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Harpers Ferry Center staff spent two weeks developing exhibits that would showcase the national parks and natural protected areas of Panamá. Left to right: Dionora Víquez (Executive Director, Parque Natural Metropolitano), Mark Johnson (NPS Wayside Planner), and Dave McLean (NPS Senior Exhibit Designer).

In This Issue

Exhibit Concepts for Parque Natural Metropolitano

HFC staff provide technical assistance in Panamá

In December 2005, the Park Flight Migratory Bird Program and the NPS Office of International Affairs requested the technical assistance of an exhibit planner and exhibit designer to evaluate a large abandoned concrete building located in Parque Natural Metropolitano, in the Ancón-Balboa district of Panamá City, Republic of Panamá.

This 655-acre natural park is located within the city limits of the capital of the Republic, just 15 minutes by taxi from the Pacific terminus of the Panama Canal and the booming downtown financial district. First set aside as a natural park in 1974, Parque Natural Metropolitano (PNM) is an important part of a biological corridor of protected areas along the shores of the Panama Canal that both preserve mature rainforests and assure that enough of Panamá's 200-plus inches of annual rainfall flow into Gatún Lake to op-

Above: "Bldg-418, Engine Test Building," a 10,000-square-foot facility built by the U.S. Army Air Corps in 1940 to test aircraft engines and propellers under tropical conditions. Left: Central hall entrance. Johnson and McLean were tasked to develop exhibit concepts for this 165-foot-long central hallway and two adjacent 80-foot-long chambers.

erate the Canal. The park provides habitat for many species of animals and birds that require large forest areas. PNM is also the easiest place for Panamanians of modest means and school groups with limited travel budgets to experience some of the biological riches bestowed by nature on their country.

The Empty Building

In 1940—in one part of what is today Parque Natural Metropolitano—the U.S. military built a 10,000-square-foot facility to test aircraft engines and propellers under tropical conditions of extreme heat and high humidity. Today Panamanians call it "El Castillo" (the Castle). Its stark, 18-inch-thick concrete walls, and its eight square towers remind some people of the Alhambra Castle in Spain. As a part of Albrook Airfield in the (former) Canal Zone, "Bldg-418, Engine Test Building" allowed the U.S. Army Air Corps to perform research and development on warplanes that would be used in the tropical Pacific during World War II. The managers at Parque Natural Metropolitano had long wanted to evaluate the pros and cons of developing the empty building—abandoned since the 1960s—for future museum exhibit space.

The Job Assignment

Harpers Ferry Center director Gary Candelaria responded to the call from Park Flight and the NPS Office of International Affairs. Wayside Exhibit Planner Mark W. Johnson and Senior Exhibit Designer Dave McLean were selected for the assignment, and Park Flight coordinator Carol Beidleman made the necessary travel arrangements. In March 2006, Johnson and McLean flew 2,100 miles south to Panamá to meet with park officials, assess the resources,

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Send questions and comments to David T. Gilbert either by email at *david_t_gilbert@nps.gov* or call 304 535 6102.

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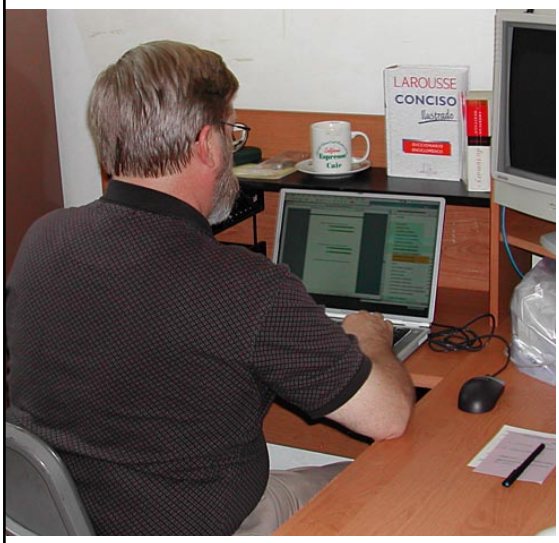


Top: Sixto Mequizama, Parque Natural Metropolitano Facility Manager, shares an article on Panama's birds with Dave McLean while Ricardo Bastidas looks on. Middle: Mark Johnson works on his laptop at park headquarters. Bottom: Dave McLean prepares exhibit concept drawings.

and write a document that would show how to use the 66-year-old "Engine Test Building" for exhibits. Specifically, the HFC team was to develop exhibits that would showcase the national parks and natural protected areas of Panamá, giving emphasis to how important Panamá's parks are for migratory birds throughout the Western Hemisphere. Working with PNM staff, Johnson and McLean had 15 days to develop their Exhibit Concept Proposal, including design concepts and detailed technical drawings. This is a complex task that normally would take several months if done in a U.S. national park.

There was another key scope-of-work requirement—the new Exhibit Concept Plan, and all its associated materials, had to be produced in Spanish. Fortunately Johnson, who worked five years as Chief of Interpretation at San Juan NHS in Puerto Rico, speaks Spanish fluently. In addition to communicating with park personnel and subject matter experts about the museum planning project, Johnson served as a 24/7 translator for McLean—on the streets, in taxis, and in restaurants. He wrote all of the team's planning documentation and technical notes—first draft to final—in Spanish.

"When in Rome, Do as the Romans Do…"

Johnson and McLean spent much of their first week in Panamá gathering ideas on Panamanian expectations about how museums should function. They visited and evaluated nearby museums and two national parks, taking notes while listening to subject matter experts. They talked with senior staff at the Smithsonian Tropical Research Institute (STRI), the Sociedad Audubon de Panamá (Audubon Society of Panamá), and the Instituto Nacional de Cultura de Panamá (INAC). They saw a superb museum that describes daily life in 16th-century

Park Flight Program

National parks inside the United States provide critical habitat for many species of migratory birds—from songbirds and raptors to shorebirds. But throughout North America these bird populations are visibly declining. Because migratory birds use NPS sites only on a seasonal basis, they cannot be protected without conservation efforts in the habitats where these same birds breed and spend the winter.

The Park Flight Migratory Bird Program is a cooperative, coordinated effort that works to protect migratory birds and their habitats in both the United States and Latin America through bird conservation and education projects. Park Flight supports projects that monitor, protect, and manage migratory birds, and promotes interpretation, environmental education, and public outreach.

Park Flight also creates opportunities for practical, cooperative learning by means of both training workshops and personnel exchanges. For example, many Latin American conservation professionals can now gain on-the-job interpretive experience by working short-term in U.S. national parks through the NPS Office of International Affairs' Volunteers-in-Parks program.

Park Flight is a partnership between the U.S. National Park Service, the National Park Foundation, the National Fish & Wildlife Foundation, the U.S. Agency for International Development (USAID), and the University of Arizona. The program is made possible through the generous support of American Airlines, the NPS Natural Resource Challenge, and other Park Flight partners.

Panamá Viejo (today an archeological site with remnants of the city destroyed by English pirates in 1670), visited the 17th-century colonial Spanish fortifications at Portobello—a World Heritage Site and national park—and traveled to San Lorenzo National Park near the Atlantic entrance to the Panama Canal.

Because Parque Natural Metropolitano now serves both a national (Spanish-speaking) audience and an international (largely English-speaking) audience, the NPS team paid particular attention to how different museums in Panamá label their exhibits. Johnson and McLean saw some examples of bilingual labels where all captions in Spanish were fully translated into English, resulting in many text-heavy interpretive panels. Other sites used Spanish-only text. The Panamá Viejo museum posted their Spanish texts with a smaller, edited-down "Readers-Digest-style" English version alongside. Panamá Viejo's designers also employed powerful illustrations and three-dimensional objects that are easily understood, regardless of the language of the visitor.

The team also learned why Park Flight is working so diligently with national parks and protected areas in Panamá: there are 957 bird species in Panamá—more than twice the number of bird species in the United States and Canada combined—and three of the four major bird migration routes between North and South America pass directly over the Isthmus of Panamá.

One of the HFC team's best sources of potential interpretive connections between tangibles and intangibles at Parque Natural Metropolitano was Sixto Mequizama, the Facility Manager and Chief of Environmental Research. Sixto, who has worked at the park for more than 20 years, provided fascinating details about the lives and habits of rainforest mammals and birds. The NPS team spent much of their second week in Panama developing exhibit concepts, talking with the park staff, and producing detailed drawings. Park managers emphasized that they did not want their future exhibits to duplicate content already available at other neighboring museums and institutions, nor at the Smithsonian's Biodiversity Museum soon to be built near the Pacific entrance to the Canal.

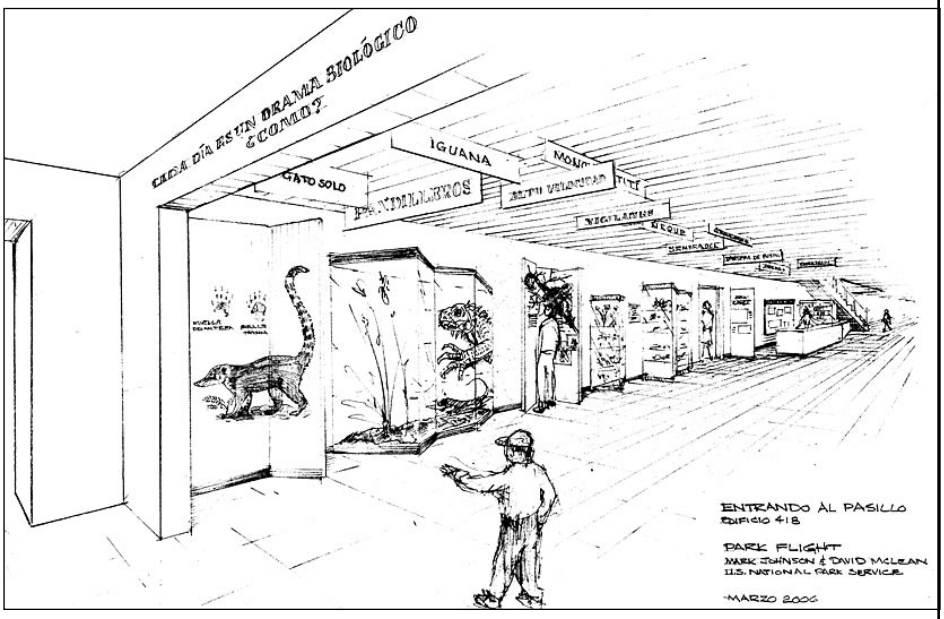


Figure 1. *The proposed "Cast of Characters" exhibit will occupy the entrance to the building's 165-foot-long central hallway (see photo on page 2). This exhibit will introduce some of the rainforest residents a visitor might encounter while hiking in Parque Natural Metropolitano.*

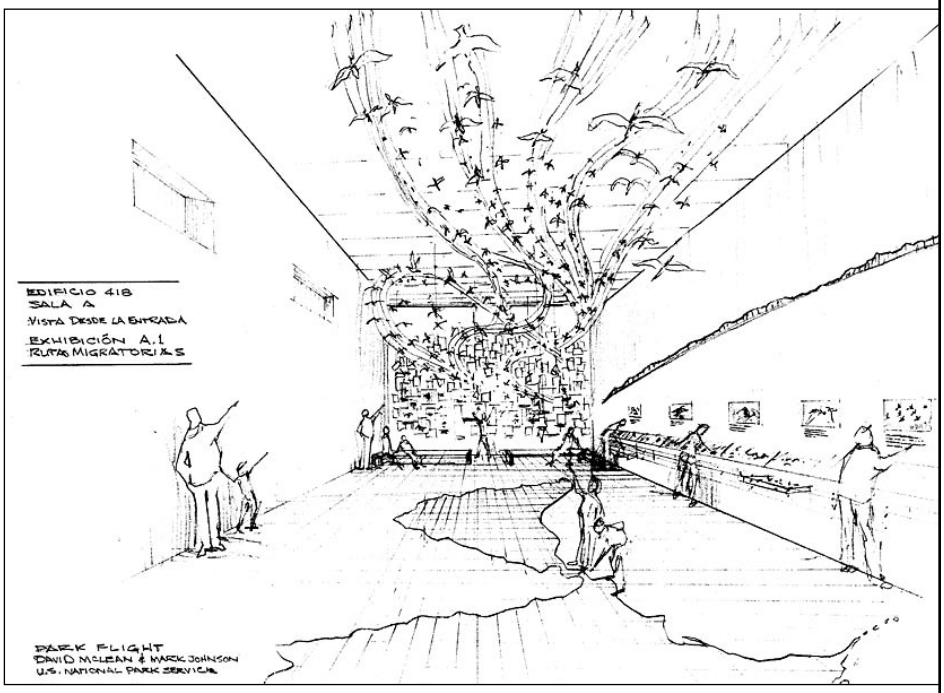
Results

By the end of the second week, Johnson and McLean were putting the finishing touches on their *Plan Conceptual para Exhibiciones*. McLean's drawings proposed a 140-seat auditorium (1,600 square feet), a large, income-earning, rentable public meeting space (1,600 square feet), and 5,300 square feet of exhibit space. The team recommended that the building's 165-foot-long central hallway introduce the park's fauna and important themes. "Cast of Characters" (*see figure 1 above*) will show some of the rainforest residents that a visitor might encounter while exploring the well-maintained PNM trails: scrambling iguanas, charismatic coatis—called "gatos solos" (lonely cats) by *panameños*—titi monkeys, flashy toucans, shy agoutis, and hordes of army ants, to name just a few.

Hall A, which is 80 feet long, 20 feet wide, and 20 feet high, presents "Bird Migration Routes"—and Panama's important role in this pivotal story (*see figure 2*). The exhibit concept proposed a very large, colorful mosaic floor map of North America, Central America, and South America. Visitors can literally "walk" from Alaska to Patagonia. Overhead are suspended the four main New World avian migration routes—three of which concentrate over the Isthmus of Panamá. Models of migratory birds who breed either in North or South America, but who winter in Panamá, will hang under their respective migration routes. At the entrance to this hall will be a "Sharing the Birds" exhibit, featuring the flags of the 18 other nations in the Americas whose birds migrate to Panamá (*see figure 3*).

The managers and board of governors of Parque Natural Metropolitano were very impressed with the work of Johnson and McLean. They will use the NPS team's technical proposal of exhibit design concepts and blueprint-like plan drawings to canvas potential donors for support. Since Panamá City is a world-class banking center for multinational corporations, the park's chances to advance this project are good. As funding becomes available, PNM will have to further develop the concepts McLean and Johnson presented, gather graphics and objects, and produce their new exhibits.

Looking back on the project, Johnson and McLean agree that combining the very different talents and points of view of a wayside exhibit planner and interior exhibit designer was professionally challenging, but very fruitful. Adding the language barrier—almost all conversations with Panamanian sources were in Spanish only—tripled the complexity of the assignment. But Johnson and McLean hit the ground running and made the most of their 15 days in Panamá. Says McLean, "The rapport Mark and I developed, drawing upon his planning expertise, his understanding of Spanish and the cultures of Latin America, and my expertise in taking spatial ideas and putting them onto paper was remarkable. We accomplished a tremendous amount of work, and made some great friendships in the process."



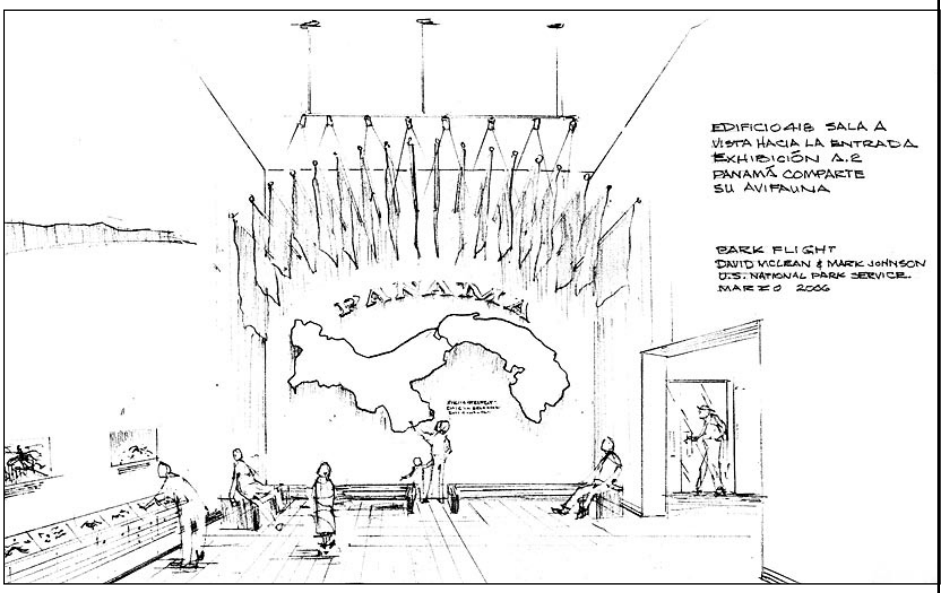


Figure 2 *(top). The "Bird Migrations" exhibit will occupy Hall A. Note the proposed floor map of North America, Central America, and South America, and the bird migration routes overhead.*

Figure 3 *(above). "Sharing the Birds" at one end of Hall A will feature the flags of the 18 other nations in the Americas whose birds migrate to Panamá.*

All photos by Mark Johnson. All concept drawings by Dave McLean.

Keeping a Close Eye on NPS Publications

HFC's Linda Meyers takes print quality control very seriously

Park visitors and National Park Service staff alike readily recognize an official national park brochure. With its distinctive black band, white title lettering, arrowhead logo, and layout grid, official park brochures are among the most consistently recognizable NPS products available to the public.

Harpers Ferry Center has worked hard over the years to maintain the production efficiency and cost effectiveness of the NPS publications program. Using standardized trim sizes and layout grids for park brochures has kept production costs down, while the consistent application of distinctive visual design has effectively maintained a "brand identity." This attention to detail and print quality control rounds out the scrutiny devoted to the park brochure production process at HFC.

Harpers Ferry Center presently manages the printing of 16 to 32 million park brochures a year. It's up to Linda Meyers, HFC's Printing & Production Officer, to ensure that each brochure looks as good, or better than, the one before it, and that the print quality matches the specifications of the Government Printing Office (GPO) contract. Meyers has several tools at her disposal. She reviews a digital blueline to ensure correct trim, fold, and back-up between the two sides of a brochure. She carefully inspects a contract-level digital color proof furnished by the printer, often comparing the proof to a previous proof, inspected press sheet, or an existing printed copy of a park brochure. And when appropriate, she or other staff will travel to the print contractor's site and conduct an onsite press inspection.

Press checks have been a mainstay of print buyers' job requirements since the advent of commercial printing. Now that the portable document format (PDF) and the Internet enable printers to quickly transmit increasingly accurate proofs anywhere in the world, the onsite press check is considered less critical than it was in the past. However, some print buyers—particularly those with challenging print jobs—still inspect press-side sheets at the time of the press run.

Linda Meyers inspects a digital color proof of the Manzanar National Historic Site brochure. Here she's comparing the proof with a press sheet from a previous printing.

The publications staff may do 30-40 press checks a year. A decision to travel 60 miles to Baltimore, Maryland—where our present GPO print contractor is located—depends upon a variety of factors. Are there discrepancies between the colors on the proof and the colors on a previously printed park brochure? Do the colors in the photographs appear

muddy or washed out? Is there a question about how evenly subtle color variations will print across a large detailed park map? Has the printer recently installed new equipment? Any number of factors may affect important quality control results.

Meyers believes strongly that developing a good working relationship with the contractor's pressmen is critical to ensuring quality control. Good communication helps both parties trouble-shoot printing problems and color issues. Meyers has the experience necessary to recommend slight press adjustments—such as how the addition or subtraction of reds and yellows or blacks and blues—might solve a particular color problem. Through a process of experimentation and compromise, Meyers almost always finds a way to keep a job on press and get the brochure printed and delivered on time.

Meyers recalls one print job several years ago that confounded a GPO print vendor in Northern Virginia. Try as he might, the pressman just couldn't match the color proof for this particular park brochure. Because the press was running at 11:00 p.m., and taking the job off line would have cost the vendor—and the government—valuable press time, the contractor called Meyers at home. Living nearby, she drove over to the job site. After about an hour of discussion, Meyers and the vendor solved the problem and kept the press rolling.

Emerging digital technologies have heightened the attention the entire staff pays to detail. A brochure looks one way on the computer screen, another way on the contract-level proofs, and somewhat differently on the press sheet. The expectations for properly saturated ink levels, registration within tolerances of the contract, and consistency that matches either the inspected press sheet or the approved color proof will not be excused due to equipment or manufacturing issues. The NPS will move forward, keeping in tune with the industry changes, but the end result is a quality brochure for our park visitors.

The printing process still relies on the precise placement of ink on paper. Ink density, dot gain, and color correction are still as much art as science. Meyers' overriding concern, however, is to maintain that good working relationship with the printer. Making that occasional visit to the printing plant ensures that both parties know what to expect from one another. By personalizing the process and paying attention to all the details, Meyers ensures that when your park brochure rolls off the press, it looks right.

Manzanar National Historic Site brochure, from a Portable Document Format (PDF) file.

Successful Sign Planning

Frequently Asked Questions About Park Sign Plans

Effective park signs are most often the result of a broad, deliberate, and well-documented sign communication strategy—not a piecemeal sign-by-sign acquisition approach. Successful park sign planning looks at the needs of an entire park or a selected area within a park, and allows signs to be selected and purchased in a logical, coordinated manner.

These frequently asked questions provide anwers to successful sign planning strategies, and describe how best to initiate a coordinated Park Sign Plan.

What is a sign plan and why is it important?

Director's Order #52C: Park Signs states that park superintendents will "establish and maintain an active sign program in their respective areas, including the designation of a park sign coordinator and the development of a park sign plan. . ."

Like Long Range Interpretive Plans (LRIPs) or General Management Plans (GMPs), a Park Sign Plan is invaluable in determining how a park communicates with its visitors. However, unlike a GMP or LRIP—which can be quite broad—a Park Sign Plan includes the detailed specifications needed to implement its strategic recommendations. In other words, in addition to establishing comprehensive and long-range goals for a park's sign program, a Park Sign Plan includes the detailed drawings and other specifications needed to acquire individual signs.

As the name suggests, a Park Sign Plan can address an entire park. It can also focus on a specific park "area" or "unit." Over time, as budgets and other circumstances allow, the smaller plans can be combined into a single comprehensive plan. In fact, a Park Sign Plan can be very helpful in obtaining funding to acquire signs.

Having an area or park-wide plan in place allows signs to be ordered in a logical and orderly fashion once funds become available. Signs can be purchased by type (signs of the same kind in a given place), by area (all signs in a given place), or by attrition (as deterioration requires). Finally, in addition to aiding in the purchase of new signs, a Park Sign Plan can greatly assist parks in accounting for signs after they are purchased and in maintaining them over time.

How do you acquire a sign plan?

If you wish to develop a sign plan for your park, begin by contacting NPS Sign Program Manager Bob Clark (*see contact information at the bottom of page 9*). Clark will describe yours options for creating this document and will help develop a strategy that matches your needs.

Typically, Clark will recommend that a trip be scheduled to the park to survey current conditions and to make recommendations. Depending on the scope of the project, workload of the office, and various other factors, Clark may recommend that a private-sector firm be included in the initial field trip. The NPS contract with its Servicewide sign supplier (Bunting Graphics, Inc.) provides access to 12 of the country's leading sign design firms—companies that have worked in park sites and have a thorough understanding of the NPS UniGuide Sign Standards.

What Does a Park Sign Plan Include?

The content of a Park Sign Plan varies depending on the extent of the area being considered and the type of signs being planned. Most plans, however, include the following:

Sign Assessment: The planning process typically begins by evaluating and documenting the signs that are currently in place. The evaluation includes a sign's physical condition as well as its content (to determine if the information displayed is correct and current). The documentation includes a digital photograph of the sign, a sketch indicating the sign's size and height above grade, the sign's location (a description and GPS coordinates), its type (Identification / Motorist Guidance / Traffic Regulatory / Visitor Information), and notes about its condition, function, and/or context ("Text too small for posted speed of 55MPH / location OK / sign panel faded").

Sign Condition: The location of all existing signs that have been evaluated is indicated on a simple map of the park or park area being planned. Each sign designated on the map is associated with information about it (recorded during the assessment) by a number code.

Determination of Needs: The assessment of a park's existing signs helps to establish its future needs. If, for example, most signs are communicating effectively, but are in poor physical condition, there may simply be a need to replace them with ones that comply with current NPS and FHWA standards. If, on the other hand, a park's signs are not communicating with visitors effectively, existing signs may need to be replaced with newer ones (with more current information) and additional signs may need to be added (keeping in mind that the number of signs in parks should be as low as possible). Recommendations about

continued on next page

Upon completion of the initial field assessment, a written report will be prepared to document the findings and ensure a mutual understanding of the work that needs to be done. Once consensus has been reached, the assessment will be used to create a project agreement (if the work is to be done by Harpers Ferry Center) or a scope of work (if the work is to be done by a contractor). Although parks may negotiate a fee for the work directly with Bunting, it is recommended that this process be conducted by HFC, especially during the first years of the contract.

Harpers Ferry Center can prepare a scope of work, negotiate a fee, and establish a schedule that is agreeable to the park. HFC will also prepare the Independent Government Estimate (IGE) that is required by the federal procurement process, and request that the park identify a project account using the Direct Charge Authorization (DCA) process. At each step, the park will be kept fully aware of the scope of the work being considered and the fees being negotiated. There is no charge by HFC for this service.

Once a project agreement (with HFC) or a task order (with a contractor) is in place, a second trip to the park will be scheduled. Depending on the size of the park or the park area being planned, and the quantity and type of signs needed, the visit may take several days or several weeks. During the visit, a Sign Assessment (*see sidebar*) will be conducted and questions about what specific signs are (or are not) needed begin to be answered. After the trip, the decisions will be documented in text and in drawings, and the Park Sign Plan described above begins to take shape.

Once a preliminary version of the Park Sign Plan is complete, it will be submitted for review. The plan will include written and photographic assessments of existing signs along with a map showing their location, as well as maps showing the location of signs recommended for removal and all new signs being proposed. The plan will also include drawings of all the new signs that show precisely what information each will present. With these documents in hand, park staff can travel through the park and determine whether the plan as presented is adequate or if changes need to be made. Based on this review, the Park Sign Plan will be revised and a final version delivered to the park so that the process of ordering specific signs can begin.

What's the cost of creating a plan?

The cost depends on several variables, principally the size of the park or area being planned, and the quantity and type of signs needed. Typically, an initial field trip will cost between $5,000 and $10,000. Development of the final Park Sign Plan will range between $25,000 and $100,000. Keep in mind that a Park Sign Plan is not simply a general proposal but a very comprehensive document that includes detailed information about dozens—even hundreds—of existing or proposed signs. Also keep in mind that a park-wide sign plan is likely to save money by helping assure that only those signs that are needed are ordered, and that those which are purchased are individually and collectively effective. The Park Sign Plan is also the key tool in maintaining and accounting for a park's investment in signs and in managing an orderly process of sign replacement.

Must a sign plan be in place before signs may be ordered?

No. Although sign plans are of significant value, it may not always be practical to have one in place when signs are ordered. On the other hand, it would not be responsible to continue to order signs for a prolonged period that are not part of a comprehensive and long-range sign communication strategy.

Continued from previous page

what signs should remain and what signs should be added are documented in a general narrative and on a map.

Sign Demolition Plan: The location of all signs that are recommended for removal is indicated on a simple map of the park or park area being planned. Each sign slated for demolition is associated with information about it (recorded during the assessment) by a number code.

Sign Location Plan: The location of all new signs that are proposed (those that replace existing signs and those that are altogether new) is indicated on a simple map of the park or park area being planned. Each sign designated on the map is associated with a drawing of it (and written specifications relating to its construction) by a number code.

Sign Drawings: Every new sign proposed is documented in a drawing. The drawings depict the size and general appearance of the sign, including the precise location of all the text or other graphic content it displays. Notations on the drawing specify how the sign is to be made, including material and color. Once the drawings have been reviewed and approved by the park, they become the principal component of a sign order.

Contact Information

If you wish to develop a sign plan for your park, contact Bob Clark (phone: 304-535-5022; email: Robert_H_Clark@nps.gov). Bob will describe the various options for creating this important document and help develop a strategy that matches your needs.

Minor Rehab Program

HFC helps with replacement of damaged or outdated wayside exhibits

It's inevitable that over time vandalism, intense heat, ultraviolet radiation, wind-blown sand, and other extreme environmental conditions will damage or destroy wayside exhibit panels and bases. While routine inspection, cleaning, and simple repairs can extend the life of a wayside exhibit, eventually all waysides will require minor repair or replacement. Even wayside panels that do not endure harsh physical conditions may need to be replaced as the information they contain becomes outdated.

The Wayside Exhibits Minor Rehab Program was established to support park efforts to maintain their wayside exhibits. The cost of replacement panels through this program is much lower than what it would cost to plan, design, and produce a new panel. If the original panel was produced by HFC, the replacement cost would be just for the production of the replacement panel.

The program offers other significant advantages if your waysides have been produced by Harpers Ferry Center:

1) simple replacement often takes as little as six weeks;
2) HFC will archive your original digital files and production materials;
3) digital reference files for all wayside panels replaced through the Minor Rehab Program are archived in MIDS: The NPS Media Inventory Database System (see "MIDS," November 2004 *HFC onMedia*, page 4).

Over the years the Minor Rehab Program has helped parks replace as few as one wayside exhibit or as many as 90. So rest assured, no project is too large or too small for the program. The program offers a range of products and services, from cleaning kits, drive rivets, and pin punches to replacement hardware and replacement panels. Program Manager Susan Haines can help with your wayside replacement needs. She can be reached by phone at 304-535-6033 or by email at *susan_haines@nps.gov*.

Above: "Safety on the Beach" wayside exhibit damaged by hurricane strength winds at Gulf Islands National Seashore.

Below: Park staff pull a duplicate replacement panel for this same wayside from storage.