

**Appendix 1. Historic Names for Alcatraz Island Features  
by Character Area**



## Appendix 1:

### Historic names for Alcatraz Island Features by Character Area

Note: The CLR name, noted in red, is the name used throughout this document.

#### Summit

<i>LCS Structure Name (from CLI)</i>	<i>IDLCS #</i>	<i>Bldg #</i>	<i>CLR Name</i>	<i>Historic Variants</i>
Alcatraz Cellhouse	010060	68	Main Prison	<ul style="list-style-type: none"> <li>• “New Prison” (U.S. Army)</li> <li>• Military Prison (U.S. Army)</li> <li>• Disciplinary Barracks (U.S. Army)</li> <li>• Prison Building (BOP)</li> <li>• Cellhouse (NPS)</li> </ul>
			Main Prison Plaza	<ul style="list-style-type: none"> <li>• Eagle Plaza (NPS)</li> </ul>
Alcatraz Lighthouse	021281	LH	Lighthouse	<ul style="list-style-type: none"> <li>• Light House (Light House Board, U.S. Army)</li> </ul>
Alcatraz Warden’s Residence		76	Warden’s House	<ul style="list-style-type: none"> <li>• Commandant’s Residence/Quarters (U.S. Army)</li> </ul>
Alcatraz Water Tower	217422		Water Tower	<ul style="list-style-type: none"> <li>• Water Tank</li> </ul>
Alcatraz Morgue	217433		Morgue	<ul style="list-style-type: none"> <li>• Emergency Light Plant (BOP)</li> <li>• Mortuary (NPS)</li> </ul>
Alcatraz Citadel Retaining Wall and Steps	021287		Citadel Retaining Wall	<ul style="list-style-type: none"> <li>• Defensive Barracks (U.S. Army)</li> <li>• Ditch</li> </ul>
Alcatraz Building Terraces	461376		North Terrace at Summit	
			Central Terrace at Summit	
			South Terrace at Summit	
Alcatraz Stockade	010053		Stockade/Recreation Yard	<ul style="list-style-type: none"> <li>• Stockade (U.S. Army)</li> <li>• Recreation Ground (U.S. Army)</li> <li>• Exercise Yard / Area (BOP)</li> <li>• Prison Yard (BOP)</li> <li>• Rec/Recreation Yard (BOP)</li> <li>• Yard (BOP)</li> </ul>
Alcatraz Fortification Walls and Magazine (Stockade/Recreation Yard Tunnel opening on north wall)	010065		Fortification Bombproof Tunnel "I"	

**Summit, continued**

<i>LCS Structure Name (from CLI)</i>	<i>IDLCS #</i>	<i>Bldg #</i>	<i>CLR Name</i>	<i>Historic Variants</i>
Alcatraz Tunnel and Bombproof (Tunnel opening west of Morgue)	010063		Fortification Bombproof Tunnel "J"	
Alcatraz Fortification Tunnel and Magazine (Stockade/Recreation Yard Tunnel opening on south wall)	010064		Fortification Bombproof Tunnel "K"	
not listed - refers to slope south of Warden's House and Lighthouse			Escarpment Slope	
Alcatraz Firebox No. 1 (located north of the granite Staircase to Citadel on Main Road)	217462		Firebox #1	<ul style="list-style-type: none"> <li>• Fire Hose Cart Box (BOP)</li> <li>• Fire cache (NPS)</li> </ul>
no name (located south of Morgue)			Firebox #5	<ul style="list-style-type: none"> <li>• Fire Hose Cart Box (BOP)</li> <li>• Fire cache (NPS)</li> </ul>
(refers to elevated walk on wall around Stockade/Recreation Yard)			Sentry Walk	
(refers to small shelters on corners of elevated walk on wall around Stockade/Recreation Yard)			Guard Station	

**Wharf**

<i>LCS Structure Name (from CLI)</i>	<i>IDLCS #</i>	<i>Bldg #</i>	<i>CLR Name</i>	<i>Historic Variants</i>
Alcatraz Wharf	010055	33	Wharf	<ul style="list-style-type: none"> <li>• Dock, Pier (U.S. Army &amp; BOP)</li> </ul>
Alcatraz Defensive Barracks (n.b., three upper concrete stories) Building 64	010050	64	Building 64	<ul style="list-style-type: none"> <li>• Four Company Barracks (U.S. Army)</li> <li>• Barracks/ New Barracks (U.S. Army)</li> <li>• Guard Barracks (U.S. Army)</li> <li>• Pacific Branch Guard Barracks (U.S. Army)</li> <li>• Bachelor Officers' Quarters &amp; Company Barracks (U.S. Army)</li> <li>• Apartments (BOP)</li> <li>• 64 Building (BOP)</li> </ul>
Casemates (n.b., brick basement Bldg 64)			Bombproof Barracks	<ul style="list-style-type: none"> <li>• Casemated Barracks (U.S. Army)</li> <li>• Defensive Barracks (U.S. Army)</li> <li>• Theaters (NPS)</li> <li>• Lower Bookstore (NPS)</li> <li>• Staff offices (NPS)</li> </ul>
not listed			Chinatown	<ul style="list-style-type: none"> <li>• China Alley (NPS)</li> <li>• Magazines (erroneous) (NPS)</li> </ul>
Alcatraz Ranger Office	217452		Ranger Office	<ul style="list-style-type: none"> <li>• Wharfinger's Office (U.S. Army)</li> <li>• "Shelter Shed" for fire apparatus, freight, and waiting rooms for enlisted and officers (U.S. Army)</li> <li>• Dock Security Office (BOP)</li> <li>• Dock Check-in (BOP)</li> <li>• Dock Office (BOP)</li> <li>• Admission Office (BOP)</li> <li>• Registration Office (BOP)</li> <li>• Bureau of White Affairs (Occupiers)</li> <li>• Tech Office (NPS)</li> <li>• Dock Office (NPS)</li> </ul>
Alcatraz Maintenance Garage	217456		Gift Shop/ Maintenance Garage	<ul style="list-style-type: none"> <li>• Dock Garage (BOP)</li> </ul>

**Wharf, continued**

<i>LCS Structure Name (from CLI)</i>	<i>IDLCS #</i>	<i>Bldg #</i>	<i>CLR Name</i>	<i>Historic Variants</i>
Alcatraz Guard Tower At Wharf	010054		Dock Tower	<ul style="list-style-type: none"> <li>• Wharf Tower (BOP)</li> <li>• Tower 1 (BOP)</li> </ul>
Alcatraz Storage Vault	217475		Storage Vault	
Landing at dock staircase				<ul style="list-style-type: none"> <li>• Gasoline Storage Building (U.S. Army)</li> </ul>
Alcatraz Firebox No. 3 and Equipment Storage (located south of Bombproof Barracks)	217472		Firebox #3	<ul style="list-style-type: none"> <li>• Fire Hose Cart Box(BOP)</li> <li>• Fire cache (NPS)</li> </ul>

**Main Road**

<i>LCS Structure Name (from CLI)</i>	<i>IDLCS #</i>	<i>Bldg #</i>	<i>CLR Name</i>	<i>Historic Variants</i>
Alcatraz Road From Guardhouse to Citadel	021289		Main Road	<ul style="list-style-type: none"> <li>• Switchback Road (BOP)</li> </ul>
Alcatraz Guardhouse  See Also 010061	217446	22, 77. GH	Guardhouse Complex	<p>NB: following names have been applied to various parts of the complex reflecting their uses over years:</p> <ul style="list-style-type: none"> <li>• Guardhouse (in 1857 structure)(U.S. Army)</li> <li>• Prison Library (in Bldg 22) (U.S. Army)</li> <li>• Prison Theater (in Bldg 22) (U.S. Army)</li> <li>• Prison Chapel (in Bldg 22) (U.S. Army)</li> <li>• Cleaning Plant (in 1857 structure) (U.S. Army)</li> <li>• Renovating Plant (in 1857 structure) (U.S. Army)</li> <li>• Salt Water Pumphouse (in 1857 structure) (U.S. Army)</li> <li>• Hat Shop (in Bldg 77)(U.S. Army)</li> <li>• Shoe Shop (in Bldg 77)(U.S. Army)</li> <li>• Armory (in Bldg 77)(U.S. Army)</li> <li>• School &amp; Night Employees Quarters (in Bldg 77)(U.S. Army)</li> <li>• Tailor Shop (in Bldg 22) (U.S. Army)</li> <li>• Warehouse (in Bldg 22) (U.S. Army)</li> <li>• Gymnasium &amp; Ordnance Storehouse (in Bldg 22) (U.S. Army &amp; BOP)</li> <li>• Indoor Range (in Bldg 22) (BOP)</li> <li>• Rifle Range (in Bldg 22) (BOP)</li> <li>• Pistol Range (in Bldg 22) BOP)</li> <li>• Boat storehouse (BOP)</li> <li>• Seaside Warehouse (BOP)</li> <li>• Fire Truck Parking (BOP)</li> <li>• Bachelor Officers' Quarters (BOP)</li> <li>• "Army Chapel" (Bldg 22; erroneous) (BOP &amp; NPS)</li> <li>• Schoolhouse (NPS)</li> <li>• Indoor Rifle Range (NPS)</li> </ul>

**Main Road, continued**

<i>LCS Structure Name (from CLI)</i>	<i>IDLCS #</i>	<i>Bldg #</i>	<i>CLR Name</i>	<i>Historic Variants</i>
Alcatraz Sallyport & Guardhouse	010061	22, 77	Guardhouse Complex	See comments under IDLCS #217446 (above)
Alcatraz Dry Moat At Guardhouse/Sallyport	461380	22, 77	Dry Moat at Guardhouse	<ul style="list-style-type: none"> <li>• Ditch (U.S. Army)</li> <li>• Dry Moat (NPS)</li> </ul>
Alcatraz Post Exchange	217439	65 PX	Post Exchange	<ul style="list-style-type: none"> <li>• Post Exchange, Gymnasium &amp; Bowling Alley (U.S. Army)</li> <li>• Social Hall (BOP)</li> <li>• Recreation Hall/ Recreation Building (BOP)</li> <li>• Officers Club (BOP)</li> </ul>
Alcatraz Old Cell House	010057	89	Prison Site/ Electric Shop	<ul style="list-style-type: none"> <li>• Prison (brick portions) (U.S. Army)</li> <li>• Cellblock (brick portions) (U.S. Army)</li> <li>• Lower Prison Guardroom (brick portions) (U.S. Army)</li> <li>• Old Prison (U.S. Army)</li> <li>• Plumbers Shop (U.S. Army)</li> <li>• Packing Plant (U.S. Army)</li> <li>• Salvage Storehouse (U.S. Army)</li> <li>• Salvage &amp; Plumbing Shop (BOP)</li> <li>• Electric Shop (BOP)</li> </ul>
			Officers' Row	
Alcatraz Officers Quarters #7	021283	7	Officers' Quarters 7	<ul style="list-style-type: none"> <li>• "Officers Quarters – Upper" (U.S. Army)</li> <li>• Quarters 9 (U.S. Army)</li> <li>• Doctor's House /Residence (BOP)</li> <li>• Medical Officer's House/Residence (BOP)</li> <li>• Chaplain's House/Residence (BOP)</li> </ul>
		7a	Garden Terrace 7a	
Alcatraz Officers Quarters #8	021284	8	Officers' Quarters 8	<ul style="list-style-type: none"> <li>• Commanding Officer's Residence/ Quarters (U.S. Army)</li> <li>• Commandant's Residence/ Quarters (U.S. Army)</li> </ul>
		8a	Garden Terrace 8a	

**Main Road, continued**

<i>LCS Structure Name (from CLI)</i>	<i>IDLCS #</i>	<i>Bldg #</i>	<i>CLR Name</i>	<i>Historic Variants</i>
Alcatraz Officers Quarters #9	021285	9	Officers' Quarters 9	<ul style="list-style-type: none"> <li>• "Officers Quarters – Lower (U.S. Army)</li> <li>• Quarters #7 (U.S. Army)</li> </ul>
		9a	Garden Terrace 9a	
no name			Trough Wall	<ul style="list-style-type: none"> <li>• Trough Wall</li> <li>• Trough Planter</li> </ul>
Alcatraz Toolshed	010052	25	Toolshed	
Alcatraz Fortification Wall (West Side Access Road)	010066		Fortification Wall - Road to Barracks	
Alcatraz Fortification Wall (East Side Access Road)	010067		Fortification Wall - Barracks to Guardhouse	<ul style="list-style-type: none"> <li>• Scarp Wall (U.S. Army)</li> <li>• Defensive Wall (U.S. Army)</li> </ul>
Alcatraz Road To Parade Ground	460633		Road to Parade Ground	
Alcatraz Road To Northwest Side of Island	021288		Road to Industries, (SB1 to Industries Yard)	
no name			Upper West Road, (Metal Detector Shed to Lighthouse)	
no name			Lower West Road, (Incinerator to Road to Parade Ground)	
Alcatraz Pedestrian Path 2 (shoreline walk from Wharf to Model Industries)	461294		Perimeter Sentry Walk	
no name – refers to non-extant Quarters near SB3		12, 13, 14	NCO Quarters	
			Water Tank Terrace	
			Rose Garden Terrace	

**Industries**

<i>LCS Structure Name (from CLI)</i>	<i>IDLCS #</i>	<i>Bldg #</i>	<i>CLR Name</i>	<i>Historic Variants</i>
Alcatraz Model Industries Building	010062	82	Model Industries	<ul style="list-style-type: none"> <li>• Utilities Shops (U.S. Army)</li> <li>• Model Industries Building (U.S. Army)</li> <li>• Old Industry Building (BOP)</li> <li>• Model Shop (BOP)</li> </ul>
Alcatraz New Industries Building	217450	84	New Industries	<ul style="list-style-type: none"> <li>• Laundry (BOP)</li> </ul>
Alcatraz Power Plant	217445	67	Powerhouse	<ul style="list-style-type: none"> <li>• Boilers &amp; Engines (U.S. Army)</li> <li>• Power Plant (U.S. Army, BOP)</li> </ul>
Alcatraz Shops and Storage Building	010059	79	Stores/QM Warehouse	<ul style="list-style-type: none"> <li>• Warehouse (U.S. Army)</li> <li>• Quartermaster Warehouse (U.S. Army)</li> <li>• Commissary (U.S. Army)</li> <li>• Stores (BOP)</li> <li>• Shop Building (BOP)</li> </ul>
(refers to non-extant building west of Powerhouse)			Old Shops and Laundry Building	
Alcatraz Foghorn (N)	217429		Foghorn North	<ul style="list-style-type: none"> <li>• Fog Bell Building (Light-house Board)</li> <li>• Bell House (U.S. Army)</li> <li>• North Fog Horn Building (US Coast Guard, BOP, NPS)</li> <li>• Siren (BOP)</li> <li>• North Fog Signal Building (US Coast Guard, BOP, NPS)</li> </ul>
Alcatraz North Caponier	010058		North Caponier	<ul style="list-style-type: none"> <li>• Bunker Oil Storage (U.S. Army &amp; BOP)</li> </ul>
Alcatraz Detector Shed	010049		Metal Detector Shed	
Alcatraz Greenhouse	217476		Greenhouse (foundation)	
no name (located at base of Laundry Terraces – North)			Firebox #4	<ul style="list-style-type: none"> <li>• Fire Hose Cart Box (BOP)</li> <li>• Fire cache (NPS)</li> </ul>
(refers to space east of Model Industries)			Industries Yard	
Alcatraz Road To Northwest Side of Island	021288		Road to Industries, (SB1 to Industries Yard)	

**Industries, continued**

<i>LCS Structure Name (from CLI)</i>	<i>IDLCS #</i>	<i>Bldg #</i>	<i>CLR Name</i>	<i>Historic Variants</i>
no name			West Road – North Side (West Side of New Industries)	
Alcatraz Fortification Wall	010056		Fortification Wall - Battery Rosencrans	<ul style="list-style-type: none"> <li>• North Battery Scarp Wall (U.S. Army)</li> </ul>
Alcatraz Fortification Tunnel	021282		Cross Island Tunnel	<ul style="list-style-type: none"> <li>• Communication Tunnel (U.S. Army)</li> <li>• Utility Tunnel (BOP)</li> </ul>
Alcatraz Pedestrian Path 2 (shoreline walk from Wharf to Model Industries)	461294		Perimeter Sentry Walk	
Alcatraz Pedestrian Path 6 (from Metal Detector Shed to New Industries)			Path to New Industries	
Alcatraz Path to Water Tower	460998		Utility Chase and Walk	
Alcatraz Oil Tank No. 1	217474		Oil Tank No. 1	
Alcatraz Oil Tank No. 2	217481		Oil Tank No. 2	
			Fortification Bombproof Tunnel "B"	<ul style="list-style-type: none"> <li>• Bombproof (U.S. Army)</li> <li>• "Powder Magazine" (erroneous) (NPS)</li> </ul>
			Fortification Bombproof Tunnel "C"	<ul style="list-style-type: none"> <li>• Bombproof (U.S. Army)</li> <li>• "Powder Magazine" (for room in Caponier) (U.S. Army)</li> <li>• Bunker Oil Tank (U.S. Army &amp; BOP)</li> <li>• Fuel Oil Tank (BOP)</li> </ul>
no name			West Landing Staircase	
no name			West Side Dock	
no name			Seawalls: Northeast Seawall Northwest Seawall	

**Parade Ground**

<i>LCS Structure Name (from CLI)</i>	<i>IDLCS #</i>	<i>Bldg #</i>	<i>CLR Name</i>	<i>Historic Variants</i>
Alcatraz Parade Ground	010051		Parade Ground	<ul style="list-style-type: none"> <li>• Parade (U.S. Army)</li> <li>• Parade Grounds (U.S. Army)</li> </ul>
Custodial Officers' Quarters		A, B, C	Apartment A Apartment B Apartment C remnants	
Duplex Remnants Building 83		83	Officers' Quarters – Duplex	<ul style="list-style-type: none"> <li>• “2-set Field Officers Quarters” (U.S. Army)</li> <li>• “Associate Warden’s &amp; Captain’s Residences” (BOP)</li> </ul>
Officers' Quarters 72-75 (cottages)		72, 73, 74, 75	-Officers' Quarters 72 -Officers' Quarters 73 -Officers' Quarters 74 -Officers' Quarters 75 Remnants	
Gymnasium Ruins			Gymnasium <i>G on graphics</i>	<ul style="list-style-type: none"> <li>• Gymnasium</li> <li>• Hand Ball Court</li> </ul>
Alcatraz Three Gun Battery	021290		Three Gun Battery/Battery Prime	<ul style="list-style-type: none"> <li>• Battery XIII (U.S. Army)</li> </ul>
Alcatraz Firebox No. 2 (located on east end of Escarpment Slope)	217466		Firebox #2	<ul style="list-style-type: none"> <li>• Fire Hose Cart Box (BOP)</li> <li>• Fire cache (NPS)</li> </ul>
Alcatraz Road To Parade Ground	460633		Road to Parade Ground	
no name			Lower West Road, <i>Incinerator to Road to Parade Ground</i>	
Alcatraz Pedestrian Path 1	454060		Parade Ground Sidewalk	
Alcatraz Pedestrian Path 4	461300		Windy Gulch Trail	<ul style="list-style-type: none"> <li>• Gulch (U.S. Army)</li> </ul>
Alcatraz Pedestrian Path 3	461297		Agave Walk	

**Parade Ground, continued**

<i>LCS Structure Name (from CLI)</i>	<i>IDLCS #</i>	<i>Bldg #</i>	<i>CLR Name</i>	<i>Historic Variants</i>
Alcatraz Foghorn (S)	217430		Foghorn South	<ul style="list-style-type: none"> <li>• South Fog Horn Building (US Coast Guard, BOP, NPS)</li> <li>• Siren (BOP)</li> <li>• South Fog Signal Building (US Coast Guard, BOP, NPS)</li> </ul>
Alcatraz South Battery	021286		Fortification Wall (Buried)-South Battery	<ul style="list-style-type: none"> <li>• Scarp Wall, South Battery</li> </ul>
not listed - refers to slope south of Warden's House and Lighthouse			Escarpment Slope	
Flagstone Wall			NPS walls on Parade Ground	
no name			Seawall: South Seawall	

**Overall**

<i>LCS Structure Name (from CLI)</i>	<i>IDLCS #</i>	<i>Bldg #</i>	<i>CLR Name</i>	<i>Historic Variants</i>
Alcatraz Gardens *also garden name	461378		by individual area:	
			Toolshed Terraces*	
			West Lawn North	
			West Lawn South	
			West Road Terraces	
			Recreation Yard Slope	
			Birdbath Garden*	
			Greenhouse Garden	
			Laundry Terraces*	
			Rose Garden*	
			Water Tank Terrace	
no name	461361		Alcatraz Concrete Fences with Cut-out Panels*	
no name			Pipe Railing	
Alcatraz Concrete Fences with Straight Posts	461369		Alcatraz Concrete Fences with Straight Posts*	
Alcatraz Federal Prison Metal Fencing	461372		Alcatraz Federal Prison Metal Fencing*	
Alcatraz Wood Fence	461374		Alcatraz Wood Fence*	
			*source: NPS GIS Data	
Alcatraz East Side Stairs	461307			• Great Dane Stairs & Poodle Stairs (NPS)
Alcatraz West Side Stairs	461312			

## **Appendix 2. Extant Landscape Features**



## Appendix 2. Extant Landscape Features

### Introduction

This section provides an overview of extant significant and contributing landscape features present on Alcatraz Island. These features are mapped and listed by the historic period in which they were constructed to describe those features that remain from each period, and to identify the historic period to which they can be attributed to, Figure 4-A. The extant features are further described within their respective landscape character areas presented in Chapter 4. Landscape Analysis, where their development and integrity to the period of significance are analyzed.

This section is not an exhaustive list of every feature identified in the Existing Conditions chapter, but rather focuses on those that are prominent or distinctive, and that contribute significantly to the character of the cultural landscape. This allows for a broader understanding of the period to which each belong. This provides insight into the continuum of change that the Island's cultural landscape represents.

### List of Extant Features by Historic Period

<i>Initial Military Fortifications/Aid to Navigation (1852-1867)</i>	
Island Summit excavations on south side of area	1852 – 1853
Eastern side of Main Road and its three switchbacks	1852 – 1853
Excavations for first batteries, and remnants of battery walls	1854 – 1865
South Fog Bell (moved 1900)	1856
Guardhouse Complex	1856
North Caponier	1856
Citadel moat, access stairs, perimeter wall and basement	1859
Terrace for three Non-Commissioned Officer Houses	1859
Foundations of Lower Prison cellblock, now used as base of Electric Shop	1862
Excavations at Wharf for Bombproof Barracks (First floor basement of current-day Building 64)	c1865
Bombproof Barracks (First floor basement of current-day Building 64)	1867

<b><i>Earthen Fortifications/Early Military Prison and Fortifications (1868-1907)</i></b>	
Road connecting Parade Ground area with Main Road	1870
Parade Ground topography excavated, creating a large flat area	1870 – 1890
Excavations for fortifications, creating broad flat areas at the center of the Island and around the north and west sides	1870 – 1876
Fortifications; all are removed or buried and some have been built upon, including Batteries 6 and 7 under the Recreation Yard	1870 – 1876
Main Road extended to west side of Island	1879
Officers' Row garden terraces	1881
Foundations of Officers' Row houses	1881
Hospital site excavated, now location of Rose Garden	1882
Flat areas excavated adjacent to western side of Main Road	c1880s
Concrete Retaining Wall between SB2 and SB3 of Main Road	1891
North Fog Bell	1901
Building 64-Barracks on top of original Bombproof Barracks	1905 – 1906
Steel dock structure replaced earlier wooden docks; surface paved with concrete in 1939	1907

<b><i>Later Military Prison (1908-1933)</i></b>	
Main Road paved with concrete	1907 – 1933
Lighthouse (replaced 1852 lighthouse, residence is a remnant)	1909
Post Exchange building (remnant)	1909
Powerhouse and smokestack (smokestack was moved to present location 1938-1939)	1912
Main Prison	1912
Stockade/Recreation Yard	1912

<i>Later Military Prison (1908-1933), continued</i>	
Stairs from quarry dock on northwest side of Island	1914
Stores/QM Warehouse, later the commissary and garage	1914 – 1922
Schoolhouse atop Guardhouse	1917
Perimeter Walk from Wharf to Industries	1918
Perimeter Walk below Parade Ground, now incorporated into Agave Walk	1918
Walkway to Powerhouse	c1920s
Cellhouse Slope	c1920s
Rose Garden	c1921
Model Shop	1922 – 1929
Agave and Eucalyptus plantings	1924
Toolshed and Laundry Terraces	c1928
Commandant's House, later known as Warden's House	1929
Officers' Quarters in Parade Ground (Buildings 72-75 and 83)	1929
Quarry site topographic changes, later occupied by New Industries building	1900 – 1929
Cisterns north of Recreation Yard	1933
West Lawn	1933
Morgue	1933
Parade Ground Paved	1930 – 1934

<i>Federal Penitentiary/GSA (1934-1969)</i>	
Guard Towers: Dock (rehabilitation), Hill, Powerhouse, and Road (remnants)	1934
Recreation Yard Gate, staircase to Industries	1934
Freight elevator installed in front of Building 64	1934
Chain link fence installed throughout Island (some was removed c1980 to facilitate birds nesting, and some has collapsed)	c1934
Concrete railings and light standards	c1934
Concrete bleacher steps in Recreation Yard	1936
Guard Towers: Model Shop and Main Prison (remnants)	1936
Catwalk from Hill Tower to Model Shop (remnants)	1936
Handball Court/Gymnasium on Parade Ground (remnants)	1936
Dockslip added to dock	1939
Smokestack moved to present location	1939
Water Tower	1940
Utility Trench under Main Road	1940 – 1941
New Industries	1941
Apartment A, B, C	1941
Sidewalks, lawns and gardens built with apartments	1941
Fences around Parade Ground and Building 64	1941
Gardens atop foundations of Officers' Quarters 8 and 9	1941
Dock Tower rebuilt in present location (spiral stairs were replaced by regular staircase in 1958, then reconstructed as spiral stairs in 2002)	1941

<b><i>Indian Occupation (1970-1971)</i></b>	
Graffiti and graffito	1969 – 1971
Four Buildings burned in a fire including the Post Exchange, Officers' Quarters 7, Warden's House, and Lighthouse Keepers Residence	1970

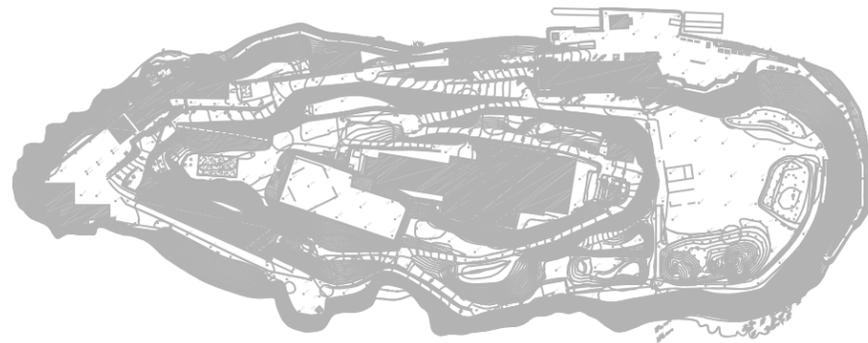
<b><i>General Services Administration (1972-1973)</i></b>	
GSA-installed chain link fence and light standards	1971
GSA-demolition of the four buildings burned in the fire during the Indian Occupation including the Post Exchange, Officers' Quarters 7, Warden's House, and Lighthouse Keepers Residence	1971

<b><i>National Park Service/Golden Gate National Recreation Area (1974-Present)</i></b>	
Amphitheater at Wharf	1994
Flagstone seatwalls around ruins in Parade Ground	1994
Agave Walk	1994
Restroom building at Wharf	1999
Restroom building adjacent to Warden's House	c1999

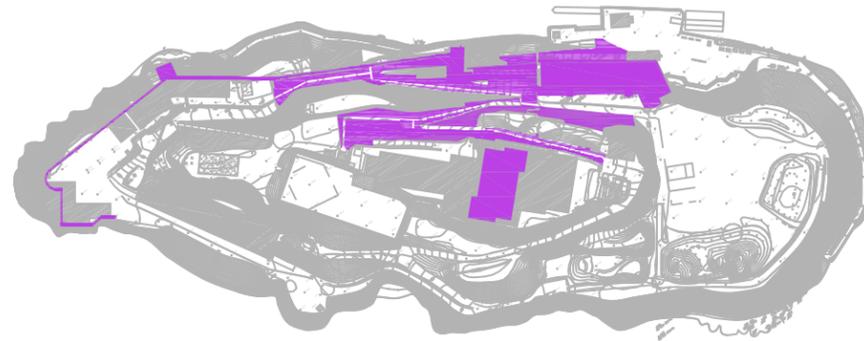


# Legend

Extant Features by Period



A. Pre-settlement: 1851 and Before



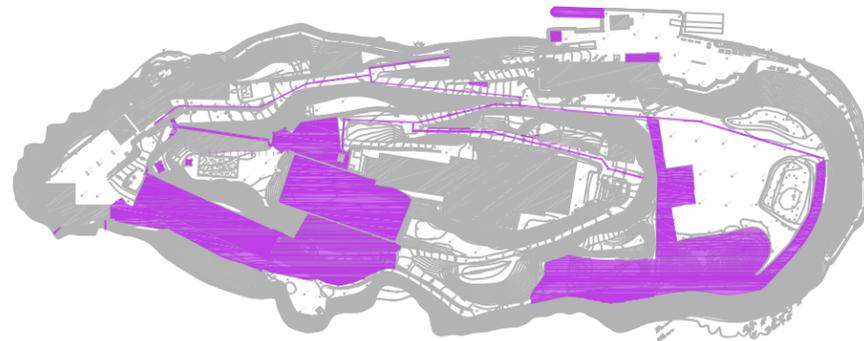
B. Initial Military Fortifications / Aid to Navigation: 1852 - 1867



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><b>FIGURE A2-1</b></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 EXTANT FEATURES BY PERIOD</p>
	<p>NAME OF PARK ALCATRAZ NATIONAL HISTORIC LANDMARK</p> <p>REGION COUNTY STATE PACIFIC SAN FRANCISCO CALIFORNIA</p>



## **Appendix 3. Alcatraz Plant Inventory and Characteristics (2005)**



APPENDIX 3: ALCATRAZ PLANT INVENTORY AND CHARACTERISTICS  
 UPDATED 5/2005

Genus	species	Type	Amount	Health	Planted	Self Sow	Unique	Lifespan	Nat. Regen.
Acacia	longifolia	Tree	Infreq.	Healthy	Yes	No	No	Long-lived	No
Acanthus	mollis	Ann, Perr, Gr	Freq.	Healthy	Yes	No	No	Long lived	Rhizomes
Aeonium	arboereum	Succulent	Abund.	Healthy	Yes	No	No	Long-lived	Pieces
Aeonium	sp. and hybrids	Succulent	Abund.	Healthy	Yes	No	No	Long-lived	Pups or pieces
Agapanthus	orientalis	Ann, Perr, Gr	Freq.	Healthy	Yes	No	No	Long lived	No
Agave	americana	Succulent	Abund.	Healthy	Yes	Yes	No	Long-lived	Seed or pups
Agave	americana 'Marginata'	Succulent	Infreq.	Healthy	Yes	Yes	No	Long-lived	Seed or pups
Agave	lecheguilla	Succulent	Infreq.	Healthy	Yes	Yes	No	Long-lived	No
Agave	sp.	Succulent	Occas'l	Healthy	Yes	Yes	Yes	Long-lived	Pups
Albizia	distachya	Tree	Abund.	Healthy	Yes	No	No	Short-lived	Yes
Aloe	arborescens	Succulent	Infreq.	Healthy	Yes	No	No	Long-lived	Pups
Aloe	sladeniana (tentative id)	Succulent	Occas'l	Healthy	Yes	No	Yes	Long-lived	Pups
Amaryllis	belladona	Bulb	Occas'l	Healthy	Yes	No	No	Long-lived	No
Ambrosia	chamissonis	Ann, Perr, Gr	Infreq.	Healthy	No	Yes	Yes	Average	Potential
Aptenia	cordifolia	Succulent	Infreq.	Healthy	Yes	No	No	Short-lived	Potential
Aptenia	sp.	Succulent							
Arundo	donax	Ann, Perr, Gr	Infreq.	Healthy	?	?	No	Long lived	Rhizomes
Baccharis	sp.	Shrub	Freq.	Fair	No	Yes	No	Long-lived	Yes
Calystegia	occidentalis	Ann, Perr, Gr	Occas'l	Healthy	No	Yes	No	Long	Yes
Carpobrotus	chilensis	Succulent	1 plant	Healthy				Long-lived	Potential, by pieces
Carpobrotus	edulis	Succulent	Abund.	Healthy	Yes	Yes	No	Long-lived	Pieces
Carpobrotus	sp.	Succulent							
Centranthus	ruber	Ann, Perr, Gr	Freq.	Healthy	Yes	Yes	No	Long lived	Seed
Chasmanthe	floribunda	Bulb	Abund.	Vigorous	Yes	Yes	No	Long-lived	Yes
Chenopodium	sp.	Ann, Perr, Gr	Abund.	Vigorous	No	Yes	No	Annual	Yes
Cistus	x hybridus	Shrub	Not found 05		Yes				
Coprosma	repens	Shrub	Abund.	Healthy	Yes	Yes	No	Short-lived	Yes
Cordyline	australis	Tree	Infreq.	Fair	Yes	No	No	Long-lived	No
Cortaderia	jubata	Ann, Perr, Gr	Infreq.	Healthy	Yes	Yes	No	Long lived	Yes
Cotoneaster	pannosus	Shrub	Infreq.	Healthy	Yes	No	No	Long-lived	Potential
Cotoneaster	sp.	Shrub							Yes
Crassula	ovata	Succulent	Occas'l	Healthy	Yes	No	No	Long-lived	No
Crassula	sp.	Succulent							
Crataegus	sp.	Tree	1 plant	Poor	?	?	?	Long-lived	No
Crocasmia	x crocosmiflora	Bulb	Occas'l	Healthy	Yes	Yes	No	Long-lived	Yes
Cupressus	macrocarpa	Tree	Occas'l	Healthy	Yes	No	No	Long-lived	Potential
Cymbalaria	muralis	Ann, Perr, Gr	Abund.	Healthy	Yes	Yes	No	Short lived	Yes
Cynara	scolymus	Ann, Perr, Gr	Infreq.	Healthy	Yes	No	No	Long lived	Yes
Dichondra	micrantha	Ann, Perr, Gr	Infreq.	Healthy	No	Yes	No	Long lived	Yes

APPENDIX 3: ALCATRAZ PLANT INVENTORY AND CHARACTERISTICS  
 UPDATED 5/2005

Genus	species	Type	Amount	Health	Planted	Self Sow	Unique	Lifespan	Nat. Regen.
Drosanthemum	floribunda	Succulent	Abund.	Healthy	Yes	Yes	No	Average	Yes
Drosanthemum	sp.	Succulent							
Echium	candicans	Shrub	Abund.	Healthy	Yes	Yes	No	Short-lived	Seed
Echium	pininana	Shrub	Infreq.	Healthy	Yes	Yes	Yes	Average	Seed
Elymus	triticoides	Ann, Perr, Gr	Abund.	Vigorous	No	Yes	No	Long lived	Yes
Epilobium	cana	Ann, Perr, Gr	Not found 05						
Epilobium	sp.	Ann, Perr, Gr							
Erodium	cicutarium	Ann, Perr, Gr	Abund.	Healthy	No	Yes	No	Annual	Yes
Eschscholzia	californica	Ann, Perr, Gr	Infreq.	Healthy	Yes	Yes	No	Annual	Yes
Eucalyptus	camaldulensis	Tree	Not found 05		Yes	No	No	Long-lived	No
Eucalyptus	globulus	Tree	Occas'l	Healthy	Yes	No	No	Long-lived	No
Eucalyptus	sp.	Tree	Infreq.	Healthy	Yes	No	No	Long-lived	No
Eucalyptus	tereticornis	Tree	Not found 05		Yes	No	No	Long-lived	No
Euonymus	japonicus	Shrub	Infreq.	Healthy	Yes	No	No	Long-lived	No
Ficus	carica	Tree	Occas'l	Healthy	Yes	No	No	Long-lived	yes
Fuchsia	denticulata (tentative id)	Shrub	Infreq.	Healthy	Yes	No	Yes	Long-lived	No
Fuchsia	magellanica	Shrub	Infreq.	Healthy	Yes	No	No	Long-lived	No
Fuchsia	magellanica 'Alba'	Shrub	Infreq.	Healthy	Yes	No	Yes	Long-lived	No
Fuchsia	Mrs. Lovell Swisher' (new plant)	Shrub	Infreq.	Healthy	Yes	No	Yes	Long-lived	No
Fuchsia	'Riccartonii'	Shrub	Infreq.	Healthy	Yes	No		Long-lived	No
Fuchsia	'Rose of Castile'	Shrub	Occas'l	Healthy	Yes	No		Long-lived	No
Fuchsia	sp.	Shrub							
Fuchsia	SP2	Shrub	Infreq.	Poor	Yes	No		Long-lived	No
Fuchsia	WH2	Shrub	Infreq.	Healthy	Yes	No		Average	No
Galium	aparine	Ann, Perr, Gr	Abund.	Good	No	Yes	No	Annual	Yes
Gladiolus hybrid		Bulb	Gone		Yes				
Gnaphalium	sp.	Ann, Perr, Gr							Yes
Hebe	salicifolia	Shrub	Infreq.	Mixed	Yes	No	No	Average	No
Hebe	sp.	Shrub	Occas'l	Mixed	Yes	No	No	Average	No
Hebe	x franciscana	Shrub	Infreq.	Mixed	Yes	No	No	Average	No
Hirschfeldia	incana	Ann, Perr, Gr							Yes
Homeria	collina	Bulb	Infreq.	Healthy	Yes	Yes		Average	Seed
Hyacinthoides	hispanica	Bulb	Abund.	Healthy	Yes	No	No	Long-lived	Yes
Hydrangea	macrophylla	Shrub	Gone		Yes				
Hymenolepis	parviflora	Shrub	Infreq.	Healthy	Yes	?	No	Long-lived	?
Iris	douglasiana	Bulb	Infreq.	Healthy	Yes	No	No	Average	Potential
Iris	orientalis	Bulb	Infreq.	Healthy	Yes	No	No	Average	Potential
Iris	spuria	Bulb	Abund	Healthy	Yes	No	No	Long-lived	Yes
Iris	sp. Tall Bearded (several color	Bulb	Abund.	Healthy	Yes	No	No	Long-lived	No

APPENDIX 3: ALCATRAZ PLANT INVENTORY AND CHARACTERISTICS  
 UPDATED 5/2005

Genus	species	Type	Amount	Health	Planted	Self Sow	Unique	Lifespan	Nat. Regen.
Kniphofia	sp.	Ann, Perr, Gr							
Kniphofia	uvaria	Ann, Perr, Gr	Infreq.	Healthy	Yes	No	No	Long lived	No
Lathyrus	latifolius	Ann, Perr, Gr	Abund.	Vigorous	?	Yes	No	Long lived	Yes
Lavatera	arborea	Ann, Perr, Gr	Infreq.	Poor	No	Yes	No	Short lived	Potential
Lavatera	assurgentiflora	Shrub	Not found 05		Yes	No	No	Short-Aver	
Leptospermum	laevigatum	Tree	Infreq.	Healthy	Yes	No	No	Long-lived	No
Leucojum	aestivum	Bulb	Infreq.	Healthy	Yes	No	No	Long-lived	Potential
Ligustrum	japonicum	Shrub	Infreq.	Healthy	Yes		No	Long-lived	Potential
Ligustrum	sp.	Shrub							
Lobularia	maritima	Ann, Perr, Gr	Abund.	Healthy	Yes	Yes	No	Short lived	Seed
Lonicera	japonica	Ann, Perr, Gr	Abund.	Healthy	Yes	No	No	Long lived	Rooting
Lupinus	arboresus	Shrub	Not found 05		No	Yes	No	Short-lived	
Lupinus	sp.	Shrub						Potential	
Malephora	crocea	Succulent	Occas'l	Healthy	Yes	No	No	Long-lived	
Malephora	sp.	Succulent							
Malus	sp.	Tree	Infreq.	poor	Yes	No	No	Long-lived	No
Malva	parviflora	Ann, Perr, Gr	Abund.	Healthy	No	Yes	No	Annual	Yes
Marah	fabaceus	Ann, Perr, Gr	Abund.	Healthy	No	Yes	No	Long lived	Yes
Melilotus	indica	Ann, Perr, Gr	Occas'l	Healthy	No	Yes	No	Long lived	Yes
Mentha	piperata	Ann, Perr, Gr	Not found 05		Yes	No	No	Long lived	Rhizomes
Mentha	sp.	Ann, Perr, Gr							
Metrosideros	excelsus	Tree	Infreq.	Healthy	Yes	No	No	Long-lived	No
Muscari	armeniicum	Bulb	Infreq.	Healthy	Yes	No	No	Long-lived	No
Narcissus	papyraceus	Bulb	Occas'l	Healthy	Yes	No	No	Long-lived	No
Narcissus	sp. (several forms)	Bulb	Occas'l	Healthy	Yes	No	No	Long-lived	No
Nothoscordum	gracile	Bulb	Abund.	Vigorous	Yes	Yes	No	Long-lived	Bulblets, seed
Olearia	sp.	Shrub	Infreq.	Healthy	Yes	No	No	Long-lived	No
Olearia	traversii	Shrub	Infreq.	Vigorous	Yes	No	No	Long-lived	No
Oxalis	pes-caprae	Bulb	Abund.	Vigorous	Yes	No	No	Long-lived	Bulblets
Oxalis	sp. (pink)	Bulb	Infreq.	Healthy	Yes	No	No	Long-lived	Bulblets
Pelargonium	California Brilliant'	Ann, Perr, Gr	Gone		Yes	No	No	Average	No
Pelargonium	quercifolium	Ann, Perr, Gr	Infreq.	Healthy	Yes	No	Yes	Average	No
Pelargonium	x domesticum	Ann, Perr, Gr							
Pelargonium	x domesticum 'Mrs. Langtry'	Ann, Perr, Gr	Infreq.	Healthy	Yes	No	No	Average	No
Pelargonium	x domesticum 'Our Frances'	Ann, Perr, Gr	Gone	Healthy	Yes	No	No	Average	No
Pelargonium	x domesticum 'Prince Bismarck'	Ann, Perr, Gr	Freq.	healthy	Yes	Yes	No	Average	Yes
Pelargonium	x domesticum 'San Antonio'	Ann, Perr, Gr	Infreq.	Healthy	Yes	No	No	Average	No
Pelargonium	x hortorum 'Alphonse Ricard'	Ann, Perr, Gr	Freq.	Healthy	Yes	No	No	Average	No
Pittosporum	crassifolium	Tree	Infreq.	Healthy	Yes	No	No	Long-lived	No

APPENDIX 3: ALCATRAZ PLANT INVENTORY AND CHARACTERISTICS  
 UPDATED 5/2005

Genus	species	Type	Amount	Health	Planted	Self Sow	Unique	Lifespan	Nat. Regen.
Pityrogramma	triangularis	Fern	Not found 05		No	Yes	No	Short-lived	Yes
Plantago	coronopus	Ann, Perr, Gr	Occas'l	Healthy	No	Yes	No	Short lived	Seed
Plantago	lanceolata	Ann, Perr, Gr	Abund.	Healthy	No	Yes	No	Long lived	Seed
Plantago	sp.	Ann, Perr, Gr							
Polypodium	californicum	Fern	Freq	Healthy	No	Yes	No	Long-lived	Spores
Polypodium	scouleri	Fern	Infreq.	Healthy	No	Yes	Yes	Long-lived	Potential
Polypogon	interruptus	Ann, Perr, Gr	Abund.	Healthy	No	Yes	No	Annual	Yes
Polystichum	munitum	Fern	Infreq.	Healthy	No	Yes	No	Long-lived	Yes
Prunus	cerasifera	Tree	Infreq.	Healthy	Yes	No	No	Long-lived	Potential
Prunus	persica	Tree	Infreq.		Yes	No			No
Pyracantha	coccinea	Shrub	Infreq.	Vigorous	Yes	No	No	Long-lived	Potential
Pyracantha	sp.	Shrub	Infreq.	Healthy	Yes	No	No	Long-lived	No
Raphanus	sativus	Ann, Perr, Gr	Abund.	Vigorous	No	Yes	No	Long lived	Yes
Rhamnus	californica	Shrub	Infreq.	Healthy	Yes	No	No	Long-lived	Potential
Rosa	Blaze'	Shrub	Not found 05		Yes	No	No	Long-lived	No
Rosa	'Dorothy Perkins'	Shrub	Infreq.	Poor	Yes	No	No	Long-lived	Suckers
Rosa	'Excelsa'	Shrub	Infreq.	Poor	Yes	No	No	Long-lived	No
Rosa	'Felicite et Perpetue'	Shrub	Abund.	Vigorous	Yes	No	No	Long-lived	Tip roots
Rosa	'Gardenia'	Shrub	Infreq.	Vigorous	Yes	No	No	Long-lived	Tip roots
Rosa	'General MacArthur'	Shrub	Infreq.	Poor	Yes	No	Yes	Long-lived	No
Rosa	Gloire des Rosomanes'	Shrub	Not found 05		Yes	No	No	Long-lived	No
Rosa	'Russeliana'	Shrub	Infreq.	Healthy	Yes	No	Yes	Long-lived	Tip roots
Rosa	wichuraiana	Shrub	Abund.	Vigorous	Yes	No	No	Long-lived	Tip roots
Rubus	discolor	Ann, Perr, Gr	Abund.	Vigorous	?	yes	no	Long lived	Yes
Rubus	sp.	Ann, Perr, Gr							
Rubus	vitifolius	Ann, Perr, Gr							Yes
Rumex	crispus	Ann, Perr, Gr	Abund.	Vigorous	No	Yes	No	Long lived	Seed
Rumex	sp.	Ann, Perr, Gr							
Schinus	sp.	Tree	Infreq.	Healthy	Yes	No	No	Long-lived	No
Scrophularia	californica	Ann, Perr, Gr							
Sedum	dendroideum	Succulent	Occas'l	Healthy	Yes	Yes		Average	
Sedum	praealtum	Succulent							
Sedum	sp.	Succulent							
Senecio	milkanoides	Ann, Perr, Gr	Infreq.	Healthy	No	Likely	No	Long lived	Yes
Sidalcea	malviflora	Ann, Perr, Gr	Occas'l	Healthy	No	Yes	No	Long lived	Yes
Solanum	americanum	Ann, Perr, Gr	Abund.	Healthy	No	Yes	No	Average	Yes
Solanum	marginata	Ann, Perr, Gr	Infreq.	healthy	?	?	yes	average	Seed
Solanum	sp.	Ann, Perr, Gr							
Sonchus	oleraceus	Ann, Perr, Gr							

APPENDIX 3: ALCATRAZ PLANT INVENTORY AND CHARACTERISTICS  
 UPDATED 5/2005

Genus	species	Type	Amount	Health	Planted	Self Sow	Unique	Lifespan	Nat. Regen.
Stachys	bullata	Ann, Perr, Gr	Freq.	Healthy	No	Yes	No	Average	Yes
Stachys	sp.	Ann, Perr, Gr			Yes				
Stellaria	media	Ann, Perr, Gr	Abund.	Healthy	No	Yes	No	Annual	Yes
Triteleia	laxa	Bulb	Infreq.	Healthy	No	Yes	No	Average	Yes
Tropaeolum	majus	Ann, Perr, Gr	Abund.	Healthy	Yes	Yes	No	Short lived	Seed
Tulipa	sp.	Bulb	Not found 05		Yes				
Vicia	coronilla	Ann, Perr, Gr	Occas'l	Healthy	No	Yes	No	Short lived	Seed
Vinca	major	Ann, Perr, Gr	Abund.	Healthy	Yes	No	No	Long lived	Rooting
Watsonia	borbonica	Bulb	Occas'l	Vigorous	Yes	No	No	Long-lived	No
Watsonia	'Mrs. Bullard's White'	Bulb	Occas'l	Healthy	Yes	No	No	Long-lived	
Watsonia	species 1 (soft orange)	Bulb	Occas'l	Healthy	Yes	No	Yes	Long-lived	Yes
Watsonia	species 2 (brilliant orange)	Bulb	1 plant	Healthy	Yes	No	Yes	Long-lived	No
Yucca	aloifolia	Tree	1 plant	Healthy	Yes	No	No	Long-lived	No
Yucca	gloriosa	Tree	Infreq.	Fair	Yes	No	No	Long-lived	No
Yucca	sp.	Tree							
Zantedeschia	aethiopica	Bulb	Abund.	Vigorous	Yes	No	No	Long-lived	Rhizomes

\*Source: Bradley 2005:



## **Appendix 4. 2007 Tree Inventory Report**



## Appendix 4: 2007 Tree Inventory Report

### Evaluation of the Trees on Alcatraz Island

Joe R. McBride  
Consulting Forester  
Albany, CA  
January 20, 2007

#### Introduction

A number of trees occur on Alcatraz Island as a result of tree planting and the natural establishment of seedlings from seeds produced by the planted trees. Evidence from photographs indicates that tree planting began in the 19<sup>th</sup> century during the period the U.S. Army and the Federal Lighthouse Service occupied the island and continued during and after the period when the Federal Bureau of Prisons maintained the island (Martini, 2002). As a result of this long history the trees in the island vary in age and size as well as condition. The purpose of this report is to summarize the conditions of the trees on the island and recommend maintenance procedures to promote tree health and insure public safety.

#### Methods

A selection of trees, identified by U.S. National Park Service personnel, were examined during two visits to the island in December, 2006. The diameter at breast height (DBH) of each tree was measured with a diameter tape. Height of each tree was determined using a clinometer. Each tree was tagged with an aluminum numbered tag, nailed to the base of the tree for future identification (Map A4-1). A core was removed from specific trees identified by the Park Service using an increment borer. Annual growth rings on each core were counted to determine the age of the tree following procedures suggested by Stokes and Smiley (1968).

Methods suggested by Matheny and Clark (1994) and Wagener (1963) were used to examine each tree for evidence of pathogens, insects, advanced decay, root lifting, branch breakage, and die back of shoots as these factors related to tree fall and limb breakage hazards. The potential "target" (or "targets") should a tree or its branches fall was also noted. Existing and potential damage to walks, road ways, and walls by the growth of tree roots, trunks, and branches was recorded.

A grove of eucalyptus trees near the south eastern end of the island was inspected with general reference to the stability of the trees. A general assessment of the condition of the stand was recorded.

The data collected and the observations were used to develop recommendations for management actions for each tree and the eucalyptus stand. These recommendations were based on experience with older trees at the Presidio, Lands End, and The Sea Ranch (McBride, 2002, 2003, 2004; Roberts and McBride, 2005).

## Results and Recommendations

The data collected on individual trees in this study and recommendations for their management are shown in Table A4-1. This table is self explanatory and does not require a tree by tree explanation or elaboration. The trees in the eucalyptus grove are not covered in Table A4-1, but are discussed below.

The examination of the trees on Alcatraz revealed some common problems for the future maintenance of trees on the island. Many of the larger trees on the island are Monterey cypress trees planted during the Army period.

As Monterey cypress trees mature they develop large horizontal branches that increase in weight and wind resistance. Branch failure is common in these older trees. Early pruning of horizontal branches can reduce branch failure and insure a more stable tree structure. In older trees that have not been previously pruned to remove horizontal branches, pruning can be done to remove branches or to reduce the weight of these branches. Trees numbered 8, 10, 13, 14, 16, 17, 28, and 29 are examples of Monterey cypress with large horizontal branches requiring removal or pruning to reduce the risk of branch failure. Some of the Monterey cypress and several eucalyptus trees on the island are composed of multiple stems. Inclusions of bark where adjacent stems have grown together can lead to trunk rots which weaken the trees and result in trees being split apart. This condition can be addressed by cabling the main branches of such trees as has been recommended for trees numbered 10 and 11.

The green dracena (*Cordyline australis*) and dragon (*Dracaena draco*) trees on Alcatraz Island are in very bad condition due to termites and trunk rots. Failure of these trees is not likely to harm visitors to the island because of the size and locations of the trees. Structural support (external staking) could be used to minimize the mechanical failure of these trees; however, the trees are in declining health and are not expected to survive more than a couple of decades. Replacement planting would insure the establishment of healthy, structurally stable trees. Filling of the cavities with concrete, asphalt, or other materials is not recommended. Harris et al (1999) state "From the standpoint of tree structure and health, the reasonable course of action is to simply leave cavities alone".

A few fruit trees are present on the island. These were generally found to be in good health. They have not been pruned to encourage fruit production and have taken on the crown characteristic of trees growing in the wild. A general heading back of the terminals of these trees, removal of sucker branches, and a light thinning of the canopy will restore their appearance to that of orchard trees. Advice on more professional pruning of these trees could be obtained from the Department of Pomology at the University of California at Davis. Faculty and graduate students in the department pruned the old Russian apple orchard at Ft. Ross a number of years ago in a successful effort to restore vigor to the trees. They may be willing to provide pruning services and expert advice for the fruit trees on Alcatraz Island.

The eucalyptus grove near the south eastern end of the island supports 32 trees over six inches in diameter, several of which have multiple trunks (Map A4-2). These trees were planted on a steep slope which may have been created by the dumping of rubble over the cliff when Army prisoners in the 19<sup>th</sup> century carved the parade ground out of the cliffs at the south end of the island. Irrespective of the mode of formation of this slope it is unstable. The lack of stability has resulted in rocks and other debris sliding down against the base of the trees. The movement of the slope and the prevailing wind through the Golden Gate has contributed to the tree leaning in an easterly direction over the walkway along the edge of the island. Several trees in the grove exhibit die back of their tallest branches, possibly in response to their exposure to higher wind velocities as their tops have grown above the elevation of the parade ground. There are also dead standing trees in the grove. The trees show evidence of having been topped at two times with major branching occurring at 15 to 18 feet above the ground and again at around 20 to 24 feet. This was a common tree maintenance procedure used by the U. S. Army at the Presidio on eucalyptus to control problems of wind breakage. Unfortunately after the practice is terminated, the branches grow heavy and can be vulnerable to wind breakage, as is the case for a number of trees in the grove. These eucalyptus trees present the greatest tree fall and limb fall hazard to visitor to the island. The condition of these trees, coupled with their proximity to a commonly used pathway makes them very dangerous. I recommend that the existing trees be cut down and allowed to sprout back. They will produce numerous vigorous sprouts which should be thinned over a period of five years to select the straightest, most vigorous sprout on each stump. These sprouts should be allowed to grow as replacements for the trees originally planted by the U. S. Army. I would further recommend the tree topping practices used by the Army be adopted to control the height and wind breakage problem which will be associated with these trees in the future.

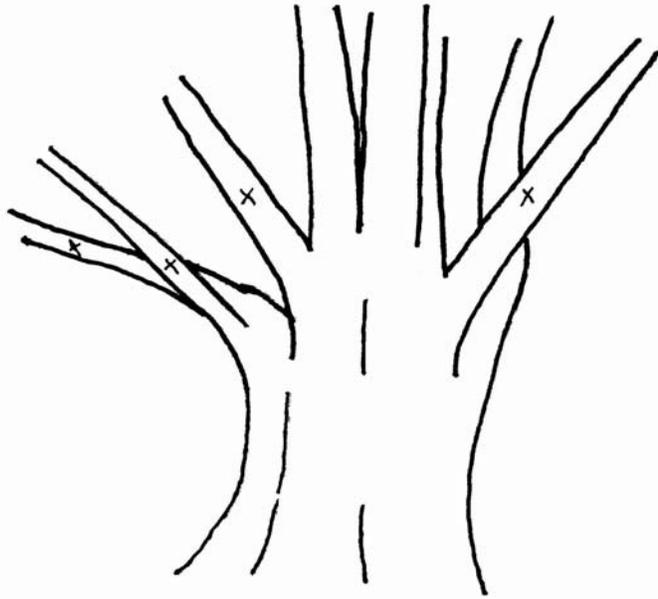
### **Acknowledgments:**

I wish to thank Laura Albers, Igor Lacan, and Sam Woodhams Roberts for their assistance on this project.

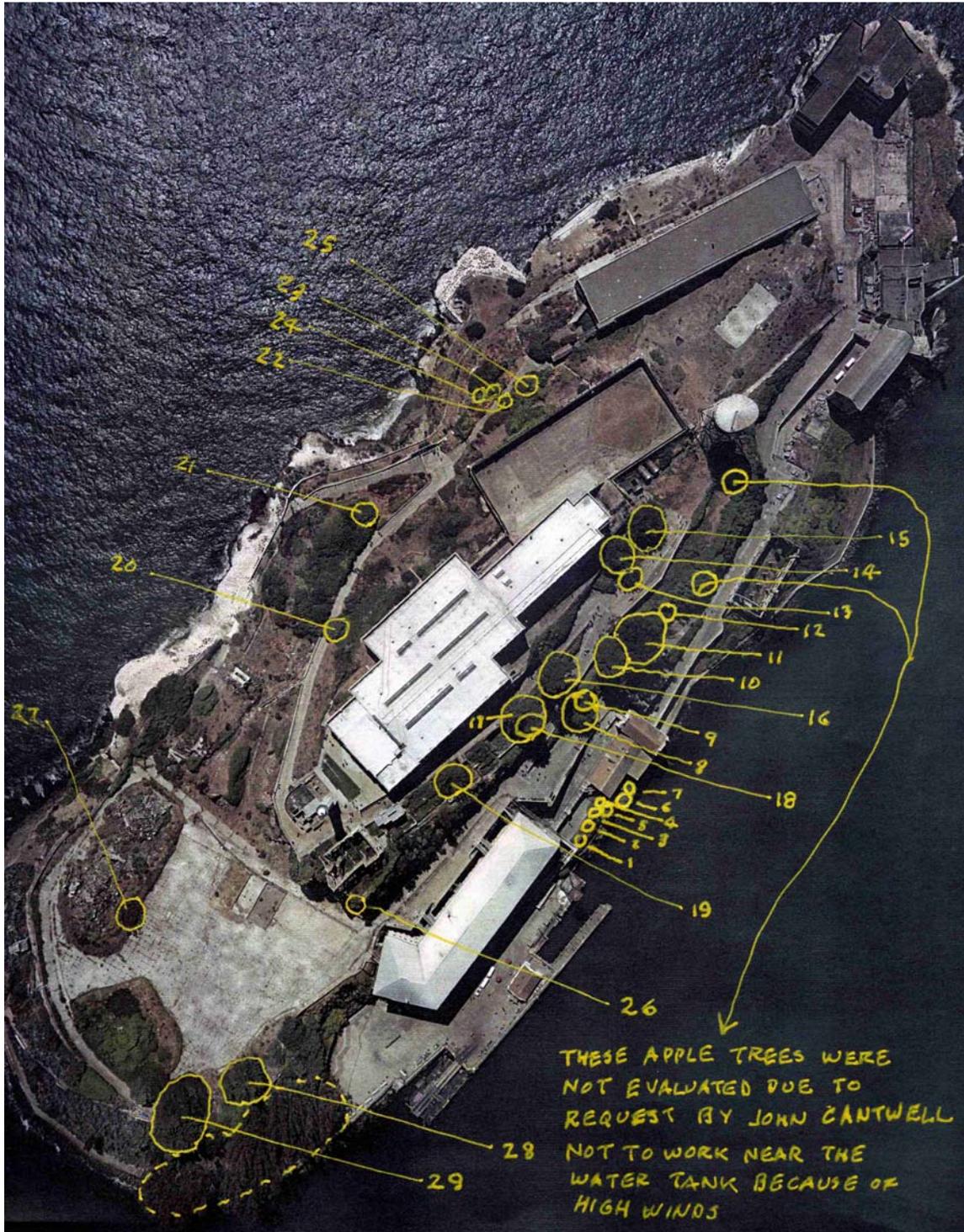
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Figure A4-1. Branching pattern of tree # 15 as viewed from the north side of the tree (x = branches to be removed)



Map A4-1. Location of trees examined on Alcatraz Island



Map A4-2. Location of trees in the eucalyptus grove

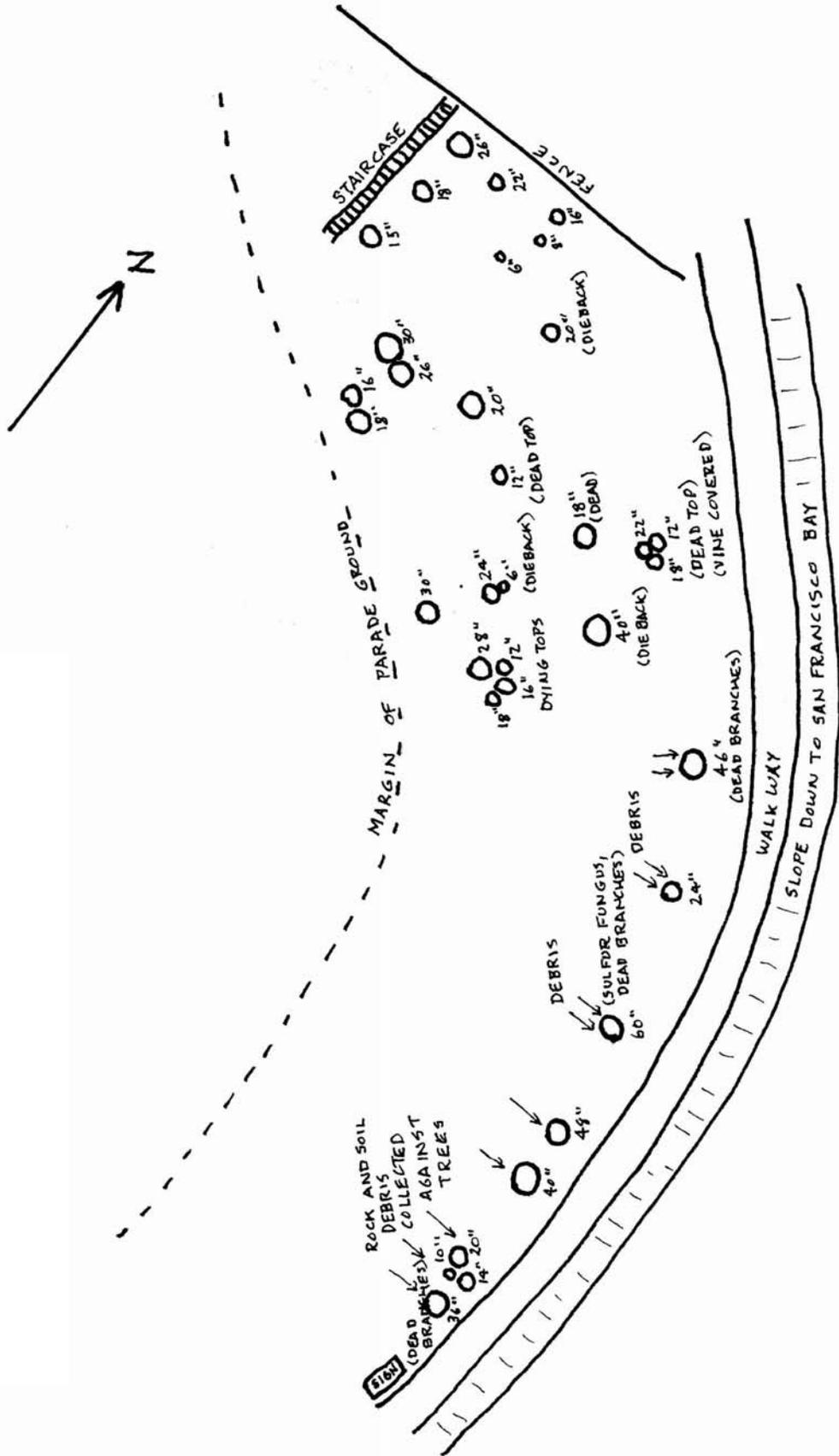




Table A4-1. Alcatraz Tree Survey Summary

Tree Number	Species		DBH (in.)	Height (ft.)	Age	Condition	Recommendations
	Common Name	Scientific Name					
1	Green Dracena; New Zealand Cabbage Tree	Cordyline australis	11.1	20	ND	Poor condition: termites, hollow trunk, decay in one buttress root, 2 main stems have acute angle of attachment - tree likely to split at this point	Remove and replant
2	Green Dracena; New Zealand Cabbage Tree	Cordyline australis	11.3	15	ND	Poor condition: termites, hollow trunk, 2 main stems have acute angle of attachment - tree likely to split at this point; foliage shows salt damage and nutrient deficiency	Remove and replant
3	Australian Tea Tree	Leptospermum laevigatum	11.3 8.5 6.2	15	74 <sup>1</sup>	Fair condition - potential for bark enclosure leading to trunk failure Limited potential for falling onto roadway	1. Remove 6.2" diameter trunk 2. Prune underside of canopy over road way to maintain clearance for vehicles
4	Australian Tea Tree	Leptospermum laevigatum	8.4 7.0 4.8	15	60 <sup>1</sup>	Fair condition Limited potential for falling onto roadway	1. Prune underside of canopy over road way to maintain clearance for vehicles
5	Australian Tea Tree	Leptospermum laevigatum	3.5	12	25	Poor condition - tree crowded by tree #4	Remove
6	Australian Tea Tree	Leptospermum laevigatum	11.9 8.0	16	80 <sup>1</sup>	Poor condition - Crack has formed between two trunks; leans toward San Francisco Bay, if tree falls into the bay its root system will be pulled out breaking the above ground fuel line adjacent to trunk	These trees (#6 and # 7) have important scenic value and are often photographed from

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7	Australian Tea Tree	Leptospermum laevigatum	8.0 9.1	17	63 <sup>1</sup>	Poor condition - Root decay; leans toward San Francisco Bay, if tree falls into the bay its root system will be pulled out breaking the above ground fuel line adjacent to trunk	inside the sally port. The hazard associate with the fuel line could be mitigated by moving the fuel line away from the base of the trees. It could be relocated along the wall of the sally port where it would not be disturbed if the trees fell.
8	Monterey Cypress	Cupressus macrocarpa	27.2	37	93 <sup>2</sup>	Fair condition - recent branch failure evident; no roots on downhill side; will target major walk way when it falls	Prune to relieve weight on downhill side of tree; thin upper crown to reduce wind resistance (remove 10 to 15 % of live branches)
9	Blue gum	Eucalyptus globulus	9 9 6	24	ND	Poor condition - tree is growing through historic concrete fence/wall and breaking it apart	1. Remove 2. Apply herbicide to prevent resprouting
10	Monterey Cypress	Cupressus macrocarpa	43.0	34	103 <sup>3</sup>	Poor condition - termites in trunk, recently broken branches, acute angle of attachment of two main stems	1. Cable main branches 2. Prune off horizontal branches on southeast side and horizontal branch on north side
11	Blue gum	Eucalyptus globulus	42 28 24 20 16 14 13 10 6	127	ND <sup>4</sup>	Fair condition - accumulated leaf litter and vine at base of tree can lead to trunk rot and instability of the tree, dieback occurring in top of tree, double trunks will result in rot seam that will weaken the tree. Failure of this tree or breakage of its branches will target main	1. Remove all trucks under 20 " DBH 2. Prune off the tops of the remaining trunks reducing their height's by 40 feet

12	Blue gum	Eucalyptus globulus	5	12	ND	Multiple sprouts from previously cut tree	walk way use by tourist to reach the prison.	3. Cable together remaining trunks 4. Periodically remove new basal sprouts 1. Remove 2. Treat stumps with herbicide to prevent resprouting
13	Monterey Cypress	Cupressus macrocarpa	18	34	ND	Fair condition - 20° lean to the north, targets park bench	Fair condition - several lower branches have low angles of attachment and will have high potential for wind breakage as they grow heavier	1. Prune off lowest two branches on north side of tree to reduce unbalanced weight 2. Move park bench 1. Prune off three smallest trunks (8", 6", 6") 2. Prune off the heavier lower branches on the 14.4" trunk 3. Prune off the large, lower branches on the north side of the 24" trunk
14	Monterey Cypress	Cupressus macrocarpa	25 14.4 8 6 6	62	ND	Fair condition - multiple stems present future problem of bark inclusion and heart rot, horizontal branches on north side of 25" trunk are becoming too heavy	Fair condition - well balanced canopy, no evidence of trunk or root rot; "knuckle" on left hand side of main trunk is a weak point	1. Remove the three smallest trunks (8", 6", 6") 2. Prune off the heavier lower branches on the 14.4" trunk 3. Prune off the large, lower branches on the north side of the 24" trunk
15	Monterey Cypress	Cupressus macrocarpa	43.8	60	ND	Fair condition - several lower branches have low angles of attachment and will have high potential for wind breakage as they grow heavier	Good condition - no evidence on problems, currently not growing against wall	1. Remove the four lower branches which are leaning our away from the main trunks (see illustration) 1. Prune off "knuckle" and branch above it 2. Lightly prune canopy to reduce weight on horizontal branches
16	Monterey Cypress	Cupressus macrocarpa	45	88	90	Good condition - well balanced canopy, no evidence of trunk or root rot; "knuckle" on left hand side of main trunk is a weak point	Good condition - no evidence on problems, currently not growing against wall	1. Prune off "knuckle" and branch above it 2. Lightly prune canopy to reduce weight on horizontal branches
17	Monterey Cypress	Cupressus macrocarpa	30.2	69	60	Good condition - no evidence on problems, currently not growing against wall	Good condition - no evidence on problems, currently not growing against wall	1. Light crown pruning to reduce wind resistance

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18	Monterey Cypress	Cupressus macrocarpa	28	70	27	Good condition - roots beginning to lift wall, tree leans slightly down hill, heavy branches developing on downhill side, will be a problem in the future, appears to be a volunteer, not a planted tree	and reduce weight of branches 1. Remove in order to prevent further damage to retaining wall
19	Monterey Cypress	Cupressus macrocarpa	29.7	49	30	Good condition - well formed canopy and trunk structure, not crowding wall, appears to be a volunteer, not a planted tree	1. Remove in order to restore historic garden
20	New Zealand Christmas Tree	Metrosideros excelsa	12 10 9 9 6 5 5 4	31	60	Good condition - leaf litter accumulating within clump of trunks, can result in trunk rot	1. Remove accumulated leaf litter at base of trunks 2. Thin out trunks less than 9" in diameter
21	New Zealand Christmas Tree	Metrosideros excelsa	8 8 7 7 6 6 5	30	57	Good condition - has accumulation of litter at base similar to tree #20, but roots of the tree are growing into this mass, canopy is overtopping adjacent green house and future wind breakage of branches may damage the greenhouse	1. Prune branches over hanging greenhouse
22	Walnut	Juglans sp.	6.4 5.1	21	40°	Good condition - sucker branches coming out around previously pruned branch scars	1. Prune off sucker branches 2. Head back tallest branches to keep walnuts within reach
23	Walnut	Juglans sp.	5.0	13	36°	Good condition	1. Head back tallest branches to keep walnuts within reach
24	Apple	Malus sp.	3 3 2.5 2.5	11	ND°	Good condition in view of the difficult site for apple trees. It appears that two trees were planted here. One tree has three trunks (3", 3", 2.5") while the other has remained a single trunk.	1. Light pruning to maintain height below 12' and even the distribution of branches around the trees 2. Remove the two trunks from the three trunked tree, leaving the

25	Common Fig	Ficus carica	5.5 4.5 4.5 4 4 4 3 3	13	40'	Good condition - sprawling tree with multiple trunks engulfed with vines. A portion of the canopy is shading the adjacent flower beds to the detriment of restoration of these beds.	3" diameter trunk which has the numbered tag attached. 1. Remove all trunks under 4.5" in diameter (at 3' above the ground) 2. Control resprouts 3. Prune back branches shading flower beds
26	Dragon Tree	Dracaena draco	36.9	12	ND	Poor condition - dying back at top, large basal trunk rot, tree pushing out wall	1. Remove and replant
27	Blue gum	Eucalyptus globulus	13 12 11 10	29	ND	Poor condition - base of tree buried in rubble from the tearing down of the adjacent apartment building. The actual diameter of this tree may be 30'. Rubble burial will lead to trunk rot. Tree is actively being used as a nest site for birds, possibly crows. Two nests were observed in the tree.	1. Remove rubble from around tree base 2. Prune out dead wood being careful not to disturb bird nests in the tree
28	Monterey Cypress	Cupressus macrocarpa	40.4	46	60	Fair condition - cracked branch on west side of canopy; tree does not target anything were it to fall. Debris collecting around base of tree	1. Light branch pruning to reduce wind resistance and reduce weight on branches 2. Clean up around base of tree
29	Monterey Cypress	Cupressus macrocarpa	42.1	35	62	Good condition - some dead branches	1. Prune dead branches and larger horizontal branches within 10' of the ground

<sup>1</sup> These trees all appear to have been planted at the same time. Probably when the drawbridge was replaced with the paved road into the sally port. I have not been able to discover that date, but a conservative estimate of the age of the largest trunks of these Australian Tea Trees could be put at between 75 and 85 years.

<sup>2</sup> Extrapolation of ring counts puts the origin of this tree at 93 years. However, this tree appears on photographs dated 1900-1903 (<http://www.cr.nps.gov/useum/exhibits/alca/exb/Military/HistoricP...>), but does not appear on photo dated "mid-1880s" (Martini, J. A. 2002. Alcatraz at War. San Francisco: Golden Gate National Park Association. P. 30)

<sup>3</sup> Extrapolation of ring counts puts the origin of this tree at 103 years. However, this tree appears to be 12 to 15' tall on photographs dated 1900-1903 (<http://www.cr.nps.gov/useum/exhibits/alca/exb/Military/HistoricP...>), but does not appear on photo dated "mid-1880s" (Martini, J. A. 2002. Alcatraz at War. San Francisco: Golden Gate National Park Association. P. 30).

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<sup>4</sup> This tree appears on photographs dated 1900-1903 ([http://www.cr.nps.gov/\\_useum/exhibits/alca/exb/Military/HistoricP...](http://www.cr.nps.gov/_useum/exhibits/alca/exb/Military/HistoricP...)), but does not appear on photo dated “mid-1880s” (Martini, J. A. 2002. Alcatraz at War. San Francisco: Golden Gate National Park Association. P. 30)

<sup>5</sup> These ring counts probably underestimate the ages of these trees by as much as 10 years. Walnuts are difficult to count because of the dark color of the heart wood. The location of these trees suggest they were part of the garden developed on the slope below the recreation yard developed by Elliot Michener in the early 1940s (Hart, J. et al. 1996. Gardens of Alcatraz. San Francisco: Golden Gate National Park Association. Pp. 35-36)

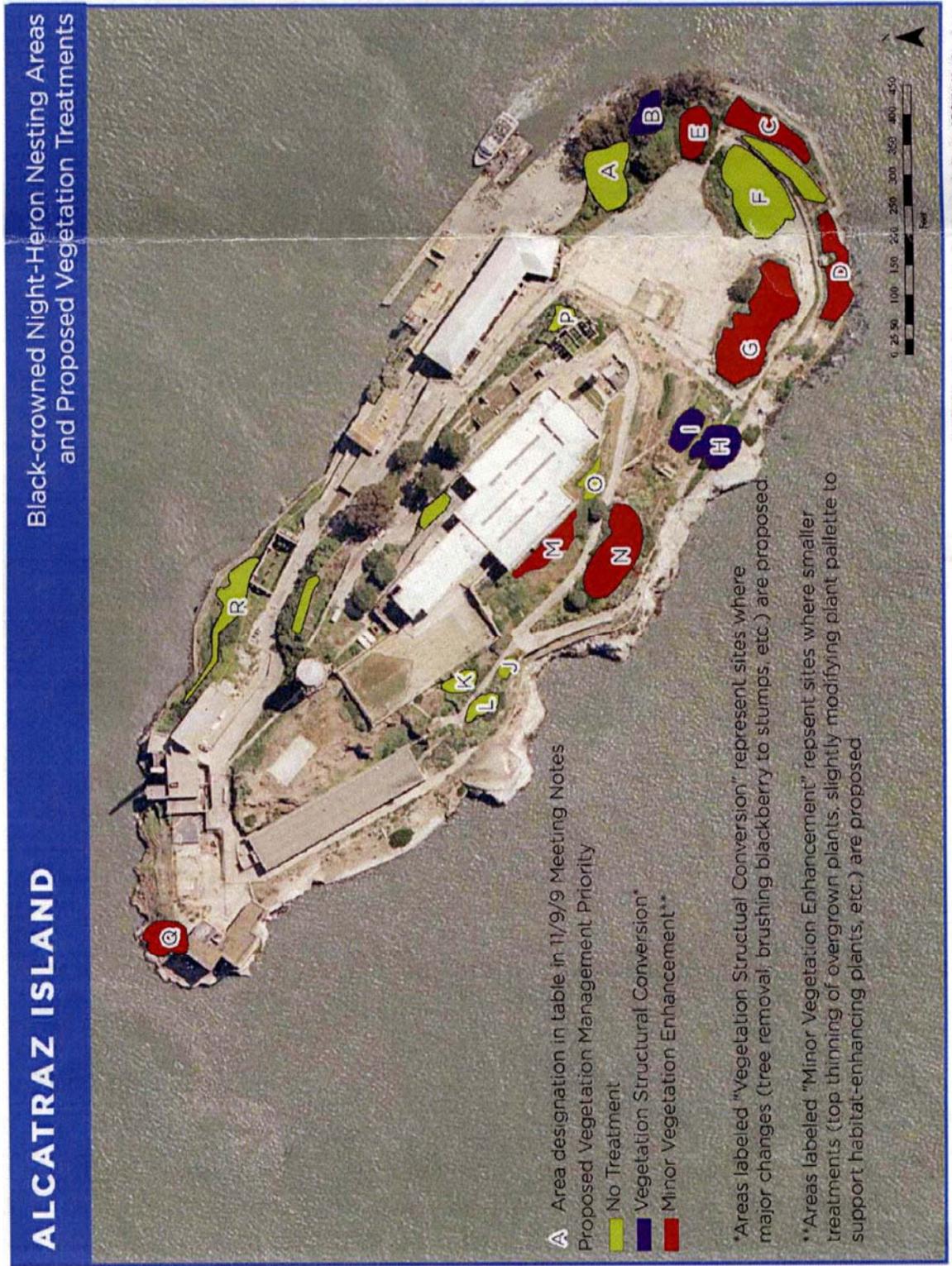
<sup>6</sup> These tree are too small to core for aging without doing serious damage to the trees. I expect they are of the same vintage as the nearby walnuts.

<sup>7</sup> Annual growth rings were poorly defined on this tree. Its location suggests it was part of the garden planted by Elliot Michener

**Appendix 5. 2010 Waterbird Nesting Areas and  
Proposed Vegetation Treatment**



# Appendix 5: 2010 Waterbird Nesting Areas and Proposed Vegetation Treatment





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## Appendix 6. Bibliography

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