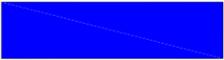


Legend

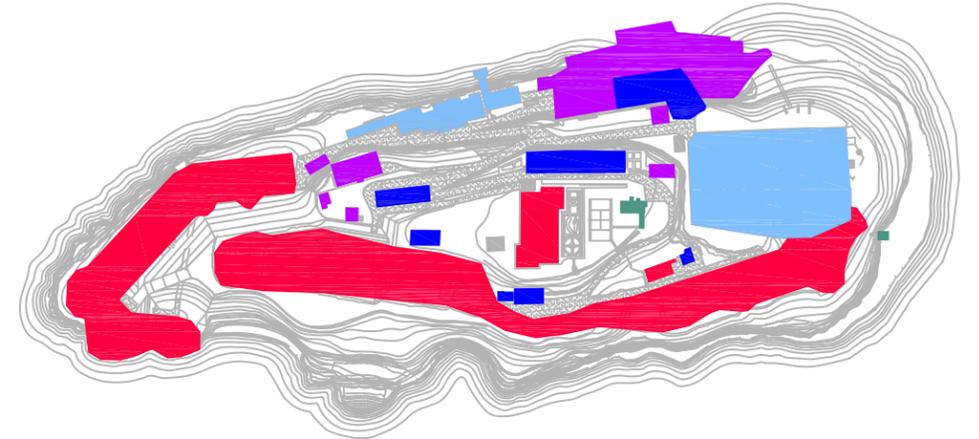
Defense		Navigation	
Domestic		Prison	
Support		Industry	



A. Pre-settlement: 1851 and Before



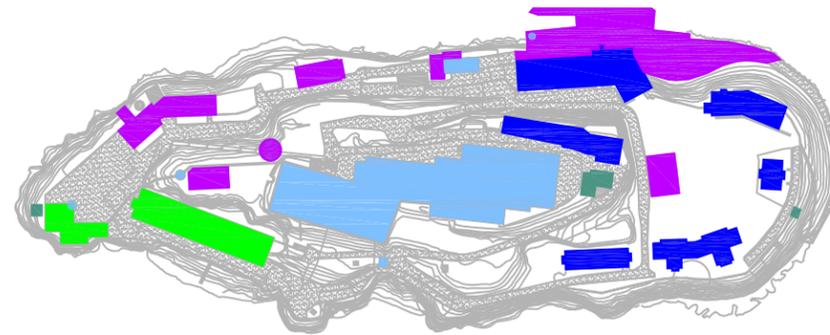
B. Initial Military Fortifications / Aid to Navigation: 1852 - 1867



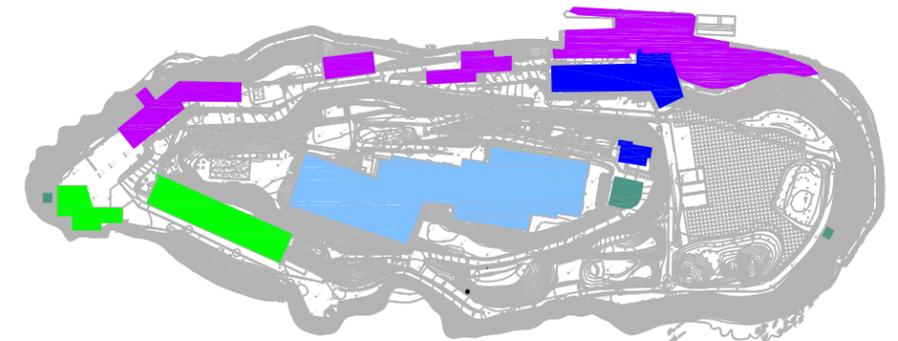
C. Earthen Fortifications / Early Military Prison: 1868 - 1907



D. Later Military Prison: 1908 - 1933



E. Federal Penitentiary / GSA: 1934 - 1973



F. NPS/GGNRA: 1974-Present



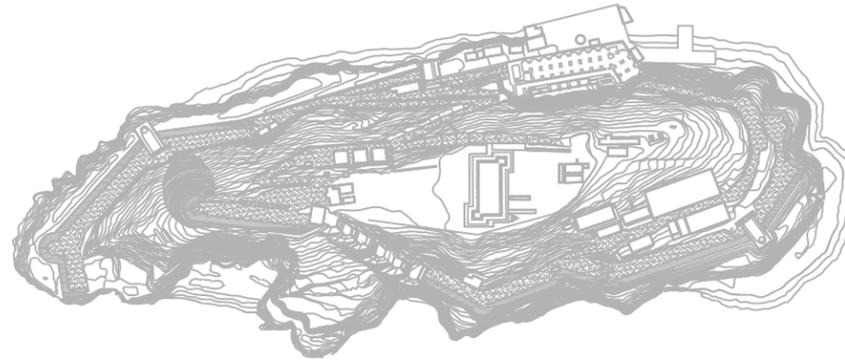
<p>FIGURE 4-7</p> <p>UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE GOLDEN GATE NATIONAL RECREATION AREA</p>	<p>TITLE OF PROJECT CULTURAL LANDSCAPE REPORT</p>
	<p>TITLE OF DRAWING LAND USE ANALYSIS</p>
	<p>NAME OF PARK ALCATRAZ ISLAND NATIONAL HISTORIC LANDMARK</p> <p>REGION: PACIFIC COUNTY: SAN FRANCISCO STATE: CALIFORNIA</p>

Legend

Bureau of Prisons Security Fencing		Island Perimeter Walk	
GSA - ERA Security Fencing		Ground Level Guard Paths (Main)	
Stockade Fencing		Ground Level Prisoner Paths (Main)	
Sentry Walk		Catwalks / Towers	



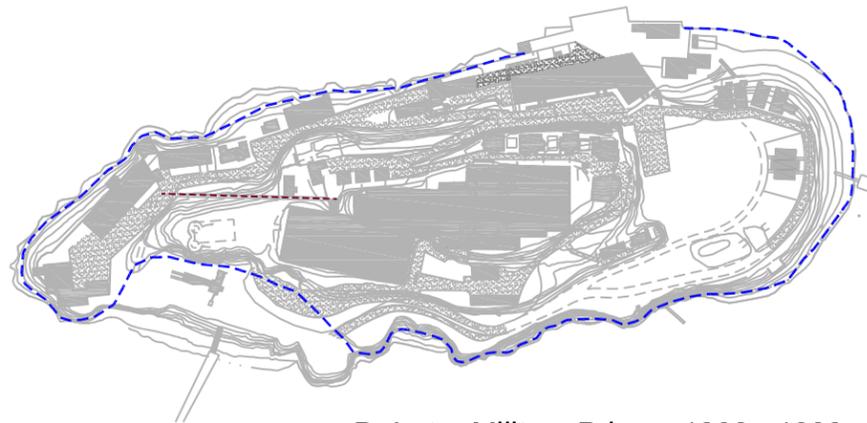
A. Pre-settlement: 1851 and Before



B. Initial Military Fortifications / Aid to Navigation: 1852 - 1867



C. Earthen Fortifications / Early Military Prison: 1868 - 1907



D. Later Military Prison: 1908 - 1933



E. Federal Penitentiary / GSA: 1934 - 1973



F. NPS/GGNRA: 1974-Present



FIGURE 4-8 UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE GOLDEN GATE NATIONAL RECREATION AREA	TITLE OF PROJECT CULTURAL LANDSCAPE REPORT
	TITLE OF DRAWING SMALL SCALE FEATURES - PRISON SECURITY FEATURES ANALYSIS
	NAME OF PARK ALCATRAZ ISLAND NATIONAL HISTORIC LANDMARK
	REGION COUNTY STATE PACIFIC SAN FRANCISCO CALIFORNIA

Legend

- Gardens
- Erosion Prevention
- Hillside Plantings/
Beautification



A. Pre-settlement: 1851 and Before



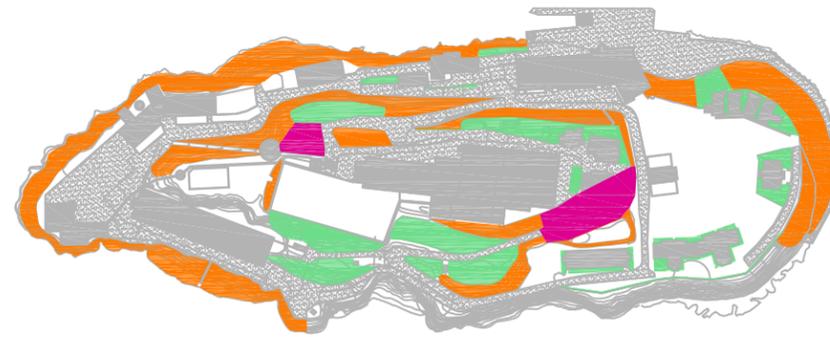
B. Initial Military Fortifications / Aid to Navigation: 1852 - 1867



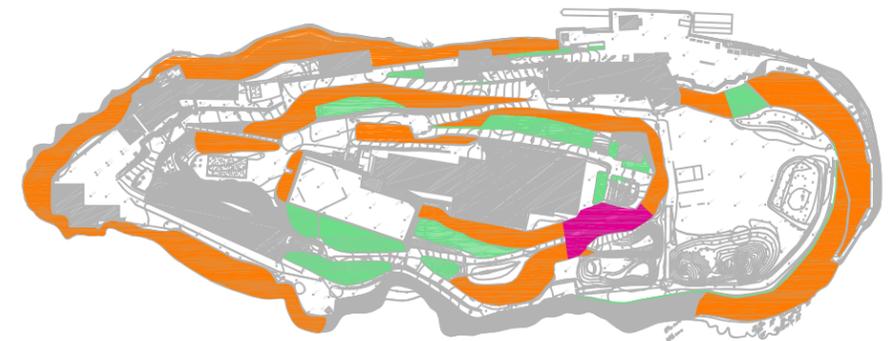
C. Earthen Fortifications / Early Military Prison: 1868 - 1907



D. Later Military Prison: 1908 - 1933



E. Federal Penitentiary / GSA: 1934 - 1973



F. NPS/GGNRA: 1974-Present

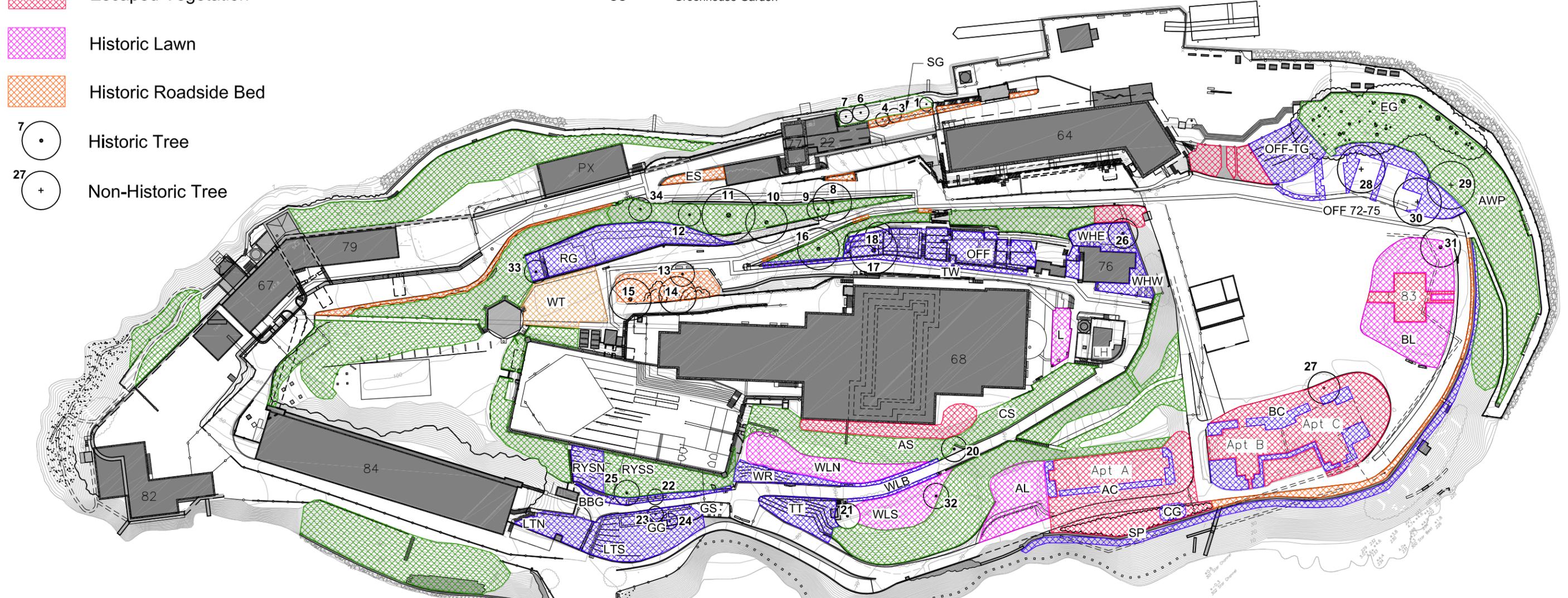


<p>FIGURE 4 - 9</p> <p>UNITED STATES DEPARTMENT OF THE INTERIOR</p> <p>NATIONAL PARK SERVICE GOLDEN GATE NATIONAL RECREATION AREA</p>	<p>TITLE OF PROJECT CULTURAL LANDSCAPE REPORT</p> <p>TITLE OF DRAWING VEGETATION ANALYSIS</p> <p>NAME OF PARK ALCATRAZ ISLAND NATIONAL HISTORIC LANDMARK</p> <p>REGION: PACIFIC COUNTY: SAN FRANCISCO STATE: CALIFORNIA</p>
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Legend

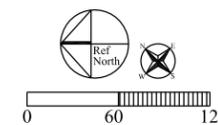
-  Historic Garden
-  Non-Historic Vegetation
-  Historic Hillside Plantings
-  Escaped Vegetation
-  Historic Lawn
-  Historic Roadside Bed
-  7 Historic Tree
-  27 Non-Historic Tree

AC	Apartment A Garden	GS	Guardtower Site	SG	Sallyport Garden
AL	Apartment A Lawn	L	Lawn at Main Prison Plaza	SP	Seawall Planter
AS	Army Slope	LTN	Laundry Terraces North	TT	Toolshed Terraces
AWP	Agave Walk Plantings	LTS	Laundry Terraces South	TW	Trough Wall
BB	Birdbath Garden	OFF	Officers' Row Gardens (7,8,9)	WHE	Warden's House Garden East
BC	Apartment B & C Gardens	OFF 72-75	Officers' Quarters Gardens	WHW	Warden's House Garden West
BL	Building 83 Lawn	OFF-TG	Terraced Garden	WLB	West Lawn Borders
CG	Cannon Garden	RG	Rose Garden	WLS	West Lawn - South
CS	Cellhouse Slope	RYSN	Recreation Yard Slope North	WLN	West Lawn - North
EG	Eucalyptus Grove	RYSS	Recreation Yard Slope South	WR	West Road Terraces
ES	Electric Shop Bed			WT	Water Tank Terrace
GG	Greenhouse Garden				



Tree List (from Appendix 4: 2007 McBride Inventory)

1. <i>Cordyline australis</i>	14. <i>Cupressus macrocarpa</i>	27. <i>Eucalyptus globulus</i>
2. Tree has been removed	15. <i>Cupressus macrocarpa</i>	28. <i>Cupressus macrocarpa</i>
3. <i>Leptospermum laevigatum</i>	16. <i>Cupressus macrocarpa</i>	29. <i>Cupressus macrocarpa</i>
4. <i>Leptospermum laevigatum</i>	17. <i>Cupressus macrocarpa</i>	30. <i>Cupressus macrocarpa</i>
5. Tree has been removed	18. <i>Cupressus macrocarpa</i>	31. <i>Metrosideros excelsa</i>
6. <i>Leptospermum laevigatum</i>	19. Tree has been removed	32. <i>Ficus carica</i>
7. <i>Leptospermum laevigatum</i>	20. <i>Metrosideros excelsa</i>	33. <i>Prunus sp.</i>
8. <i>Cupressus macrocarpa</i>	21. <i>Metrosideros excelsa</i>	34. <i>Malus sp.</i>
9. <i>Eucalyptus globulus</i>	22. <i>Juglans sp.</i>	
10. <i>Cupressus macrocarpa</i>	23. <i>Juglans sp.</i>	
11. <i>Eucalyptus globulus</i>	24. <i>Malus sp.</i>	
12. <i>Eucalyptus globulus</i>	25. <i>Ficus carica</i>	
13. <i>Cupressus macrocarpa</i>	26. <i>Dracaena draco</i>	



<p>FIGURE 4-10</p> <p>UNITED STATES DEPARTMENT OF THE INTERIOR</p> <p>NATIONAL PARK SERVICE GOLDEN GATE NATIONAL RECREATION AREA</p>		<p>TITLE OF PROJECT CULTURAL LANDSCAPE REPORT LANDSCAPE ANALYSIS</p> <p>TITLE OF DRAWING ALCATRAZ ISLAND HISTORIC VEGETATION</p> <p>NAME OF PARK ALCATRAZ ISLAND NATIONAL HISTORIC LANDMARK</p> <p>REGION: PACIFIC COUNTY: SAN FRANCISCO STATE: CALIFORNIA</p>
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Natural Systems - Alcatraz Island

The development of Alcatraz Island through its historic periods was influenced by the natural systems and features present on and around the Island. The Island's location at the entrance to San Francisco Bay made it a prime location for both navigation and defensive military fortifications. The Island's natural systems and features such as the rock substrate, steep terrain, climate and hydrology influenced the placement and design of the Island's man-made features for military fortifications, circulation, buildings and structures and vegetation. Terraces and retaining walls, switchback roads and planting bed pits were all built in ways responsive to the extreme terrain. The lack of fresh water on the Island affected the survival of vegetation, influenced the selection of plantings, and necessitated the construction of water tanks and cisterns. High winds and frequent fog not only influenced the location of facilities on the Island, but also created an atmosphere of gloom that added to the Island's mystique and legend.

During Alcatraz Island's period of significance (1847 to 1973), the extensive and continual disturbance by human action was not conducive to wildlife or bird habitat or to intertidal reefs. Few waterbirds were documented on the Island between 1847 and early 1970s - with the exception being the 1864 photography series of Alcatraz Island that shows Cormorants perched on the Island's rocky, vertical cliffs.³⁸ Waterbirds may have inhabited the Island before its period of significance, as early descriptions mention a thin layer of guano covering the Island, but little soil and sparse vegetation.³⁹ This material was removed by the U.S. Army's blasting of terraces and construction of fortifications and facilities as well as dredging and other construction activities that altered the Island's subtidal environment.⁴⁰ Historical accounts of the Island from its military periods seemingly do not include references to waterbirds or their habitat occupying the Island.

There is also evidence that intertidal reefs existed around the entire perimeter of the Island prior to the initial military fortifications in the 1850s. These areas would have been negatively impacted by the shoreline alterations and the continual dumping of discarded materials into the bay throughout the period of significance.

After the BOP closure of the Island in 1963, human intervention such as regular upkeep and maintenance ceased until the National Park Service opened the Island to visitors in 1973. Likewise, the large scale and on-going construction of buildings and site features, and topographic modifications that had occurred on a continuous basis during the Island's period of significance also ceased. Between 1963 and 1972, the only sustained human habitation occurred during the Indian Occupation that lasted for approximately nineteen months. After 1973, use focused primarily on visitor services and limited maintenance.

After the BOP closure, with the resultant limited human activity, waterbird species recolonized on the Island in vegetated and bare areas, and along portions of the rocky cliffs. Initially, they concentrated in areas of human modification such as the ornamental plantings that remained from the Island's gardens and hillsides created during its period of significance.⁴¹ Waterbirds were noted as recolonizing as early as 1975, including pairs of Western Gulls and Black-crowned Night Herons.⁴² Following the establishment of the National Park, the 1980 General Management Plan (GMP) provided guidance for the protection of the island's rocky cliffs and shoreline for wildlife

³⁸ Florence Markofer collection 1864

³⁹ Thompson 1979: 1

⁴⁰ GGNRA 2001

⁴¹ LSA Associates 1993: 8

⁴² GGNRA 2005: Table 1 Nesting History and Nesting Sites of Alcatraz Island Bird Colonies (updated in 2009)

resources. The 1993 Alcatraz Development Concept Plan (ADCP) further protected natural resources with provisions for maintaining breeding populations of colonial waterbirds.⁴³ In 1990, the first official monitoring year, 485 pairs of Western Gulls were documented on all areas of the Island except the Main Prison roof, the Wharf and Eucalyptus grove, and 170 Black-crowned Night Heron pairs were noted.⁴⁴ The 1993 GGNRA Alcatraz Management Plan emphasized protection of the Island's natural resources and recommended natural resources monitoring and the development of protocols to determine baseline information of key wildlife populations.

Monitoring had already begun in 1990 as noted above for Western Gulls and Black-crowned Night Heron as a result of the dramatically increasing breeding population of Western Gulls on the Island.⁴⁵ Monitoring of Snowy Egret populations also began in 1990.⁴⁶ A comprehensive waterbird monitoring program was established in 1996 in conjunction with PRBO, which has continued.⁴⁷

Today, the natural systems and features such as the Island's form, shoreline and tide pools and climatic conditions that shaped Alcatraz Island are similar to those present during the period of significance and contribute to the integrity of location, setting, and association. The protection of the tide pools from access since the National Park Service administration of the Island has protected the natural rocky intertidal reef on the south side of the Island and benefited the native plant and animal communities found on the reef and tide pools. Today, these support marine animals and algae, anemones, crustaceans, mollusks, echinoderms (sea stars), various invertebrates, fish, birds and marine mammals.⁴⁸

Bird species are protected by the Migratory Bird Treaty Act, National Park Service Management Policies, and NPS-77 Natural Resource Management Guidelines.⁴⁹ Since 1975, the number of waterbirds has dramatically increased due to seasonal closures to protect birds, enhancement of slopes and shoreline for habitat creation⁵⁰ and the limited human activity that now occurs on the Island (in contrast to the extensive and on-going modifications that occurred during its period of significance). Six waterbird species regularly nest on Alcatraz Island today, including Brandt's Cormorant, Pelagic Cormorant, Western Gull, California Gull, Black Oystercatcher, and Pigeon Guillemot. Three additional colonial nesting birds, Black-crowned Night Heron, Snowy Egret, Great Egret, and Great Blue Heron have also occupied the Island.⁵¹

The waterbirds and their use of the Island's cultural resources do not contribute to the Island's significance as a cultural landscape. The presence of nesting and roosting Western Gulls in many of the public access areas results in complaints of aggressive gull behavior, areas closed to public access, and unpleasant odors resulting from extensive guano droppings.

The BCMS instituted a number of gull mitigation measures that have successfully protected many of the Island's cultural resources and reduced visitor conflicts (Figure 4-12b) especially in those areas managed to protect cultural resources. BCMS mitigation measures focus on zoning the Island into three conservation and treatment areas: Area A – Western Gull Management Area; Area

⁴³ GGNRA, 2005: Appendix A p. A-10

⁴⁴ GGNRA, 2005: Table 1 Nesting History and Nesting Sites of Alcatraz Island Bird Colonies (updated in 2009)

⁴⁵ Bell 1990

⁴⁶ Hothem and Hatch 2004

⁴⁷ GGNRA, 2005: Appendix A p. A-10

⁴⁸ Silva, P.C. 1979; (from Merkle 2009 review text)

⁴⁹ GGNRA 2001: Bird species are protected by the Migratory Bird Treaty Act, National Park Service Management Policies, and NPS-77 Natural Resource Management Guidelines

⁵⁰ GGNRA 2001

⁵¹ GGNRA 2005: Appendix A p. A-10

B - Buffer Area; and Area C - Colonial Waterbird Conservation Area. The protection of cultural resources has been most successful in Area A where the “*control and/or disturbance of nesting and roosting Western Gulls will be allowed and managed using protocols and actions described under Bird Conservation and Management Action 5 and prescribed by the depredation permit (USFWS 2005).*”⁵² Area A includes the Wharf, Summit, the Main Road on the east side, Main Prison and Stockade/Recreation Yard and portions of Industries, and remains open during nesting season. In addition, there are no restrictions on projects, general maintenance or visitor use activities, all proposed exclusion prescriptions can be employed in Area A. Gull disturbance or depredation must be within limits of the MBTA permit.⁵³

The degradation of cultural resources is most severe in Areas B and C with the extent of degradation most widespread in these areas. Area B addresses land based disturbance to waterbirds and is a ten meter wide band surrounding most of Area C intended to aid conservation of waterbird colonies by buffering disturbances caused by noise and human presence.⁵⁴ Limited access is allowed including use of existing roadways and trails by visitors (on foot and by tram as defined by ADCP) and staff is permitted all year, but it is closed during breeding season for all other activities unless approved by the Alcatraz Management Team. If physical barriers (e.g., vegetation screening) are implemented in the buffer area, noise levels can be reduced, and if traffic can be directed tangentially rather than directly towards the birds the ten meter distance can be reduced. Western Gull management is allowed in the buffer zone, limited to exclusion devices on rooftops and structures. However measures that may disturb nesting birds (e.g. dogs, percussive noises, etc.) are discouraged. Some prescriptions, such as screening or netting require approval by the Alcatraz Management Team and project review.⁵⁵

Area C is managed “*designed to accommodate the variability and dynamism (interannual plasticity) inherent in nesting waterbird colonies,*” and “*encompasses all known areas occupied by colonial nesting waterbirds and the two core population areas supporting Western Gulls.*”⁵⁶ Area C is closed to all activities during the nesting season, typically February 15 and August 30,⁵⁷ with the exception of emergency or high security access. This area includes the Parade Ground, north, west and south shorelines, and the north terrace of the Summit where the cistern and water tank are located. Portions are closed year-round, consistent with the ADCP, and no gull exclusion prescriptions are permitted unless approved through the NEPA process and in compliance with MBTA permitting.⁵⁸

The colonization and expansion of habitat for waterbirds is directly and indirectly (through seasonal closures and protections) causing damage to cultural resources that contribute to the Island’s significance as a National Historic Landmark. This damage poses one of the threats to the integrity of the overall cultural landscape of Alcatraz Island. Since the closing of the Federal penitentiary in 1963, there has been a steady lack of funds to keep up with necessary maintenance for the Island’s cultural features. This, along with the seasonal closure of large portions of the Island

⁵² GGNRA, 2005: 37-38

⁵³ GGNRA, 2005: 37

⁵⁴ Ibid., 39. BCMS recommends a 100 meter exclusion zone be established around the perimeter of Alcatraz Island. This exclusion zone would be particularly critical on the west and northern sides of the Island and should be demarcated with buoys located 100 meters from shore

⁵⁵ Ibid., 43

⁵⁶ Ibid., 39

⁵⁷ Ibid., 37 If Western Gulls persist beyond August, activities can proceed through approval and guidelines set forth by Management Team, and if potential disturbance to gulls does not deviate from population targets, does not disrupt other colonies and is in compliance with MBTA permits

⁵⁸ Ibid., 43

during breeding seasons (Figure 5-4) prevents maintenance and restoration work. As a result, many of the cultural resources (e.g., prison buildings, infrastructure, landscaping) are rapidly deteriorating and immediate stabilization actions are needed to sustain their integrity.

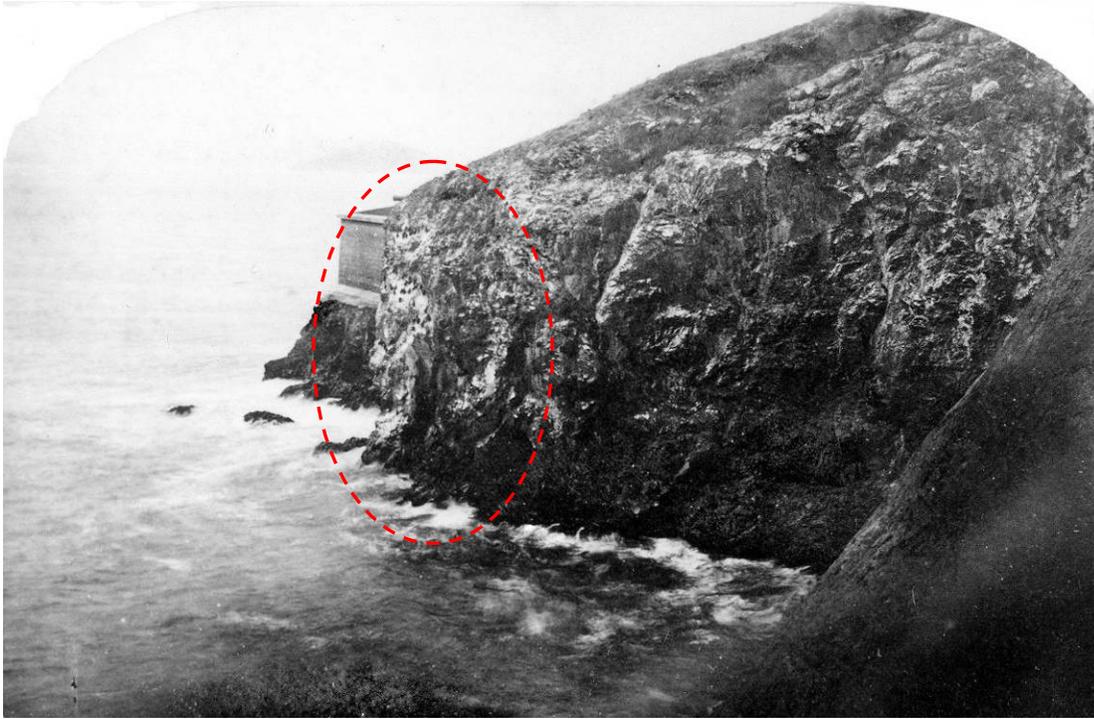


Figure 4 - 11. Cormorants on shoreline cliffs circa 1864 (Initial Military Fortifications and Aids to Navigation period: 1852-1867) (Source: City of Sacramento History Center; Florence Markofer collection)



Figure 4 - 12a. Present day Waterbird Habitat areas. (Source: W. Merkle 2009, Data from PRBO Conservation Science, 2008 Report)

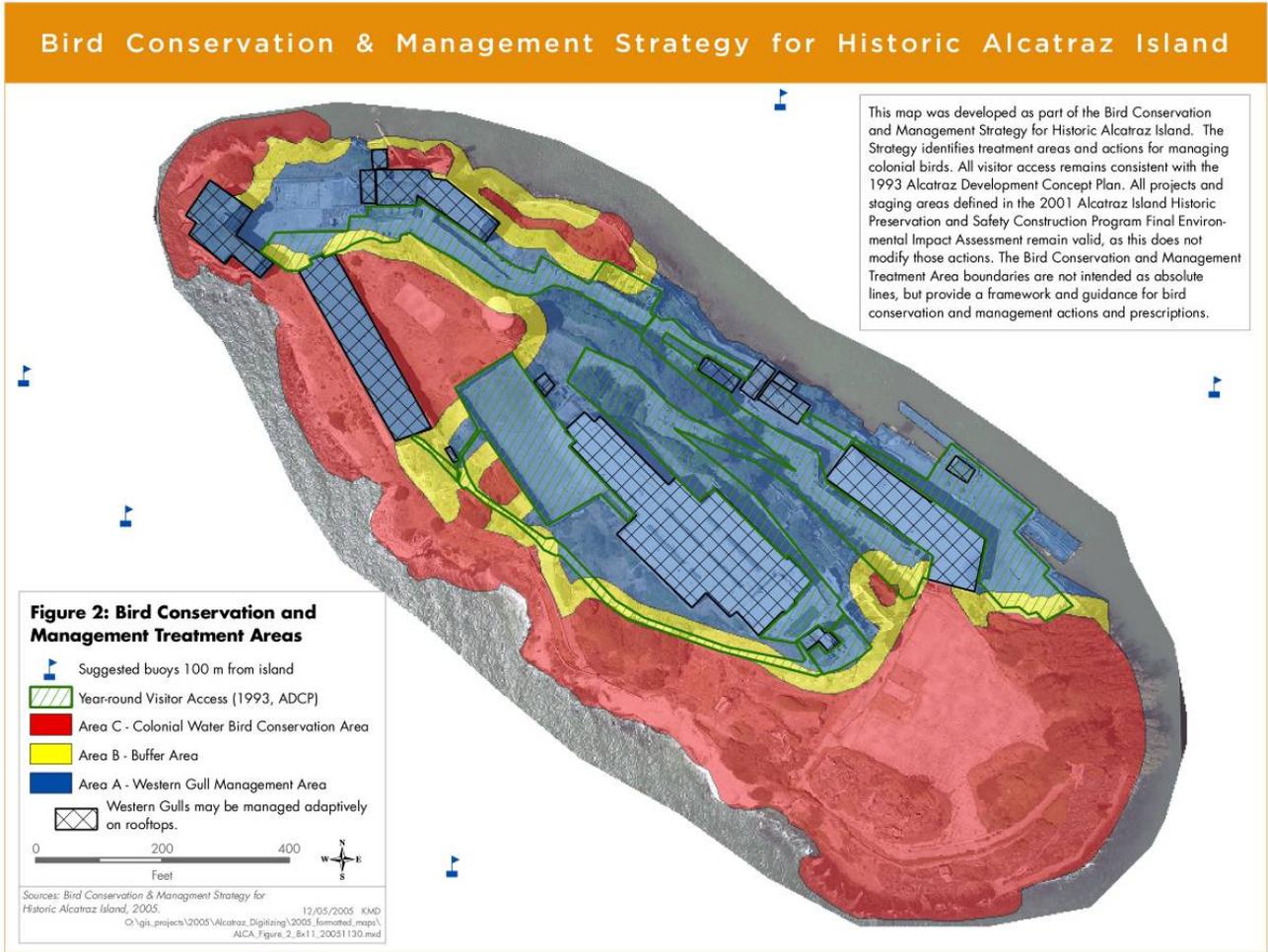


Figure 4 – 12b. Bird Conservation & Management Strategy for Historic Alcatraz Island, 2005. (Image Courtesy of Parks Conservancy)

Archeological Sites – Alcatraz Island

No prehistoric archeological sites have been identified on Alcatraz Island. Historic archeological sites are located throughout the Island due to the continual repurposing of many buildings and areas during the period of significance. The 2005 CLI only included features that were considered to be documented resources with integrity, of which there were only eight Island-wide at the time.

A detailed study of archeological features of Alcatraz Island was completed in May 2009 by Leo R. Barker, Park Archeologist, and are presented in Figure 3-16 in Chapter 3. Existing Conditions Assessment in this document. Many relate to the early development of the Island for fortification and navigation and were subsequently incorporated into later features, including buildings, building remnants, fortification walls, dumpsites and other above-ground features that are visible. These resources are presented as part of the landscape characteristic to which they relate, such as buildings and structures, which are presented by landscape character area.

Others are not visible. However, their identification and preservation is critical in understanding the successive layers of history of the Island's evolution. As they may yield important information about the history of the Island, they should be protected, and be evaluated through thorough investigations.