



Leave No Trace Research Bibliography

Plan Ahead and Prepare

Cole, David N. 1989. *Low-impact recreational practices for wilderness and backcountry*. USDA Forest Service. General Technical Report. INT-265
leopold.wilderness.net/pubs/183.pdf

Stewart, William; Cole, David; Manning, Robert; Valliere, William; Taylor, Jonathan; Lee, Martha. 2000. *Preparing for a Day Hike at Grand Canyon: What Information Is Useful?*. In: Cole, David N.; McCool, Stephen F.; Borrie, William T.; O'Loughlin, Jennifer, comps. 2000. *Wilderness science in a time of change conference— Volume 4: Wilderness visitors, experiences, and visitor management; 2000 May 23–27; Missoula, MT. Proceedings RMRS-P-15-VOL-4*. Ogden, UT: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 221-225
Available at:
<http://leopold.wilderness.net/pubsResults.cfm?searchType=Publication&Pub=437>

Stoner, Mary A., Kelly, M. Hanlon, S. 1993. *Techniques and equipment for wilderness travel with stock*. USDA Forest Service. 9323-2839-MTDC. 60 p.

Travel and Camp on Durable Surfaces

Camp, R.J., Knight, R.L. 1998. *Effects of rock climbing on cliff plant communities at Joshua Tree National Park, California*. *Conservation Biology*, 12 (6), 1302-1306
<http://www.blackwell-synergy.com/links/doi/10.1046/j.1523-1739.1998.97363.x/abs/>

Cole, D. 1990. *Trampling disturbance and recovery of cryptogamic soil crusts in Grand Canyon National Park*. *Great Basin Naturalist* 20:321-326
<http://leopold.wilderness.net/pubsResults.cfm?searchType=Publication&Pub=215>

Cole, David N. 1993. *Trampling effects on mountain vegetation in Washington, Colorado, New Hampshire, and North Carolina*. USDA Forest Service Res. Pap. INT-464. 56p.

- Cole, D. N., Spildie, D. R. 1998. *Hiker, horse and llama trampling effects on native vegetation in Montana, USA*. Journal of Environmental Management 53 (1) :61-71.
leopold.wilderness.net/pubsResults.cfm?searchType=Publication&Pub=542
- Cole, D.N., 1995. *Experimental trampling of vegetation. I. Relationship between trampling intensity and vegetation response*. Journal of Applied Ecology 32 :203-214.
leopold.wilderness.net/pubsResults.cfm?searchType=Publication&Pub=263
- Cole, David N. 1995. *Recreational trampling experiments: effects of trample weight and shoe type*. Research Note INT-RN-425. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Research Station 4p.
Available at: www.fs.fed.us/rm/pubs_int/int_rn425.pdf
- Cole, D.N. 1995. *Disturbance of natural vegetation by camping: experimental applications of low-level stress*. Environmental Management. 19 :405-416.
<http://leopold.wilderness.net/pubsResults.cfm?searchType=Publication&Pub=266>
- Cole, David N.; Monz, Christopher A. 2004. *Spatial patterns of recreation impact on experimental campsites*. Journal of Environmental Management 70: 73-84.
Available at:
<http://leopold.wilderness.net/pubsResults.cfm?searchType=Publication&Pub=686>
- Cole, David, N. 1982. *Wilderness campsite impacts: Effect of amount of use*. USDA Research Paper INT-284. 34 p.
- Farris, M.A., 1998. *The effects of rock climbing on the vegetation of three Minnesota cliff systems*. Canadian Journal of Botany 76, 1-10
files.dnr.state.mn.us/ecological_services/nongame/projects/consgrant_reports/1995_farris_sign.pdf
- Hassig, D. W. 1991. *A preliminary investigation of conditions of soil and ground cover vegetation on campsites closed to use in the Adirondack High Peaks Wilderness Area (New York)*. Thesis. State University New York, Syracuse, New York. 77pp.
- Hawkins, J. P., Roberts, C. M. 1993. *Effects of recreational scuba diving on coral reefs - trampling on reef-flat communities*. J. Appl. Ecol. 30 (1) :25-30
www.reefrelief.org/coralreef/study/effects.html
- Jenkins, Carolyn. And Ashley Olson and Jennifer L. Ruesink. 2001. *Watch Your Step: Impacts of Trampling on a Rocky Shoreline of San Juan Island, Washington*. Department of Zoology, University of Washington
Available at: www.psat.wa.gov
- Sun, D., Liddle, M. J. 1993. *A survey of trampling effects on vegetation and soil in eight tropical and subtropical sites*. Environmental Management. 17 (4) :497-510.

Dispose of Waste Properly

Cilimburg, A., Monz C. & Kehoe, S. 1997. *Wildland recreation and human waste: A review of problems, practices and concerns*. Unpublished manuscript, National Outdoor Leadership School, Lander, WY. 31pp.
Available at: <http://www.nols.edu/resources/research/humanwaste.shtml>

Ells, Michael D., Lee, Kathryn J. 2000. *The fate of feces and fecal microorganisms in human waste smeared on rocks in a temperate forest environment and its impacts on public health*. National Outdoor Leadership School, National Park Service, Leave No Trace Center for Outdoor Ethics, Ferris State University. 35p.
Have file

Ells, Michael D., Lee, Kathryn J. 2000. *The fate of feces and fecal microorganisms in human waste deposited on snow and smeared on rocks in the alpine environment*. National Outdoor Leadership School, National Park Service, Leave No Trace Center for Outdoor Ethics, Ferris State University. 54p.
Have file

Ells, Michael D., Lee, Kathryn J. 2000. *The fate of feces and fecal microorganisms in human waste smeared on rocks in an arid environment and its impacts on public health*. National Outdoor Leadership School, National Park Service, Leave No Trace Center for Outdoor Ethics, Ferris State University. 31p.
Have file

Leffel, J. *A descriptive study of human waste collection and disposal alternatives used in the National Park Service (NPS) backcountry*. 2003 (scroll down page a little to find pdf.)
Available at: www.neha.org/research/aec_presentations.htm

Leave What You Find

Ward, C. and J. Roggenbuck. 2003. *Understanding park visitor's responses to interventions to reduce petrified wood theft*. *Journal of Interpretation Research* 8:1, 67-82

Widner, C.J. and Roggenbuck, J. W. 2000. *Reducing the Theft of Petrified Wood at Petrified Forest National Park*, *Journal of Interpretation Research*. Vol 5.

Minimize Campfire Impacts

Bratton, Susan P., Stromberg, Linda L. 1982. *Firewood gathering impacts in backcountry campsites in Great Smokey Mountains National Park*. *Environmental Management* 6, 1: 63-71.

Cole, David N. 1995. *Rational behind fire building and wood gathering practices*. Master Network, Leave No Trace Newsletter, National Outdoor Leadership School 7, 3:3, 12-3

Available at:

<http://archive.Int.org/LNTPublications/Newsletter/FireRationaleTest.php>

Cole, David N. and John Dalle-Molle, 1982. *Managing campfire impacts in the backcountry*. Research Paper. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Forest and Range Experiment Station

Fenn, Dennis B., G. Jay Gogue, and Raymond E. Burge, 1976. *Effects of campfires on soil properties*. Ecological Services Bulletin, Washington, D.C.: U.S. Department of the Interior, National Park Service

Hammit, William E., 1982. *Alternatives to banning campfires*. Parks 7, 3:8-9

Hammit, William E., 1980. *Fire rings in the backcountry: Are they necessary?* Parks 5, 4:8-9

Vachowski, Brian. 1997. *Leave No Trace campfires and firepans*. USDA Forest Service. 9723-2815-MTDC

Respect Wildlife

Access Fund. 1997. *Raptors and Climbers: Guidelines for managing technical climbing to protect raptor nest sites*. The Access Fund, Boulder, CO. 27pp.

Available at: <http://www.accessfund.org/pubs/index.php>

Aitchison, S.W. 1977. *Some effects of a campground on breeding birds in Arizona*. Importance, preservation, and management of riparian habitat: proceedings of a symposium. USDA Forest Service, General Technical Report. RM-43. 175-182

Anderson, S.H. 1995. *Recreational disturbance and wildlife populations*. Wildlife and Recreation: Coexistence through management and research. Island press, Washington, DC

Anthony, R.G., Steidl, R.J., McGarigal, K. 1995. *Recreation and bald eagles in the Pacific Northwest*. Wildlife and Recreation: Coexistence through management and research. 223-241. Island press, Washington, DC

Boise Climbers' Alliance & Idaho Department of Fish and Game (1999). *Guidelines for protecting cliff-nesting raptors and climbing management at the Black Cliffs, Boise Idaho*. Idaho Department of Fish and Game, Nampa, ID 10pp.

Available at: <http://www.boiseclimbers.org/>

Boyce, M.S., Metzgar, L.H., Peters, J.T. 1992. *Bighorn sheep and horses on the Bighorn National Recreation Area: Wilderness or pasture?* Wilderness Issues in the Arid Lands of the Western U.S. :51-67

Cassirer, E. Frances, Freddy, David J., Ables, Earnest D. 1992. *Elk responses to disturbance by cross-country skiers in Yellowstone National Park.* Wildlife Society Bulletin 20 (4) :375-381

Cole, D.N., Landres, P.B. 1995. *Indirect effects of recreationists on wildlife.* Chapter 11 in Knight, R.L./Gutzwiller, K.J., editors. *Wildlife and recreationists: coexistence through management and research.* Island Press, Washington, D.C.

Available at:

<http://leopold.wilderness.net/pubsResults.cfm?searchType=Publication&Pub=265>

Cole, David N.; Knight, Richard L. 1991. *Wildlife preservation and recreational use: conflicting goals of wildland management.* In: Transactions of the 56th North American wildlife and natural resources conference 233-237pp.

Available at:

<http://leopold.wilderness.net/pubsResults.cfm?searchType=Publication&Pub=213>

Dahlgren, R. B., Korschgen, C. E. 1992. *Human disturbances of waterfowl: An annotated bibliography.* U.S. Fish and Wildlife Service, Washington, D.C.. Resour. Pub. No. 188. 62pp.

Davidson, N. 1997. *Waterbirds and recreation: considerations for the sustainable management of wetlands.* Gibier Faune Sauvage("Hunting and Protected Areas in Europe: Proceedings of the International Seminar, Brussels, June 19, 1996"; Lecocq, Yves; Swift, John; Birkan, Marcel, editors). 14 (2) :211-225.

Garber, S.D.; Burger, J. 1995. *A 20-yr study documenting the relationship between turtle decline and human recreation.* Ecological Applications 5 (4) :1151-1162.

<http://www.esajournals.org/esaonline/?request=get-abstract&issn=10510761&volume=005&issue=04&page=1151>

Goodrich, J.M., Berger, J. 1994. *Winter recreation and hibernating black bears, Ursus americanus.* Biological Conservation 67 (2) :105-110.

nohvcclibrary.forestry.uga.edu/ei%20wildlife%20winter%20recreation%20abs.htm

Gutzwiller, K.J. 1995. *Recreational disturbance and wildlife communities.* Chapter 10 in Knight, R.L. Gutzwiller, K.J., editors. *Wildlife and recreationists: coexistence through management and research.* Island Press, Washington, D.C.

Hicks, L.L., Elder, J.M.1979. *Human disturbance of Sierra Nevada bighorn sheep.* Journal of Wildlife Management, 43 (4), 909-915

Holmes, T.L., Knight, R.L., Stegall, L., Craig, G.R. 1993. *Responses of wintering grassland raptors to human disturbance*. Wildlife Society Bulletin 21, 461-468

Joslin, G., and H. Youmans, coordinators. 1999. *Effects of recreation on Rocky Mountain wildlife: A Review for Montana*. Committee on Effects of Recreation on Wildlife, Montana Chapter of The Wildlife Society. 307pp.
www.montanatws.org/pages/page4a.html

Knight, R.L., Cole, D.N. 1991. *Effects of recreational activity on wildlife in wildlands*. Transcripts of the 56th North American Wildlife & Natural Resources Conference (238-246)

Knight, R.L. Skagen, S.K. 1998. *Effects of recreational disturbance on birds of prey: A review*. R.L. Glinski (ed.) Proceedings of the Southwest Raptor Management Symposium and Workshop (pp. 355-359) Institute of wildlife research National Wildlife Federation Scientific and Technical Series No.11

Knight, R. L., Temple, S. A. 1995. *Wildlife and recreationists: co-existence through management*. Chapter 20 in Knight, R.L./Gutzwiller, K.J., editors. *Wildlife and recreationists: coexistence through management and research*. Island Press, Washington, D.C.

Sawyer, Marit. 1997. *How recreational activities affect wildlife: A review of Knight and Cole's Effects of Recreational Activity on Wildlife in Wildlands (1991)*. Master Network newsletter Fall (No.16) :4pp..
<http://archive.lnt.org/LNTPublications/Newsletter/RecreationActivities&Wildlife.php>

Stalmaster, Mark V., Kaiser, James L. 1998. *Effects of recreational activity on wintering bald eagles*. Pages 1-46 Wildlife Monographs 137.

Vachowski, Brian. 1994. *Low impact food hoists*. USDA Forest Service. 9523-2809-MTDC. 14 p.
<http://www.fhwa.dot.gov/environment/fspubs/95232809/>

White, Don, Jr., Kendall, K.C., Picton, H.D. 1999. *Potential energetic effects of mountain climbers on foraging grizzly bears*. Wildlife Society Bulletin 27 (1) :146-151.

Be Considerate of Other Visitors

Manning, R.E., Valliere, W.A., 2001, *Coping in outdoor recreation: Causes and consequences of crowding and conflict among community residents*. Journal of Leisure Research. Vol. 33 (4), 99. 410-426
http://www.findarticles.com/p/articles/mi_qa3702/is_200110/ai_n8986169

Schneider, I.E., Hammitt, W.E. 1995, *Visitor response to outdoor recreation conflict: A conceptual approach*. Leisure Sciences, Vol. 17 (3), pp. 223-234
www.wilderness.net/library/documents/Schneider_4-20.pdf

Schneider, I.E. 2000. *Revisiting and revising recreation conflict research*. Journal of Leisure Research. Vol. 32 (1) pp.129-132

Stewart, William P.; Cole, David N. 2001. *Number of encounters and experience quality in Grand Canyon backcountry; consistently negative and weak relationships*. Journal of Leisure Research 33(1): 106-120
<http://leopold.wilderness.net/pubsResults.cfm?searchType=Publication&Pub=617>

Watson, Alan E.; Niccolucci, Michael J.; Williams, Daniel R. 1994. *The nature of conflict between hikers and recreational stock users in the John Muir Wilderness*. Journal of Leisure Research 26(4): 372-385.
<http://leopold.wilderness.net/pubsResults.cfm?searchType=Publication&Pub=257>

General

Aitchison, S. W. 1976. *Human impact on the Grand Canyon*. Down River 3 (4) :18-19

Aune, K.E. 1981. *Impacts of winter recreationists on wildlife in a portion of Yellowstone National Park, Wyoming*. Thesis. Montana State University, Bozeman, Montana, USA. 111pp.

Brown, J. H., Jr., Kalisz, S.P., Wright, W.R. 1997. *Effects of recreational use on forested sites*. Environmental Management 1 (5) :425-431

Buckly, R. 2004. *Environmental impacts of ecotourism*. Cambridge, MA, USA : CABI Pub., 2004.389 p.
Available at: <http://www.cabi-publishing.org/bookshop/BookDisplay.asp?SubjectArea=Lei&Subject=Tourism&PID=1779>

Carlson, Lars H., Godfrey, Paul J. 1989. *Human impact management in a costal recreation and natural area*. Biological Conservation. 49 (2) :141-156

Cole, David N. 2000. *Biophysical impacts of wildland recreation use*. Gartner, William C. and David W. Lime, editors. Trends in outdoor recreation, leisure and tourism. CABI publishing, Wallingford, UK: 257-264

Cole, David N. 2004. *Environmental impacts of outdoor recreation in wildlands*. In: Manfredo, M.; Vaske, J., Field, D, Brown, P. and Bruyere, B. (eds). Society and resource management: a summary of knowledge. Modern Litho: Jefferson City, MO: 107-116.

Cole, D.N., Knight, R. L. 1990. *Impacts of recreation on biodiversity in wilderness*. Pages 33-40 Wilderness areas: their impacts; proceedings of a symposium. Utah State University, Logan, Utah

Cole, David N. 1986. *Resource impacts caused by recreation*. In: A literature review: The President's Commission on Americans Outdoors. Washington, DC: The President's Commission on Americans Outdoors: Management 1-11pp.
Available at:
<http://leopold.wilderness.net/pubsResults.cfm?searchType=Publication&Pub=165>

Cole, D. N. 1990. *Ecological impacts of wilderness recreation and their management*. Pages 425-466 Hende, J. C. Stankey, G. H. Lucas, R. C., editors. Wilderness Management. North American Press, Golden, Colorado

Cole, David N., van Wagtendonk, Jan W., McClaran, Mitchel P., Moore, Peggy E., McDougald, Neil K. 2004. *Response of mountain meadows to grazing by recreation pack stock*. Journal of Range Management 57(2): 153-160.
Available at:
<http://leopold.wilderness.net/pubsResults.cfm?searchtype=publication&pub=694>

Cordell, H. Ken; Tarrant, Michael A.; McDonald, Barbara L.; and Bergstrom, John C. 1998. *How the public views wilderness*. International Journal of Wilderness, 4(3): 28-31.
Available at: www.srs.fs.usda.gov/trends/ijw43.pdf

Cordell, H. K., Tarrant, M. A., & Green, G. T. 2003. *Is the public viewpoint of wilderness shifting?* International Journal of Wilderness, 9(2), 27-32
Available at: www.wilderness.net/library/documents/aug03_cordell.pdf

Cordell, H. Ken and Jeff Teasley. 1998. *Recreational Trips to Wilderness: Results from the USA National Survey on Recreation and the Environment*. The International Journal of Wilderness, 4(1): 23-27.

Cordell, H. Ken and Patrick C. Reed. 1990. *Untrammelled by Man: Preserving Diversity Through Wilderness*. Preparing to Manage Wilderness in the 21st Century, Proceedings of the Conference. Athens, GA: USDA Forest Service, Southeastern Forest Experiment Station, General Technical Report SE-66, 1-4

Floyd, Myron F. and Johnson, Cassandra. 2002. *Coming to terms with environmental justice in outdoor recreation: a conceptual discussion with research implications*. Leisure Sciences. 24(1):59-77.
Available at: <http://www.srs.fs.usda.gov/pubs/viewpub.jsp?index=3220>

Fly, J. Mark; Jones, Robert Emmet; and Cordell H. Ken. 2000. *Knowledge of and attitudes toward Wilderness in the Southern Appalachian ecoregion*. Wilderness

science in a time of change conference, Volume 2: Wilderness within the context of larger systems. RMRS-P-15-Vol-2 Fort Collins, CO: U.S. Department of Agriculture, Forest Service. 201-204

Available at:

www.wilderness.net/library/documents/science1999/volume2/Fly_2-26.pdf

HaySmith, L., Hunt, J.D. 1995. *Nature tourism: impacts and management*. Pages 203-219 in Knight, R.L./Gutzwiller, K.J., editors. *Wildlife and recreationists: coexistence through management and research*. Island Press, Washington, D.C.

Marion, Jeffrey L. Cole, David N. 1989. *Evaluating recreation impacts: a multi-faceted research design*. *Park Science* 9(2): 23-24

<http://leopold.wilderness.net/pubsResults.cfm?searchType=Publication&Pub=177>

Marion, Jeff L. 1998. *Recreation Ecology Research Findings: Implications for Wilderness and Park Managers*. Proceedings of the National Outdoor Ethics Conference, April 18-21, 1996, St. Louis, MO. (1998)

Available at: www.fw.vt.edu/forestry/cpsu/rececol.html

Newsome, David E., David N. Cole and Jeffery L. Marion. 2004. *Environmental impacts associated with recreational horse riding*. Buckley, Ralf (ed), *Environmental Impact of Tourism*, Cambridge, MA: CABI Publishing. Pp61-82.

Oelschlaeger, M. 1995. *Taking the land ethic outdoors: its implications for recreation*. Pages 335-350 Knight, R.L./Gutzwiller, K.J., editors. *Wildlife and recreationists: coexistence through management and research*. Island Press, Washington, D.C.. 372pp.

Olson-Rutz, K. M.; Marlow, C. B.; Hansen, K.; Gagnon, L. C.; Rossi, R. J. 1996. *Packhorse grazing behavior and immediate impact on a timberline meadow*. *Journal of Range Management Society for Range Management* 49: 546-550.

Available at:

<http://leopold.wilderness.net/pubsResults.cfm?searchType=Publication&Pub=292>

Reid, Scott., Marion, Jeff. *The Efficacy of Visitor Education Programs*. Research Paper www.lnt.org/training/resources/lnteducationeffectiveness.pdf

Spildie, David R.; Cole, David N.; Walker, Sarah C. 2000. *Effectiveness of a Confinement Strategy in Reducing Pack Stock Impacts at Campsites in the Selway-Bitterroot Wilderness, Idaho*. Cole, David N.; McCool, Stephen F.; Borrie, William T.; O'Loughlin, Jennifer, comps. 2000. *Wilderness science in a time of change conference— Volume 5: Wilderness ecosystems, threats, and management; 2000 May 23– 27; Missoula, MT. Proceedings RMRS-P-15-VOL-5*. Ogden, UT: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 199-208.

Available at:

<http://leopold.wilderness.net/pubsResults.cfm?searchType=Publication&Pub=472>

Watson, Alan E., H. Ken Cordell, and Lawrence A. Hartmann. 1989. *Characteristics of Wilderness Users in Outdoor Recreation Assessments*. In: Recreation and Park Management, Papers from the First National Symposium on Social Science in Resource Management. Corvallis, OR: Oregon State University, College of Forestry, 1-10.

Visitor Management

Beeton, S. 1999, *Hoofing it – on four or two feet? Managing multi-use trails and sites*. Current Issues in Tourism. Vol. 2 (2-3), pp. 211-225

Available at: www.channelviewpublications.net/cit/002/cit0020211.htm

Cole, David N. 2001. *Day users in Wilderness: How different are they?*. USDA Forest Service Research Paper RMRS-RP-31. 29 p.

<http://leopold.wilderness.net/pubsResults.cfm?searchtype=publication&pub=620>

Cole, David N. 2004. *Monitoring and management of recreation in protected areas: the contributions and limitations of science*. 2004 June 16-20; Rovaniemi, Finland. Working Papers of the Finnish Forest Research Institute: 9-16.

<http://leopold.wilderness.net/pubsResults.cfm?searchType=Publication&Pub=703>

Cole, David N. and Vita Wright. 2003. *Wilderness visitors and recreation impacts: baseline data available for twentieth century conditions*. USDA Forest Service General Technical Report RMRS-GTR-117. 52 p.

Available at:

www.leopold.wilderness.net/pubsResults.cfm?searchType=Publication&Pub=674

Cole, David N.; Petersen, Margaret E.; Lucas, Robert C. 1987. *Managing wilderness recreation use: common problems and potential solutions*. Gen. Tech. Rep. INT-GTR-230. Ogden, UT: USDA For. Serv., Intermountain Research Station .

<http://www.leopold.wilderness.net/pubsResults.cfm?searchType=Publication&Pub=169>

Confer, J.J.; Absher, J.D.; Grafe, A. R.; Titre, J. 1998. *Relationship between visitor knowledge of “Leave No Trace” minimum impact practices and attitudes toward selected management practices*. In: Proceedings 1998 Northeast Recreation Research Symposium. GTR-NE-255. p 142.

Duncan, G. Martin, S. 2002. *Comparing the effectiveness of interpretive and sanction messages for influencing wilderness visitors’ intended behavior*. International Journal of Wilderness. Vol. 8 Num. 2. p.6

www.wilderness.net/library/documents/Duncan1.pdf

English, D. B. K., Zarnoch, S. J., & Kocis, S. M. 2004. *Designing a sampling system for concurrently measuring outdoor recreation visitation and describing visitor characteristics*. Proceedings of the second international conference on monitoring and management of visitor flows in recreational and protected areas (pp. 27-32). Saarijarvi, Finland: Finnish Forest Research Institute.
Available at: www.metla.fi/julkaisut/workingpapers/2004/mwp002-04.pdf

Flint, D., 1998, *US National Parks: visitor experience and resource protection*. Geography Review. Vol. 11 (5), pp.20-31

Harding, James A., William T. Borrie, and David N. Cole. 2000. *Factors that limit compliance with low-impact recommendations*. In: Cole, David N., Stephen F. McCool, William T. Borrie, and Jennifer O'Loughlin, comps. Wilderness science in a time of change conference--Volume 4: Wilderness visitors, experiences, and visitor management. USDA Forest Service Gen. Tech. Rep. RMRS-P-15-VOL-4:198-202.
Available:
<http://www.leopold.wilderness.net/pubsResults.cfm?searchType=Publication&Pub=427>

Jones, Matt. 1999. *Leave No Trace: Pilot Project Report*
<http://www.ci.boulder.co.us/openspace/visitor/LNT/lntreport.htm>

Kuss, F.R., Graefe, A.R. & Vaske, J.J. 1990. *Visitor impact management: A review of research*. Washington, DC: National Parks and Conservation Association.

Leung, Yu-Fai and Jeffrey L. Marion. 2000. *Recreation impacts and management in wilderness: A state-of-knowledge review*. In: Cole, D.N. and others (eds.), Proceedings: Wilderness Science in a Time of Change; Vol. 5: Wilderness ecosystems, threats, and management, pp. 23-48; May 23-27, 1999, Missoula, MT. Proceedings RMRS-P-15-Vol-5. Ogden, UT: USDA Forest Service, Rocky Mountain Research Station
http://www.wilderness.net/library/documents/science1999/volume5/Leung_5-4.pdf

Marion, Jeffrey L. and Tracy Farrell. 2002. *Management Practices that Concentrate Visitor Activities: Camping Impact Management at Isle Royale National Park, USA*. Journal of Environmental Management 66(2): 201-212
www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=12418164&dopt=Abstract

McCool, Stephen F.; Cole, David N. 2000. *Communicating Minimum Impact Behavior With Trailside Bulletin Boards: Visitor Characteristics Associated With Effectiveness*. Cole, David N.; McCool, Stephen F.; Borrie, William T.; O'Loughlin, Jennifer, comps. 2000. Wilderness science in a time of change conference— Volume 4: Wilderness visitors, experiences, and visitor management; 2000 May 23–27; Missoula, MT. Proceedings RMRS-P-15-VOL-4. Ogden, UT: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 208-216.

Available at:

<http://leopold.wilderness.net/pubsResults.cfm?searchType=Publication&Pub=436>

Monz, Christopher, Joseph Roggenbuck, David Cole, Richard Brame, and Andrew Yoder. 2000. *Wilderness party size regulations: implications for management and a decision making framework*. In: Cole, David N., Stephen F. McCool, William T. Borrie, and Jennifer O'Loughlin, comps. *Wilderness science in a time of change conference-- Volume 4: Wilderness visitors, experiences, and visitor management*. USDA Forest Service Gen. Tech. Rep. RMRS-P-15-VOL-4:265-273.

<http://leopold.wilderness.net/pubsResults.cfm?searchType=Publication&Pub=450>

Mowen, A.J., Graefe, A.R., Williams, D.R., 1998. *An assessment of activity and trail type as indicators of trail user diversity*. *Journal of Park and Recreation Administration*. Vol. 16 (1). pp. 80-86

Pyke, Kathryn. Jodice, Patrick. Davidson, Sam. 2001. *Climbing Management: A Guide to Climbing Issues and the Production of a Climbing Management Plan*. Access Fund. <http://www.accessfund.org/pubs/cm.php>

Yuan, S. Maiorano, B. Yuan, M. 1995. *Techniques and equipment for gathering visitor use data on recreation sites*. USDA Forest Service. 9523-2838-MTDC.

Zabinski, Catherine; Cole, David. 2000. *Understanding the Factors That Limit Restoration Success on a Recreation- Impacted Subalpine Site*. In: Cole, David N.; McCool, Stephen F.; Borrie, William T.; O'Loughlin, Jennifer, comps. 2000. *Wilderness science in a time of change conference— Volume 5: Wilderness ecosystems, threats, and management; 2000 May 23– 27; Missoula, MT. Proceedings RMRS-P-15-VOL-5*. Ogden, UT: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 216-221.

Available at:

<http://leopold.wilderness.net/pubsResults.cfm?searchType=Publication&Pub=474>

Recreation Trends

Access Fund. 1995. *Climbing in Wilderness. An inventory of recreational climbing use in the National Wilderness Preservation system*. Unpublished manuscript, Access Fund, Boulder, CO 62pp.

Bayless, Donna S., John C. Bergstrom, Mark L. Messonnier, H. Ken Cordell. 1994. *Assessing the Demand for Designated Wildlife Viewing Sites*. *Journal of Hospitality & Leisure Marketing*, 2(3):75-93

Bergstrom, John C. and H. Ken Cordell. 1991. *An Analysis of the demand for and value of outdoor recreation in the United States*. *Journal of Leisure Research*, Vol 23(1): 67-86.

Bergstrom, John C. and H. Ken Cordell. 1988. *The Future Supply and Demand of Outdoor Recreation in America*. Trends, 25(4):39-42.

Bergstrom, John C., H. Ken Cordell, Linda Langner. 1994. *RPA Assessment of Outdoor Recreation: Past, Current, and Future Directions*. USDA Forest Service, Southeastern Forest Experiment Station, General Technical Report SE-87. 30 p.

Betz, Carter J. and H. Ken Cordell. 1988. *Trends in Recreation Participation on Public Lands*. Outdoor Recreation Benchmark 1988: Proceedings of the National Outdoor Recreation Forum, General Technical Report SE-52. USDA Forest Service, Southeastern Forest Experiment Station, 128-146.

Bowker, J.M. 2001 *Outdoor Recreation by Alaskans: Projections for 2000 through 2020*. General Technical Report, PNW-GTR-527. Portland, OR: U.S. Department of Agriculture, Pacific Northwest Research Station. 22p
Available at: www.srs.fs.usda.gov/trends/pnwgtr527.pdf

Cole, D.N. 1996. *Wilderness recreation use trends, 1965 through 1994*. USDA For. Serv. Res. Paper INT-488.

Cole, David N. 1995. *Wilderness recreation in the United States – trends in use, users, and impacts*. International Journal of Wilderness 2(3): 14-18.
Available at:
<http://leopard.wilderness.net/pubsResults.cfm?searchType=Publication&Pub=293>

Cole, David N., Wright, Vita. 2003. *Wilderness visitors and recreation impacts: baseline data available for the twentieth century conditions*. General Technical Report. RMRS-GTR-117. Ogden, UT: U.S. Department of Agriculture. Forest Service, Rocky Mountain Research Station. 52p
Available at: http://www.fs.fed.us/rm/pubs/rmrs_gtr117.pdf

Cordell, H. K., Betz, C. J., Green, G. T., Mou, S., Leeworthy, V. R., Wiley, P. C., Barry, J. J., & Hellerstein, D. 2004. *Outdoor recreation for 21st century America: a report to the nation: the national survey on recreation and the environment*. State College, PA: Venture Publishing. 293 p.
<http://www.venturepublish.com/itemDetails.asp?ItemID=CORD146&ReferringURL=default>

Cordell, H. Ken and Herbert, Nancy G. 2002. *Popularity of birding is still growing*. Birding, 34 (1):54-61.
<http://www.srs.fs.usda.gov/pubs/viewpub.jsp?index=2914>

Cordell H. Ken; Herbert, Nancy G.; Pandolfi, Francis. 1999. *The growing popularity of birding in the United States*. Birding, 31(2):168-176.
Available at: <http://www.srs.fs.usda.gov/pubs/viewpub.jsp?index=1079>

Cordell, H. Ken. 1997. *The evolution of outdoor recreation in America*. Scandinavian Forest Economics, 36:1-14.

Cordell, H. Ken and John C. Bergstrom. 1991. *Outdoor Recreation Demand And Supply: Trends And Implications*. Contemporary Issues in Outdoor Recreation: Technical Papers from the 1988 and 1989 SAF Conventions. Fairfax, VA: George Mason University, Center for Recreation Resources Policy, 35-43.

Cordell, H. Ken and Joseph O'Leary. 1998. *Trends in outdoor recreation participation. Outdoor Recreation - A reader for Congress*. ISBN 0-16-057007-7. Washington, DC: Government Printing Office, 140-143.

Cordell, H. Ken; Teasley, Jeff; Super, Greg [and others]. 1997. *Outdoor recreation in the United States: results from the National Survey on Recreation and the Environment*.

Available at: www.srs.fs.usda.gov/trends/fsoutrec.html

Cordell, H. Ken, Burt Lewis, and Barbara L. McDonald. 1995. *Long-term Outdoor Recreation Participation Trends*. Proceedings of the Fourth International Outdoor Recreation & Tourism Trends Symposium & the 1995 National Recreation Resource Planning Conference. Minneapolis, MN: University of Minnesota, 35-38.

Flather, C.H., Cordell, H.K. 1995. *Outdoor recreation: historical and anticipated trends*. Chapter 1 in Knight, R.L./Gutzwiller, K.J., editors. Wildlife and recreationists: Coexistence through management and research. Island Press, Washington, D.

Hartmann, Lawrence A. and H. Ken Cordell. 1984. *Trend Tracking and Forecasting Recreation Demand and Consumption in the United States*. In: Proceedings for Economic Value Analysis of Multiple Use Forestry. Corvallis, OR: Oregon State University, Department of Resource Recreation Management, 96-111.

Outdoor Industry Association, *Outdoor Recreation Participation Study in the US, 6th edition, 2004*

Available at: www.outdoorindustry.org/research.current.html

Links to Research Outlets

Adventure Research Cache
<http://webdb.iu.edu/Hperweb/iole/index.cfm>

Aldo Leopold Wilderness Research Institute
www.leopold.wilderness.net

Arthur Carhart National Wilderness Training Center

www.carhart.wilderness.net

Coalition for Education in the Outdoors: Research Symposium Proceedings
<http://outdooredcoalition.org/research.htm>

National Environmental Health Association
www.neha.org

National Outdoor Leadership School – Research Page
www.nols.edu/resources/research/abstracts.shtml

Natural Resources Research Information Pages
www4.ncsu.edu/~leung/recres.html

NPS Research Learning Centers Clearinghouse
<http://www.nature.nps.gov/learningcenters/>

NPS Social Science Page–(large number of publications concerning visitor management)
<http://www.nature.nps.gov/socialscience/products.cfm>

Outdoor Recreation Resource Links
http://www.idahoparks.org/Data_Center/resource_links.html

Outdoor Industry Association
www.outdoorindustry.org/

Recreation.gov Recreation Research Links
<http://www.recreation.gov/faqresearch.cfm>

USDA-Forest Service-Pacific Northwest Research Station
<http://www.fs.fed.us/pnw/>

USDA-Forest Service-North Eastern Research Station
<http://www.fs.fed.us/ne/>

USDA-Forest Service-Southern Research Station
<http://www.srs.fs.usda.gov/>

USDA-Forest Service-Rocky Mountain Research Station
<http://www.fs.fed.us/rm/>

USDA-Forest Service-Pacific Southwest Research Station
<http://www.fs.fed.us/psw/>

USDA-Forest Service-North Central Research Station
<http://www.ncrs.fs.fed.us/>

Wilderness.net
www.wilderness.net

The Wilderness Institute – The University of Montana
www.forestry.umt.edu/research/MFCES/programs/wi/

Wilderdom Outdoor Education Research and Evaluation Center
<http://www.wilderdom.com/research.html>

Miscellaneous Internet Links

Links to Outdoor Recreation Information
http://www.ac.wvu.edu/~moorej/outdoor_links.html

Leave Only Footprints – Adventure Racing and the Environment
<http://adventure.mountainzone.com/2000/afiles/environment/html/>

National Park Service Planning
www.wilderness.nps.gov/

Natural Resource Impacts of Mountain Biking
www.imba.com/resources/science/impact_summary.html

Off Road Impacts of Mountain Bikes
www.mbosc.org/Impacts/index.html

Roper Research: Outdoor Recreation in America 2003
www.funoutdoors.com/research

Recreation, Wilderness, Urban Forest, and Demographic Trends Research
www.srs.fs.usda.gov/trends/

Recreation Impacts
http://nps.sonoran.org/ht_recreation_impacts.html

Recreation and Tourism Impacts – International Perspective
www4.ncsu.edu/%7Eleung/intimp.htm

Responsive Management – A natural resource survey research firm.
www.responsivemanagement.com/index.html

Water Sanitation and Health (WSH) - Introduction to fact sheets on sanitation

www.who.int/water_sanitation_health/hygiene/emergencies/envsanfactsheets/en/index2.html

Links to Wilderness Legislation

Map of the National Wilderness Preservation Lands
<http://www.wilderness.net/index.cfm?fuse=NWPS>

The Wilderness Act of 1964
<http://www.wilderness.org/OurIssues/Wilderness/act.cfm>

The Wilderness Act Handbook
<http://www.wilderness.org/Library/Documents/WildernessActHandbook2004.cfm>