(Inside Front Cover)

The Mission of the National Park Service

The National Park Service preserves unimpaired the natural and cultural resources and values of the national park system for the enjoyment, education, and inspiration of this and future generations. The Park Service cooperates with partners to extend the benefits of natural and cultural resource conservation and outdoor recreation throughout this country and the world.

The Mission of National Park Service Research Learning Centers

The Mission of National Park Service Research Learning Centers is to increase the effectiveness and communication of research and science results in the national parks through facilitating the use of parks for scientific inquiry, supporting science-informed decision making, communicating the relevance of and providing access to knowledge gained through scientific research, and promoting science literacy and resource stewardship.

Research Learning Centers Support the NPS Mission by leveraging partnerships and collaborating to achieve fiscal efficiency in generating high-quality scientific information and products for park management. RLC facilitated scientific research projects, programs, and support result in increasingly effective management and public understanding of park resources. Moreover, RLC science education programs provide a vital and underutilized role in public education for thousands of students and teachers each year.

National Park Service
List of Current Research Learning Centers

Research Learning Center	Host Park
Appalachian Highlands Science Learning Center	Great Smoky Mountains National Park (X Parks)
Atlantic Research Center	Cape Cod National Seashore
*Biscayne Subtropical Coastal and Marine Learning Center	Biscayne National Park
California Mediterranean Research Learning Center	Santa Monica Mountains NRA (3 Parks)
Continental Divide Research Learning Center	Rocky Mountain National Park (X Parks)
*Crater Lake Science and Learning Center	Crater Lake National Park
Crown of the Continent Research Learning Center	Glacier National Park (X parks)
Great Lakes Research and Education Center	Indiana Dunes National Lakeshore (X Parks)
*Greater Yellowstone Science Learning Center	Yellowstone National Park (3 Parks)
Jamaica Bay Institute	Gateway National Recreation Area
*Learning Center of the American Southwest	Virtual (~40 parks, 3 I&M Networks)
*Mammoth Cave International Center for Science and Learning	Mammoth Cave National Park
*Murie Science and Learning Center	Denali National Park and Preserve
North Coast and Cascades Research Learning Network	Olympic National Park (3 Parks)
*Ocean Alaska Science and Learning Center	Kenai Fjords National Park
Old-Growth Bottomland Forest Research and Education Center	Congaree National Park
Pacific Coast Science and Learning Center	Point Reyes National Seashore (5 Parks)
Schoodic Education and Research Center	Acadia National Park
*Sierra Nevada Research Institute - Wawona Field Station	Yosemite National Park
Urban Ecology Research Learning Alliance	National Capital Region Center for Urban Ecology

**Not funded by the NPS Research Learning Center Program. These centers were established in anticipation of permanent NPS funding that has not materialized. Funding for many of these centers is tenuous and a year-to-year struggle which jeopardizes long-term success and contributions to local parks and a national program.*

National Park Service

Research Learning Center Network
Strategic Plan
2009 - 2016

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Ms. Bobbi Simpson	California Exotic Plant Management Team Leader
Dr. Michael Soukup	Assoc. Dir. of Natural Resources Stewardship and Science (Retired)
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Dr. Leigh Welling	National RLC Coordinator, 2005-2007

Add Others Here

National Park Service
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Strategic Plan (2009 – 2013)

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DRAFT ADNRSS LETTER

The intersection of science and stewardship will help natural and human communities enhance their resilience to the major environmental changes that we will experience in this century. As the NPS and our partners face these tremendous environmental, conservation, and preservation challenges, Research Learning Centers (RLCs) will be an important component of the NPS 'strategy to address, diminish and overcome these threats. Solutions to climate change impacts, urbanization, fragmentation, invasive species, species extinction and other challenges require research-informed decision making. RLCs facilitate and generate such targeted research through innovative partnerships and concurrently develop a scientifically literate and informed citizenry that is critical to survival and preservation of our national park system and the ecosystems we are charged with protecting. Importantly, RLCs also foster research that may be critical to addressing unanticipated issues that may arise in the future.

To fulfill these goals, this Research Learning Center Strategic Plan proposes many synergistic activities with the other existing and highly successful Natural Resources Challenge programs. The plan promotes increased collaboration with the Inventory & Monitoring Program and CESUs to extend their research, monitoring and science communication functions.

This plan was developed with input and involvement from the NPS National Education Council and also supports the Interpretation and Education Renaissance Action Plan. Additionally, this plan strongly supports and complements many of the goals of the NPS Centennial Challenge.

I strongly support implementation of this strategic plan and am excited about RLCs future potential to greatly contribute to NPS 'goals. This plan will facilitate collaboration, results, and expansion of the network of RLCs to all 32 I&M networks around the country. The program will also serve as an international model for supporting data-driven science-based resources management and integrating science research, education, and life-long learning. I would like to thank the RLCs for taking on this planning effort and anticipate that important progress in conservation science and science communication with will emerge by enacting this plan.

Sincerely,

Herbert C. Frost, Ph.D.
Associate Director - Natural Resource Stewardship and Science

Executive Summary

The Mission of National Park Service Research Learning Centers is to increase the effectiveness and communication of research and science results in the national parks through facilitating the use of parks for scientific inquiry, supporting science-informed decision making, communicating the relevance of and providing access to knowledge gained through scientific research, and promoting science literacy and resource stewardship.

The National Park Service (NPS) established Research Learning Centers (RLCs) as part of the NPS Natural Resources Challenge Program in 2001. The NPS *Parks for Learning Plan* budget proposal called for establishment of 32 Learning Centers, one serving each of America's ecoregions, to be phased in over a period of four years in response to *"critical needs"* of *"lab and classroom space, in-park logistical support, temporary housing, and Internet/computing access."* (NPS, 2001; NPS, 2002) As Dr. Michael Soukup, then Associate Director for Natural Resources Stewardship and Science, describes it "the idea was to make the parks more accessible to researchers, and when possible researchers to visitors." (M. Soukup, pers. comm.) Each RLC is in a different stage of development. Twelve centers have been funded through the NRC. In addition, eight of these centers were established using soft funding or diversions from existing park base under the initial premise that congressional funds would soon follow for additional RLCs. Unfortunately, no funds have been added to the RLC network since 2002, and as a result many of the unfunded centers struggle to achieve their goals under tight fiscal constraints.

The present plan is designed to codify the common purpose and basic functions of RLCs, and facilitate better collaboration between RLCs and other Natural Resource Challenge entities to more effectively accomplish their mission. It is also designed to delineate the needs and actions required to realize the original vision for a strong network of RLCs serving all 32 ecoregions and 100% of the units of the National Park System. Representatives from the 20 RLCs collaborated over an 18 month period to develop the plan with the assistance of a strategic planning consultant.

To accomplish the RLC mission the planning team identified a set of five strategic actions, with a total of 19 associated tasks to be accomplished over a seven-year period:

- Facilitate RLCs reaching their full potential of service to the National Park System as a whole.
- Increase efficiencies in completing research projects and creating education programs and materials.
- Facilitate the synthesis, translation, and analysis of RLC sponsored research and make results available in useable formats.
- Engage the public and research community in park science.
- Assess value and accomplishments of RLCs.

Highlights of the plan include:

- Completion of the RLC Network with at least one RLC in each of the I&M networks,
- Establishment of a full time RLC Network coordinator in the Washington Office;
- Creation of a robust expanded website designed for researchers, park managers, and stakeholders;
- Development of ongoing communication and evaluation systems and processes.

Introduction

National Park Service Research Learning Centers (RLCs) work to increase the effectiveness and communication of research and science results in the national parks by facilitating the use of parks for scientific inquiry, supporting science-informed decision making, communicating the relevance of and providing access to knowledge gained through scientific research, and promoting science literacy and resource stewardship. They combine existing facilities with the skills of researchers and National Park Service scientists, education specialists, interpreters, and public information officers to develop and share scientific information for park management and public learning. (NPS, 2006)

The Research Learning Center Idea

The idea for the Research Learning Centers was reportedly born in the late 1990s during a brainstorming session between then NPS Deputy Director Dennis Galvin and Associate Director for Natural Resource Stewardship and Science Dr. Michael A. Soukup (M. Whatley, pers. comm.). As Dr. Soukup describes it, "the idea was to make the parks more accessible to researchers, and when possible researchers to visitors" (M. Soukup, pers. comm.). At the time, the logistics and cost of doing research in parks had been a deterrent for many scientists and graduate students. Lodging was often crowded and expensive, primitive or non-existent. To further complicate matters, Congress had put pressure on the NPS to reduce park housing, hence simultaneously discouraging park managers from creating new structures to house scientists. Access to the Internet, laboratory space and equipment, and other amenities that make research easier were few and far between. A proto-RLC operation at Purchase Knob at the Great Smoky Mountains National Park provided inspiration for an NPS-wide network of RLCs.

Mr. Galvin's and Dr. Soukup's vision was to make parks hospitable to a wide range of researchers by retrofitting existing park structures (and adaptively rehabilitating historic structures when appropriate) to create lodging and lab space. Beyond simply providing research space, this vision included developing research learning centers (RLCs) which would be staffed to attract, coordinate and facilitate research, and communicate research results to park managers and the public. RLCs would also facilitate formal and informal interaction between scientists, educators, volunteers, visitors and the public at large, helping to increase science literacy and fulfilling the goal of "parks for science and science for parks." Pacific West Regional Director Jonathan B. Jarvis describes the RLCs as the "interface between research, researchers, and our communication professionals" (Jarvis, 2007). Dr. Soukup describes his vision for Research Learning Centers as "Intellectual Hubs: Shining centers of information assimilation, integration, sharing, and application into park operations and interpretation" (M. Soukup, pers. comm.). These ideas were incorporated into the *Natural Resources Challenge* and *Parks for Science Plan* budget proposal (NPS, 1999a). The plan called for the NPS to:

> *Invest in Park Infrastructure for Science*
> *Establish Research Coordinators in the Parks*

The revised NPS *Parks for Learning Plan* budget proposal (NPS, 2001) further called for establishment of 32 Learning Centers, one serving each of America's ecoregions, to be phased in over a period of four years beginning in 2001 with base funding of $225,000 each. Unfortunately, funding was only received for 12 RLCs. The plan also detailed specific guidelines for RLCs:

> *"Critical needs are lab and classroom space, in-park logistical support, temporary housing, and Internet/computing access. The National Park Service will develop, with corporate and foundation assistance, 32 Learning Centers to serve as focal points for research, information exchange, and education. Each center will serve a network of parks... As learning centers are established, they will be staffed with a Research/Center Coordinator and an education position."*
> (NPS, 2001; NPS, 2002)

The Research Learning Center Network

Since then, a network of 20 RLCs has been established serving approximately 50% of the units in the National Park System. Each RLC is in a different stage of development. Eight of these centers were established using soft funding or diversions from existing park base under the initial premise that congressional funds would soon follow for additional RLCs. Unfortunately, no funds have been added to the RLC network since 2002, and as a result many of the unfunded centers struggle to achieve their goals under tight fiscal constraints. If centers begin to close due to lack of funds, the goal of a national RLC program and the associated benefits for the NPS will not be achieved. As a network, the centers have a wide variety of public and private funding sources, partner combinations and internal structures that have evolved to meet the needs of the parks and partners they serve.

The Strategic Plan

The present plan is designed to codify the common purpose and basic functions of RLCs, and facilitate better collaboration between RLCs and other Natural Resource Challenge entities to more effectively accomplish their mission. It is also designed to delineate the needs and actions required to realize the original vision for a strong network of RLCs serving all 32 networks and 100% of the units of the National Park System.

Representatives from the 20 RLCs collaborated to develop the plan. Initially, with the assistance of a consultant, they researched and wrote a documented administrative history of the RLC Network, including the legislative background and the original vision and intents for the centers. (The administrative history is available at http://www.nature.nps.gov/learningcenters/xxxx.) The group also conducted an internal survey to determine the modes of operation currently in use at the various RLCs. (See Appendix C for a detailed report of survey results.) The information from the survey was used to develop a program logic model documenting the basic structure and design of the RLCs. (See Appendix D for more information on logic models and to view the RLC logic model.) These processes were important to gather and analyze information about how the RLCs have been operating since their inception seven years ago. They were also critical for the group to develop common language and understanding of what RLCs are and should be based on their background and current operation.

The planning team met twice with a strategic planner/facilitator over the course of 18 months at the 2007 George Wright Society Conference in Saint Paul, Minnesota, and in January of 2008 at Congaree National Park in Columbia, South Carolina. On both occasions, representatives from other Natural Resources Challenge programs and the division of Interpretation and Education attended. In addition, the group held monthly conference calls and participated in smaller working groups to draft and edit sections of this plan.

Through implementation of this strategic plan, the overall effectiveness of RLCs as a network within the National Park Service will increase at multiple scales (local, regional and national). National coordination will provide greater efficiencies and visibility for the RLC network and the National Park Service as a place for scientific inquiry and relevant/effective information sharing.

In addition, the plan provides broad guidance for individual centers and suggests better national coordination of the RLC network. It also calls for delineation of a formal process for establishing and funding RLCs. However, the plan is not intended to inhibit creativity at the individual centers or disregard local and regional differences between RLCs. Rather, it is hoped that implementation of this strategic plan will strengthen and enhance *Parks for Science and Science for Parks*.

Background: Legislative Precedent and establishment of the National Park Service Research Learning Centers

The 1916 Organic Act established the National Park Service with the explicit mission to

> *"... conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."* (16 U.S.C.A. Sec. 1)

This bold conservation language empowered a new bureau to protect the nation's finest scenic, natural, and cultural resources for the American public in perpetuity. At the time, the idea of simply setting aside land was thought to preserve it for the future (NRC, 1992:1).

Ninety years later, the National Park Service cares for nearly 400 national park units containing over 84 million acres that represent all 32 of America's ecoregions (Jarvis, 2007). However, while Congress has effectively set aside the nation's special places, they are by no means preserved and protected. The National Park System faces a myriad of complex challenges, unimaginable when the bureau was new. The Service must now accomplish its mission despite problems such as: the introduction of non-native, invasive species; increased development resulting in loss of native habitat and ecosystem fragmentation; barriers to animal movement and migration, poor water quality and increased human demand on water resources; increased use of fossil fuels leading to poor air quality, climate change, acid rain; and much more. The National Park Service struggles to manage parks effectively due to lack of resource-base knowledge sufficient to effectively manage resources on these dynamic landscapes. We have not yet begun to fathom the changes that will occur due to climate change and the rapid onset of global warming.

Simply setting aside land for preservation is no longer a viable approach to conservation. Public lands must be actively and skillfully managed, in partnership with the American people, if they are to be preserved and protected. In order to accomplish this, it is necessary for the Service to have in-depth, accurate, and up-to-date knowledge about the natural systems and cultural treasures it is charged to protect. Similarly, NPS staff must have access to the most recent scientific information, and parks themselves must become laboratories for scientific inquiry. Unfortunately, until very recently, this was not the case.

For a brief period in the 1930s, under the leadership of George M. Wright, the Service ran a scientific research program focusing on wildlife. However, after Wright's tragic death in 1936, and a series of budget cutbacks, the effort died and the three remaining NPS biologists transferred to the U.S. Fish and Wildlife Service (NRC, 1992:41). In the early 1960s Secretary of the Interior Stuart Udall recognized the need for better scientific information and called for two committee reviews and reports. The first was a committee chaired by A. Starker Leopold with the mandate to advise the Secretary regarding wildlife management in the National Parks. The second charged the National Academy of Sciences National Research Council to:

> *"... recommend a research program designed to provide the data required for effective management, development, protection, and interpretation of the national parks; and to encourage the greater use of the national parks by scientists for basic research."* (NRC, 1992:43)

Unfortunately, most of their recommendations were never enacted. Over the next 35 years, 11 additional studies and reports were done, all calling for similar change, specifically a robust and serious emphasis on scientific research and monitoring in the national parks (NRC, 1992:43).

In 1993, Secretary of the Interior Bruce Babbitt established the National Biological Survey (NBS), a new bureau designed to combine all the Department's biological research efforts in one agency to improve scientific research at the national level. This effort did not have full support from Congress, however, and did not receive full funding. By 1995, the NBS was merged into the U.S. Geological Survey (USGS) as the Biological Research Division (BRD). The incorporation of NBS into USGS further degraded the ability of National Park Service personnel to access good scientific research for park management.

In 1997, Richard West Sellars, a National Park Service historian, published *Preserving Nature in the National Parks: A History*, to bring national attention to the plight of park science. His popular press book documents the historical clash between the NPS's more traditional scenic and tourism management approach and the need to respond to changing ecological conditions and emerging knowledge of natural systems (Sellars, 1997). His careful research substantiated the observations articulated in previous reports on the state of science in the national parks. This helped influence Congress to pass the National Parks Omnibus Management Act (NPOMA) that gave superintendents and managers specific legal authority to conduct and support science in parks. Specifically:

> Section 201: Purpose: *The purpose of this Act is to encourage others to use the NPS for study to the benefit of park management as well as broader scientific value, where such study is consistent with … the NPS Organic Act.*
>
> Section 202: Research Mandate: *The Secretary is authorized and directed to assure that management of units of the NPS is enhanced by the availability and utilization of a broad program of the highest quality science and information.*

Sellars 'book, and the attention it received, along with the mandates of the Omnibus Act, inspired NPS Director Robert G. Stanton and the U.S. Congress to action, resulting in the development and successful implementation of the *Natural Resource Challenge: the National Park Service's Action Plan for Preserving Natural Resources* (NPS, 1999b).

The *Challenge* is a "multi-year, $100 million dollar effort to institutionalize science based resource management in NPS" (NPS, 1999b). The Challenge provides a number of programs including long-term inventory and monitoring in the 271 NPS units with substantial natural resources, a Cooperative Ecosystem Studies Network that provides research, technical assistance, and education to all NPS units, a network of Research Learning Centers, and others including Exotic Plant Management Teams (National Park Advisory Board, 2004). The four stated goals of the Natural Resource Challenge are:

1. *National Parks are preserved so that this generation and future generations can enjoy, benefit, and learn from them.*
2. *Management of national parks is improved through a greater reliance on scientific knowledge.*

3. *Techniques are developed and employed that protect the inherent qualities of national parks and restore natural systems that have been degraded; collaboration with the public and private sectors minimizes degrading influences.*
4. *Knowledge gained in national parks through scientific research is promulgated by the National Park Service and others for the benefit of society.*
   (NPS, 1999b; NPS, 2002)

Specifically, the *Challenge* Action Plan (NPS, 1999b) stated:

> *"At least one private-public learning center will be developed in each network to facilitate the use of parks as libraries of knowledge and support visiting researchers. We have a responsibility to encourage the use of parks for science. Research will be encouraged in the parks in ways that support other park values. ... Coordinated interpretation and education programs at each Learning Center will transfer information about park resources to park-based interpreters and the public at large, through outreach to schools, website development and other means."* (NPS, 1999b; NPS, 2002)

Now almost a decade old, the *Challenge* has successfully begun the institutional transformation called for by the National Research Council in 1992. Hundreds of new scientists and technicians are deployed across the Service establishing baseline inventories of flora and fauna, water and air quality and other natural processes. Many floral and faunal inventories have been completed and an ongoing natural resources monitoring program is in place. A network of Cooperative Ecosystem Studies Units located on university campuses has created direct linkages between NPS staff and scientists across the country. As part of the *Challenge*, a system of Research Learning Centers facilitates and supports scientific research in national parks, and communicates research results to park managers and the public (NPS, 1999b).

(Note: Planning and administrative background of the National Park Service Research Learning Center network from its inception in 2000 through 2007 is available at http://www.nature.nps.gov/learningcenters/xxx.)

National Park Service Research Learning Center Mission

The mission of Research Learning Centers is to increase the effectiveness and communication of research and science results in the national parks.

Vision for Research Learning Centers by 2016

National Park Research Learning Centers are widely recognized for support and synthesis of scientific research, through collaboration among researchers, resource managers, educators, and partners. The knowledge acquired through Research Learning Centers contributes significantly toward solving critical problems such as climate change, habitat fragmentation, invasive species, and other issues that threaten the preservation and ecological integrity of our national parks and our world. Through partnerships, the centers increase scientific literacy and stewardship, creating strong education, public outreach, and volunteer programs. Park staff relies on the centers for current and accurate scientific information they can share with national park audiences. Citizens, park managers, Department of Interior staff, and Congress regard the Research Learning Centers as indispensable sources of information necessary to make research-informed management decisions. As a result, Research Learning Centers contribute toward preserving the integrity of National Park System resources and their values for future generations.

Research Learning Center Goals

I. Facilitate the use of parks for scientific inquiry.
II. Support science-informed decision making.
III. Communicate the relevance of and provide access to knowledge gained through scientific research.
IV. Promote science literacy and resource stewardship.

Research Learning Center Strategic Actions
With Associated Performance Measures, Cost Estimates, and Outcomes
(See timeline below for sequencing)

Strategic Action 1. Facilitate RLCs reaching their full potential of service to parks and the entire National Park System.

1a. Provide base funding for approved but unfunded centers (8) that have begun operations with indirect funding.

Performance Measure: Base funding secured for eight centers currently functioning on soft money

Outcome: Sustainable Research Learning Centers, consistently serving more than 100 parks.

1b. Fully fund at least one RLC in each of the 32 Inventory and Monitoring networks.

Performance Measure: Base funding secured for 12 additional Research Learning Centers.

Outcome: Sustainable Research Learning Centers consistently serving the National Park System.

1c. Increase base funding for current funded centers to keep up with inflation.

Performance Measure: Increased funding secured for 12 current Research Learning Centers.

Outcome: Sustainable Research Learning Centers consistently serving the National Park System.

1d. Establish full-time national coordination for RLCs. This position would provide leadership, coordination, communications, website, record-keeping, and advocacy for RLCs at the national level.

Performance Measure: Position Established

Outcome: More efficient and effective RLC network able to fulfill its goals and fully serve the national park system (see Appendix D: Research Learning Center Logic Model)

1e. Design a consistent process for establishing an NPS approved Research Learning Center.

Performance Measure: Process Established and Adopted

Outcome: Consistent, equitable method for establishing and approving new RLCs.

1d. Develop individual strategic plans for every RLC, to ensure that each RLC works to accomplish the mission, vision, and goals of the RLC network, as well as address their local/network-level needs and concerns.

Performance Measure: Within five years, 66% of RLCs have strategic plans

Outcome: Individual RLCs better equipped to accomplish goals and outcomes for national park system (see Appendix D: Research Learning Center Logic Model)

1e. Write and implement a national communications plan for the RLC network designed to facilitate effective internal and external marketing and communications, and raise awareness of the benefits of RLCs in achieving NPS goals internally and externally.

Performance Measures:

a. Within one year, marketing and communications plan written.

b. Within three years, 75% of plan activities accomplished; within five years, 95% of plan activities accomplished.

Outcomes:

a. NPS managers and staff, partners, and the public understand and know how to use RLCs to improve resource management and stewardship, conduct more and better research in parks, improve science literacy and improve science education.

b. RLCs improve ability to work collaboratively to accomplish identified goals, outcomes and impacts (see appendix: RLC Logic Model)

1f. Communicate NPS research and management needs directly to scientists by addressing research questions, park management concerns, and data gaps, including emerging issues via RLC convened Ecological Working Groups modeled after the National Science Foundation's National Center for Ecological Analysis and Synthesis program.

Performance Measure: Fifteen Workshops

Outcome: Cutting edge research and scientific guidance that influences science-informed management of national parks across the country.

Strategic Action 2: Increase efficiencies in completing research projects and creating education programs and materials.

2a. Establish thematic connections between RLCs, CESUs and I&M Networks.

Performance Measure: Within one year, set of themes established.

Outcome: More effective research completed; better collaboration on research.

2b. Collaborate closely with all Natural Resources Challenge programs to identify research questions and help communicate the results of their work, by participate as ex-officio member of the boards for CESU, I&M, and EPMT at the regional and national levels.

Performance Measure: Within one year, ex-officio positions established.

Outcome: Better collaboration between Natural Resources Challenge programs and RLCs.

2c. Collaborate closely with the division of Interpretation and Education.

2ci. Participate on the NPS National Education Council

Performance Measure: RLC Coordinator actively participates on National Education Council.

Outcome: Better integration and collaboration with NPS Interpretation and Education Division, resulting in more effective programs and visitor outcomes.

2cii. Coordinate nationally and locally with NPS Interpretation and Education.

Performance Measure: Within three to five years, self-reported higher incremental rate of regular communication and contact with I&E staff locally and nationally.

Outcome: Better integration and collaboration with NPS Interpretation and Education Division, resulting in more effective programs and visitor outcomes.

2d. Collaborate closely with the division of Resources Management through participation on Regional Natural Resources Advisory Committees (NRAC).

Performance Measure: RLC Coordinator actively participates on NRAC Groups.

Outcome: Better integration and collaboration with NPS Resources Management Division, resulting in more cost effective programs and resource-based management.

2e. Establish national research fellowship program.

Performance Measure: Within two years, national research fellowship program established; within four years, fellowship program evaluated and improved.

Outcomes: New researchers mentored and aware of national parks as laboratories for scientific inquiry. Leverage university resources for park research priorities.

Strategic Action 3: Facilitate the synthesis, translation, and analysis of RLC sponsored research and make results available in useable formats.

3a. In conjunction with their associated I&M network and CESUs, each RLC will support a national website that serves as a comprehensive source for scientific information on parks 'most important resources and management issues. This thematically based site will provide "one-stop" access to information for a variety of audiences from students, to superintendents to research scientists and the public.

Performance Measure: Within three years, national website established; within five years, website evaluated and improved.

Outcome: Managers and the public have easy access to current science research and its applications facilitating better research stewardship decisions, better science education, and improved scientific literacy.

3b. Partner with I&M and CESU at the George Wright Society meetings to run a track on research results that can be applied to national level resource management issues. (Use thematic connections to select content.)

Performance Measure: Track established at George Wright Society Conference; high percentage of attendance at sessions; positive evaluation of sessions and posters.

Outcome: Managers and other researchers have better access to research results and their implications for resources management.

Strategic Action 4. Engage the public and research community in park science.

4a. Develop and participate in a national Citizen Science Association in collaboration with another organization such as the National Association for Interpretation.

Performance Measure: Within three years, national citizen science association/or network established; within five years, association/network grown.

Outcome: Improved citizen science programs nationally.

4b. Provide ongoing professional development for RLC education staff on current issues and research regarding effective science education.

Performance Measure: 75% of RLC education staff attends science education conferences and/or training programs annually.

Outcome: Education programs will be more effective and better facilitate science literacy and stewardship.

4c. Partner with organizations such as the National Science Teacher's Association, the North American Association for Environmental Education; the Association for Supervision and Curriculum Development, and the Association for the Advancement of Science on teacher training and development of teaching materials.

Performance Measure: At least three partnership activities with a selection of the above organizations at the local or national levels annually; results shared among all RLCs.

Outcome: Education programs will be more effective, better facilitating science literacy and stewardship.

4d. Partner with the National Association for Interpretation regarding informal science education, communication, and interpretation.

Performance Measure: At least one partnership activity with the National Association for Interpretation at the local or national level annually; results shared among all RLCs.

Outcome: Interpretive and informal education programs will be more effective, better facilitating science literacy and stewardship.

Strategic Action 5: Assess value and accomplishments of RLCs by developing and implementing a results-based evaluation plan.

Performance Measure: Within two years, evaluation plan with data gathering instruments developed and pilot tested; within five years, evaluation plan used annually for program improvement and reporting.

Outcome: Ongoing improvement of RLC programs and results (see Appendix D: RLC Logic Model)

Table 1 summarizes the above strategic actions in relation to the four goals of the Research Learning Center Network of the National Park Service.

Research Learning Center Strategic Actions	Goal I Facilitate the use of parks for scientific inquiry.	Goal II Support science-informed decision making.	Goal III Communicate the relevance and provide access to knowledge gained through scientific research.	Goal IV Promote science literacy, and resource stewardship.
1. Facilitate RLCs reaching their full potential of service to the National Park System as a whole.	X	X	X	X
2. Increase efficiencies in completing research projects and creating education programs and materials.	X		X	X
3. Facilitate the synthesis, translation, and analysis of RLC sponsored research and make results available in useable formats.	X	X	X	X
4 Engage the public and research community in park science.			X	X
5. Assess value and accomplishments of RLCs.	X	X	X	X

Short Term Outcomes and Long-term Impacts of Research Learning Centers

Research Learning Centers are designed to accomplish specific short term outcomes, and contribute toward the accomplishment of longer term impacts that benefit the National Park System, society and our environment. These short term outcomes and longer term impacts can be used as a basis for evaluating the effectiveness and accomplishments of the Research Learning Centers. To see a diagram of the logic behind Research Learning Center design, see Appendix D.

Desired Short Term Outcomes of Research Learning Centers

The scientific community gains new knowledge.

The public & scientific community view parks as places for scientific inquiry.

Park managers (national, regional, local) make science-based decisions to steward resources.

Participants learn new information and concepts about the park or scientific topic.

Teachers improve science education professional practice and students have enhanced learning/ motivation.

Participants learn civic engagement/ citizen science skills and take action (e.g. volunteer, take action on their own property or community, advocate for park resources).

Desired Long Term Impacts of Research Learning Centers

Solutions are found to critical problems that threaten the integrity of park resources and ecosystems.

NPS and the public have increased capacity to steward park resources.

The public has increased scientific literacy.

Research Learning Center Guiding Principles

The NPS Research Learning Centers (RLCs) are as rich and diverse as the natural and cultural systems they are established to study and protect. While each center is unique, a set of principles guides our individual and collective work.

Mission Driven

The work of RLCs is driven by the NPS mission, operating within the context of the Organic Act and the Natural Resource Challenge. A key outcome for RLC's is to promote stewardship of park resources. RLC's aim to serve all divisions and functional areas in the parks they represent.

Scientific Research for Management and Knowledge

RLCs facilitate high quality scientific research for park management and improved public knowledge. RLC's support scientific research in its broadest sense to include all natural, physical, social, and historical, integrated and multi-disciplinary research. RLC's promote parks as places for scientific inquiry. While RLC's vary in their services and facilities for researchers, every RLC provides some level of support for researchers to work in parks.

Support and Improve Resource Management

RLCs collaborate with parks to address prioritized research needs and to establish and expand connections with the research community. They promote basic research that improves managers' general understanding of park resources, and make research results available and understandable.

Collaboration

The work of RLCs is the result of diverse and dynamic collaborations among internal NPS groups and external partners. RLCs form links and synergies among and between park staff and researchers, and promote collaborations among the Natural Resource Challenge programs, leading to better efficiencies, leveraging of resources, and grater impacts.

Partnerships

Partnerships are integral to how RLCs operate. Partnerships are developed to identify mutual agendas, combine efforts, and accomplish what neither could do alone. Partnerships assist with implementing programs and projects; accessing audiences such as organized education groups; sharing of resources (fiscal and personnel) and increasing knowledge bases through colleges and universities. Partners can come from the following groups: Internal NPS; other federal, state, and local government agencies; community groups; park neighbors; researchers; formal and informal educators; non-profits; and higher learning institutions. The partner composition of each Research Learning Center is different and helps determine how that RLC operates.

Science-based Education

RLCs support and improve science education, including both science literacy (see Appendix A: Glossary) and park-relevant scientific content. While educational techniques will vary amongst RLCs, they all support educational opportunities that are distinctly founded on park research. This includes data collection, inventory and monitoring data, technical research summaries, and technical research syntheses. RLCs educate and inform a variety of internal and external audiences. Each RLC, along with its partners, has the flexibility to focus on its own key audiences. Education

products which the RLCs create follow the NPS education program guidelines set out in the "Renewing Our Education Mission" document which can be found at http://www.nps.gov/interp/renaissance/renewing_our_education_mission.pdf.

References

To Be Added

Appendix A: Summary of RLC Successes and Contributions

RLC Successes and Contributions –From marine protected area design, genetics of wildlife disease, and climate change research to all-taxa biodiversity inventories and science education, RLCs provide high-quality, timely research results to NPS managers and the public. This information is critical for NPS managers and stakeholders to make science-based management decisions. For greater detail, see Appendix A.

RLC Science and Research

- Each year, over 900 research projects investigating National Park biology, physical sciences, social sciences and other disciplines are facilitated through the RLCs. Many of these studies provide high-quality information quickly to park management. RLC efforts helped produce over 70 peer-reviewed journal articles in FY07. Such articles and ancillary products (e.g., presentations to staff, research briefs) are critical for science-informed management decisions.
- RLCs entice world-class researchers to work in NPS units by accommodating over 21,000 researcher person-nights each year, saving researchers over $1.2 million in lodging expenses and providing a suite of additional logistical support that makes their research in parks possible.
- RLCs involve the next generation of scientists in park research. Over 450 university students work on RLC led projects each year and many will contribute to park management, conservation, and education later in their careers as graduate students or Ph.D. level researchers.

RLC Science Education and Dissemination

- Each year, RLCs produce hundreds of science communication products used by teachers, students, park staff, and the general public. These include on-line multi-media such as digital video, audio recordings and electronic field trips along with more traditional products such as research briefs, newsletters, brochures, resource and site bulletins, wayside and visitor center exhibits, and nature trail guides.
- Dozens of public workshops and seminars are held each year on specific topics such as mercury contamination, invasive species, and wildlife conservation, as well as synthetic conferences highlighting a range of park research projects and applications.
- Hundreds of teachers and thousands of students are engaged in hands-on science activities in and about parks each year.
- Internally, RLC staff provides hundreds of hours of training for park resource managers, interpreters, and concessionaires.
- RLCs regularly collaborate with other NPS programs, such as I&M and CESUs, to create joint products that convey resource information to managers and the public.
- Innovative virtual RLC programs at Yellowstone and the Learning Center of the American Southwest have developed web information portals for I&M and other science-related results to be quickly and efficiently transferred to managers and the public. These models are currently being adopted by additional RLCs.

RLC Partnerships for Science

- RLCs engage hundreds of park partners including universities, schools, non-profit organizations, community groups, federal, state, tribal agencies and NPS programs.
- Each year, RLCs log over 20,000 volunteer hours and leverage about $1M in direct match and in-kind support. Additionally, millions more in research funding was supported solely by outside funding agencies in projects facilitated by the RLCs.
- RLCs implement many citizen science programs including "bioblitzes" and other longer-term programs to monitor the health of species and ecosystems on NPS lands.
- RLC programs and partnering capabilities can quickly adapt to unforeseen and rapidly arising park information needs.

Multi-RLC Programs in 2008

- Geology of the National Parks Math Literacy Curriculum Development (9 RLCs – Successful NSF Grant)
- California Environmental Legacy Project (PBS Film Series and place-based education focusing on environmental change and citizen involvement - NSF 2nd round proposal)
- Invasive Cattail Genetic Marker Project
- National All Taxa Biodiversity Inventories and Bioblitzes (5+ RLCs) (NPS Centennial Challenge Program)
- NPS national training sessions on integrating interpreters and research programs (3 RLCs)

Appendix B: Glossary of Terms

Assessment Research: Social science research on program or individual performance evaluation.

Centennial Challenge: (http://www.nps.gov/2016/) The Centennial Challenge is a private-public partnership President George W. Bush called for within the Centennial Initiative. Its purpose is to bolster basic park operations and provide a higher level of excellence for America's parks, as the National Park Service enters its second century (1916 –2016).

CESU (Cooperative Ecosystem Study Unit): (http://www.cesu.psu.edu/) The Cooperative Ecosystem Studies Units National Network is a network of academic and non-government organization partners established to provide expertise to resource and environmental managers. CESUs have a blanket federal agreement that allows them to work flexibly with parks.

Citizen Science: A term used for a project or ongoing program of study in which a network of volunteers, many of whom may have no specific scientific training, perform or manage research-related tasks such as observation, measurement, or computation.

Climate Change: see Global Climate Change

Communication: A process by which we assign and convey meaning in an attempt to create shared understanding.

Education: Education encompasses teaching and learning specific skills, and also something less tangible but more profound: the imparting of knowledge, positive judgment and well-developed wisdom. Education has as one of its fundamental aspects the imparting of culture from generation to generation. in this sense, education means to draw-out, facilitating realization of self-potential and latent talents of an individual.

EPMT (Exotic Plant Management Team): (http://www.nature.nps.gov/biology/invasivespecies/) In order to manage invasive plants on park lands, 17 Exotic Plant Management Teams (EPMT's) have been deployed throughout the country. The teams are a new weapon to combat exotic plants. The teams were modeled after the coordinated rapid response approach used in wild land fire fighting.

Global Climate Change: Any long-term significant change in the "average weather" that a given region experiences. Average weather may include average temperature, precipitation and wind patterns. It involves changes in the variability or average state of the atmosphere over durations ranging from decades to millions of years. These changes can be caused by dynamic processes on Earth, external forces including variations in sunlight intensity, and more recently by human activities. In recent usage, especially in the context of environmental policy, the term "climate change" often refers to changes in modern climate (see global warming).

Global Warming: The increase in the average temperature of the Earth's near-surface air and oceans in recent decades and its projected continuation.

George Wright Society (GWS): (http://www.georgewright.org/) The GWS is a nonprofit association of researchers, managers, administrators, educators, and other professionals who work on behalf of the scientific and heritage values of protected areas.

I&M (Inventory and Monitoring): When capitalized it generally refers to the NPS Inventory and Monitoring Program; (http://science.nature.nps.gov/im/index.cfm). The Inventory and Monitoring Program is funded through the Natural Resource Challenge, and incorporates two other programs within NPS, the Vital Signs Monitoring Program and the Inventory Program. In order to accomplish the long-term goals of the I&M Program, 32 networks have been established which incorporate 270 NPS units with significant natural resources (http://science.nature.nps.gov/im/networks.cfm). As part of the National Park Service's effort to "improve park management through greater reliance on scientific knowledge," a primary role of the Inventory and Monitoring (I&M) Program is to collect, organize, and make available natural resource data and to contribute to the Service's institutional knowledge by facilitating the transformation of data into information through analysis, synthesis, and modeling.

Logic Model: Narrative or graphical depictions of processes in real life that communicate the underlying assumptions upon which an activity is expected to lead to a specific result. Logic models illustrate a sequence of cause-and-effect relationships —a systems approach to communicate the path toward a desired result. Logic models are a commonly used tool for describing the effectiveness of programs.

Meta-analysis: A type of data analysis in which the results of several studies, none of which need find anything of statistical significance, are lumped together and analyzed as if they were the results of one large study.

Metadata: Information about data, of any sort in any media. For example, an item of metadata may describe an individual datum, or content item, or a collection of data including multiple content items. Metadata (sometimes written 'meta data') are used to facilitate the understanding, characteristics, use and management of data. The metadata required for effective data management varies with the type of data and context of use. Metadata also helps with interpretation and evaluation of data quality.

Monitoring: Or to monitor, generally means to be aware of the state of a system using data collected over time.

National Park Service (NPS): The National Park Service mission is to preserve "unimpaired the natural and cultural resources and values of the national park system for the enjoyment, education, and inspiration of this and future generations." NPS is part of the Department of Interior and manages 391 areas covering more than 84 million acres of public lands.

Natural Resource Challenge (aka The Challenge): The National Park Service's Action Plan for Preserving Natural Resources addresses the challenges of caring for our country's natural heritage within the complexities of today's modern landscapes.
http://www.nature.nps.gov/challenge/index.cfm

Organic Act: On August 25, 1916, President Woodrow Wilson signed the act creating the National Park Service, a new federal bureau in the Department of the Interior responsible for protecting the 40 national parks and monuments then in existence and those yet to be established. This "Organic Act" of August 25, 1916, states that "the Service thus established shall promote and regulate the use of Federal areas known as national parks, monuments and reservations . . . by such means and measures as conform to the fundamental purpose of the said parks, monuments and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."

Parks for Science: The policy that parks should serve as places of scientific inquiry even when the type of inquiry has no immediate obvious benefit to a park.

Research: A human activity based on intellectual investigation and aimed at discovering, interpreting, and revising human knowledge on different aspects of the world. Research can use the scientific method, but need not do so.

Research Learning Center (RLC): (http://www.nature.nps.gov/learningcenters/) Research Learning Centers ("Centers") have been developed to facilitate research efforts and provide educational opportunities. They are places where science and education come together to preserve and protect areas of national significance. They have been designed as public-private partnerships that involve a wide range of people and organizations including researchers, universities, educators, and community groups. Each learning center serves a variety of partners including NPS park units. The RLC program was initially funded through the Natural Resource Challenge.

Resource Management: A multidisciplinary systems approach to managing our natural and cultural heritage. This includes the biological, engineering, social and economic aspects of managing resources as an integrated system at various scales over time. Ecological principles are applied and evaluated at various scales (i.e.global, local, microscopic). Regulations, laws, economics, individual perspectives and science based activities (data) influence resource management.

Science: (from the Latin *scientia*, 'knowledge'), in the broadest sense, refers to any systematic knowledge or practice. In a more restricted sense, science refers to a system of acquiring knowledge based on the scientific method, as well as to the organized body of knowledge gained through such research. Fields of science are commonly classified along two major lines:

- Natural sciences, which study natural phenomena (including biological life)
- Social sciences, which study human behavior and societies

These groupings are empirical sciences, which means the knowledge must be based on observable phenomena and capable of being experimented for its validity by other researchers working under the same conditions.

Science Communication: The sum of all those processes by which scientific culture and knowledge is incorporated into the common culture.

Science-Informed Decision Making: Decisions where science is involved in the discussion, but where it is not the only factor considered.

Science Literacy: The knowledge and understanding of scientific concepts and processes required for personal decision making, participation in civic and cultural affairs, and economic productivity.

Scientific Inquiry: Scientific inquiry has two functions: First, to provide a descriptive account of *how* scientific inquiry is carried out in practice; second, to provide an explanatory account of *why* scientific inquiry succeeds as well as it appears to do in arriving at genuine knowledge of its objects.

Scientific Investigation = Scientific investigation relies on the application of the scientific method, a harnessing of curiosity. This research provides scientific information and theories for the explanation of the nature and the properties of the natural world (which includes humans). It makes practical applications possible. Scientific research may be funded by public authorities, by charitable organizations and by private groups, including many companies.

Service Learning: A teaching and learning strategy that integrates meaningful community service with instruction and reflection to enrich the learning experience, teach civic responsibility, and strengthen communities. As a teaching methodology, it falls under the philosophy of experiential education.

Social Sciences: A group of academic disciplines that study human aspects of the world. They differ from the arts and humanities in that the social sciences tend to emphasize the use of the scientific method in the study of humanity, including quantitative and qualitative methods.

Strategic Planning: A process of defining business strategy, or direction, and making decisions on allocating resources to pursue this strategy, including its capital and people. Various analysis techniques can be used in strategic planning, analysis of strengths, weaknesses, opportunities, and threats. The planning process usually involves developing a vision statement, goals, and objectives are outlined to meet those goals. Both short-term and long-term objectives can be identified.

Appendix C: Research Learning Center Modes of Operation
Research Learning Center Opinions of Program Roles: 2007 Survey

Compiled by: L. Welling and B. Becker
Reviewed by: D. Pavek, J. Marburger, L. Powers, S. Hejl, D. Shelly, J. Freilich, S. Yost, and RLC representatives at the January 2008 RLC Strategic planning meeting at Congaree National Park.

Objectives:

1. Clarify RLC operations for internal use and relationships with non-RLC park management.
2. Provide a summary that defines functional attributes of RLC operations for use in the logic model and the strategic plan. Such a description will help both existing and future RLCs determine and justify goals, strategies, and operations to fulfill the RLC Mission and better serve parks. The results should be presented as both as raw data and with some minor analysis to allow readers to draw their own conclusions about any patterns in the dataset.
3. Provide preliminary responses to various program elements that RLCs may or many not have in common.

Background:

Diversity among RLCs is an important and productive aspect of their character that allows each to uniquely fulfill the RLC mission under the special circumstances of facilities and priorities at the host park, under the talents and capabilities of the staff, and the realities of local partner and funding opportunities. However, it is critical that RLCs strive to achieve the RLC Mission in its entirety, regardless of individual RLC emphases and modes of operation.

It is also important to consider how various activities support the RLC mission and goals:

RLC Mission Statement:

To increase the effectiveness and communication of research and science results in the national parks through:

i. *Facilitating the use of parks for scientific inquiry*
ii. *Supporting science-informed decision making*
iii. *Communicating relevance and providing access to research knowledge*
iv. *Promoting resource stewardship through partnerships*

Methods:

1. A 17 question survey was completed by each of 17 RLC (see Table C-1); all RLCs responded to all questions. Any zeros reported on individual surveys were converted to ones. The questions explore importance, extent or amount of five general program areas: the four mission goals and administrative support. Because the survey instructions were not specific, we assumed that some RLCs reported values where they wanted to be, while others listed what they currently were doing. All centers evaluated themselves and were not evaluated by a single objective observer.
2. RLCs responded using a relative valuation or agreement scale of 1-10, with 1 the lowest or least and 10 as highest or most. The results are numbers of RLCs responding to various choices, so are immediately interpretable in terms of majorities and minorities.
3. No attempt was made to group individual RLCs based upon activities.

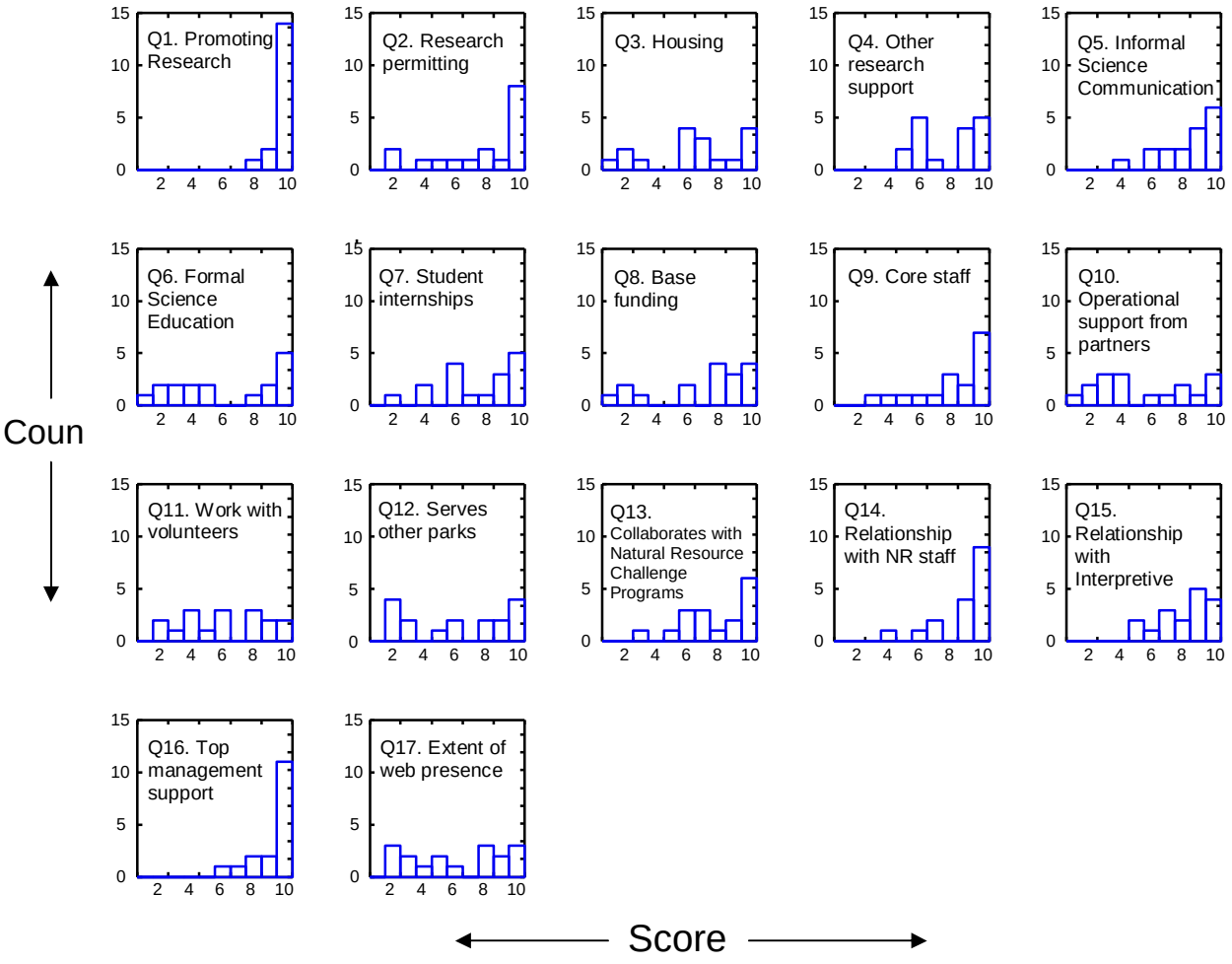
Table C-1: Research Learning Center questions for Strategic Planning survey submitted to 17 National Park Service Research Learning Center units targeting modes of operation for each individual learning center.

1. How important is promoting/facilitating research to your RLC operation?
2. To what extent is your RLC involved in research permitting for your park(s)?
3. How much effort/time/resources does your RLC commit to providing/maintaining housing for researchers and other partners ?
4. How much emphasis does your RLC place on providing other research support (e.g. computer access, wet lab, field support, etc.)?
5. To what extent does your RLC emphasize informal science communication (internal and external audiences)?
6. To what extent do you emphasize formal (curriculum-based) science education in your program?
7. To what extent does your RLC promote/support student internships in parks?
8. Rank the ONPS (park base) funding contribution to your RLC operation?
9. Rank the degree to which your RLC is operated by committed core staff (vs. collateral duty or shared positions with other park divisions or programs).
10. To what extent do you receive operational support from non-NPS partners?
11. To what extent do you work with volunteers (e.g. citizen science, bioblitzes, etc.)?
12. Rank the degree to which your RLC serves parks other than your host park?
13. To what extent do you collaborate with other natural resource programs (e.g. I&M; CESU; NRPC, etc)?
14. How strong is your relationship with park resources management staff?
15. How strong is your relationship with park interpretive staff?
16. To what extent do you have top management support?
17. How much of a web presence does your RLC have?

Results and Discussion:

Results from the completed questionnaires were graphed below (Figure C-1).

Figure C-1. Bar graphs of responses to questions 1-17.



Discussion of Results in Context of Individual RLC Goals:

Goal 1. Facilitating the use of parks for scientific inquiry

The majority of RLCs perform the key functions of promoting and facilitating research, providing support other than housing to researchers, and collaborating with other Natural Resource Challenge programs, which facilitates the use of parks for science.

1. All respondents agree (three rated as 8-9) to highly agree (fifteen rated as 10) that "promoting/facilitating research" is important to their RLC.

4. The majority of respondents (15) indicated that most of their emphasis is on providing research support other than housing. Two RLCs rated their emphasis as 4.

13. Most respondents (15) rated the extent that they collaborate with other natural resource programs (e.g., I&M, CESU, NRPC, etc.) as 5 or higher. One rated this as a 4 and another as a 2.

Goal 2. Supporting science-informed decision making

RLCs contribute to science-informed decisions and decision processes by having strong relationships with park resource management staff. Most RLCs use informal communication avenues to convey science information. About half of the RLCs extend their support to other parks in addition to the host park.

5. Most of the respondents (16) rated their emphasis on informal science communication (internal and external audiences) as 5 or more. One RLC rated their emphasis as 3.

12. Eight RLCs rated the extent that their RLC serves parks other than their host as 8 or higher. Three RLCs rated this as 4 to 6, and six rated it as 3 or less.

14. Many of the RLCs (13) rated the strength of their relationship with park resources management staff quite high as 8-10. Three rated their relationships as 5-6, and one rated it as a 4.

Goal 3. Communicating relevance and providing access to research knowledge

There are many ways of communicating and providing access to research knowledge.

Most of the RLCs promote/support student internships, and most have strong relationships with interpretive staff. About half of the RLCs highly emphasized formal science communication (curriculum-based). Over half of the RLCs felt that they have a large web presence.

6. Nine of the RLCs rated their emphasis on formal science communication (curriculum-based) as 5 or less. Eight RLCs rated their emphasis as 8 or higher.

7. Most of the RLCs (14) rated the extent that they promote/support student internships in parks as 5 or higher. Two RLCs rated this as a 4 and one as a 2.

15. Fifteen RLCs rated the strength of their relationship with park interpretive staff as 5 or higher; two rated the relationships as a 4.

17. Nine RLCs rated the amount of web presence for their RLC as 7 or higher; eight rated it as 6 or less.

Goal 4. Promoting resource stewardship through partnerships

Most of the RLCs have a large amount of effort/time/resources committed to providing/maintaining housing for researchers and other partners. Slightly less than half of the RLCs work a great amount with volunteers. Slightly more than half of the RLCs receive a large amount of operational support from non-NPS partners; the other half receive much less-to-no support.

3. Thirteen RLCs rated their effort/time/resources committed to providing/maintaining housing for researchers and other partners as 6 to 10. Four rated 0 to 3.

10. Nine RLCs rated the extent that they receive operational support from non-NPS partners as 3 or less; eight RLCs rated as 5 or higher.

11. Ten respondents rated the extent that they work with volunteers (e.g., citizen science, bioblitzes, etc.) as 6 or less. Seven rated it as 8 or higher.

Administrative Support (not a specified goal, but important)

All of the RLCs felt that they have a high level of top management support. Most of the RLCs are not run by staff as collateral duties. Just over half of the RLCs are completely responsible for issuing all research permits for their host park.

2. Eight respondents have 100% involvement in the park's research permitting; five RLCs rated their involvement in research permitting between 5 and 9, and two rated involvement as between 4 or 5. Two RLCs have no involvement in research permitting.

8. Eleven RLCs rated ONPS park base funding contribution to RLC function as 8 or higher. Two rated ONPS funding as 6, and four rated as three or less.

9. Fourteen respondents rated the degree as 5 or higher that their RLC is operated by committed core staff instead of collateral duty or shared positions with other park divisions or programs. Three rated it as four or less.

16. All RLCs felt that they have top management support, rating as 5 or higher.

Conclusions:

From diverse and varied beginnings, this cursory survey shows that it is the opinion of RLCs that they have much in common. As RLCs move forward developing a strategic plan, the results of this questionnaire provide details about RLC perceptions of their functioning in 2007, elements and activities for future focus, and potential, needed resources. While there is some diversity among RLCs, they appear to have much in common.

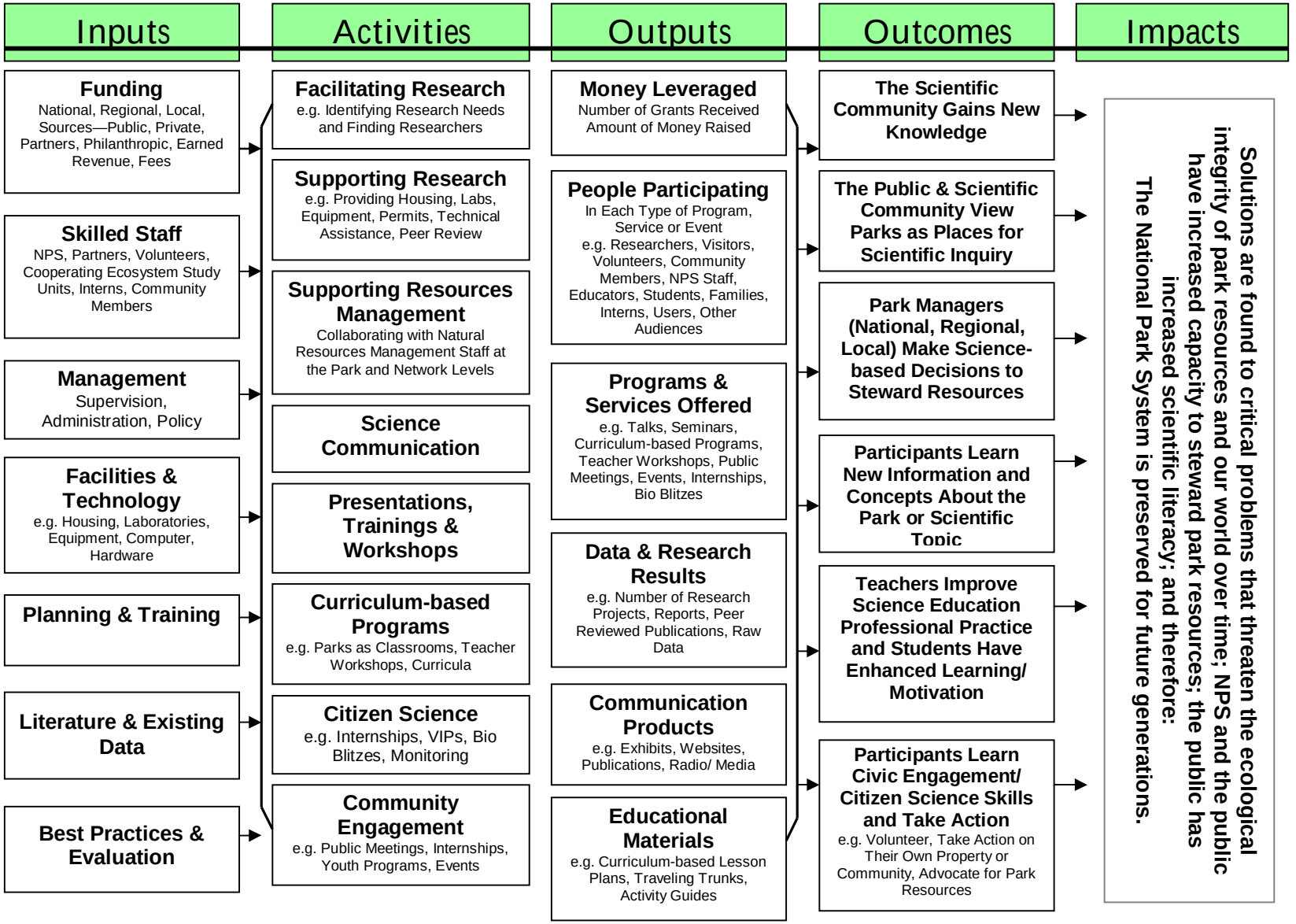
Suggestions:

1. Discussion needs to occur regarding whether all RLCs need to have significant programs in all four areas (Goals) of the mission.
2. Additional surveys should be considered in the future, and the questions should be vetted by a working group before going out as a survey.

Appendix D: Research Learning Center Logic Model

A logic model depicts the flow of materials and processes to produce the results desired by the organization or program. A logic model can be very useful to organize planning and analysis when designing the organization and its programs or when designing outcomes-based evaluations of programs. It can also be useful for describing organizations and programs (for example, in grant proposals).

National Park Service Research Learning Center Program Logic Model Draft 8/07



Works with Individual Park Units or Networks of Parks

(Inside Back Cover)

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(Back Cover)

Updated RLC Map Here

NPS Arrowhead

http://www.nature.nps.gov/learningcenters/