Methods

General Statistics Used

Mean & Median: For a set of data, the mean and median were both used to approximate the value that will be most similar to all data in the set. The mean is the average of the dataset. The median is the middle value of the dataset, if all values are put in order. Depending on the values in the dataset, one method may have been deemed more appropriate than the other.

Standard Deviation: The standard deviation is a measure of the dispersion of a dataset, or how spread out or tightly centered the data is, and was used as part of the method for comparing and combining different sets of data as detailed in the Indicator Rankings method above.

Indicator Rankings

For a given indicator, counties are ranked according to the following methodology:

Each county is assigned a Z-Score for each variable that makes up the indicator in order to normalize and compare numerically different variables. The Z-Score for a county and for a given variable is equal to the value of the variable for that unit minus the mean value of the variable for all counties all divided by the standard deviation of the variable for the group.

$Z = (X - X_{mean})/S_x$, where Z is the Z-Score, X is the value of a variable for a geographic unit, X_{mean} is the mean value of the variable for all units in the group, and S_x is the standard deviation of the variable for all units in the group.

After each county is assigned a Z-Score for each variable that makes up the indicator, each county is assigned an overall Z-Score by averaging the county's different Z-Scores. Sometimes different Z-Scores are given different weight as indicated in that section of the *Report Card*. Then, each unit is ranked in order of its overall Z-Score for the indicator.

Indicator Grades

After the units are ranked for the indicator as outlined above, the following percentage distribution is applied to assign grades to each geographic unit:

Percentile Earning Grade	% of Counties Earning Grade	Letter Grade Earned
100% to 93%	8%	A
92% to 85%	8%	A-
84% to 77%	8%	B+
76% to 70%	7%	B
69% to 64%	6%	B-
63% to 54%	10%	C+
53% to 44%	10%	C
43% to 36%	8%	C-
35% to 28%	8%	D+
27% to 0%	7%	D

County Groups: Metro, Micro, and Rural

The State of the Rockies uses the rural-urban continuum codes developed by the Economic Research Service at the U.S. Department of Agriculture in 2003 based on their metropolitan-nonmetropolitan status and size of their metropolitan or urban populations. Beginning in June 2003, the Office of Management and Budget (OMB) has instructed the Census Bureau to track "micropolitan" areas as well as metropolitan areas. Micropolitan statistical areas must have an urban cluster of at least 10,000 people but fewer than 50,000 people. The designation includes the county where the urban cluster is, plus adjacent counties linked by commuting ties. For more information http://www.census.gov/population/www/estimates/metrodef.html and http://www.ers.usda.gov/briefing/rurality/RuralUrbCon/. Note: Because it was so recently created, and most data sets do not yet include it, Broomfield County, Colorado is not included in our analyses.

State of the Rockies County Label	Code	Census/ USDA Label	Definition	Number of Counties in the Rockies
Metro	1	Metro	County in metro area with 1 million population or more	12
Metro	2	Metro	County in metro area of 250,000 to 1 million population	24
Metro	3	Metro	County in metro area of fewer than 250,000 population	25
Micro	4	Non Metro	Nonmetro county with urban population of 20,000 or more, adjacent to a metro area	14
Micro	5	Non Metro	Nonmetro county with urban population of 20,000 or more, not adjacent to a metro area	14
Micro	6	Non Metro	Nonmetro county with urban population of 2,500-19,999, adjacent to a metro area	38
Micro	7	Non Metro	Nonmetro county with urban population of 2,500-19,999, not adjacent to a metro area	72
Rural	8	Non Metro	Nonmetro county completely rural or less than 2,500 urban population, adj. to metro area	25
Rural	9	Non Metro	Nonmetro county completely rural or less than 2,500 urban population, not adj. to metro area	56

Additional Acknowledgements

Simon Cataldo is a student researcher for the 2008 State of the Rockies Project. A native of Concord, Massachusetts, Simon has also lived in Ecuador and Bolivia, where he studied language, cultural studies and development issues. Curiosity about the dynamic set of challenges and rewards facing the Rockies region as it moves towards integrating newcomers inspired Simon to focus on immigration for his summer research. After graduating with a degree in Environmental Science in May of 2008, Simon will join Teach for America as a high school Earth Science teacher at Frederick Douglass Academy in Harlem, New York City.

Lucy Emerson-Bell is a student researcher for the 2008 State of the Rockies Project. Originally from Cambridge, MA she has roots in Colorado and has fallen in love with the West. She will be graduating from Colorado College in May 2008 with a B.S. in biology focusing on plant ecology. While at Colorado College she has been involved with environmental activism, tutoring, snowboarding and yoga. After graduation she plans on interning in government and working for the Democratic National Convention followed by a year of travel.

Brandon Goldstein is a student researcher for the 2008 State of the Rockies Project. He will graduate in May, 2008 with a major in mathematical economics. Growing up in Montana, Brandon has gained considerable interest in social and environmental issues throughout the Rocky Mountain States. His senior thesis research will focus on the evaluation of environmental systems through regression analysis. As an intern for the State of the Rockies project, he is pursuing his interest in the field of environmental economics.

David Havlick is an assistant professor of geography and environmental studies at the University of Colorado-Colorado Springs, and faculty editor of the 2007/2008 State of the Rockies Project. He graduated from Dartmouth College with a degree in English, earned an M.S. in environmental studies from the University of Montana, and a Ph.D. in geography at the University of North Carolina at Chapel Hill (2006). His publications include *No Place Distant: Roads and Motorized Recreation on America's Public Lands* (Island Press, 2002); and articles in *Ethics, Place & Environment, High Country News, Walking, Adventure Cyclist, Conservation in Practice, Science*, and other periodicals. He was the founding president of Wild Rockies Field Institute, where he taught for more than a decade as a field instructor, and has worked for other organizations including Predator Conservation Alliance, Wildlands CPR, and the Forest History Society

Walter E. Hecox is professor of economics and environmental science, director of the Slade Sustainable Development Workshop, and project director for the State of the Rockies Project at Colorado College, Colorado Springs, Colorado. Walt received his B.A. degree from Colorado College in 1964 and an M.A. (1967) and Ph.D. (1970) from Syracuse University, Syracuse, New York. He teaches courses in ecological economics and sustainable development. He has conducted research and taken leave to work for the World Bank, U.S. Agency for International Development, U.S. Department of Energy, and Colorado Department of Natural Resources. He is author of Charting the Colorado Plateau: an Economic and Demographic Exploration (The Grand Canyon Trust, 1996), co-author of Beyond the Boundaries: the Human and Natural Communities of the Greater Grand Canyon (Grand Canyon Trust, 1997), and co-editor of the Colorado College State of the Rockies Report Cards.

Chris Jackson is 2007/08 program coordinator for the Colorado College State of the Rockies Project. This is his third year with the State of the Rockies Project, and second year as the program coordinator when he also served as co-editor of the 2007 and 2008 Report Cards. Chris' work for the 2006 Report Card focused on innovative resource management techniques in the Rockies. He graduated cum laude from Colorado College in May 2006 with a B.A. degree in International Political Economics.

Elizabeth Kolbe is a student researcher for the 2008 State of the Rockies Project. She is currently an environmental science major at CC with a focus on renewable energy and sustainable design. Since leaving Grinnell, Iowa, she has also developed an interest in the state's agricultural economy, its relationship to ethanol, and the effects of the corn subsidy on farmers and markets. Aside from academics, Liz was a two-year captain of the CC women's basketball team enjoys the outdoors, reading, and cooking. After graduation, she will take over as program coordinator for the State of the Rockies Project and prepare to attend graduate school for environmental studies.

John MacKinnon is a 2008 Project Researcher for the Colorado College State of the Rockies Project. He graduated from Colorado College in August 2006 with a BA in economics. During his time at CC, John has focused primarily on macroeconomic issues, and wrote a thesis concerning the potential monetary and social effects of Medicare Part D. After college, John took steps to integrate his lifelong passion for the outdoors into his career, and was elected to the board of directors of the watershed conservation group, Animas Riverkeeper. John plans to further his career in environmental conservation by beginning law school in the Fall of 2008.

Pablo Navarro is a student researcher for the 2008 State of the Rockies Project. He will graduate from Colorado College in May 2008 with a degree in Mathematical Economics. Upon graduation from Karl C. Parrish School in Barranquilla, Colombia, Pablo received the prestigious Ecopetrol award. At Colorado College, Pablo has worked as a research assistant for the Economics and Political Science departments. He recently finished a research paper analyzing the effects of Brazilian tax cuts on government revenues and the shadow economy. His main interest is equitable wealth creation through business development, particularly in Latin America. After graduation, Pablo will be working in Chicago as a Transfer Pricing Consultant with Ernst & Young.

Matthew K. Reuer serves as the technical liaison for the State of the Rockies Project, overseeing tasks including data assimilation, GIS analysis, and logistics management; in addition he co-edited the 2007 Report Card. He received his doctorate degree from MIT in 2002 and was a Harry Hess postdoctoral research fellow at Princeton University from 2002 to 2004, focusing on global carbon cycle research. Matt's scientific interests in this region include the environmental chemistry of western rivers and watersheds and global change impacts on alpine biogeochemical cycles. He is also highly interested in western development issues and the creation of innovative energy policies in the Rocky Mountain West.

Wiley Rogers is a student researcher for the 2008 State of the Rockies Project. He is currently a senior at Colorado College completing his self designed major Ecological Economics, which is an interdisciplinary approach to Environmental Science combining Mathematics, Environmental Science and Economics courses. After spending summer 2006 attending a perma-culture design course taught in interior Brazil and during the fall researching tourist demographics with Costa Rica's National Park system, Wiley is excited to be investigating Rockies topics closer to home. After graduating in May of 2008, Wiley plans on joining a sustainable construction firm on the West Coast, then road biking to Curitiba, Brazil.

Bethanie Walder is Executive Director of Wildlands CPR, a national conservation organization that works to promote balance, save money and create jobs by restoring unneeded forest roads to their natural state and by limiting off-road vehicle use. She has a B.A. in Political Science from Duke University and an M.S. in Environmental Studies from the University of Montana.

Stephen G. Weaver is an award-winning photographer with over 30 years experience making images of the natural world and serves as technical director for the Colorado College geology department. Educated as a geologist, Steve combines his scientific knowledge with his photographic abilities to produce stunning images that illustrate the structure and composition of the earth and its natural systems. As an undergraduate geology student, he first visited the Rocky Mountains, where he fell in love with the mountain environment and the grand landscapes of the West. Steve currently photographs throughout North America with a major emphasis on mountain and desert environments. His use of a 4x5 large format view camera allows him to capture images with amazing clarity and depth.

Students Researching, Reporting, and Engaging:

The Colorado College State of the Rockies Report Card, published annually since 2004, is the culmination of research and writing by a team of Colorado College student researchers. Each year a new team of students studies critical issues affecting the Rockies region of Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, and Wyoming.

Colorado College, a liberal arts college of national distinction, is indelibly linked to the Rockies. Through its Block Plan, students take one course at a time, and explore the Rockies and Southwest as classes embark in extended field study. Their sense of "place" runs deep, as they ford streams and explore acequias to study the cultural, environmental, and economic issues of water; as they camp in the Rocky Mountains to understand its geology; as they visit the West's oil fields to learn about energy concerns, and hike through forests to experience the biology of pest-ridden trees and changing owl populations. CC encourages a spirit of intellectual adventure, critical thinking, and hands-on learning, where education and life intertwine.

The Colorado College State of the Rockies Project dovetails perfectly with that philosophy, providing research opportunities for CC students and a means for the college to "give back" to the region in a meaningful way. The Report Card fosters a sense of citizenship for Colorado College graduates and the broader regional community.

Research
During summer field work, the student researchers pack into a van and cover thousands of miles of the Rocky Mountain West as they study the landscape, interview stakeholders, and challenge assumptions. Back on campus, they mine data, crunch numbers, and analyze information.

Report
Working collaboratively with faculty, the student researchers write their reports, create charts and graphics, and work with editors to fine-tune each Report Card section. Their reports are subjected to external review before final publication.
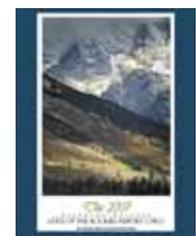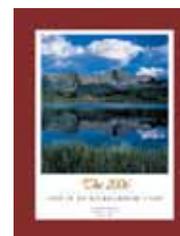
Engage
Through a companion lecture series on campus, the naming of a Champion of the Rockies, and the annual State of the Rockies Conference, citizens and experts meet to discuss the future of our region.

Each Report Card has great impact: Media coverage of Report Cards has reached millions of readers, and the 2006 report section on climate change was included in a brief presented to the U.S. Supreme Court. Government leaders, scientists, ranchers, environmentalists, sociologists, journalists, and concerned citizens refer to the Colorado College State of the Rockies Report Card to understand the most pressing issues affecting the growing Rockies region.

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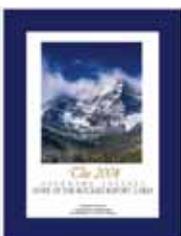
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