

GIS, GPS, Cultural Resource Database Information, and the FMSS Program at Kalaupapa National Historical Park

Tom Fake, National Park Service Pacific Islands Support Office, Box 50165, Honolulu, Hawaii 96850; tom_fake@nps.gov

Kalaupapa National Historical Park, established in 1980, contains the physical setting for two tragedies in Hawaiian history. The first was the forced removal of indigenous people in 1865 and 1895 from an area where they had lived for over 900 years on the island of Molokai. This resulted in the cutting of cultural ties and the association of generations of Hawaiians with the *aina* (land). The second tragedy was the forced relocation of thousands of Hawaiians, sick with leprosy, to this isolated settlement starting in 1866 and continuing until 1969. The establishment of the isolation settlement, first at Kalawao and then at Kalaupapa, was the government's response to the growing fear of the disease.

The community of Kalaupapa, on the leeward side of the Kalaupapa Peninsula, is still home for many surviving Hansen's Disease patients. Many of the structures that support this community still exist today. There are distinctive neighborhoods that support many activities of daily life. Since 1980, when the park was established, the National Park Service (NPS), in cooperation with the Hawaii Department of Health and the Department of Hawaiian Home Lands has begun a process of transfer of historic structures over to NPS's care. This process includes a careful analysis of the historic value of the structure as well as of the steps necessary for future care of the building. With over 400 buildings in the settlement, it was necessary to prioritize buildings with the goal of preserving the cultural landscape of the neighborhoods. Over 200 buildings were identified as a high priority for preservation.

Even before the establishment of the national park, the Kalaupapa Leprosy Settlement was designated a national historic landmark in 1976. Many individual structures are now listed by NPS on the List of Classified Structures (LCS). The LCS database contains important information concerning each building. An important part of the on-going management of the historic structures by NPS is the use of a geographic information system (GIS) to map the LCS database. A detailed map was produced from digitized utility and survey maps showing the location of each structure. From these digitized maps,

ArcView building shape files were developed with key data fields listing the LCS number for each building. The LCS data are joined with the map data to produce an interactive map with both building locations and detailed information about each building from the database.

The next step in the preservation of the historic buildings took place in 2002 with the implementation of the NPS Facility Management Software System (FMSS). Each of the buildings in the settlement is entered as an asset into FMSS. Each of the structures is given an asset priority index (API), which assigns an importance value to the building. The next process is to define the current replacement value (CRV) for each of the structures. This number will be used to determine the condition relative to other structures. A condition assessment is completed on each structure and "work orders" are entered describing work to be completed on each structure. The total cost for the work orders is compared with the CRV and the API to produce an asset condition index (ACI). The ACI indicates the condition of each structure, from "poor" to "good" condition. The information is entered for each structure in FMSS, then combined with the LCS data in the interactive ArcView map. The database for FMSS is stored in a central server in Washington, D.C., but the data are accessible through reports. The reports can be assembled so as to be compatible with GIS. The Kalaupapa building shape files also note the individual FMSS

Technology for Resource Management

asset number, so the two databases can be joined. The database for each building now lists the FMSS data. As new data are added to FMSS, the joined database is also updated.

The use of ArcView GIS and the ability to join other databases with the GIS data have become important tools for park managers to preserve historic resources at Kalaupapa.

