

1 ***Greater Sage-Grouse Umbrella CCAA for***
2 ***Wyoming Ranch Management***
3

4 **A Candidate Conservation**
5 **Agreement with Assurances**
6 **for**
7 **Greater Sage-Grouse**
8 **(*Centrocercus urophasianus*)**
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13 Developed Cooperatively by the:

14
15 Wyoming Governor's Office
16 Wyoming Bureau of Land Management
17 Natural Resources Conservation Service
18 Wyoming Game and Fish Department
19 Wyoming Department of Agriculture
20 Wyoming Association of Conservation Districts
21 U.S. Forest Service

22
23 and the

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25 U.S. Fish and Wildlife Service
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28 Draft Document
29 December 19, 2012
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EXECUTIVE SUMMARY

Prior to settlement in the 19th century, greater sage-grouse (*Centrocercus urophasianus*; hereafter referred to as ‘sage-grouse’) inhabited 13 western States and three Canadian provinces, and their potential habitat covered over 1,200,483 square kilometers (km) (463,509 square miles (mi)). Sage-grouse have declined across their range due to a variety of causes and now occur in 11 States and two Canadian provinces. Many factors played a role in reducing sage-grouse from a once abundant, broadly distributed species, but the primary threat is loss of habitat due to increased surface disturbance and general fragmentation of the landscape. These concerns were identified in the 2005 Endangered Species Act (ESA) listing finding and remain so, but with more intensity and on a larger scale today. In the 2010 listing finding, additional concerns were identified as threats, including an increase in the use of sagebrush habitat for renewable energy such as wind power, and the spread of West Nile Virus (WNV).

In anticipation of a final listing decision by the U.S. Fish and Wildlife Service (FWS), the Wyoming Governor’s Office (WGO) requested assistance from the FWS in developing a sage-grouse strategy for ranch management activities that could offer private landowners assurances their livestock operations could continue in the event the species was listed under the ESA. The WGO and FWS in conjunction with the Bureau of Land Management (BLM), the Natural Resources Conservation Service (NRCS), the U.S Forest Service (USFS), the Wyoming Department of Agriculture (WDA), Wyoming Game and Fish Department (WGFD), and the Wyoming Association of Conservation Districts have developed this umbrella Candidate Conservation Agreement with Assurances (CCAA).

A CCAA is a voluntary agreement whereby private landowners agree to manage their lands to remove or reduce threats to species at risk of being listed under the ESA. In return for managing their lands to the benefit of species at risk, these landowners receive assurances against additional regulatory requirements should that species ever be listed under the ESA. Under a CCAA, the FWS will issue enrolled landowners Enhancement of Survival (EOS) permits pursuant to section 10(a)(1)(A) of the ESA for a period of 20 years. Since the agreement is voluntary, the landowner can end it at any point, although in doing so they would give up any assurances, and the EOS permit would terminate. FWS will issue EOS permits to participating landowners contingent on development of a site-specific individual sage-grouse conservation plan consistent with this umbrella CCAA. This umbrella CCAA includes:

- A general description of responsibilities of all involved participating agencies and landowners, and the area covered under the umbrella CCAA;
- Background, status and general threats to sage-grouse, and conservation measures needed to remove or reduce those identified threats;
- Expected benefits of prescribed actions in relation to the five threat factors the FWS is required to evaluate when considering a species for listing; and
- Level of take likely to occur from activities on enrolled lands, assurances, monitoring, and annual reporting.

TABLE OF CONTENTS

75		
76		
77	DEFINITIONS.....	4
78		
79	LIST OF ACRONYMS/FREQUENTLY USED TERMS.....	12
80		
81	1. INTRODUCTION	13
82	1.1 GREATER SAGE-GROUSE DECISION	13
83	1.2 COMPREHENSIVE CONSERVATION STRATEGY FOR GREATER SAGE-GROUSE.....	15
84	1.3 ADVANTAGES AND DISADVANTAGES OF IMPLEMENTING INDIVIDUAL CCAAs.....	14
85	1.4 CCAA APPLICATION PROCESS	16
86	1.5 BATCHING PERMIT APPLICATIONS.....	17
87	1.6 DEVELOPING INDIVIDUAL CCAAs.....	17
88		
89	2. ENROLLED LANDS	18
90		
91	3. AUTHORITY AND PURPOSE.....	19
92		
93	4. DESCRIPTION OF EXISTING CONDITIONS, STATUS, AND THREATS.....	20
94	4.1 DESCRIPTION OF EXISTING CONDITIONS WITHIN THE AGREEMENT AREA	20
95	4.2 STATUS.....	21
96	4.2.1 Present or Threatened Destruction, Modification, or Curtailment of Habitat or	
97	Range.....	22
98	4.2.2 Overutilization for Commercial, Recreational, Scientific, or Educational	
99	Purposes.....	24
100	4.2.3 Disease or Predation.....	24
101	4.2.4 Inadequacy of Existing Regulatory Mechanisms.....	25
102	4.2.5 Other Natural or Manmade Factors Affecting the Species Continued	
103	Existence.....	26
104	4.3 SPECIFIC FACTORS AFFECTING THE SPECIES.....	26
105		
106	5. CONSERVATION MEASURES	27
107	5.1 EXPECTATIONS OF ALL ENROLLED LANDOWNERS	27
108	5.2 SPECIFIC CONSERVATION MEASURES	28
109	5.3 UNITED STATES FISH AND WILDLIFE SERVICE	36
110	5.4 NATURAL RESOURCE CONSERVATION SERVICE AND CONSERVATION DISTRICTS.....	36
111	5.5 WYOMING DEPARTMENT OF AGRICULTURE	37
112	5.6 WYOMING GAME AND FISH DEPARTMENT.....	37
113	5.7 BUREAU OF LAND MANAGEMENT.....	38

114	5.8 UNITED STATES FOREST SERVICE.....	38
115	6. LEVEL/TYPE OF TAKE/IMPACTS.....	38
116		
117	7. EXPECTED BENEFITS	41
118		
119	8. ASSURANCES PROVIDED	44
120		
121	9. ASSURANCES PROVIDED TO ENROLLED LANDOWNER IN CASE OF CHANGED	
122	OR UNFORESEEN CIRCUMSTANCES	45
123		
124	10. MONITORING PROVISIONS	47
125		
126	11. COMPLIANCE MONITORING.....	48
127		
128	12. BIOLOGICAL MONITORING	48
129		
130	13. NOTIFICATION OF TAKE REQUIREMENT	51
131		
132	14. DURATION OF CCAA AND PERMIT	51
133		
134	15. MODIFICATION OF INDIVIDUAL CCAA	51
135		
136	16. MODIFICATION OF UMBRELLA CCAA.....	52
137		
138	17. AMENDMENT OF INDIVIDUAL 10(a)(1)(A) PERMITS	52
139		
140	18. TERMINATION OF THE CCAA.....	53
141		
142	19. PERMIT SUSPENSION OR REVOCATION	53
143		
144	20. REMEDIES.....	53
145		
146	21. DISPUTE RESOLUTION	53
147		
148	22. SUCCESSION AND TRANSFER	54
149		
150	23. AVAILABILITY OF FUNDS.....	55
151		
152	24. RELATIONSHIP TO OTHER AGREEMENTS	55
153		
154	25. NO THIRD-PARTY BENEFICIARIES.....	55
155		
156	26. REPORTS	55
157		
158	27. NOTICES.....	55

159		
160	REFERENCES CITED.....	58
161		
162	LIST OF FIGURES	
163		
164	Figure 1. Current Sage-grouse Habitat in Wyoming.....	19
165		
166	Figure 2. Wyoming Sage-grouse Current and Historical Distribution.....	21
167		
168	Figure 3. Sage-grouse Average Males/Lek in Wyoming 1960-2009.....	21
169		
170	LIST OF TABLES	
171		
172	Table 1. Prioritization of CCAA Applications.....	17
173		
174	Table 2. Conservation Measures.....	29
175		
176	Table 3. Suitable Nesting and Early Brood-rearing Habitat Characteristics.....	49
177		
178	Table 4. Suitable Late Brood-rearing Habitat Characteristics.....	49
179		
180	Table 5. Suitable Fall and Winter Habitat Characteristics.....	50
181		
182	APPENDICES	
183		
184	Appendix A. Basic Steps to Apply for an Individual CCAA.....	60
185		
186	Appendix B. Wyoming Sage-grouse Umbrella CCAA Information Screen.....	61
187		
188	Appendix C. Wyoming Sage-grouse Individual CCAA Application.....	62
189		
190	Appendix D. Sample Annual Individual CCAA Report.....	72
191		
192	Appendix E. Contact List.....	75
193		

DEFINITIONS

Animal Unit Month (AUM): The amount of forage required by a mature (1,000 pounds (436 kilograms)) cow for one month. Animal unit equivalents can be determined for steers, horses, sheep, and other animals.

Avoid: Used in the context of this document, avoid is to “minimize impacts from an action to the maximum extent possible.” It does not infer that a specific action will never occur.

Candidate Conservation Agreement (CCA): A voluntary conservation agreement between the FWS and one or more public or private parties. CCAs are primarily developed by Federal agencies to cover Federal lands and utilize conservation measures to benefit the designated wildlife species. No assurances are provided by the FWS that additional conservation measures will not be required or additional restrictions will not be imposed should the species become listed in the future.

Candidate Conservation Agreement with Assurances (CCAA): A voluntary conservation agreement between a non-Federal landowner and the FWS. The CCAA utilizes conservation measures to benefit the designated wildlife species and the landowner. Non-federal landowners will receive assurances from the FWS that additional conservation measures will not be required and additional restrictions will not be imposed should the species become listed in the future.

Candidate Species: Species for which the FWS has enough information to warrant proposing them for listing under the ESA, but is precluded from doing so by higher listing priorities. While listing actions of higher priority go forward, the FWS works with States, Tribes, private landowners, private partners, and other Federal agencies to carry out conservation actions for these species to prevent further decline and possibly eliminate the need for listing.

Complete Restoration: Restoration of the entire location, including any ancillary facilities or access roads. The site is reshaped as closely as possible to the original contour, covered with topsoil, and reseeded. Over a period of years the site will re-grow native vegetation, eventually making it difficult to find the location.

Conservation Measures (CMs): Specific management actions that directly benefit a species or its habitat.

Conservation Plan: A written record of overall management decisions and conservation practices landowners plan to use (Wyoming NRCS). A Grazing Management Plan (with more specific details on grazing practices that can enhance sage-grouse habitat) may be included as part of a Conservation Plan.

Cooperative Weed Management Areas (CWMA): A county or multi-county geographical area with partnerships between Federal, State, and local agencies; Tribes; individuals; and other interested groups to manage both regulated noxious weeds and invasive plants in that area.

239 **Coordinated Resource Management (CRM)**: A voluntary, private landowner initiated
240 planning process that establishes resource goals by consensus. It is formulated and designed as
241 an approach to improve cooperation and coordination among resource owners, users, and
242 managers in making decisions about how natural resources can best be used and managed.
243

244 **Crucial Habitats**: Places that (1) contain the resources (food, cover, shelter, and “[important](#)
245 [wildlife corridors](#)”) contributing to survival and reproduction of wildlife; (2) are necessary to
246 prevent unacceptable declines; or (3) facilitate future recovery of wildlife populations (see
247 Western Governors Association - Wildlife Corridors Initiative Science Committee Protocols for
248 Information Delivery to Support the Initiative November 12, 2007).
249

250 **Deferment**: A period of non-grazing during part of the growing season (also see [rest](#); Howery et
251 al. 2000). A Deferred-Rotation System alternates pastures that are grazed during critical periods
252 i.e., during the growing season (Howery et al. 2000).
253

254 **Disruptive Activities**: Those actions that alter behavior or cause the displacement of individuals
255 such that reproductive success is negatively affected, or an individual's physiological ability to
256 cope with environmental stress is compromised. This term does not apply to actions that
257 physically [disturb](#) the land surface, vegetation, or features. Examples of disruptive activities may
258 include noise, human foot or vehicle traffic, domestic livestock roundups, or other human
259 presence regardless of the activity. When administered as a land use restriction (e.g., *No*
260 *Disruptive Activities*), this term may prohibit or limit the physical presence of sound above
261 ambient levels, light beyond background levels, and/or the nearness of people and their activities.
262 The term is commonly used in conjunction with protecting wildlife during crucial life stages
263 (e.g., breeding, nesting, birthing, etc.), although it could apply to any resource value (see BLM
264 Information Bulletin No. WY-2007-029).
265

266 **Disturb**: To cause a change in the existing condition of an ecological system through a discrete
267 event, either natural or human-induced.
268

269 **Drought**: A prolonged chronic shortage of water or period with below normal precipitation.
270 During drought, the soil water content is reduced to the extent plants suffer from a lack of water.
271 Drought is frequently associated with excessively high temperatures and winds during spring,
272 summer, and fall (see NRCS Range and Pasture Handbook).
273

274 **Endangered Species Act (ESA)**: A law passed in 1973 designed to protect and recover
275 imperiled species and the ecosystems upon which they depend. Under the ESA, a species may
276 be listed as either endangered or threatened. “Endangered” means a species is in danger of
277 extinction throughout all or a significant portion of its range. “Threatened” means a species is
278 likely to become endangered within the foreseeable future.
279

280 **Enhancement of Survival (EOS) Permit**: Used in the context of this document, the permit
281 issued under a CCAA that authorizes [incidental and intentional take](#) associated with the land uses
282 and conservation measures covered by the CCAA. The permit becomes effective upon listing of
283 the covered species. The permitting authority is ESA section 10(a)(1)(A).

284
285 **Federal Action:** A Federal action occurs when a Federal agency authorizes, funds, or carries
286 out a program or project that may affect federally-listed species or their designated critical
287 habitat. Section 7 of the ESA directs all Federal agencies to participate in the conservation and
288 recovery of threatened and endangered species by consulting with FWS to insure any action that
289 occurs on Federal land, requires a Federal permit or license, or uses Federal funds is not likely to
290 jeopardize the continued existence of a listed species or result in the destruction or adverse
291 modification of its designated critical habitat. If a Federal agency determines adverse effects to a
292 federally-listed species are likely to occur from a proposed action, it should request formal
293 section 7 consultation with FWS. Examples of actions include, but are not limited to: (1) actions
294 intended to conserve listed species or their habitats; (2) the promulgation of regulations; (3) the
295 granting of licenses, contracts, leases, easements, rights-of-way, permits, or grants-in-aid; or (4)
296 actions directly or indirectly causing modifications to the land, water, or air. For example, if a
297 landowner receives Federal funds through the U.S. Farm Bill Conservation Reserve Program,
298 NRCS would consult with FWS on associated actions to ensure that any listed species were not
299 adversely affected (Note: This consultation would only cover activities associated with the
300 Federal action and would not address activities outside the scope of the specific action).

301
302 **Grazing Plan:** A strategy outlining livestock management. Plans may include details on:
303 livestock pasture usage (e.g., rotation of pastures) to improve range condition, promoting
304 uniform forage utilization, management for heterogeneity of plant communities, and achieving
305 broad distribution of animals across the property.

306
307 **Grazing Management Plan:** A program of action designed to secure the best practicable use of
308 the forage resources by manipulation of the grazing animal (see NRCS National Range and
309 Pasture Handbook). This Plan can be included as a component of a Conservation Plan and may
310 contain specific details on grazing management that will enhance sage-grouse habitat.

311
312 **Important Wildlife Corridors:** [Crucial habitats](#) providing connectivity over different time
313 scales (including seasonal or longer) among areas used by wildlife. Important wildlife corridors
314 can exist within unfragmented landscapes or join naturally or artificially fragmented habitats and
315 serve to maintain or increase essential genetic and demographic connection of populations (see
316 Western Governors Association - Wildlife Corridors Initiative Science Committee Protocols for
317 Information Delivery to Support the Initiative, November 12, 2007).

318
319 **Incidental Take:** The [take](#) of a species listed under the [ESA](#) that is incidental to, and not the
320 purpose of, carrying out an otherwise lawful activity. An EOS permit issued under a CCAA can
321 authorize incidental take from routine landowner activities covered by the CCAA or take
322 associated with conservation activities for the covered species.

323
324 **Interim Reclamation:** Restoration of vegetation and scenic and habitat resources while there
325 are ongoing activities (e.g., energy production) at the site. With interim reclamation, all areas
326 not needed for the activity are reclaimed (reshaped, covered with topsoil, and reseeded with
327 native plants).

328 **Listing:** Used in the context of this document, listing provides a determination of whether a
329 species is designated as threatened or endangered under the ESA and considers the designation
330 of critical habitat for those species. Under the ESA, the FWS may determine a species is
331 endangered or threatened based only on consideration of one or more of the following five
332 factors (consideration of economics, or other factors not listed here, is not permissible under the
333 ESA):

- 334 ▪ The present or threatened destruction, modification, or curtailment of its habitat or range;
- 335 ▪ Overutilization for commercial, recreational, scientific, or educational purposes;
- 336 ▪ Disease or predation;
- 337 ▪ The inadequacy of existing regulatory mechanisms; or
- 338 ▪ Other natural or man-made factors affecting its continued existence.

339 **Meadow:** An area of land vegetated primarily by grass and other non-woody plants (grassland).
340 It is often irrigated or located near a river or stream providing supplemental surface or subsurface
341 water. It may be cut for hay or grazed by livestock.

343 **Participating Party:** An enrolled landowner, FWS, or participating agency that contribute to
344 development of an individual CCAA.

346 **Potential Habitat:** Habitat containing the characteristics necessary to support sage-grouse.

348 **Precluded:** Used in the context of this document, precluded means deferred due to higher
349 priority actions.

351 **Rest:** Nonuse of a pasture for 12 consecutive months rather than [deferment](#) for only part of the
352 growing season (Howery et al. 2000).

354 **Take:** Take is defined in the ESA as to harass, harm, pursue, hunt, shoot, wound, kill, trap,
355 capture, or collect any threatened or endangered species.

357 **SAGE-GROUSE SPECIFIC DEFINITIONS**

359 **Annual status:** [Lek](#) status is assessed annually based on the following definitions:

- 361 ▪ **Active** – Any lek attended by male sage-grouse during the strutting season. Acceptable
362 documentation of sage-grouse presence includes observation of birds using the site or
363 signs of strutting activity.
- 364 ▪ **Inactive** – Any lek where sufficient data suggests no strutting activity throughout a
365 strutting season. Absence of strutting grouse during a single visit is insufficient
366 documentation to establish that a lek is inactive. This designation requires
367 documentation of either: (1) an absence of birds on the lek during at least 2 ground
368 surveys separated by at least seven days. These surveys must be conducted under ideal
369 conditions (April 1-May 7, no precipitation, light or no wind, half-hour before sunrise to
370

371 one hour after sunrise) or (2) a ground check of the exact known lek site late in the
372 strutting season (after April 15) that fails to find any sign (tracks, droppings, feathers) of
373 strutting activity. Data collected by aerial surveys may not be used to designate inactive
374 status.

- 375
- 376 ▪ **Unknown** – Leks for which status as [active](#) or [inactive](#) has not been documented during
377 the course of a strutting season. Except for those leks not scheduled for checks in a
378 particular year, use of this status should be rare.

379
380 **Density Disturbance Calculation Tool (DDCT):** A process developed by the state of
381 Wyoming to determine the maximum disturbance allowed in suitable sage-grouse habitat within
382 the area affected by a proposed project.

383
384 **Lek:** A traditional courtship display area attended by male sage-grouse in or adjacent to
385 sagebrush dominated habitat. A lek is designated based on observations of two or more male
386 sage-grouse engaged in courtship displays. Before adding the suspected lek to the database, it
387 must be confirmed by an additional observation made during the appropriate time of day, during
388 the strutting season. Signs of strutting activity (tracks, droppings, feathers) can also be used to
389 confirm a suspected lek. Sub-dominant males may display on itinerant (temporary) strutting
390 areas during population peaks. Such areas usually fail to become established leks. Therefore, a
391 site where less than five males are observed strutting is generally confirmed active for two years
392 before adding it to the lek database.

393
394 **Lek Complex:** A lek or a group of leks within 2.5 km (1.5 mi) of each other between which
395 male sage-grouse may interchange from one day to the next. Fidelity to leks has been well
396 documented. Visits to multiple leks are most common among yearlings and less frequent for
397 adult males, suggesting an age-related period of establishment (Connelly et al. 2004).

398
399 **Lek Count:** A census technique documenting the actual number of male sage-grouse observed
400 attending a lek complex. The following criteria are designed to assure counts are done
401 consistently and accurately, enabling valid comparisons among data sets. Additional technical
402 criteria are available from the WGFD.

- 403
- 404 ▪ Lek counts are conducted at 7-10 day intervals over a 3-4 week period after the peak of
405 mating activity. Although mating typically peaks in early April in Wyoming, the number
406 of males counted on a lek is usually greatest in late April or early May, when attendance
407 by yearling males increases.
- 408 ▪ Lek counts are only conducted from the ground. Aerial counts are not accurate and are
409 not comparable to ground counts.
- 410 ▪ Lek counts are conducted from half-hour before sunrise to one hour after sunrise.
- 411 ▪ Attendance is counted at each lek a minimum of three times annually during the breeding
412 season.
- 413 ▪ Lek counts are only conducted when wind speeds are less than 15 km per hour (10 mi per
414 hour) and no precipitation is falling.
- 415 ▪ All leks within a complex are counted on the same morning.

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Lek Count Route: A census of a group of leks relatively close to each other and representing a single breeding population or sub-population. Leks are counted on pre-determined routes to facilitate repeatability by other observers, increase the likelihood of recording satellite leks, and account for any shifts in breeding birds. Lek routes are established so that all leks along the route can be counted within 1.5 hours, following the criteria listed under [Lek Count](#).

Lek Perimeter: The outer perimeter of a lek and any associated satellites. Perimeters are mapped by experienced observers using established protocols for all leks, with larger leks receiving higher priority. Perimeters may vary over time as population levels, habitat, or weather conditions change. However, changes to mapped perimeters occur infrequently and only if grouse consistently use the area for at least 2 years, demonstrating that the existing perimeter is inaccurate. A point within the lek perimeter is recorded or calculated as the identifying location for the lek. The point may be the geographic center of the perimeter polygon as calculated through a GIS exercise or a GPS point reflecting the center of breeding activity as typically witnessed on the lek.

Lek Survey: Lek surveys are designed principally to determine whether leks are active or inactive, requiring as few as one visit to a lek. Obtaining accurate counts of the numbers of males attending is not essential. Lek surveys involve substantially less effort and time than lek counts. They can be done from the ground or from a fixed-wing aircraft or helicopter. Lek surveys are conducted from the initiation of strutting in early March until early-mid May, depending on the site and spring weather. Ideally, all sage-grouse leks are counted annually. However, some breeding habitat is inaccessible during spring because of mud and snow, or the location of a lek is so remote it cannot be routinely counted. In other situations, topography or vegetation may prevent an accurate count from any vantage point. In addition, time and budget constraints often limit the number of leks that can be visited. Where lek counts are not feasible for any of these reasons, surveys are the only reliable means to monitor population trends.

Management status: Based on its annual status, a lek is assigned to one of the following categories for management purposes:

- **Occupied lek** – A lek that has been active during at least one strutting season within the prior 10 years. Occupied leks are protected through prescribed management actions during [surface disturbing activities](#).
- **Unoccupied lek** – (Formerly known as “historical lek”) There are two types of unoccupied leks, “destroyed” and “abandoned.” Unoccupied leks are not protected during [surface disturbing activities](#).
- **Destroyed lek** – A formerly active lek site and surrounding sagebrush habitat that is no longer suitable for sage-grouse breeding. A lek site that has been strip-mined, paved, converted to cropland, or undergone other long-term habitat type conversion is considered destroyed. Destroyed leks are not monitored unless the site has been reclaimed to suitable sage-grouse habitat.
- **Abandoned lek** – A lek in otherwise suitable habitat that is not active. To be designated abandoned, a lek must be inactive (see above criteria) in at least four non-consecutive

461 strutting seasons spanning 10 consecutive years. The site of an abandoned lek should be
462 surveyed at least once every 10 years to determine whether it has been re-occupied by
463 sage-grouse.

464 ■ **Undetermined lek** – Any lek that has not been documented active in the last 10 years,
465 but has insufficient survey information to designate the lek as unoccupied. Undetermined
466 leks are protected through prescribed management actions during [surface disturbing](#)
467 [activities](#) until sufficient documentation is obtained to confirm the lek is unoccupied. Use
468 of this status should be rare.

469
470 **Predator:** An animal that preys upon sage-grouse. Predators may include coyotes, red foxes,
471 bobcats, badgers, many species of raptors, and domestic cats or dogs.

472
473 **Raptor:** A “bird of prey” such as an eagle, hawk, or owl.

474
475 **Satellite Lek:** A relatively small lek (usually less than 15 males) that develops within about 500
476 meters (1,640 feet) of a larger lek during years of relatively high grouse numbers. Locations of
477 satellite leks should be included within lek perimeter boundaries. Birds counted on satellite leks
478 should be added to those counted on the primary lek for reporting purposes.

479
480 **Suitable Habitat:** Sagebrush area known or suspected by agency biologists of providing habitat
481 for sage-grouse during important life periods (breeding, nesting, brood-rearing, and/or wintering)
482 as determined by existing or historical records and/or by habitat assessments conducted by
483 professional biologists.

484
485 **Surface Disturbing Activity:** An action altering the vegetation, surface/near surface soil
486 resources, or surface geologic features beyond natural site conditions and on a scale affecting
487 other land values. Examples of surface disturbing activities may include: operation of heavy
488 equipment to construct well pads, roads, pits, and reservoirs; installation of pipelines and power
489 lines; and several types of vegetation treatments (e.g., prescribed fire, etc.) (see BLM
490 Information Bulletin No. WY-2007-029). A surface disturbing activity may be authorized or
491 prohibited under this CCAA.

492
493 **Winter Concentration Area:** During winter, sage-grouse feed almost exclusively on sagebrush
494 leaves and buds. Suitable winter habitat requires sagebrush above snow. Sage-grouse tend to
495 select wintering sites where sagebrush is 25-36 centimeters (cm) (10-14 inches (in)) above the
496 snow. Sagebrush canopy cover utilized by sage-grouse above the snow may range from 10-30
497 percent. Foraging areas tend to be on flat to generally southwest facing slopes or on ridges
498 where sagebrush height may be less than 25 cm (10 in), but the snow is routinely blown clear by
499 wind. When these conditions are met, sage-grouse typically gain weight over winter. In most
500 cases, winter is not considered limiting to sage-grouse. Under severe winter conditions, grouse
501 will often be restricted to tall stands of sagebrush typically located on deeper soils in or near
502 drainage basins. Winter habitat may be limiting under these conditions. On a landscape scale,
503 winter habitats should allow sage-grouse access to sagebrush under all snow conditions.

504

505 Large numbers of sage-grouse have been documented to persistently use some specific areas
506 characterized by the habitat features described above. These areas should be delineated as
507 “winter concentration areas.” Winter concentration areas do not include all winter habitats used
508 by sage-grouse, nor are they limited to narrowly defined “severe winter relief” habitats.
509 Delineation of these concentration areas is based on determination of the presence of winter
510 habitat characteristics confirmed by repeated observations and signs of large numbers of sage-
511 grouse. The definition of “large” is dependent on whether the overall population is large or
512 small. In core population areas, frequent observations of groups of 50 or more sage-grouse meet
513 the definition; while in marginal populations, group size may be 25-50. Consultation and
514 coordination with the WGFD is required when delineating winter concentration areas.

LIST OF ACRONYMS

515		
516		
517	AUM	Animal Unit Month
518	BLM	Bureau of Land Management
519	CCA	Candidate Conservation Agreement
520	CCAA	Candidate Conservation Agreement with Assurances
521	CM	Conservation Measure
522	DDCT	Density Disturbance Calculation Tool
523	ESA	Endangered Species Act
524	EOS	Enhancement of Survival
525	FWS	U.S. Fish and Wildlife Service
526	NRCS	Natural Resources Conservation Service
527	PA	Participating Agency (BLM, NRCS, FWS, USFS, WACD, WDA,
528		WGFD, WGO)
529	SUA	Surface Use Agreement
530	USFS	U. S. Forest Service
531	WACD	Wyoming Association of Conservation Districts
532	WAFWA	Western Association of Fish and Wildlife Agencies
533	WDA	Wyoming Department of Agriculture
534	WGFD	Wyoming Game and Fish Department
535	WGO	Wyoming Governor's Office
536	WNv	West Nile virus

537 **1. INTRODUCTION**

538
539 ***1.1 GREATER SAGE-GROUSE DECISION***
540

541 The sage-grouse currently occurs across 11 states and two Canadian provinces. However, the
542 species' distribution and numbers have shown a decreasing trend. Between 1999 and 2003, the
543 FWS received eight petitions to list various populations of sage-grouse under the [ESA](#). On
544 January 12, 2005, the FWS published a finding that the sage-grouse did not warrant rangewide
545 protection under the ESA (70 FR 2244). This “not warranted” finding was challenged in court,
546 and in December 2007, a Federal Judge ordered the FWS to reconsider its decision. On March
547 23, 2010, the FWS published a rangewide “warranted but [precluded](#)” finding (75 FR 13909).
548 The 2010 finding's determination indicates that the sage-grouse needs ESA protection, but
549 higher priority species preclude proceeding with a listing rule at this time, thereby conferring
550 candidate status on the sage-grouse. The primary threats to the sage-grouse, as defined in the
551 2010 finding, are habitat loss, fragmentation, and degradation.

552
553 While some livestock management methods may be detrimental to sage-grouse habitat, it was
554 not a primary contributor to the 2010 “warranted” determination. The FWS determined the act
555 of grazing was not the actual threat, rather it was some aspects of livestock management and the
556 potential influence they may have on habitat loss, fragmentation, and degradation. Ranch and
557 livestock management can have positive or negative impacts on sage-grouse, depending on the
558 management techniques employed. Some benefits of livestock management may include:

- 559
560
 - 561 ■ Maintenance of large tracts of unfragmented and undeveloped land;
 - 562 ■ Increased rangeland plant diversity, including perennial grasses and forbs;
 - 563 ■ Weed and invasive species management; and
 - 564 ■ Productive springs and seeps (Beck and Mitchell 2000, Connelly et al. 2004, Crawford et
565 al. 2004, Cagney et al. 2010).

566 However, some livestock and ranch management activities can also have negative impacts to
567 sage-grouse by:

- 568
 - 569 ■ Compacting soils and increasing bare ground, thereby increasing the risk of establishing
570 invasive weeds;
 - 571 ■ Installation of water developments in certain locations, degrading nesting and brood-
572 rearing habitat or increasing the risk of WNV;
 - 573 ■ Sagebrush removal to increase forage for livestock, resulting in loss of sage-grouse
574 habitat;
 - 575 ■ Over-grazing, decreasing beneficial grasses and forbs in nesting and brood-rearing
576 habitat; and
 - 577 ■ Installation of fences in certain locations, causing direct mortality to sage-grouse and
578 increasing fragmentation of habitats (Beck and Mitchell 2000, Connelly et al. 2004,
579 Crawford et al. 2004, Cagney et al. 2010).

580
581 Landowners can address the compatibility of livestock and sage-grouse management concerns

582 through various practices which reduce habitat loss, fragmentation, and degradation. However,
583 in order to maximize the benefits of positive management, these techniques must be employed
584 on a large scale. A comprehensive strategy is needed to accomplish this goal.

585
586 Livestock production is a primary use of Wyoming's lands, and [listing](#) the sage-grouse could
587 have significant impact on this use. Therefore, the WGO has requested the FWS collaboratively
588 develop a comprehensive sage-grouse management strategy to provide assurances to private
589 ranch owners for activities on their private and State-leased lands.

590 591 ***1.2 COMPREHENSIVE CONSERVATION STRATEGY FOR GREATER SAGE-GROUSE***

592
593 Comprehensive, cooperative approaches to conservation are an important component of
594 addressing threats to sage-grouse. This umbrella CCAA outlines sage-grouse issues associated
595 with ranch management and specific CMs to address these concerns, while providing landowners
596 regulatory assurances. There are three goals this umbrella CCAA is designed to meet:

- 597
- 598 ▪ Streamline the process for landowner enrollment;
- 599 ▪ Promote CMs that reduce or remove threats to the sage-grouse through proactive ranch
600 management, providing comprehensive conservation; and
- 601 ▪ Provide landowners assurances that current ranch management practices covered by this
602 CCAA will continue in the event the sage-grouse is listed under the ESA.
- 603

604 This statewide strategy allows participants to identify issues and opportunities unique to their
605 operation that may be addressed by specific CMs. This umbrella CCAA provides a
606 comprehensive menu of specific CMs from which a landowner and the PAs can select those
607 measures most appropriate to his or her property for inclusion in an individual CCAA, with FWS
608 concurrence. Appropriate CMs may vary depending on many site-specific factors such as
609 available seasonal habitats, local climate, existing infrastructure, and water resources.
610 Participants are not required to enroll their entire property. Using a streamlined application
611 process, the landowner can develop and submit an individual CCAA to the FWS. The individual
612 CCAA is linked to the umbrella CCAA, in conjunction with the regulatory assurances provided
613 in a section 10(a)(1)(A) permit. By signing the individual CCAA and permit, the landowner
614 agrees to implement CMs associated with current or future activities on the enrolled land. These
615 CMs will reduce or remove threats to sage-grouse and restore, enhance, or preserve its habitat.
616 The landowner also agrees to allow access to monitor the effectiveness of the implemented CMs.
617 In return, the FWS agrees not to seek further commitments of resources or additional actions
618 from the landowner on non-Federal lands during the term of the permit, if the species is listed.
619 Under the terms of this CCAA, the enrolled landowner also receives coverage for specific
620 activities. This policy is consistent with the Candidate Conservation Agreement with Assurances
621 Final Policy (64 FR 32726; June 17, 1999) and the regulations implementing the policy (69 FR
622 24084; May 3, 2004).

623
624 The Federal agencies which are joining this umbrella CCAA as participating agencies (PA) are
625 agreeing to coordinate Federal actions under their administration on intermingled Federal land
626 and Federal programs on private land with the individual CCAAs approved for private

627 landowners. A landowner may graze livestock on land that is adjacent to or intermingled with
628 Federal land administered by the BLM or the USFS where Federal permits are required. Also, a
629 landowner may receive funding or other assistance from Federal agencies for parts of their
630 grazing operations. If a Federal agency proposes to fund, authorize, permit, or otherwise carry
631 out an action that may affect a listed species, the agency is required to coordinate with FWS to
632 ensure the proposed action will not jeopardize the continued existence of any listed species or
633 adversely modify any designated critical habitat. If the Federal agency determines, and FWS
634 agrees, that the project is not likely to adversely affect any listed species or its critical habitat, the
635 consultation is concluded. However, if adverse effects are likely to occur, the Federal agency
636 must formally consult with FWS, and the FWS prepares a biological opinion. If a determination
637 of jeopardy or adverse modification of critical habitat is made, the biological opinion must
638 identify any reasonable and prudent alternatives that could allow the project to move forward
639 without jeopardizing the species or adversely modifying designated critical habitat.

640

641 ***1.3 ADVANTAGES AND DISADVANTAGES OF IMPLEMENTING INDIVIDUAL CCAAs***

642

643 With significant participation, the umbrella CCAA will improve the status of sage-grouse in
644 Wyoming, reducing the likelihood the species may be listed under the ESA. However, in the
645 event this species is listed, a participating (enrolled) landowner's individual CCAA ensures that
646 ongoing private land operations and any additional covered activities described in this umbrella
647 CCAA may continue, provided the landowner is properly implementing the CCAA and no new
648 information becomes available indicating the species may be jeopardized (see section 8). In
649 addition, enrolled landowners receive [incidental take](#) coverage under section 10 of the ESA for
650 activities described in section 8 (covered activities). This coverage, authorized in advance of
651 possible listing, also serves to protect enrolled landowners from additional requirements for
652 covered activities, should the sage-grouse be listed.

653

654 Even if individual CCAAs are implemented, the FWS cannot guarantee listing will never be
655 necessary for all or part of the sage-grouse range. It is important to note that "preclude or
656 remove any need to list" is based upon the removal of threats and the stabilization or
657 improvement of the species' status. The decision to list under the ESA is a regulatory process
658 independent of a CCAA or CCA. The FWS will evaluate actions and successes of this CCAA in
659 accordance with the FWS Policy for Evaluation of Conservation Efforts during the listing
660 determination process, as required under section 4(b)(2)(A) of the ESA. The FWS will consider
661 the contribution to conservation made by these agreements in a "five-factor analysis" used to
662 make a listing determination. The five factors include:

- 663 ▪ The present or threatened destruction, modification, or curtailment of the species' habitat
664 or range;
- 665 ▪ Overutilization of the species for commercial, recreational, scientific, or educational
666 purposes;
- 667 ▪ Disease or predation;
- 668 ▪ The inadequacy of existing regulatory mechanisms; or
- 669 ▪ Other natural or man-made factors affecting the species' continued existence.

670 Some of the specific advantages of implementing an individual CCAA include:

- 671
- 672 ▪ Regulatory assurances are provided for enrolled non-Federal landowners (as long as the
- 673 CCAA is being properly implemented, FWS will impose no additional regulatory
- 674 requirements on participating landowners, even if the sage-grouse is listed);
- 675 ▪ Decreased time needed for project reviews of any related Federal programs and activities
- 676 (ESA section 7 consultation has already occurred through the agreement process, which
- 677 streamlines requirements with other Federal agencies such as the NRCS);
- 678 ▪ Landowners participate with the FWS in selecting CMs fitting their individual ranch
- 679 plans;
- 680 ▪ CCAA/Section 10 permits give incidental take coverage; and
- 681 ▪ Landowners continue to play an important role in conserving sage-grouse.

682

683 Some of the specific disadvantages of implementing an individual CCAA include:

684

- 685 ▪ Ranches may be subject to some public disclosure of ranch information through the
- 686 required public review of the CCAA; and
- 687 ▪ Development of a CCAA and any associated management plans and implementation of
- 688 appropriate CMs does not guarantee sage-grouse will not be listed.

689

690 It is important to understand that CCAAs are voluntary agreements. There are no ESA
691 regulations related to sage-grouse currently impacting a rancher's livestock operation. The sage-
692 grouse is currently managed by the WGFD and will continue to be, unless the species becomes
693 listed under the ESA. It is also important to note that if sage-grouse were listed; this does not
694 impart the right to the FWS to freely gain access to private lands without first asking permission.

695

696 Disadvantages of not implementing an individual CCAA include:

697

- 698 ▪ Landowners do not receive assurances or a section 10(a)(1)(A) permit, consequently
- 699 there would be no incidental take coverage for sage-grouse and no assurance that land use
- 700 restrictions would not be imposed if the species is listed;
- 701 ▪ Landowners have less opportunity to participate in a comprehensive strategy to conserve
- 702 sage-grouse and shape the conservation actions on their property; and
- 703 ▪ If there is a Federal action on the property and a species is listed, the FWS may
- 704 recommend appropriate CMs to minimize adverse impacts, with less opportunity for
- 705 early landowner input.

706

707 ***1.4 CCAA APPLICATION PROCESS***

708

709 The appendices in this document provide specific information and necessary application forms
710 for an individual CCAA and the section 10(a)(1)(A) permit. The following steps (described in
711 more detail in Appendix A) summarize the process:

712

- 713 1. Contact the FWS Field Office in Cheyenne. The FWS will provide landowners with a
- 714 pre-application screen (Appendix B) to complete. The pre-application screen includes

- 715 the information necessary to initiate project review (e.g., landowner name; contact
 716 information; legal description of property location; identification of structures, fences,
 717 and pastures; and description of land use and management).
- 718
- 719 2. The FWS will contact the appropriate PAs to assist with review of the individual CCAA
 720 pre-application screen.
- 721
- 722 3. The FWS and other PAs will gather maps of property boundaries (based on the legal
 723 description provided by the landowner), soil maps, ecological site information, existing
 724 shrub cover, known [leks](#), and topographical features. In consultation with the FWS and
 725 other PAs, landowners will determine if the property warrants further consideration for
 726 inclusion under this umbrella CCAA.
- 727
- 728 4. An EOS permit application must be completed and submitted by the landowner. The
 729 application form is available online at <http://www.fws.gov/forms/3-200-54.pdf>. The
 730 permit application must include the draft individual CCAA. Landowners will complete
 731 their individual CCAA in cooperation with PAs (e.g., identify current habitat conditions,
 732 threats for all lands and land use practices, CMs to be implemented and potential
 733 monitoring sites). (Appendix C). The application must include a \$50 application fee.
- 734

735 ***1.5 BATCHING PERMIT APPLICATIONS***

736

737 The FWS will “batch” individual CCAAs and permit applications from each landowner with
 738 other applications based on their time of submission. The FWS will announce a quarterly
 739 deadline, and will process all applications received during that timeframe together. If workload
 740 constraints prevent the FWS from processing all applications within the specified timeframe,
 741 they will evaluate applications based on a prioritization process, with highest value properties
 742 considered first (Table 1).

743

744 **Table 1.** Prioritization of CCAA applications.

745

Considerations	Value
Property within sage-grouse core area	50
Property adjacent to sage-grouse core area	25
Active Grazing Plan , with sage-grouse needs considered	10
No energy development on property	10
Surface-owner also owns mineral rights to property	50
Property to be enrolled is \geq 259 hectares (ha) (640 acres (ac))	25

746

747 ***1.6 DEVELOPING INDIVIDUAL CCAAs***

748

749 The following steps describe how to develop individual CCAAs:

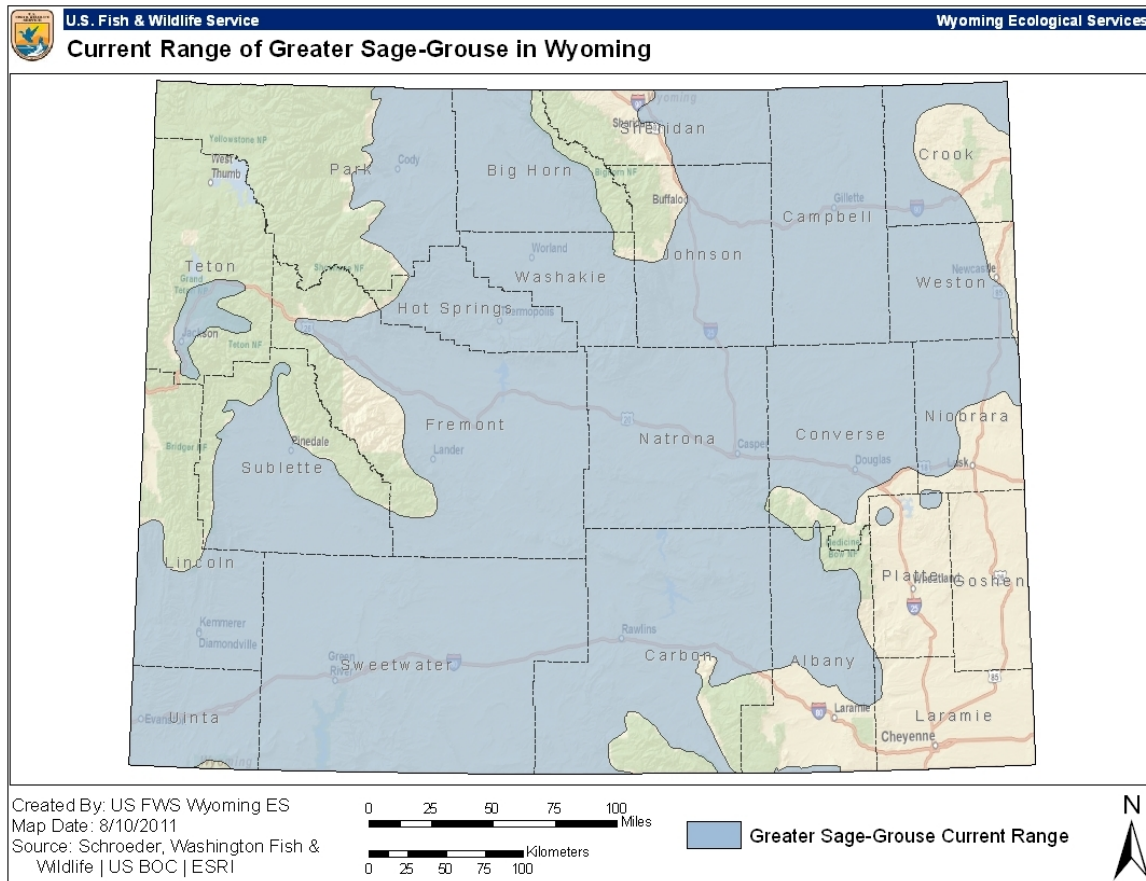
750

- 751 1. Landowner will complete Information Screen (Appendix B).
752
753 2. Landowners and PAs will select appropriate CMs from the list provided in the umbrella
754 CCAA for inclusion in each individual CCAA application (Appendix C). Individual
755 CCAA applications will be consistent with the threats and CMs identified in the umbrella
756 CCAA and will describe specific CMs that will be (or are currently) implemented on
757 enrolled lands. The selected CMs will conserve, restore, or enhance habitat for the sage-
758 grouse, as well as reduce unfavorable impacts to the species arising from the management
759 and use of these lands.
760
761 3. Before submitting the application for an individual CCAA to the FWS, the landowner
762 should conduct a risk analysis and cost/benefit evaluation of potential costs and ranch
763 commitments resulting from this CCAA process.
764
765 4. The landowner will finalize the individual CCAA and EOS permit application, and
766 submit them to the FWS for review.
767
768 5. The FWS will review individual CCAA and EOS permit applications. Under the
769 umbrella CCAA and relevant regulations and policy, if CCAA and permit issuance
770 criteria are met, the Regional Office (Region 6) will approve the individual CCAAs and
771 issue individual ESA section 10(a)(1)(A) EOS permits to enrolled landowners within the
772 State of Wyoming. The EOS permit will become effective if the species is listed, which
773 is when ESA take prohibitions for the species become effective.
774
775 6. Following FWS approval of an individual CCAA, if the landowner does not have an
776 adequate conservation management plan already in place, the landowner will be expected
777 to develop a site-specific conservation plan with assistance from PAs or other qualified
778 service providers (e.g., consultant). The landowner will have 12 months from the signing
779 of the individual CCAA to complete a sage-grouse conservation plan. If an adequate
780 conservation plan is not completed within 12 months, the FWS and PAs will work with
781 the landowner to complete a plan. However, if an adequate plan has not been completed
782 within 18 months of signature of the CCAA, FWS reserves the right to suspend or revoke
783 the CCAA and EOS permit.
784
785 7. PAs will establish field monitoring sites and record initial values. The landowners (or
786 their designee) will implement a compliance and biological monitoring program within
787 one year of enrollment.
788
789

790 **2. ENROLLED LANDS**

791
792 The proposed umbrella CCAA encompasses approximately 7,011,569 ha (17,312,515 ac) of
793 privately owned lands within the current range of the sage-grouse in Wyoming. Acreage
794 estimates were derived from Wyoming Geographic Information Science Center land cover
795 analyses, which are based on satellite images and digital elevation models (these estimates could

796 change as new landscape information becomes available). Figure 1 presents all current sage-
 797 grouse habitat (public and private) in Wyoming. Connelly et al. (2004) estimated the total area
 798 in sagebrush in Wyoming was nearly 10 million ha (24 million ac); of which approximately 38
 799 percent was privately-owned, 7 percent state-owned, 47 percent BLM-owned, 4 percent USFS-
 800 owned, and 4 percent BIA-owned, with other Federal agencies owning lesser amounts.



801
 802 **Figure 1.** Current sage-grouse habitat within Wyoming (adapted from Schroeder et al. 2004)
 803
 804

805 **3. AUTHORITY AND PURPOSE**
 806

807 Sections 2, 7, and 10 of the ESA of 1973, as amended (Act, 16 U.S.C. 1531 *et seq.*), allow the
 808 FWS to enter into this CCAA. Section 2 of the ESA states that encouraging interested PAs,
 809 through Federal financial assistance and a system of incentives, to develop and maintain
 810 conservation programs is a key to safeguarding the Nation’s heritage in fish, wildlife, and plants.
 811 Section 7 of the ESA requires the FWS to review programs it administers and utilize such
 812 programs in furtherance of the purposes of the ESA. Section 10 describes permits issued under
 813 the ESA, exempting certain prohibitions under Section 9.
 814

815 The purposes of the ESA are “to provide a means whereby the ecosystems upon which
 816 endangered species and threatened species depend may be conserved,” and “to provide a

817 program for the conservation of such endangered species and threatened species ...” “Conserve”
818 is defined in section 3(3) of the ESA and means “to use and the use of all methods and
819 procedures which are necessary to bring any endangered species or threatened species to the
820 point at which the measures provided pursuant to this Act are no longer necessary.” Lastly,
821 section 10(a)(1)(A) of the ESA authorizes the issuance of permits to “enhance the survival” of a
822 listed species. Enhancement means the permitted activities benefit species in the wild.
823

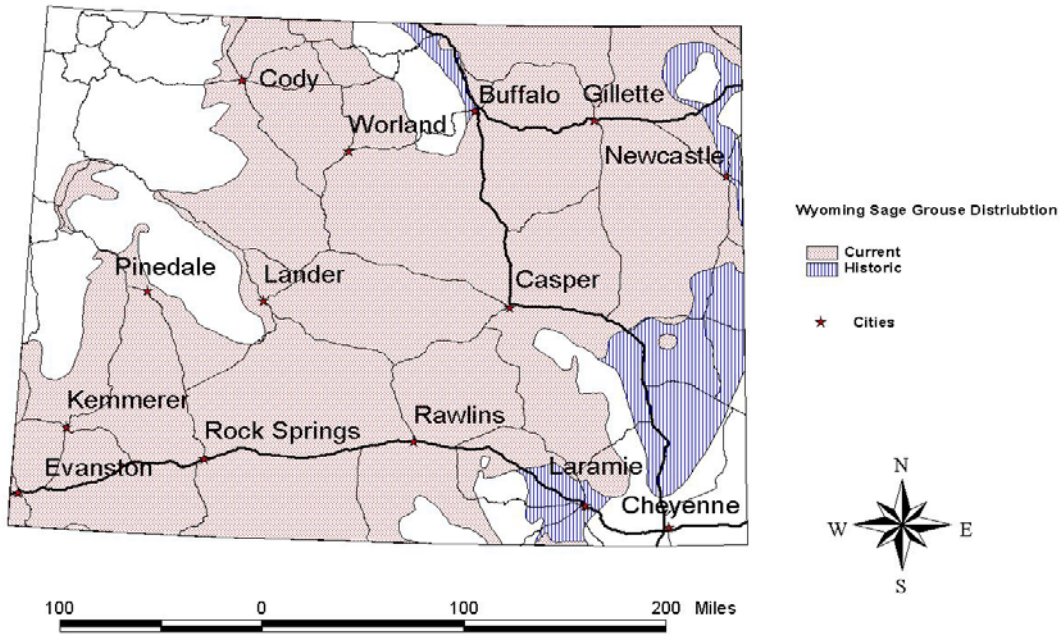
824 By entering into a CCAA, the FWS is utilizing its Candidate Conservation Programs to further
825 conservation of the Nation’s fish and wildlife. Consistent with the FWS’s “Candidate
826 Conservation Agreement with Assurances Final Policy” (64 FR 32726; June 17, 1999), the
827 conservation goal of this umbrella CCAA is to maintain and enhance sage-grouse on non-Federal
828 lands within the range of the species in Wyoming. Landowners will meet this conservation goal
829 by implementing CMs to address threats to the species, and will receive regulatory certainty
830 from the FWS concerning land use restrictions that might otherwise apply, should this species be
831 listed under the ESA.
832
833

834 **4. DESCRIPTION OF EXISTING CONDITIONS, STATUS, AND** 835 **THREATS**

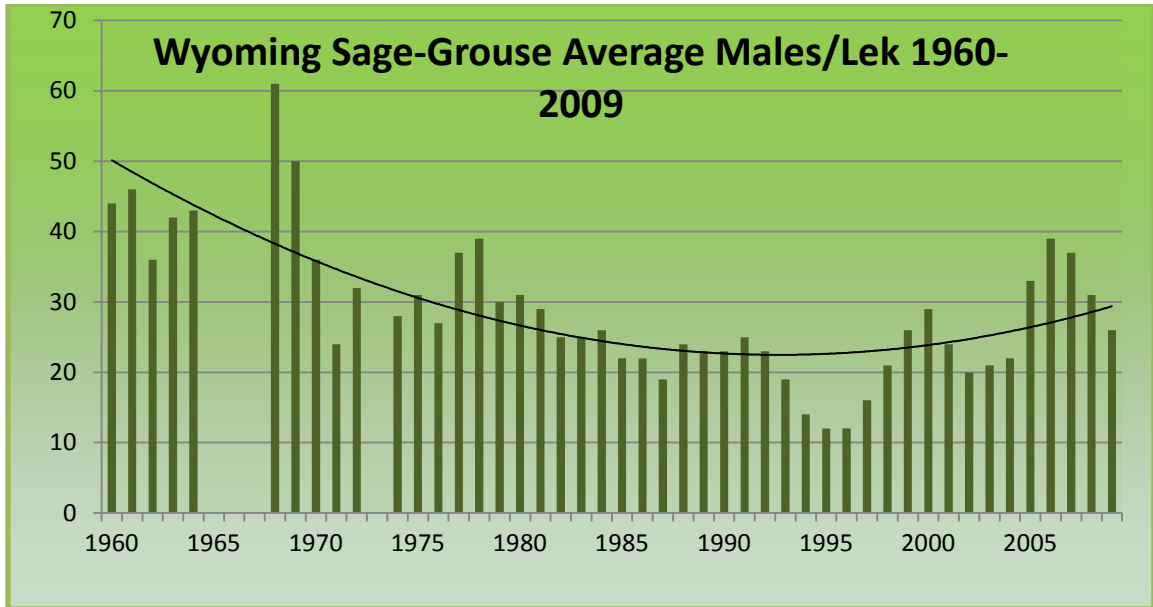
836
837 Information on existing conditions, status, and threats in this umbrella CCAA is summarized
838 from the Wyoming Greater Sage-grouse Conservation Plan (WGFD 2003), the FWS January 12,
839 2005, 12-month finding (70 FR 2243), the WAFWA Greater Sage-grouse Comprehensive
840 Conservation Strategy (Stiver et al. 2006), and the FWS March 23, 2010, 12-month finding (75
841 FR 13910). We refer the reader to these documents for a more in-depth analysis. This is the
842 most recent information available, but will likely change in the future.
843

844 ***4.1 DESCRIPTION OF EXISTING CONDITIONS WITHIN THE AGREEMENT AREA***

845
846 Sage-grouse are considered a landscape-scale species. The species is common throughout
847 Wyoming because their habitat remains relatively intact (Figure 1). Wyoming has the largest
848 and most widespread population of sage-grouse of any State or Province. Nevertheless, sage-
849 grouse populations have declined in Wyoming (Figure 2) and elsewhere across the West over the
850 last half-century. However, over the last 15 years, the average number of males per lek has
851 increased in Wyoming, indicating an increasing statewide population. In summary, there have
852 been long-term declines in Wyoming, but with recent increases in sage-grouse populations
853 (Figure 3). While these trends are valid at the statewide scale, local sub-populations may be
854 more heavily influenced by human impacts (e.g., sub-divisions, intensive energy development,
855 and large-scale conversion of sagebrush) and have experienced declining populations in some
856 cases.
857



858
 859 **Figure 2.** Wyoming sage-grouse current and historical distribution (WGFD 2003).
 860



861
 862
 863 **Figure 3.** Sage-grouse average males/lek in Wyoming 1960-2009 (A minimum of 100 leks
 864 checked each year) (adapted from WGFD 2003).
 865

866 **4.2 STATUS**
 867

868 On February 26, 2008, the FWS initiated a status review for the sage-grouse (73 FR 10218). The
 869 purpose of the status review was to determine whether the species warrants listing as threatened
 870 or endangered under the ESA (16 U.S.C 1531 et seq.). On March 23, 2010, the FWS determined

871 listing the sage-grouse was warranted, but precluded by higher priority listing actions (75 FR
872 13910). The FWS assigned a listing priority number (LPN) of 8 to the sage-grouse, based on its
873 finding that the magnitude of the threats is moderate, the immediacy of the threats is imminent,
874 and the sage-grouse has more than one species in its genus.
875

876 When making a decision to list a species under the ESA, the FWS is required to determine
877 whether the species is threatened by any of the five listing factors. Stressors specific to ranch
878 management in Wyoming are described for the five factors.
879

880 ***4.2.1 Present or Threatened Destruction, Modification, or Curtailment of Habitat or Range***

881

882 Habitat fragmentation is the leading cause of sage-grouse population decline rangewide,
883 including Wyoming. Historically, portions of the native sagebrush shrub community were lost to
884 seeded perennial grasses, irrigated agriculture, urbanization, and infrastructure associated with
885 human development (e.g., subdivisions, oil and gas field developments). While conversion to
886 agriculture and perennial grassland pastures has likely reached its limits, human encroachment
887 continues to fragment previously undisturbed habitat, and more development is expected. The
888 following stressors may occur during ranch management and can adversely impact sage-grouse
889 habitat.
890

891 Exurban Development

892

893 Exurban development is a significant issue, causing a reduction in the size of ranch operations
894 into smaller ownerships with accompanying small pastures. Subdivision and associated human
895 activities may reduce cover, alter composition of native species, and increase the likelihood
896 livestock will trample nests or physically disrupt the life cycle of sage-grouse. Roads, power
897 lines, increased traffic, and additional fences associated with rural residential development may
898 further reduce or fragment habitat and pose physical threats to sage-grouse. There are also
899 ancillary effects. For example, residential development likely results in an increase in the
900 number of domestic dogs and cats and a corresponding increase in feral animals. These dogs and
901 cats can prey on sage-grouse adults, chicks, and eggs, or cause nest abandonment. Domestic
902 livestock numbers can also increase, particularly horses. While a house and outbuildings may
903 occupy only a small portion of a 16 ha (40 ac) ownership, concentrating one or more horses on
904 the surrounding native range, with the resultant alteration and removal of vegetation, and
905 associated fences, can have significant impacts on sage-grouse.
906

907 The potential for exurban development is likely to increase in Wyoming. Between 2000 and
908 2005, Wyoming ranked 31st nationally in population growth. However, Wyoming jumped to 9th
909 place in 2007. Wyoming's growth over the last 15 years has been primarily in rural exurban
910 areas (e.g., density of one home per 16 ha (40 ac)). Growth is typically measured by U.S.
911 Census data as the increase in year-round residents. However, census data does not include
912 second homes, which are also typically located in rural areas (Taylor and Lieske 2002). Because
913 second homes are not included in census data, growth in rural areas tends to be under-
914 represented; especially since Wyoming had a 30 percent increase in second homes for the 2000
915 census (Taylor and Lieske 2002).

916
917 Economic factors often contribute to an increase in exurban development. After a high in 1993
918 of almost \$200 million, net proprietor income for agriculture in Wyoming averaged less than \$40
919 million per year through 2006. Drought resulted in negative income in 2002 (-\$16.5 million) and
920 2006 (-\$63.2 million) (Hulme et al. 2009). Despite the current lower levels of profitability for
921 agriculture in Wyoming, the average price of a ranch in Wyoming increased by more than three
922 times on a production-unit basis from 1993-1995 and 2002-2004. Similarly, the average price
923 for irrigated meadowland in Wyoming has nearly doubled (Taylor 2003).

924
925 Livestock Operations and Management Impacts

926
927 Livestock grazing is the dominant land use within the CCAA area. Large ranching operations
928 have maintained intact habitat with minimal roads, power lines, and human intrusions compared
929 to more intensive land uses such as oil and gas development. However, there are sometimes
930 adverse impacts from grazing; particularly in areas where intensive grazing and purposeful
931 removal of shrub communities have altered native vegetation and the successional stage in
932 sagebrush-bunchgrass communities. The challenge of managing grazing impacts lies with the
933 ability of ranchers to readily identify and then rectify unfavorable conditions. Sagebrush-
934 bunchgrass communities evolved in an arid climate, and changes in vegetative composition are
935 subtle, often not recognizable until the adverse trend is well-established (Cagney et al. 2010).
936 From a rancher's perspective, options to change vegetative conditions concern the management
937 of herds – specifically where and when they graze, for how long, and in what numbers (Cagney
938 et al. 2010). These decisions, coupled with fences, herding techniques, salt and mineral
939 placement, seasons of use, water development, and type of livestock, constitute the vast majority
940 of management options.

941
942 Fire

943
944 The effect of fire upon sage-grouse can sometimes be transitory or even beneficial, depending
945 upon the size of the burn, the condition of the vegetative community affected, and the presence
946 of additional unaffected sagebrush habitat nearby. In some situations, carefully developed fire
947 management plans may help maintain a mosaic of vegetative conditions across a landscape that
948 supports various seasonal and life cycle needs of the sage-grouse. However, in other situations,
949 annual precipitation less than 30 cm (12 in), poor soils, or difficult terrain results in high
950 economic cost and variable success of fire management plans. Fire can increase the spread of
951 noxious weeds and annual grasses by removing the native vegetation's seed source, especially in
952 areas with monocultures of annual grasses (e.g., cheatgrass) or widespread weed problems (e.g.,
953 thistle, black henbane). Much of the landscape has reached a point where remaining sagebrush
954 stands should be protected, and fire can no longer be viewed as a constructive force across the
955 landscape.

956
957 A variety of techniques to reestablish sagebrush habitat post-fire have been attempted, with
958 mixed success (Cadwell et al. 1996, Quinney et al. 1996, Livingston 1998). Sagebrush
959 restoration following a fire can be complicated by the presence of invasive exotic annual plant
960 species, restoration costs, availability of suitable seeds, and the difficulty of establishing

961 sagebrush seedlings. The efficacy of these efforts and the utility of these sites for sage-grouse
962 may not be realized for several decades. Range monitoring, especially in burned areas, is
963 expected to reveal more information on sage-grouse use (or avoidance) of these areas, which
964 may lead to better management prescriptions in the future.

965

966 Annual Grass Invasions

967

968 The establishment of plant communities that do not provide suitable habitat (e.g., invasive
969 plants) is a major threat to sage-grouse. For example, the rapid and aggressive spread of
970 cheatgrass has been facilitated by a number of ecological traits allowing it to out-compete native
971 species for water and nutrients on sites where it is adapted. Displacement of native perennials is
972 of most concern in drier habitats with less than 30 cm (12 in) of annual precipitation, particularly
973 flat areas with high clay content in the soil. South and west exposures are more susceptible than
974 northern exposures to invasion by non-native plants. As precipitation increases, the ability of
975 cheatgrass to compete with native plants for moisture and nutrients decreases. The higher
976 potential productivity and density of native understory grasses may also increase recovery rates
977 of native fire-tolerant species.

978

979 Concentrated Encroachment of Woodland Species

980

981 Encroachment of woodland species (e.g., junipers, conifers, Russian olive, salt cedar) into sage-
982 grouse habitat can lead to a reduction of sage-grouse use, or complete abandonment of these
983 habitats.

984

985 Concentrated Wildlife

986

987 Concentrated or overabundant big game populations can harm plant communities important to
988 sage-grouse, reducing both habitat quality and quantity.

989

990 **4.2.2 Overutilization for Commercial, Recreational, Scientific, or Educational Purposes**

991

992 This factor has not been demonstrated to be a significant threat to sage-grouse in Wyoming.

993

994 **4.2.3 Disease or Predation**

995

996 Sage-grouse are susceptible to a variety of diseases, and an outbreak could have a severe effect
997 on the species. This possibility is heightened by the recent spread of WNV throughout
998 Wyoming, particularly in the northeastern corner of the State. Detection of the virus in birds and
999 documentation of the disease in humans and horses indicate the potential for large-scale
1000 outbreaks among susceptible species such as sage-grouse.

1001

1002 Predation has been suggested as a possible cause of long-term population declines. Sage-grouse
1003 are a prey species. Predators can have a severe impact on prey populations occurring at critically
1004 low numbers or in patches of habitat so small the opportunity for escape is limited. Adult sage-
1005 grouse typically experience relatively high annual survival rates, suggesting predation has little

1006 impact on rangewide breeding populations (Connelly et al. 2004). However, fragmentation and
1007 the presence of infrastructures can increase predation rates on sage-grouse at a local scale.

1008

1009 *4.2.4 Inadequacy of Existing Regulatory Mechanisms*

1010

1011 State of Wyoming

1012

1013 No zoning or other land use restrictions protect important sage-grouse habitat from unfavorable
1014 land use changes at the local level. However, Wyoming has developed a core area strategy for
1015 sage-grouse by delineating important habitats. The State designated these core areas to protect
1016 the most important sage-grouse habitats, including their lek sites. The WGO issued Executive
1017 Order 2011-5, which outlines development restrictions within those core areas. Specifically, the
1018 Order requires “state agencies should, to the greatest extent possible, focus on the maintenance
1019 and enhancement of those Greater Sage-Grouse habitats and populations within the Core
1020 Population Areas identified by the Sage Grouse Implementation Team.” The order addresses
1021 new development within “Core Population Areas,” which “should be authorized or conducted
1022 only when it can be demonstrated by the state agency that the activity will not cause declines in
1023 Greater Sage-Grouse populations.” Other recommendations include working with the FWS to
1024 develop CCAAs and CCAs to address threats, proactive activities to combat wildland fire, and
1025 incentives to enhance reclamation sites within the core areas.

1026

1027 The State of Wyoming also developed a statute (Wyoming Legislature 2005) pertaining to
1028 surface use of lands where mineral rights are owned by an entity other than the surface owner.
1029 This statute requires operators to develop a surface use agreement (SUA) with the surface owner.
1030 The agreement ensures the surface owner an opportunity for input regarding how mineral rights
1031 on their lands are developed. The statute states, “Prior to the commencement of operations on
1032 the Lands, Operator shall present to Owner a draft of a Development Plan which details the
1033 scope and timing of development on the Lands or portions thereof. Owner and Operator shall
1034 jointly develop a final version of the Development Plan (which shall be revised from time to time
1035 as conditions warrant), and it shall become the document from which orderly development
1036 proceeds.” The statute also states the “Operator agrees that it will not commence any [surface](#)
1037 [disturbing activities](#) on the Lands, or any part thereof, unless and until Owner has approved the
1038 Development Plan, which approval will not be unreasonably withheld.”

1039

1040 Federal Agencies

1041

1042 The BLM manages approximately 47 percent of sagebrush habitat in Wyoming. The BLM’s
1043 primary management tool is the Resource Management Plan (RMP), which guides decisions for
1044 livestock and travel management, wildlife, and other resources. Most BLM RMPs have been
1045 recently revised or are currently under revision. In 2011, the BLM Washington Office issued
1046 two Instructional Memoranda regarding sage-grouse conservation, providing management
1047 direction and protection measures. In 2012, the BLM Wyoming State Office updated and
1048 reissued their Instructional Memorandum on sage-grouse habitat management policy. The BLM
1049 is working with the FWS to draft a CCA on lands BLM manages in Wyoming. The BLM’s

1050 CCA and this umbrella CCAA are designed to “dovetail,” providing additional benefits to the
1051 species and management continuity between private and Federal lands.

1052
1053 The USFS manages approximately four percent of sagebrush habitat in Wyoming. The USFS
1054 has land management guidance similar to the BLM known as the Land and Resource
1055 Management Plan (LRMP). The USFS also is working with the FWS to draft a CCA on lands
1056 they manage in Wyoming. As with the BLM’s CCA, the USFS’s agreement is designed to
1057 “dovetail” with this umbrella CCAA, providing additional benefits to the species and
1058 management continuity between private and Federal lands.

1059
1060 ***4.2.5 Other Natural or Man-made Factors Affecting the Species’ Continued Existence***
1061

1062 Energy developments are confirmed threats to sage-grouse within Wyoming, and new
1063 exploration leases for natural gas are being permitted nearly statewide (see FWS March 2010
1064 finding). However, within designated sage-grouse core areas, these activities are significantly
1065 restricted by both the State and BLM. In addition to the core area restrictions, private
1066 landowners can guide surface use of their properties through SUAs, when they do not own the
1067 mineral rights.

1068
1069 Major transmission lines currently cross the State, with several new proposals in the planning
1070 stages. However, the State has regulations in place considering the needs of the sage-grouse and
1071 requiring State permitting agencies to work with the WGFD to minimize impacts to sage-grouse
1072 when siting these projects.

1073
1074 The use of pesticides to control grasshoppers, Mormon crickets, and noxious weeds does not
1075 pose a significant rangewide threat to sage-grouse. However, pesticides have caused mortality to
1076 sage-grouse in the past. Pesticides could have a local impact through direct contact with
1077 individual grouse, consumption by sage-grouse of insects exposed to pesticides, or by reduction
1078 of all insect populations during times when insects are a crucial part of the birds’ diets (see FWS
1079 March 2010 finding).

1080
1081 ***4.3 SPECIFIC FACTORS AFFECTING THE SPECIES***
1082

1083 The long-term persistence of sage-grouse will depend on maintenance of intact landscapes.
1084 Sage-grouse are landscape-scale species and the destruction and fragmentation of their habitat
1085 has contributed to significant population declines over the past century. If current trends persist,
1086 many local populations may disappear in the next several decades, with remaining fragmented
1087 populations vulnerable to extinction. Based on a review of the scientific literature related to
1088 ranch management (see FWS March 2010 finding), threats to sage-grouse and their habitats in
1089 Wyoming may include, but are not limited, to the following specific factors.

- 1090
1091 ➤ Habitat fragmentation is the most significant threat to the long-term persistence of sage-
1092 grouse.
1093 ➤ Infrastructure (e.g., powerlines, roads) can fragment sage-grouse habitat, decreasing sage-
1094 grouse use and habitat quality.

- 1095 ➤ Previously disturbed, degraded, or fragmented sage-grouse habitat that remains
1096 unrestored or unreclaimed results in a loss of sage-grouse habitat quality and quantity.
1097 ➤ Establishment of plant communities that do not provide [suitable habitat](#) (e.g.,
1098 monocultures of non-natives) reduces sage-grouse habitat quality and quantity.
1099 ➤ Introduction of non-native invasive plant species can eliminate native plant communities
1100 important to sage-grouse, reducing habitat quality and quantity.
1101 ➤ Wildland fire can remove long-lived species such as sagebrush, reducing sage-grouse
1102 habitat quality and quantity.
1103 ➤ Surface water developments such as ponds may in some instances increase mosquito
1104 habitat, resulting in increased sage-grouse mortality from disease (e.g., WNv).
1105 ➤ Sagebrush management (e.g., prescribed fire, chemical, or mechanical) can result in a
1106 reduction of sage-grouse habitat quality and quantity.
1107 ➤ Some grazing management practices may alter shrub cover and grass and forb
1108 composition, reducing sage-grouse habitat quality and quantity.
1109 ➤ Concentration of livestock may impact vegetation and soil structure, reducing sage-
1110 grouse habitat quality and quantity.
1111 ➤ Encroachment of woodland species into sage-grouse habitat can lead to a reduction of use
1112 or abandonment of habitat.
1113 ➤ Livestock, humans, and vehicle activity can physically [disturb](#) birds and cause them to
1114 leave leks or abandon nests (i.e., direct impact to nests and brooding hens), resulting in
1115 decreased reproductive success.
1116 ➤ Water diversions and spring developments can dry up [meadow](#) and riparian areas,
1117 reducing sage-grouse habitat quality.
1118 ➤ Some farm and ranch facilities can increase opportunities for predation of sage-grouse
1119 and sage-grouse nests by providing additional [raptor](#) perches or human attractants such as
1120 dead piles or garbage dumps that attract mammalian and avian predators.
1121 ➤ Application of insecticides can remove insects important to sage-grouse, reducing sage-
1122 grouse habitat quality.
1123 ➤ Prolonged [drought](#) can harm plants important to sage-grouse, reducing sage-grouse
1124 habitat quality and quantity.
1125 ➤ Livestock watering tanks and troughs can cause sage-grouse mortality by entrapment and
1126 drowning.
1127 ➤ Concentrated or overabundant wildlife populations can harm plant communities
1128 important to sage-grouse, reducing habitat quality and quantity.
1129 ➤ Sage-grouse can collide with poorly designed or located fences, resulting in serious
1130 injury or death.
1131

1132 These potential threats and their corresponding CMs are described in more detail in the following
1133 section.
1134

1135 **5. CONSERVATION MEASURES**

1136 **5.1 EXPECTATIONS OF ALL ENROLLED LANDOWNERS**

1137
1138
1139

1140 According to the FWS 2010 listing finding, the primary threat to sage-grouse is habitat
1141 fragmentation. Therefore, in order for this CCAA to address the conservation needs of the sage-
1142 grouse, the following CM must be implemented by all enrolled landowners on the enrolled
1143 portion of their property:

1144
1145 *Maintain contiguous habitat by avoiding fragmentation (e.g., do not subdivide property,*
1146 *consider conservation easements).*

1147
1148 In addition, all enrolled landowners will agree to undertake the following measures:

- 1149
1150 (1) [Avoid](#) impacts to populations and individual sage-grouse present on their enrolled
1151 properties to the maximum extent practicable.
1152 (2) Continue current practices identified as conserving sage-grouse.
1153 (3) Implement all agreed upon CMs in site-specific plans within the agreed upon timeframe.
1154 (4) Implement a conservation management plan within 12 months following approval of
1155 their individual CCAA.
1156 (5) Provide the FWS or their agreed upon representatives access to the enrolled property at
1157 mutually agreeable times to identify or monitor sage-grouse and their habitat, implement
1158 CMs, and monitor effectiveness and compliance with individual CCAAs.
1159 (6) When requested, allow PAs to share with each other habitat and other planning or
1160 monitoring information related to the enrolled properties.
1161 (7) Cooperate and assist with monitoring activities and other reporting requirements identified in
1162 site-specific plans.
1163

1164 **5.2 SPECIFIC CONSERVATION MEASURES**

1165
1166 The process of selecting specific CMs for individual properties will be based on the threats
1167 identified for the enrolled property (see Appendix C). Each identified threat within control of the
1168 landowner will be addressed and will have one or more corresponding CM(s). The FWS and
1169 other PAs recognize each property is unique and CMs will be site-dependent. The FWS and
1170 other PAs will work with each landowner to identify specific threats for the property and select
1171 CM(s) to remove or reduce each threat. There is no minimum number of CMs required to
1172 qualify for a CCAA, as long as the specific threats are addressed. In addition, the FWS
1173 recognizes not every potential CM listed for a particular threat is appropriate for a given
1174 property. Selecting site-specific CMs will be based on their likely effectiveness and ability to be
1175 implemented. Consequently, the CMs selected for the enrolled property should be the most
1176 beneficial for that particular property.

1177
1178 While these CMs should apply across the landscape, there may be circumstances where site-
1179 specific modifications or conditions warrant changes to the standard prescriptions. Changes to
1180 CMs will occur in consultation with local agency specialists (e.g., biologists, range management
1181 specialists), and with FWS agreement. The FWS will note those changes on the individual
1182 CCAAs for enrolled properties, including rationale or justification for any modifications.
1183

1184 The following table describes potential threats and corresponding CMs, conservation benefits,
1185 and compliance monitoring, for this umbrella CCAA.

1186
1187

Table 2. Conservation Measures

THREAT	CONSERVATION MEASURES	CONSERVATION BENEFITS	COMPLIANCE MONITORING
<i>Fragmentation of the Landscape</i>			
Fragmentation of the landscape causes birds to leave leks or abandon nests or important habitats (i.e., direct impact to nests and brooding hens), resulting in decreased reproductive success.	Maintain contiguous habitat by avoiding fragmentation (e.g., do not subdivide property, enter into conservation easements, consolidate new roads, buildings, power lines).	Reduces disruptions to sage-grouse activities, maintains habitat quality & quantity, maintains population connectivity and recruitment, and reduces vulnerability to predation	Describe measures taken to avoid fragmentation of the habitat (e.g., consolidating new and existing roads, buildings, power lines). If conservation easements are implemented, describe any signed and acres enrolled.
<i>Infrastructure</i>			
Infrastructure (e.g., power lines, roads, fences) can fragment sage-grouse habitat, decreasing sage-grouse use and habitat quality.	Convert electrically (AC) powered pumps or wind mills to solar.	Removes or reduces amount of habitat fragmentation and mortality due to infrastructure across the landscape	Describe specific actions taken to avoid new infrastructure or consolidate or otherwise minimize existing infrastructure to comply with these conservation measures.
	Avoid building new infrastructure (e.g., roads, buildings, fences) within 0.6-mile of occupied leks and within sage-grouse habitats. In core areas, use the DDCT method as outlined in the Governor’s Executive Order 2011-5.		
	Consolidate existing roads, buildings, etc. within 0.6 mile of occupied leks or within sage-grouse habitats.		
	If feasible, bury new and existing power lines.		
<i>Restoring Disturbed Habitats</i>			
Disturbed, degraded, or fragmented sage-grouse habitat not restored or reclaimed results in permanent loss of sage-grouse habitat quality and quantity.	Implement restoration projects in areas with known issues/concerns.	Enhances degraded habitats and reduces potential for spread of noxious weeds Increases success and reduces time necessary for successful establishment of new plantings	Describe any restoration projects and status of same in annual monitoring reports.
	Rest newly seeded/planted rangeland from livestock use. Consult agency specialist for the amount of time to rest.		Describe management plan, actions taken to implement the plan, and monitoring to measure success.
	Work with agencies to include provisions for successful interim reclamation and complete restoration of habitats that have experienced development and/or surface disturbing activities .		Describe restoration or reclamation plan, actions taken to implement the plan, and monitoring to measure success.

1188

1189 **Table 2 continued. Conservation Measures**
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THREAT	CONSERVATION MEASURES	CONSERVATION BENEFITS	COMPLIANCE MONITORING
<i>Establishment of Non-native Monocultures</i>			
Establishment of plant communities that do not provide suitable habitat (e.g., monocultures of non-natives such as crested wheatgrass) reduces sage-grouse habitat quality and quantity.	Do not introduce non-natives (e.g., crested wheatgrass) tending toward monocultures on enrolled lands, except non-persistent annual grasses used for soil protection until perennial native vegetation can be established (e.g., sterile Triticale) or non-invasive beneficial forbs.	Reduces impacts to sage-grouse habitat quality and quantity	Describe specific action taken to avoid introduction of invasive non-native vegetation. Describe monitoring to detect potential presence of non-natives.
	Work to remove the invasive, non-native vegetative component; inter-seed range with native/beneficial seed mixes.		Describe which non-natives detrimental to sage-grouse habitat quality were present. Describe actions to remove any detrimental non-native vegetation.
<i>Management of Invasives and Non-native Plant Species</i>			
Establishment of invasive plant species (including post wildland fire) reduces sage-grouse habitat quality and quantity.	Participate in weed-control groups/processes such as Cooperative Weed Management Areas (CWMAs) or a Coordinated Resource Management (CRM) .	Reduces impacts to sage-grouse habitat quality and quantity	Describe your activity in these programs.
	Work with management agencies (e.g., BLM, USFS) or Weed and Pest Districts to identify areas of invasives and work to control them.		Describe the method of treatment and number of acres treated. Monitor and report treatment results.
	Work with PA to ensure suitable reclamation of weed treated areas for sage-grouse (e.g., seed mixes in sage-grouse habitat with appropriate shrub, forb, and grass components). Rest newly seeded/planted rangeland from livestock use. Consult agency specialist for amount of time to rest.		Describe actions to reclaim these areas.
	Use state-certified weed-free seed mixes and mulches.	Describe any weed-free seed mixes and mulches used.	
	Work with PA specialists to address post-wildland fire issues.	Reduces impacts from wildfires or minimizes likelihood of wildfires	Describe management before and/or after wildland fire.
	Work with PA specialists to address and prevent wildland fire, especially if rangelands have a cheatgrass component. This is most relevant for areas adjacent to railroads, interstates, and in the Powder River Basin.		

1191

1192 **Table 2 continued. Conservation Measures**

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THREAT	CONSERVATION MEASURES	CONSERVATION BENEFITS	COMPLIANCE MONITORING
<i>Surface Water Developments/Disease</i>			
Surface water developments such as ponds may increase mosquito habitat, resulting in increased sage-grouse mortality from disease (e.g., WNV). This is most relevant in northeast Wyoming, where WNV is prevalent.	Treat mosquito larvae present in ponds using <i>Bacillus thuringiensis</i> or appropriate chemicals.	Reduces potential for direct mortality and/or disease transmission	Describe if and when larvae were treated.
	Where new pond construction is proposed (e.g., for livestock or waterfowl), use innovative design for ponds (e.g., pipe water to trough offsite from a pond with steep sides to prevent establishment of aquatic vegetation).		Describe if and where new ponds were constructed, including pond design.
	Report to either WYGD or FWS within 24 hours any dead or sick sage-grouse found.		Describe when and where any dead or sick sage-grouse were found.
<i>Sagebrush Management</i>			
Sagebrush management (e.g., prescribed fire, chemical, mechanical) can result in a reduction of sage-grouse habitat quality and quantity.	Avoid eradicating sagebrush. Undertake no new conversion of rangeland to cropland.	Maintains or enhances sagebrush communities	Describe actions taken (or not taken) to avoid reducing sagebrush.
	Work with agency specialists to plan sagebrush treatments, avoiding areas currently providing sage-grouse habitat. Agency specialists will determine if sagebrush treatments are part of an appropriate landscape plan. After a plan is developed with agency specialists and if sagebrush treatment is warranted, utilize a mosaic pattern of treatment rather than a large uniform block. Avoid fire for sagebrush treatments in areas with less than 12 in annual precipitation. Work with agency specialists to develop prescribed fire management plans to address timing (e.g., spring burn versus fall), as well as the importance of treatment of the potential habitat to sage-grouse.		Describe sagebrush management.

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1196 **Table 2 continued. Conservation Measures**
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THREAT	CONSERVATION MEASURES	CONSERVATION BENEFITS	COMPLIANCE MONITORING
<i>Livestock Management and Rangeland Health</i>			
Some grazing management practices alter shrub cover and/or grass and forb composition, reducing sage-grouse habitat quality and quantity.	Work with agency specialists to inventory vegetation and compare with the Ecological Site Description.	Maintains or enhances sage-grouse habitat, reproduction, and survival Minimizes potential for adverse impacts caused by grazing	Describe how a vegetative inventory was conducted.
	Within 12 months, work with PAs to develop and implement a written conservation management plan .		Provide the conservation management plan to the FWS.
	Within 24 months, develop and implement a written grazing management plan (a key component of any conservation management plan) to maintain or enhance the existing plant community as suitable sage-grouse habitat. This may be accomplished by site-specific modifications to grazing season of use, location, duration, frequency, number of animals, and/or types of livestock (see Cagney et al. 2010).		Provide the grazing management plan to the FWS.
Concentration of livestock caused by activities such as stock tank placement, branding, and roundup may impact vegetation and soil structure, resulting in a reduction of sage-grouse habitat quality and quantity. Intensity and duration of livestock present will affect the extent of impacts.	Avoid (or rotationally utilize) known nesting and brood-rearing habitat as a location for activities that concentrate livestock such as stock tank placement, branding, and roundup.	Maintains or enhances sage-grouse habitat, reproduction and survival Minimizes potential for adverse impacts caused by grazing	Describe how these habitat types were avoided.
	Place salt or mineral supplements in sites minimizing impacts to sage-grouse habitat.		Describe locations of salt or mineral supplements in relation to sage-grouse habitat.
	Avoid placing salt or supplements within 0.25-mile of riparian habitats.		Describe locations of salt or mineral supplements in relation to riparian habitat.
	If necessary, fence riparian habitat with markers (consult agency specialist), to protect habitat from trampling; or implement a grazing strategy.		Describe fencing of riparian habitats.

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 1199

1200 **Table 2 continued. Conservation Measures**
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THREAT	CONSERVATION MEASURES	CONSERVATION BENEFITS	COMPLIANCE MONITORING
<i>Woodland Encroachment</i>			
Encroachment of woodland species (e.g., juniper, conifers, Russian olive, and salt cedar) into sage-grouse habitat can lead to a reduction in the amount of sage-grouse habitat, a reduction in its use, or abandonment.	Treat/remove undesirable woodland species encroaching into sage-grouse habitats. Work with agency specialists to determine if treatment is needed and an appropriate treatment method.	Maintains important existing sagebrush communities	Describe any treatment in areas with encroachment and the number of acres treated.
<i>Livestock Management in Important Sage-grouse Habitats</i>			
Livestock, humans, and vehicles can physically disturb birds and cause them to leave leks or abandon nests (i.e., direct impact to nests and brooding hens), resulting in decreased reproductive success.	From March 1 through May 15, avoid new surface disturbing activities (e.g., roads, pipelines, corrals for branding) within 0.6-mile of the perimeter of occupied leks.	Reduces disruptions to lek and nesting activity, thereby reducing abandonment and predation risk	Describe any surface disturbing activities from March 1 – May 15.
	From March 1 through May 15, avoid disruptive activities between 6 p.m. and 8 a.m. within 0.6-mile of the perimeter of occupied leks.		Describe any disruptive activities from March 1 – May 15.
	From March 15 through June 30, avoid concentrating livestock in nesting habitat.		Describe if livestock were concentrated in potential nesting habitat from March 15 – June 30.
	From March 15 through June 30, avoid off-trail vehicular travel in nesting habitat, unless it is essential for routine ranch management (including but not limited to: repairing fence, “doctoring” livestock, finding lost livestock).		Describe if there was off-trail vehicular traffic from March 15 – June 30.
<i>Design and Placement of Water Developments (including ponds and springs)</i>			
Livestock watering tanks and troughs can cause sage-grouse mortality by entrapment and drowning.	Fit existing and new water troughs with escape ramps.	Reduces potential for direct mortality	Describe where and how many ramps were installed.

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Table 2 continued. Conservation Measures.

THREAT	CONSERVATION MEASURES	CONSERVATION BENEFITS	COMPLIANCE MONITORING
Water diversions and spring developments can dry up meadow and riparian areas, reducing sage-grouse habitat quality and quantity.	Allow springs to be free-flowing (do not capture all of the water) at the point of diversion or source of the spring in order to maintain or enhance a wet riparian area. If necessary, fence riparian habitat with markers to protect habitat from trampling (consult agency specialist).	Maintains or enhances availability of nesting/early brood-rearing habitats	Describe if springs were developed and where habitat was protected.
<i>Predation</i>			
Some farm and ranch operations can increase opportunities for avian and mammalian predation of sage-grouse and their nests.	Avoid locating new garbage and dead piles closer than 0.6-mile from occupied leks, or within nesting or brood-rearing habitat. Relocate existing garbage and dead piles within 0.6-mile of occupied leks, nesting, or brood-rearing habitat. Limit access to leks, nesting, or brood-rearing habitat by domestic pets.	Reduces direct mortality to individuals and broods	Describe any measures taken to avoid predation.
	Install raptor perch deterrents on existing structures (e.g., power poles).		
<i>Insecticide Use</i>			
Application of insecticides can remove insects important to sage-grouse, reducing sage-grouse habitat quality.	Implement the Reduced Area & Application Treatment (RAAT) approach. Avoid carbaryl/malathion.	Maintains insects as a seasonally important food item	Describe any spraying that occurred on the property and if RAAT was implemented.
	Work with agency specialists to plan and design control efforts that avoid harming non-target species.		Describe your plan to avoid harm to non-target species and actions taken to implement plan.
<i>Drought</i>			
Prolonged drought can harm plants important to sage-grouse, reducing sage-grouse habitat quality and quantity.	Work with agency specialists to incorporate a drought management component into grazing plan, considering the needs of sage-grouse (e.g., stocking conservatively, destocking when necessary to reduce impacts on rangeland health, applying grazing regimes protective of sage-grouse habitats to the greatest extent practicable).	Maintains or reduces potential loss of sage-grouse habitat, reproduction, and/or survival	Describe if Animal Unit Months or season of use changed as a result of drought.
	Adjust livestock use (season of use, intensity, and/or duration) to reduce the impact on perennial herbaceous cover, plant species diversity, and plant vigor.		

1206

1207 **Table 2 continued. Conservation Measures**
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THREAT	CONSERVATION MEASURES	CONSERVATION BENEFITS	COMPLIANCE MONITORING
<i>Big Game Populations</i>			
Concentrated or overabundant big game populations can harm plant communities important to sage-grouse, reducing habitat quality and quantity.	Utilize public hunting access opportunities to manage big game numbers and associated habitat conditions. Enroll properties in hunter management areas or walk-in area programs through WGFD's Private Lands Public Wildlife program. Cooperatively work with WGFD setting the big game season and/or objective.	Reduces impacts to sage-grouse habitats Maintains or enhances sage-grouse reproduction and survival	Describe if lands were opened to hunting.
	Cooperatively work with WGFD to implement habitat treatments to distribute big game.		Describe response of habitat to treatment.
<i>Placement of Fences</i>			
Sage-grouse can collide with fences resulting in serious injury or death.	Avoid construction of new fences within 0.6-mile of occupied leks or riparian areas where broods are known to concentrate. If fencing is needed for livestock management, mark fence.	Reduces mortalities from collisions	Describe the location of new fences.
	Consult with agency specialist to relocate, redesign (e.g., wood posts, buck and pole fences), or mark existing fences (e.g., wire markers) that occur within 0.6-mile of a lek, especially where previous collisions have been observed.		Describe if existing fences within 0.6-mile of occupied leks were relocated, redesigned or marked.

1209

1210 **5.3 UNITED STATES FISH AND WILDLIFE SERVICE**

1211
1212 The FWS agrees to provide the following assistance to aid landowners in selecting and
1213 implementing the appropriate CMs, subject to authorized and appropriated funds.
1214

- 1215 1. Serve as an advisor, providing expertise on the conservation of sage-grouse and
1216 providing information on FWS requirements regarding CCAAs.
- 1217 2. Provide assistance in coordinating development and implementation of this CCAA.
1218 Assist in the development of mutually agreeable site-specific plans in cooperation with
1219 participating landowners and PAs.
- 1220 3. Ensure the landowner is personally notified at least 48 hours in advance with a time,
1221 location, and names of all personnel entering an enrolled property.
- 1222 4. Issue individual section 10(a)(1)(A) EOS permits, in accordance with 50 CFR 17.22(d) or
1223 17.32(d), providing participating landowners authorization for limited incidental take of
1224 sage-grouse as a result of covered activities and provide regulatory assurances should the
1225 species be listed under the ESA. The term of the permit shall be included as part of the
1226 site-specific plans. Consistent with FWS policy, incidental take of sage-grouse as a result
1227 of any pesticide use would not be authorized under the permit.
- 1228 5. Carry out any responsibilities for implementing conservation, monitoring, or other
1229 measures agreed to by the FWS under any site-specific plan or memorandum of
1230 agreement associated with this CCAA.
- 1231 6. To the extent funding is available, provide FWS funding to support implementation of
1232 this CCAA and site-specific plans.
- 1233 7. In those cases where terms of site-specific plans are not being met and efforts with the
1234 landowner to resolve compliance issues have not been effective, the FWS can suspend or
1235 revoke, in whole or in part, the section 10(a)(1)(A) EOS permit (see section 19).
- 1236 8. Coordinate completion of all monitoring requirements set forth in this CCAA as well as
1237 site-specific plans developed pursuant to this agreement.
- 1238 9. Coordinate completion of all reports pertinent to this CCAA and its implementation.
1239

1240 **5.4 NATURAL RESOURCE CONSERVATION SERVICE AND CONSERVATION**
1241 **DISTRICTS**

1242
1243 At the request of landowners and as resources allow, the NRCS and local Conservation Districts
1244 agree to provide the following technical assistance to landowners, FWS, and other PAs to assist
1245 in implementation of this CCAA.
1246

- 1247 1. Implement grazing management or conservation plans where they exist.
- 1248 2. Develop grazing management or conservation plans where they do not exist.
- 1249 3. Revise grazing management or conservation plans when needed.
- 1250 4. Initiate or revise a range monitoring program.
- 1251 5. Provide resource and ranch information to the FWS and other PAs.
- 1252 6. Complete CCAA enrollment documentation, including any ranch and resource condition
1253 inventories or current and proposed grazing management plans. Select CMs compatible
1254 with the landowners' operations and the long-term goal of removing or reducing threats
1255 to the sage-grouse.

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5.5 WYOMING DEPARTMENT OF AGRICULTURE

The WDA, at the request of landowners and as resources allow, agrees to provide the following technical assistance and support to landowners, FWS, and other PAs in activities related to applying for a CCAA or implementing the CMs.

1. Serve as an advisor to landowners as they work through the umbrella CCAA application process for their operation.
2. Provide training and assistance in rangeland monitoring protocols, or advise landowners on where to find assistance to fully implement this CCAA.
3. Participate in Sage-grouse Local Working Groups as requested, offering technical assistance and support.
4. Provide information and cooperate with landowners, and those assisting landowners, in the development of these plans.
5. Provide support and technical assistance through programs administered by the WDA, including the Coordinated Resource Management Program, Rangeland Health Assessment Program, Animal Damage Management (Rodent/Predator) Program, and Weed & Pest Program.
6. Provide mediation, facilitation, or other alternative dispute resolution processes.
7. Locate and apply for financial assistance to enable timely implementation of CMs.
8. Provide inventory, monitoring, survey, or other collected data to the FWS and/or other PAs.

5.6 WYOMING GAME AND FISH DEPARTMENT

The WGFD agrees to provide the following technical assistance to landowners, FWS, and other PAs in implementing the CMs.

1. Serve as an advisor, providing expertise on the management and conservation of sage-grouse.
2. Coordinate and participate in the statewide lek monitoring program (e.g., rangeland monitoring protocols, conducting [lek counts](#) in accordance with established WGFD protocols) to implement this CCAA and assure the consistency and quality of site-specific plans.
3. Ensure management of wildlife is compatible with the needs of sage-grouse to the greatest extent practicable.
4. Continue as an active participant in Sage-grouse Local Working Groups, offering technical assistance and support. Collaborate with the local working groups to identify the individual CMs in this CCAA that can best be implemented through efforts at the local level and maintain a schedule for completing those actions.
5. Provide information and cooperate with landowners, and those assisting landowners, in the development of individual site-specific plans.
6. In cooperation with the WGO, seek funding to implement this CCAA.
7. Provide inventory, monitoring, survey, or other collected data to the FWS and/or other PAs.

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5.7 BUREAU OF LAND MANAGEMENT

The BLM agrees to provide the following technical assistance to aid landowners in implementing the CMs for the BLM CCA.

1. Work with landowners (i.e., Federal grazing permit holders) and other agencies (e.g., agriculture extension agents) to facilitate appropriate rangeland monitoring and/or training.
2. Implement a companion CCA (see section 24).

5.8 UNITED STATES FOREST SERVICE

The USFS agrees to provide the following technical assistance to aid landowners in implementing the CMs.

1. Work with landowners (i.e., Federal grazing permit holders) and other agencies (e.g., agriculture extension agents) to facilitate appropriate rangeland monitoring and/or training.
2. Implement a companion CCA where appropriate (see section 24).

6. LEVEL/TYPE OF TAKE/IMPACTS

Current regulations authorize the issuance of permits for otherwise prohibited activities (e.g., take, import, export, interstate and foreign commerce) in order to enhance the propagation or survival of a listed species. For CCAAs, the respective policy (64 FR 32726) and regulations (50 CFR 17.22(c) and 17.32(c)) provide for the associated EOS permits under section 10(a)(1)(A) to authorize incidental take.

The FWS identified habitat loss and fragmentation as the primary causes of sage-grouse declines (75 FR 13910; March 23, 2010). The protection of existing sage-grouse habitat as well as the restoration of degraded habitat is crucial to the continued existence of the species in Wyoming. The CMs identified in this CCAA are expected to maintain and enhance habitat on enrolled lands and limit adverse impacts to sage-grouse. Several CMs address potential sources of mortality, injury, and other forms of take through loss or degradation of habitat. Therefore, minimal incidental take as a result of proper implementation of the CMs and normal ranching operations maintaining healthy sagebrush ecosystems is expected. We expect the majority of incidental take will be in the form of harassment or death during haying and mowing, strikes on fences and other ranch infrastructure, and fragmentation of intact sagebrush landscapes.

The precise number of sage-grouse that will be taken in Wyoming cannot be determined. Little information is available regarding incidental mortalities of sage-grouse from ranching operations. However, Christiansen (2009) and Stevens (2011) discuss rates of fence collisions

1346 for sage-grouse at specific locales. Christiansen (2010) also discusses sustainable levels of take
1347 from hunting.

1348
1349 Stevens (2011) determined that at four sites in Idaho sage-grouse collisions with fences during
1350 the breeding season were negatively influenced by increasing topographical relief, but had a
1351 positive relationship with increasing fence length and density, increasing lek size, and decreasing
1352 distance from a fence to a lek. The author found differences in collision rates between study
1353 areas, suggesting landscape features also influence collision rates. Collision rates varied from
1354 0.10-0.75 strikes per km (0.16-1.21 strikes per mi) of fence.

1355
1356 In a Wyoming study, Christiansen (2009) reported increasing topographical relief resulted in
1357 fewer collisions, presumably because sage-grouse were flying at greater elevations simply to
1358 avoid topographical features. The author also noted increased collision rates were associated
1359 with fences constructed with steel t-posts, fences near leks and riparian areas, and fences
1360 bisecting winter concentration areas. This study documented 146 sage-grouse strikes along 7.6
1361 km (4.7 mi) of fence.

1362
1363 Both authors found marking fences to increase visibility significantly reduced collisions.
1364 Population sizes were not provided; therefore, we cannot estimate the impact of these collisions
1365 on population persistence. Both authors also noted not all fences within the range of sage-grouse
1366 were problematic. Given the diversity of variables measured in this research (fence length, fence
1367 construction, proximity to lek, proximity to riparian areas, lek size, seasonal habitat use, and
1368 topographical variation), it is not possible to calculate the number of sage-grouse taken in
1369 Wyoming as a result of collision with fences. However, we anticipate fence collisions will be
1370 minimized on enrolled lands through the implementation of CMs specifically designed to reduce
1371 collision rates.

1372
1373 The only quantifiable estimates of take relative to total population mortality pertain to hunting.
1374 Connelly et al. (2000) suggested no more than 10 percent of the fall sage-grouse population be
1375 removed through harvest. Sedinger et al. (2010) detected no negative correlation between annual
1376 survival and harvest when harvest rates were less than 11 percent of the fall population.
1377 However, States do not presently measure fall population size of sage-grouse, and no recognized
1378 protocol has been established to do so (Reese and Connelly 2011). To compensate for a lack of
1379 site-specific information and contradictory study results, Reese and Bowyer (2007) suggested
1380 wildlife managers propose a harvest of five percent of the spring breeding population estimate.

1381
1382 The WGFD estimates less than five percent of the sage-grouse population is taken annually by
1383 hunters in Wyoming (Christiansen 2010). Incidental take from ranching activities and
1384 implementation of the CMs identified in this CCAA will likely be less than take from hunting
1385 due to the beneficial nature of the CMs. Therefore, combined take from both hunting and
1386 ranching activities should be within the 10 percent recommendation made by Connelly et al.
1387 (2000) and Sedinger et al. (2010). A sustainable population level of sage-grouse should be
1388 maintained throughout the State at this level of take. Incidental take from these activities will
1389 likely be reduced even further following successful implementation of the CMs associated with
1390 this CCAA.

1391

1392 We cannot predict the number of landowners and acreage that will enroll in this program.
1393 Consequently, we cannot quantify the actual take that may result from implementation of this
1394 umbrella CCAA. However, we developed a simple estimator using a statewide estimate of sage-
1395 grouse abundance, the total area of sagebrush statewide, the number of acres enrolled by an
1396 individual landowner, and an allowable take of 5 percent from ranching activities. We assumed
1397 approximately 208,000 sage-grouse are in Wyoming (FWS 2010). We also assumed that the
1398 total area of sagebrush habitats within the State is approximately 17,500,000 ha (43,000,000 ac)
1399 (FWS unpublished GIS data). This equals a statewide average density of approximately 0.01
1400 birds per ha (0.005 birds per acre) of sagebrush. The number of acres enrolled by a landowner
1401 multiplied by the statewide average density of sage-grouse provides an estimate of the number of
1402 birds on the enrolled property. The number of birds on the property multiplied by an allowable
1403 take of 5 percent determines the annual allowable incidental take for the enrolled property. For
1404 example, if a landowner enrolls 1,000 ac, he will have an annual allowable incidental take of
1405 0.25 birds (1000 ac x 0.005 birds per acre x 0.05 allowable take = 0.25 birds). Therefore, over
1406 the 20 year duration of the individual CCAA, an allowable incidental take of 5 birds would be
1407 authorized in the landowner's section (10)(a)(1)(A) EOS permit.
1408

1409 If new information suggests that allowable incidental take is inadequate for a particular enrolled
1410 property, FWS will work cooperatively with the landowner to adjust take to an appropriate level
1411 as long as FWS determines that additional take is not detrimental to the long-term conservation
1412 of the sage-grouse. Additionally, if total allowable take for a given enrolled property is
1413 exceeded, if the landowner takes necessary actions to eliminate the cause of take, FWS will work
1414 cooperatively with the landowner to continue implementation of the CCAA.
1415

1416 We recognize that this formula for incidental take does not consider variations in habitat quality
1417 or hunting intensity between enrolled properties. However, we believe that this is a reasonable
1418 approach given the complexities of annually assessing each enrolled property to determine the
1419 number of sage-grouse present. We also recognize that annual allowable take may be less than
1420 one bird, depending on the number of acres enrolled. However, if take is assessed over multiple
1421 years, we gain a degree of flexibility in determining take.
1422

1423 Adverse impacts not rising to the level of take

1424

1425 Disturbance of some individual sage-grouse may occasionally occur from feeding, calving, and
1426 herding of livestock, or from recreational activities (e.g., horseback riding, ATV riding, and legal
1427 hunting of other species). These effects are expected to occur only rarely and will likely result in
1428 birds being flushed a short distance. This will not likely adversely affect the fitness of these
1429 birds.
1430

1431 How take may affect the sage-grouse

1432

1433 Incidental take of sage-grouse related to ranch operations is often related to fragmentation of
1434 habitat. Several CMs address fragmentation, including the CM regarding maintenance of
1435 contiguous habitat required of all enrolled landowners. Occasional sage-grouse mortality may
1436 also occur from fence strikes, and CMs have been designed to limit the risk of these losses.

1437 Mortality from fence strikes is anticipated to occur very infrequently with the implementation of
1438 these CMs.

1439
1440 In conclusion, the small level of incidental take estimated from ranching activities (5 percent)
1441 will be reduced by the successful implementation of the CMs. The umbrella CCAA (including
1442 participation of individual CCAAs) will aid conservation of sage-grouse and their habitat in
1443 Wyoming, as further described in the following section.

1444
1445

1446 **7. EXPECTED BENEFITS**

1447
1448 The FWS must determine that the CMs and expected conservation benefits from this umbrella
1449 CCAA, combined with those benefits achieved if similar CMs were also implemented on other
1450 similar properties throughout the range of the sage-grouse, would remove the need to list the
1451 species. The CMs identified in this CCAA are expected to benefit sage-grouse through
1452 maintenance, enhancement, and restoration of sage-grouse populations and their habitats and by
1453 reducing threats causing direct mortality. Since non-Federal landowners control substantial
1454 acreage of important habitat for sage-grouse, encouraging implementation of CMs by enrolled
1455 landowners throughout Wyoming will improve conservation of this species statewide. This is an
1456 opportunity to make large-scale improvements on over 7 million ha (17 million ac) of privately
1457 owned lands, with the expected result of larger and more widely distributed populations of sage-
1458 grouse throughout Wyoming. As required by the CCAA standard, if this CCAA were
1459 implemented on all necessary properties, the FWS believes the need to list sage-grouse would
1460 likely be precluded for the threats addressed in this umbrella CCAA and for the area it covers.
1461 The expected conservation benefits in relation to threats known or potentially occurring in
1462 Wyoming are described in the following paragraphs.

1463
1464 Regulatory assurances conferred to enrollees will provide an incentive for more landowners to
1465 maintain their ranch operations and lessen the likelihood these lands will be sold and divided for
1466 exurban development. The curtailment of the development threat would benefit sage-grouse
1467 populations by maintaining habitat quantity and quality and limiting habitat fragmentation,
1468 which has been identified as the most significant threat to the species. The assurances conferred
1469 under the CCAA program by section 10(a)(1)(A) EOS permits encourage potential participating
1470 landowners to select CMs to remove or reduce threats on enrolled lands. Such decisions are
1471 crucial to the success of this umbrella CCAA, but can only be carried out through the actions of
1472 individual landowners with individual CCAAs. The umbrella CCAA provides further incentives
1473 for landowner participation through a streamlined enrollment process. Although enrollees will
1474 need to sign individual CCAAs, the umbrella CCAA simplifies the process for developing site-
1475 specific plans by providing the suite of appropriate CMs for each threat that may occur on the
1476 property. With anticipated increased enrollment as a result of these incentives, benefits to the
1477 species are expected at a landscape scale.

1478
1479 From a rancher's perspective, options to change vegetative conditions primarily concern the
1480 management of herds – specifically where and when they graze, for how long, and in what
1481 numbers (Cagney et al. 2010). These decisions, coupled with fences, herding techniques, salt

1482 and mineral placement, seasons of use, water development, and type of livestock, constitute the
1483 majority of ranch management options. CMs related to livestock management take two forms.
1484 The first is avoidance and minimization of direct physical threats. In many cases, maintenance
1485 of currently suitable habitat meets the needs of sage-grouse. However, in some cases, livestock
1486 grazing is displacing birds. Methods to avoid or minimize impacts include not concentrating
1487 livestock in known breeding or brood-rearing habitat or near known leks during the times these
1488 areas are in use by the sage-grouse. The second form of livestock management addresses
1489 unfavorable modifications to habitat, particularly breeding and brood-rearing habitats. Some of
1490 these impacts are easily identified. For example, spring grazing can reduce grass and forb
1491 heights. An appropriate CM is to remove livestock from specific areas during the spring to
1492 protect adequate nesting cover. More subtle changes in species composition, grass/forb mixture,
1493 and shrub cover may also modify habitat and can only be determined by establishing long-term
1494 trend monitoring for each pasture (described in section 12). Alternative CMs addressing changes
1495 in timing, intensity, or duration may be needed if the vegetative trend moves away from desired
1496 conditions.

1497
1498 Fencing is an effective method to control livestock use of pastures and facilitate herd use over
1499 the landscape, thereby avoiding localized impacts to habitat. However, fencing can also degrade
1500 and fragment habitat, particularly if roads are maintained next to the fence. Fences can provide a
1501 pathway for predators, introduce weeds, and contribute to increased bird-fence collision risks.
1502 CMs designed to reduce or remove these threats include habitat assessments to avoid
1503 constructing fences (and other infrastructure) in important habitats, removal of fences (or
1504 portions of the fence) where confirmed collisions are a threat, use of “lay down” or electric
1505 fence, and markers to improve the visibility of fences.

1506
1507 Extended periods of drought can harm habitats important to sage-grouse. While ranching
1508 operations cannot influence precipitation, they can help maintain or reduce potential loss of sage-
1509 grouse habitat and ultimately increase the survival rates of sage-grouse by implementing drought
1510 management plans. For example, adjusting livestock use (season of use, intensity, and/or
1511 duration) can reduce adverse impacts on perennial herbaceous cover, plant species diversity, and
1512 plant vigor, as well as increase soil moisture by increasing plant litter. Working with agency
1513 specialists may identify other options (e.g., grass or “forage” reserves) available to assist in
1514 further reducing impacts during dry conditions.

1515
1516 CMs for fire include working with PA specialists on strategies to prevent or suppress wildland
1517 fires, particularly those in important sage-grouse habitat, as well as participation in restoration
1518 activities post-burn (e.g., native seeding/planting, temporarily removing or reducing livestock
1519 use). Fire suppression in breeding and winter habitats is probably among the most beneficial
1520 CMs regarding fire. If important sagebrush stands are burned, sage-grouse use can be adversely
1521 affected for 20 years or more, reducing habitat quality and quantity. Therefore, it is important to
1522 develop plans to reduce the threat of fire where possible and aggressively fight fire when
1523 outbreaks occur in important sagebrush habitat. Proactive planning addresses wildland fire
1524 outbreaks and reduces the possibility of establishing unsuitable plant communities (e.g.,
1525 monocultures of non-natives, introductions of exotics). Sagebrush restoration following a fire is
1526 complicated by the presence of invasive exotic annual plant species, restoration costs,

1527 availability of suitable seeds, and the difficulty of establishing sagebrush seedlings. The efficacy
1528 of these efforts and the utility of these sites for sage-grouse in the future may not be realized for
1529 several decades. Range monitoring, especially in burned areas, is expected to provide more
1530 information on sage-grouse use (or avoidance) of these areas, which may lead to better
1531 management prescriptions in the future.

1532
1533 The most effective CMs to reduce or remove threats associated with annual grass invasions are
1534 the prevention and suppression of wildland fire, particularly in important sagebrush habitats.
1535 This also imparts the benefits of maintaining existing shrub cover and preventing incursions of
1536 annual grasses. Secondary CMs include livestock management practices leaving residual cover,
1537 eradication of known populations of invasives, and immediate restoration of disturbed sites (e.g.,
1538 borrow ditches along roads).

1539
1540 Encroachment of woodland species (e.g., junipers, conifers, Russian olive, salt cedar) into sage-
1541 grouse habitat can lead to a reduction of sage-grouse use, or complete abandonment of these
1542 habitats. If this threat is present, enrolled landowners should remove woodland species, which
1543 will increase available sage-grouse habitat or restore previously occupied habitat.

1544
1545 Concentrated and/or overabundant big game populations can harm plant communities important
1546 to sage-grouse, reducing both habitat quality and quantity. CMs for this potential threat include
1547 working with WGFD to allow public hunting access to reduce or re-distribute wildlife and
1548 working with PAs to develop habitat treatments that better distribute wildlife use of an area.
1549 This will minimize localized impacts from overgrazing by big game, thereby maintaining
1550 optimal habitat conditions for sage-grouse.

1551
1552 CMs to remove or reduce mosquito habitat limit the threat to sage-grouse from WNV. For
1553 example, constructing ponds with steep slopes and limited vegetation may reduce the habitat for
1554 mosquito vectors carrying WNV. Treating ponds with mosquito larvicides in areas known to be
1555 high in mosquito vectors (e.g., Powder River Basin) will also reduce the threat of WNV.
1556 Reporting dead and dying sage-grouse to WGFD or FWS could result in earlier treatment and
1557 thereby help avert a larger outbreak.

1558
1559 CMs including removing dead piles, controlling domestic pets, and installing raptor perch
1560 deterrents in important sage-grouse habitat can directly address the impacts of human-caused
1561 increases in local predators. CMs addressing the threat of habitat loss and fragmentation will
1562 also reduce the threat of predation. For example, removing fences in important sage-grouse
1563 habitat removes a potential travel corridor for predators.

1564
1565 Development restrictions within sage-grouse core management areas designated by the State of
1566 Wyoming will limit new development in those areas. The core strategy effort, in conjunction
1567 with this umbrella CCAA will conserve sage-grouse by formally providing protections and CMs
1568 on private lands within the core areas. Lands outside the core area remain important; however,
1569 the benefits to habitat within core areas are magnified when included in the CCAA strategy. The
1570 State also requires development of a SUA before mineral rights can be developed on lands with
1571 severed surface and mineral ownership. If a landowner(s) develops a SUA, they may condition

1572 the SUA based on the objectives and CMs in the individual CCAA. The CMs would continue to
1573 apply to those lands. However, incidental take assurances will not apply to take resulting from
1574 mineral development activities.

1575
1576 CMs to reduce potential impacts from the application of pesticides include: (1) evaluation of the
1577 pest threat (i.e., do not spray if there is no problem); (2) implementation of a RAAT to control
1578 grasshoppers, which focuses control efforts along strips to avoid spraying entire fields, and
1579 avoids the pesticides carbaryl and malathion; and (3) working with agency specialists to plan and
1580 design control efforts to avoid harming non-target species. These CMs minimize or eliminate
1581 potential exposure to pesticides directly harmful to sage-grouse or indirectly impacting sage-
1582 grouse through the loss of invertebrates that are a component of the species' diet.

1583
1584 Upon completion of this umbrella CCAA, it will be used as a template to draft CCAs for lands
1585 managed by BLM and USFS as deemed appropriate by agency leadership. The CCAs will
1586 present CMs similar to those in the individual CCAAs being implemented by private landowners
1587 who also hold grazing permits on respective Federal lands. Consequently, the CCAs will
1588 "dovetail" with individual CCAAs, providing benefits to sage-grouse on Federal lands leased by
1589 private landholders similar to the benefits derived on private lands. The CCA efforts will
1590 enhance the comprehensive landscape approach to greater sage-grouse conservation for grazing
1591 and associated activities.

1592

1593 **8. ASSURANCES PROVIDED**

1594

1595 The FWS provides assurances through individual CCAAs with non-Federal property owners and
1596 the associated section 10(a)(1)(A) EOS permits. If the sage-grouse is listed, no additional CMs
1597 or land, water, or resource use restrictions, beyond those voluntarily agreed to and described in
1598 Section 5, will be required as long as the enrolled landowner is in full compliance with the
1599 individual CCAA and section 10(a)(1)(A) permit. These assurances will be authorized with the
1600 issuance of EOS permits under section 10(a)(1)(A) of the ESA. If all permit issuance criteria are
1601 met in accordance with 50 CFR §§ 17.22(d)(2) and 17.32(d)(2), the FWS would issue permits to
1602 authorize incidental take associated with the following covered activities.

1603

1604 1. *General farm operation:* Cultivation of fields (planting, cultivation, and harvesting small
1605 grain, seed, and/or hay crops); irrigation by flooding or sprinklers; weed control within
1606 fields; and maintenance of houses, outbuildings, fences, and corrals.

1607

1608 2. *General ranching operations:* Grazing of forage, feeding hay and dietary supplements in
1609 feedlots and pastures, calving and branding operations (including temporary penning of
1610 animals), disposal of dead animals, construction and placement of watering sources,
1611 gathering and shipping livestock, general stewardship, and animal husbandry practices.

1612

1613 3. *Recreation:* These same lands provide numerous recreational benefits for family
1614 members and guests, some of whom pay for recreational services by leasing hunting
1615 rights or through other mechanisms. For the purposes of this CCAA, the following land
1616 use, management, and recreational activities are defined as "covered activities," although

1617 they may be further refined in individual site-specific plans: legal hunting and fishing,
1618 use of recreational vehicles both on and off established roads, horseback riding, camping,
1619 and hiking.

1620
1621 Take resulting from mineral development activities will not be authorized under individual
1622 CCAAs or section 10(a)(1)(A) permits.

1623
1624

1625 **9. ASSURANCES PROVIDED TO ENROLLED LANDOWNER IN CASE** 1626 **OF CHANGED OR UNFORESEEN CIRCUMSTANCES**

1627
1628 The assurances listed below apply to enrolled landowners with an EOS permit associated with
1629 this CCAA, where the CCAA is being properly implemented. The assurances apply only with
1630 respect to sage-grouse and only to ranch management activities.

1631

1632 Changed circumstances provided for in the CCAA

1633

1634 If additional CMs are necessary to respond to changed circumstances and were identified in this
1635 umbrella CCAA, the FWS and other PAs will work with enrolled landowners in selection of
1636 appropriate, and mutually agreed upon, CMs. If circumstances occur eliminating a substantial
1637 amount of sage-grouse habitat on properties covered by this CCAA to the extent meeting suitable
1638 habitat conditions is not possible within the CCAA time frame, PAs will meet and evaluate CMs
1639 and identify potential actions to address the changed circumstances. The FWS will work with
1640 the enrolled landowner(s) to re-evaluate the existing CMs to be implemented in order to develop
1641 a mutually agreed upon schedule. Adaptive management approaches will be applied to make
1642 adjustments to maximize the likelihood of success.

1643

1644 Potential factors resulting in changed circumstances include drought, fire, disease (WNV), and
1645 development. These factors are described below.

1646

1647 Drought: Variation in precipitation is common throughout the sage-grouse range. Annual
1648 rangeland monitoring and CMs on enrolled lands are expected to address minor year to year
1649 variations in precipitation. However, prolonged droughts in important grouse habitats may
1650 create conditions reducing seasonally available habitat beyond normal annual variation and
1651 causing changed circumstances on the landscape such as vegetative die-off or poor production of
1652 invertebrates. In the event of drought, the FWS will meet with other PAs and evaluate the
1653 drought conditions. If appropriate, CMs specific to situations of prolonged drought will be
1654 utilized to address local conditions. The FWS will work with enrolled landowners to determine
1655 if current livestock grazing practices should be temporarily modified. CMs enrolled landowners
1656 may use to address drought conditions include, but are not limited to: (1) grazing [rest](#), [deferment](#),
1657 rotation, or other management changes designed to retain residual and live vegetation; (2)
1658 development of grass banks for use during drought conditions; (3) development of additional
1659 water sources for livestock and sage-grouse; and (4) other vegetation management to minimize
1660 additive impacts. Any changes or additions to CMs will be mutually agreed upon by enrolled
1661 landowners and FWS.

1662
1663 Fire: There is a potential for catastrophic fire throughout the sage-grouse range, particularly
1664 during periods of drought. Fire can eliminate sagebrush habitat and increase the likelihood of
1665 invasive, noxious plants. In the event of catastrophic fire, the FWS will meet with other PAs and
1666 evaluate the impact of the fire. The FWS will work with enrolled landowners to determine if
1667 additional CMs are needed. CMs enrolled landowners may use to address impacts from fire
1668 include, but are not limited to: (1) implementation of restoration projects; (2) rest from livestock
1669 use; (3) removal of invasive plants; and (4) working with PA specialists to address issues. Any
1670 changes or additions to CMs will be mutually agreed upon by enrolled landowners and FWS.

1671
1672 Disease (WNV): WNV has recently spread into Wyoming, particularly the northeastern corner of
1673 the State. There is the potential for a large-scale outbreak among sage-grouse, which are
1674 susceptible to the disease and suffer a high rate of mortality when infected. In the event of a
1675 disease outbreak, the FWS will meet with other PAs and evaluate the impact from the outbreak.
1676 The FWS will then meet with enrolled landowners to determine if additional CMs are needed.
1677 CMs enrolled landowners may use to address impacts from WNV include, but are not limited to:
1678 (1) chemical treatment of mosquito larvae present in ponds; (2) design ponds to prevent
1679 establishment of aquatic vegetation and minimize mosquito habitat; and (3) notify WGFD or
1680 FWS of dead or sick sage-grouse. Any changes or additions to CMs will be mutually agreed
1681 upon by enrolled landowners and FWS.

1682
1683 Development: There is the possibility of development unrelated to ranching. In particular,
1684 renewable and non-renewable energy development may occur throughout much of the sage-
1685 grouse range in Wyoming, especially on lands where subsurface mineral rights are severed from
1686 the enrolled landowner's surface rights. Impacts can include both direct loss of habitat and
1687 habitat fragmentation by roads, pipelines, power lines, wind turbines, and other infrastructure.
1688 Accompanying noise disturbance can also reduce lek attendance and nesting success. In the
1689 event of energy development on lands enrolled under this umbrella CCAA, the FWS and other
1690 PAs will evaluate the compatibility of the development with the goals of the individual CCAA.
1691 The FWS will work with enrolled landowners to determine if additional CMs are needed. CMs
1692 that enrolled landowners may use to address impacts from energy development include, but are
1693 not limited to: (1) avoid building new infrastructure within 0.6 mi of occupied leks; (2) avoid
1694 eradicating sagebrush; and (3) craft an SUA and development plan in cooperation with the
1695 operator to minimize surface disturbing activities. Any changes or additions to CMs will be
1696 mutually agreed upon by enrolled landowners and FWS.

1697
1698 Changed circumstances not provided for in the CCAA

1699
1700 If additional CMs are necessary to respond to changed circumstances and such measures were
1701 not provided for in the umbrella CCAA, the FWS will not require any conservation and
1702 mitigation measures in addition to those provided for in the individual CCAA without the
1703 consent of the enrolled landowner(s), provided the CCAA is being properly implemented.

1704
1705
1706

1707 Unforeseen circumstances

1708
1709 If additional CMs are necessary to respond to unforeseen circumstances, the FWS work with the
1710 enrolled landowner to determine applicability of implementing additional CMs, but only if such
1711 measures are limited to modifications addressed within this umbrella CCAA, and only if those
1712 measures maintain the original terms of the individual CCAA to the maximum extent possible.
1713 Additional CMs will not require the commitment of additional land resources, water resources,
1714 financial compensation, or additional restrictions on the use of land, water, or other natural
1715 resources, beyond the level otherwise agreed upon, without the consent of the enrolled
1716 landowner(s). The FWS will have the burden of demonstrating unforeseen circumstances exist,
1717 using the best scientific and commercial data available. These findings must be clearly
1718 documented and based upon reliable technical information regarding the status and habitat
1719 requirements of the sage-grouse. The FWS will consider, but not be limited to, the following
1720 factors:

- 1721
- 1722 (1) Size of the current range of the sage-grouse;
 - 1723 (2) Percentage of range adversely affected by the CCAA;
 - 1724 (3) Percentage of range conserved by the CCAA;
 - 1725 (4) Ecological significance of the portion of the range affected by the CCAA;
 - 1726 (5) Level of knowledge about the sage-grouse and the degree of specificity of the species’
1727 conservation program under the CCAA; and
 - 1728 (6) Whether failure to adopt additional CMs would appreciably reduce the likelihood of
1729 survival and recovery of sage-grouse in the wild.
- 1730

1731

1732 **10. MONITORING PROVISIONS**

1733
1734 Enrolled landowners and PAs will conduct monitoring in accordance with individual CCAAs.
1735 There are several components of the monitoring program:

- 1736
- 1737 (1) Compliance monitoring, which will include:
 - 1738 a. Annual self-reporting by the enrolled landowner, and
 - 1739 b. Compliance evaluations conducted by the FWS and PAs; and
 - 1740 (2) Biological monitoring, which will include:
 - 1741 a. Baseline assessment by enrolled landowners or designees,
 - 1742 b. Periodic but intensive sage-grouse habitat monitoring conducted by a team
1743 established by the PAs, and
 - 1744 c. Annual sage-grouse lek monitoring conducted by the WGFD and enrolled
1745 landowners trained in lek monitoring protocols.
- 1746

1747 After reasonable prior notice to the enrolled landowner, the FWS or other PAs may enter the
1748 enrolled lands to ascertain compliance with the CCAA or to conduct biological monitoring.
1749 Reasonable prior notice is notice given at least two weeks in advance of a visit. Landowners will
1750 also be notified at least 48 hours in advance with a specific time, location, and names of all personnel
1751 entering the property for monitoring purposes.

1752
1753 The results of monitoring efforts outlined below and more specifically addressed in Appendices C
1754 and D will be considered from an adaptive management perspective. Many of the potential CMs
1755 have been successfully implemented as part of other conservation efforts. However, outcomes of a
1756 few CMs may vary based upon local site conditions. Specifically, CMs with a vegetation restoration
1757 component may have varying success based upon local soil type and climatic conditions such as
1758 rainfall timing and amount. For these CMs, careful monitoring both before and after implementation,
1759 along with the flexibility provided through adaptive management, will maximize the likelihood of
1760 success through possible changes to seed mixtures, rescheduling of reclamation efforts, timing of
1761 treatments, and other adjustments.

1762
1763 An adaptive, outcome-based approach (Walters 1986) will be used to allow management
1764 flexibility, recognizing CMs may need to be updated based on changing conditions or new
1765 information. Such an adaptive approach explicitly recognizes multiple factors (environmental
1766 conditions, biological processes) affect sage-grouse populations. Furthermore, the consequences
1767 of prescriptive CMs cannot be predicted with certainty. Therefore, the CCAA provides a
1768 framework for making objective decisions in the face of uncertainty. If the expected results of a
1769 CM are not achieved, the CM is either modified or an alternative CM is undertaken in order to
1770 achieve the expected results. Adaptive management relies on an iterative cycle of monitoring,
1771 assessment, and decision making to clarify the relationships among the CMs and the response of
1772 habitat and, ultimately, sage-grouse abundance.

1773

1774

1775 **11. COMPLIANCE MONITORING**

1776

1777 The enrolled landowner is responsible for annual compliance monitoring and annual reporting
1778 specified herein related to implementation of the individual CCAA and fulfillment of its
1779 provisions, including implementation of agreed-upon CMs (see Appendices C and D for
1780 reporting recommendations) and take authorized by the permit. Compliance monitoring will
1781 require information on which CMs were implemented, when and where the CMs were
1782 implemented, and whether any take occurred (see Table 2 for specific requirements).

1783

1784

1785 **12. BIOLOGICAL MONITORING**

1786

1787 Ranch management and grazing practices currently employed by landowners likely result in one
1788 of two conditions: (1) properties contain suitable habitat currently being maintained; or (2)
1789 properties contain potentially suitable habitat not currently being maintained, but for which there
1790 exists substantial opportunity to restore, improve, and enhance habitat through the
1791 implementation of CMs included in this CCAA.

1792

1793 The landowner will conduct a scaled approach to monitoring based on the quality and type of
1794 habitat existing on the enrolled property at the time of application. PA biologists will be
1795 identified on a site-by-site basis to assist the landowner with monitoring as appropriate. PA
1796 biologists will determine the level of monitoring applied to each property. The first and simplest

1797 level of monitoring applies to those properties containing suitable habitat for sage-grouse
 1798 currently maintained by existing grazing or ranch management practices. This level of
 1799 monitoring will consist of verifying, through annual reporting to FWS, the continued
 1800 implementation of agreed-upon CMs. Alternatively, on those properties for which a grazing
 1801 management plan has been developed by NRCS, monitoring would consist of reporting on
 1802 compliance with the plan.

1803
 1804 The second, more rigorous, level of monitoring will apply to properties with potentially suitable
 1805 sage-grouse habitat, for which there is substantial opportunity to improve habitat through the
 1806 implementation of CMs. There are three main seasonal habitats important to sage-grouse: (1)
 1807 nesting and early brood-rearing, (2) late brood-rearing, and (3) fall and winter (Connelly et al.
 1808 2000). Consequently, the biological monitoring protocols will focus on annual evaluations of
 1809 these habitat types where CMs are being implemented for each enrolled property. PA biologists
 1810 will confirm the presence of each habitat type on each enrolled property, and assist each
 1811 landowner in establishing appropriate transect locations, number of transects per habitat type,
 1812 and proper time of year to perform the surveys. The landowner and assisting PAs will collect
 1813 information appropriate to the seasonal habitat types found on the property using the procedures
 1814 outlined in Tables 3-5 below.

1815
 1816 **Table 3.** Suitable nesting and early brood-rearing habitat characteristics
 1817

Habitat Feature	Habitat Use	Minimum Productive Site Characteristics	Example of technique to measure metric
Sagebrush canopy cover	Nesting Cover	15 percent	Continuous line intercept
Sagebrush height	Nesting Cover	12 in	Robel Pole
Sagebrush growth form	Nesting Cover	Spreading form with few dead branches	Visual Observation/Photo
Perennial grass and forb height	Nesting Cover	>7 in	Robel Pole
Perennial grass and forb cover	Nesting Cover and food	>15 percent	Line-point intercept
Forb abundance and variety	Food	High	Daubenmire plot/sample point method

1818
 1819 **Table 4.** Suitable late brood-rearing habitat characteristics
 1820

Habitat Feature	Habitat Use	Minimum Productive Site Characteristics	Example of technique to measure metric
Sagebrush canopy cover	Cover	10 percent	Continuous line intercept

Sagebrush height	Cover	15 in	Robel Pole
Proximity of sagebrush cover	Cover	Sagebrush cover is adjacent(<100 yards) to brood-rearing area(s)	Measuring tape
Perennial grass and forb canopy cover	Cover and food	>15 percent	Line-point intercept
Riparian and wet meadow plant community	Food	Wetland plant species dominate wet meadow or riparian area	Daubenmire plot/sample point
Riparian and wet meadow stability	Cover and food	Some bare ground maybe evident but vegetative cover dominates the site	Daubenmire plot/sample point method
Forb availability in uplands and wetland areas	Food	Succulent forbs are readily available in terms of distribution and plant structure	Daubenmire plot/sample point method

1821
1822
1823

Table 5. Suitable fall and winter habitat characteristics

Habitat Feature	Habitat Use	Minimum Productive Site Characteristics	Example of technique to measure metric
Sagebrush canopy cover	Cover and food	10 percent	Continuous line intercept
Sagebrush height	Cover and food	10 in above snow level	Robel Pole

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Enrolled landowner biological monitoring includes:

1. Evaluation by each enrolled landowner or their designee of the effects of implemented CMs on local seasonal habitat condition and may include monitoring vegetation heights, canopy cover, production, and species diversity (see Tables 3-5).
2. Monitor rangelands for noxious, invasive weeds, especially on areas of disturbed soils, to enable early detection and control of undesirable species, before they become established. There is no set protocol, but there is a reporting requirement that surveys be documented (e.g., date, length of survey route, location of survey route) and reported annually.
3. Record dates, locations, and numbers of sage-grouse observed on their property and include information in the annual report. The FWS will provide a report form.
4. Report all observed mortalities of sage-grouse to the FWS within five days.
5. Annually compile and provide information from these monitoring efforts to FWS by January 31. FWS will distribute copies of reports to all PAs.

PAs biological monitoring includes:

- 1842 6. Assess sage-grouse habitat conditions on 10 percent of randomly selected enrolled
1843 properties at least once every five years. Since sagebrush takes years to respond to
1844 changes in management, changes in vegetative composition will be captured within this
1845 timeframe. This assessment will describe occupied seasonal habitat and potential
1846 seasonal habitat, seasonal habitat availability, and anthropogenic features within and
1847 between seasonal habitats for each enrolled property.
- 1848 7. Annually assess Quality Assurance/Quality Control by randomly selecting 10 percent of
1849 the enrolled properties and completing a local seasonal habitat condition evaluation. The
1850 results of this evaluation/survey will be compared with landowner evaluation for Quality
1851 Assurance/Quality Control of the survey methods/protocols.
- 1852 8. PAs and enrolled landowners trained in lek data collection protocols will conduct annual
1853 monitoring of sage-grouse leks. Monitoring will follow protocols established by the
1854 WGFD. Reports are due annually to FWS on January 31. FWS will distribute copies of
1855 reports to all PAs.
- 1856 9. PAs will conduct surveys to evaluate individual CM effectiveness (e.g., how well do
1857 fence markers actually work in reducing fence strikes?).
1858

1859 Stable to increasing populations of sage-grouse will give evidence selected CMs were
1860 successfully implemented. Additional information on monitoring requirements is presented in
1861 Appendices C and D.
1862
1863

1864 **13. NOTIFICATION OF TAKE REQUIREMENT**

1865

1866 While it will not be possible in all incidental take situations, to the extent that it is possible
1867 enrolled landowners agree to provide the FWS with an opportunity to rescue individuals of the
1868 covered species before anticipated and authorized take occurs (e.g., mowing hay with potential to
1869 take a nesting hen and brood). In such cases, notification of take should be provided to FWS 30
1870 days prior to the action; minimally, notification must occur no less than 14 days prior to the
1871 action. For those situations in which unpredicted, authorized take has occurred, the enrolled
1872 landowner agrees to provide notification to FWS within 30 days of take occurrence.
1873
1874

1875 **14. DURATION OF CCAA AND PERMIT**

1876

1877 This umbrella CCAA will be in effect for 40 years following its approval and signing by the
1878 FWS. Individual CCAAs for enrolled landowners, including any commitments related to
1879 funding under FWS programs, will be in effect for 20 years following approval and signing by
1880 the FWS. The section 10(a)(1)(A) EOS permit authorizing take of the species also will have a
1881 term of 20 years from the effective date of the permit. This duration should be sufficient to
1882 determine that the CMs are benefiting the sage-grouse. A 20 year duration for individual
1883 CCAAs and associated permits also suits the practicalities of maximizing enrollment
1884 opportunities for interested landowners. While the greater sage-grouse remains unlisted, the
1885 FWS may renew individual CCAAs and permits, based upon reevaluation of the CCAA's ability
1886 to continue to meet the CCAA standard and agreement of the PAs. An enrolled landowner may

1887 also voluntarily terminate an individual CCAA as described in section 18. The FWS can only
1888 enroll new properties as long as the sage-grouse has not been listed.
1889

1890

1891 **15. MODIFICATION OF INDIVIDUAL CCAA**

1892

1893 Any Participating Party (enrolled landowner, FWS, or PA) may propose modifications or
1894 amendments to an individual CCAA, as provided in 50 CFR 13.23, by providing written notice
1895 to, and obtaining the written concurrence of, the other parties participating in the individual
1896 CCAA. Such notice shall include a statement of the proposed modification, the reason for it, and
1897 its expected results. The parties will use their best efforts to respond to proposed modifications
1898 within 60 days of receipt of such notice. Proposed modifications will only become effective
1899 upon the written concurrence of all parties participating in the individual CCAA.
1900

1901

1902

1903 **16. MODIFICATION OF UMBRELLA CCAA**

1904

1905 The FWS may not, through modification of the umbrella CCAA, impose any new requirements
1906 or conditions on, or modify any existing requirements or conditions applicable to, an enrolled
1907 landowner or successor in interest to the landowner (see section 22), to compensate for changes
1908 in the conditions or circumstances of any species or ecosystem, natural community, or habitat
1909 covered by the individual CCAA except as stipulated in 50 CFR 17.22(d)(5) and 17.32(d)(5).
1910

1911

1912

1913 **17. AMENDMENT OF INDIVIDUAL 10(a)(1)(A) PERMITS**

1914

1915 The FWS may amend individual permits to accommodate changed circumstances in accordance
1916 with all applicable legal requirements, including but not limited to the ESA, the National
1917 Environmental Policy Act (NEPA), and the FWS's permit regulations at 50 CFR 13 and 50 CFR
1918 17. The party proposing the amendment shall provide a statement describing the proposed
1919 amendment and the reasons for it. The amendment procedure cannot be used to impose CMs
1920 that are not provided for in the umbrella CCAA or propose additional use restrictions without
1921 landowner consent.
1922

1923

1924 In order to facilitate an effective amendment process, the parties to the CCAA agree to a set of
1925 amendment stipulations including: (1) notification to ensure all Participating Parties are provided
1926 any proposed amendments, and (2) an opportunity for all Participating Parties to review and
1927 respond to any proposed amendments. For each proposed amendment, the FWS must determine
1928 whether the proposed amendment of the EOS permit results in a minor change or a major
1929 modification of the individual CCAA resulting in outcomes significantly different from those
1930 analyzed for the original agreement.

1931

1932 Minor amendments involve routine administrative revisions or changes to the operation and
1933 management program associated with an individual CCAA, and may or may not alter the

1931 conditions of the permit. Minor amendments do not include the addition or alteration of CMs.
1932 Upon the written request of one of the parties to the CCAA, the FWS can approve minor
1933 amendments to individual CCAAs if the amendment does not conflict with the purposes of the
1934 umbrella CCAA or does not result in some material change to the FWS’s analyses (i.e., with
1935 respect to meeting the CCAA standard, the amount of take authorized, the section 7
1936 determination, or the NEPA decision). These minor amendments do not require a formal
1937 amendment process, but do require written documentation Participating Parties approved the
1938 amendment prior to it becoming effective. For example, a minor amendment might include a
1939 change in monitoring or reporting protocols based upon recommendations from new research.
1940

1941 A major amendment would either (1) result in a different level or type of take than was analyzed
1942 in association with the individual CCAA or (2) result in a change to the cumulative conservation
1943 benefits to the covered species such that the CCAA standard might not be met. Major
1944 amendments are likely subject to the procedural requirements of Federal laws and regulations,
1945 such as NEPA, and to require additional analysis by the FWS, public notification in the Federal
1946 Register, and a formal CCAA amendment process. For example, a major amendment might
1947 include a proposal to use a pesticide in sage-grouse habitat not specified in the individual CCAA.
1948

1949

1950 **18. TERMINATION OF THE CCAA**

1951

1952 As provided for in the draft CCAA Handbook (U.S. Fish and Wildlife Service 2003), an enrolled
1953 landowner may terminate implementation of the individual CCAA’s voluntary management
1954 actions prior to the CCAA’s expiration date, even if the expected benefits have not been realized.
1955 If an enrolled landowner is unable or unwilling to continue implementation of the plans and
1956 stipulations of the CCAA, the landowner must relinquish the permit to the FWS. An enrolled
1957 landowner may terminate a CCAA with 30 days prior written notice to the PAs. The FWS
1958 should be provided an opportunity to relocate affected species within 48 hours of that notice.
1959

1960

1961 **19. PERMIT SUSPENSION OR REVOCATION**

1962

1963 The FWS may suspend the privileges of exercising some or all of the EOS permit authority at
1964 any time if the permittee is not in compliance with the conditions of the permit, or with any
1965 applicable laws or regulations governing the conduct of the permitted activity. Such suspension
1966 shall remain in effect until the issuing officer determines that the permittee has corrected the
1967 deficiencies.

1968

1969 The FWS may not revoke an EOS permit except as follows:

1970

- 1971 • The FWS may revoke an EOS permit for any reason set forth in 50 CFR 13.28(a)(1)
1972 through (4). This regulation authorizes revocation if:

1973

- 1974 (1) The permittee willfully violates any Federal or State statute or regulation, or any
1975 Indian tribal law or regulation, or any law or regulation of any foreign country, which

1976 involves a violation of the conditions of the permit or of the laws or regulations
1977 governing the permitted activity; or
1978 (2) the permittee fails within 60 days to correct deficiencies that were the cause of a
1979 permit suspension; or
1980 (3) the permittee becomes disqualified; or
1981 (4) a change occurs in the statute or regulation authorizing the permit that prohibits the
1982 continuation of a permit issued by FWS.

- 1983
- 1984 • The FWS may revoke an EOS permit if continuation of the permitted activity would
1985 either:
1986
1987 (1) Appreciably reduce the likelihood of survival and recovery in the wild of any listed
1988 species; or
1989 (2) directly or indirectly alter designated critical habitat such that it appreciably
1990 diminishes the value of that critical habitat for both the survival and recovery of a
1991 listed species.

1992

1993 Before revoking a permit for either of the last two reasons, the FWS, with the consent of the
1994 permittee, will pursue all appropriate options to avoid permit revocation. These options may
1995 include, but are not limited to: extending or modifying the existing permit, capturing and
1996 relocating the species, compensating the landowner to forgo the activity, purchasing an easement
1997 or fee simple interest in the property, or arranging for a third party acquisition of an interest in
1998 the property.

1999

2000

2001 **20. REMEDIES**

2002

2003 Each party shall have all remedies otherwise available to enforce the terms of the CCAA and the
2004 permit, except that no party shall be liable in monetary damages for any breach of this CCAA,
2005 any failure to perform an obligation under this CCAA, or any other cause of action arising from
2006 this CCAA.

2007

2008

2009 **21. DISPUTE RESOLUTION**

2010

2011 The Participating Parties recognize disputes concerning implementation of, compliance with, or
2012 termination of the individual CCAA or EOS permit may arise from time to time. The
2013 Participating Parties agree to work together in good faith to resolve such disputes, using the
2014 informal dispute resolution procedures set forth in this section, or such other procedures upon
2015 which the parties may later agree. However, if at any time any party determines circumstances
2016 so warrant, it may seek any available remedy without waiting to complete informal dispute
2017 resolution.

2018

2019 Informal dispute resolution process – Unless the parties agree upon another dispute resolution
2020 process, or unless an aggrieved party has initiated administrative proceedings or suit in Federal

2021 court as provided in this section, the parties may use the following process to attempt to resolve
2022 disputes:

- 2023
- 2024 (1) The aggrieved party will notify the other parties of the provision potentially violated, the
2025 basis for contending a violation has occurred, and the remedies it proposes to correct the
2026 alleged violation.
- 2027 (2) The party alleged in violation will have 30 days, or such other time as may be agreed, to
2028 respond. During this time it may seek clarification of the information provided in the
2029 initial notice. The aggrieved party will use its best efforts to provide any available
2030 information responsive to such inquiries.
- 2031 (3) Within 30 days after such response was provided or was due, representatives of the
2032 parties having authority to resolve the dispute will meet and negotiate in good faith
2033 toward a solution satisfactory to all parties, or will establish a specific process and
2034 timetable to seek such a solution.
- 2035 (4) If any issues cannot be resolved through such negotiations, the parties will consider non-
2036 binding mediation and other alternative dispute resolution processes and, if a dispute
2037 resolution process is agreed upon, will make good faith efforts to resolve all remaining
2038 issues through that process.
- 2039

2040

2041 **22. SUCCESSION AND TRANSFER**

2042

2043 Individual CCAs shall be binding on and shall inure to the benefit of the enrolled landowner(s)
2044 and their respective successors and transferees (i.e., new owners) in accordance with applicable
2045 regulations (50 CFR 13.24 and 13.25). The new owner(s) will have the option of receiving
2046 CCAA assurances and transfer of the permit by signing the original individual CCAA. The EOS
2047 permit and assurances issued to the enrolled landowner(s) will be extended to the new owner(s)
2048 only if they choose to enroll. As a party to the original CCAA and permits, the new owner(s)
2049 will have the same rights and obligations with respect to the enrolled property as the original
2050 owner. Alternatively, the new owner(s) may enroll in a new individual CCAA and receive a new
2051 permit and assurances.

2052

2053 The enrolled landowner(s) shall notify the FWS of any transfer of ownership, so that the FWS
2054 can attempt to contact the new owner, explain the baseline responsibilities applicable to the
2055 property, and seek to interest the new owner in signing the existing CCAA or a new one to
2056 benefit sage-grouse on the property. Assignment or transfer of the permit shall be governed by
2057 FWS regulations in force at the time. If a new owner chooses not to enroll, the permit
2058 authorizations and assurances will cease.

2059

2060

2061 **23. AVAILABILITY OF FUNDS**

2062

2063 Federal PAs that are parties to this CCAA are subject to the requirements of the Anti-Deficiency
2064 Act and the availability of appropriated funds. Nothing in this CCAA will be construed by the
2065 PAs to require the obligation, appropriation, or expenditure of any funds from the U.S. Treasury.

2066 The PAs acknowledge the FWS will not be required under this CCAA to expend any Federal
2067 agency's appropriated funds unless and until an authorized official of that agency affirmatively
2068 acts to commit to such expenditures as evidenced in writing.
2069

2070

2071 **24. RELATIONSHIP TO OTHER AGREEMENTS**

2072

2073 The BLM and USFS are working cooperatively with the FWS to construct companion CCAs to
2074 this umbrella CCAA. The CMs described in this CCAA will be incorporated into the companion
2075 CCAs. When complete, CMs should reach seamlessly across property types, regardless of
2076 ownership.

2077

2078 CCAs focus on private land conservation initiatives. This Umbrella CCAA addresses greater
2079 sage-grouse conservation as influenced by livestock grazing and ranch management and was
2080 jointly developed by a working group of private, state and Federal representatives. The primary
2081 goal is to develop an umbrella conservation framework that all entities can endorse and
2082 implement locally in a coordinated fashion on adjoining lands and where private and Federal
2083 lands are intermingled in Federal grazing allotments. This portion of the CCAA addresses the
2084 Federal role in its implementation specifically for the BLM, Forest Service and the National
2085 Forests and Grasslands.

2086

2087 **Bureau of Land Management**

2088

2089 At the time of application, landowners will identify any BLM lands for which they hold a
2090 Federal grazing permit and would like to obtain a Certificate of Participation for the BLM CCA.
2091 Once the CMs have been identified within an individual CCAA application submitted to the
2092 FWS, the BLM State Office representative will begin working with the Field Office Manager,
2093 who is responsible for administering the grazing permits, to develop CMs relevant to the specific
2094 allotment(s). Prioritization of CCA application processing will be at the discretion of the Field
2095 Manager.

2096

2097 **Forest Service**

2098

2099 The Forest Service in Wyoming will continue to support the CCAA goal in two primary ways:
2100 (1) grazing allotment permittees that graze mixed-ownership Forest allotments under a single
2101 allotment management plan (AMP) that enter into individual CCAs with FWS will be
2102 considered in compliance with Forest AMPs. This will be reflected in the language in the Annual
2103 Operating Instructions for the AMP. The Forest Service may also conduct sufficiency reviews of
2104 current AMPs, as needed, to ensure compatibility and consistency of the individual CCAA with
2105 that AMP as it applies to both the private and Federal lands in the allotment; or (2) develop a
2106 companion Forest Service CCA for an allotment or group of allotments of intermingled federal-
2107 private lands managed under one AMP and where the permittee(s) desire to enter into a CCAA
2108 agreement with the FWS. These approaches are consistent with the four-agency MOU (NRCS,
2109 FWS, FS and BLM) to ensure sustainable livestock grazing and other agricultural practices that
2110 restore and enhance sage-grouse habitats on private and Federal ownerships. It is also consistent

2111 with Regional Forester policy for the Rocky Mountain Region: *“Forest Supervisors are*
2112 *encouraged to develop a Candidate Conservation Agreement for sage-grouse with the U.S. Fish*
2113 *and Wildlife Service. Incorporate sage-grouse conservation measures into Forest Plan*
2114 *management direction and apply conservation measures for sage-grouse and sagebrush habitats*
2115 *into project design”* (Region 2 FSM 2630 suppl., effective Sept. 30, 2011).

2116
2117 CCAs tiered to private agreements under the CCAA may not be appropriate or desired for all
2118 National Forests and Grasslands in Wyoming. Forest Service line officers, in coordination with
2119 the FWS and permittees, will consider several factors in deciding the relative value of
2120 developing a local CCA. These include factors such as the amount and quality of sage-grouse
2121 habitat, relative risk or conservation value to the greater sage-grouse on the unit, and added value
2122 of a CCA when considering existing land management planning direction for sage-grouse,
2123 direction emanating from the current joint BLM-FS plan amendment process to be finalized by
2124 late 2013, and ongoing cooperation with the state and others to promote implementation of the
2125 Governor’s Executive Order for the sage-grouse. Close cooperation with permittees and the FWS
2126 in successfully implementing individual agreements under the CCAA on both Federal and
2127 private lands in allotments of intermingled landownerships is especially important and a priority.
2128 When approached by permittees on a case-by-case basis, the Forest Service will work with the
2129 permittee and FWS to identify the best approach for the agency in facilitating consistent
2130 implementation of individual agreements across mixed-landowner ownership allotments.

2131
2132 The agencies expect that CCAs that are developed will reflect some subset of conservation
2133 measures from the umbrella CCAA that are most appropriate for the local unit and conditions.
2134 These will likely differ in size and complexity between land management units due to the
2135 varying habitat values and conservation risks among the management units. Also, attempts to
2136 align CCAs locally with individual private CCAAs may further promote differences in their
2137 content from one locality to the next.

2138
2139

2140 **25. NO THIRD-PARTY BENEFICIARIES**

2141
2142 This umbrella CCAA and any subsequent individual CCAAs signed under the umbrella CCAA
2143 do not create any new right or interest in any member of the public as a third-party beneficiary,
2144 nor shall it authorize anyone not a party to this CCAA to maintain a suit for personal injuries or
2145 damages pursuant to the provisions of this CCAA. The duties, obligations, and responsibilities
2146 of the PAs to this CCAA with respect to third parties shall remain as imposed under existing law.

2147
2148

2149 **26. REPORTS**

2150
2151 Any reports, including monitoring and annual reports, required by this CCAA shall be delivered
2152 to the person listed below:

2153
2154
2155

Field Supervisor, Wyoming Field Office
U.S. Fish and Wildlife Service

2156 5353 Yellowstone Road, Suite 308
2157 Cheyenne, WY 82009
2158

2159
2160 **27. NOTICES**
2161

2162 This umbrella CCAA was written with the participation of the agencies (listed below). It is
2163 because of the collaborative efforts of these agencies that this CCAA was completed. Official
2164 contact information is provided in Appendix E.
2165

2166 IN WITNESS WHEREOF, THE PARTICIPATING AGENCIES HERETO have, as of the last
2167 signature date below, executed this umbrella Candidate Conservation Agreement with
2168 Assurances to be in effect as of the date of the last signatory to sign this agreement.
2169

2170
2171
2172 _____
2173 Governor of Wyoming Date
2174

2175
2176
2177 _____
2178 State Director Date
2179 Wyoming Game and Fish Department
2180

2181
2182
2183 _____
2184 State Director Date
2185 Wyoming Department of Agriculture
2186

2187
2188
2189 _____
2190 State Director Date
2191 Wyoming Association of Conservation Districts
2192

2193
2194
2195 _____
2196 Wyoming State Director Date
2197 Bureau of Land Management
2198

2199
2200

2201	_____	_____
2202	Wyoming State Director	Date
2203	Natural Resources Conservation Service	
2204		
2205		
2206		
2207	_____	_____
2208	Regional Forester	Date
2209	Region 2	
2210	U.S. Forest Service	
2211		
2212		
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2214	_____	_____
2215	Regional Forester	Date
2216	Region 4	
2217	U.S. Forest Service	
2218		
2219		
2220		
2221	_____	_____
2222	Regional Director	Date
2223	Region 6	
2224	U.S. Fish and Wildlife Service	
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2226		

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2313

2314 **APPENDIX A.**

2315

2316 **BASIC STEPS TO APPLY FOR AN INDIVIDUAL CCAA**

2317

2318 This is a 4-step process with a simple screen to fill out first, prior to applying for a CCAA. Once
2319 the screen is completed, the FWS will review the information submitted. In conjunction with the
2320 PAs, the FWS will gather the needed information and set up a site visit. The PAs will help the
2321 landowner complete the application.

2322

2323 **STEP 1: Complete the Information Screen (Appendix B)**

2324

2325 **STEP 2: PAs will collect the following information:**

2326

-
- 2327 ▪ Information on land status/ownership and mineral ownership
 - 2328 ▪ Aerial photos of property
 - 2329 ▪ Create map of the property boundary or pull from NRCS
 - 2330 ▪ Determine if the property is in or adjacent to core area
 - 2331 ▪ Pull data on sage-grouse. Are there leks on the property or nearby?
 - 2332 ▪ Oil and gas conservation commission data on wells active and/or plugged and abandoned
 - 2333 ▪ Data on wind farms or other large-scale projects in the area, FAA data, Industrial Siting
2334 Council, Transmission/pipelines (pipeline authority)
 - 2335 ▪ Other information
 - 2336 ▪ Map locations of spring development, stock tank, salt/mineral for the property
-

2337

2338 This is important information needed to process and prioritize the application and to develop
2339 individual needs of applicants.

2340

2341 **STEP 3: PAs will conduct site visit with landowner and help complete individual**
2342 **CCAA application (Appendix C).**

2343

2344 **STEP 4: Landowner submits an ESA section 10(a)(1)(A) EOS permit application**
2345 **(application form is available online at [http://www.fws.gov/forms/3-200-](http://www.fws.gov/forms/3-200-54.pdf)**
2346 **[54.pdf](http://www.fws.gov/forms/3-200-54.pdf)), with the individual CCAA application (Appendix C) attached, to**
2347 **FWS.**

2348

2349 **STEP 5: FWS prioritizes applications (if necessary) received by batch date.**

2350

2351 **STEP 6: FWS reviews application and, if the individual CCAA is approved, issues an**
2352 **EOS permit (takes effect if the sage-grouse is listed under ESA) to the**
2353 **landowner.**

2354

2355

2356

2357

2358

2359 **APPENDIX B.**

2360

2361 **WYOMING SAGE-GROUSE UMBRELLA CCAA INFORMATION**
2362 **SCREEN**

2363

2364 **Landowner Name: 7T**

2365 **Address: 7T**

2366 **Phone Number: 7T**

2367 **E-mail: 7T**

2368 **Enrolled Lands (Range, Township, Section(s)): 7T**

2369

2370 **Documentation:**

- 2371 1. Do you have a map of the property to be covered by the CCAA?
- 2372 2. Do you have a current Grazing Plan approved by NRCS/CD/BLM?
- 2373 3. Do you have additional documentation pertaining to habitat, leks on the property, existing
2374 conservation measures, spring development, stock tank, salt/mineral locations?
2375

2376

2377 **APPENDIX C.**

2378

2379 **WYOMING SAGE-GROUSE INDIVIDUAL CCAA APPLICATION**

2380

2381 **This Appendix will be attached to the companion EOS permit application.**

2382

2383 **Landowner Name: 7T**

2384 **Address: 7T**

2385 **Phone Number: 7T**

2386 **E-mail: 7T**

2387

2388 **Description of Existing Conditions: 7T**

2389

2390 IN WITNESS WHEREOF, THE PARTICIPATING AGENCY HERETO has, as of the last
2391 signature date below, executed this Candidate Conservation Agreement with Assurances to be in
2392 effect as of the date the FWS issues the permit.

2393

2394

2395

2396 _____ Date _____
Enrolled landowner(s)

2397

2398

2399

2400 _____ Date _____
Field Supervisor

2401 Wyoming Ecological Services Office

2402 U.S. Fish and Wildlife Service Region 6

2403

2404 The enrolled landowner must adhere to all terms and conditions of the umbrella CCAA.
2405 According to the 2010 listing finding, the primary threat to sage-grouse is habitat fragmentation.
2406 Therefore, in order for this CCAA to address the conservation needs of the sage-grouse, the
2407 following CM must be implemented by all enrolled landowners on the enrolled portion of their
2408 property:

2409

2410 *Maintain contiguous habitat by avoiding fragmentation (e.g., do not subdivide property,*
2411 *consider conservation easements).*

2412

2413 In addition, all enrolled landowners will agree to undertake the following measures:

2414

- 2415 (1) Avoid impacts to populations and individual sage-grouse present on their enrolled
- 2416 properties to the maximum extent practicable.
- 2417 (2) Continue current practices identified as conserving sage-grouse.
- 2418 (3) Implement all agreed upon CMs in site-specific plans within the agreed upon timeframe.
- 2419 (4) Implement a conservation management plan within 12 months following approval of
- 2420 their individual CCAA.
- 2421 (5) Provide the FWS or their agreed upon representatives access to the enrolled property at

2422 mutually agreeable times to identify or monitor sage-grouse and their habitat, implement
2423 CMs, and monitor effectiveness and compliance with individual CCAAs.

2424 (6) When requested, allow PAs to share with each other habitat and other planning or
2425 monitoring information related to the enrolled properties.

2426 (7) Cooperate and assist with monitoring activities and other reporting requirements identified in
2427 site-specific plans.

2428

2429 The process for selecting specific CMs applicable to individual properties will be based on the
2430 threats identified for the covered property from the following table. Each identified threat within
2431 control of the landowner will be addressed and will have one or more corresponding CM(s). The
2432 FWS and PAs recognize each property is unique and the CMs will be site-dependent. The FWS
2433 recognizes not every potential CM listed for a threat will be appropriate for a given property.

2434

2435

2436 **Conservation Measures and Monitoring Requirements**

2437

2438 The following threats, conservation measures, current or future practices, and comments are
 2439 identified for this property:

2440

Threat(s)	Conservation Measure(s)	Current Practice	Future Practice	Comments
Fragmentation of the landscape physically disturbs and causes them to leave leks or abandon nests or important habitats, (i.e., direct impact to nests and brooding hens), resulting in decreased reproductive success.				7T
Infrastructure (e.g., power lines, roads, fences) can fragment sage-grouse habitat, decreasing sage-grouse use and habitat quality.				7T
Disturbed, degraded, or fragmented sage-grouse habitat that is not restored or reclaimed results in a loss of sage-grouse habitat quality and quantity.				7T

2441

Threat(s)	Conservation Measure(s)	Current Practice	Future Practice	Comments
Establishment of plant communities that do not provide suitable habitat (e.g., monocultures of non-natives such as crested wheatgrass) reduces sage-grouse habitat quality and quantity.	Choose an item.			7T
Establishment of invasive plant species (including post wildland fire) reduces sage-grouse habitat quality and quantity.				7T
Surface water developments such as ponds may increase mosquito habitat, resulting in increased sage-grouse mortality from disease (e.g., WNV). This is most relevant in northeast Wyoming, where WNV is prevalent.	Choose an item.			7T

2442
2443

2444

Threat(s)	Conservation Measure(s)	Current Practice	Future Practice	Comments
Surface water developments such as ponds may increase mosquito habitat, resulting in increased sage-grouse mortality from disease (e.g., WNV). This is most relevant in northeast Wyoming, where WNV is prevalent.	Choose an item.			7T
Sagebrush management (e.g., prescribed fire, chemical, mechanical) can result in a reduction of sage-grouse habitat quality and quantity.	Choose an item.			7T
Some grazing management practices alter shrub cover and/or grass and forb composition, reducing sage-grouse habitat quality and quantity.	Choose an item.			7T

2445

2446

2447

Threat(s)	Conservation Measure(s)	Current Practice		Future Practice		Comments	
Water diversions and spring developments can dry up meadow and riparian areas, reducing sage-grouse habitat quality and quantity.	Choose an item.					7T	
Some farm and ranch operations can increase opportunities for avian and mammalian predation of sage-grouse and their nests.						7T	
Concentration of livestock caused by activities such as stock tank placement, branding, and roundup may impact vegetation and soil structure, resulting in a reduction of sage-grouse habitat quality and quantity. Intensity and duration of livestock present will affect the extent of impacts.	Choose an item. Choose an item.					7T	7T

2448
2449

Threat(s)	Conservation Measure(s)	Current Practice	Future Practice	Comments
Application of insecticides can remove insects important to sage-grouse, reducing sage-grouse habitat quality.	Choose an item.			7T
Prolonged drought can harm plants important to sage-grouse, reducing sage-grouse habitat quality and quantity.	Choose an item.			7T
Concentrated and/or overabundant wildlife populations can harm plant communities important to sage-grouse, reducing habitat quality and quantity.	Choose an item.			7T
Sage-grouse can collide with fences, resulting in serious injury or death				7T

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This Appendix will accompany the EOS permit completed online at <http://www.fws.gov/forms/3-200-54.pdf>

2458 **APPENDIX D.**

2459

2460 **SAMPLE ANNUAL INDIVIDUAL CCAA REPORT**

2461

2462 **ANNUAL REPORT SUBMITTED UNDER CCAA NO. _____ AND GREATER**
2463 **SAGE-GROUSE UMBRELLA CCAA FOR WYOMING RANCH MANAGEMENT**

2464

2465 **Landowner Name: 7T**

2466 **Address: 7T**

2467 **Phone Number: 7T**

2468 **E-mail: 7T**

2469 **Agreement Tracking No.: 7T**

2470

2471

2472 **Observational Biological Monitoring Data:**

2473

2474 Monitoring rangelands for noxious weeds: Especially relevant in areas of disturbed soils, to
2475 enable early detection and control of undesirable species. This is designed as an ongoing attempt
2476 to identify noxious weeds early on, before they become established:

2477

2478 **Date(s): 7T**

2479 **Length of survey route(s): 7T**

2480 **Location of survey route(s): 7T**

2481

2482 Record dates, locations, and numbers of sage-grouse observed on enrolled property:

2483

2484 **Date(s): 7T**

2485 **Number of sage-grouse observed: 7T**

2486 **Location observation(s): 7T**

2487

2488 Report observed mortalities of sage-grouse including the dates and locations:

2489

2490 **Date(s): 7T**

2491 **Number of sage-grouse observed: 7T**

2492 **Location and circumstance(s): 7T**

2493

2494

2495 **Biological Monitoring Requirements**

2496

2497 The following monitoring sites are identified for this property. Results are reported for each
 2498 monitored transect site. All transects are for the Nesting/Early brood-rearing metric:
 2499

Site	Location (UTMs)	Photo Point(s) (UTM)	Habitat Feature	Results/Comments
1	7T	Narrow: 7T Wide: 7T	Sagebrush canopy cover	7T
			Sagebrush height	7T
			Sagebrush growth form	7T
			Perennial grass and forb height	7T
			Perennial grass and forb cover	7T
			Forb abundance and variety	7T
2	7T	Narrow: 7T Wide: 7T	Sagebrush canopy cover	7T
			Sagebrush height	7T
			Sagebrush growth form	7T
			Perennial grass and forb height	7T
			Perennial grass and forb cover	7T
			Forb abundance and variety	7T
3	7T	Narrow: 7T Wide: 7T	Sagebrush canopy cover	7T
			Sagebrush height	7T
			Sagebrush growth form	7T
			Perennial grass and forb height	7T
			Perennial grass and forb cover	7T
			Forb abundance and variety	7T
4	7T	Narrow: 7T Wide: 7T	Sagebrush canopy cover	7T
			Sagebrush height	7T
			Sagebrush growth form	7T
			Perennial grass and forb height	7T

			Perennial grass and forb cover	7T
			Forb abundance and variety	7T
5	7T	Narrow: 7T	Sagebrush canopy cover	7T
			Sagebrush height	7T
			Sagebrush growth form	7T
		Wide: 7T	Perennial grass and forb height	7T
			Perennial grass and forb cover	7T
			Forb abundance and variety	7T

2500
2501

2502 **APPENDIX E.**

2503

2504 **CONTACT LIST**

2505

2506 Wyoming Governor's Office

2507

2508 Wyoming Game and Fish Department

2509

2510 Wyoming Department of Agriculture

2511

2512 Wyoming Association of Conservation Districts

2513

2514 Bureau of Land Management

2515

2516 Natural Resources Conservation Service

2517

2518 U.S. Forest Service Region 2

2519

2520 U.S. Forest Service Region 4

2521

2522 U.S. Fish and Wildlife Service

2523
