

# Facility Operations and Maintenance

From smoothing the surface of the road to Limantour Beach to mitigating erosion on Coast Trail, the operations and maintenance activities of Point Reyes National Seashore ensure the built environment is managed to optimize operational efficiencies while providing stakeholder access and reducing degradation of the seashore's assets. Achieving this goal entails routine custodial services, monitoring, preventative maintenance, and repair. For example, as a park ranger leads a program at the Point Reyes Lighthouse, the operations and maintenance staff's work ensures that the restrooms are clean, the water in the drinking fountain meets public health requirements, the building is well-lit, and the roof is maintained despite wind speeds as high as 130 miles per hour. The Facility Operations and Maintenance administrative team manages more than 700 park assets and asset features, including buildings, residences, roads, trails, and water and wastewater systems through the National Park Service Facility Management Software System (FMMS). In addition to planning, budgeting, operating, and evaluating needs of assets, the administrative team coordinates data management with branch managers to track and record workload and project planning, work site supervision, and routine safety inspections. Staff also compiles utility costs and sets water and sanitation rates for non-National Park Service customers.

In all of these activities, Facility Operations and Maintenance management and staff act as resource stewards. The national seashore employs sustainable practices and works to conserve energy and water whenever possible. In addition, Point Reyes National Seashore was selected by the National Park Service as a Center for Environmental Innovation in 2002 (*see profile "A Showcase of Sustainable Practices"*). The national seashore is committed to not only educating the public on sustainable practices, but also to utilizing such practices and becoming a leader in the area of environmental innovation. Sustainable design and engineering are primary considerations in all park planning efforts to ensure resources are preserved for future generations. From using "green" cleaning products to installing solar energy systems, environmental stewardship also guides daily operations and maintenance decisions.

## **Buildings, Grounds, and Utilities Maintenance**

The Buildings, Grounds, and Utilities team assures that statutory, regulatory, and procedural controls are met regarding the maintenance of all the buildings, grounds, and utilities within

## **FACILITIES OPERATIONS AND MAINTENANCE OPERATIONAL PRIORITIES**

### **Upgrade water system infrastructure.**

The provision of safe drinking water for visitors, staff, and residents is an important responsibility of the seashore. An initial capital outlay to install regional water systems designed for low operations and maintenance would enable the seashore to save on labor costs associated with daily monitoring of water quality in the future.

### **Conserve energy and reduce consumption.**

As a Center for Environmental Innovation, Point Reyes National Seashore is committed to identifying creative approaches to environmental stewardship, such as implementing new solar energy systems, seeking alternative fuel vehicles, and utilizing recycled building materials and green cleaning supplies.

### **Reduce total number of assets and implement preventive maintenance plan for remaining assets.**

Management is evaluating the condition of all seashore facilities and the priority assigned to each asset. The park asset management plan developed will be used to ensure future resource allocations target maintaining high-priority assets in good condition. Management will evaluate demolishing low-priority assets in poor condition.

### **Identify operational efficiencies and opportunities for knowledge sharing between branches.**

Staff will invest time and resources to share technical knowledge internally to build long-term capacity.

## DEFERRED MAINTENANCE BACKLOG (OPERATIONS VERSUS MAINTENANCE)

The National Park Service distinguishes between operations and maintenance to better quantify the deferred maintenance backlog of a given park unit. To meet operational needs, many parks have deferred maintenance of structures over time. This deferral has led to rapidly deteriorating assets within the National Park Service, which need to be addressed before they become unsalvageable.

Facilities Operations includes activities such as removing hazardous trees, stocking restroom supplies, and changing light bulbs. These types of tasks are necessary for the immediate use of a resource. Facilities Maintenance includes activities such as repairing roofs, fixing wastewater systems, and replacing broken windows. These kinds of duties are required to prolong the life of an asset for continued use in the future.



Tomales Point Trail, PHOTO BY KRISTIN GILLISS

Point Reyes National Seashore, including normal repairs of buildings, painting, plumbing, and roof maintenance. This oversight includes 39 housing units, 64 wastewater systems, five public water systems, 29 private water systems, 16 actively used administrative buildings, four backcountry campgrounds, two bayside campgrounds, three major visitor complexes, one research center, and two environmental education centers. The Buildings, Grounds, and Utilities staff responds to 95 percent of all work orders submitted at the national seashore, and staff is responsible for planning and completing the repair of systems and structures. Emergency repair needs, such as those caused by floods or fire, limit staff's ability to allocate time to preventative maintenance and inspections.

### Buildings, Grounds, and Utilities Operations

From changing light bulbs in the Bear Valley Visitor Center to collecting litter or monitoring water from backcountry campgrounds, the day-to-day activities that comprise Buildings, Grounds, and Utilities operations impact the national seashore's resources and public health. In addition to routine cleaning and custodial work at buildings and campgrounds, staff inspects and adjusts utility components daily to maintain full-service to seashore facilities. For example, public water systems require daily monitoring to ensure water quality, yet some systems, such as that at Glen Camp, are only reached after a two-hour journey on a winding, unpaved road. The logistics of monitoring these systems has limited staff time available for preventative maintenance.

### Trails Maintenance

The Trails Branch maintains and repairs more than 113 miles of former ranch and logging roads that comprise Point Reyes National Seashore's trail system. A visitor survey conducted by the national seashore revealed that a majority of park visitors include a hike along the seashore's trail system during their visit. Maintaining these popular trails to ensure visitor access and safety entails cleaning more than 1,500 drainage devices each year, routine maintenance of almost 350 trail signs, and removal of vegetation such as poison oak and stinging nettles along trail sides. The national seashore relies substantially on partnership and volunteer programs to perform trail maintenance. The seashore's partnership with Youth Conservation Corps is in its twenty-third year, and the annual crew of 10-15 enrollees accounts for maintenance of 50 miles of trails. In addition, in 2006, the Adopt-A-Trail program boasted more than 370 volunteers, ranging



Facilities Management team members install a new sign for the Resource Management Division. With only one staff person, the sign shop at Point Reyes creates approximately 70 new signs each year for projects, public health and safety, and visitor information. In addition to maintaining and repairing existing signs, the sign shop completed more than 100 work orders in FY 2006, including upgrading stop signs with reflective material, detailing law enforcement ranger vehicles and boats, painting roadside curbs, designing safety decals, and installing wayside road signs and interpretive exhibits.

PHOTO BY KRISTIN GILLISS



A historic preservation crew member performs delicate work to restore a window on the historic Lifesaving Station, a national historic landmark. PHOTO BY KRISTIN GILLISS

Opposite: National Park Service carpenters proudly pose next to a carriage house dating to the 1920s at Home Ranch. The historic preservation crew removed rotten wood and installed a historically accurate timber sill foundation. PHOTO BY KRISTIN GILLISS

from local school groups to returned Peace Corps volunteers, who maintained approximately 10 miles of trails. Management of these programs requires significant staff time. While staff members perform some maintenance, such as mowing, on all trails each year, they typically are able to perform more intensive cyclic maintenance, including drainage and tread repair, on only 50 miles, or one-third of trails, annually. The Trails Branch gives highest priority to maintenance of Point Reyes National Seashore's most popular trails, such as the Coast Trail.

The ranching and logging legacy of Point Reyes poses unique challenges for the Trails Branch staff. Rather than narrow hand-built trails, the trails at the seashore are 30- to 45-foot-wide former road beds constructed with heavy equipment. Almost 96 trail miles, or 85 percent of the national seashore's trails, are located in congressionally designated wilderness areas where the use of mechanical devices is prohibited. Maintenance of these wide trails is time-consuming and difficult. Often, though, maintenance is critical as these former roads were designed and constructed based on utilitarian, not environmental, considerations. Where trails lead directly uphill rather than following the topography of the land, erosion and resultant pollutant and sediment runoff to local water sources can be mitigated by maintenance. However, without labor- and supply-intensive rerouting or redesign projects, these former roads will continue to be high-maintenance and high-environmental impact assets. Management remains committed to leveraging all new trail construction project money, such as the rerouting of Estero Trail in conjunction with the Coastal Watershed Restoration Project, to ensure the construction of low-maintenance, resource-friendly trails.

### Roads Maintenance

The Roads Branch maintains and repairs almost 37 miles of paved roads, 60 miles of unpaved roads, 21 paved parking lots, 37 unpaved parking lots, and all associated fencing and vehicle barriers. Similar to trail maintenance, keeping these former ranching roads in good condition requires a sophisticated understanding of drainage devices and erosion control. In Fiscal Year 2006 a crew of six employees maintained these assets by cleaning ditches and culverts, grading roads, doing asphalt overlays, patching potholes, filling cracks, and striping. An additional staff person was dedicated to sign repair and replacement for the more than 660 signs at Point Reyes National Seashore.

### HISTORIC STRUCTURES MAINTENANCE

A historic preservation crew works on restoring, repairing and stabilizing the almost 300 historic structures maintained by the national seashore, including historic ranch buildings, the 130-year-old Point Reyes Lighthouse, and Point Reyes Lifeboat Station, which is a national historic landmark. The historic preservation crew's projects fuse maintenance and craftsmanship, and these projects are more expensive in terms of both labor and material expenditures. For example, restoring one window in the Lifeboat Station based on the guidance in the "Secretary of the Interior's Standards for the Treatment of Historic Properties" may require up to 40 hours of labor between scraping, sanding, patching a frame to preserve the original wood, repainting, and reinstallation. To stabilize the floor of the barn at Teixeira Ranch in Olema Valley in 2006, this team of talented cultural resource stewards hand-hewed timbers with historic hand tools—a broad axe, felling axe, adze, and slick—to match the original timbers being replaced. Increased material costs reflect the additional expense incurred by requirements unique to historic structure maintenance, such as the need to have lumber milled to be 2 x 4 inches instead of the modern 1.5 x 3.5 inches.

The Point Reyes National Seashore team is one of only three historic preservation crews in the Pacific West Region of the National Park Service. Team members frequently travel at the invitation of other parks to contribute to preservation projects, but there continues to be increased demand for their services at the national seashore. In 1995 the number of structures at the seashore listed by the National Register of Historic Structures was 190; today, the number has increased to 279. As these assets age, increased cultural cyclic maintenance funding will be needed. In Fiscal Year 2006 the budget was \$282,259. In addition, management expects increased need for repair and rehabilitation projects.

**Priority: Maintain 127 of 297 historic structures listed in "good" condition and increase to 137.**

The agricultural history at Point Reyes includes a large number of historic ranch buildings. Additional funding for preventive maintenance would enable the historic preservation crew to maintain those structures already listed in "good" condition. Project funding is required to improve the status of additional structures.



Preservation Work  
In Progress



Point Reyes Historic  
Preservation Crew



A member of the park roads crew maintains a trailhead sign area. PHOTOS BY KRISTIN GILLISS

Drivers, cyclists, and hikers depend on Roads Branch staff for safe, timely access to resources, facilities, and residences. Drivers on the national seashore's roads include visitors, staff, concessioners, and residents. Lack of maintenance not only makes roads more dangerous, it also makes transportation more time-consuming. Well-maintained roads increase the efficiency of staff members who are required to utilize them for daily operations, such as monitoring water quality at Wildcat Campground. The campground is accessible only by a dirt road which is also frequently used by visitors exploring the seashore on horseback. This road is difficult to maintain, particularly during the rainy season, but the Roads Branch staff members work to ensure that it and other roads are safe and accessible. One of the greatest challenges to completing maintenance faced by the Roads Branch is frequent requests from other branches for equipment and staff support for other services. For example, the Roads Branch is comprised of skilled workers familiar with operating the heavy equipment often required by other park programs. Staff frequently hauls rock and materials for natural resource management projects or operates a backhoe in support of repairing a broken water line for the utilities team.

#### Trails and Roads Operations

Trails and Roads Operations also include hazardous and downed tree removal. Downed trees often block trail or roadside ditches and prevent water from flowing through culverts installed beneath trails or roads. The result of overflowing ditches can be erosion of the trail or road surface. The Roads Branch presently depends on equipment loans from the U.S. Coast Guard to perform some of these activities.

In addition, Point Reyes National Seashore has 140 mowable road shoulders that are routinely mowed to improve fire protection and increase sight distance along winding, cliffside roads. Clearing vegetation from roadsides requires both mowing with heavy equipment and hand operation of weed trimmers for areas that are more difficult to access. The Roads Branch endeavors to mow and clear vegetation from roadsides at least four times each year. In recent years, the Roads Branch has partnered with the natural resources management team to adjust its mowing schedule to respect the breeding and nesting seasons of native species.



#### ON THE PATH TO ENVIRONMENTAL WORK

##### Sarah Shimizu, Trail Crew

"I love being outside—to work out here and be in the field five days a week—I couldn't ask for anything more. When I was at Point Reyes Summer Camp, I wished that I could be out here all of the time. I got my wish."

After eight years at PRNSA's environmental education summer camp, Sarah joined the Youth Conservation Corps (YCC) in 2001 when she was 17. She returned the following year as a YCC youth leader. Since then, she worked at the seashore five consecutive years as a seasonal trail crew member, and is now a crew leader for the YCC. "We work really hard," she said. "It teaches kids to have a really good work ethic." When asked what keeps bringing her back, Sarah replied, "The seashore—it's beauty, and the people. I have great co-workers."

Sarah is entering her senior year at Humboldt State University where she is studying botany, anthropology, and appropriate technology in the environmental resource engineering department. Her senior project focuses on the native garden at Kule Loklo, the seashore's replica Coast Miwok village. "I'm going to be doing something like this the rest of my life, work that engages my body and my mind; YCC and the trail crew are what started me on that path. I'm really grateful."

## MAKING A DIFFERENCE NOW AND FOR THE FUTURE

### **Karen McKey, Utility System Operator and Repairer**

"I get to help care for and protect this beautiful, incredible place and assure the impact that we leave on it is healthy. As long as we're providing safe drinking water and good facilities that operate and function to the best ability, then we're making sure we're taking care of the park for both visitors today and future generations."

PHOTO BY KRISTIN GILLISS



## ENHANCING NATURAL PASSAGES

### **The Point Reyes trail crew constructs a new bridge as part of the Coastal Watershed Restoration Project.**

At this site, the project involves removal of an existing road crossing within an official wilderness area and the reroute of the Estero Trail. The bridge will allow for natural hydrological process and fish passage. It will ultimately allow for the reintroduction and enhancement of endangered fish populations, including federally threatened steelhead trout and federally endangered coho salmon.

PHOTO BY KRISTIN GILLISS

