

CHAPTER 3

SETTING: LAND USE

3.1 REGIONAL AND HISTORIC LAND USE

The regional and historic land use setting provides a context for understanding the circumstances under which the Base currently operates and the role being placed upon it as a result of land development trends, regional socio-economics, and land planning decisions made by agencies other than the DoD. Understanding regional and historic land uses also provides a context for predicting future trends. Camp Pendleton cannot manage its resources and operate in isolation of the surrounding region. Just as the presence of the Base affects surrounding communities land use decisions, land use in the region affects the Base.

Historic land uses and regional growth over the past 200 years have significantly influenced not only the physical appearance of Camp Pendleton and its environs, but also the ecological setting in which the Base finds itself today. Southern California, with its high degree of species endemism and increasing human population and development pressure, currently has a substantial number of federally listed threatened and endangered species. Military installations in southern California, with their requirement for large open spaces for training, are among the last remaining places for the region's listed and sensitive species. Camp Pendleton has managed to maintain more than 90% of its military training lands as undeveloped. By virtue of this land mass, location, and open space, Camp Pendleton contributes significantly to the continued survival of as many as 18 of the 38 threatened and endangered plant and wildlife species in San Diego County.

Camp Pendleton understands its lands and associated natural resources can and do play a crucial role in regional conservation efforts and stewardship initiatives. Camp Pendleton welcomes its role of responsibly managing its lands and natural resources consistent with current federal policies and regulations. However, local, state, and federal jurisdictions in the region must share an understanding that Base lands have been set aside by Congress specifically for military training, mission support, and preparedness activities in support of National Security mandates. Further, Camp Pendleton's position has always been, and will continue to be, that conservation initiatives in the southern California ecoregion must be shouldered by all stakeholders in the region, not solely the Base with its vast open spaces and wealth of natural resources.

Throughout its nearly 60 years in the region, Camp Pendleton has endeavored to work closely with surrounding communities, local jurisdictions, and private entities. However, the Base lands have been, and continue to be, subject to both direct and indirect pressures from surrounding communities and the region for land use (e.g., leases and easements) and mission restrictions (e.g., noise). Moreover, Camp Pendleton is concerned that, as regional development continues to encroach on natural habitats off Base, its land will become increasingly, and disproportionately, important to regional habitat and sensitive species conservation initiatives. This presents another pressure on the Base. For example, as more

species are federally listed as threatened or endangered (regardless of whether the species have thrived locally on Base), the Base is burdened with additional regulatory requirements and management needs. Such encumbrances are viewed as encroachment threats to the military mission (see discussion of encroachment in Chapter 6); they affect how Marines train and potentially degrade military readiness. As regional populations increase, pressures from encroachment are expected to only worsen.

3.1.1 Regional Environment: Adjacent Land Use and Trends

Increasing population growth and the resulting pressure to accommodate more and more people within southern California is the primary driving force for land use and trends in the region surrounding Camp Pendleton. Statewide, more than 34 million people currently live in California, with nearly 20 million people in southern California, including Imperial, Los Angeles, Orange, Riverside, San Bernardino, San Diego, Santa Barbara, Ventura Counties (Census 2000 population numbers; California Department of Finance 2001). Projected population growth figures suggest the situation will only worsen. California is predicted to increase to 40 million as it approaches 2010, 45 million in 2020, and nearly 60 million in 2040 (December 1998 projections; California Department of Finance 1998). According to a press release (3 May 2000) from the Demographic Research Unit of the California Department of Finance, the top five fastest growing counties in the state based on numerical population increases are Los Angeles, San Diego, Riverside, Orange, and San Bernardino Counties. Southern California (defined using the same counties listed previously) is projected to increase to populations over 23, 26, and 34 million in 2010, 2020, and 2040, respectively (December 1998 projections; California Department of Finance 1998).

The southern California landscape is rapidly changing due to the increasing urbanization and unimpeded development needed to support the region's population growth. Urbanization and development pressures have occurred, and are expected to continue to occur, along the coastal strip stretching from metropolitan Los Angeles to San Diego. Consequences of this urbanization and development include a decrease and displacement of agricultural acreage and open spaces, an increase in habitat fragmentation and isolation, and an increase in the number of native and endemic species and habitats that are becoming threaten with extinction. A recent report by The Nature Conservancy tallied all known extinctions in the U.S. state-by-state since the 17th century. California led the list for the continental U.S. with 46 known or suspected extinctions of plants and animals. Dobson et al. (1997) tallied the number of rare and federally listed threatened and endangered species county-by-county across the continental U.S., and San Diego County led the list.

Camp Pendleton and the adjacent Cleveland National Forest occupy the last significant open space and wildlife habitats in the coastal areas of southern California. A study completed by Harvard University in 1996 suggested, "By 2030, urbanization will completely surround Camp Pendleton, with the exception of the Cleveland National Forest (approximately 12 kilometers along [Camp Pendleton's] northern boundary), and the Pacific Ocean." In fact, within the last 5-7 years, 19 new residential developments were either approved for construction or have been built in communities and other open space lands surrounding Camp Pendleton.

3.1.1.1 COMMUNITIES OF DELUZ AND FALLBROOK

Northeast of Camp Pendleton and south of the Cleveland National Forest is an unincorporated area of San Diego County that includes the communities of DeLuz and Fallbrook. These lands are currently designated as estate residential, which limits development to residential units of a density no greater than one unit per two acres of unimproved land. This does not limit large tracts of real estate from being developed at once as long as the overall average meets the requirements for estate residential. DeLuz is the closest buildable area to training areas on Camp Pendleton without any type of buffer to minimize land use conflicts between residential uses and military training. Although Camp Pendleton's impact areas are separated from residential areas by space allocated for maneuvers, this space is of limited size and potential use, leaving a potential for conflict similar to that which has occurred on the Base's southern boundary near the San Luis Rey gate on Vandergrift in eastern Oceanside. This is most evident in the area around DeLuz and north of the developed Fallbrook community. The area surrounding the developed portion of Fallbrook and to its south is somewhat buffered by the Naval Weapons Station Seal Beach, Fallbrook Annex. The land use is industrial; however, the interval of operation is regulated and separation is such that any nuisance associated with its operation does not impact areas outside of the facility.

Developments in unincorporated areas submitted for approval to San Diego County in the last three years have tended to congregate around the developed portion of Fallbrook. Approximately 50 percent of the proposed developments are located in or adjacent to Fallbrook proper. The remaining planned developments are to the east of Fallbrook closer to the I-15 corridor. The total amount of proposed development in the area, both approved and unapproved by the county since 1993 consists of about 800 units on 1,065 acres. Most of these have been constructed by 2000. The scale of development in northeastern San Diego County is only a fraction of that in San Clemente.

3.1.1.2 CITY OF OCEANSIDE

The southeastern boundary of Camp Pendleton is shared entirely with the City of Oceanside. The western portion of Oceanside, its commercial district, has grown along with the growth of the Base itself. The types of land uses found in this area are common to both sides of the boundary. A mixture of residential, commercial, and light industrial areas abounds in Oceanside as well as in the adjacent southwestern area of Camp Pendleton. New development in Oceanside, which consists mainly of housing and its related entities, has pushed east to previously vacant land and now constitutes a large percentage of the common boundary with the Base.

The largest portion of the new development in Oceanside is residential units adjacent to training areas just south of the Headquarters Area along Vandergrift Boulevard. A review of city records shows that this development is consistent with their existing General Plan;

however, the Oceanside General Plan makes no mention of noise from training activities on Camp Pendleton.

3.1.1.3 CITY OF SAN CLEMENTE

Except for a downturn period in the economy during the early 1990s, development within the City of San Clemente, located adjacent to Camp Pendleton's northern border, has proceeded at a relatively fast pace over the last decade. Practically all developable property along San Clemente's southern boundary with the Base has been developed to its full potential, with the exception of one area of the community located along the northeastern corner of Camp Pendleton. The San Clemente approved that portion of the city, known as the Talega area for development in 1998. The Talega project, which began construction in 1999 and is expected to reach full build-out by 2010, will be a 4,000-unit residential housing development along with several small parcels of supporting commercial property.

The increased numbers of residential housing areas and growing San Clemente population now found along Camp Pendleton's northern boundary is expected to result in increased incidents of noise complaints arising from this community area north of the Base. This growth in San Clemente's population over the last decade is not unlike the same increased levels of growth that has been occurring throughout all communities in Orange, San Diego, and Riverside Counties (the three counties along Camp Pendleton boundaries) during the last ten years. This regional population growth is expected to place ever increasing demands on an already overburdened regional transportation and infrastructure system. One such example of how this last ten years of continued regional population growth can potentially affect Camp Pendleton can be seen in an Orange County joint powers agency (the Transportation Corridors Agency [TCA]) proposal to construct a future toll road transportation project on this Base. In that case, the TCA proposes to build this road project through five miles of Camp Pendleton along the Base's northern boundary adjacent to the City of San Clemente. The status of this proposed transportation project continues to be monitored by the Marine Corps.

3.1.1.4 CLEVELAND NATIONAL FOREST

Roughly 25 percent of the eastern boundary of Camp Pendleton is contiguous with the Cleveland National Forest or holdings of the Bureau of Land Management that are virtually uninhabited. This open space represents an important habitat linkage and wildlife corridor for the Base. The only conflict that occurs in this area is the infrequent violation of the Base boundary by visitors to the forest. These infrequent violations may be misguided hikers, willful trespassers, and/or game poachers. While such occurrences are a relatively minor concern, they are monitored and any proposed change of the wilderness designation of the National Forest that would increase access to the area would be of concern to the Marine Corps. Areas with the wilderness designation are closed to all forms of mechanized transportation and are currently lightly traveled due to their isolation and limited access.

3.1.1.5 PACIFIC OCEAN

Development along Camp Pendleton's western boundary is limited by the Pacific Ocean. The only type of permanent development feasible would be facilities to support offshore oil exploration and drilling. This has been proposed in the past and considered by the Department of the Interior for the granting of leases to the oil industry. The status of the leases is being monitored by the Marines as well as many environmental groups.

3.1.2 Historic Land Use

The land currently occupied by the Base has a long history of human presence (>10,000 years), from prehistoric peoples through Spanish colonials (1769-1821) and Mexican (1821-1848) and American ranchers (1848-1942). Cattle grazing and, later, crop cultivation continued in the region until the U.S. government purchased the land in 1942. It is thought that the early Native Americans regularly burned patches of land in order to clear them. While fire ignitions and burn frequency at Camp Pendleton are much higher today than at the time the military acquired the property, burn patterns may reflect prehistoric ones more closely than those resulting from fire suppression policies in southern California (Minnich 1983).

During the Rancho period, agriculture and livestock were the economic base of the region. Former residents of Rancho Santa Margarita put the number of cattle grazed at "more than 25,000 head" (Grayler, pers. comm. 1989) on about 82,500 acres. It is believed that sheep were introduced in the late 1800s. Subsequent owners of the property also used the land for grazing, and grazing leases continued after the military took over the property during World War II. Camp Pendleton was reputed to have the finest grazing land in southern California during the early 20th Century.

Grazing and farming activities were supported by El Camino Real, the old thoroughfare used by the missionaries that became Highway 101 and used to follow the Basilone Road alignment before it was moved closer to the coast. Infrastructure development included a railroad, which ran from San Diego to Oceanside, inland along the Santa Margarita River to Temecula, and connected to the transcontinental railroad at Colton in Riverside County. The tracks were generally ten to thirty feet above the riverbed in the canyon. Thirty miles of track were washed out in 1884 and again in 1891. This route was then replaced by a more secure route along the coast.

First established in the Las Flores/Las Pulgas basin in 1897, a bean farm covered approximately 1,980 acres by 1943. Other areas farmed on Camp Pendleton over the years include the Las Pulgas, San Mateo, and San Onofre valleys; Ysidora Basin; the Chappo area (now the Supply Depot and airfield); the coastal bench from Oceanside to San Onofre east and west of Interstate 5; and Stuart Mesa. At one time, farmed areas of the Base totaled around 10,000 acres (Zedler et al. 1997). Stuart Mesa was "a mixture of hog wallows and dune sand in 1938" (AC/S ES historical files). Coastal farms were un-irrigated, as were parts of the San Onofre and Las Flores areas. Irrigated farms included Ysidora Basin, Stuart Mesa, San Mateo, and parts of San Onofre. Truck farming started in the San Onofre valley in 1925.

The Cristianitos area was first leased in 1948, and the Talega area was farmed until 1953. A 3,000-acre guayule (*Parthenium argentatum*) “Emergency Rubber Project” was in place that included most of the coastal bench lands north of Horno Canyon. Other historical crops included lemons, nursery stock, dry-land farmed lima beans, tomatoes, strawberries, sweet corn, barley, bulbs, and several types of vegetables, vegetable seed, flowers, and potatoes for the California Potato Experiment Station. In 1944 and 1945, the Base tried to cancel agricultural leases, but gave up after a general protest. It was decided that the “agricultural economy of the entire U.S. would have been affected,” particularly because of vegetable seed and poinsettia production.

In 1942, the Department of the Navy purchased 130,000 of the 181,000 total acres of the *Rancho Santa Margarita y Las Flores* property and converted these lands into a military training center for World War II. Later that year, President Franklin D. Roosevelt named the Base in honor of Major General Joseph H. Pendleton. By 1946, Camp Pendleton had become the headquarters for all Marine Corps activities on the west coast. Over the past 60 years, nearly 5,000 acres has been disposed of by the DoD, resulting in Camp Pendleton’s current size of approximately 125,000 acres.

Camp Pendleton is the Marine Corps’ only amphibious training base on the west coast and has been, is, and will continue to be responsible for the training and deployment of Marines throughout the Pacific Region. For nearly 60 years, the Base has provided a unique combination of natural and military resources for training Marines in every conflict since World War II, contributing substantially to the success of national security objectives around the world.

On August 7, 1942, the United States government landed Marines on Guadalcanal, as the first major American offensive of World War II. Camp Pendleton’s top priority became training Marines in amphibious assault landings. After the assault on Tarawa in 1943, amphibious training and facilities to support these activities increased ten-fold. From that point forward, thousands more Marines were trained for the Pacific Theater at Camp Pendleton during World War II, including the Third, Fourth, and Fifth Marine Divisions. On February 19, 1945 more than 70,000 combat-ready Marines from 880 ships, most of them from Camp Pendleton, assaulted the beaches of Iwo Jima.

The First Marine Division left Camp Pendleton in 1950 to reinforce the Pusan perimeter in Korea, after a June 25, 1950 invasion of South Korea by eight divisions of the North Korean People’s Army. An amphibious assault landing at Inchon followed on September 15, 1950 and at Chosin Reservoir, seven divisions of the Chinese Communist Army engaged Marines in a failed attempt to prevent them from leaving. In all, more than 200,000 Marines were trained at Camp Pendleton for service during the Korean Conflict. Development around the Base expanded as a result of this Conflict, with \$20 million spent on expanding existing facilities and constructing new ones at Camp Horno and the tank park at Las Flores.

In Vietnam, Marines were providing assistance as early as 1962. In 1965, the 7th Marine Regiment saw the first major American engagements during Operations *STARLITE* and *PIRANHA*. By June 1966, the entire 1st Marine Division had left Camp Pendleton and was in action in Vietnam. For more than ten years, tens of thousands of Marines were trained at

Camp Pendleton and sent to war in Vietnam. Development across the Base continued from 1958 through the mid-1970s, as Vietnam became a priority for Camp Pendleton.

Again, in August 1990, Marines from Camp Pendleton were among the first sent overseas. This time by President George Bush to assist in the defense of Saudi Arabia. Then, in February 1991, the 1st Marine Division supported by the 3^d MAW and 1st FSSG was called upon to initiate the attack to retake and liberate Kuwait from the occupying Iraqi Army.

In more recent times, military operations, other than war, have increased in frequency and Camp Pendleton Marines have been increasingly called upon to assist in these missions, including Operation *INTERFET* in East Timor, and Operation *ALLIED FORCE* in Kosovo. As stated in the USMC's *Strategy 21* doctrine, "Whether winning our Nation's battles or reducing human suffering due to man-made or natural disasters, the Marines unique qualities offer the Nation an unparalleled ability to respond to threats or crises, influence world peace, and promote peace and stability."

3.2 CURRENT LAND USE

A variety of land uses occur at Camp Pendleton, however, the priority of Camp Pendleton is and will continue to be military training and support of that military training. While some locations support only one type of activity (e.g., agricultural row crops and dud-producing impact areas), many areas on Base support multiple activities. The following categories illustrate the general locations and predominate types of land uses on Base (Figure 1-2): military training and training support facilities, Base infrastructure and mission support (including cantonment and recreational facilities), and real estate agreements and leaseholders.

3.2.1 Military Training and Training Support Facilities

Although the combat training environment, weapons, and tactics have changed over the years, Camp Pendleton's purpose has remained constant: *it is first and foremost a training base, designed to mold young men and women into the country's finest fighting force*. As a training base, Camp Pendleton must maintain its ability to provide ready, capable Marines in the right place, at the right time, and with the right training in order to excel in the uncertain challenges of the future.

Camp Pendleton actions are guided by the Commandant of the Marine Corps': "[*Bases and stations*] provide the means by which we develop, train and maintain a modern force that is prepared to win our Nation's battles. *Installations* are the platform from which we project expeditionary power by deploying and sustaining Marine Air-Ground Task Forces. They will continue to grow in importance as we fully implement our future doctrine and the '*reach back*' requirements it demands." The following equation captures the sentiments of the Commandant regarding the future of training for the Marine Corps at Camp Pendleton: "Increased home training, combined with decreased overseas training, equals more training projected for Camp Pendleton." The Commandant further emphasized, "Without [*Camp*

Pendleton], there is no place to live and no place to train” (Commanders Encroachment Brief, December 2000). Future warfighting guidance from the Commandant also captures the essence of natural resource management issues facing the Commanding General at Camp Pendleton: “Emerging warfighting concepts, plus [Base Realignment and Closure] impacts, and more home training, means Camp Pendleton is busy, and going to get busier, and this creates a dilemma for the Base CG.” Regardless of the difficulties faced by Camp Pendleton, the Base must ensure that Marines, individually and as a unit, are ready to answer the Nation’s call, anytime, anywhere.

Marines are required to be trained in all U.S. Marine Corps mandated requirements and to be combat ready for global deployment in pursuit of mandated national security missions. Training activities must include, but are not limited to: amphibious landings, use of tracked vehicles, personnel maneuvers, artillery and small arms firing, aerial weapons delivery, engineer support operations, logistics support, field combat service support, communications, airlift support (re-supply) of troops and weapons, equipment maintenance, and field medical treatment. Appendix L identifies Mission Essential Task Lists (METLs) for several of the tenant units of the Base.

Camp Pendleton provides training facilities for many active duty and reserve Marine, Navy, Army, Air Force, and National Guard units, as well as other national, state, and local agencies. Camp Pendleton’s population can reach 90,000 people daily. Nearly 60,000 personnel train at Camp Pendleton every year, with 35,000 service members actually assigned to Camp Pendleton.

Camp Pendleton is most heavily used by and structured to support the First Marine Expeditionary Force. The IMEF is the command element for the 1st MARDIV, 1st FSSG, and 3d MAW. The latter is headquartered at MCAS Miramar. One of 3rd MAW’s four Aircraft Groups, MAG-39, a helicopter Group, is based at MCAS Camp Pendleton. Forces of the IMEF are continuously deployed worldwide to meet national security objectives as directed by the National Command Authority. The Base also supports several specialized schools, Headquarters and Support Battalion, Security Battalion, Assault Amphibious Schools Battalion, and a Reserve Support Unit. Camp Pendleton’s training ranges are heavily used not only by active Marine and Navy units, but also by reserve Marines, Army National Guard, local community law enforcement agencies, and private research firms for weapons testing.

3.2.1.1 MANEUVER TRAINING

Camp Pendleton’s use of more than 200 square miles of land space for training includes 31 training areas, a Central Impact Area (CIA) of more than 32,000 acres, more than 100 live-fire facilities, 4 amphibious assault landing beaches, and Special Use Airspace.

Amphibious Operations

The Base is situated next to a variety of offshore ocean training areas that extend Camp

Pendleton's operational capabilities. The waters immediately west of the Base, known as the Camp Pendleton Amphibious Assault Area (CPAAA), contain 294 square miles of amphibious assault training and maneuvering areas, including the seaward portion of restricted airspace area R-2503A. The CPAAA includes an area dedicated to Landing Craft Air Cushion (LCAC) training and operations, as well as the Camp Pendleton Amphibious Vehicle Area. No live ordnance is utilized within the CPAAA during amphibious training operations except those operations that take place within the seaward portion of R-2503A; however, extensive Naval surface, subsurface, and aviation operations take place during such training evolutions. The ocean bottom is designated as the "floor" of the CPAAA while the "ceiling" is considered to be 700 feet mean sea level (MSL), except that portion that lies within R-2503A which extends to 2,000 feet MSL (Figure 3-1).

Although Camp Pendleton also has more than 17 miles of coastline, less than 10 miles of those are normally available for training activities, and only at four amphibious landing beaches (Red, Green, White, and Blue beaches). In addition, there are 11 ingress points under the Interstate 5, railroad, and utility line (e.g., energy and telephone) easement corridors that run parallel to the coastline and allow access to inland training areas of the Base. However, only one of these ingress points (underpasses) is capable of supporting use by *all* military vehicles, equipment, and personnel, including tanks and other amphibious assault equipment. Other physical constraints to amphibious training exercises include terrain (bluffs), other existing leases and easements (San Onofre Nuclear Generating Station, San Diego Gas & Electric, etc.) and a variety of environmental constraints that include species and habitats, wetlands, nesting sites, and archaeological resources. Each of these constraints restricts military and support activities on Camp Pendleton's beaches during amphibious landings, particularly for larger exercises such as Kernel Blitz, severely degrading Camp Pendleton's military readiness capability.

The majority of amphibious assault training activity occurs at Red Beach. Other amphibious assault training can take place at Green, White, and Blue Beaches; however, each of these has environmental and physical limitations that reduce effectiveness for ingress opportunities. Of the five amphibious landing beaches, Red Beach has the least amount of environmental and physical constraint to training activities.

Maneuver Corridors

Proficiency with the variety of military weapons and hardware used by Marines stationed at Camp Pendleton is crucial to the readiness of the Marine Corps and the military training mission of the Base. A key to developing weapons proficiency is ready access to the various firing ranges spread across the Base's interior, particularly those firing positions located around the perimeter of the Central Impact Area. One of the primary components of accessing interior ranges is the availability of inland transit routes, called "maneuver corridors" (Figure 3-2). These maneuver corridors represent key locations where movement of military personnel, equipment and vehicles is facilitated, or at least relatively unrestricted by either terrain, vegetation, man-made constraints (e.g., buildings and developed areas) and/or rigid environmental regulations (e.g., designated Critical Habitat, sensitive species and archaeological locations, wetlands, etc.)

Training Areas

Camp Pendleton's 31 training areas and open space lands facilitate the intensive training mandated by Marines to acquire a full range of basic and advanced combat readiness skills, weapons proficiency, and leadership skills. The Base's natural resources are unique and irreplaceable to the Marine Corps because they combine over 17 miles of coastline and extensive, diverse inland training areas. Camp Pendleton is the only West Coast Marine Corps facility where amphibious training operations can be combined with elements of Marine aviation and other supporting combat arms to develop, evaluate, and exercise Marine Corps combat doctrine to the fullest extent.

Inland training areas consists of nearly 114,000 acres of live-fire ranges, impact areas, and training areas. Camp Pendleton's 31 training areas and ranges are designed to facilitate all phases of combat readiness training - from individual basic Warrior (small arms) training to larger company/battalion sized training operations. Even larger live-fire combined arms training evolutions that include the use of artillery and Close Air Support are conducted aboard the Base.

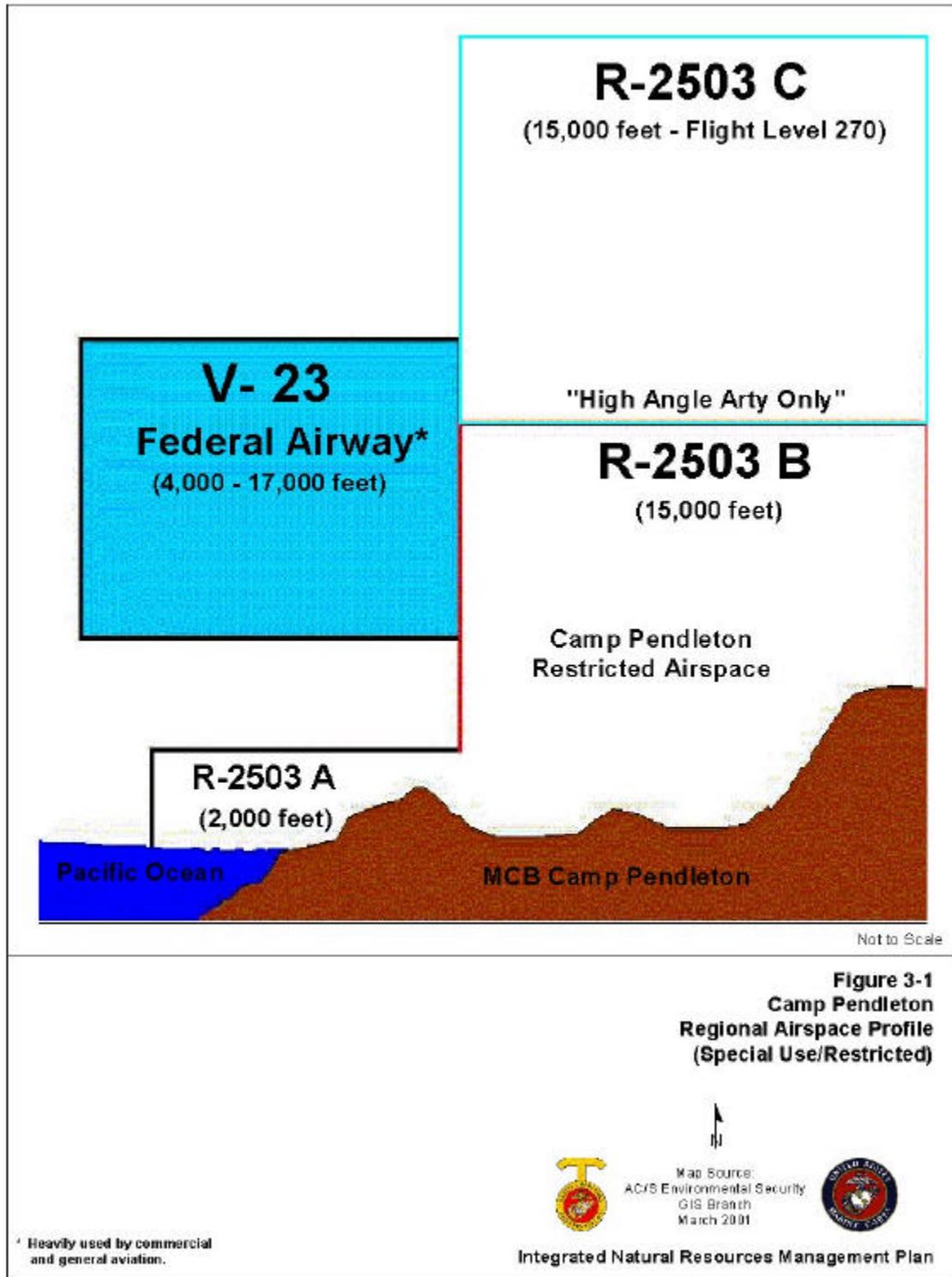
The uniqueness and variety of Camp Pendleton's topography, combined with its contiguous offshore amphibious training areas, its live fire ranges, and its protective restricted airspace, offer maximum flexibility for establishing realistic combat training scenarios. This capability to remain flexible is essential. Camp Pendleton is truly the only complete amphibious training facility in the Pacific region and a precious national asset to be preserved.

3.2.1.2 IMPACT AREAS

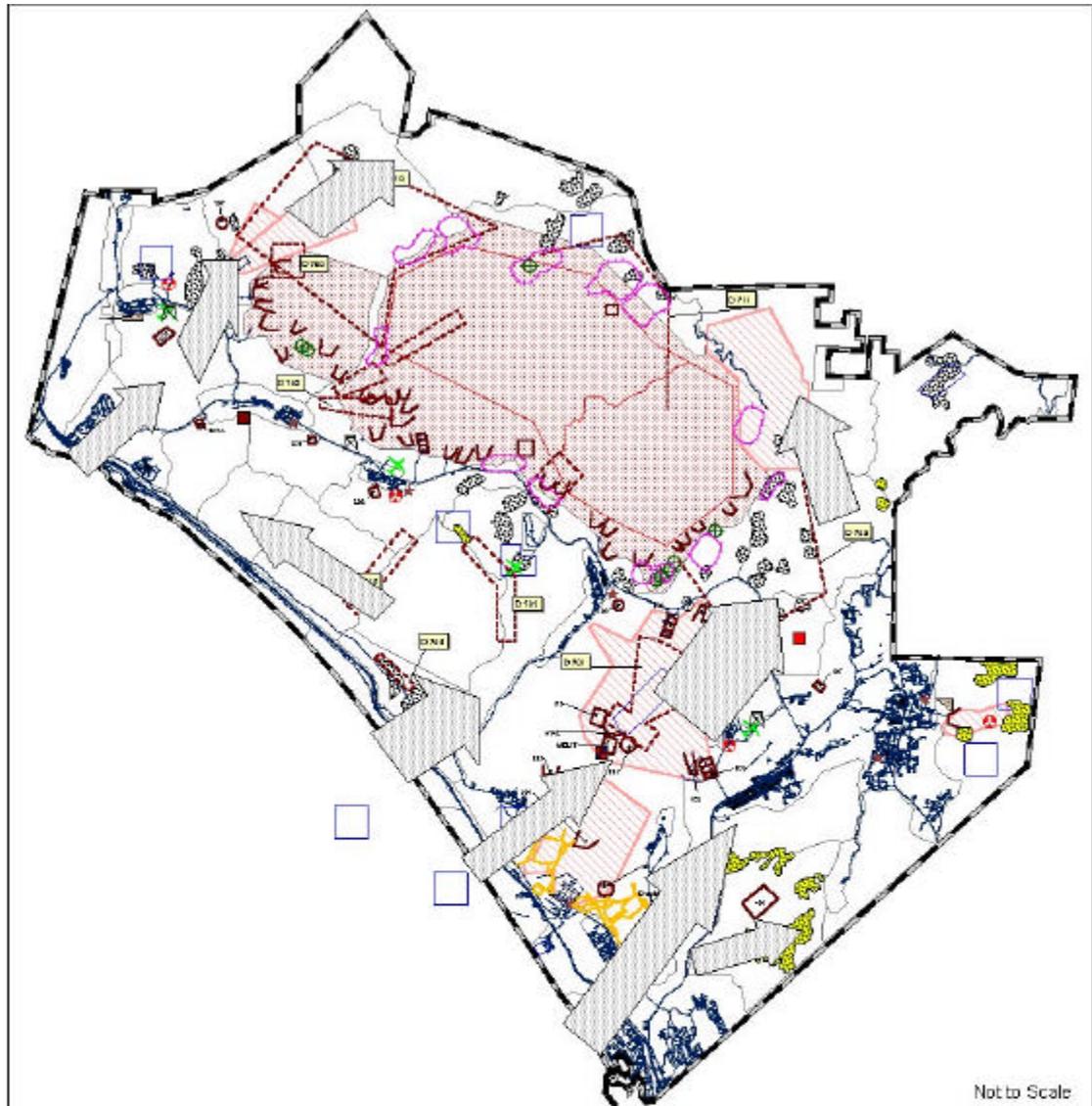
Impact areas on Camp Pendleton have been specifically designated for the receipt of live-fire ordnance (projectiles and explosives) and serve as targeting areas for associated live fire exercises for the various weapons used in training. Locations designated as impact areas cover approximately 33,200 acres of Camp Pendleton. Of this amount, nearly 4,200 acres (including the Range 409 impact area and Firing Ranges 312A, 313A, and 403) overlaps with the training area acreage provided above. Impact areas on Camp Pendleton are classified as either *dud-producing* or *non dud -producing* (Figure 3-2).

Dud-producing impact areas support the delivery of ground-to-ground and air-to-ground ordnance and may contain unexploded (dud) ordnance. Dud-producing impact areas include the Quebec, Whiskey, and Zulu impact areas, often referred to collectively as the Central Impact Area. The CIA contains most of live-fire ranges on Base and, as such, is bordered on all sides by safety zones and the remaining maneuver and training ranges.

Including safety zones and the Jardine Canyon area between Quebec and Whiskey/Zulu, the Central Impact Area totals over 29,000 acres. No maneuver activities are conducted within the CIA. Access to dud-producing impact areas is tightly controlled for safety reasons.



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Not to Scale

Figure 3-2
Ground Training Operations

- | | | | |
|--|--|--|---------------------|
| | Camp Pendleton Boundary | | NBC Facilities |
| | Training Area Boundaries | | 25 Area Combat Town |
| | LFAM | | 52 Area Combat Town |
| | Crucible | | MOUT |
| | Ranges | | Maneuver Areas |
| | Mortar Firing Areas | | |
| | Heavy Equipment Training Sites | | |
| | AFAs | | |
| | Live Fire (Non Dud-Producing) Impact Areas | | |
| | Central Impact Area (Restricted Access) | | |
| | Dropzone | | |
| | RSOPs (NFAFAs) | | |
| | Rappelling Towers | | |
| | Obstacle Courses | | |
| | Mortar Positions | | |
| | Aircraft Mock-Ups/Hulks | | |



Map Source:
ACJS Environmental Security
GIS Branch
March 2001



Integrated Natural Resources Management Plan

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Wildfire in these areas is not normally suppressed due to safety concerns. Firebreaks are used to contain wildfires in dud-producing impact areas.

Non dud-producing impact areas, referred to collectively as “secondary impact areas,” support training activities that utilize small arms firing and the use of non dud-producing ordnance in live fire exercises. Secondary impact areas are scattered across the Base and include Edson Range, X-Ray Impact Area, 409 Impact Area, and Firing Ranges 312A (currently inactive), 313A (currently inactive), and 403 located within the Juliett Training Area (Figure 3-2). Upon request, maneuver activities may be conducted within secondary impact areas.

3.2.1.3 TRAINING SUPPORT FACILITIES

Camp Pendleton has numerous training related facilities to support the diverse air, sea, and land based training. These facilities range from combat training towns and rappel towers to designated areas for the use of live fire, explosives, and other potentially hazardous training. Training facilities in support of aviation operations are covered in Section 3.2.1.5 below.

Live Fire, Explosives, Blanks, Pyrotechnics, Smoke, Chemical Munitions, and Lasers

Live fire is defined to include the use of weapons or weapon systems that produce projectiles (e.g., small arms, artillery, aviation ordnance, and other dud- and non dud-producing ordnance). For ease of coverage in this document, live fire does not include explosives, pyrotechnics, and other incendiary devices.

Training operations which involve the use of live fire are restricted to the following six types of locations across the Base (Figure 3-2): impact areas (described above); live fire facilities, including ranges, Artillery Firing Areas (AFAs), Mortar Positions (MPs), and Mortar Firing Areas (MFAs); and Live Fire And Maneuver (LFAM) areas. The Base currently operates nearly 100 live fire facilities and 12 LFAM areas.

A live fire range is a designated area equipped with a variety of targets and monitoring/scoring devices for live fire training. Live fire ranges are designed to accommodate a broad spectrum of weapons including pistols, rifles, machine guns, mortars, antitank assault weapons, grenades, missiles, and artillery. These include man-portable weapons, vehicle-mounted weapons systems, and rotary and fixed wing aircraft systems. Ranges are designed to provide combat conditions and scenarios to train personnel as well as test the capabilities of weapon systems. Live fire ranges must be continuously upgraded to keep pace with evolving technology. With few exceptions, the firing ranges are located within and along the perimeter of the central and secondary impact areas.

AFAs, MPs, and MFAs are designated locations for the firing of inert and explosive artillery and mortar ammunition into the impact areas. The Base currently has 45 AFAs and 7 MPs. Twelve MFA sites are proposed within the periphery of the Central Impact Area. AFAs are fairly large and relatively flat areas, usually free of brush and shrubs. MPs are similar, but

much smaller in area. The proposed MFA sites are generally larger than MPs and are for simulating emergency suppression tactics. Specially designated AFAs are also used in conjunction with live fire operations by wheeled and tracked assault vehicles. AFA or MP training includes the burning of unused powder and charges. This is generally conducted in trenches and in accordance with the Range and Training Regulations, equipment technical manuals and operation manuals. There are six nonfiring AFAs on Base, called Reconnaissance, Selection, Occupation of Positions (RSOPs) that are used for AFA types of training without live fire. RSOPs are also included in Figure 3-2 as they receive the similar types of training related impacts (less the firing noise and associated impacts) as AFAs.

With few exceptions, MPs are located within and along the perimeter of the central and secondary impact areas; the AFAs, RSOPs, and LFAM areas are located in training areas throughout the Base.

Live Fire and Maneuver activities are field training exercises that practice the coordination of infantry, vehicle, flight operations, and combat service support operations during various offensive assault and attack scenarios. LFAM operations enable personnel to experience realistic simulations of combat scenarios. Twelve specific locations on Base designated for LFAM operations (Figure 3-2):

- D700 occupies an area that overlaps portions of several training areas, including India, Kilo One, Kilo Two, and the CIA buffer. This LFAM site has been selected to accommodate battalion sized or larger units in mobile assaults scenarios that integrate infantry, aviation, mechanized, and motorized units with direct live fire and supporting arms live fire.
- D701 occurs primarily within the X-Ray Impact Area. This LFAM site has been selected to integrate battalion sized or larger infantry and mechanized, aviation, and motorized assault units with scenarios that include minefield breaching operations and both direct live fire and supporting arms live fire.
- D702 occupies a small canyon situated in overlapping portions of three training areas: Papa One, Two, and Three. This LFAM has been selected to integrate company and platoon sized or smaller infantry assault units with live fire and maneuver scenarios that include use of both direct live fire and supporting arms live fire.
- D703 primarily occupies lands within the CIA, northeast of Basilone Rd. across from the ASP facility, including a portion of AFA#10. This LFAM has been selected to integrate company and platoon sized or smaller infantry assault units within live fire and maneuver scenarios that include both direct live fire and supporting arms live fire.
- D704 occupies an area that lies exclusively within the Tango training area, overlapping with a portion of AFA#14, east of I-5. This LFAM has been selected to integrate company and platoon sized infantry maneuver activities within scenarios that include direct live fire. This LFAM will also integrate mechanized unsupported live fire and maneuver attacks.

- D705 occupies a portion of Horno Canyon that includes parts of several training areas: Papa Two, and Romeo One and Two. This LFAM site has been selected to accommodate company and platoon sized mobile assault scenarios that integrate both mechanized and motorized units in live fire offensive attacks.
- D706 is primarily situated within a portion of the Quebec Impact area but also includes portions of the Bravo One and Yankee training areas. This LFAM site has been selected to support platoon sized or smaller infantry assault units within a live fire ambush scenario.
- D707 is exclusively situated within the CIA, near Jardine Canyon. This LFAM site has been selected to support squad sized infantry units within an offensive range live fire scenario.
- D708 is primarily situated along a hillside overlooking the south fork of San Onofre Canyon, east of the 52 Area, near Jardine Canyon. This LFAM site has been selected to support squad sized infantry units conducting live fire assault scenarios.
- D709 is primarily situated along the drainage within the north fork of San Onofre Canyon, east of Jardine Canyon. This LFAM site has been selected to support aerial assaults on a mechanized enemy column using anti-armor weapons systems.
- D710 occupies a larger region of the northern part of the Base, overlapping portions of several training areas: Bravo One, Charlie, Yankee, Quebec Impact Area, and the northernmost reaches of the CIA, including Jardine Canyon. This LFAM site is designated as Live Fire And Maneuver Area #4 and has been selected to accommodate company and platoon sized units in mobile assault scenarios that integrate infantry, units with direct fire, and aerial support live fire, including the use of ordnance.
- D711 is primarily situated along the eastern margin of the CIA, adjacent to Echo Training Area, but also includes portions of the Whiskey-Zulu Impact Areas and its adjoining buffer zone. This LFAM site has been selected to support company sized units in helicopter insertion of heavy weapons and coordinated live fire attacks in an offensive scenario.

Except for hand grenade training, use of explosives are limited to demolition training and to simulate battlefield conditions. Typical explosive devices involve trinitrotoluene (TNT), C4, shape charges, 1700-pound line charges, and demolition equipment. Demolition and explosives training involving ¼-pound blocks of TNT and C4 or smaller may be used on all ranges and training areas (or wherever a unit commander believes is safe, so long as usage complies with the fire danger rating and Base Order restrictions). Larger charges are permitted on ranges 219, 401, and 600 but require proper approvals for use on any other range or training area. Hand grenade training is restricted to ranges 109, 202, 307, and 503.

Blanks are non-projectile producing rounds that may be used with an array of small arms to simulate weapons firing without the safety risks involved with the use of live ammunition. Blanks may be used basewide in all training areas, so long as usage complies with the fire danger rating and Base Order restrictions.

Pyrotechnics are devices that create smoke and/or light for signaling or illumination (e.g., flares or smoke grenades) or for simulating battlefield conditions. Some devices are designed to produce smoke for targeting or for “self-screening” that are not typically considered pyrotechnics (e.g., white phosphorous, used largely for targeting, is not considered a pyrotechnic in the Range and Training Regulations manual). Pyrotechnics and smoke producing devices are permitted in training areas throughout the Base, so long as usage complies with the fire danger rating and Base Order restrictions.

Chemical munitions used during infantry training refer almost exclusively to nontoxic tear gas (chlorobenzylamalonitrile), which is used in designated NBC chambers, in Combat Training Towns, the Military Operations in Urban Terrain (MOUT), and throughout training areas in general (Figure 3-2).

Camp Pendleton has been certified for the use of a variety of man-portable, vehicle-mounted, and airborne laser targeting systems generally employed in target designation in ranges and impact areas. Laser systems may be operated only from observation posts and live fire ranges as specified in the Range and Training Regulations (paragraph 8005).

Obstacle Courses, Rappelling, Urban Terrain, etc.

The Base has a variety of facilities for ground based training exercises (Figure 3-2). These include, but are not limited to: two Combat Training Towns (CTTs, one each in Kilo Two and Alfa Two training areas), one MOUT (in X-Ray impact area), 19 obstacle courses, the Crucible course, 3 rappel towers, aircraft mock-ups (Hulks), and two heavy equipment training sites (discrete locations for bulldozer, etc. training).

The CTTs and the MOUT are facilities that simulate developed areas for urban terrain training and consist of one and two story concrete block and wood buildings to simulate infiltration, patrolling of built-up areas, building searches, etc. The 25 Area CTT (in Kilo Two), 52 Area CTT (in Alfa Two), and the MOUT occupy approximately 62, 48, and 312 acres respectively (acreage estimates include ruderal land surrounding the facilities). Training conducted in the 52 Area CTT employs only small arms blanks and smoke grenades, whereas the combat scenario at the 25 Area CTT is further enhanced by the use of simulated artillery and machine gun fire (from propane cannons), tear gas, additional smoke devices, and pyrotechnics. In addition to the kinds of activities conducted at the CTTs, training at the MOUT involves detonation of ¼-pound TNT charges and use of six live fire stations situated at Range 131, all located within the X-Ray Impact Area.

3.2.1.4 AVIATION OPERATIONS

Camp Pendleton's Special Use Airspace includes military operations areas, a controlled firing area, and restricted airspace established to support military training and ground weapons firing per agreement with the Federal Aviation Administration (FAA). This Special Use Airspace is approved for military use from 6:00 AM to midnight, seven days a week, year around (Figure 3-3).

Special Use Airspace was established over Camp Pendleton to segregate hazardous military air operations and ground firing activities from nonparticipating civil aviation operations. The restricted airspace overlies most of the Base's landmass, including all of its inland training ranges. As many as five unlawful intrusions into Camp Pendleton's airspace occur each month from private civilian aircraft, raising the potential for collision. MCAS Camp Pendleton, with eight helicopter squadrons, 180 aircraft, and over 148,000 flight operations annually on a single runway, is the busiest helicopter airstrip in the Marine Corps (at peak periods, a military aircraft, usually a helicopter, takes off or lands at MCAS Camp Pendleton within the R2503-B airspace every two minutes). Adding to the situation, the commercial airway (V-23) located just off the coast from Camp Pendleton is considered the busiest in southern California. At peak periods, a commercial aircraft operates in this airspace every two minutes, as well. This situation has led the FAA to designate Camp Pendleton as a "High Midair Potential" area.

Commercial air traffic from the 40 airports within a 60-mile radius of Camp Pendleton severely degrades aviation training and adversely affects overall military readiness at Camp Pendleton. Requirements exist for expanding restricted airspace to support new warfighting tactics and equipment (e.g., MV-22 Osprey, multiple rocket artillery system, etc.).

Nearly 4,000 personnel and 180 rotary wing aircraft are stationed at MCAS Camp Pendleton. Rotary wing aircraft participating in flight operations on Base include the Huey (UH-1), Cobra (AH-1W), Sea Knight (CH-46E), Super Stallion (CH-53E), and Sea Stallion (CH/RH-53D). Additionally, rotary wing aircraft from Marine Corps Air Station Miramar and local Navy installations and ships, Coast Guard stations, the Air Force Bases, and Army facilities utilize the Central Impact Area and the various landing areas located across the Base.

Rotary wing operations include: ordnance delivery (e.g., rockets, gunnery), air-launched anti-armor missile training, night vision goggle training, parachute drops of supplies and personnel, vertical replenishment (VERTREP), from ship-to-shore and shore-to-ship operations, external load training, door gunner training, Low Altitude Antiaircraft Defense (LAAD) training, and Terrain Flight (TERF) route operations (Figure 3-3). Rotary wing training operations typically utilize aviation overflight zones (Figure 3-3) and five live fire ranges located in the dedicated impact areas of the Base. Helicopters also use the door gunner ranges (Door Gunner #1 and Door Gunner #2 ranges) located adjacent to Case Springs, which involves firing machine guns into the Whiskey impact area. Takeoffs and landings are conducted primarily from established landing zones (LZs), Confined Area Landing (CAL) sites, Vertical/Short Take Off and Landing (V/STOL) pads, the Helicopter Outlying Landing Field (HOLF) and simulated amphibious assault ship flight decks (LHA Pads) (Figure 3-4).

However, helicopters may take off and land virtually anywhere within training areas, as required by individual training scenarios.

Rotary wing flight operations are typically conducted 100-700 feet above ground level (AGL), depending upon the training scenario and the number of aircraft involved. TERF routes afford aircraft low altitude (50-100 ft AGL) navigation training through passes, canyons, flat terrain, and along rivers. Aviation live fire training events are restricted to the dedicated impact areas. Aviation operations, fixed and rotary wing occur year-round at the Bases various aviation facilities.

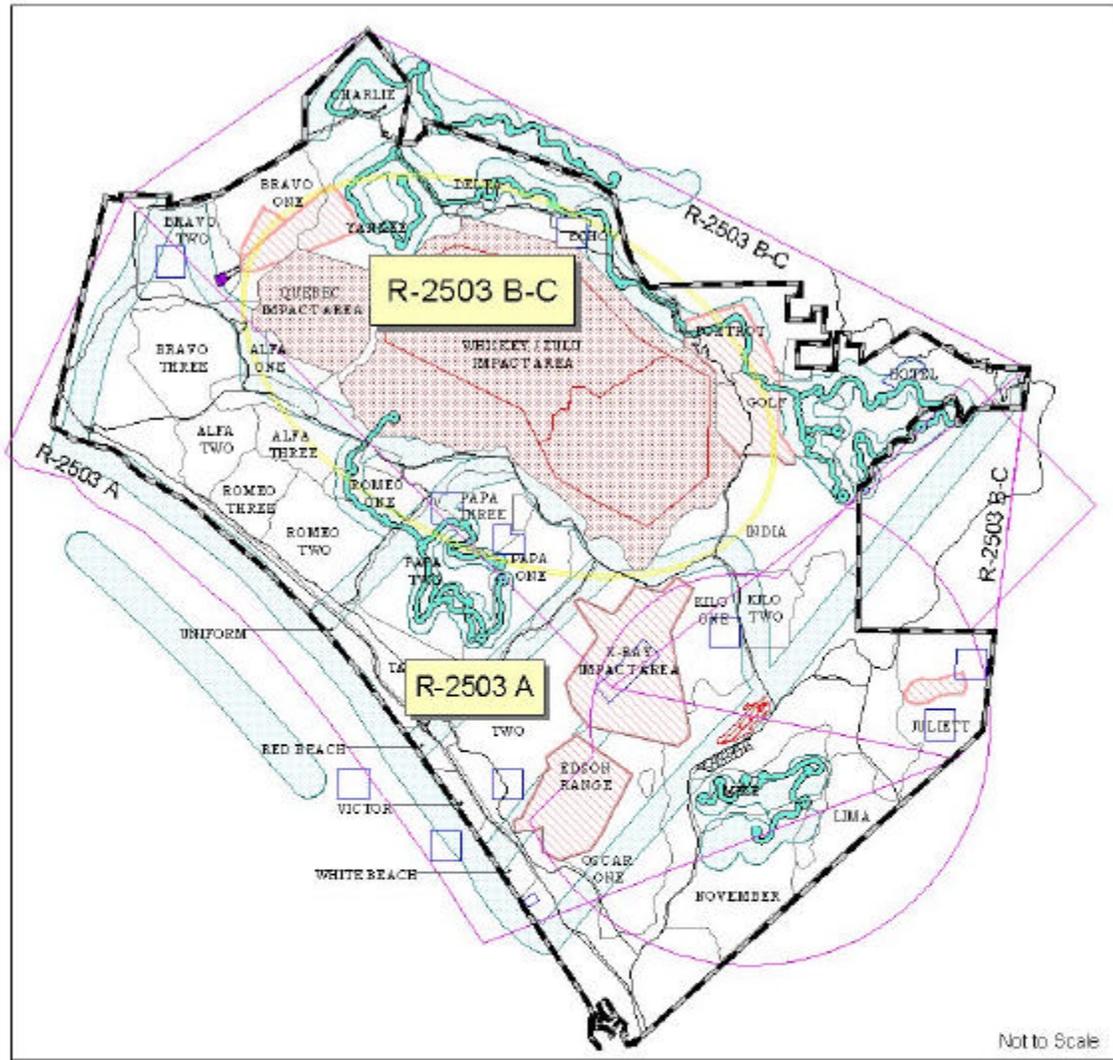
The Base has recently completed construction of the HOLF at Range 313A. This facility became operational during August 2000 and supports night vision goggle operations, increased helicopter training efficiency (e.g., by providing both grass strip and hard surface runways for skid-mounted, as well as wheeled helicopters), and enhances combat readiness for helicopter squadrons (Ogden 1998a).

At present, no fixed wing aircraft are permanently stationed at MCAS Camp Pendleton. Fixed wing turbo prop and jet aircraft from MCAS Miramar and other local military facilities, however, use the Central Impact Area and the various landing areas located across the Base. Fixed wing aircraft participating in flight operations on Base include the Harrier (AV-8), Thunderbolt (A-10), Hornet (F/A-18), Tomcat (F-14), Viking (S-3), Orion (P-3), Hercules (C-130), Star Lifter (C-141), Greyhound (C-2), and numerous aircraft of civilian design/manufacture.

Flight operations involving fixed wing aircraft include: Close Air Support (CAS), command and control, air reconnaissance, transport of troops and equipment, parachute operations for the deployment of personnel and equipment, vertical and short take off and landings, and LAAD training. Fixed wing ground support aircraft, with the exception of AV-8Bs, confine their take off and landing operations to the air station. AV-8Bs can perform takeoffs and landings at the V/STOL pad located south of Red Beach, the LHA pad in the Tango Area, the V/STOL Two pad in the Oscar Two Area, and the designated Road Operations area on old Highway 101 east of I-5 in the Tango area (Figure 3-4). Parachute operations occur within designated Drop Zones (Figure 3-4). Fighter and attack aircraft conduct CAS activities with live and inert ordnance in the Zulu Impact Area located in the center of the Base (Figure 3-3). Simulated CAS in support of ground maneuver operations may occur within all training areas.

3.2.2 Base Infrastructure and Mission Support

Camp Pendleton's military training mission is sustained by a wide range of mission support activities and facilities. Similar to local municipalities, the Base provides Marines, Sailors, and their families with support facilities and services, including housing, water and sewage service, solid waste disposal, medical and dental services, schools, child care, employment assistance, and recreation opportunities. The importance of providing this support in close proximity to training areas cannot be understated.



Not to Scale

**Figure 3-3
Aviation Operations
(Airspace)**

- Camp Pendleton Boundary
- Training Area Boundaries
- Camp Pendleton Special Use Airspace
- Main Roads
- MCAS Camp Pendleton (23 Area Air Station)
- Fixed Wing Close Air Support (CAS) Route
- TERF Routes
- HOLF
- Central Impact Area (Restricted Access)
- Live Fire (Non Dud-Producing) Impact Areas
- Aviation Overflight Zones
- Drop Zone

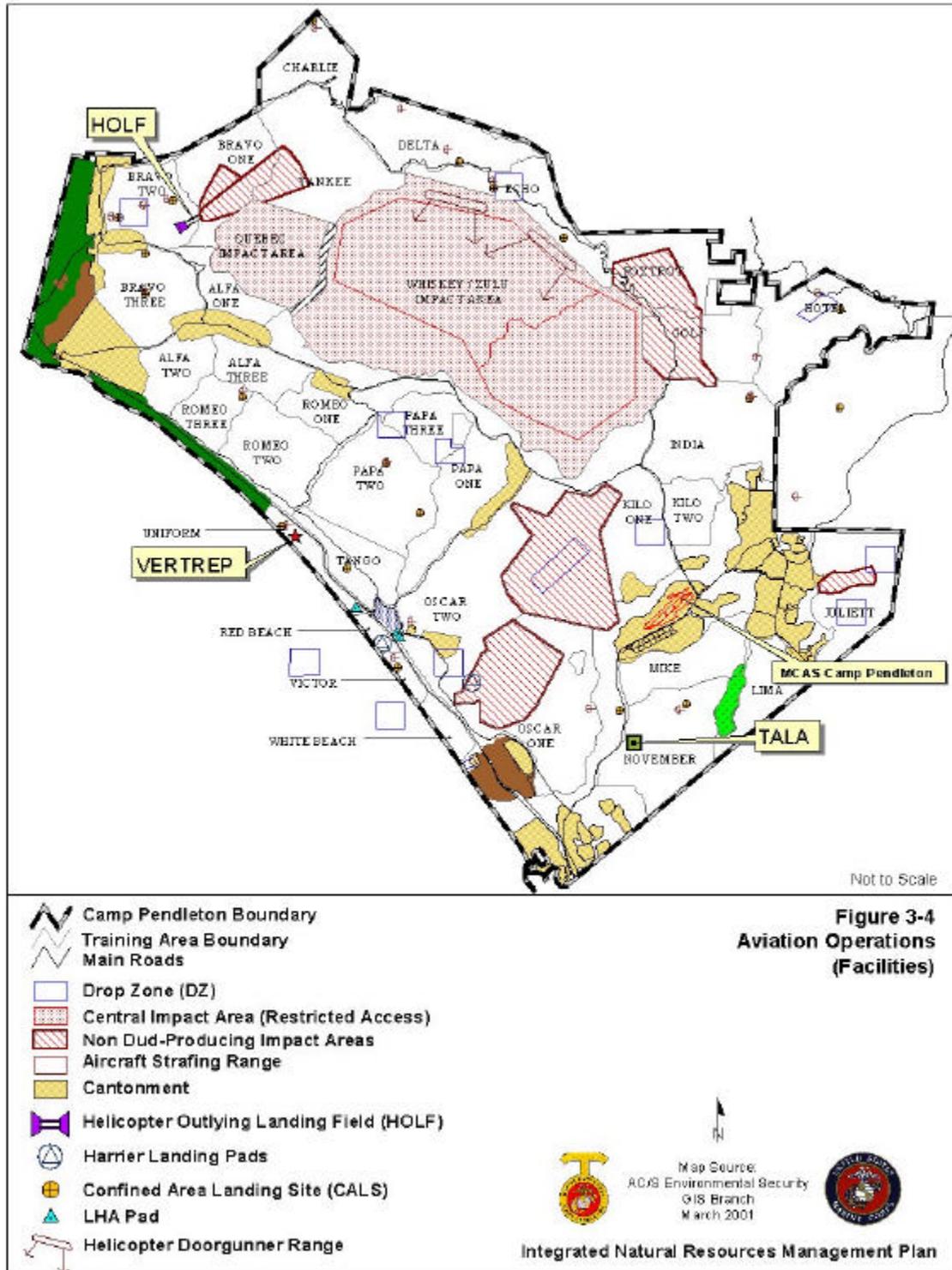


Map Source:
AC/8 Environmental Security
GIS Branch
March 2001



Integrated Natural Resources Management Plan

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The Base is home to as many as 41,000 residents: 18,000 single service members, 6,000 married service members, and another 17,000 family members. In addition, almost 10,000 civilian workers (e.g., San Onofre Nuclear Generating Station, DoD, State Parks, etc. personnel) transition on and off Base each day.

Camp Pendleton currently has more than 5,000 buildings and structures, 500 miles of roads, and nearly 1,000 miles of utility lines basewide (Figure 3-5). The estimated current value of land and physical assets is over \$2.9 billion, not including military hardware and personnel. These assets are located on approximately 10,000 acres (cantonment areas) scattered across the Base in pockets of development. Much of the infrastructure development of Camp Pendleton over its nearly 60 year history has occurred on lands previously disturbed by cattle ranching and farming activities that covered approximately 82,500 acres of the former *Rancho Santa Margarita y Las Flores*.

3.2.2.1 CANTONMENT AREAS

Cantonment areas are portions of the Base that generally contain infrastructure development (Figure 3-5), including more than 5,000 buildings and other permanent structures. Cantonment areas are designated on Base maps, however, some portions of designated cantonment areas contain open space and may be used for training, recreation, etc. Likewise, designated training areas may contain some buildings and infrastructure development. Areas designated as cantonment total approximately 10,800 acres. Sometimes included in the acreage designated as cantonment are a cultural resource area (*Estancia de las Flores*) and/or the golf course, adding 180 acres and 380 acres, respectively, to the cantonment total. Actual developed areas on Base, not including roads, are estimated to total 9,800 acres.

Seven separate cantonment areas for infantry and artillery regiments and schools are located along Basilone and San Mateo Roads, namely San Mateo, San Onofre, Horno, Las Pulgas, Margarita, Vado Del Rio, and Talega. Two cantonment areas, Las Flores and Edson Range, are located on the coastal plain east of I-5 and three other cantonment areas, Del Mar, MCTSSA, and Assault Craft Unit 5 are located on the coastal plain west of I-5.

The largest concentration of development is in the southeastern corner of the Base, close to Fallbrook and San Luis Rey gate, where major community support facilities and four family housing areas are located. The U.S. Naval Hospital, another family housing area, Chappo industrial area, and MCAS Camp Pendleton lie in the Santa Margarita River valley.

The second largest concentration of development occurs in the southwestern corner of the Base. Wire Mountain, the largest family housing area, is located just east of I-5 at the Oceanside Gate. The Del Mar boat basin and additional family housing lie to the west of I-5. A large family housing community (1,166 units), Stuart Mesa housing, is south of Edson Range. Another family housing area and a shopping center are located near the San Onofre gate at the northwestern corner of the Base. The San Mateo Point family housing area contains 76 attached residential units.

3.2.2.2 RECREATION AREAS

The Base recreation program provides a variety of recreational opportunities to Base patrons, including members of the public. Chapter 5 identifies the locations of recreational opportunities on Base, as well as the extent of public access for the purpose of fish- and wildlife-oriented recreation/education. Many recreational activities occur in cantonment areas (e.g., fitness centers, bowling, and cinemas), on roads or trails (jogging, bicycling), or training areas (hunting, camping). Few areas on Base are dedicated solely for recreational purposes. These are the equestrian facilities (stables, rodeo grounds, horse pastures [1,309 and 123 acres]) and the golf course (380 acres). Although primary purpose of Lake O’Neill is as an aquifer recharge, the lake also provides recreational opportunities for fishing, camping, boating, and the like. Even the State Park is not solely devoted to recreational usage as it is also available for training operations with prior coordination.

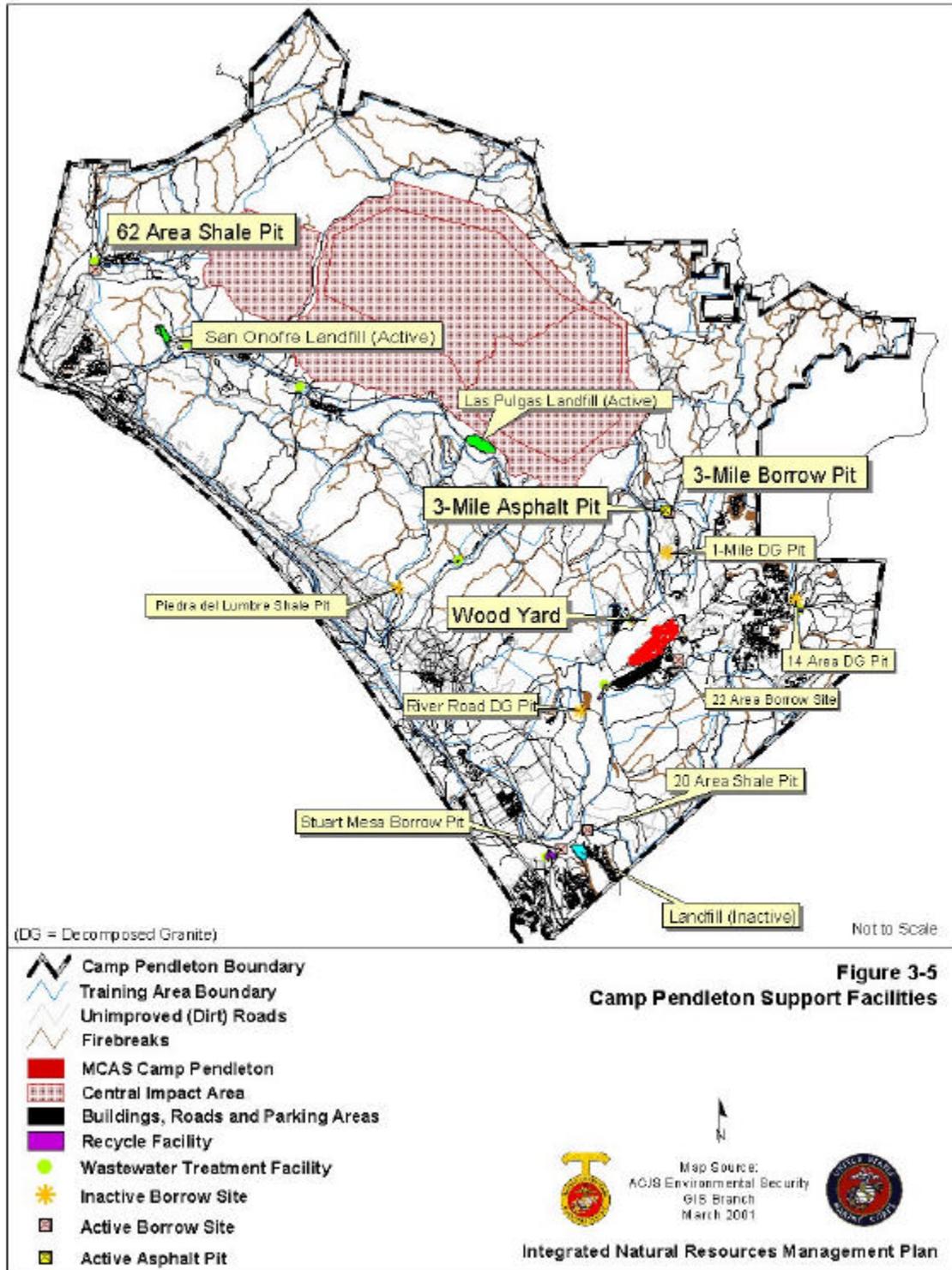
3.2.2.3 ROADS, TRAILS, FIREBREAKS, ETC.

Primary and secondary roads, parking lots, and culverts are widely distributed across the Base (Figure 3-5). Primary roads consist of paved and improved roads, while secondary roads are dirt roads with decomposing granite, gravel, or shale as a surface covering. Approximately 103 secondary roads exist. The Base has more than 500 miles of roadways. In addition, the Base has established an extensive network of 85 firebreaks and 1 fuel break (MCB Camp Pendleton 1998), totaling nearly 1,300 acres and covering approximately 186 linear miles. A firebreak is any natural or constructed barrier bladed or disked to bare earth and used to segregate, stop, and control the spread of fire. A fuelbreak is a natural or constructed barrier that includes mowed or modified vegetation and is used to segregate, slow, and control the spread of fire or provide a control line from which to work. Fuelbreaks are wider than firebreaks and are not designed to completely stop a fire like a firebreak; rather fuelbreaks allow more time for the fire’s heat to dissipate before reaching the firefighter.

3.2.2.4 BORROW SITES, LANDFILLS, AND WOOD YARD

The Base Facilities Maintenance Division operates 6 active borrow sites (Figure 3-5): 20 Area Shale Pit, 62 Area Shale Pit, Stuart Mesa Borrow Site, 22 Area Chappo Site, Three Mile Concrete/Asphalt Site, and the Three Mile Decomposed Granite Pit. An additional 4 borrow sites are inactive: the Piedra de Lumber Shale Pit and the River Road, 14 Area, and One Mile Decomposed Granite Pits. Borrow sites are used at various times for excavation of fill material for construction projects and maintenance actions, such as the extraction of shale material for use in resurfacing and repairing secondary roadways and unpaved parking lots.

Camp Pendleton also operates and maintains two active landfills for the acceptance, disposal, and daily capping of non-regulated solid waste generated on Base (Figure 3-5): the Las Pulgas and San Onofre landfills. A third landfill site, the Box Canyon Landfill, is currently inactive and is in process of final cap and closure.



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The wood yard is a central staging area for woody debris (e.g., tree stumps, logs, limbs), not to include leaf matter, green waste, or lumber/scrap wood. The woody debris within the wood yard is generated from maintenance and construction projects and provides a source of firewood for military personnel.

3.2.2.5 UTILITY LINES AND FENCING

Underground and aboveground utility lines are located throughout the Base. Utility repair is conducted on an emergency basis only and may occur during the day or night. Operational checks and preventive maintenance are conducted throughout the year and typically during daylight hours.

Underground utility maintenance for the repairs and/or upgrading of systems is uncommon and may require excavation of buried utility lines. Maintenance of utilities accessible through manholes, however, only results in ground disturbance from off-road vehicle operation to remote sites. If digging is necessary to gain access to underground utilities, notification of a locator service is required. Equipment used during underground utility maintenance activities ranges from lightweight trucks to heavy trucks and backhoes. Backhoes are frequently used.

Aboveground telephone and fiber optic cables typically follow major roads throughout Camp Pendleton. Periodic herbicide application and vegetation cutting is required to maintain access to the cables and to protect them from overgrowth. Tree trimming is continuously required to protect overhead lines from damage. Herbicides are applied and vegetation is cleared around the base of telephone poles and pedestals in a 10-foot radius. Pipeline maintenance activities for aboveground pipelines include routine examinations for leaks and deterioration, operational inspections, and preventive maintenance. Herbicides are applied with a backpack spray system and hand tools. Weed eaters, swing blades, and hand-held trimmers are used to cut vegetation. Lightweight vehicles are commonly used in routine maintenance and repair activities.

The majority of fences on Base are chain link; however, there are also some barbed wire and wood fences. Fences are concentrated in developed areas and around facilities, with additional fencing on some portions of the Base boundary and some range boundaries. Most fence maintenance involves minor repairs on existing fence lines and requires only the use of lightweight trucks, hand tools, and augers. Fence maintenance is conducted on an as-needed basis, typically during daylight hours.

3.2.3 Real Estate Agreements and Leaseholders

A number of long-term leases and easements have become part of the land use practiced on the Base. These include Interstate 5 and the U.S. Border Patrol Checkpoint, North County Transit District railroad right of way, a 50-year lease for San Onofre State Park, utility easements, Oceanside and Fallbrook public schools, and the San Onofre Nuclear Generating Station (SONGS). A list of current leases and real estate agreements is provided in Appendix M.

Existing Base real estate agreements (e.g., leases, easements, assignments) cover approximately 28,500 acres of the Base (not inclusive of leased acreage within cantonment areas) (Figure 3-6). These agreements include easements for public utilities and transit corridors; leases to public educational and retail agencies; State Park leases; and agricultural leases for row crop production, seed collection, and grazing. Much of the real estate agreement acreage is also available to training (e.g., utility corridors, State Park land, and land used for grazing); only an estimated 3,600 acres is not available for training.

3.2.3.1 AGRICULTURE

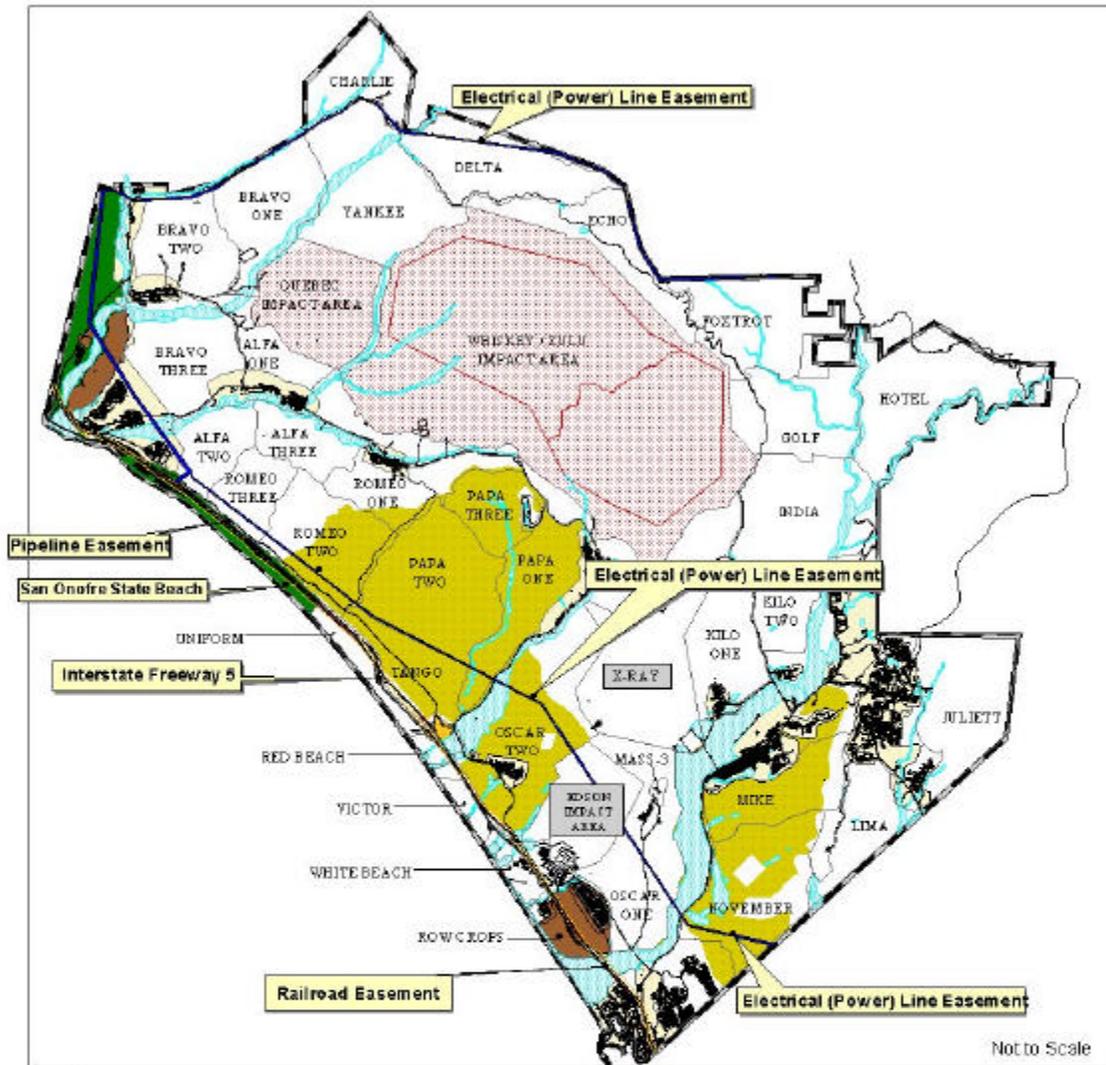
The Base leases approximately 24,000 acres for intermittent livestock grazing and 1,300 acres for row crop production (Figure 3-6). In addition, an undetermined amount of land is available under a lease agreement for native seed harvesting. Each lease specifies soil and water conservation practices required to protect and improve land productivity and fertility, a schedule for application of the required practices, and provisions for restoration of the land upon termination of the lease. Additionally, each plan includes agricultural and pest management practices that are consistent with state and federal regulatory requirements and the overall goals of the Base per MCO 5090.2. Per 10 U.S. Code §2667 and the Navy Real Estate Manual P-73, funds obtained from agricultural leases can only be used for administrative support of agricultural leases and financing multiple land use management programs.

Livestock Grazing

Cattle grazing was historically the principal form of land use at Camp Pendleton. It is thought that livestock grazed the land since the late 1700s. According to interviews with previous residents of the Base, it is estimated that in excess of 25,000 head of cattle were grazed on about 82,500 acres of the Rancho.

Currently, approximately 24,000 acres of land at Camp Pendleton are outleased for sheep grazing. The acreage available for grazing overlays active training areas and thus can only be utilized when grazing will not interfere with military training. This reduces overall grazing pressure. The Land Management Branch is responsible for establishing animal carrying capacity, which has been set at approximately 44,000 sheep-unit months (a sheep-unit month is the amount of forage a single ewe-lamb pair will consume in a month).

Grazing generally occurs on annual grasslands south of the Santa Margarita River and on perennial grasslands north of the river in portions of several training areas: Oscar One and Two; Papa One, Two, and Three; and Romeo One and Two (Figure 3-6). Grazing also has been utilized as vegetation control. Selective sheep grazing has been used for vegetation control in years past within the fenced compound at the Las Pulgas Ammunition Supply Point and to abate fire hazards on specific ranges (D. Lawson, pers. comm. 1995).



-  Camp Pendleton Boundary
-  Training Area Boundary
-  Cantonment
-  Paved Roads and Buildings
-  Riparian, Beach & Estuarine Habitats
-  Interstate Highway (I-5) Easement
-  Railroad Easement
-  Electrical Transmission Line Easement
-  Pipeline Easement
-  Agricultural Lease
-  Sheep Grazing Lease
-  Boy Scout Lease (Historical Site)
-  San Onofre State Park & Beach Lease

Figure 3-6
Real Estate Agreements and Leases



Map Source:
ACJS Environmental Security
GIS Branch
March 2001



Integrated Natural Resources Management Plan

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The grazing season typically occurs from 1 January through 31 May each year and can be extended or reduced at the discretion of the Base, depending upon available forage and military training requirements. Animal numbers are verified by government sheep counts periodically conducted by the Land Management Branch to ensure the accuracy of monthly animal number reports.

Row Crop Production

Approximately 1,300 acres of land are leased for farming. These current row crop parcels represent the remaining portion of approximately 6,000 acres that were leased for farming in the 1940s and 1950s. Even larger areas (as many as 10,000 acres) were farmed before the military purchased the property. This reduction in farmed acreage has occurred piecemeal due to both military requirements for the land and lack of suitable water available for irrigation.

Agricultural row crop acreage comprises nearly 1,300 acres of the Base. The largest contiguous row crop lease on the Base covers nearly 600 acres and is located in the San Mateo Valley adjacent to the San Onofre State Park and San Mateo Creek. The remaining row crop acreage, covered by three separate leases and totaling nearly 690 acres, is located on both sides of Interstate 5 at Stuart Mesa. All leases are due to expire in 2003.

Native Seed Collection

Contractors have commercially harvested seeds from native plants on Base since 1988. Native seeds have commercial value as stock for native vegetation restoration programs and for ornamental landscaping. In addition to gaining revenue from the commercial sale of the seeds (approximately \$10,000 per year), Camp Pendleton uses the seeds for restoration purposes on Base. The use of seeds from the Base helps ensure a genetic stock that is adapted to the environmental conditions of the area and saves money spent on site restoration.

Over 200 species are approved for harvest (a species list is provided to the contractor), but no more than 30% of the annual seed crop of a tree, brush, forb, or grass species in any individual location shall be harvested each year. All seed harvesting is done by hand and/or with hand carried vacuum type devices. Mechanical harvesting is not allowed. No mechanical injury to plants is allowed. The harvesting of endangered, threatened, or proposed endangered and proposed threatened species is regulated by the USFWS by permit. Some native plant species are harvested from October to December, while other species are harvested between April and July. Because seed collecting activity is conducted on foot, most locations on Base (excluding impact areas) are available for seed collection.

3.2.3.2 PUBLIC RECREATION - SAN ONOFRE STATE PARK

The largest single leaseholder on the Base is the State of California, Department of Parks and Recreation, which accounts for approximately 2,000 acres. Leased from Camp Pendleton on

1 September 1971 for a 50-year term, the San Onofre State Park system is divided into the San Onofre Beach Park and the San Mateo Park. The San Mateo Park lies within the San Mateo drainage, immediately adjacent to and along the north side of the creek. In general, the Park areas are used for public recreation and are subject to state regulatory requirements. Maintenance operations in the parks include maintaining the existing camping and recreational facilities, landscape maintenance, and erosion control. Military training is permissible within the parkland with advanced coordination.

3.2.3.3 SAN ONOFRE NUCLEAR GENERATING STATION (SONGS)

The San Onofre Nuclear Generating Station was established on Camp Pendleton in July 1963, when Congress passed Public Law 88-82 authorizing the Secretary of the Navy to grant Southern California Edison and San Diego Gas & Electric Company an easement for the purpose of constructing and operating a nuclear power facility. Unit 1, the first reactor, was completed in 1964. Over the past 36 years, the SONGS facility has expanded to include two more reactors (Units 2 and 3) and more land. SONGS real estate rights on Camp Pendleton are vested in nine Department of Navy issued easements and two leases. These real estate documents apply to a total of approximately 438 acres and generate more than \$900,000 in revenue annually to the U.S. Government (Note, that unlike the agricultural lease revenues on Base, by agreement, only half of SONGS revenue is received by Camp Pendleton for use in maintenance of real property. The remaining half is directed to the U.S. Treasury.) Current real estate grants authorize SONGS to maintain a presence on Camp Pendleton through approximately 2024.

Camp Pendleton is the only DoD installation in the country where a nuclear power plant has been constructed and is operated on its property.

3.2.3.4 SAN DIEGO GAS AND ELECTRIC COMPANY (SEMPRA ENERGY)

San Diego Gas & Electric (SDG&E), through its parent company Sempra Energy, holds more than 153 acres of leased land agreements with the Base. Most of these leases are jointly operated and managed in concert with the Southern California Edison Company, including the SONGS and various transmission and communication corridor easements, and associated support facilities.

3.2.3.5 INTERSTATE HIGHWAY 5 (I-5 FREEWAY)

The I-5 freeway occupies a linear corridor approximately 500 ft wide and 17 miles long that traverses the entire length of Camp Pendleton in a north-to-south direction between the cities of San Clemente and Oceanside. Comprising approximately 726 acres, the I-5 freeway is located on DoN owned land. It has been constructed within a right-of-way easement granted in perpetuity to the State of California (Department of Transportation) by DoN in the 1960s. The I-5 freeway stretches along Camp Pendleton's coastal area and is located in a scenic corridor through the Base adjacent to coastal bluffs and undeveloped beach areas. Currently,

there are 11 separate underpasses (ingress/egress points) located along the 17-mile Camp Pendleton portion of I-5, which are available for the transition of military personnel, vehicles and equipment from the beach side of I-5 to inland training areas on the inland side of this freeway. These underpasses were created at the time of I-5's initial construction through Camp Pendleton in the mid-1960s. As a result of increasing vehicle size which came along with the development of new upgraded and modernized Marine Corps amphibious assault equipment over the last 40 years, only one of the current 11 underpasses remains capable of supporting passage of all military vehicles, equipment, hardware and personnel.

3.2.3.6 NORTH COUNTY TRANSIT DISTRICT RAIL LINE AND MAINTENANCE YARD

North San Diego County Transit Development Board, also known as the North County Transit District (NCTD) owns and operates a commuter rail train system between the City of Oceanside (Oceanside Transit Center) and the City of San Diego (Santa Fe Depot). This NCTD commuter rail system, known as the Coaster, provides service to one portion (the coastal communities of San Diego County) of a regional commuter rail transportation system operating within parts of San Diego, Orange, Los Angeles Ventura, and Riverside Counties. As the operator of the Coaster commuter rail system, NCTD also owns and maintains all the rail line located between the San Diego/Orange County boundary line and the City of San Diego, including the approximately 18 miles of rail line which traverses Camp Pendleton. This rail line through the Base parallels I-5, and like the I-5 freeway, it runs along the coastal area of Camp Pendleton. NCTD's railroad corridor through Camp Pendleton is contained within a 100' by 40' right-of-way easement, which has been granted to NCTD in perpetuity by the Department of the Navy to support NCTD's operation of the Coaster commuter rail system through the Base.

As owner of this rail line between the City of San Diego and the Orange County border, NCTD also coordinates and approves use of this railroad line by other train operators including the Metrolink commuter rail trains that serves Orange and Los Angeles Counties, Amtrak trains, and Burlington-Northern Santa Fe (BNSF) freight trains. Currently, approximately 50 trains per day pass through Camp Pendleton on this trackage.

In support of their commuter rail operations, NCTD also maintains and operates a 24-hour Commuter Rail Maintenance Facility located on Camp Pendleton. This Commuter Rail Maintenance Facility, located within the Stuart Mesa area of Camp Pendleton, is situated immediately adjacent to NCTD's railroad right-of-way through the Base. It's existence and construction was authorized by a second and separate easement in perpetuity, granted by DoN to NCTD in 1994 for operation of this Maintenance Facility. This NCTD easement also supports the operation of a BNSF railroad switching yard that is located adjacent to the Maintenance Facility. Altogether the easement for the NCTD Commuter Rail Maintenance Facility and BNSF switching yard operations total approximately 20 acres.

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