

Gunnison Sage-grouse Listing Determination Literature Cited (By Category)

Peer Reviewed Original Research Based on Data

- Back, G. N., M. R. Barrington, and J. K. McAdoo. 1987. Sage grouse use of snow burrows in northeastern Nevada. *Wilson Bulletin* 99:488-490.
- Barnett, J. F., and J. A. Crawford. 1994. Pre-laying nutrition of sage grouse hens in Oregon. *Journal of Wildlife Management* 47: 114-118.
- Batterson, W. M., and W. B. Morse. 1948. Oregon sage grouse. Oregon Game Commission Fauna Series 1, Portland, Oregon. 29 pp.
- Beck, T. D. I. 1977. Sage grouse flock characteristics and habitat selection in winter. *Journal of Wildlife Management* 41:18-26.
- Bergerud, A. T. 1988. Mating systems in grouse. Pages 439-472 in A. T. Bergerud and M.W. Gratson, editors. *Adaptive strategies and population ecology of northern grouse*. University of Minnesota Press, Minneapolis, Minnesota.
- Billings, W. D. 1994. Ecological impacts of cheatgrass and resultant fire on ecosystems in the western Great Basin. Pages 22 – 30 in S. B. Monsen and S. G. Kitchen, compilers. *Proceedings – ecology and management of annual rangelands*. U.S. Forest Service General Technical Report INT-GTR-313.
- Blus, L. J., C. S. Staley, C. J. Henny, G. W. Pendelton, T. H. Craig, E. H. Craig, and D. K. Halford. 1989. Effects of organophosphorus insecticides on sage-grouse in south-eastern Idaho. *Journal of Wildlife Management* 53:1139-1146.
- Boltz, M. 1994. Factors influencing postfire sagebrush regeneration in south-central Idaho. Pages 281-290 in S.B. Monsen and S.G. Kitchen, compilers. *Proceedings: Ecology and management of annual rangelands*. General Technical Report INT-GTR-313. U.S. Department of Agriculture, U.S. Forest Service, Intermountain Research Station.
- Borell, A. E. 1939. Telephone wires fatal to sage-grouse. *Condor* 41:85-86.
- Boyce, M. S. 1990. The red queen visits sage grouse leks. *American Zoology* 30:263-270.
- Braun, C. E. 1986. Changes in sage grouse lek counts with advent of surface coal mining. *Proc. Issues Technol. Manage. Impacted Wildl.* 2: 227-231.
- Braun, C. E., and D. I. Beck. 1996. Effects of research on sage grouse management. Pages 429-436 in *Transactions of the 61st Annual North American Wildlife and Natural Resources Conference*.

- Burkhardt, J. W., and E. W. Tisdale. 1969. Nature and successional status of western juniper vegetation in Idaho. *Journal of Range Management* 22:264-270.
- Carr, H. D., and F. A. Glover. 1970. Effects of sagebrush control on sage grouse. *Transactions of the Thirty-Fifth North American Wildlife and Natural Resources Conference* 35:205-215.
- Charlesworth, B., M. T. Morgan, and D. Charlesworth. 1993. The effect of deleterious mutations on neutral molecular variation. *Genetics* 134: 1289-1303.
- Commons, M. L., R. K. Baydack, and C. E. Braun. 1999. Sage grouse response to pinyon-juniper management. Pages 238-239 in S. B. Monsen and R. Stevens, compilers. *Proceedings: ecology and management of pinyon-juniper communities*. United States Department of Agriculture, Forest Service, RMRS-P9, Fort Collins, Colorado.
- Connelly, J. W., A. D. Apa, R. B. Smith, and K. P. Reese. 2000b. Effects of predation and hunting on adult sage grouse *Cetrocerus urophasianus* in Idaho. *Wildlife Biology* 6:227-232.
- Connelly, J. W., K. P. Reese, R. A. Fischer, and W. L. Wakkinen. 2000c. Response of a sage grouse breeding population to fire in southeastern Idaho. *Wildlife Society Bulletin* 28:90-96.
- Connelly, J. W., and C. E. Braun. 1997. Long-term changes in sage grouse *Centrocercus urophasianus* populations in western North America. *Wildlife Biology* 3:229-234.
- Connelly, J. W., H. W. Browsers, and R. J. Gates. 1988. Seasonal movements of sage grouse in southeastern Idaho. *Journal of Wildlife Management* 52: 116-122.
- Connelly, J. W., and O. D. Markham. 1983. Movements and radionuclide concentrations of sage grouse in southeastern Idaho. *Journal of Wildlife Management* 47: 169-177.
- Connelly, J. W., W. J. Arthur, and O. D. Markham. 1981. Sage grouse leks on recently disturbed sites. *Journal of Range Management* 52: 153-154.
- DeLong, A. K., J. A. Crawford, and D. C. DeLong, Jr. 1995. Relationships between vegetational structure and predation of artificial sage grouse nests. *Journal of Wildlife Management* 59:88-92.
- Drut, M. S., J. A. Crawford, and M. A. Gregg. 1994a. Brood habitat use by sage grouse in Oregon. *Great Basin Naturalist* 54:170-176.
- Drut, M. S., W. H. Pyle, and J. A. Crawford. 1994b. Diets and food selection of sage-grouse chicks in Oregon. *Journal of Range Management* 47:90-93.
- Fischer, R. A., K. P. Reese, and J. W. Connelly. 1996a. An investigation on fire effects within xeric sage grouse brood habitat. *Journal of Range Management* 49: 194-198.

- Fischer, R. A., K. P. Reese, and J. W. Connelly. 1996b. Influence of vegetal moisture content and nest fate on timing of female sage grouse migration. *Condor* 98: 868-872.
- Fuhlendorf, S. D., A. J. W. Woodward, D. M. Leslie Jr., and J. S. Shackford. 2002. Multi-scale effects of habitat loss and fragmentation on lesser prairie chicken populations of the US Southern Great Plains. *Landscape Ecology* 17:617-628.
- Gates, R. J. 1985. Observations of the formation of a sage grouse lek. *Wilson Bulletin* 97:219-221.
- Gelbard, J. L. and J. Belnap. 2003. Roads as conduits for exotic plant invasions in a semiarid landscape. *Conservation Biology* 17:420-432.
- Gibson, R. M., and J. W. Bradbury. 1985. Sexual selection in lekking sage grouse: phenotypic correlates of male mating success. *Behavioral Ecology and Sociobiology* 18:117-123.
- Giezentanner, K. I., and W. H. Clark. 1974. The use of western harvester ant mounds as strutting locations by sage grouse. *Condor* 76:218-219.
- Gratson, M. W. 1993. Sexual selection for increased male courtship and acoustic signals and against large male size at sharp-tailed grouse leks. *Evolution* 47:691-696.
- Greenwood, R. J. 1986. Influence of striped skunk removal on upland duck nest success in North Dakota. *Wildlife Society Bulletin* 14:6-11.
- Gregg, M. A., J. A. Crawford, M. S. Drut, and A. K. DeLong. 1994. Vegetational cover and predation of sage grouse nests in Oregon. *Journal of Wildlife Management* 58:162-166.
- Hanna, W. C. 1936. Sage grouse breeding in California. *Condor* 38: 38.
- Hartzler, J. E. 1974. Predation and the daily timing of sage grouse leks. *Auk* 91:532-536.
- Hobbs, N. T., D. L. Baker, G. D. Bear, and D. C. Bowden. 1996. Ungulate grazing in sagebrush grassland: mechanisms of resource competition. *Ecological Applications* 6:200-217.
- Holloran, M. J. and S. H. Anderson 2005. Spatial distribution of greater sage-grouse nests in relatively contiguous sagebrush habitats. *Condor* 107:742-752.
- Hupp, J. W., and C. E. Braun. 1989. Topographic distribution of sage grouse foraging in winter. *Journal of Wildlife Management* 53:823-829.
- Hupp, J. W., and C. E. Braun. 1991. Geographic variation among sage grouse in Colorado. *Wilson Bulletin* 103:255-261.

- Johnson, D. H., A. B. Sargeant, and R. J. Greenwood. 1989. Importance of individual species of predators on nesting success of ducks in the Canadian Prairie Pothole Region. *Canadian Journal of Zoology* 67:291-297.
- Johnson, G. D., and M. S. Boyce. 1990. Feeding trials with insects in the diet of sage-grouse chicks. *Journal of Wildlife Management* 54:89-91.
- Johnson, G. D., and M. S. Boyce. 1991. Survival, growth, and reproduction of captive-reared sage grouse. *Wildlife Society Bulletin* 19: 88-93.
- Johnson, K. H. and C. E. Braun. 1999. Viability and conservation of an exploited sage grouse population. *Conservation Biology* 13:77-84.
- Kahn, N. W., C. E. Braun, J. R. Young, S. Wood, D. R. Mata, and T. W. Quinn. 1999. Molecular analysis of genetic variation among large- and small-bodied sage grouse using mitochondrial control-region sequences. *Auk* 116:819-824.
- Klebenow, D. A. 1969. Sage grouse nesting and brood habitat in Idaho. *Journal of Wildlife Management* 33:649-661.
- Klebenow, D. A. 1970. Sage grouse verses sagebrush control in Idaho. *Journal of Range Management* 23:396-400.
- Klebenow, D. A., and G. M. Gray. 1968. Food habits of juvenile sage-grouse. *Journal of Range Management* 21:80-83.
- Klott, J. H., and F. G. Lindzey. 1989. Comparison of sage and sharp-tailed grouse leks in south central Wyoming. *Great Basin Naturalist* 49:275-278.
- Knight, R. L., H. A. L. Knight, and R. J. Camp. 1993. Raven populations and land-use patterns in the Mojave Desert, California. *Wildlife Society Bulletin* 21:469-471.
- Lande, R. 1995a. Breeding plans for small populations based on the dynamics of quantitative genetic variance. Pages 318 - 341 in J. D. Ballou, M. Gilpin, and T. Foose, editors. *Population management for survival and recovery: analytical methods and strategies in small population conservation*. Columbia University Press, New York, New York.
- Leach, H. R., and A. L. Hensley. 1954. The sage grouse in California, with special reference to food habits. *California Fish and Game* 40: 385-394.
- Lynch, M., J. Conery, and R. Bürger. 1995. Mutation accumulation and the extinction of small populations. *The American Naturalist* 16:489-518.
- Lyon, A. G., and S. H. Anderson. 2003. Potential gas development impacts on sage-grouse nest initiation and movement. *Wildlife Society Bulletin* 31:486-491.

- Miller, R. F., and J. A. Rose. 1995. Historic expansion of *Juniperus occidentalis* (western juniper) in southeastern Oregon. *The Great Basin Naturalist* 55:37-45.
- Miller, R. F. and J. A. Rose. 1999. Fire history and western juniper encroachment in sagebrush steppe. *Journal of Range Management* 52:550-559.
- Miller, R. F., T. J. Svejcar, and J. A. Rose. 2000. Impacts of western juniper on plant community composition and structure. *Journal of Range Management* 53:574-585.
- Naugle, D. E., C. L. Aldridge, B. L. Walker, T. E. Cornish, B. J. Moynahan, M. J. Holloran, K. Brown, G. D. Johnson, E. T. Schmidtman, R. T. Mayer, C. Y. Kato, M. R. Matchett, T. J. Christiansen, W. E. Cook, T. Creekmore, R. D. Falise, E. T. Rinkes, and M. S. Boyce. 2004. West Nile virus: pending crisis for greater sage-grouse. *Ecology Letters* 7:704-713.
- Naugle, D. E., C. L. Aldridge, B. L. Walker, K. E. Doherty, M. R. Matchett, J. McIntosh, T. E. Cornish, and M. S. Boyce. 2005. West Nile Virus and sage-grouse: What more have we learned? *Wildlife Society Bulletin*. 33:616-623.
- Nelle, P. J., K. P. Reese, and J. W. Connelly. 2000. The long-term effects of fire on sage-grouse nesting and brood-rearing habitat on the Upper Snake River Plain. *Journal of Range Management* 53:586-591.
- Olson, R. A. and T. D. Whitson. 2002. Restoring structure in late-successional sagebrush communities by thinning with tebuthiuron. *Restoration Ecology* 10:146-155.
- Oyler-McCance, S. J., J. St. John, S. E. Taylor, and T. W. Quinn. 2005. Population genetics of Gunnison sage-grouse: implications for management. *Journal of Wildlife Management* 69:630-637.
- Oyler-McCance, S. J., K. P. Burnham, and C. E. Braun. 2001. Influence of changes in sagebrush on Gunnison sage grouse in southwestern Colorado. *Southwestern Naturalist* 46:323-331.
- Oyler-McCance, S. J., N. W. Kahn, K. P. Burnham, C. E. Braun, and T. W. Quinn. 1999. A population genetic comparison of large- and small- bodied sage grouse in Colorado using microsatellite and mitochondrial DNA markers. *Molecular Ecology* 8:1457-1465.
- Peterson, J. G. 1970. The food habits and summer distribution of juvenile sage grouse in central Montana. *Journal of Wildlife Management* 34:147-155.
- Pyle, W. H., and J. A. Crawford. 1996. Availability of foods of sage grouse chicks following prescribed burning in sagebrush-bitterbrush. *Journal of Range Management* 49: 320-324.
- Quinney, D. L., M. McHenry, and J. Weaver. 1996. Restoration of native shrubland in a military training area using hand-broadcasting of seed. Pages 156-157 in J.R. Barrow, E.

- D. McArthur, R. E. Sosebee, and R. J. Tausch, compilers. Proceedings: Shrubland ecosystem dynamics in a changing environment. General Technical Report INT-GTR-338. U.S. Department of Agriculture, U.S. Forest Service, Intermountain Research Station. Ogden, Utah.
- Remington, T. E., and C. E. Braun. 1985. Sage grouse food selection in winter, North Park, Colorado. *Journal of Wildlife Management* 49:1055-1061.
- Remington, T. E. and C. E. Braun. 1991. How surface coal mining affects sage grouse, North Park, Colorado. *Proc. Issues Technol. Manage. Impacted Wildl.* 5:128-132.
- Restani, M., J. M. Marzluff, and R. E. Yates. 2001. Effects of anthropogenic food sources on movements, survival, and sociality of common ravens in the Arctic. *Condor* 103:399-404.
- Ritchie, M. E., M. L. Wolfe, and R. Danvir. 1994. Predation of artificial Sage Grouse nests in treated and untreated sagebrush. *Great Basin Naturalist* 54:122-129.
- Rosenberg, K. V., B. Kott, R. S. Hames, R. W. Rohrbaugh, Jr., S. B. Swarthout, and J. D. Lowe. 2004. Effects of recreational development on forest-breeding birds in U.S. national forests. Cornell Lab of Ornithology, Ithaca, New York. 19 pp.
- Sargeant, A. B., R. J. Greenwood, M. A. Sovada, and T. L. Shaffer. 1993. Distribution and abundance of predators that affect duck production - Prairie Pothole Region. U.S. Fish and Wildlife Service Resource Publication 194. 102 pp.
- Schroeder, M. A. 1997. Unusually high reproductive effort by sage grouse in a fragmented habitat in north-central Washington. *Condor* 99:933-941.
- Schroeder, M. A., C. L. Aldridge, A. D. Apa, J. R. Bohne, C. E. Braun, S. D. Bunnell, J. W. Connelly, P. A. Deibert, S. C. Gardner, M. A. Hilliard, G. D. Kobriger, S. M. McAdam, C. W. McCarthy, J. J. McCarthy, D. L. Mitchell, E. V. Rickerson, and S. J. Stiver. 2004. Distribution of sage-grouse in North America. *Condor*:106:363-376.
- Sovada, M. A., A. B. Sargeant, and J. W. Grier. 1995. Differential effects of coyotes and red foxes on duck nest success. *Journal of Wildlife Management* 59:1-9.
- Steenhof, K., M. N. Kochert, and J. A. Roppe. 1993. Nesting by raptors and common ravens on electrical transmission line towers. *Journal of Wildlife Management* 57:271-281.
- Summers, R. W., R. E. Green, R. Proctor, D. Dugan, D. Lambie, R. Moncrieff, R. Moss, and D. Baines. 2004. An experimental study of the effects of predation on the breeding productivity of capercaillie and black grouse. *Journal of Applied Ecology* 41:513-525.
- Tate, J., Jr., M. S. Boyce, and T. R. Smith. 1979. Response of sage grouse to artificially created display ground. Pages 464-468 in G. A. Swanson, technical coordinator. The mitigating

- losses of fish and wildlife habitats. United States Department of Agriculture, Forest Service, General Technical Report RM-65, Fort Collins, Colorado.
- Vander Haegen, W. M., M. A. Schroeder, and R. M. DeGraaf. 2002. Predation on real and artificial nests in shrubsteppe landscapes fragmented by agriculture. *Condor* 104:496-506.
- Wallestad, R. O. 1975. Life history and habitat requirements of sage grouse in central Montana. Montana Fish and Game Department, Technical Bulletin, Helena, Montana. 65 pp.
- Wallestad, R. O., J. G. Peterson, and R. L. Eng. 1975. Foods of adult sage grouse in central Montana. *Journal of Wildlife Management* 39:628-630.
- Welch, B. L., F. J. Wagstaff, and J. A. Roberson. 1991. Preference of wintering sage grouse for big sagebrush. *Journal of Range Management* 44: 462-465.
- Welch, B. L., J. C. Pederson, and R. L. Rodriguez. 1988. Selection of big sagebrush by sage grouse. *Great Basin Naturalist* 48:274-279.
- Whisenant, S. G. 1990. Changing fire frequencies on Idaho's Snake River Plains: ecological and management implications. Pages 4-10 in E. D. McArthur, E. M. Romney, S. D. Smith, and P. T. Tueller, compilers. Proceedings – symposium on cheatgrass invasion, shrub die-off, and other aspects of shrub biology and management. U. S. Forest Service General Technical Report INT-276. 7 pp.
- Wiley, R. H. 1973. The strut display of male sage grouse: a “fixed” action pattern. *Behaviour* 47: 129-152.
- Wirth, T. A. and D. A. Pyke. 2003. Restoring forbs for sage grouse habitat: fire, microsites, and establishment methods. *Restoration Ecology* 11:370-377.
- Wroblewski, D. W. and J. B. Kauffman. 2003. Initial effects of prescribed fire on morphology, abundance, and phenology of forbs in big sagebrush communities in southeastern Oregon. *Restoration Ecology* 11:82-90.
- Young, D. P., Jr., W. P. Erickson, M. D. Strickland, R. E. Good and K. J. Sernka. 2003. Comparison of avian responses to UV-light reflective paint on wind turbines. Subcontract Report, National Renewable Energy Laboratory, Golden, Colorado. 62 pp.
- Young, J. A., and R. A. Evans. 1981. Demography and fire history of a western juniper stand. *Journal of Range Management* 34:501-506.
- Young, J. R., C. E. Braun, S. J. Oyler-McCance, J. W. Hupp, and T. W. Quinn. 2000. A new species of sage-grouse (Phasianidae: *Centrocercus*) from southwestern Colorado. *Wilson Bulletin* 112:445-453.

Peer Reviewed Secondary Research Derived

- Aldridge, C. L. and R. M. Brigham. 2003. Distribution, Abundance, and Status of the Greater Sage-Grouse, *Centrocercus urophasianus*, in Canada. *Canadian Field-Naturalist* 117:25-34.
- American Ornithologists' Union. 2000. Forty-second supplement to the American Ornithologists' Union *Check-list of North American Birds*. *Auk* 117:847-858.
- Applegate, R. D. 2001. History of the sage grouse in Kansas. *North American Birds* 55(2):241.
- Beck, J. L. and D. L. Mitchell. 2000. Influences of livestock grazing on sage grouse habitat. *Wildlife Society Bulletin* 28:993-1002.
- Boyle, S. A. and F. B. Samson. 1985. Effects of nonconsumptive recreation on wildlife: A review. *Wildlife Society Bulletin* 13:110-116.
- Braun, C. E. 1987. Current issues in sage grouse management. *Proceedings of Western Association of Fish and Wildlife Agencies* 67:134-144.
- 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.
- Braun, C. E., M. F. Baker, R. L. Eng, J. W. Gashwiler, and M. H. Schroeder. 1976. Conservation committee report on effects of alteration of sagebrush communities on the associated avifauna. *Wilson Bulletin* 88:165-171.
- Braun, C. E., O. O. Oedekoven, and C. L. Aldridge. 2002. Oil and gas development in western North America: effects on sagebrush steppe avifauna with particular emphasis on sage-grouse. *Transactions of the North American Wildlife and Natural Resources Conferences* 67:337-349.
- Charlesworth, D., and B. Charlesworth. 1987. Inbreeding depression and its evolutionary consequences. *Annual Review of Ecology and Systematics* 18:237-68.
- Connelly, J. W., M. A. Schroeder, A. R. Sands, and C. E. Braun. 2000a. Guidelines to manage sage grouse populations and their habitats. *Wildlife Society Bulletin* 28:967-985.
- Cote, I. M., and W. J. Sutherland. 1997. The effectiveness of removing predators to protect bird populations. *Conservation Biology* 11:395-405.
- Crawford, J. A., R. A. Olson, N. E. West, J. C. Mosley, M. A. Schroeder, T. D. Whitson, R. F. Miller, M. A. Gregg, and C. S. Boyd. 2004. Ecology and management of sage-grouse and sage-grouse habitat. *Journal of Range Management* 57:2-19.
- Emmerich, W. E. 1985. Tebuthiuron – environmental concerns. *Rangelands* 7:14-16.

- Forman, R. T. T. 2000. Estimate of the area affected ecologically by the road system in the United States. *Conservation Biology* 14:31-35.
- Forman, R. T. T. and L. E. Alexander. 1998. Roads and their major ecological effects. *Annual Review of Ecology and Systematics* 29:207-231+C2.
- Franklin, I. R. 1980. Evolutionary change in small populations. Pages 135-149 in M. E. Soulé and B. A. Wilcox, editors. *Conservation biology*. Sinauer Associates, Sunderland, Massachusetts.
- Huff, M. H. and J. K. Smith. 2000. Fire effects on animal communities – Chapter 5. pages 35-42 in J.K. Smith, ed. *Wildland fire in ecosystems: Effects of fire on fauna*. General Technical Report RMRS-GTR-42 Vol. 1. U.S. Department of Agriculture, U.S. Forest Service, Rocky Mountain Research Station.
http://www.fs.fed.us/rm/pubs/rmrs_gtr42_1.pdf
- Knick, S. T., D. S. Dobkin, J. T. Rotenberry, M. A. Schroeder, W. M. Vander Haegen, and C. Van Riper, III. 2003. Teetering on the edge or too late? Conservation and research issues for avifauna of sagebrush habitats. *Condor* 105:611-634.
- Knight, R. L. and D. N. Cole. 1995. Factors that influence wildlife responses to recreationists. Pages 71-79 in R.L. Knight and K.J. Gutzwiller, editors. *Wildlife and recreationists: Coexistence through management and research*. Island Press. Washington, D.C.
- Lande, R. 1995b. Mutation and conservation. *Conservation Biology* 9:782-791.
- Lande, R. and G. F. Barrowclough. 1987. Effective population size, genetic variation, and their use in population management. Pages 87-123 in M. E. Soulé, editor. *Viable populations for conservation*. Cambridge University Press, New York, New York.
- McArthur, E. D. 1994. Ecology, distribution, and values of sagebrush within the intermountain region. Pages 347-351 in S.B. Monsen and S.G. Kitchen, compilers. *Proceedings: Ecology and management of annual rangelands*. General Technical Report INT-GTR-313. U.S. Department of Agriculture, U.S. Forest Service, Intermountain Research Station.
- Milton, S.J., R.J. Dean, M.A. du Plessis, and W.R. Siegfried. 1994. A conceptual model of arid rangeland degradation. *BioScience* 44:70-76.
- Phillips, J. B. 1990. Lek behaviour in birds: do displaying males reduce nest predation? *Animal Behavior* 39:555-565.
- Riebsame, W. E., H. Gosnell, and D. M. Theobald. 1996. Land use and landscape change in the Colorado mountains I: theory, scale, and pattern. *Mountain Research and Development* 16: 395-405.

- Rose, R. I. 2004. Pesticides and public health: integrated methods of mosquito management. *Emerging Infectious Diseases* 7. (<http://www.cdc.gov/ncidod/eid/vol7no1/rose.htm>). 7 pp.
- Schroeder, M. A., J. R. Young, and C. E. Braun. 1999. Sage grouse (*Centrocercus urophasianus*). No. 425 in A. Poole and F. Gill, editors. *The birds of North America*. The Birds of North America, Inc., Philadelphia, Pennsylvania. 28 pp.
- Schroeder, M. A., and R. K. Baydack. 2001. Predation and the management of prairie grouse. *Wildlife Society Bulletin* 29:24-32.
- Shaffer, M. L. 1987. Minimum viable populations: coping with uncertainty. Pages 69 - 87 in M. E. Soulé, editor. *Viable populations for conservation*. Cambridge University Press, New York, New York.
- Wiley, R. H. 1974. Evolution of social organization and life-history patterns among grouse. *Quarterly Review of Biology* 49:201-227.
- Young, J. A. and F. L. Allen. 1997. Cheatgrass and range science:1930-1950. *Journal of Range Management* 50:530-535.

Grey Research Based on Data

- Aldridge, C. L. 2005. Identifying habitats for persistence of greater sage-grouse (*Centrocercus urophasianus*) in Alberta, Canada. Thesis, Univ. of Alberta, Edmonton, Alberta, Canada. Abstract, Chapter 4 and Literature Cited sections. 64 pp.
- Amstrup, C. and R. L. Phillips. 1977. Effects of coal extraction and related development on wildlife populations: Effects of coal strip mining on habitat use, activities, and population trends of the sharp-tailed grouse (*Pedioecetes phasianellus*). Annual progress report, Denver Wildlife Research Center, U.S. Fish and Wildlife Service, Denver, Colorado. 37 pp.
- Apa, A. D. 2004. Habitat use, movements, and survival of Gunnison sage-grouse in southwestern Colorado. A preliminary report. Colorado Division of Wildlife, Colorado. 73 pp.
- Barber, H. A. 1991. Strutting behavior, distribution and habitat selection of sage grouse in Utah. Thesis, Brigham Young University, Provo, Utah. 70 pp.
- Barber, T. A. 1968. Function of the cecal microflora in sage grouse nutrition. Thesis, Brigham Young University, Provo, Utah. Pp. 41-51.

- Brown, K. G. and K. M. Clayton. 2004. Ecology of the greater sage-grouse (*Centrocercus urophasianus*) in the coal mining landscape of Wyoming's Powder River Basin. Final Technical Report, Thunderbird Wildlife Consultants, Gillette, Wyoming. 19 pp.
- Byrne, M. W. 2002. Habitat use by female greater sage grouse in relation to fire at Hart Mountain National Antelope Refuge, Oregon. M.S. Thesis. Oregon State University, Corvallis, Oregon. 50 pp.
- Cappa, J. A., G. Young, J. W. Keller, C. J. Carroll, B. Widmann. 2005. Colorado Mineral and Fuel Activity, 2004. Information Series 70, Colorado Geological Survey, Department of Natural Resources, Denver, Colorado. 42 pp.
- Commons, M. L. 1997. Movement and habitat use by Gunnison Sage Grouse (*Centrocercus minimus*) in southwestern Colorado. Thesis, University of Manitoba, Winnipeg, Manitoba, Canada. 100 pp. + appendices.
- Deibert, P. A. 1995. The effects of parasites on sage grouse (*Centrocercus urophasianus*) mate selection. PhD Thesis, University of Wyoming, Laramie, Wyoming. 139 pp.
- Ellis, K. L. 1985. Effects of a new transmission line on distribution and aerial predation of breeding male sage grouse. Final report, Deseret Generation and Transmission Cooperative, Sandy, Utah. 26 pp.
- Garton, E.O. 2005. Gunnison sage-grouse population trends. Final report of statistical analysis. US Fish and Wildlife Service, Cheyenne, Wyoming. 29 pp.
- Gregg, M. A., M. Pope, and J. A. Crawford. 2003a. Survival of sage grouse chicks in the Northern Great Basin - 2002 annual report. Oregon State University. Corvallis, Oregon. 25 pp.
- Gregg, M. A., M. Pope, and J. A. Crawford. 2003b. Survival of sage grouse chicks in the Northern Great Basin - 2003 annual report. Oregon State University. Corvallis, Oregon. 23 pp.
- Holloran, M. J. 2005. Greater sage-grouse (*Centrocercus urophasianus*) population response to natural gas field development in western Wyoming. PhD Dissertation, University of Wyoming, Laramie, Wyoming. 223 pp.
- Hupp, J. W. 1987. Sage grouse resource exploitation and endogenous reserves in Colorado. Dissertation, Colorado State University, Fort Collins, Colorado. 81 pp.
- Lyon, A. G. 2000. The potential effects of natural gas development on sage grouse (*Centrocercus urophasianus*) near Pinedale, Wyoming. Abstract of Thesis, University of Wyoming, Laramie, Wyoming. p. 1.

- Miller, P. S. 2004. Preliminary population viability assessment for the Gunnison sage grouse (*Centrocercus minimus*). Report prepared for Gunnison Sage Grouse Rangewide Conservation plan Science Team. Apple Valley, Minnesota. 39 pp.
- Myers, O. B. 1992. Sage grouse habitat enhancement: effects of sagebrush fertilization. Dissertation, Colorado State University, Fort Collins, Colorado. 97 pp.
- Nehring, J. A., and A. D. Apa. 2000. Gunnison sage-grouse population augmentation to Poncha Pass, Saguache County and Sims Mesa, Montrose County, Spring 2000. Unpublished report to the Colorado Division of Wildlife, Colorado.
- Rasmussen, D. I., and L. A. Griner. 1938. Life history and management studies of sage grouse in Utah, with special reference to nesting and feeding habitats. Transactions of the Third North American Wildlife and Natural Resources Conference 3: 852-864.
- Root, T. 2002. Gunnison sage-grouse seasonal habitat use study annual report, 1, October 2001 – 30 September 2002. Unpublished report to the National Park Service, Black Canyon of the Gunnison National Park and Curecanti National Recreation Area, Colorado. 21 pp.
- Schoenberg, T. J. 1982. Sage grouse movements and habitat selection in North Park, Colorado. Thesis, Colorado State University, Fort Collins, Colorado. 97 pp.
- Slater, S. J. 2003. Sage-grouse (*Centrocercus urophasianus*) use of different-aged burns and the effects of coyote control in southwestern Wyoming. Thesis, University of Wyoming, Laramie, Wyoming. 187 pp.
- US Centers for Disease Control and Prevention. 2004. Statistics, surveillance, and control. [<http://www.cdc.gov/ncidod/dvbid/westnile/surv&control.htm>]. Site accessed December, 2004. 2 pp.
- Utah Governors Office of Planning and Budget. County Level Population and Employment Projections. Available at [http://governor.utah.gov/dea/2005 baseline.pdf](http://governor.utah.gov/dea/2005%20baseline.pdf). Accessed August 10, 2005. 1 p.
- Wenger, S. R., M. R. Grode, and A. D. Apa. 2003. Inventory of sagebrush defoliation and mortality in Gunnison and Dry Creek Basins, final report. Colorado Division of Wildlife, Colorado. 32 pp.
- Young, J. R. 1994. The influence of sexual selection on phenotypic and genetic divergence among sage grouse populations. Dissertation, Purdue University, West Lafayette, Indiana. 125 pp.
- Zablan, M. A. 1993. Evaluation of sage grouse banding program in North Park, Colorado. Thesis, Colorado State University, Fort Collins, Colorado. 68 pp.

Zunino, G. W. 1987. Harvest effects on sage grouse densities in northwest Nevada. Master's Thesis, University of Nevada, Reno, Nevada. 41 pp.

Grey Literature Based on Literature Analysis

Brown, J. K. 2000. Ecological principles, shifting fire regimes and management considerations- Chapter 9. Pages 185-204 in J. K. Brown and J. K. Smith, editors. Wildland fire in ecosystems: Effects of fire on flora. General Technical Report RMRS-GTR-42 Vol. 2. U.S. Department of Agriculture, U.S. Forest Service, Rocky Mountain Research Station.

Connelly, J. W., S. T. Knick, M. A. Schroeder, and S. Stiver. 2004. Conservation assessment of greater sage-grouse and sagebrush habitats. Unpublished Report, Western Association of Fish and Wildlife Agencies. Cheyenne, Wyoming. 610 pp.

Crawford, J. A. 1982. History of sage grouse in Oregon. Oregon Wildlife. Oregon Department of Fish and Wildlife, Portland, Oregon. 4 pp.

Erickson, W. P., G. D. Johnson, M. D. Strickland, D. P. Young Jr., K. J. Sernka, and R. E. Good. 2001. Avian collisions with wind turbines: A summary of existing studies and comparisons to other sources of avian collision mortality in the United States. National Wind Coordinating Committee Resource Document. National Wind Coordinating Committee, Washington D.C. 62 pp.

Grahame, J. D., and T. D. Sisk, editors. 2002. Exotic and invasive species on the Colorado Plateau, http://cpluhna.nau.edu/Biota/invasive_exotics.htm In Canyons, cultures and environmental change: an introduction to the land-use history of the Colorado Plateau. [03/16/04] <http://www.cpluhna.nau.edu/>. Site accessed April, 2004. 7 pp.

Kilpatrick, S. 2000. Using prescribed fire to manage sagebrush communities in occupied sage grouse habitats of Wyoming. Twenty-second Western States Sage and Columbian Sharp-tailed Grouse Symposium, Redmond, Oregon. 6 pp.

Manville, A. M. 2002. Bird strikes and electrocutions at power lines, communication towers, and wind turbines: State of the art and state of the science – next steps toward mitigation. International Partners in Flight Conference, Monterey, CA. 27 pp.

Miller, R. F., and L. L. Eddleman. 2000. Spatial and temporal changes of sage grouse habitat in the sagebrush biome. Oregon State University Agricultural Experiment Station Technical Bulletin 151. Corvallis, Oregon. 35 pp.

Peters, E. F. and S. C. Bunting. 1994. Fire conditions pre- and post-occurrence of annual grasses on the Snake River plain. Pages 31-36 in S. B. Monsen and S. G. Kitchen, compilers. Proceedings: Ecology and management of annual rangelands. General Technical Report INT-GTR-313. U.S. Department of Agriculture, U.S. Forest Service, Intermountain Research Station.

- Rowland, M. 2004. Effects of management practices on grassland birds: greater sage-grouse. Northern Prairie Wildlife Research Center, Jamestown, North Dakota. 44 pp.
- Rowland, M. M. and M. J. Wisdom. 2002. Research problem analysis for greater sage-grouse in Oregon - Final Report. Oregon Department of Fish and Wildlife; U.S. Department of the Interior, Bureau of Land Management, Oregon/Washington State Office; and U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 75 pp.
- Sime, C. A. 1999. Domestic dogs in wildlife habitats. Pages 8.1-8.17 in G. Joslin and H. Youmans, coordinators. Effects of recreation on Rocky Mountain wildlife: a review for Montana. Committee on Effects of Recreation on Wildlife, Montana Chapter of the Wildlife Society, Montana.
- Suter, G. W. II. 1978. Effects of geothermal energy development on fish and wildlife. Report FWS/OBS-76/20.6. U.S. Fish and Wildlife Service. 26 pp.
- Wambolt, C. L., A. J. Harp, B. L. Welch, N. Shaw, J. W. Connelly, K. P. Reese, C. E. Braun, D. A. Klebenow, E. D. McArthur, J. G. Thompson, L. A. Torell, and J. A. Tanaka. 2002. Conservation of greater sage-grouse on public lands in the western U.S.: implications of recovery and management policies. Policy Analysis Center for Western Public Lands, Caldwell, Idaho. 41 pp.
- Willis, M. J., G. P. Keister, Jr., D. A. Immell, D. M. Jones, R. M. Powell, and K. R. Durbin. 1993. Sage Grouse in Oregon. Wildlife Research Report No. 15. Oregon Department of Fish and Wildlife, Portland, Oregon. 70 pp.
- Wooten, J., S. Wilkerson, K. Hinson, and M. Grodowitz. 1996. A summary of noxious weed laws in the continental U.S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi. [http://www.wes.army.mil/el/pmis/html/what is .html](http://www.wes.army.mil/el/pmis/html/what%20is.html). Site accessed 9/27/2004. 5 pp.
- Young, J. A., R. E. Eckert, Jr., and R. A. Evans. 1979. Historical perspectives regarding the sagebrush ecosystem. Pages 1 – 13 in The sagebrush ecosystem: a symposium: Proceedings. Utah State University, College of Natural Resources, Logan, Utah.

Other

- Autenrieth, R. E. 1981. Sage grouse management in Idaho. Idaho Department of Fish and Game, Wildlife Bulletin 9, Boise, Idaho. 238 pp.
- Bureau of Land Management. 1999. State of Colorado oil and gas potential. Available online at <http://www.co.blm.gov/metadata/ogpbrw.htm> . Site accessed February 23, 2004. 1 p.
- Bureau of Land Management. 2000. Land Use Planning Handbook. 122 pp.

- Bureau of Land Management. 2003. Final environmental impact statement and proposed plan amendment for the Powder River Basin Oil and Gas Project, Vols. 1 and 2. Bureau of Land Management, Buffalo, Wyoming.
- Bureau of Land Management. 2004. Best management practices (BMP's) for Fluid Minerals. Available online at <http://www.blm.gov/nhp/300/wo310/>. Site accessed September 17, 2004.
- Bureau of Land Management Instruction Memorandum IM 2003 – 137. Integration of EPCA Inventory Results into Land Use Planning and Energy Use Authorizations. April 2003. 3pp.
- Bureau of Land Management Instruction Memorandum IM 2003-233. Integration of Energy Policy and Conservation Act (EPCA) Inventory Results into the Land Use Planning Process. July, 2003. 5 pp.
- Bureau of Land Management Instruction Memorandum IM 2005-024. National Sage-Grouse Habitat Conservation Strategy. November 16, 2004. 4 pp.
- Bureau of Land Management Instruction Memorandum IM CO-2005-038. Statement of Interim Policy, Implementation of the Gunnison Sage-grouse Rangewide Conservation Plan. July 12, 2005. 3pp.
- Call, M. W., and C. Maser. 1985. Wildlife habitats in managed rangelands—the Great Basin of southeastern Oregon. Sage grouse. USDA Forest Service, General Technical Report PNW 187, Portland, Oregon. 29 pp.
- Coker, C. 2001. Uranium mining in Colorado. <http://www.colorado.edu/geography/cartpro/cartography2/spring2001/coker/uranium/intro.html>. Site accessed October 14, 2005. 4pp.
- Colorado Department of Agriculture. 2003. 8 CCR 1203-19: Rules pertaining to the administration and enforcement of the Colorado Noxious Weed Act. <http://www.ag.state.co.us/DPI/weeds/statutes/weedrules.pdf>. Site accessed March 16, 2004. 27 pp.
- Colorado Department of Local Affairs. 2004. Preliminary population forecasts by region and county, 2000-2030. Available from: <http://dola.colorado.gov/demog/Population/PopulationTotals/Forecasts/Counties5.pdf> Date accessed July 28, 2005. 4 pp.
- Colorado Department of Public Health. 2004. Summary of mosquito-borne virus testing Results, Colorado. <http://www.cdphe.state.co.us/dc/zoonosis/wnv/WNVPublicReport.pdf>. Site accessed August, 2004. 2 pp.

- Colorado Department of Transportation. 2004. Roadway statistics – 2004 county road statistics – centerline miles, lane miles, and bridge deck square feet. Available from: http://www.dot.state.co.us/App_DTD_DataAccess/Statistics/dsp_folder/Roadway/2004/2004CountyRds... Site accessed February 7, 2006. 2 pp.
- Colorado Oil and Gas Conservation Commission. 2004. Colorado annual oil and gas statistics. Available at <http://oil-gas.state.co.us/>. Site accessed September 1, 2005. 52 pp.
- Crawford Area Conservation Plan. 1998. Gunnison sage grouse conservation plan. Crawford Area – Colorado. 28 pp.
- Dobkin, D. S. 1995. Management and conservation of sage grouse, denominative species for the ecological health of shrubsteppe ecosystems. U.S.D.I. Bureau of Land Management, Portland, Oregon. 26 pp.
- Dolores County. 2002. Development and land use regulation. 3pp.
- Gunnison Basin Conservation Plan. 1997. Gunnison sage-grouse conservation plan. Gunnison, Colorado. 108 pp.
- Gunnison County. 2001. Gunnison County land use resolution. 8 pp.
- Gunnison Sage-grouse Rangewide Steering Committee. 2005. Gunnison sage-grouse rangewide conservation plan. Colorado Division of Wildlife, Denver, Colorado. 359 pp. + appendices.
- Hays, D. W., M. J. Tirhi, and D. W. Stinson. 1998. Washington State status report for the Sage Grouse. Washington Department of Fish and Wildlife, Olympia, Washington. 62 pp.
- Laycock, W. A., D. Loper, F. W. Obermiller, L. Smith, S. R. Swanson, P. J. Urness, and M. Vavra. 1996. Grazing on public lands. Council for Agriculture Science and Technology Task Force. Report No. 129. Ames, Iowa. 70 pp.
- Livingston, M. F. 1998. Western sage grouse management plan - Yakima Training Center. 76 pp.
- Massey, M. 2001. Long-range plan for management of lesser prairie chickens in New Mexico, 2002-2006. Federal Aid in Wildlife Restoration Grant W-104-R41, Project 3.4, New Mexico Game and Fish, New Mexico. 47 pp.
- Montrose County. 2003. Master plan – planning policies. 3 pp.
- Moore, R. and T. Mills. 1977. An environmental guide to western surface mining. Part 2: impacts, mitigation and monitoring. FWS/OBS-78/04, U.S. Fish and Wildlife Service, Fort Collins, Colorado. 379 pp.

- Patterson, R. L. 1952. The sage grouse in Wyoming. Sage Books, Denver, Colorado. 344 pp.
- Proctor, B. R., R. W. Thompson, J. E. Bunin, K. W. Fucik, G. R. Tamm and E. G. Wolf. 1983. Practices for protecting and enhancing fish and wildlife on coal surface-mined land in the Powder River-Fort Union region. FWS/OBS-83/10, U.S. Fish and Wildlife Service, Washington D.C. 244 pp.
- Rogers, G. E. 1964. Sage grouse investigations in Colorado. Technical Publication Number 16, Project W-37-R, Federal Aid in Wildlife Restoration. Game Resources Division, Colorado Game, Fish, and Parks Department. Denver, Colorado. 132 pp.
- Webb, R. 2000. Status review and petition to list the Gunnison sage grouse (*Centrocercus minimus*). Document prepared by Net Work Associates – Ecological Consulting, Eugene, Oregon. 253 pp. + appendices.
- Wyoming Game and Fish Department. 2003. Wyoming greater sage-grouse conservation plan. Wyoming Game and Fish Department, Cheyenne, Wyoming. 97 pp.

Unpublished Literature

- Bureau of Land Management. 2004. Gunnison sage-grouse 2004 candidate status report for all BLM Colorado Field Offices. Unpublished report prepared for the U.S. Fish and Wildlife Service. 65 pp.
- Bureau of Land Management. 2005a. Gunnison sage-grouse 2005 candidate status report for the Grand Junction Field Office [Pinon Mesa population]. Unpublished report prepared for the U.S. Fish and Wildlife Service. 14 pp.
- Bureau of Land Management. 2005b. Gunnison Basin road miles, grazing allotments, and mines. Unpublished literature prepared for the U.S. Fish and Wildlife Service. 64 pp.
- Bureau of Land Management. 2005c. Gunnison Basin active mines, powerlines, and roads. Unpublished literature prepared for the U.S. Fish and Wildlife Service. 2 pp.
- Bureau of Land Management. 2005d. Gunnison sage-grouse 2005 candidate status report for the Uncompahgre Field Office [Cerro Summit-Cimarron-Sims Mesa population, Crawford population, and San Miguel Basin population]. Unpublished report prepared for the U.S. Fish and Wildlife Service. 60 pp.
- Bureau of Land Management. 2005e. Gunnison Basin fence miles. Unpublished literature prepared for the U.S. Fish and Wildlife Service. 3 pp.
- Bureau of Land Management. 2005f. Gunnison sage-grouse habitat, Federal oil and gas lease acreages, and oil and gas wells on Federal leases. Unpublished literature prepared for the U.S. Fish and Wildlife Service. 5 pp.

- Bureau of Land Management. 2005g. Gunnison sage-grouse 2005 candidate status report for the Dolores Public Lands Office [Dove Creek and San Miguel Basin populations]. Unpublished report prepared for the U.S. Fish and Wildlife Service. 15 pp.
- Bureau of Land Management. 2005h. Number and percentages of grazing allotments and acres covered in the Gunnison Basin that have Gunnison sage-grouse objectives incorporated. Unpublished literature prepared for the U.S. Fish and Wildlife Service. 1 pp.
- Bureau of Land Management. 2005i. Gunnison sage-grouse 2005 candidate status report for the Gunnison Field Office [Gunnison Basin population]. Unpublished report prepared for the U.S. Fish and Wildlife Service. 35 pp.
- Colorado Division of Wildlife. 2002. Summary of CDOW actions with regards to Gunnison's sage-grouse. Unpublished report prepared for the U.S. Fish and Wildlife Service. 222 pp.
- Colorado Division of Wildlife. 2004. High counts of male Gunnison sage-grouse, Pinyon Mesa, Mesa County, Colorado, 1995-2004. Unpublished report prepared for the Pinon Mesa Gunnison sage-grouse Working Group partners. 2 pp.
- Colorado Division of Wildlife. 2005a. 2005 Gunnison Basin Gunnison sage-grouse lek count summary and population estimate. Unpublished report for interested parties. 29 pp.
- Colorado Division of Wildlife. 2005b. Area 18 male sage-grouse high counts [San Miguel Basin and Cerro Summit-Cimarron-Sims Mesa populations]. Unpublished report for interested parties. 10 pp.
- Colorado Division of Wildlife. 2005c. High counts of male sage-grouse, Dove Creek area, Dolores County, Colorado. Unpublished report for interested parties. 2 pp.
- Colorado Division of Wildlife 2005d. 2005 Pinon Mesa high male sage-grouse count. Unpublished report for interested parties. 1 pp.
- Colorado Division of Wildlife 2005e. Crawford grouse summary, 1978-2005. Unpublished report for interested parties. 4 pp.
- Colorado Division of Wildlife 2005f. 2005 high male count for Poncha Pass. Unpublished report for interested parties. 2 pp.
- Colorado Division of Wildlife 2005g. Information for 2005 candidate status report. Unpublished report prepared for the U.S. Fish and Wildlife Service. 152 pp.
- Colorado Division of Wildlife. 2006. Information on Gunnison sage-grouse road kills in Dry Creek Basin group. Unpublished literature prepared for the U.S. Fish and Wildlife Service. 9 pp.

- Gunnison Watershed Noxious Weed Program. 2005. Gunnison County weed treatments. Unpublished report prepared for the U.S. Fish and Wildlife Service. 14pp.
- Mesa County. 2003. Mesa countywide land use plan. Unpublished literature prepared for the U.S. Fish and Wildlife Service. 2 pp.
- San Juan County Gunnison Sage-grouse Work Group. 2005. Gunnison sage-grouse proposed rule information request: San Juan County, Utah response. Unpublished report prepared for the U.S. Fish and Wildlife Service. 147 pp.
- San Miguel County. 2005. San Miguel County Land use Code. Unpublished literature prepared for the U.S. Fish and Wildlife Service. 8 pp.
- San Miguel County. 2006. Unpublished literature from San Miguel County Board of Commissioners to Director of Colorado Land Board. 2pp.
- Stiver, J. 2005. Actual and effective size of Gunnison sage-grouse populations. Unpublished final report No. C108147, prepared for Colorado Division of Wildlife. 60 pp.

Personal Communications

- Clait Braun, Colorado Division of Wildlife, pers. comm. 1998
- Tony Apa, Colorado Division of Wildlife, pers. comm. 2004
- Jim Garner, Colorado Division of Wildlife, pers. comm. 2004
- Tony Apa, Colorado Division of Wildlife, pers. comm. 2005
- Sandy Borthwick, Bureau of Land Management, pers. comm. 2005
- Myron Chase, National Park Service, pers. comm. 2005
- Jim Ferguson, Bureau of Land Management, pers. comm. 2005
- Jim Garner, Colorado Division of Wildlife, pers. comm. 2005
- Paul Jones, Colorado Division of Wildlife, pers. comm. 2005
- Ron Lambeth, Bureau of Land Management, pers. comm. 2005
- Steve McCall, Bureau of Reclamation, pers. comm. 2005
- Kathy Nickell, Bureau of Land Management, pers. comm. 2005

Duane Spencer, Bureau of Land Management, pers. comm. 2005

Guy Wallace, Utah Division of Wildlife Resources, pers. comm. 2005

Tammy Wallace, Bureau of Land Management, pers. comm. 2005

Sandy Borthwick, Bureau of Land Management, pers. comm. 2006

Linda Luther, San Miguel County, pers. comm. 2006

Gary Skiba, Colorado Division of Wildlife, pers. comm. 2006

Guy Wallace, Utah Division of Wildlife Resources, pers. comm. 2006