COMMENTS OF DR. CLAIT E. BRAUN ON PARTNERSHIP FOR THE WEST, INFORMATION QUALITY ACT CHALLENGE (23 September 2004)

I. Background and Qualifications

1. My name is Clait E. Braun, and I reside in Tucson, Arizona. I currently work as a consultant in the area of avian biology, especially species of grouse.

2. I have a B.S. in Technical Agronomy from Kansas State University, a M.S. in Wildlife Management from the University of Montana, and a Ph.D. in Wildlife Biology from Colorado State University. In addition, I have attended numerous short courses, workshops, technical sessions, etc., to remain current in my professional work. I am a Certified Wildlife Biologist.

3. I was a Research Wildlife Scientist, Wildlife Research Leader, and Avian Program Manager for the Colorado Division of Wildlife from 1969 to 1999 and have been an invited lecturer at more than 20 U.S. and Canadian universities. I also worked as a Soil Scientist in Montana (1964) and Kansas (1961) for the U.S.D.A., Soil Conservation Service, and as a Research Technician with the Montana Department of Fish and Game (1965).

4. My field research was primarily on different species of birds, especially species of grouse (1965-2004). I specifically conducted and directed research on Sage-grouse throughout Colorado from 1973 through mid-1999. My research on Sage-grouse has necessarily involved reviewing sagebrush steppe ecosystems (plants and animals) throughout all western states and provinces. This research has led to more than 200 scientific publications, mostly in peer-reviewed journals.

II. Materials Reviewed

5. In preparing these comments, I reviewed the following documents:

   a. Partnership for the West. Information Quality Act Challenge. (23 September 2004). ("Challenge").

   b. Connelly, J. W., S. T. Knick, M. A. Schroeder, and S. J. Stiver. Conservation Assessment of Greater Sage-grouse and Sagebrush Habitats. 2004. ("WAFWA Report").

   c. Western Governor's Association. Conserving the Greater Sage Grouse: A Compilation of Efforts Underway on State, Tribal, Provincial and Private Lands. 2004. ("Western Governor's Report").

   d. Published literature as cited in these comments.

III. Overview

6. The Information Quality Act Challenge submitted by the Partnership for the West is a mix of exaggeration, mis-statements, misinterpretations, half-truths, and extraneous tidbits of information taken out of context, coupled with equivocal information that can be debated by competent scientists. The Challenge is not objective and is highly subjective and selective. It is important to note that "petitions" requesting that species be listed under the Endangered Species Act of 1973 are rarely prepared by scientists. The petitions submitted to the U.S. Fish and Wildlife Service requesting that Greater Sage-grouse be considered for listing under the Endangered Species Act were also not prepared by scientists. However, they provided substantial information and the

U.S. Fish and Wildlife Service acted correctly in deciding in their "90-day Finding" that Greater Sage-grouse warranted a "twelve month review" (Federal Register, 21 April 2004). The WAFWA Report provides the best compilation and analysis of existing data and information on Greater Sage-grouse available. Competent scientists using information and data provided by the involved states prepared the report. Some states failed to provide all requested information in a timely manner and the authors of the WAFWA Report repeatedly identify the weaknesses and possible biases associated with their assessment. In addition, authors of the WAFWA Report had a specified deadline to complete their assessment. While there are problem areas, the authors clearly identified those issues. Thus, the WAFWA Report is scientifically credible and accurately describes the overall status of sage-grouse through 2003. My review of the Information Quality Act Challenge by the Partnership for the West finds it is selectively biased and not scientifically credible on the major issues.

IV. **Comments**

7. There is no evidence other than personal views that "listing" Greater Sage-grouse under the Endangered Species Act would threaten or harm the species (Challenge, pages 3 and 6). This allegation is without merit.

8. There is no evidence of any "high level of certainty" that adequate resources would be available (given present federal budget deficits and other important national demands) to implement conservation actions to benefit Greater Sage-grouse. A conservation plan for the Gunnison Sage-grouse in the Gunnison Basin, Colorado, was completed 5+ years ago and there has been no significant increase in population size or

overall distribution as implementation of conservation actions has been slow due to a variety of factors, including inadequate funding for projects.

9. Implementation schedules for conservation actions (CAs) to benefit Greater Sage-grouse are still in development in many states, with most CAs not scheduled to be implemented until 2005, 2006, or later (even assuming that necessary funding is available). Any evaluations of scheduled CAs will occur at least 5 years from now (2010 at the earliest). Further, there are no available data that conservation actions to be implemented will be successful in maintaining or enhancing populations of Greater Sage-grouse.

10. There is clear evidence the overall distribution of Greater Sage-grouse has significantly declined (Schroeder, M. A. et al. 2004. Distribution of sage-grouse in North America. Condor 106:363-376) from 1,200,483 km² to 668,412 km² at present. This is a decrease in overall distribution of at least 44%.

11. There are no data to indicate that distribution of Greater Sage-grouse populations has increased as a result of state or local conservation actions. The data from the WAFWA Report indicate continued shrinkage in population size as "Five populations are now extirpated or have numbers too small to monitor" (Chapter 13:4). "Four of these populations demonstrated significant downward attendance at leks preceding extirpation and a fifth did not have enough data for analysis" (Chapter 13:4). "An additional 14 populations face a high risk of extinction, due largely to their small populations" (Chapter 13:4).

12. There are no data to indicate that "Unprecedented Conservation Efforts" would be "at Risk" (Challenge, page 5) if Greater Sage-grouse were "listed" under the Endangered Species Act by the U.S. Fish and Wildlife Service.

13. No data are presented in the Western Governor's Report that support the claim of "an exhaustive list of impressive on-the-ground work" that would be compromised should Greater Sage-grouse be listed (Challenge, page 6).

14. The Challenge (page 7) suggests that disseminated information cannot be legitimate if it does not accurately interpret the literature cited. Yet, the Literature Cited in the Partnership for the West's Challenge is incomplete, selective, and fails to meet any standard for scientific accuracy.

15. There are no data to indicate that listing Greater Sage-grouse would "have a chilling effect on extensive and ongoing federal, state and private conservation efforts now underway" (Challenge, page 10). The opposite might be true as approved **Recovery Plans** would be developed and implemented in contrast to the voluntary approach adopted by present state and local conservation plans.

16. The Partnership for the West fails to clearly demonstrate its interests would be "harmed" by any potential "listing" of Greater Sage-grouse. They allege (Challenge, page 17) they "could be affected" and then "would" be affected by "delays or outright prohibitions of activities" without any documentation other than the Western Governor's Report, which itself includes no scientific documentation.

17. The validity of counting male Greater Sage-grouse to measure trends and estimate population size is repeatedly discounted in the Challenge. The WAFWA Report clearly identifies the problems with lek counts, as have others (Beck, T. D. I., and

C. E. Braun. 1980. The strutting ground count: variation, traditionalism, management needs. Proceedings of the Western Association of Fish and Wildlife Agencies 60: 558-566; Emmons, S. R., and C. E. Braun. 1984. Lek attendance of male sage grouse. Journal of Wildlife Management 48: 1023-1028). The Walsh et al. (2004) report (Walsh, D. P., G. C. White, T. E. Remington, and D. C. Bowden. 2004. Evaluation of the lek count index for greater sage-grouse. Wildlife Society Bulletin 32: 56-68) cited by the Partnership for the West to support its claim that Greater Sage-grouse populations are substantially larger has several flaws. It was conducted in a truncated part of a small intermountain basin where ingress and egress are limited, the data only represent 1 breeding season, banded birds could have attended lek areas and not been seen, the marked bird sample was small; etc. Thus, the estimates of marked male and female attendance could be low with both estimates leading to inflated calculations of total population size. This study needs to be replicated in multiple areas of differing size for at least 2 years per area as the present "findings" represent hypotheses, which may not have any merit. Thus, use of counts of male Greater Sage-grouse to depict trends and population estimates is open to scientific debate. The authors of the WAFWA Report recognized these problems. Reputable scientists could take the present "data" and develop population estimates that were either higher or lower than those **not presented** in the WAFWA Report.

18. The size of the historic population of Greater Sage-grouse is unknown. The 2 million bird estimate referenced in innumerable sources originated from a talk given by C. E. Braun to the Directors (and their senior staff) of state wildlife agencies in Jackson Hole, Wyoming, in July 1998. This estimate was not included in the published

paper from that presentation (Braun, C. E. 1998. Sage grouse declines in western North America: what are the problems? Proceedings of the Western Association of State Fish and Wildlife Agencies 78:139-156). The estimate was carefully developed and I consider all higher estimates as being unlikely to have been true. The WAFWA Report was cautious on estimating the historic size of the Greater Sage-grouse population. The discussion of historic population estimates in the Challenge (page 21) is clearly without any relevance or merit.

19. The discussion of population viability analysis in the Challenge (pages 23-25) is extraneous and open to scientific debate depending on whether one chooses to use *Drosophila* or species similar to Greater Sage-grouse for a possible baseline estimate of a minimum viable population. Suffice it to say that populations of Greater Sage-grouse (WAFWA Report, Chapter 13:4) have been extirpated and that more are at risk of extirpation at the present time. Further, the effective population size is smaller than the estimated population size because of the mating system of Greater Sage-grouse.

20. There are valid threats (Challenge, page 26) at the present time to local populations of Greater Sage-grouse from such factors as invasion of cheatgrass, type conversion to benefit livestock, pinon-juniper invasion, housing developments, etc. For example, housing developments in Summit and Eagle counties, Colorado, have markedly affected the continued persistence of Greater Sage-grouse and it is extremely unlikely that sage-grouse will persist in these counties **despite approved local conservation plans.**

21. There are no data to support an estimate (Challenge, page 28 and elsewhere) that numbers of Greater Sage-grouse are "easily in the hundreds of thousands…."This estimate is without scientific merit.

22. A large part of the problem for Greater Sage-grouse (Challenge, page 29 and elsewhere) is that sage-grouse habitats are poorly managed and are afforded no real protection on federal public lands. If habitats on these lands were well managed or **had** been well managed, there would be little concern for persistence of populations of Greater Sage-grouse. Thus, to suggest that sage-grouse are not in trouble because of the presence of large expanses of federal public lands is obviously incorrect. Further, it is quite clear that **existing regulatory measures have been totally inadequate** or populations of Greater Sage-grouse would be far larger and some populations would not have been extirpated.

23. There is no evidence that existing legal or procedural requirements to protect Greater Sage-grouse habitats are adequate in areas leased for oil and gas development on public lands (Challenge, page 30). The BLM's own data (Pinedale Anticline Project Draft EIS 1999:5-34) indicates the agency's 1/4-mile restriction for no surface development near active Greater Sage-grouse leks provides inadequate protection for sage-grouse. This has been documented by others as well (Connelly et al. 2000, Holloran and Anderson 2004) (Connelly, J. W., M. A. Schroeder, A. R. Sands, and C. E. Braun. 2000. Guidelines to manage sage grouse populations and their habitats. Wildlife Society Bulletin 28: 967-985; Holloran, M. J. and S. H. Anderson. 2004. Sage-grouse response to natural gas field development in northwestern Wyoming. Proceedings of the Western Agencies Sage and Columbian Sharp-tailed Grouse Technical Committee

24:32). The 1/4 –mile distance restriction would appear to have been conjured by BLM, as there are no scientific data to support this limited distance. Further, the BLM's local field or project officer frequently waives oil/gas development restrictions, stipulations, and exceptions upon request of those that might be affected by them.

24. The Bureau of Land Management and U.S. Forest Service consistently fail to consider or unevenly apply the WAFWA Guidelines for Management of Sage-grouse Populations and Habitats published by Connelly et al. (2000) in their respective planning processes (Challenge, page 32).

25. Reclamation of disturbed lands (Challenge, page 33 and elsewhere) to support the year-round activities of Greater Sage-grouse may take many years (15-30+) depending on site preparation, plant species included in the seed mixture, livestock use, site characteristics, edaphic factors, etc. Reclamation bonds are normally released as soon as areas have some vegetation, and not when they are again useful to support Greater Sage-grouse. Reclamation periods are clearly too long to immediately benefit Greater Sage-grouse population maintenance, let alone enhancement. Adequate techniques are presently not available to "reclaim" large expanses of disturbed lands for Greater Sage-grouse.

26. The "special Status Species Policy" of the BLM for Greater Sage-grouse (Challenge, pages 33 and 34) provides no protection for sage-grouse. This is repeatedly demonstrated across public lands managed by the BLM as measured by no sustained increases in distribution of sage-grouse anywhere on public lands.

27. The Challenge (page 37 and elsewhere) repeatedly asserts there is a positive relationship between numbers of Greater Sage-grouse and high numbers of

livestock. There are no cause and effect data to support this assertion and the available evidence indicates that livestock can change the structure and composition of plant communities as well as distribution of Greater Sage-grouse. Further, public rangelands are not in "good" condition as at least one-half of lands managed by the BLM do not meet the agencies' own rangeland health standards. Grazing management practices such as increased fencing, piping of water, placement of watering tanks, timing of grazing, etc. clearly negatively affect distribution of Greater Sage-grouse.

28. Greater Sage-grouse evolved with grazing animals that could seasonally migrate over large areas. This allowed many areas to not be grazed year after year as grazing animals were not constrained to "pastures" or allotments. Thus, repetitive grazing was not common prior to "modern" grazing systems where fencing is used to control livestock movements and livestock grazing is on an annual basis with no true rest or rotation. Livestock, especially domestic sheep, will eat sagebrush, especially under winter grazing conditions.

29. The Challenge (pages 40, 51, and elsewhere) asserts that "Grouse numbers" are "inversely proportionate to predator numbers" with no supportive data other than a personal communication. The real issues are habitat security and large blocks of habitat not fragmented by powerlines, roads, fences, etc., which act as conduits for both ground predators and raptors. It is clear that smaller patches of habitat can be more effectively searched by predators and that additional perch sites can increase risks to Greater Sage-grouse of being eaten. Greater Sage-grouse evolved with the present suite of predators (and predatory species no longer present). Adding predator species to

modern landscapes may locally impact Greater Sage-grouse in areas where habitats are fragmented or degraded.

30. The Challenge (pages 40, 59, and elsewhere) questions that fragmentation of habitats can be detrimental to Greater Sage-grouse without any supporting data. Transportation corridors (for example, Interstate highways 70 and 80) are negative to Greater Sage-grouse as are powerlines, etc. The Challenge further suggests that fragmentation is positive as it creates a mosaic of habitats. Greater Sage-grouse do use a variety of habitats and natural mosaics can be beneficial if they are linked with close juxtaposition of breeding, nesting, brood rearing, winter use, and escape cover. Fragmentation of habitats and habitat mosaics are clearly different.

31. The WAFWA Report used minimal disturbance distances in projecting impacts from disturbance. The Challenge questions these impacts without providing any alternatives. It is likely that some disturbance distances (1 to 3 km) are too limited in the WAFWA Report depending upon topography and other site conditions.

32. The Challenge (page 42) asserts, "Braun's objectivity must be questioned" as "Braun is quoted in a press release threatening a federal listing…." This is untrue and represents a mis-statement, as C. E. Braun is neutral on the question of listing Greater Sage-grouse. However, it is true that C. E. Braun's analysis of BLM's past and present management actions indicates this agency could do more to prevent listing of Greater Sage-grouse than any other federal or state agency.

33. The Challenge (page 42), on the basis of a letter from the Jackson County (Colorado) Board of County Commissioners, repeats the unsupported belief that "predation and harvest are the biggest issues facing the species." However, Johnson and

Braun (1999) (Johnson, K. H., and C. E. Braun. 1999. Viability and conservation of an exploited sage grouse population. Conservation Biology 13: 77-84) analyzed 20+ years of Greater Sage-grouse data from Jackson County, Colorado, and reported the population was most sensitive to vegetation management and harvest. Zablan et al. (2003) (Zablan, M. A., C. E. Braun, and G. C. White. 2003. Estimation of greater sage-grouse survival in North Park, Colorado. Journal of Wildlife Management 67: 144-154) examined survival of banded Greater Sage-grouse in Jackson County, Colorado, over a 20+ year period and could not relate harvest rates to apparent population size.

34. The Challenge (page 44) questions that loss of breeding habitat "can result in the loss of the breeding population" of Greater Sage-grouse. Braun and Beck (1976) (Braun, C. E., and T. D. I. Beck. 1976. Effects of sagebrush control on distribution and abundance of sage grouse. Colorado Division of Wildlife, Final Federal Aid Report, Project W-37-R-29. Denver, USA) demonstrated that block treatments of sagebrush by spraying and plowing negatively impacted breeding populations of Greater Sage-grouse. Further, Truett et al. (2005) (Truett, J. C., M. A. Zablan, and K. Kunkel. 2005. Ecological impact assessments and habitat conservation plans. Pages 000-000 *in* C. E. Braun, editor. Techniques for wildlife investigations and management. Sixth edition. The Wildlife Society, Bethesda, Maryland, USA) suggest it is likely that the size of the breeding bird population will be reduced at least proportional to the amount of habitat disturbed.

35. The Challenge asserts (page 44) "there are few populations of sage grouse with published survival and recovery estimates" without reviewing the available literature. Zablan et al. (2003) cite 7 publications that include harvest rate estimates for Greater Sage-grouse based on marked birds.

36. The Challenge (page 47) suggests "successful repopulation of reclaimed coal mines in northwestern Colorado" has been overlooked. Columbian Sharp-tailed grouse have successfully become re-established on reclaimed coal mines south of Craig in northwestern Colorado. Greater Sage-grouse were much slower to become established on reclaimed coal mine sites in this area as these sites could not sustain year-round use for a period of at least 20+ years.

37. The Challenge (page 48) questions Braun's objectivity without fully reading the literature on Greater Sage-grouse use of areas after coal mining (Remington, T. E., and C. E. Braun. 1991. How surface coal mining affects sage grouse, North Park, Colorado. Proceedings, Issues and Technology in the Management of Impacted Western Wildlife. Thorne Ecological Institute 5: 128-132).

38. The Challenge (page 49) questions Braun (1998) concerning the proportion of sagebrush steppe converted for agriculture without referring to the approved recovery plan for Greater Sage-grouse for the state of Washington. Further, livestock grazing is production agriculture and western rangelands have been managed for domestic livestock grazing.

39. The Challenge (page 53), citing C. C. Gibson, continues to assert that predator management is an effective tool for assuring sage-grouse survival. Côté and Sutherland (1997) (Côté, I. M., and W. J. Sutherland. 1997. The effectiveness of removing predators to protect bird populations. Conservation Biology 11: 395-405) reviewed studies where predators were controlled and reported that predator removal could improve hatching success, but was not significant in affecting breeding bird population size.

40. Habitat modeling is an imprecise exercise under the best conditions. The authors of the WAFWA Report had limited time to consider and test models demonstrating the "human footprint" on sagebrush-steppe habitats. Reputable scientists can develop differing scenarios even when using the same information to build models. Modeling exercises are scientifically proper to examine potential results of possible actions.

41. The Challenge (page 60) fails to differentiate between water developments. Greater Sage-grouse can respond to development of small areas of open water, but large reservoirs typically flood, at least seasonally, productive brood-rearing habitats. This habitat type is thought to be in short supply in most sagebrush-steppe areas.

42. The Partnership for the West's Challenge (page 60) fails to review literature that indicates that disease (coccidiosis) transmission has occurred among Greater Sage-grouse concentrated at water sites (Honess, R. F., and G. Post. 1968. Sage grouse coccidiosis. Pages 4-22 *in* Part 1: History of an epizootic in sage grouse. Science Monograph 14. University of Wyoming Agricultural Experiment Station, Laramie, USA).

IV. Conclusions

43. The Information Quality Act Challenge by the Partnership for the West is based on misinterpretation, mis-statements, exaggeration, and debatable scientific hypotheses. It is selectively biased and the objectivity of the Partnership for the West can be questioned in their presentation. The Challenge is not scientifically credible.

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