nests from March 15 to July 31
- Map existing facilities within 1 mile of active ferruginous hawk nests

⁸ US Fish & Wildlife Service (2002)

- Document likelihood of new facilities and surface disturbance activities within 1 mile of active ferruginous hawk nests if not for the agreement to implement the Conservation Measure

Performance Monitoring to Support Adaptive Management:

- Map any changes in facilities or surface disturbance activities that occur within 1 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 Prairie 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 prairie 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 prairie habitat such as nest sites, prairie dog colonies, etc.
- Map existing facilities within 1 mile of occupied shortgrass prairie habitat
- Document likelihood of new facilities and surface disturbance activities within 1 mile of occupied shortgrass prairie habitat if not for the agreement to implement the Conservation Measure
- Commit to establish a 1 mile radius zone of avoided or limited human activity and noise levels as identified.

Performance Monitoring to Support Adaptive Management:

- Map any changes in facilities or surface disturbance activities of occupied shortgrass prairie 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 if not for the agreement to implement the Conservation Measure
- Commit to restrict surface disturbance activities from April 10 to July 10 within ¼ mile of all 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

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

A13 Shortgrass Prairie Conservation Measure D: Schedule topsoil stripping activities outside of the 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 prairie habitat (prairie dog colonies, known ferruginous nesting areas, etc.)
- Proposed topsoil stripping areas and timeline
- Commit to schedule topsoil stripping activities outside of the nesting season

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 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 Prairie Benefits: Removing or limiting human disturbance and noise near shortgrass prairie 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 Prairie 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 Prairie 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 (pure live seed rate, seed mix composition, etc.)
- Commit to seed disturbed and reclaimed areas with native shortgrass seed mix within 1 year of site reclamation and ensure success of seeded areas
- Conduct baseline vegetation monitoring: cover by species, species height

¹⁰ Based on FWS Wyoming Ecological Services Field Office's recommended spatial and seasonal buffers for ferruginous hawk and burrowing owl

- 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 \pm 2 weeks of baseline photograph anniversary date; provide digital photograph(s) to the Association within 2 weeks of taking 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 Prairie Benefits: Increasing the area of appropriate native plant communities will increase potential shortgrass prairie habitat. The establishment of appropriate food sources, nesting conditions, and/or brood-rearing conditions 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 prairie habitat available.

Roads

A15 Shortgrass Prairie 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 Prairie Conservation Measure A: Implement annual chemical dust control measures for high-use unpaved roadways within Suitable Shortgrass Prairie Habitat [1 point per 1/4 mile; maximum 3 points]

CI or CI/CP Information:

- Identify and map Suitable Shortgrass Prairie Habitat and existing roads, including existing easements
- Identify dust control areas (taking existing easements into consideration) and map location indicating daily usage
- Specify details of selected dust control measures
- Commit to implement annual chemical dust control measures
- Baseline photo points with GPS locations: 1 per 1/4 mile

Performance Monitoring to Support Adaptive Management:

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.

- 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 within 2 weeks of taking 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

A15 Shortgrass Prairie 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 August 31¹² [4 points for entire CI or CI/CP area]

CI or CI/CP Information:

- Map prairie dog colony boundaries and roads within 1/4 mile, including existing easements
- Signed surface use agreement with the Association specifying road closure details
- Commit to enforce road closures where necessary

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 between April 10 and August 31 to verify effectiveness of recreational vehicle use prevention efforts

A15 Shortgrass Prairie 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 August 31) 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 colony boundaries and existing roads, including existing easements
- Identify speed reduction areas
- Commit to install signs indicating speed restrictions
- GPS location of each sign

Performance Monitoring to Support Adaptive Management:

- Report speed restriction implementation details and any observed covered species mortalities 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 within 2 weeks of taking 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 Prairie Benefits: Reducing habitat modification and fragmentation from roads can maintain and potentially increase shortgrass species use capacity by favorably affecting prairie dog colonization, nest

¹² Based on FWS guidelines for mountain plover and the WYNDD guidelines for burrowing owl

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 Prairie Threat: Uncontrolled recreational shooting (prior to any listing under the ESA) 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 Prairie 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 (approximately 3 prairie dogs per acre) with a minimum of 2 active burrows for every 5 inactive burrows¹³ 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 colony
- Use only non-toxic and full metal jacket bullets

[2 points per 80 collective acres managed, maximum of 6 points]

Note: This Conservation Measure is applicable prior to any listing under the ESA. If the black-tailed prairie dog is listed during the term of the CI or CI/CP, recreational shooting would likely not be legal and therefore additional Conservation Measures may need to be selected for implementation to replace this Conservation Measure.

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 colony
- Commit to limit recreational shooting as described prior to any listing under the ESA.

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 colonies annually within \pm 2 weeks of baseline photograph anniversary date; provide digital photograph(s) to the Association within 2 weeks of taking or as specified in the CI or CI/CP

¹³ 4W Ranch FLP Candidate Conservation Agreement with Assurances (2009)

- Association staff will visit the site at least once every 3 years to verify burrow density

B1 Shortgrass Prairie Conservation Measure B: Commit to no shooting of black-tailed prairie dogs within the CI or CI/CP area [up to 10 points for entire CI or CI/CP area based on number of acres of active prairie dog colonies (maximum points for $\geq 1,500$ acres), up to 26 points if boundary control measures (see Item C1B) are included]

Note: If the black-tailed prairie dog is listed under the ESA during the term of the CI or CI/CP, shooting would likely not be legal and therefore the points associated with this Conservation Measure may require review by the Association Board and Conservation Advisory Committee.

CI or CI/CP Information:

- Map current prairie dog colony boundaries
- Baseline photo points of managed prairie dog colonies with GPS location: 1 per prairie dog colony
- Document likelihood of prairie dog shooting if not for the agreement to implement the Conservation Measure
- Document shooting of prairie dogs during previous 5 years
- Commit to no shooting of black-tailed prairie dogs within CI area

Performance Monitoring to Support Adaptive Management:

- Map prairie dog colony 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 colonies annually within ± 2 weeks of baseline photograph anniversary date; provide digital photograph(s) to the Association within 2 weeks of taking 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 colonies

B1 Shortgrass Prairie 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 Prairie 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 colonies¹⁴. 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

¹⁴ Cully and Williams (2001)

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 Prairie Conservation Measure A: 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. Boundary control measures (Item C1B) must be chosen in conjunction this Conservation Measures and must be reviewed and approved by the Board [up to 5 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 and property boundaries
- Specify details of management, protection methods at a larger landscape scale, and boundary control plan
- Comment to implement management and protection actions
- Baseline photo points of managed prairie dog colonies with GPS location: 1 per prairie dog colony
- Document use of poison on prairie dogs during previous 5 years

Performance Monitoring to Support Adaptive Management:

- Map prairie dog colony 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 colonies annually within ± 2 weeks of baseline photograph anniversary date; provide digital photograph(s) to the Association within 2 weeks of taking 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 colonies

C1 Shortgrass Prairie Conservation Measure B: In coordination with the participating agencies, county Weed & Pest offices, or other non-governmental organizations, provide annual 1/2 mile boundary control for prairie dog colonies using non-anticoagulant rodenticides or other approved methods as appropriate [2 points for each 160 acres (1/2 mile at 1/2 mile buffer depth) of boundary control]. Depending on vegetation surrounding proposed area of implementation of this Conservation Measure, the Participating Member may also want to consider implementing Conservation Measures from A7 in conjunction with this Conservation Measure to reduce impacts of invasive plants in areas where prairie dogs are controlled.

CI or CI/CP Information:

- Map current prairie dog colonies requiring boundary control
- Specify details of boundary control methods
- Commit to implement boundary control methods as specified
- Baseline photo points of managed prairie dog colonies with GPS location: 1 per prairie dog colony

Performance Monitoring to Support Adaptive Management:

- Map prairie dog colony boundaries; report boundary and control details to the Association by December 31 of each year or as specified in the CI or CI/CP
- Photograph managed prairie dog colonies annually within ± 2 weeks of baseline photograph anniversary date; provide digital photograph(s) to the Association within 2 weeks of taking 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 colonies

Note: This Conservation Measure is applicable prior to any listing under the ESA. If the black-tailed prairie dog is listed during the term of the CI or CI/CP, this Conservation Measure would need to be evaluated using

Adaptive Management. Therefore additional Conservation Measures may need to be selected for implementation to replace this Conservation Measure.

C1 Shortgrass Prairie Conservation Measure C: 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 percent of a complex. Exceptions will be prairie dog colonies with plague that are located less than 1.75 miles¹⁵ 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 colonies with GPS location: 1 per prairie dog colony
- Document likelihood of prairie dog poisoning if not for the agreement to implement the Conservation Measure
- Document use of poison on prairie dogs during previous 5 years
- Commit not to poison remaining prairie dogs following a plague event

Performance Monitoring to Support Adaptive Management:

- Map prairie dog colony 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 colonies annually within \pm 2 weeks of baseline photograph anniversary date; provide digital photograph(s) to the Association within 2 weeks of taking 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 colonies

C1 Shortgrass Prairie Conservation Measure D: In coordination with the participating agencies, county Weed & Pest offices, or other non-governmental organizations, participate in efforts to control sylvatic plague (e.g., dusting of prairie dog colonies with Deltamethrin or other appropriate flea control powder, oral delivery of plague vaccine, etc.) [up to 5 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
- Specify details of management and protection methods
- Commit to implement efforts to control sylvatic plague as specified
- Baseline photo points of managed prairie dog colonies with GPS location: 1 per prairie dog colony

Performance Monitoring to Support Adaptive Management:

- Map prairie dog colony boundaries; report boundary and control details to the Association by December 31 of each year or as specified in the CI or CI/CP
- Photograph managed and protected prairie dog colonies annually within \pm 2 weeks of baseline photograph anniversary date; provide digital photograph(s) to the Association within 2 weeks of taking or as specified in the CI or CI/CP

¹⁵ WYNDD

- Association staff will visit the site at least once every 3 years to verify status of prairie dog colonies

C1 Shortgrass Prairie Benefits: Reduction of poisoning after plague events and plague control activities 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 Prairie Threat: Predation can cause 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 Prairie Conservation Measure A: Remove or routinely burn as permitted (outside of seasonal activity restriction periods) existing dumps, landfills, or garbage piles within 4.3 miles¹⁶ of prairie dog colonies or Suitable Shortgrass Prairie Habitat [2 points for entire CI or CI/CP area]

CI or CI/CP Information:

- GPS active prairie dog colonies, Suitable Shortgrass Prairie Habitat, and existing dumps, landfills, or garbage piles within 4.3 miles
- Identify individual trash sites for removal and commit to remove or routinely burn
- 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 within 2 weeks of taking or as specified in the CI or CI/CP
- 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 Prairie 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 Prairie 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

¹⁶ For those predator species with an ecological association with humans (including coyotes, red foxes, and raccoons for the region covered by this Strategy), Knick and Connelly (2011) have identified a 4.3 mile distance of influence around residential areas due to the foraging distances of human-associated predators. For this Strategy it is assumed that this distance of influence should also apply to potential impacts from domestic and feral dogs and cats around residential areas.

- Commit to utilizing waste disposal options as specified

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 Prairie Conservation Measure C: Remove existing brush piles and downed trees within 3 miles of active prairie dog colonies or Suitable Shortgrass Prairie Habitat [2 points for entire CI or CI/CP area]

CI or CI/CP Information:

- GPS active prairie dog colonies, Suitable Shortgrass Prairie Habitat, existing brush piles, and downed trees within 3 miles
- Identify individual brush piles or trees that will be removed
- Commit to remove identified brush piles and/or trees
- 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 within 2 weeks of taking or as specified in the CI or CI/CP

Performance Monitoring to Support Adaptive Management:

- Association staff will visit the site at least once every 3 years to verify status of brush piles and downed trees

C2 Mountain Plover Conservation Measure D: Eliminate riparian brush and thickets with documented 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 and loggerhead shrike nesting sites, existing riparian brush and thickets
- Identify individual riparian brush and thickets that will be removed
- Commit to eliminate identified riparian brush and thickets
- 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 within 2 weeks of taking or as specified in the CI or CI/CP

Performance Monitoring to Support Adaptive Management:

- Association staff will visit the site at least once every 3 years to verify status of brush piles and downed trees

C2 Shortgrass Prairie Conservation Measure E: Notify and provide surface or aerial access to APHIS Wildlife Services (allow APHIS to search and relocate great horned owls using aircraft) for relocation of great horned owls within 5 miles of active prairie dog colonies where black-footed ferrets are scheduled to be, or have been, introduced [2 points for entire CI or CI/CP area]

CI or CI/CP Information:

- Identify proposed access areas and provide map
- Commit to notify and provide surface or aerial access to APHIS Wildlife Services

One-time Compliance Monitoring:

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

C2 Shortgrass Prairie 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 Prairie Threat: Both on- and off-road vehicle use of shortgrass prairie 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 Prairie 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 August 31¹⁷ for important shortgrass prairie habitat [3 points for entire CI or CI/CP area]

CI or CI/CP Information:

- GPS ferruginous hawk nest sites and map Suitable Shortgrass Prairie Habitat
- Commit to signing surface use agreement with the Association
- Specify details of recreational vehicle use prevention efforts or reference signed surface use 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 Prairie 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.

¹⁷ Based on FWS guidelines for mountain plover and the WYNDD guidelines for burrowing owl

Federal Land Management and Split Estate Situations

D2 Shortgrass Prairie Threat: Several agencies have defined 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, Wyoming Game and Fish Department, and Wyoming Department of Environmental Quality, among others. In addition, these agencies desire to manage prairie dog populations to aid in the recovery and potential delisting of black-footed ferrets. However, grazing permittee concerns and split estate situations may reduce or negate the effectiveness of regulatory mechanisms, due to permittee resistance and surface ownership or activities that are not subject to regulation. These situations can result in 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 Prairie Conservation Measure A: Establish a voluntary cooperative management plan between surface owner and mineral rights owner that addresses site specific fragmentation issues and maintains or enhances shortgrass prairie 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 within 5 years of CI or CI/CP signing and commit to implement cooperative management plan
- 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 Prairie Conservation Measure B: Establish a voluntary cooperative management plan between grazing permittee and the appropriate land management agency that addresses site specific fragmentation issues and maintains or enhances shortgrass prairie habitats including prairie dog colonies; submit that plan to the Association for review [up to 7 points depending on number of species and area covered]

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 grazing permittee and the appropriate land management agency within 5 years of CI or CI/CP signing and commit to implement management plan
- 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 grazing permittee and the appropriate land management agency 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 Prairie Conservation Measure C: Members who hold a federal grazing permit in potential black-footed ferret recovery areas agree not to protest (and if possible, support) federal land management agency decisions or actions related to black-footed ferret recovery and, if possible, assist in implementation of recovery actions[up to 4 points depending on area covered]

CI or CI/CP Information:

- Identify area covered by federal grazing permit
- Identify black-footed ferret recovery area
- Agree to not protest federal land management decisions or actions related to black-footed ferret recovery areas
- If possible, assist in implementation of recovery actions

Performance Monitoring to Support Adaptive Management:

- Report actions taken to ensure coordination between grazing permittee and the appropriate land management agency and submit a "no protest of federal land management agency actions related to ferret recovery" 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 coordination and management actions

D2 Shortgrass Prairie Benefits: Establishing voluntary cooperative management plans to coordinate surface owner and mineral right owner or grazing permittee and land management agency responsibilities will reduce activities that can potentially decrease the availability of quality habitat. In the same manner, agreeing not to protest land management agency plans relating to black-footed ferret recovery will ensure that more time and resources are devoted to developing quality habitat. These actions will increase nesting and brood rearing success and/or improve prairie dog colonization and will aid in black-footed ferret recovery.

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

Control of Prey / Food Sources

E1 Shortgrass Prairie 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 Prairie Conservation Measure: Commit to not poisoning prairie dogs on the entire CI or CI/CP acreage. Prairie dogs within a buffer of up to 1 mile around human habitations and up to 1/2 mile around dam faces can be controlled using non-anticoagulant rodenticides or other methods which 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 if not for the agreement to implement the Conservation Measure
- Document use of poison on prairie dogs during previous 5 years
- Identify any areas where prairie dogs will be controlled and document reason for control
- Commit to not poisoning prairie dogs on entire CI or CI/CP acreage
- Specify control methods for any areas where prairie dogs will be controlled

Performance Monitoring to Support Adaptive Management:

- Submit a "no poisoning" statement or document approved control 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 to verify status of poisoning programs

E1 Shortgrass Prairie 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 Shortgrass Prairie 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 shortgrass prairie species. 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 using non-anticoagulant rodenticides 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 if not for the agreement to implement the Conservation Measure
- Document use of poison on rodents or lagomorphs during previous 5 years
- Commit to limiting rodent and lagomorph control programs

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 Shortgrass Prairie Conservation Measure B: Use only zinc phosphide (or similar rodenticides) for any prairie dog control poisoning. In order to avoid potential mortalities for all covered species, anticoagulant rodenticides such as Rozol™ or Kaput™ will not be used on the enrolled property [8 points for entire CI or CI/CP area]
(REQUIRED)

CI or CI/CP Information:

- Map likely prairie dog control areas
- Document non-anticoagulant poison control program specifics
- Document likelihood and timing of non-anticoagulant prairie dog poisoning if not for the agreement to implement the Conservation Measure
- Commit to restricting use of anticoagulant rodenticides and only use zinc phosphide or similar, identified rodenticides

Performance Monitoring to Support Adaptive Management:

- Map likely prairie dog control areas; 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 or full metal jacket 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 or full metal jacket bullet program specifics and commit to implement the program
- Document likelihood of non-approved bullet use if not for the agreement to implement the Conservation Measure
- Document use of non-approved bullets during previous 5 years

Performance Monitoring to Support Adaptive Management:

- Provide details of non-toxic or full metal jacket 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 Shortgrass Prairie 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 shortgrass prairies species life cycle performance.

Use of Insecticides

E3 Burrowing Owl and Mountain Plover 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 Burrowing Owl and Mountain Plover Conservation Measure A: Commit to restricting large-scale insecticide application to lands outside of a 1/4 mile radius¹⁸ 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
- Commit to restricting large-scale insecticide application to lands outside of a ¼ radius around active prairie dog colonies
- Document insecticide program specifics
- Document likelihood of new insecticide use if not for the agreement to implement the Conservation Measure
- 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 colony 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 Burrowing Owl and Mountain Plover 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 and/or mountain plovers]

CI or CI/CP Information:

- Map current burrowing owl and mountain plover use areas
- Commit to not use carbofuran insecticides on the enrolled acres
- Document likelihood of new carbofuran insecticide use if not for the agreement to implement the Conservation Measure
- Document use of carbofuran insecticides on enrolled acres during previous 5 years

Performance Monitoring to Support Adaptive Management:

- Map burrowing owl and mountain plover 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 Burrowing Owl and Mountain Plover 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

¹⁸ Based on FWS spatial and seasonal buffers for burrowing owl

- Document likelihood of new grasshopper control and insecticide spraying if not for the agreement to implement the Conservation Measure
- Document grasshopper control and insecticide spraying on enrolled acres during previous 5 years
- Commit to using the Reduced Area & Application Treatments and restricting grasshopper control as described

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 Burrowing Owl and Mountain Plover 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.

Outreach and Education Needs

E4 Shortgrass Prairie Threat: Many details on life cycle habitat needs of shortgrass species, and the specific locations of Suitable Shortgrass Prairie 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 Prairie 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 conservation commitments and programs, 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 for 2 spots, maximum 3 points (18 points for small acreage owners) from all E4 options]

CI or CI/CP Information:

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

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 Prairie Conservation Measure B: Work cooperatively with conservation districts to sponsor two Small Acreage Workshops or "welcome packets" focusing on shortgrass prairie habitat including avoiding/addressing habitat fragmentation, need for weed control, and other positive steps for ranchette owners [1 point for 2 workshops, maximum 3 points (18 points for small acreage owners) from all E4 options]

CI or CI/CP Information:

- Provide details of public education material (media type, target audience, subject matter, distribution methods, etc.)
- Commit to produce and distribute educational materials

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 Prairie Conservation Measure C: Commit to develop and present shortgrass species related information in classrooms, meetings, etc. [1 point per activity, maximum 3 points (18 points for small acreage owners) from all E4 options]

CI or CI/CP Information:

- Provide details of education material (media type, target audience, subject matter, distribution methods, etc.)
- Commit to produce and distribute educational materials

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 Prairie Conservation Measure D: Develop/sponsor programs on shortgrass prairie 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 per program, maximum 3 points (18 points for small acreage owners) from all E4 options]

CI or CI/CP Information:

- Provide details of education material (media type, target audience, subject matter, distribution methods, etc.)
- Commit to produce and distribute educational materials

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 Prairie Conservation Measure E: Sponsor/host outreach activities (e.g., informational meetings, workshops, school tours, etc.) dealing with shortgrass prairie habitat for educators and their classes and the interested public [1 point, maximum 3 points (18 points for small acreage owners) from all E4 options]

CI or CI/CP Information:

- Provide details of outreach activities (outreach type, target audience, subject matter, distribution methods, etc.)
- Commit to produce and distribute educational materials

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 Prairie 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.

Conservation Measures Sorted by Point Value

The below table is provided as a summary table of point values for the Conservation Measures described in detail preceding the table. The table is not intended to fully describe the requirements of each Conservation Measure.

Item	Conservation Measures Summary	Point Value	Page
A5f	construct and install artificial nest burrows	1	14
A5g1	<u>protect</u> , build, or enhance flat-topped rock outcrops for use as nest sites	1	14
A5g2	<u>protect</u> , <u>build</u> , or enhance flat-topped rock outcrops for use as nest sites	1	14
A5h1	<u>protect</u> small hills and ridges and use focused grazing to maintain low structure	1	14
A5h2	<u>protect</u> small hills and ridges and <u>use focused grazing</u> to maintain low structure within 5mi of nests	1	14
A5i	protect active or potential nesting trees within 5mi of active prairie dog colonies	1	15
A6b	develop and follow an approved grazing management plan that develops suitable habitat	1	16
A7a1	control cheatgrass within a 320 acre block or 10% of CI or CI/CP area if less than 1,000 acres	1	17
A9a	close & reclaim existing roads within 1mi of suitable habitat	1	20
A11	establish tall grass buffers between prairie dog colonies and active crop lands	1	22
A14	use shortgrass seed mixes for reclaiming disturbed areas	1	25
A15a	implement annual dust control within suitable habitat	1	26
C2d	remove riparian brush and thickets with documented shrike nests within 1/4mi of occupied habitat	1	33
E2c	use only non-toxic and nonexpanding bullets for prairie dog hunting	1	38
E4a	develop and fund two media spots describing conservation programs	1	40
E4b	work with Conservation Districts to sponsor two Small Acreage Workshops	1	40
E4c	develop and present shortgrass species related information in classrooms	1	41
E4d	develop material on impacts of fragmentation and benefits of weed control and provide to teachers	1	41
E4e	sponsor outreach activities for educators and their classes along with interested public	1	41
A3a	collect sighting & prairie dog colony extent information & provide to TBGPEA for dissemination	2	8
A5e	enhance or maintain active habitat areas using prescribed fire and grazing	2	13
A7a2	control cheatgrass (A7a1) and reseed with native shortgrass species	2	18
A12	forego field activities from 4/10 - 7/10 in areas within 1/4mi of suitable habitat	2	23
A13a	avoid new surface occupancy & disturbance within 1mi of active nests from 3/15 - 7/31	2	23
A13c	avoid human disturbance within 1/4mi of occupied habitat from 4/10 - 7/10	2	24
A15c	place speed restrictions on roads within 1/4mi of active prairie dog colonies from 4/10 - 8/31	2	27
B1a	manage recreational shooting of prairie dogs to maintain ≥ 10 active burrows per acre	2	28
C1b	provide annual 1/2mi boundary control for prairie dog colonies	2	30
C2a	remove or routinely burn existing dumps, landfills, or garbage piles within 4.3mi suitable habitat	2	32
C2c	remove brush piles and downed trees within 3mi of suitable habitat	2	33
C2e	allow APHIS access for removal of great horned owls within 5mi of ferret introduction areas	2	33
E2a	commit to rodent control programs that lower cyclic highs and aren't employed during lows	2	37
A4c	establish low structure buffer zones around prairie dogs colonies to encourage expansion	3	11
A5a	map and protect active prairie dog colonies	3	11
A5b	encourage rebuilding of burrows utilizing light, ground disturbing activities	3	12
A6a	establish low ($\leq 4"$) plant structure with a minimum of 30% bare ground on 1-5% of enrolled acres	3	16
A6c	utilize attractants to develop and/or maintain shortgrass species habitat	3	17
A8a	site power lines $\geq 1/4$ mi from suitable habitat and > 5 mi from active FEHA nests (operators)	3	19
A8b	sign agreement with operators that meets specifications of A8a (landowners)	3	19
C2b	utilize non-attractant waste disposal methods within 4.3mi of suitable habitat	3	32
D1	sign surface use agreement that prevents recreational use from 4/10 - 8/31	3	34
E3a	apply insecticide only to those lands outside of 1/4mi radius around active prairie dog colonies	3	38
A2b	decrease new well pad size by average 20% in shortgrass habitat	4	8
A3b	conduct studies and other research on shortgrass prairie species & provide to TBGPEA	4	9
A5c	facilitate new prairie dog colony establishment or expansion using artificial burrows	4	12
A13d	commit to topsoil stripping from 9/15 - 3/15	4	25
A15b	close roads within 1/4mi of active prairie dog colonies from 4/10 - 8/31	4	27
D2c	federal grazing permittee members agree not to protest black-footed ferret recovery plans	4	36
E3b	commit to not using carbofuran insecticides	4	39
A1a	bring disturbed lands to desired condition, encourage shortgrass species	5	6
A8c	move or bury existing power lines within 1/4mi of suitable habitat & 5mi of active FEHA nests	5	20
A9b	avoid building new roads within 1/4mi of suitable habitat	5	21
C1a	encourage a mixture of large and small prairie dog colonies	5	30
C1d	participate in efforts to control sylvatic plague	5	31
E3c	commit to RAATs and avoid grasshopper control within 1/4mi of all occupied prairie dog colonies	5	39
A1b	commit to no new conversion of short grass prairie to cropland	6	7
A5d	successfully relocate prairie dogs onto suitable lands	6	12
A10	commit to preserving existing land configuration, no new subdivisions, etc.	6	21
A13b	avoid or limit activity & disturbance within 1mi of occupied habitat from 3/15 - 9/15	6	24
D2a	sign a cooperative management plan between surface and mineral rights owner	7	35
D2b	sign a cooperative management plan between grazing permittee & federal land management agency	7	35

Conservation Measures Sorted by Point Value

The below table is provided as a summary table of point values for the Conservation Measures described in detail preceding the table. The table is not intended to fully describe the requirements of each Conservation Measure.

<u>Item</u>	<u>Conservation Measures Summary</u>	<u>Point Value</u>	<u>Page</u>
A4b	obtain or donate conservation easements with minimum 10 year term	8	10
E2b	no use of anticoagulant rodenticides for prairie dog control - REQUIRED	8	37
A2a	limit surface disturbance to 5% of suitable habitat per 640 acres	9	7
C1c	commit to not poison prairie dogs while the population is at a low level following a plague event	9	30
E1	commit to not poisoning prairie dogs except within 1/4 mile of human habitations/sites of concern	9	36
A4a	develop 1,500 acres of active prairie dog colonies and allow for introduction of black-footed ferrets	10	10
B1b	commit to no shooting of prairie dogs within CI or CI/CP area	10	29