



Conservation Volunteers International Program

P.O. Box 61912, Santa Barbara, California 93160 USA

www.conservationvip.org

Tel: 805.698.6915 Fax: 805.964.8612

A Non-Profit 501c3 Tax Exempt Organization CST 2089890-40

PROJECT REPORT MACHU PICCHU SANCTUARY VOLUNTEER EXPEDITION APRIL 27 - MAY 10, 2009

Executive Summary

Conservation Volunteers International Program (CVIP) organized and led a volunteer expedition to Machu Picchu Sanctuary, April 27-May 10, 2009, in collaboration with Peru's National Institute of Culture (INC) and the National Service for Protected Area management (SERNANP, formerly called the National Institute of Natural Resources, or INRENA). The project was authorized by Sr. Jorge Zegarra, Cusco Regional Director of the INC, and by Sra. Ada Castillo, Director of the Santuario Historico de Machu Picchu for SERNANP.

Nine volunteers completed restoration of a variety of projects which were designated by the employees of INC and SERNANP:

1. Volunteers maintained approximately four kilometers of trail, including the repair or installation of 57 water drains;
2. Volunteers removed plants and lichens from 29,700 square feet of building and terrace walls;
3. Volunteers removed 980 square feet of undesired vegetation from the floors of Inca buildings;
4. Volunteers cleaned 195 stone steps of plants in joints and stone surfaces; and
5. Volunteers collected native grass seeds for use in restoration efforts.



In total, volunteers donated 500 hours of time with an estimated value of \$9,000. In addition, volunteers donated approximately \$300 in tools and equipment.

Volunteers contributed approximately \$20,800 in local expenditures for lodging, food and transportation.



At the end of the volunteer expedition, the trip leader provided a briefings to Antropologo Fernando Astete (Director of Santuario de Machu Picchu for INC, Arqueologa Piedad Champi (Principal Archaeologist of the Santuario for INC), and Sra. Ada Castillo of SERNANP. In addition, briefings were provided to the Municipality of Machu Picchu, PromPeru (national tourism office), Sra. Maria Jose Jorquera of CANATUR, and the embassy of the United States. All spoke favorably of the expedition and the positive effect of the project upon the cultural and natural resources, visitor safety, economic development in the community, and international bilateral relations.

The representatives of INC and SERNANP invited the volunteers from Conservation Volunteers International Program to return to the Machu Picchu Sanctuary.

Detailed Trip Report

The nine members of the volunteer expedition, including three group leaders, arrived into Cusco on Monday April 27, 2009. A Cusco city walking tour provided orientation to the history and culture of the region. On Tuesday April 28th, volunteers participated in a full day orientation tour of the Sacred Valley, visiting Sacsayhuaman, Urubamba, Ollantaytambo and Pisac. These orientation tours provided context for the upcoming week of work within the Machu Picchu Sanctuary and helped them to acclimate to the high altitude. During the Sacred Valley tour, two group leaders remained in Cusco to meet with SERNANP and INC staff to discuss work assignments. In addition, they bought tools and food for box lunches. On Wednesday April 29th, volunteers traveled from Cusco by bus to Ollantaytambo, then by train to Aguas Calientes. After checking into the hotel, volunteers enjoyed their first glimpse of Machu Picchu with an orientation visit led by a professional guide. From April 30th - May 7th, volunteers completed a variety of tasks assigned by the local Machu Picchu Sanctuary staff. Upon completion of our volunteer work, participants returned to Cusco by train and bus late on May 7th, enjoying a day to rest and explore Cusco on May 8th. Volunteers completed their visit to Peru with a bus and walking tour of Lima before departing at midnight May 9th for the US. Volunteers arrived home on Sunday May 10th.

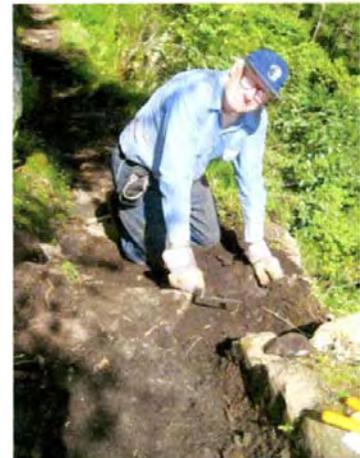
Trail Maintenance

The INC and SERNANP staff identified three trail locations in need of maintenance.

Project Area A. Volunteers maintained the popular trail from the Guardhouse (Recinto del Guardian) to the Sungate (Intipunku), a distance of approximately 2 km. Forty-five water drains were maintained or installed to ensure water properly drained away from the trail. This maintenance corrected drainage problems that were causing soil erosion along much of the trail. In addition, 12 rock steps were cleaned of loose soil debris to improve safety. The rainwater erosion of the trail tread had deposited this loose soil. Vegetation was cut back along the entire length of this trail segment to improve safety for hikers as they walked along the trail.

Project Area B. Volunteers maintained the newly reopened trail from the Guardhouse to the Inca Bridge, a distance of approximately 2 km. Fifty-two wide steps leading to the vista point and checkpoint safety gate overlooking the Inca Bridge were cleared of loose soil debris. This debris had been created by soil erosion of the trail tread. Because sections of this trail are located along a cliff face, removal of the loose debris covering stone steps greatly improved visitor safety. Twelve water drainage dips were installed or maintained to reduce future erosion of the trail.

Project Area C. A reconnaissance of the Inca Trail from Kilometer 104 to the Sun Gate (Intipunku) occurred to determine maintenance needs along this popular trail segment. Many sections of this trail require maintenance to install or improve drainage features. Removal of vegetation within the trail prism will improve safety and ease of travel. The wood stringers of footbridges had direct soil contact; many were showing signs of degradation. These stringers should be tested by a trained bridge specialist, and/or replaced to prevent failure while hikers are crossing the bridge. The longevity of the upper sections of these wood bridges could be extended through application of an appropriate paint or stain. Because of the distance from lodging at Kilometer 104 or Aguas Calientes to reach the entire length of the trail, it may be necessary to have a future work crew camp overnight near the bridge sites to improve efficiency and minimize the amount of time the trail is closed to visitors during the bridge restoration effort.



Restoration



**Park Rangers and Volunteers
At the Temple of the Moon**

Volunteers cleaned the walls of Inca-constructed building and terrace walls within the Sacred City, Temple of the Moon and The Sun Gate. The work involved carefully removing plants and lichens from stone surfaces and from the joints between the stones. Plants adversely affect the stone features by accelerating the break down of stone, or sending roots into rock structures. These roots grow and can eventually damage or destroy these constructed features. All the removed plants were placed into bags and removed to a designated disposal site. Our work occurred in the following areas:

Project Area D. The Three Doorways. Because of the unusual symmetry of these three rooms (including matching walls, double-jam doorways and niches), archaeologists believe the structures in this area were intended for the Inca elite. Volunteers were instructed to meticulously clean the buildings of moss, lichens and small plants from joints and stone surfaces. The following locations were restored: interior of the center room; the walls between the middle and eastern room; the walls within the western room; and 16 niches. This restoration effort required two full days of effort for all nine volunteers. In total, approximately 1,800 square feet of wall area and 600 square feet of floor area were restored to the high restoration standard set by the INC restoration crew.



Project Area E. Northern Agricultural terraces along the trail from the Sacred City to the Urubamba River. These agricultural terraces required extensive removal of plants from the terrace walls and steps. A total of 60 steps and approximately 4,920 square feet of walls were cleared of vegetation.



Project Area F. Temple of the Moon. Volunteers accompanied ten INC restoration personnel to the Temple of the Moon, located about two hours hike on the north side of Wayna Picchu. While minor removal of jungle plant growth occurred alongside the trail to the site, the focus of the full day was restoration of this beautiful temple. INC crews cleared the terraced agricultural fields of tall grasses and volunteers cleaned plant materials from the superb stonework adjacent to the cave as well as the adjacent walls, including a double-jamb doorway and niches. Approximately 2,000 square feet of constructed wall features, 380 square feet of floor, and 10 steps were cleared of vegetation. The walls had many larger plants growing from the joints indicating that some time had passed since the prior cleaning.



Before



After

Project Area G. Temple of the Condor. The inner walls of the Temple of the Condor were cleaned of plants in the joints. The stone faces were also lightly brushed to remove lichens and mosses growing on the stone surfaces. Volunteer work was stopped whenever a group of tourists entered the small space of the temple to avoid disturbing the experience of the visitors. Approximately 480 square feet of walls were restored in this area.



Before



After

Project Area H. Western Artisan Wall and stairs (Group of the Mortors) and the eastern Plaza Terraces of the Main Square (Plaza Principal). Approximately 20,000 square feet of walls were cleaned of plants from the stone joints. Along the Artisan Wall, a tall ladder was necessary to reach the upper sections of the wall that extended 18 feet above the ground. In addition, 62 steps of 6 foot in width were cleared of plants.



Project Areas H and I. Agricultural Terraces south of the Guard Station and terraces in the eastern section of the Main Square (Plaza Principal). The INC Rangers demonstrated how volunteers could properly identify and collect the native grass from these terraces. The native grass seed could be dried and later planted to compete with exotic grasses. These exotic grasses exhibited long roots that were disturbing the constructed features. Approximately 50 volunteer hours were spent collecting native grass seeds.



Project Area J. Eastern wall of the Storage Buildings (Depositos Qolqas) in the lower Agricultural Terraces. Approximately 500 square feet of constructed walls were cleaned of plant materials. Ladders were necessary to reach the upper sections of the walls.

Project Area K. Volunteers observed INC restoration crews working on the western vertical walls in the vicinity of the Guardhouse. The group leader (an experienced vertical rock rescue climber) offered several suggestions to the INC restoration crews on ways to improve their safety. For example:





1. A single wooden post had been driven into the ground as a rappel anchor. Multiple metal anchors properly tied together provide increased security.

2. No climbing harness or helmet was being used. Conservation VIP had donated this type safety equipment to INC crews in November 2008. Additional equipment was needed to ensure all restoration crewmembers had access to this equipment.

3. No safety zone had been established around the anchors and climbing ropes. Visitors were observed walking through the work area to watch the crews, stepping on climbing ropes and standing

near the single wooden anchor. As a corrective action, Conservation VIP placed red pin flags in the ground to close off the work area.

4. A plastic water bottle was used in an effort to protect the climbing rope from the sharp cliff edge. A sturdy fabric, such as canvas or carpet, should be placed under the rope as edge guard.

Conservation VIP provided a weeklong training course in vertical rescue in November 2008 for INC, SERNANP, and Municipality of Machu Picchu staff who are called upon for rescues in the area. Approximately \$5,000 of safety equipment (including ropes, carabiners, climbing harnesses, helmets, and pulleys) was donated. Based on these arguably limited observations of restoration work in vertical wall environments, Conservation VIP recommends that a follow up training in vertical rescue and safe working conditions in vertical environments be offered to the three agencies.