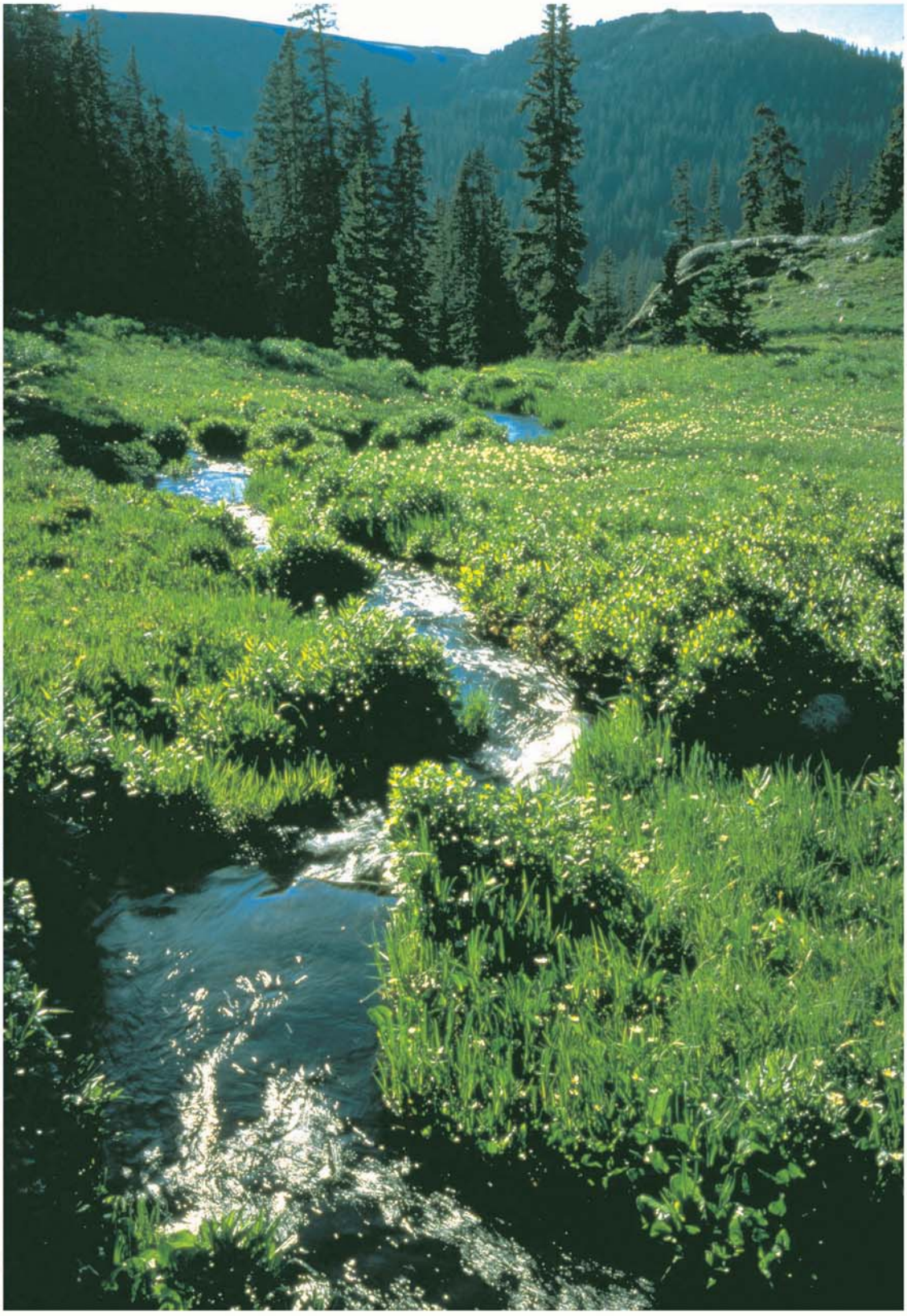
National Park Service
U.S. Department of the Interior

Rocky Mountain National Park, Great Sand Dunes National Monument and Preserve,
Florissant Fossil Beds National Monument

Continental Divide Research Learning Center
Strategic Plan 2003-2005



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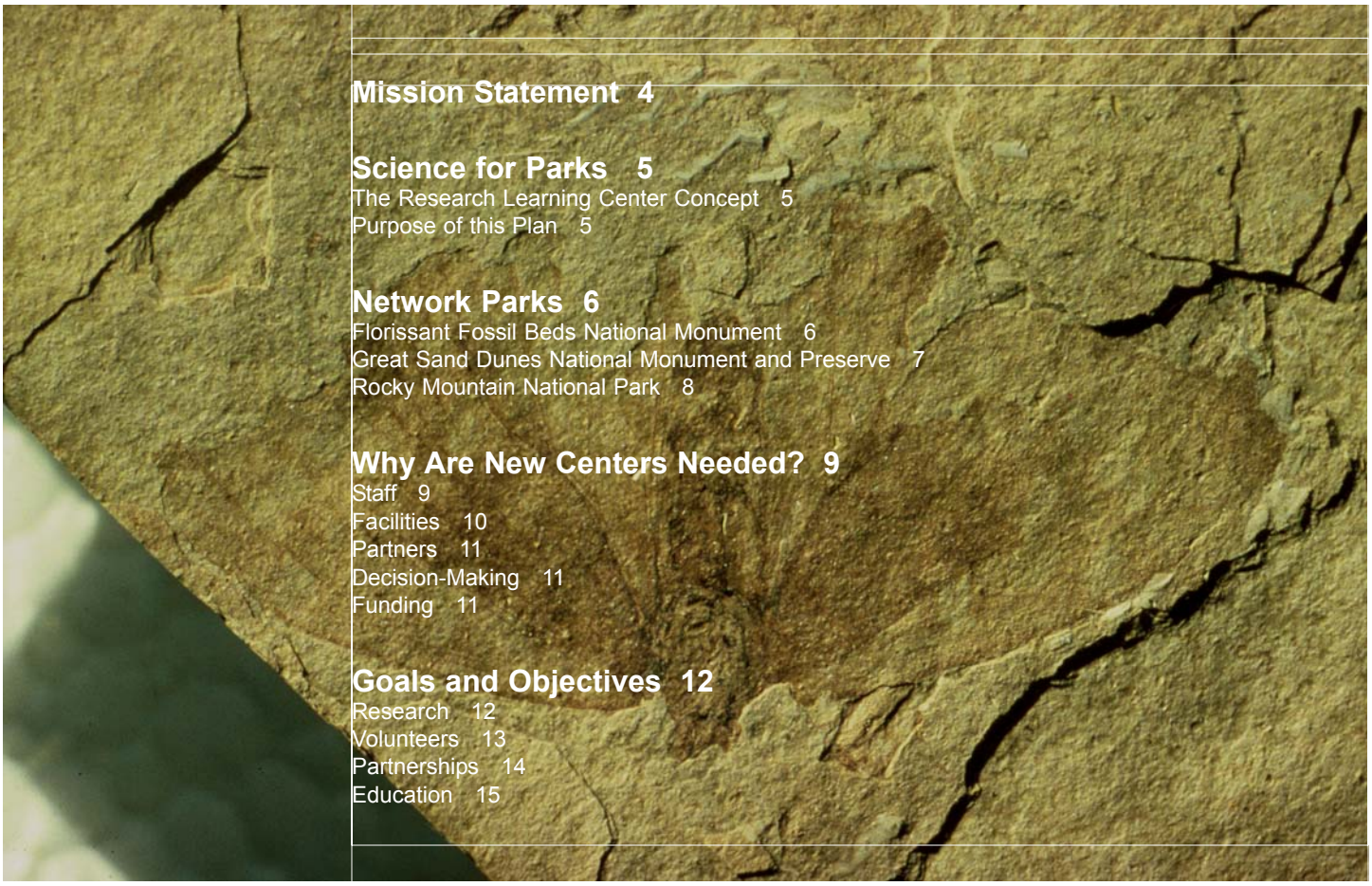


THE WINGS OF A BUTTERFLY in 35-million-year-old shale. (NPS-FLFO photo)

Written January 2003 by National Park Service (NPS) staff at Rocky Mountain National Park (ROMO), Florissant Fossil Beds National Monument (FLFO), and Great Sand Dunes National Monument and Preserve (GRSA)

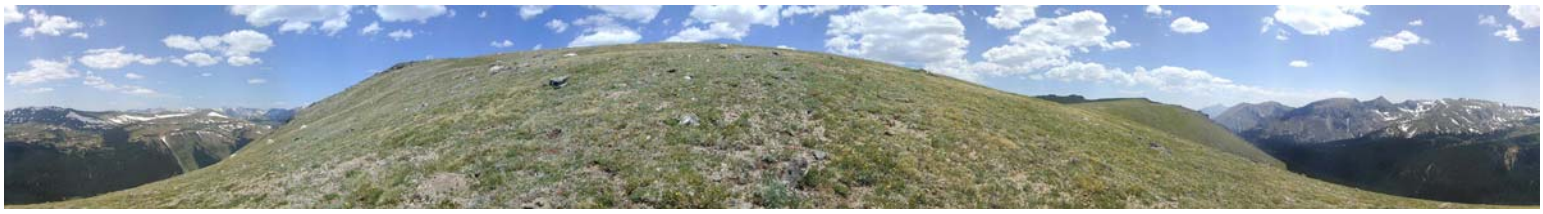
Ken Czarnowski, Larry Frederick, Terry Terrell, Judy Visty, Cheri Yost (ROMO)

Fred Bunch, Carol Sperling (GRSA)

Tom Ulrich (formerly at FLFO), Jeff Wolin (FLFO)

Design consultant: Ann Green

website: http://www.nps.gov/romo/education/CDRLC/index.html



NPS photo

Mission Statement

The Continental Divide Research Learning Center's mission is to support park research activities, to synthesize results as an aid to decision-making, and to engage the public in research-related educational opportunities.

CONTINENTAL DIVIDE
RESEARCH LEARNING CENTER
Resources ▲ Parks ▲ People

Science for Parks

"The Secretary is authorized and directed to assure that management of units of the National Park (NPS) system is enhanced by the availability and utilization of a broad program of the highest quality science and information."

National Parks Omnimbus Act of 1998

The National Park Omnibus Act is causing a quiet revolution in national parks. For the first time in its history, the National Park Service has a congressional mandate to use science information to improve decision-making.

A RESEARCHER MONITORS nesting birds in an upland shrub community at Rocky Mountain NP. (NPS-ROMO photo)

SNOW AND ICE SAMPLES from Rocky Mountain NP are used to monitor air quality trends. (NPS-ROMO photo)

The Research Learning Center Concept

Research Learning Centers combine the elements of field stations, partnerships, active encouragement of research, and information transfer to fulfill the 1998 science mandate. As of 2002 Congress funded thirteen centers. Each has two full-time employees to coordinate projects and learning opportunities.

Bunks for Researchers

More bunk beds may seem like an odd way to instigate government reform, but beds for visiting researchers are one of the keys to ensuring that researchers are willing and able to come to parks to research. Most visiting researchers cannot afford the high temporary housing costs found near today's premier parks. And camping in a tent for several weeks may sound romantic but has limitations when field work involves long hours, bad weather, and strenuous physical activity. A room and shared kitchen facilities make it possible for a researcher to type field notes, eat, stay in touch with volunteer assistants, and get a good night's sleep before going out for another long day. The rustic "field station" environment also fosters information exchange with other scientists and park staff.

Partnerships to Enhance Learning and Stretch Research Dollars

Partnerships are another ingredient of the NPS science revolution. The type of science needed to address park issues is often sophisticated and multi-disciplinary. Fifty years ago a study of bighorn sheep might have involved a ranger on horseback. Today's wildlife study teams include veterinarians, population modelers, GIS specialists, and geneticists. It would be financially impractical for a park to try to duplicate this type of professional expertise. Partnerships with universities and government agencies such as the U.S. Geological Survey allow parks to tap into research "dream teams" from other organizations.

Science Education

Partnerships with schools allow for project-based learning, using real-life situations as the basis of classroom activities. Educational research has shown that this type of learning is especially effective for students who may not excel in normal course work. Science comes alive when students interact with researchers and, in some cases, assist with data collection.

Citizen Science

Park volunteers supervised by qualified researchers can often accomplish projects that parks cannot otherwise afford. These efforts have given rise to the term "citizen science." This national movement allows volunteers to gain a first-hand understanding of the complexities of park science issues. Sometimes the volunteers are themselves scientists donating their time and expertise.

Purpose of This Plan

Congress funded the Continental Divide Research Learning Center (CDRLC) in 2001 to support research and educational opportunities in Rocky Mountain National Park. The center's mission has evolved to include two other parks: Great Sand Dunes National Monument and Preserve and Florissant Fossil Beds National Monument. These three units of the NPS system are also linked in an inventory and monitoring network. The establishment of the CDRLC extends this relationship and allows for further sharing of park staff expertise.

This document provides a concise listing of the CDRLC's goals and objectives for three years (2003-2005). Since Learning Centers are a relatively new institution, many of the objectives described here will involve the piloting of new approaches and ideas. Evaluation of successes (and failures) will be ongoing and will undoubtedly result in some change of emphases.

Network Parks

The Continental Divide Research Learning Center serves three National Park Service units, all in Colorado. Together these parks protect 335,725 acres of America's natural and cultural heritage. Over 3.3 million people visited the parks during 2002.

Florissant Fossil Beds National Monument

West of Pikes Peak, Florissant Fossil Beds National Monument protects world-class plant and insect fossils, providing a stunning record of an extinct late Eocene (34-35 million years ago) ecosystem from the southern Rocky Mountains. Almost 35 million years ago, enormous volcanic eruptions buried the then lush valley and petrified the redwood trees that grew there. A lake formed in the valley and the fine-grained sediments at its bottom became the final resting place for thousands of insects and plants. These sediments compacted into layers of shale and preserved the delicate details of these organisms as fossils.

In addition to many small fossils, the park protects large petrified tree stumps, a historic homestead site, and plant and animal species of the present-day montane ecosystem. The park continues to loan fossils to museums and institutions throughout the world.

A PETRIFIED SEQUOIA STUMP at Florissant Fossil Beds evokes an ancient, moist ecosystem. (NPS-FLFO photo)

Florissant Fossil Beds National Monument has the following Mission Statement:

The mission of Florissant Fossil Beds National Monument is to preserve, research and interpret the excellently preserved fossil flora and fauna and related geologic sites and objects in order to advance our knowledge and understanding of these paleontologic and geologic resources.[1]

Florissant Fossil Beds National Monument Research Program

The research focus at Florissant Fossil Beds is primarily on the fossils themselves, their classification, and comparison with current life forms. In addition, the unique sediment environment that resulted in the preservation of the fossils is also of special interest. Research underway includes a comparative ecosystem study between the ancient Eocene at Florissant and a modern ecosystem in Mexico. The park has a very successful intern program to assist with research and education. A fossil database, published in 2002, is the culmination of many years of traveling and gathering information about Florissant's fossils in museum collections worldwide (www.planning.nps.gov/flfo/home.htm).

The elk herd and present day riparian habitat in the park are additional valuable resources and topics of research.

Florissant Fossil Beds National Monument Education Program

Park staff conducts on-site and off-site school programs each spring and fall. An award-winning middle school curriculum has been developed for use by teachers. A seminar series and interpretive programs are offered in the summer season. At the Hornbeck homestead, volunteers coordinate special events and offer on-site interpretive programs.

[1] ***Florissant Fossil Beds National Monument Strategic Plan 2001-2005*** **(14 April 2000) 11.**

Great Sand Dunes National Monument and Preserve

Great Sand Dunes National Monument and Preserve, located in south-central Colorado, protects the highest sand dunes in North America. The interaction of wind, sand, and water continually reshape the dunes, giving them a dynamic beauty.

In 2000, Congress passed the Great Sand Dunes National Park and Preserve Act adding 41,676 acres of high elevation wilderness, formerly managed by the U.S. Forest Service, to the national monument. In addition to the resources immediately surrounding the dunes, the preserve includes alpine, spruce-fir, aspen-cottonwood, ponderosa forest, grasslands, and riparian ecosystems. Hundreds of archaeological sites now fall under the park's management and protection.

The park has three purposes:

To preserve and protect the Great Sand Dunes, its associated geology, ecosystems, cultural and historical resources, and scenic and wilderness values;

To provide opportunities for visitors to experience, understand, enjoy and gain a sense of stewardship for Great Sand Dunes National Monument and Preserve and surrounding areas, through educational opportunities and exposure to park resources and meanings in safe and sustainable ways; and

To facilitate research to support management of the park for visitor understanding and enjoyment and resource protection and to promote scientific knowledge and educational values.[2]

Great Sand Dunes National Monument and Preserve Research Program

The geologic composition and dynamics of the dunes, along with the area hydrology that is key to dune maintenance, are the principle topics of research at Great Sand Dunes. The dune-associated flora and fauna, including several unique species, are also being documented. Archeological studies, under the sponsorship of the Smithsonian Institution, are examining the long history of human occupation in the area. A 24,000-square-foot lab, opened in 2003, provides much needed work space.

Great Sand Dunes National Monument and Preserve Education Program

The park expansion is reflected in new educational efforts. Construction is underway on a visitor center addition that will include an auditorium, office space, and improved exhibits. A new design and additional content have been developed for the park's In Depth website (www.nps.gov/grsa/home.htm). In 2002 the park hired its first full-time education specialist. The number of school groups from the Front Range urban area visiting the park has steadily grown in recent years. It is also the destination of many college-level geology classes.

[2] Great Sand Dunes National Monument and Preserve In-Depth Website (www.nps.gov/grsa/significance2.htm, as seen on 10 May 2002).

THE DUNES FROM MEDANO CREEK. Recent boundary expansion increased the amount and type of research needed at the park. (NPS-GRSA photo)

Rocky Mountain National Park

The snow-mantled peaks of Rocky Mountain National Park rise above verdant valleys, twisting rivers, and glistening lakes. One third of the park is above treeline, where tundra predominates. Wild flowers color the summer landscape. Wildlife, from the tiny pika to the majestic bighorn sheep, also enhance the stunning scenery. In addition to its natural resources, the park preserves a long history of human occupation, from prehistoric hunting camps to turn-of-the-century settlements.

RESEARCHERS, PARK STAFF, AND VOLUNTEERS placed markers to monitor movement of the Boulder Field on Longs Peak in October 2002. (NPS-ROMO photo)

Rocky Mountain National Park has the following significance statement:

Rocky Mountain National Park contains one of the most rugged sections of the Continental Divide as well as significant cultural resources reflective of the human history of the area. The park is managed primarily as wilderness. As such, the National Park Service will preserve some of the finest examples of physiographic, biologic, and scenic features that typify the southern Rocky Mountains including alpine tundra, snowy peaks, and glaciers.[3]

Rocky Mountain National Park Research Program

Based on the number of research permits issued annually (60-80 per year) through the NPS Research Permit System, Rocky Mountain National Park has one of the top five research programs in the National Park Service. Current foci for research include air quality trends, elk-vegetation interactions, chronic wasting disease, high elevation archeology, long-term health of bighorn sheep populations, visitor use of the backcountry, and amphibian distribution and health.

Rocky Mountain National Park Education Program

The park has a long tradition of educational efforts including ranger-conducted programs and publications designed to provide a general understanding of the park's natural history and management issues.

The Heart of the Rockies Education program, under the leadership of a full-time Educational Specialist, serves more than 10,000 students per year. The curriculum-based program for grades kindergarden through twelve, called Heart of the Rockies, is integrated with state education standards. Teacher training is offered in planning sessions and workshops. For additional information, see www.heartoftherockies.org.

CDRLC education efforts, by focussing on current research activities and results, are designed to complement the other programs already in place at Rocky Mountain National Park. Research conferences and volunteer field assistant opportunities create first-hand connections between researchers and the public. The excitement and complexity of the scientific process is communicated directly to the public.

[3] ***Strategic Plan for Rocky Mountain National Park, October 1, 2000 to September 20, 2005: A Performance Management Report in Compliance with the Government Performance and Results Act of 1993*** **(1 February 2001).**

Why Are New Centers Needed?

In the past, the National Park Service has placed too little emphasis on supporting non-NPS research efforts, working with partners toward common goals, and sharing information. The new centers are not so much places as they are a new way of doing business--one that values researchers, partnerships, and the transfer of research results to the public.

Staff

Research Coordinators
The Research Administrator at Rocky Mountain National Park and the Chiefs of Resource Management at Great Sand Dunes and Florissant are the main points of contact for researchers seeking to do projects in each park. These three individuals review project proposals for their appropriateness to a park setting, and they seek opportunities to work with research partners for joint benefit. The Research Administrator or Chief of Resource Management also manages a permit system that tracks individual projects and results.

Education Coordinator
Stationed in Rocky Mountain National Park, a Research Learning Center Education Coordinator directs the efforts to connect the public and park researchers. These connections may be opportunities to participate in field work, to hear researchers speak about their findings, or to study research results through a variety of media (e.g., the internet, university courses, publications). The CDRLC Education Coordinator provides assistance, as requested, to interpretation and education staff at Florissant and Great Sand Dunes in improving science information transfer for those parks.

Park Ranger
A Park Ranger, also stationed at Rocky Mountain National Park, manages facilities at the McGraw Research Ranch, recruits and coordinates research volunteers, develops media, and assists with a variety of public programs.

Volunteers
The CDRLC receives support from numerous volunteers, who help with special events and will provide assistance in operating the McGraw Research Ranch. Additionally, volunteers, working under the supervision of a researcher, gain hands-on learning experience in a range of projects from observing bighorn sheep to capturing frogs for amphibian studies to conducting social science surveys. They improve safety in the field by accompanying researchers to remote locations. Through these activities, volunteers make a valuable contribution to the amount and kind of research conducted.

A ROCKY MOUNTAIN NP VOLUNTEER gives a camera to a park visitor as part of a research study of visitor backcountry experiences. (NPS-ROMO photo)

Facilities

McGraw Ranch Research Center, Rocky Mountain National Park

In June 2003, the McGraw Ranch Research Center hosted its first scientists. The park used a combination of private and public funds to rehabilitate this former guest and cattle ranch. Located six miles northeast of the town of Estes Park, Colorado, the facility includes small sleeping cabins for approximately fourteen researchers. The main house has a common kitchen, work room, living room, and conference room. Adjoining buildings house a small laboratory, computer facility, and library. One of the cabins and all of the common facilities are handicap accessible.

Research Dorm, Rocky Mountain National Park

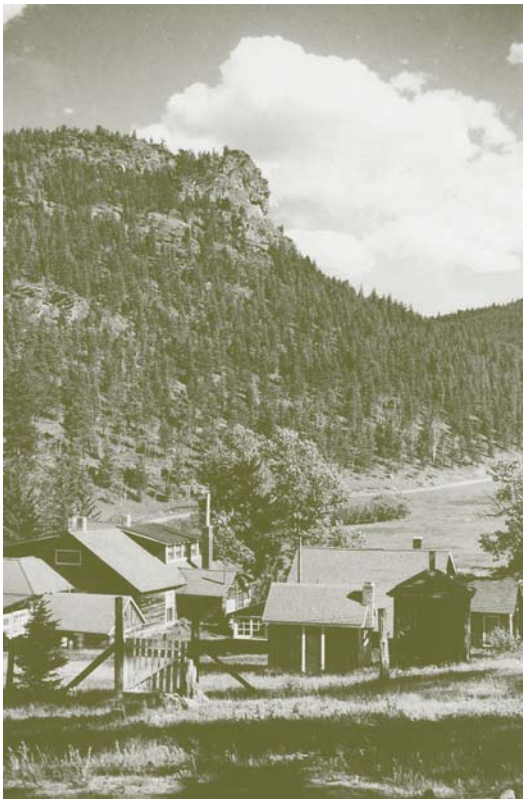
Rocky Mountain National Park has a dormitory, with space for sixteen researchers, located within the park about two miles west of the town of Estes Park. Researchers with valid permits may occupy the dorm between April and September as space is available. The dorm includes a common lounge, kitchen, and unisex bathroom. The dormitory also includes a separate accessible bathroom.

Great Sand Dunes Resource Management Lab

Although Great Sand Dunes National Monument and Preserve lacks a dedicated research facility, a new 24,000 square foot lab completed in January 2003 at park headquarters will be open to researchers. The lab, 35 miles northeast of Alamosa, Colorado, has shared office space and an equipment storage area. Visiting researchers often stay in the park's campground.

Florissant Fossil Beds Facilities

Currently the park does not have any housing or other facilities for researchers. Interns are, on occasion, housed in open-market rentals in nearby Woodland Park. The lack of low cost housing limits opportunities for the park to benefit from interns, graduate students, and researchers.



FROM BUNKS FOR DUDES TO BUNKS FOR SCIENCE, the McGraw Ranch Research Center provides overnight accomodations in semi-private rooms with shared kitchen, office, lab, and computer space. Rocky Mountain NP, in partnership with the National Trust for Historic Preservation, rehabilitated the historic guest ranch. (ca. 1930 photo courtesy of Ruth McGraw)

TAKING A CLOSER LOOK at the fossils is necessary for identification and cataloging. (NPS-FLFO photo)

Partners

Friends Groups and Individual Park Partners
Each of the parks has a nonprofit organization that assists with fund-raising.

Rocky Mountain Nature Association is a nonprofit organization associated with Rocky Mountain National Park. The Association directs profits from book sales toward educational projects. A sister organization, Rocky Mountain National Park Associates, raises funds for park projects approved by its board of directors. Rocky Mountain NP also partnered with the National Trust for Historic Preservation to rehabilitate McGraw Ranch.

At Great Sand Dunes National Monument and Preserve, members of The Friends of the Dunes volunteer their time on behalf of the park and have helped with fund-raising for selected projects. The Western National Parks Association is responsible for book sales at the park. The Nature Conservancy, which has land adjoining the park, is an important partner in many activities.

Friends of Florissant is the designated fund-raising organization for Florissant National Monument. Book sales are handled by the Rocky Mountain Nature Association.

Research Learning Center Partners
Current CDRLC formal partners with signed agreements are the three principal state universities (i.e., University of Colorado, Colorado State University, University of Northern Colorado). Another formal partner is the United States Geological Survey in Fort Collins.

The parks also use agreements with Cooperative Ecosystems Studies Units (CESUs). CESUs create partnerships between universities and federal agencies. Each CESU has a host university and numerous partner institutions. An NPS representative is stationed at each CESU to serve as a liaison among the universities and the other agencies.

Additional formal partners, including other institutions of higher learning and non-governmental organizations with research and education missions, may be added during the next few years. Formal partnership agreements simplify fund transfers, equipment/facility use, and staff involvement.

Non-formal partners--those without written agreements--are also critical to the mission of the CDRLC. These include Emporia State University, the Denver Botanic Gardens, Eagle Rock School of Estes Park, and Aims Community College. It is expected the number of informal partners will continue to grow over the next three years.

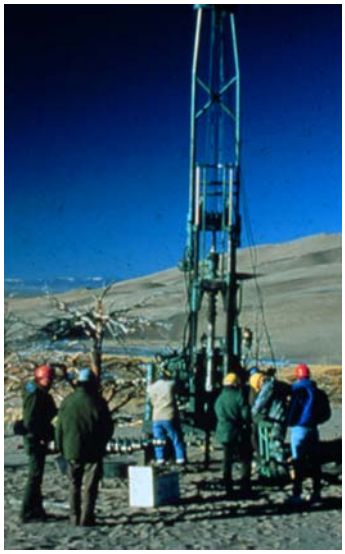
Decision-Making

For the initial three years, decision-making authority as to CDRLC priorities and strategies will lie with the National Park Service staff. Since most of the funding is currently federal funds, NPS staff are accountable to Congress for expenditures. Representatives from partner organizations may provide input at annual meetings. In 2005, CDRLC staff will consider further incorporating partners into decision-making.

Funding

Congress approved a $225,000 annual base increase to Rocky Mountain National Park to fund the activities and positions associated with the CDRLC. The park subsequently created two positions and has provided start-up costs for basic equipment, facility maintenance, and program support. Rocky Mountain National Park also created a new Research Administrator position from separate Natural Resource Challenge funding. Some government funds have also been provided for the renovation of the McGraw Ranch Research Center. However, congressional funding is viewed primarily as "seed" money that will allow parks to leverage additional funds and in-kind donations.

TESTING THE WATER at Florissant Fossil Beds, a researcher and park employee work together. (NPS-FLFO/ROMO photo)



SEARCHING FOR WATER UNDER THE DUNES, researchers and park staff gather ground water data. This research resulted in the expansion of the park boundaries to protect the aquifers in the San Luis Valley. (NPS-GRSA photo)

CDRLC Funding

Item	Source
Research Learning Center Education Coordinator Salary and Support	90,000
Park Ranger Salary and Support	65,000
McGraw Ranch Annual Maintenance	40,000
Media Development and Information Transfer	30,000
Total	225,000

The following goals and objectives form a framework for 2003-2005. The specific projects undertaken will depend on success of grant proposals, research priorities, and the continued refinement of the research learning center concept.

GOAL 1: *Support management-related research within the three network parks*

Fiscal Year	03	04	05
Objective: Develop and promote park research needs.			
Hold annual fall meeting with key staff at three network parks to identify and prioritize research needs, especially projects of joint interest.	⊙	⊙	⊙
Create web-based research needs catalog (FY03, ROMO only).	⊙	⊙	⊙
Seek funding through grant proposals, private donations, partnership arrangements, and other mechanisms to fund priority projects.	⊙	⊙	⊙
Objective: Facilitate the exchange of information among researchers.			
Sponsor a twice-annual three-park research conference held in a central location; publish conference abstracts in booklet and web form.		⊙	
Promote the Investigators' Annual Report system and NPS Bibliography as vehicles to share information.		⊙	
Objective: Assess need and funding options for additional low-cost researcher housing in or near parks.			
Seek funding for research housing at Florissant Fossil Beds National Monument and Great Sand Dunes National Monument and Preserve.	⊙	⊙	⊙
Investigate possible locations and funding options for research housing on the west side of Rocky Mountain National Park.	⊙	⊙	⊙
Objective: Make McGraw Ranch Research Center operational. (Objective refers to ROMO only)			
Assist the Rocky Mountain National Park Facility Management Division with the rehabilitation work program.	⊙		
Write a site management plan for the complex that covers safety, facility use, and cultural landscape management; revise and fine tune as needed in first years of operation.	⊙	⊙	⊙
Purchase furnishings and lab equipment; immediate needs include conference table and chairs, AV screen, LCD projector, lights, and library shelves.	⊙	⊙	⊙

SIFTING FOR ARTIFACTS, volunteers assist archaeologists at Great Sand Dunes NM&P. (NPS-GRSA photo)

RESEARCHERS EXCHANGE IDEAS at the Rocky Mountain NP research conference in 2002. (NPS-ROMO photo)

GOAL 2: *Enlist volunteers to support park research efforts*

Fiscal Year	03	04	05
Objective: Develop an array of recruiting methods and sources.			
Create an e-mail list to communicate with volunteers; use quarterly electronic communication to review past projects and highlight upcoming opportunities.	⊙	⊙	⊙
Recruit qualified volunteers to accomplish specific projects from organizations such as Partners in Flight, Partners in Parks, Colorado Native Plant Society, Student Conservation Association, and Geoscientists in Parks.	⊙	⊙	⊙
Recruit qualified and diverse student interns/volunteers using mileage reimbursement, volunteer stipend, or housing as payment.	⊙	⊙	⊙
Objective: Develop forms and procedures to match researchers and volunteers. (ROMO only)			
Evaluate volunteer requests from researchers in order to prioritize projects that provide a meaningful, well-supervised learning experience for volunteers.	⊙	⊙	⊙
Evaluate the effectiveness of the volunteer effort using a triangular interview approach (i.e., interviews with volunteers, researchers, and park staff).			⊙
Objective: Seek soft funding to provide volunteer housing, stipends, equipment, and transportation expenses, especially for students or disadvantaged volunteers.			
Purchase radios, cameras, binoculars, gortex jackets, hats, and other equipment for use by volunteers.	⊙	⊙	⊙
Recruit 10 ROMO volunteers to participate in one project in GRSA (cost approximately $1000) and FLFO (approximately cost $650) each year.	⊙	⊙	⊙
Expand the scope of research and resource volunteers to include glacier and bird monitoring at ROMO, bat inventory and monitoring at FLFO and GRSA, and vital signs monitoring at all three parks.	⊙	⊙	⊙

VOLUNTEER STUDENTS AND FACULTY from Emporia State University make rare book boxes at Rocky Mountain NP. (NPS-ROMO photo)

A VOLUNTEER DIGS A TEST PIT during archaeological research at Great Sand Dunes. (NPS-GRSA photo)

Intern Needs	ROMO	FLFO	GRSA
GIS	⊙		
digitizing historic photos			⊙
records management	⊙		
archives	⊙	⊙	⊙
National Register/historic research	⊙	⊙	⊙
journalism and media development	⊙	⊙	⊙
paleontology		⊙	
Spanish-translation services	⊙	⊙	⊙

GOAL 3: *Foster effective partnerships and increase the amount of matching dollars supporting network research and education*

Fiscal Year	03	04	05
Objective: Improve communication with existing partners and parks.			
Host annual meeting with partners and parks.	⊙	⊙	⊙
Use quarterly electronic communication to share information regarding events, strategies, and research projects, with a focus on projects pertinent to all three parks.	⊙	⊙	⊙
Objective: Increase number and variety of partners.			
Identify partnerships that will complement interests of all three CDRLC park units.	⊙		
Build informal partnerships at various levels (i.e., field personnel and management, state and regional agencies, private and non-profit groups, colleges and high schools).	⊙	⊙	⊙
Develop written agreements as necessary to formalize relationships.	⊙	⊙	⊙
Objective: Work with partners to leverage external and internal funding.			
Contribute to a minimum of two grant proposals each year that support mutually agreed upon priority projects.	⊙	⊙	⊙
Seek agency funding through various regional sources such as Special Emphasis Program Allocation System (SEPAS) and Cooperative Ecosystem Studies Units (CESU) grants.	⊙	⊙	⊙

ALL THREE PARKS partner with the United States Geological Survey (USGS) to inventory and monitor amphibians. (photo courtesy of Erin Muths, USGS)

GOAL 4: *Develop a multi-faceted communication and education program that promotes network research*

A PARK EMPLOYEE describes the features of a radio collar used in an elk study at Rocky Mountain NP (NPS-ROMO photo)

PARK NEWSPAPERS AND PRINT PUBLICATIONS communicate research information. (NPS-ROMO photo)

Fiscal Year	03	04	05
Objective: Proactively seek media coverage of research results and volunteer efforts as identified at the annual CDRLC meeting.			
Develop network of media representatives interested in park-related science stories.	⊙		
Use local and regional television and radio programming to tell park research and resource stories; recruit students to assist with media development.	⊙	⊙	⊙
Seek grant money to support production and evaluation of media efforts.	⊙	⊙	⊙
Objective: Sponsor public research conferences and research programs at each of the parks.			
Public conference, Saturday-Night-in-the-Park programs, and field seminars at ROMO.	⊙	⊙	⊙
Research conference and ranger led programs at GRSA.	⊙	⊙	⊙
Seminar series at FLFO.	⊙	⊙	⊙
Objective: Use the web as an effective tool for communicating with researchers, the public, and park staff.			
Develop a CDRLC web site that emphasizes research needs and results, field volunteer opportunities, and management applications of results; recruit student designers and educators to enhance quality of products.	⊙		
Create web-based list of current projects in all three parks.		⊙	
Develop content relating to the Southern Rocky Mountain Ecoregion; foster public support of all three units.			⊙
Objective: Use the parks' print publications as an effective tool for communicating with researchers, the public, and park staff.			
Develop stories for park newspapers highlighting research program results.	⊙	⊙	⊙
Publish a booklet, *The Science Behind the Scenery*, that details the variety of science-related efforts taking place in the parks.		⊙	

GOAL 4: *Develop a multi-faceted communication and education program that promotes network research*

Fiscal Year	03	04	05
		⊙	⊙
	⊙	⊙	⊙
			⊙
	⊙	⊙	⊙

Objective: Develop opportunities to use park research projects and results as the basis for formal science education.

Working in partnership with park education staffs and universities, develop undergraduate or high school science units that correspond to state and national teaching standards using three park data sets such as air quality, acid deposition, and amphibian population trends.

Market park research projects that could be undertaken as "class projects," supervised by qualified faculty, and are suitable for high school, undergraduate, and graduate level courses.

Develop montane ecosystem curriculum. (FLFO and GRSA)

Establish a bird banding station following the MAPS protocol that is used as educational resource for school groups and park visitors. (ROMO only)

HANDS ON LEARNING happens in parks every day. (NPS-FLFO photo)