

## **Chapter 5. Outdoor Recreation, Social, and Economic Factors**

### **5.1 Outdoor Recreation**

The climate and geography of Hawai‘i make the islands a perfect location for outdoor recreation activities. The State Comprehensive Outdoor Recreation Plan (2008) was developed to guide planning, development, and management of these outdoor recreation resources. In addition, the eight regional Development Plans/Sustainable Communities Plans throughout the Island of O‘ahu identify local recreational goals.

As identified in the Administration Act, as amended, the Service identifies six general wildlife-dependent uses on national wildlife refuges: hunting, fishing, wildlife observation and photography, and EE and interpretation. Similar opportunities are available on lands managed by the State and City and County of Honolulu.

This section describes recreational opportunities in the areas surrounding James Campbell NWR, as well as recreational activities currently occurring at the Refuge units. Islandwide recreational demands and potential recreational opportunities are also discussed.

#### **5.1.1 Federal, State, and County Recreational Parks**

State parks are administered by the Hawai‘i Department of Land and Natural Resources (DLNR), Division of State Parks. The State park system on O‘ahu encompasses 22 parks covering approximately 9,900 acres. Special use permits are required for certain activities including group activities, pavilion usage, meetings, weddings, shows, community events, scientific research, and gathering of forest products.

The City and County of Honolulu, Department of Parks and Recreation (DPR) administers an additional 282 parks throughout O‘ahu comprising 5,314 acres. These parks are divided into two groups: Island-Based Parks and Community-Based Parks. The largest and most specialized parks (such as regional parks, beach and shoreline parks, beach and shoreline rights-of-way, nature parks and reserves, botanical gardens, golf courses, and zoological parks) are classified as Island-Based Parks. These parks are intended to serve the needs of all O‘ahu residents. The DPR suggests 8 acres of Island-Based Parks for every 1,000 persons. Community-Based Parks are smaller parks designed to provide recreation for more localized populations. These parks include district parks, community parks, neighborhood parks, and mini parks. The DPR uses a standard of 2 acres of Community-Based Parks for every 1,000 persons (DPP 2002, DBEDT 2009).

There are two State parks in the Ko‘olaupua region – Mālaekahana State Recreation Area (SRA) and Ahupua‘a O Kahana State Park. The Mālaekahana SRA is divided into two sections. The Kalanai Point portion is 0.6 mile north of Lā‘ie and the Kahuku portion is 1.3 miles north of Lā‘ie. Swimming, bodysurfing, fishing, and beach-related activities are permitted at this park. Ahupua‘a O Kahana State Park is located roughly 9.3 miles south of the Refuge between the communities of Kāne‘ohe and Lā‘ie. Recreational activities at the park include camping, hiking, and hunting in designated areas during weekends and holidays (Division of State Parks 2008).

### 5.1.2 Historic/Cultural Sites

O‘ahu has 151 State historic sites and 68 sites on the National Register of Historic Places. These resources have the potential to be recreational areas for local residents and tourists. There were 57 archaeological sites identified in the region of Ko‘olaupua during a survey in the 1930s. Many of these sites may have since been destroyed by urban development or agriculture activities. The sites closest to the Refuge are the Waikane stone at Kawela, the Kalaewila heiau at Kahuku Point, and the Wai‘āpuka pool at Mālaekahana. Three additional archaeological/cultural sites occur in the community of Lā‘ie. These include the Paeo Fishpond, Nioi Heiau, and Laniloa Point. In addition to designated cultural sites, iwi, which are bones and other skeletal remains from traditional Hawaiian burials, are known to occur in sand dunes and sandy soils along coastal areas. Three such burials have been documented in the vicinity of the Refuge coastline as “inadvertent discoveries”. This is when iwi have become exposed and discovered due to wind and water erosion (DPP 2002, Dougherty and Moniz-Nakamura 2005).

The Punamanō Unit is named for a legendary spring on the Refuge. The following is an account reported by J. Gilbert McAllister in his book *Archaeology of Oahu* (1933):

#### ***The Punamanō Legend***

*One time when the people of Kahuku were fishing they caught a small manō (shark). Putting him in a calabash of water they carried him to their houses near the beach. Here he was cared for and put in larger and larger calabashes as he grew bigger. Finally having outgrown even the largest calabash that could be found, it was decided to place him in one of the pools of brackish water which came to be known as Punamanō (shark spring).*

*A man and woman living near the pool became the manō’s guardians. They had lived in their grass huts with a breadfruit tree near the pool and taro and potato patches near the mountains for several years when the brother of the woman came to live with them. Sometime after, the man and woman went to the mountains to gather taro and potatoes. The brother, who was staying at home, thought that he would like to have some food prepared when they returned.*

*He climbed the breadfruit tree and gathered several, throwing the fruit into the water instead of on the ground, where it would have been bruised in the fall. After picking enough for a few days he descended the tree and gathered most of the fruit from the bank. Two had floated to the middle of the pond and he could not reach them. Now this man knew of the shark that lived in the water, but he had frequently bathed in the pool and no thought of fear crossed his mind as he swam to the breadfruit. He did not know, however, that his sister had warned the manō not to allow anyone to steal breadfruit when they were gone.*

*When the sister and her husband returned they could not find the brother. Neither was the manō to be found, but they saw the breadfruit floating in the pool and a reddish color to the water. They guessed what had occurred. For nearly a mile they followed the bloody trail until they came to the spring known as Punaho‘olapa (restless spring). Not only was the brother never seen, but the manō has never been seen to this day.*

Although not designated as a historic site, a portion of the former World War II Kahuku Army Airfield is located within the new expansion lands. Classified as an auxiliary field, it had a very short lifespan, from 1942 until it was closed in the late 1940s. Ground troops were stationed in the area to protect the airfield and man shoreline fortifications. It is documented that the 18th Air Base Group, 47th Pursuit Squadron was stationed there along with B-24s and B-17s that were based at Kahuku for short periods of time during World War II. Most of the buildings and support structures associated with the Kahuku Army Air Field have been removed. A portion of the old runway, a few scattered concrete pillboxes, storage bunkers, and antenna supports covered by low brush and debris can be found in the coastal shrubland (McKillop 2005).

### 5.1.3 Ocean Recreation



*Rough north shore surf Laura Beauregard/USFWS*

Ocean recreation in Hawai‘i supports an \$800 million industry. The Hawai‘i Division of Boating and Ocean Recreation manages 14 small boat harbors, 1 deep draft harbor, and 4 launching facilities on the Island of O‘ahu. The closest launch ramp to James Campbell NWR is located at Kahana Bay. Hale‘iwa Harbor is the nearest small boat harbor. This harbor is located on the north shore region in Waialua Bay (DPP 2002).

The primary ocean recreation activities adjacent to the Refuge shoreline consist of fishing from the shore with poles and throw nets, catching ama crabs and he‘e, and free-dive spearfishing. Due to rough ocean conditions year-round (windy, choppy surf, and shallow coral), surfing in the immediate vicinity of the Refuge is only an occasional activity conducted by a few individuals.

### 5.1.4 Wildlife Observation, Photography, Interpretation, and Environmental Education

The 18 wildlife sanctuaries and refuges on O‘ahu encompass 700 acres. Opportunities for wildlife observation, photography, and EE are available at most of these areas, and private tour operators provide interpretation at some sites. Off the coast of the Ko‘olauloa area, the public can engage in wildlife observation at five islets designated as State Seabird Sanctuaries.

Wildlife observation opportunities at the Ki‘i Unit fluctuate with the nesting season of the waterbirds at the Refuge, especially ae‘o. Public entry is limited between February and mid-July when birds are nesting and fledging. Following this time period, Refuge staff conduct intensive habitat maintenance work until mid-October. Seasonal tours of the Ki‘i Unit are available after maintenance work until February 28. The public may access the Refuge by authorization from the



*Wildlife viewing at the Refuge © ucDavis.edu*

Refuge Manager or by participating in scheduled tours. Guided tours by volunteer docents or knowledgeable birders occur on Thursdays and Saturdays by reservation only.

During the nonnesting season between 2009 and 2010, more than 1,200 individuals visited the Ki'i Unit of the Refuge. Two-thirds of these visitors were students participating in EE. This wetland education program has been occurring at James Campbell since 1985. Biweekly scheduled tours for the general public brought in the other visitors during the 2009-2010 nonnesting season. General public tours have an average of 12 people per tour, while EE tours have slightly over 30 individuals per tour.

### 5.1.5 Fishing

Recreational and subsistence fishing is an important activity to many residents of Hawai'i, and fishing tourism is also an important part of the economy. Recreational fishing is administered by the Division of Aquatic Resources within DLNR. No license is required for recreational saltwater fishing, which takes place all along the coastal areas near Kahuku. Typically, rod and reel poles are used; however, spearfishing and throw-nets are also popular. The most coveted reef fishes are uhu, ulua, and redfish. The closest public shore access locations are 1 mile south at Mālaekahana SRA and 4 miles north at the Turtle Bay Resort.



*Fishing along Refuge shoreline  
Mike Silberman/USFWS*

Current access to the Refuge coastal strand occurs by two primary means: (1) By entering from either end of the coastline along the public shoreline corridor; and (2) by crossing James Campbell Company land. Private access to the shoreline has occurred over many decades by persons and their invited guests that held leases on that land from the James Campbell Company. These leases will be terminated as this land is acquired by the Service and the associated private access will end as well. The Kahuku Village Association also allows controlled access for fishing to the public shoreline corridor on lands it controls near the Kahuku Golf Course. About 200 people pay an annual “fishing club” membership fee for this access.

### 5.1.6 Hunting

On O‘ahu, hunting is permitted in 12 public hunting areas, covering 25,000 acres. The main species hunted are goats and pigs. Nonnative game birds are also hunted including the ring-necked pheasant, Japanese quail, three francolin species, and several dove species. Personnel engaging in hunting must possess a valid State of Hawai'i hunting license. A total of 8,249 hunting licenses were issued throughout the State in 2008. There are few game species (game birds and pigs) within the Refuge. Yearlong management actions for four endangered waterbirds and their associated habitat, coupled with low, scattered game populations on the Refuge, preclude a public hunting program. Based on the potential for direct harm to endangered waterbirds, the Refuge is closed to the public for hunting (DBEDT 2009).

## **5.2 Social and Economic Conditions**

The purpose of this section is to address the local economy and social environment surrounding the James Campbell NWR, including population estimates and economic indicators. The Refuge is located within the County of Honolulu, next to the community of Kahuku.

### **5.2.1 Population**

The total resident population of the Hawaiian Islands according to the 2010 census was 1,360,301. The Island of O‘ahu is home to 73 percent of this total. In terms of population density, Hawai‘i’s 211.8 people per square mile in 2010 is 2.42 times the U.S. population density. According to the Hawai‘i Department of Business, Economic Development and Tourism (DBEDT), roughly 43 percent of the Hawai‘i population was born outside of the State of Hawai‘i. The ethnic composition of the City and County of Honolulu is diverse with the majority of the population identifying themselves as Caucasian, Hawaiian or part Hawaiian, Japanese, Filipino, or mixed ethnic background.

O‘ahu is divided into eight planning areas. Each area has a Development Plan which is adopted by City Council ordinance and administered by the Department of Planning and Permitting. James Campbell NWR is located within the Ko‘olau Loa planning area. As of the census of 2000, there were 2,097 people, 509 households, and 401 families residing in Kahuku. Pacific Islanders lead the racial makeup with 27.28 percent, 26.85 percent Asian, 11.06 percent White, 0.29 percent Black or African American, 0.14 percent Native American, 1.05 percent from other races, and 33.33 percent from two or more races. A total of 8.63 percent of the population is Hispanic or Latino of any race. (HCDA 2005, DBEDT 2010).

There were 509 households out of which 43.2 percent had children under the age of 18 living with them, 59.3 percent are married couples living together, 14.3 percent had a female householder with no husband present, and 21.2 percent were nonfamilies. The average household size was 3.96 and the average family size was 4.63. The median income for a household in 2000 was \$39,135, in stark contrast to the islandwide median income of \$70,010 (quickfacts.census.gov).

### **5.2.2 Education**

Educational attainment is slightly higher on the island of O‘ahu compared to the rest of the State. In 2000, approximately 84.8 percent of the O‘ahu population 25 years and over had received a high school diploma. Furthermore, approximately 27.9 percent reported to have a Bachelor’s degree or higher. The State averages during the same year were 84.6 and 26.2 percent, respectively (DBEDT 2010).

Within the University of Hawai‘i system (UH) are five community colleges and two universities on O‘ahu. In 2008, enrollment at UH Mānoa was 20,169 and at the West O‘ahu Campus was 1,140 students. Approximately 21,169 students were enrolled in the community colleges throughout O‘ahu. Total enrollment in private universities on O‘ahu (including Brigham Young, Hawai‘i Pacific, and Chaminade) in 2008 was 13,293. Brigham Young University is just 3 miles south of the Refuge with an enrollment of 2,500 students who represent over 70 different countries and cultures from the Pacific Rim, the U.S. mainland, and other parts of the world. (DBEDT 2009).

### 5.2.3 Economy

Hawai‘i’s economy grew at an annual rate of 4.1 percent 2001-2006. Including the economic recession of 2008 and 2009, the economic growth rate in Hawai‘i 2000-2009 was 2.3 percent per year. Hawai‘i is economically dynamic with diversified agriculture and manufacturing; strategically important to the global defense system of the nation; a Pacific Basin transportation center; and a major tourism destination. The health of the State’s economy depends significantly on conditions in the overall U.S. economy and key international economies, especially Japan. State taxes are collected under a centralized tax system. The chief sources of the State’s revenue are a general excise tax, individual income taxes, and Federal grants-in-aid. The second largest source of income in Hawai‘i is the Federal government, primarily through defense expenditures (DBEDT 2010).

Tourism is Hawai‘i’s largest industry with the majority of visitors coming from the U.S. mainland, Canada, Australia, and countries of the Far East, particularly Japan. Most visitors to Hawai‘i travel by air. The Honolulu International Airport on O‘ahu; General Lyman Field on Hawai‘i; and the Kahului Airport on Maui, are the major civilian airports capable of serving large-jet traffic. There are several smaller airports among the islands and a number of small private airfields and military airports throughout the State. Oceanic passenger ships also carry visitors through Honolulu, cruise ships travel from California to Hawai‘i and Tahiti to Hawai‘i, and there is also an interisland cruise line.

Hawai‘i’s mild, year-round climate sustains many different types of agriculture, generating \$2.9 billion to the State’s annual economy and directly and indirectly providing 42,000 jobs. The Polynesian voyagers traveled to Hawai‘i with plants such as taro, bananas, and other staples to sustain themselves. Agriculture began with small farms covering the islands, growing everything from sweet potato to rice. Fishponds were created along the coasts to raise fish and other seafood. The plantation era brought decades of the sugar and pineapple industries, expanding over thousands of acres of prime agricultural lands. Now, with the decline of the sugar industry, these agricultural lands are returning to a new era of small farms growing diversified agricultural products. Crops such as specialty fruits, coffee, macadamia nuts, flowers and foliage not only provide fresh produce and flowers to local markets, but also have become major exports to destinations around the world. The early fishponds have evolved into high-tech aquaculture ventures, farming varieties of fish, shrimp, lobster, abalone, and seaweed (HDA 2009).

Hawai‘i has several hundred companies engaged in diversified manufacturing. Heavy-manufacturing plants, using raw materials for the most part imported from the U.S. mainland, include an oil refinery that produces a variety of petroleum products and chemical compounds, a steel mill manufacturing reinforcing bars; several cement plants, a concrete-pipe plant, and an aluminum-extrusion plant. Most building lumber is imported from the mainland. A number of garment manufacturers produce printed fabrics and apparel marketed locally, nationally, and abroad.

The Hawai‘i film and movie industry is booming, with production expenditures expected to reach \$391 million for 2010. The State provides competitive tax incentives, the only State-owned and operated film studio in the country and a growing list of production facilities, a well-established one-stop process for State film permits, and a film-friendly government and community. The DBEDT estimates that the amount of economic activity generated by the industry will total \$606.5 million for the year 2011. The jump in production expenditures is being driven by 10 motion pictures as well as the final season of TV’s “Lost” and the start of 2 network shows, “Hawai‘i Five-0” and “Off the

Map”. There have been a number of national and international commercials shot here, along with episodes for television series and a mini-series from Japan (DBEDT 2010).

Ocean-surface transportation is critical to Hawai‘i, and Honolulu Harbor is the primary shipping center. A large percentage of the cargo ships traverse between Hawai‘i and California ports, a few between Hawai‘i and the East Coast of the U.S. via the Panama Canal, and others from western Pacific ports. Around-the-world passenger ships carry visitors through Honolulu, and there is an inter-island luxury cruise line. Tug-pulled barges and small freighters transport goods from Honolulu to the outer islands, returning with agricultural crops and livestock.

A major concern is the high cost of living, due in large part to the dependence on imports. The State imports 85 percent of the food consumed in Hawai‘i. Transportation costs are included in the prices of nearly all consumer goods. As the population increases, housing grows increasingly difficult to acquire, and it is disproportionately expensive when compared with housing costs in many of the mainland States. Building materials, most of which are imported, are expensive. Residential land is limited and highly priced, since much of the property is owned by corporations and trusts. More than half the land in the State is owned by private individuals or corporations, although the State itself, holding more than one-third of the land, is the largest single landowner. The Federal government owns one-sixth of the land in the State. State and county governments are major employers (Britannica 2010).

#### **5.2.4 Refuge Contribution**

The exact economic contribution of visitors to the James Campbell NWR has not been calculated, although estimations have been made for other refuges in Hawai‘i. Carver and Caudill (2007) found that Hakalau Forest NWR had total annual recreational expenditures of \$56,400 from 1,323 visitors. Similar to the James Campbell NWR, birding and other wildlife observations are the main attraction at the Hakalau Forest NWR. Based on this estimate, it is likely that the James Campbell NWR provides a similar contribution. Based on Fiscal Year 2011, the projected budget for the James Campbell NWR is \$657,912, of which \$415,401 is for employee salaries. The remaining \$242,511 is for local expenditures.

In addition to recreational expenditures, the Refuge contributes money to the local economy through the Refuge Revenue Sharing Act of 1978 (16 U.S.C. 715s). This Act authorizes Federal payments to be transferred to the County of Honolulu annually in lieu of discontinued taxation of private property. The amount compensated is approximately 0.75 percent of the fair market value of fee lands. In 2009, \$3,443 was paid to the City and County of Honolulu for 222 acres owned in fee title at James Campbell NWR. As we acquire more parcels within the approved boundary, these payments will increase accordingly, subject to congressional appropriations.

As public use facilities are developed, visitors to the north shore will be attracted to the Refuge and augment business revenue in Kahuku and local communities.

