

Appendix A: The Sample of 80 in the State of America's National Parks

In 2006, Center for Park Research staff (at that time known as Center for State of the Parks) evaluated all existing national park units according to five criteria—ecosystems present, classification (e.g., national park, national monument, national seashore), historical epochs represented, visitation levels, and geography—in order to choose a subset of parks to evaluate that would represent the National Park System as a whole. Sampling practices indicated that a list of 128 parks could serve as a representative sample. Certain iconic parks and other parks of interest to the National Parks Conservation Association were added to the list, along with parks that the Center had already assessed or was in the process of assessing. The final total was 160. The 80 parks the Center for Park Research has assessed to date, upon which this report is based, represent half that list of 160, and comprise approximately 20 percent of the National Park System. They are listed in the following table.

<u>Park Name</u>	<u>Report Date</u>	<u>Natural Resources Overall Score</u>	<u>Cultural Resources Overall Score</u>
Adams National Historical Park	2001		72
Alcatraz Island (part of Golden Gate National Recreation Area)	2010		
Andersonville National Historic Site	2004		61
Andrew Johnson National Historic Site	2008		83
Apostle Islands National Lakeshore	2007	69	53
Appalachian National Scenic Trail	2010		
Appomattox Court House National Historical Park	2008	71	68
Assateague Island National Seashore	2007	75	58
Big Bend National Park	2003	62	46
Big Hole National Battlefield	2007	74	70
Big Thicket National Preserve	2005	69	42
Biscayne National Park	2006	58	48
Bryce Canyon National Park	2005	81	39
Cabrillo National Monument	2008	65	70
Canyonlands National Park	2004	75	49
Capitol Reef National Park	Unpublished	73	74
Carl Sandburg Home National Historic Site*	2009		78
Catoctin Mountain Park	2006	82	64
Channel Islands National Park	2008	59	63
Charles Pinckney National Historic Site	2008		82
Chesapeake and Ohio Canal National Historical Park	2004	57	57
Chickamauga & Chattanooga National Military Park	2009	75	75
Cowpens National Battlefield*	2010		76
Cumberland Island National Seashore	2009	74	55
Death Valley National Park	2005	67	71
Denali National Park and Preserve	2003	94	56

Effigy Mounds National Monument	2009	72	80
Fort Donelson National Battlefield*	2009		74
Fort Laramie National Historic Site	2004		65
Fort Necessity National Battlefield	2004		56
Fort Pulaski National Monument	2007	79	69
Fort Sumter National Monument	2008		74
Fort Union Trading Post National Historic Site	2006	66	71
Frederick Douglass National Historic Site	2003		57
Gateway National Recreation Area	2007	53	46
Glacier National Park	2002		52
Glacier Bay National Park and Preserve	2008	89	66
Grand Canyon National Park	2010	67	71
Great Basin National Park	2009	81	66
Great Smoky Mountains National Park	2004	62	52
Harper's Ferry National Historical Park	2009	75	83
Hawaii Volcanoes National Park	2008	60	65
Hopewell Furnace National Historic Site	2005		71
Indiana Dunes National Lakeshore	2007	58	60
Isle Royale National Park	2007	74	35
Joshua Tree National Park	2005	65	58
Keweenaw National Historical Park	2007		65
Kings Mountain National Military Park	2010	78	81
Knife River Indian Villages National Historic Site	2006	59	74
Lake Clark National Park and Preserve	2009	91	84
Lassen Volcanic National Park	2009	71	75
Lewis and Clark National Historic Trail	2006		
Lewis and Clark National Historical Park	2006	62	74
Little Bighorn Battlefield National Monument	2003	93	74
Longfellow National Historic Site	2005		72
Missouri National Recreational River	2006	59	51
Mojave National Preserve	2005	59	50

Muir Woods National Monument	2010	81	67
Nez Perce National Historical Park	2006	59	75
Ninety Six National Historic Site*	2010		68
Olympic National Park	2004	81	65
Pea Ridge National Military Park	2009	75	75
Pictured Rocks National Lakeshore	2007	69	55
Point Reyes National Seashore	2009	66	68
Redwood National and State Parks	2008	69	66
Rocky Mountain National Park	2002		67
Saint-Gaudens National Historic Site	2004		71
San Antonio Missions National Historical Park	2008		71
San Juan Island National Historical Park	2007	72	67
Santa Monica Mountains National Recreation Area	2008	62	74
Scotts Bluff National Monument	2009	70	67
Shenandoah National Park	2003	65	56
Shiloh National Military Park	2009	79	78
Sleeping Bear Dunes National Lakeshore	2007	73	60
Stones River National Battlefield*	2009		82
Vicksburg National Military Park*	2008		67
Virgin Islands National Park	2008	73	55
Virgin Islands Coral Reef National Monument (assessed with VIIS)			
Wilson's Creek National Battlefield	2009	72	77
Zion National Park	2005	82	54

Red Listings: Only Cultural Resources were assessed. Rocky Mountain National Park and Glacier National Park were assessed with an older natural resources methodology so natural resources data are not used in this report. Alcatraz Island was evaluated using the cultural resources methodology but was not scored as it is technically not a stand-alone park unit.

Green Listings: Natural Resources and Cultural Resources data were collected (for parks with an asterisk, natural resource data were collected but overall natural resource scores are not in the public report because a sufficient percentage of natural resource data was not available)

Blue Listings: These are trails; the Center described certain resource issues, but the information presented was not based on data typically collected to satisfy the assessment methodologies

What does the sample of 80 include?

The 394 units of the National Park System fall within 13 designations or classes (National Park Index 2009-2011):

- National Battlefield
- National Historical Park or Historic Site
- National Lakeshore
- National Memorial
- National Monument
- National Park
- National Parkway
- National Preserve
- National Scenic or Recreational River
- National Recreation Area
- National Scenic Trail
- National Seashore
- Other

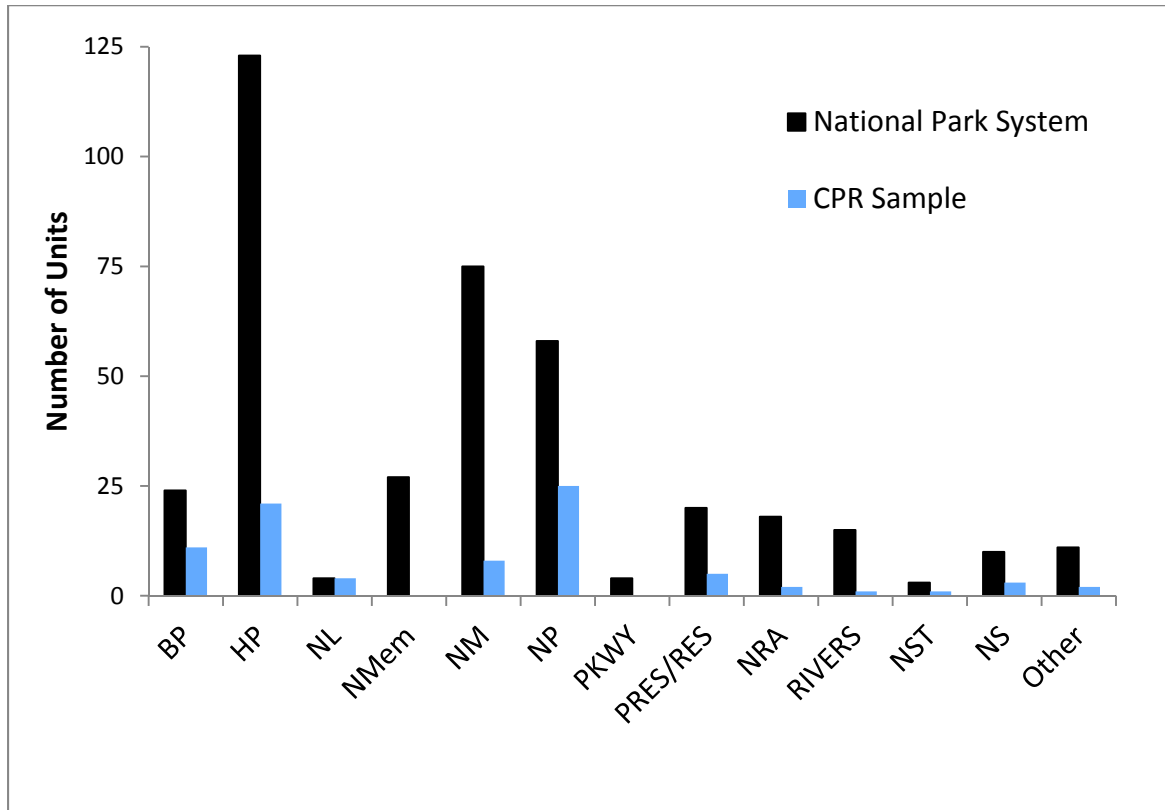


Figure 1. National park system designations and the sample.

The largest designation, in terms of number of units, is the historical parks class, which includes the national historical parks, national historic sites, and one international historic site. These 123 historical parks comprise nearly one-third (31 percent) of the entire park system. The second largest designation is the national monuments, totaling 74 units (19 percent), followed by the 58 national parks (15 percent). Of the 13 major designations outlined by the National Park Index (2009-2011), this report includes parks representing eleven of those major categories (Figure 1). The only park classes not included in the Center for Park Research sample of parks are national memorials and national parkways. With regards to national scenic trails, the Center did complete a resource study of the Appalachian National Scenic Trail, although those resources were not scored using the Center’s assessment methodology. The same is true for the Lewis and Clark National Historic Trail, which is grouped under “Other.” Although the Center’s sample of 80 park units includes 11 of the 13 designations, it does not provide a proportional representation of the parks within each class; representation for each class was variable (Figure 2). Overall, the Center considers its sample to represent fairly the types of parks within the National Park System.

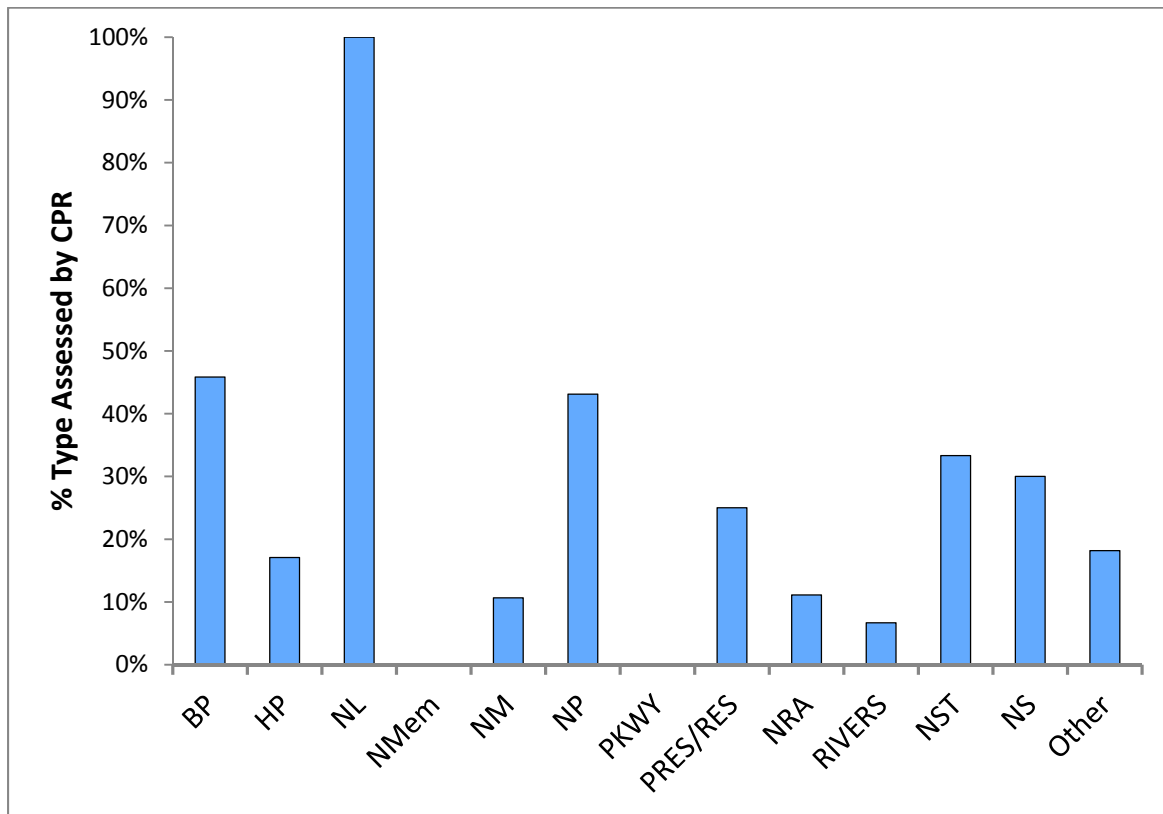


Figure 2. The classes of parks in the sample.

The sample also reflects the geographical diversity across the system. The National Park Service is divided into seven administrative regions, and the Center evaluated parks from each. The sample includes three parks from the Alaska Region, 19 from the Pacific West Region, 12 from the Intermountain Region, 13 from the Midwest Region, 19 from the Southeast Region, four from the National Capitol Region, and nine from the Northeast Region.

Appendix B: Resource Assessment Process

Two comprehensive, peer-reviewed methodologies—one for assessing natural resource conditions and one for assessing cultural resource conditions—form the core of the assessment process developed under the State of the Parks Program. These methodologies provide consistent, reproducible frameworks for examining and rating resource conditions. Goals of the assessment process include identifying resource condition, identifying information gaps related to resource condition, and considering resource management as it relates to condition.

Researchers interview National Park Service staff and synthesize existing information from the scientific literature, National Park Service and other agency documents, and databases to determine resource condition. No new data are generated during the assessment process. Both methodologies, the spreadsheet used in natural resource assessments, and the list of performance indicator questions used in cultural resource assessments are available at www.npca.org/stateoftheparks/. Summaries of the processes are provided below.

From the information gathered on resources, the Center's staff prepares a public report, which is a synthesis of park resource conditions and a discussion of resource threats and protection. All of the published reports are available at www.npca.org/stateoftheparks/ under "Read Our Reports."

Natural Resources Methodology

The natural resources assessment approach was developed using conceptual and other features from protocols that included those of the Heinz Center, The Nature Conservancy, World Wildlife Fund, and IUCN. In brief, it involves the evaluation of impacts (principally human-caused) on park ecosystem(s). The assessments rely on existing (published and unpublished) background information and environmental and ecological data to describe natural resource conditions in their unique context. The assessment criteria address those ecosystem attributes, environmental metrics, and biotic stressors that are indicative of biotic and ecosystem integrity. Researchers collect information using a spreadsheet that includes metrics for Ecosystem Extent and Function, Species Composition and Condition, Biotic Impacts and Stressors, and Environmental Quality. Over 120 discrete elements are evaluated and rated based on the researcher's best professional judgment given the information available; researchers must justify their score with pertinent information. The guidelines for assigning a rating are that, for a given element, data indicate or observation(s) are made, or persuasive inferential evidence exists to the effect of: 3 = No net loss, degradation, negative change, or alteration noted; 2 = Limited, isolated, contained, or restored loss, degradation, negative change, or alteration noted; 1 = Pronounced, widespread, uncontained, and/or key species/critical process degradation, negative change, or alteration noted; and, 0 = Complete and irreparable loss, absolute degradation, negative change, or alteration noted. In the event that insufficient information or no data or persuasive evidence exist to make a reasonable determination, the level is marked as "Insufficient" or "No Data." In the event the ratings element is not a feature or is not relevant to the site assessment, the level is marked as "Not Applicable." To assign a score for one of the four categories mentioned above, individual metrics in that category are averaged. Overall condition is described by averaging the four categories. Ranges of scores are provided with a

descriptive rating: 0 – 35 is “critical”; 36 – 60 is “poor”; 61 – 80 is “fair”; 81 – 90 is “good”; and, 91 – 100 is “excellent.”

Researchers also provide a report that discusses background information on the park to explain and give context to the resources; this report more fully details the condition of natural resources, using the worksheet elements as a framework. A standard report outline is available in the “Natural Resources Methodology” document at the website listed above.

Cultural Resources Methodology

The cultural resources assessment methodology is based on the National Park Service’s *Director’s Order #28* and its counterpart, the *Cultural Resource Management Guideline*, as well as federal legislation and various other agency policies. The methodology requires researchers to evaluate the parks’ cultural resource conditions against the desired conditions outlined in National Park Service guidance. Researchers evaluate six resource types: history, archaeological resources, cultural landscapes, historic structures, museum and archival collections, and ethnography. Sources are used to answer performance indicator questions about a park’s cultural resources. These sources include: databases (e.g., Archaeological Sites Management Information System, List of Classified Structures, Cultural Landscape Inventory); National Register of Historic Places activity; historical studies and other secondary sources; required and specialized plans (e.g., general management plan, resource management plan, collections management plan, historic structure report, cultural landscape report, administrative history, ethnographic overview and assessment, archaeological overview and assessment, etc.); Government Performance and Results Act goals; annual performance or strategic plans; Operations Formula System and Project Management Information System requests for projects and operational increases; interviews with park, program, and regional staff; and park programs, materials, and exhibits. There are 90 performance indicator questions. Each performance indicator question is scored on a scale of 0-10 points; researchers must justify the score of each performance indicator based on the information available and their best professional judgment. If a resource type is not represented at a park, it is scored as “Not Applicable.” To assign a score for one of the six resource types mentioned above, performance indicator questions in that resource type are averaged. Overall condition is described by averaging the six resource types. Ranges of scores are provided with a descriptive rating: 0 – 35 is “critical”; 36 – 60 is “poor”; 61 – 80 is “fair”; 81 – 90 is “good”; and, 91 – 100 is “excellent.”

Researchers also provide a report that discusses background information on the park to explain and give context to the resources; this report more fully details the condition of cultural resources, using the performance indicator questions as a framework. A standard report outline is available in the “Cultural Resources Methodology” document at the website listed above.

Data Collected

As with all assessment methodologies, these methodologies have certain underlying limitations associated with the data collected. First, the data collected encompass the information available at that time for the topics considered. The data thus provide point-in-time information on park resources. In addition, data may have been collected in previous years. This is not as much of an issue for relatively

static resources, but for dynamic resources, the data may be the best available but they may or may not best represent current conditions. That judgment would be made after consulting with knowledgeable park staff.

Data available can also be fairly disparate, and they might not always have been collected in the dedicated manner demanded for in-depth analysis. This results in an amount of uncertainty being associated with the data. There is less reliance on in-depth analysis and more on straightforward summary and professional judgment in the methodologies because of this situation. This data issue occurs across resource assessment methodologies. Data gaps, which often exist in the source information, are also present for given topics. Researchers' findings on worksheets and performance indicator questions address this by using "Insufficient" or "No Data" (IND) along with any necessary descriptions of the situation.

Finally, the methodologies employed by the Center have changed over time (see the park list in Appendix A to determine which methodologies were used in each park). The natural resources methodology was revamped after the initial four assessments conducted by the Center. Any natural resources data collected for these initial assessments are not used in this report. One of these initial parks (Point Reyes) was assessed at a later date using the current methodology and those data are used. Additional minor changes to metrics have occurred since the methodology was revamped, but these have been accounted for in this report.

The cultural resources methodology changed after the initial assessments (Adams, Glacier, Rocky Mountain, Little Bighorn, Shenandoah, Frederick Douglass, Denali, Olympic). While Point Reyes was one of these initial assessments, the data from its subsequent re-assessment in 2009 are used in this report. These first assessments covered the same topics in five of the disciplines (history was not included in the methodology) as the methodology that was subsequently developed, and because overall discipline scores are on the same scale, results from those assessments can be used in discussion of overall conditions. The specific questions were different and were scored differently, however, so those assessments are not included in discussions of specific indicator questions. The assessment of Great Smoky Mountains National Park was completed after the methodology was changed but before history was added as a topic to the performance indicator questions; those data are used in this report. Additional minor changes to performance indicator questions have occurred since the methodology was revised but these have been accounted for in this report.

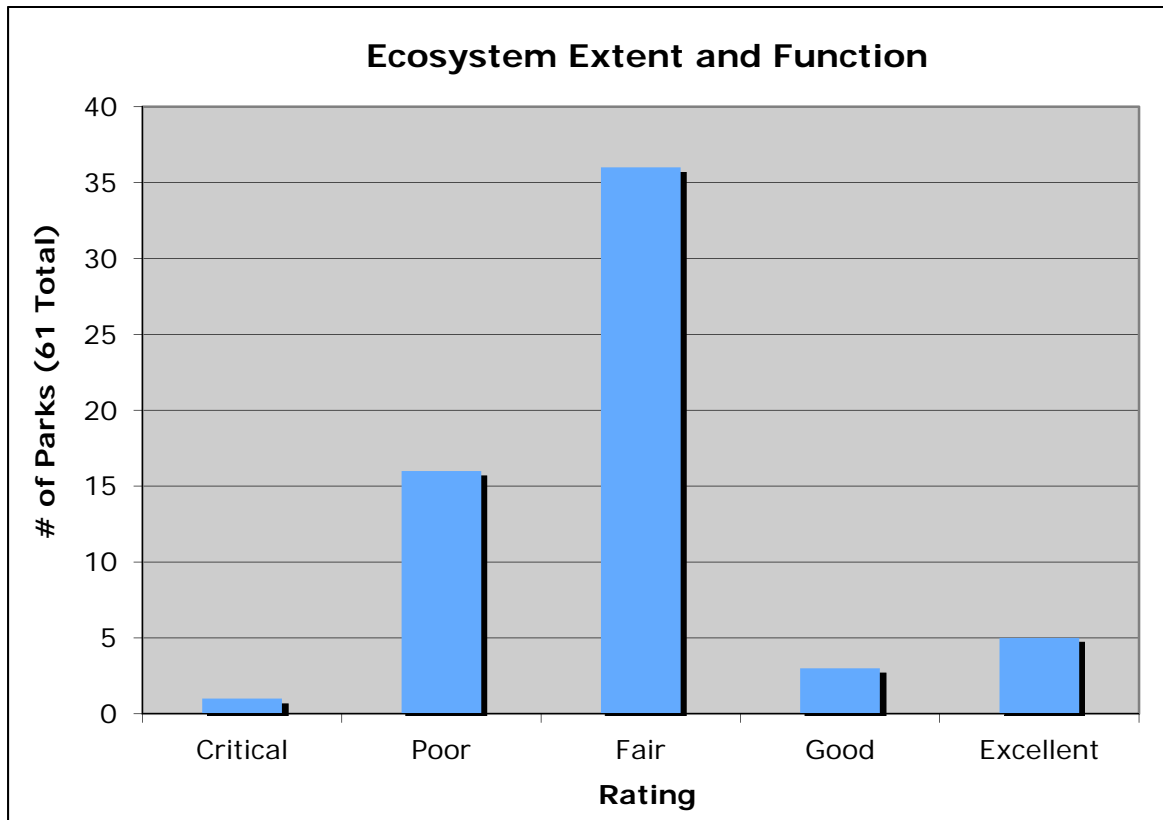
Public Report Process

As noted above, the reports on resources generated using the two methodologies are combined and summarized into a public report, which is written in a manner that is accessible to the non-technical reader. The reports, in general, cover certain park statistics and features, an overview of assessment findings, the resource ratings, key stories (including threats to resources), and resource management highlights. Because of their summary nature and the target audience, these public reports do not go into great detail on the limitations of the data used, other than to indicate what percentage of total information required by the methodologies was available. Relevant National Park Service staff review the public reports for accuracy. Upon publication, the public reports are distributed to the National Park

Service, members of Congress, stakeholders, the media, and any other interested parties in order to increase awareness of the park, its challenges, and its successes.

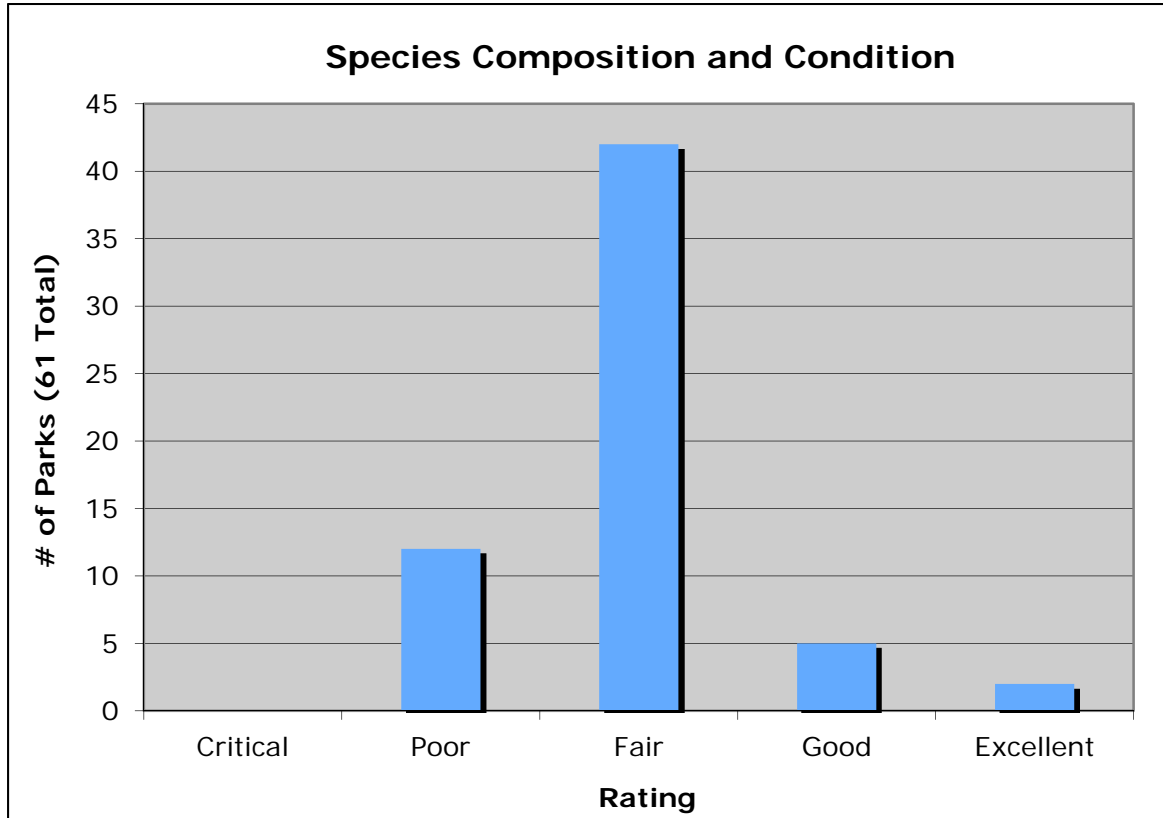
Appendix C: Natural Resources Assessments: Categories Analysis

The parks included in natural resources assessments can be found in Appendix A. The results of the Center’s research showed that the natural resources in the assessed parks predominantly exhibited “fair” condition overall. Overall condition was determined after examining a broad range of indicators exploring aspects of ecosystem and environmental condition; the indicators were grouped under four categories, Ecosystem Extent and Function, Species Composition and Condition, Environmental Quality, and Biotic Impacts and Stressors. The condition and health of park ecosystems, as quantified through the Ecosystem Extent and Function and the Species Composition and Condition indicators, mirrored the condition of overall park natural resources. The largest proportion of parks in the sample (59 percent) exhibited “fair” resource condition with respect to ecosystem extent and function. The next largest class (26 percent) demonstrated “poor” ecosystem condition. Only one park (2 percent of the sample) had aspects of ecosystem extent and function deemed to be in “critical” condition. The remaining 13 percent of the sample were parks showing ecosystem condition to be in either “good” or “excellent” condition.

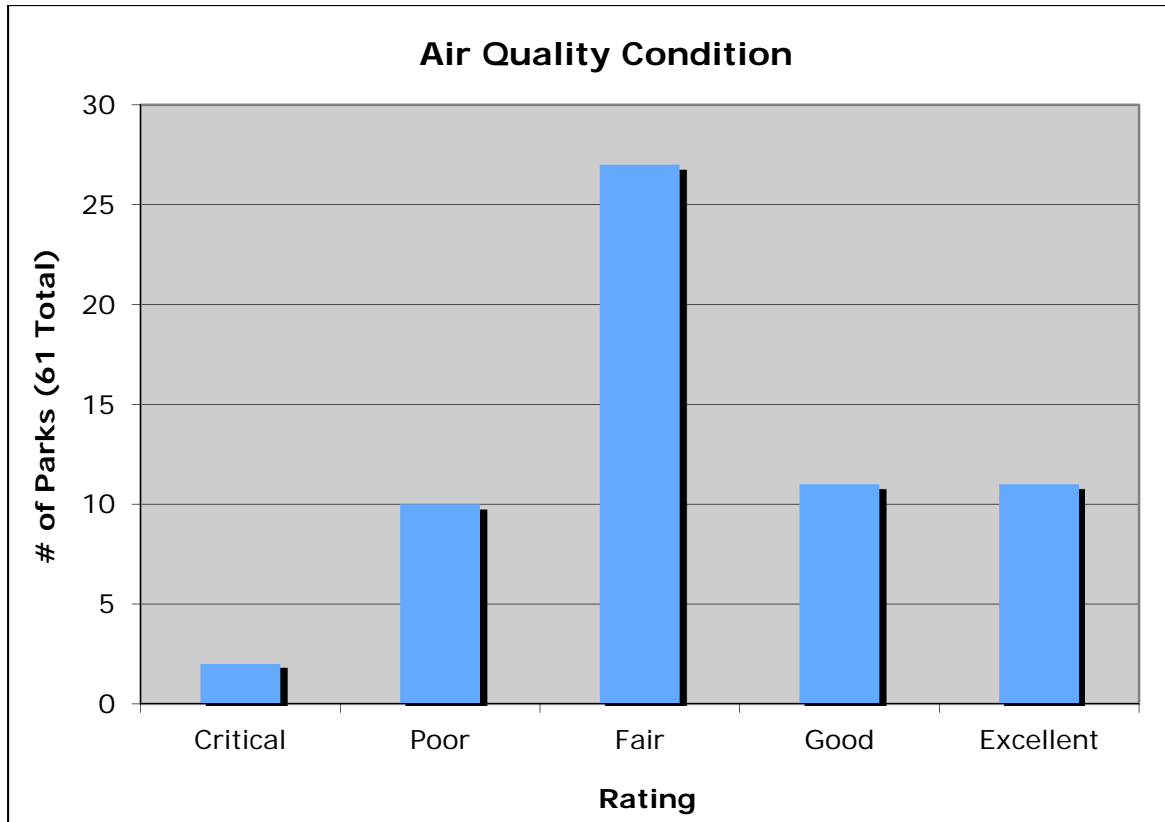


Another dimension of the condition of park ecosystems examined using the natural resources methodology explored the condition of ecosystems as expressed by the composition and condition of native plant and animal species. This class of indicators, referred to as Species Composition and Condition, synthesized data and information regarding native species and the function of those species within a broader ecological context. The summary of this indicator class across the park assessments,

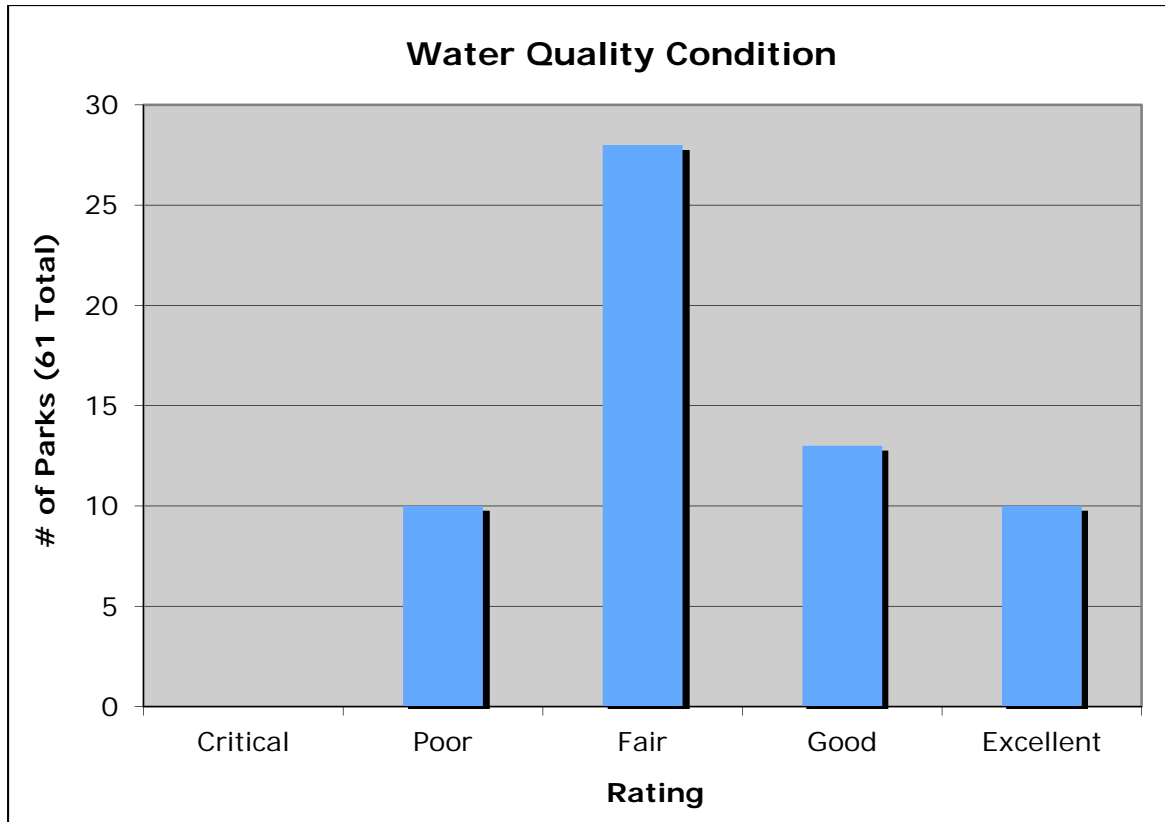
shown below, strongly resembled the results of ecosystem extent and function. As above, the largest percent of parks (69 percent) had “fair” classifications; the next largest class (20 percent) exhibited “poor” condition. The remaining parks in the sample (11 percent) were either “good” or “excellent” with respect to species composition and condition.



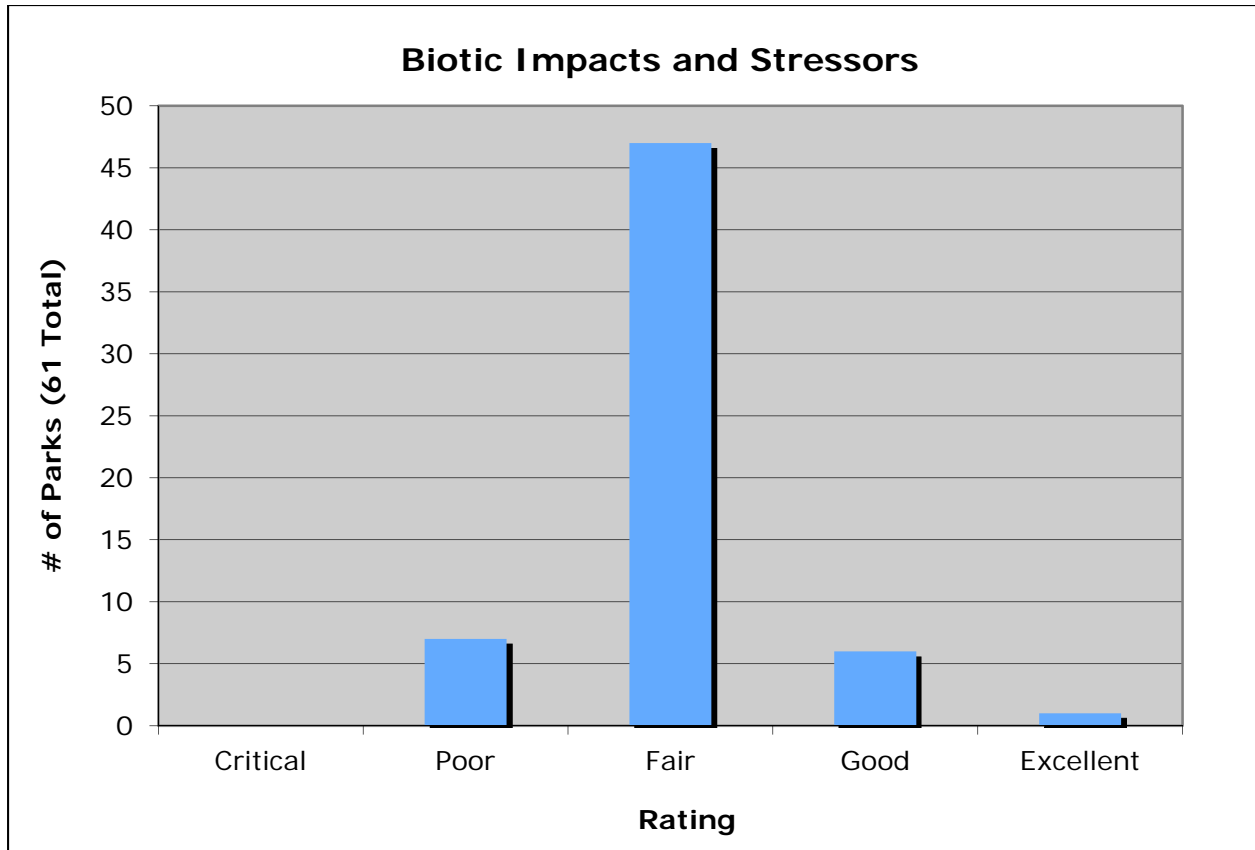
The results of the research completed by the Center consistently highlighted resource concerns from the perspective of ecosystem condition and function. Results for indicators of environmental quality generally exhibited better condition. In particular, while air and water resources in the parks assessed demonstrated an overall “fair” level, these two measures of environmental quality also had a larger proportion of parks showing both “good” and even “excellent” resource conditions. Specifically, for air resources, 3 percent of parks had air resources deemed to be in “critical” condition, while 16 and 44 percent of the park sample were categorized as “poor” or “fair,” respectively. And while 64 percent of the sample had air in “fair” or worse condition, the remainder of the sample comprised parks with either “good” or even “excellent” condition.



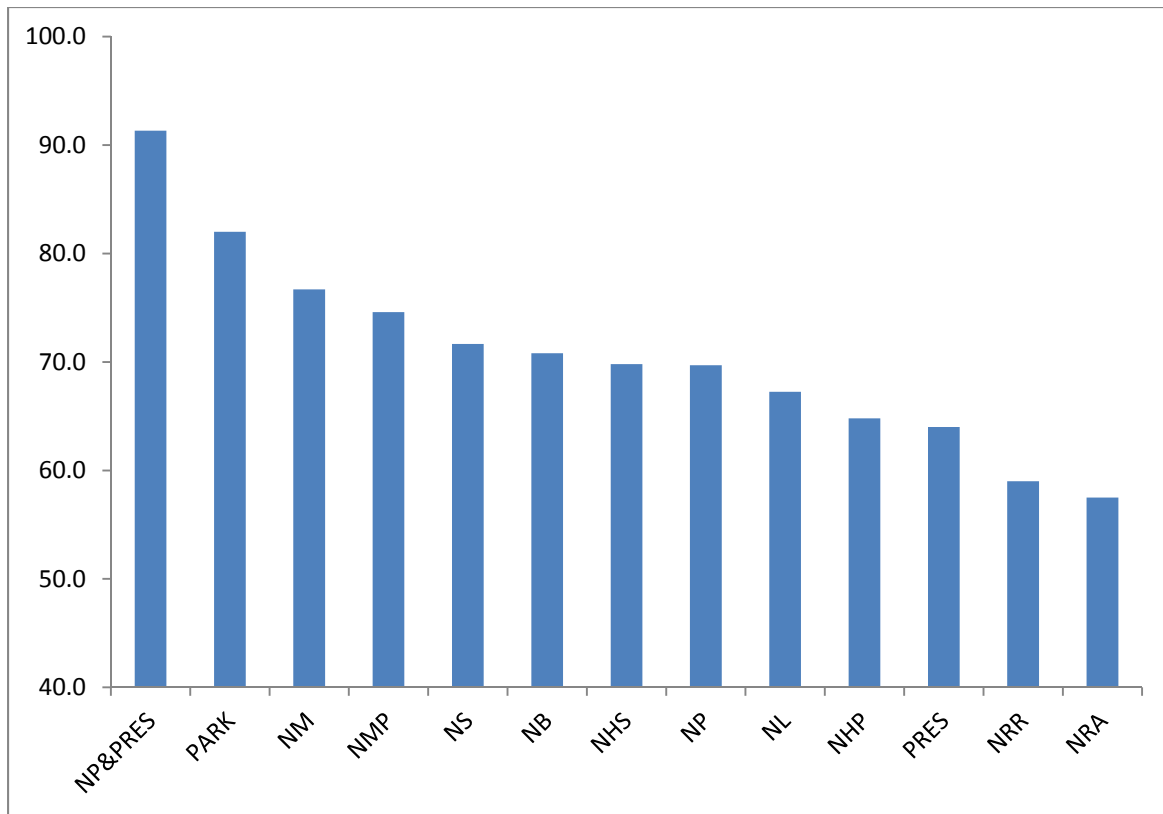
Water resources in national parks had an overall scoring distribution similar to that for air resources. The majority of the sample (62 percent) was deemed to show “fair” (46 percent) or “poor” (16 percent) condition. On the other end of the spectrum, though, 37 percent of the sample parks had water resources in either “good” (21 percent) or “excellent” (16 percent) condition.



Another dimension of environmental quality measured by the research methodology explored the condition of biotic impacts and stressors, or aspects of environmental quality, and how those directly impact the condition of park plant and animal species. The research results pertaining to biotic impacts and stressors showed that the majority (77 percent) of parks assessed were in “fair” condition; of the remainder, nearly equal proportions were in “poor” (11 percent) and “good” (10 percent) condition. Only 2 percent of assessed parks exhibited “excellent” condition.



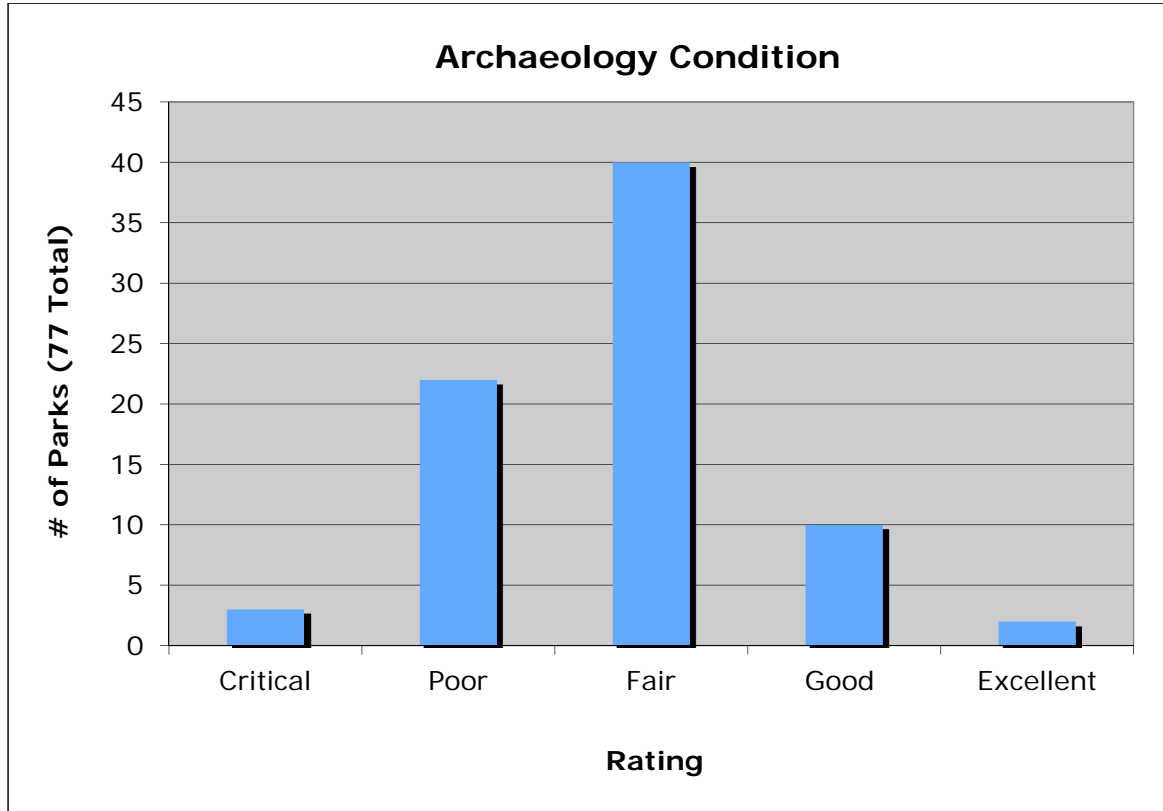
There are several designations for units of the National Park System, each with a specific focus or criteria and management objectives. Some designations signal preservation of a single resource or specific type of resource, such as an important battlefield or a house; other designations indicate the unit's purpose is to preserve and interpret a natural and cultural landscape with an array of resources. The results of the Center's research showed that condition of natural resources across the park system varied somewhat with the park designation.



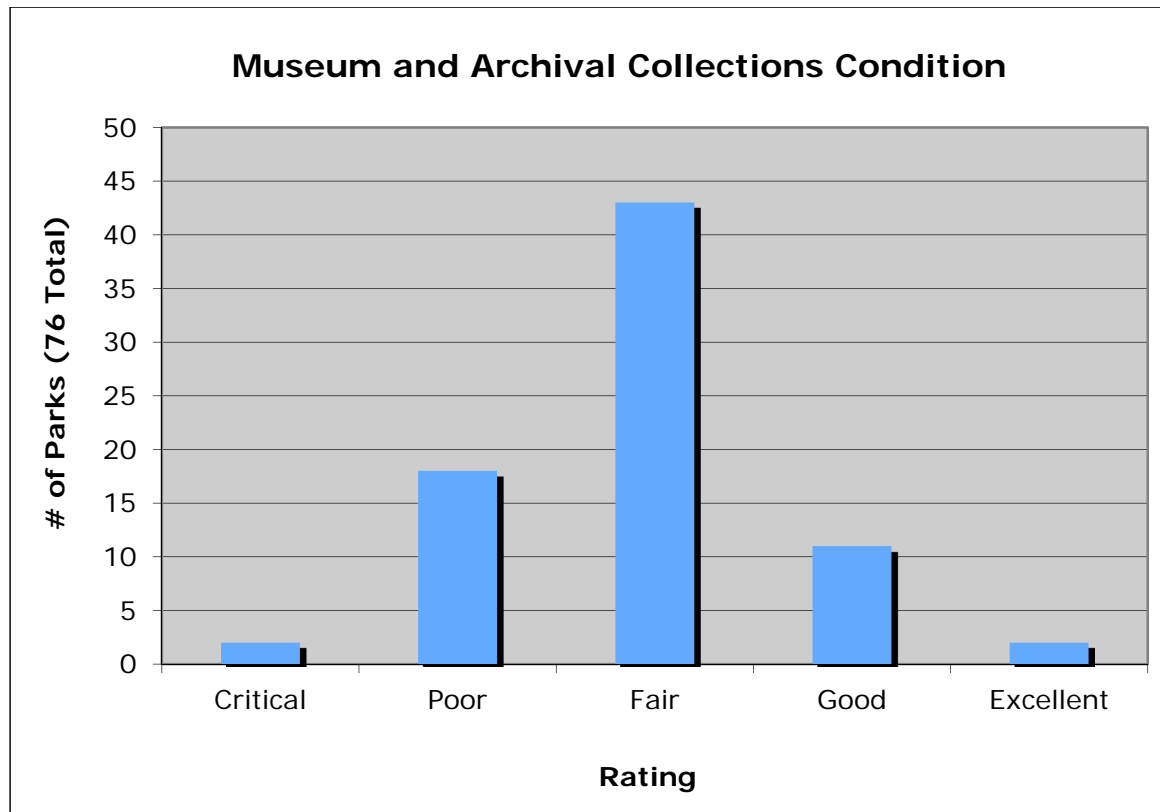
The highest average conditions of natural resources in the sample were observed in three Alaskan parks designated National Park and Preserve. Natural resources in these three parks were estimated to be in “excellent” condition. Catoclin Mountain Park in Maryland stands alone in the “Park” designation, with overall resources in “good” condition. From there, the condition of natural resources declines to “fair,” and the fair classification applies across most of the other park designations. The recreational designations (recreational river, recreational area), which included three parks, were designations with the lowest natural resource condition. From this summary, a few other relevant points stand out. First, the majority of the park system, in terms of park designation, shows a relatively narrow range of natural resource condition. The average score of National Monuments in the sample was 77, while the mean score for National Parks was 70. The National Historical Parks and National Preserves from the sample had scores of 65 and 64, respectively. Sample sizes for each of the groups were generally small ($N < 6$), except the national park (NP) class, which had $N = 19$. These results indicate that, for the majority of parks, the designation (and by extension, the motivation for creation) has little impact on the condition of natural resources. Most parks exhibit a relatively consistent condition of natural resources. Only the national park and preserve units, which were carved out of large areas of relatively pristine Alaska wilderness, exhibited “excellent” resource condition, while the natural resources in units with more of a recreation designation, which can allow more modified lands to be incorporated into the system and a greater range of activities on those lands after establishment, exhibited the worst condition.

Appendix D: Cultural Resources Assessments: Resource Type Analysis

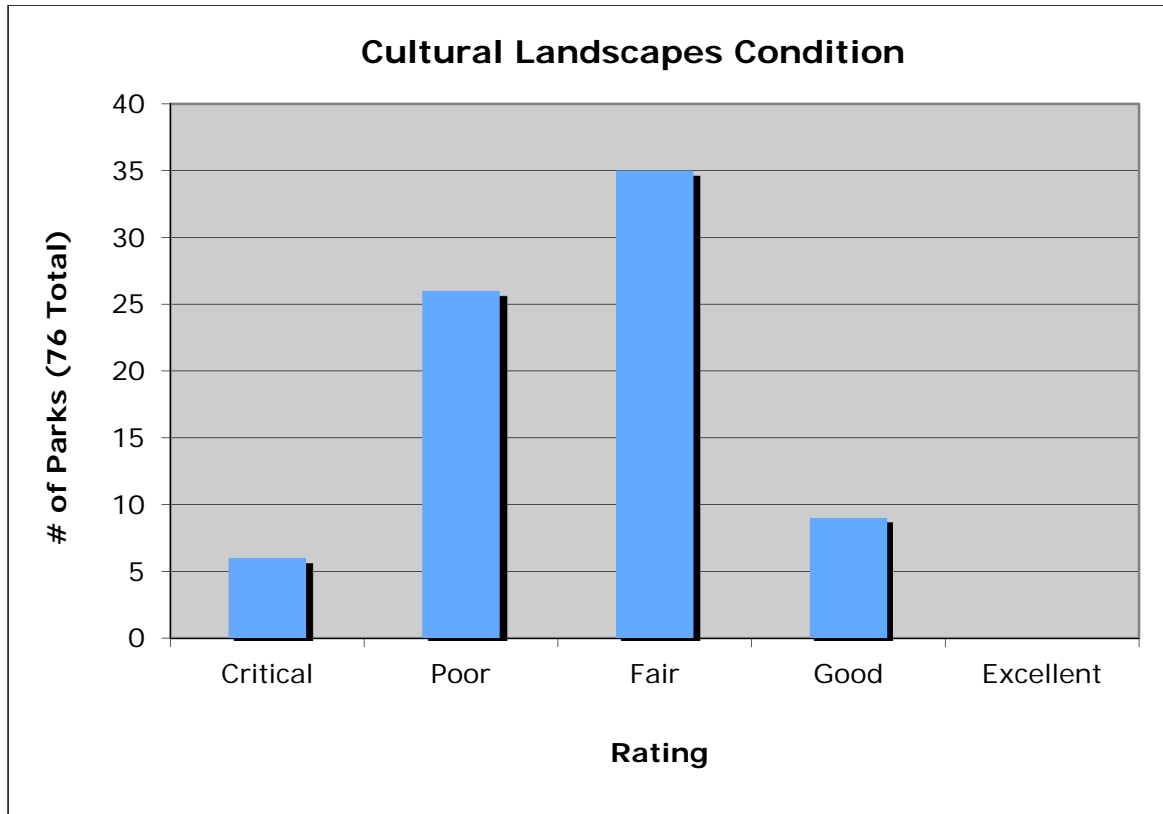
The overall condition ratings for the six cultural resource types assessed by the Center are presented below. The distribution of ratings is fairly consistent with the combined overall scores, and shows a strong similarity between resource types.



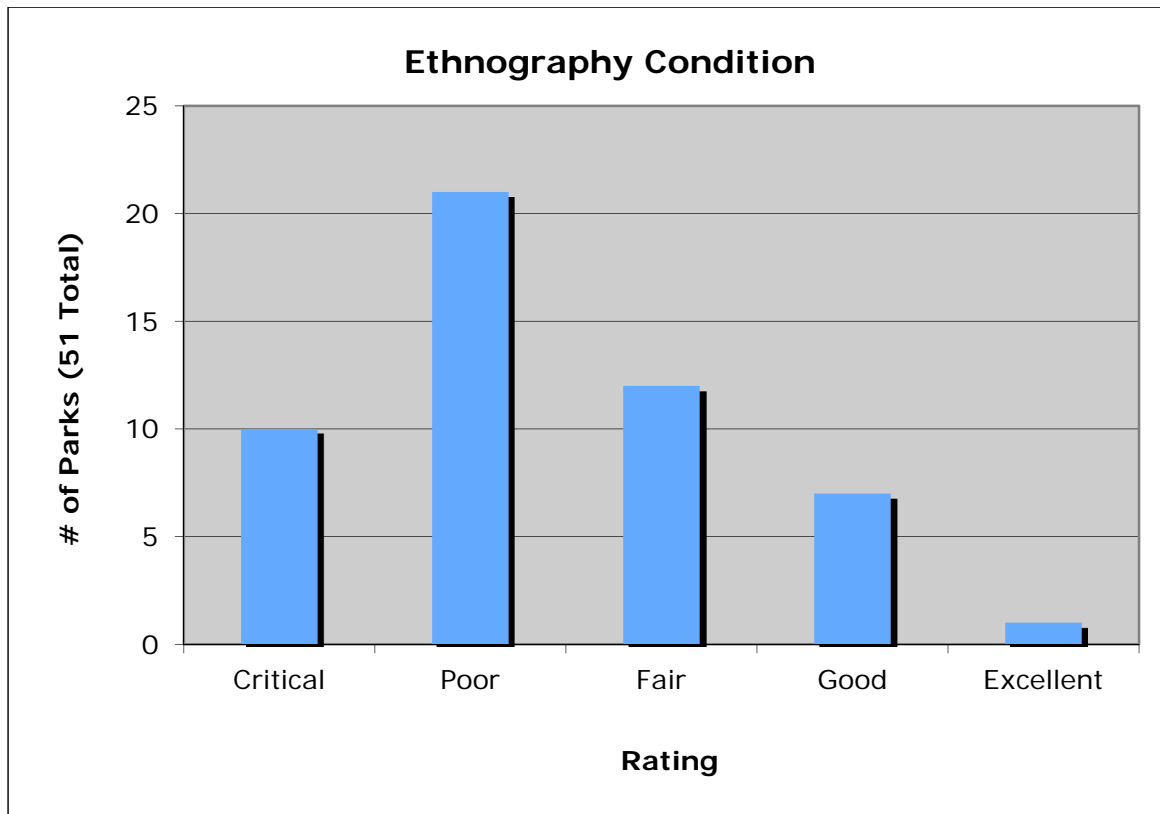
In assessing the condition of archaeological resources, the methodology looks at the extent and completeness of archaeological research and documentation in the park unit; the park's success in protecting resources from looting, vandalism, and inadvertent damage; whether plans and staff are in place to make progress toward goals for archaeological resources; and whether these resources are part of the park's interpretation programs. All of the sample parks with cultural resource programs had archaeology programs, although in some cases there is no archaeologist on staff at the park level and no current research in archaeology is being done. More than half (40 out of 77) of the sample parks scored a "Fair" rating; "Fair" and "Poor" ratings combined accounted for 80 percent of the park units in the sample. Only 16 percent of the parks in the sample were rated "Good" or "Excellent."



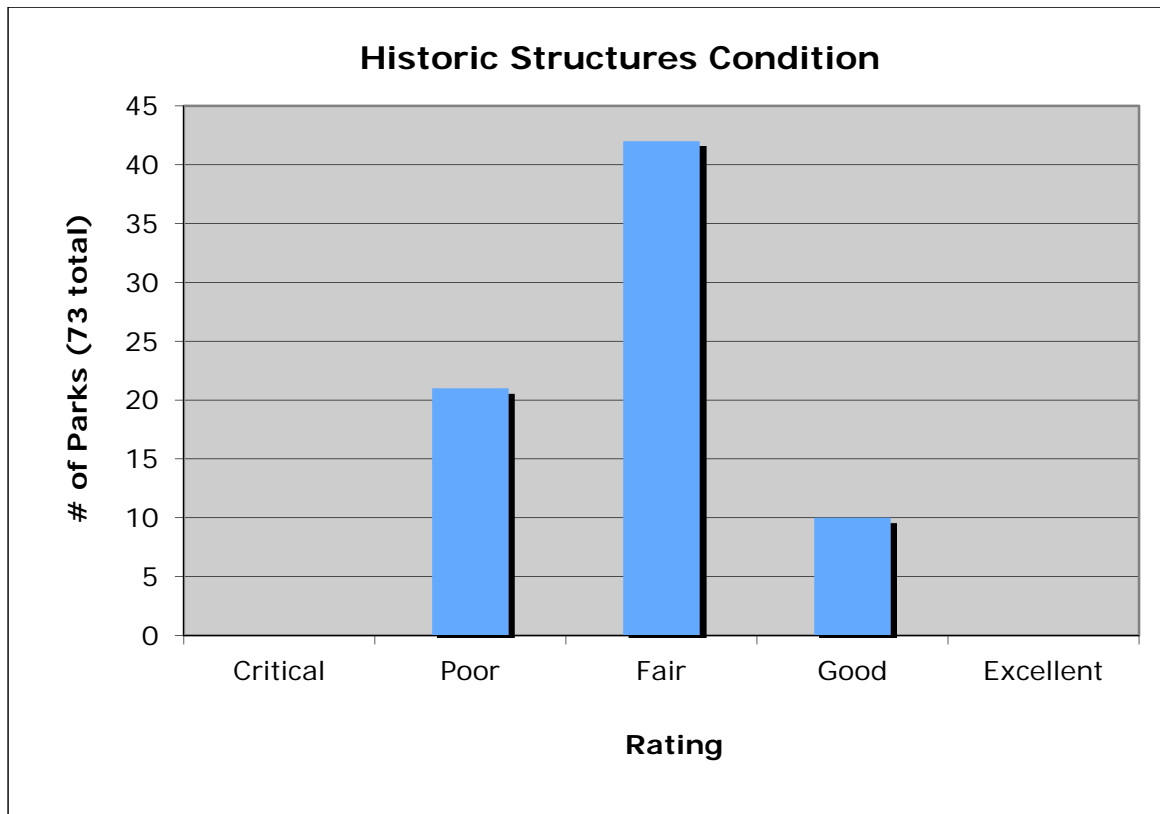
In assessing the condition of Museum and Archival Collections, Center researchers consider the condition of artifacts and archives themselves, whether storage and exhibit facilities meet National Park Service guidelines, how much of the collection is catalogued and whether it is available to researchers and the public, whether staff are available to care for the collections, and whether required reports and inventories are up-to-date. Many of the artifacts in park collections were in poor condition when the park received them, and a park was not penalized for that in the assessment, which looks at the care given to the artifact since it came into the collection. All but one of the 77 parks in the sample group have museum and archival collections, and of that number, 11 parks (14 percent) were rated in “Good” or “Excellent” condition. Eighty percent were rated in “Fair” or “Poor” condition, and two park units had collections considered to be in “Critical” condition. One of the parks whose collections were rated “Critical” had none of the collection items catalogued, no professional staff available to do the cataloguing, and there was no designated storage for the collections. At the other park with collections in “Critical” condition, most of the collections had not been catalogued, valuable collections items could not be located, collections records were missing, and there was no designated storage for the collections.



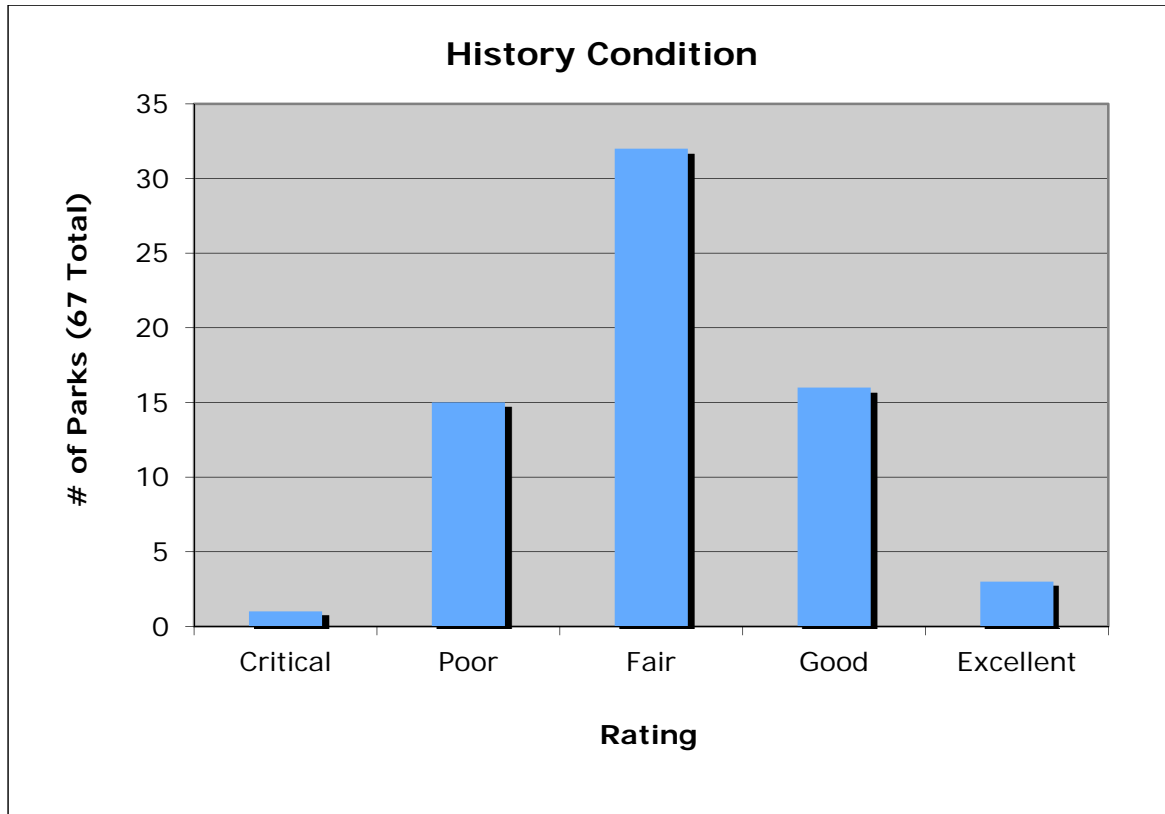
The Cultural Landscape assessment looks for identification and documentation of cultural landscapes in a park unit, whether staff with appropriate expertise are available to provide planning, restoration, and maintenance guidance, and how the landscapes are used and interpreted in park programs. Seventy-six park units in the sample group had identified cultural landscapes. Of that number, only nine park units (12 percent) scored a rating of “Good” for the condition of their cultural landscapes. Sixty-one park units (80 percent) were rated “Fair” or “Poor,” and six park units received a “Critical” rating. Cultural landscapes in “Critical” condition have no documentation and are threatened by park development, visitor use, fire, and changes to vegetation. In some cases, irreparable damage is occurring due to lack of understanding of the significance of the cultural landscape.



Factors considered in the assessment for Ethnography include the status of research on groups of people who may have had traditional associations with the land and resources now incorporated into the park unit, communication with the descendants of those groups, studies of how they made use of park resources, staff training, and interpretation of ethnographic resources. Ethnography as an area of cultural resources management in the National Park System dates back to the 1980s, but many park units have not established ethnography programs. Of the 77 parks in our sample group, only 51 had an ethnography program that could be evaluated. Eight park units were rated “Good” or “Excellent,” 33 were rated “Fair” or “Poor,” and ten were found to have ethnographic resources in “Critical” condition. Critical conditions were found at parks where traditionally associated people are known in the community, yet little to no work has been done to establish relationships, to research their connections to the park and its resources, or to include them in the park’s interpretive themes.



The concepts of historic structure preservation and the elements required for proper care have been long established, yet the condition of the historic structures in our sample group of park units suggest there are some serious problems preventing the National Park Service from achieving success in the care of these highly visible resources. The Center’s assessment methodology considers whether the required documentation of structures is complete and up-to-date, whether the park has fulfilled the requirements of the National Historic Preservation Act in evaluating and nominating historic structures to the National Register of Historic Places, to what extent historic structures are used and interpreted in park programs, and whether qualified staff are available to guide the preservation and maintenance of the structures. Of the 73 park units in our sample group with historic structures, none scored a rating of “Excellent” for the condition of these resources, and only ten units (14 percent) received a rating of “Good.” Eighty-six percent of our sample scored only “Fair” or “Poor.” While none of our sample park units received a “Critical” rating, this suggests that the goal of the historic structures program is set only high enough to keep these resources in a minimal state of preservation rather than in optimal condition for full use and interpretation.



Assessment of the History program in a park unit focuses on whether historical research is up-to-date and comprehensive, and whether it is used to inform planning, management, and interpretation for visitors to the park. The History component of the methodology was added after the Center’s assessment program had been under way for two years; therefore, History scores are available for 67 of the parks in our sample group. Nineteen of 67 park units (28 percent) scored a rating of “Excellent” or “Good” for History. Nearly half the units (32) were rated “Fair,” 15 were considered to have History resources in “Poor” condition, and one park unit was scored at “Critical.”