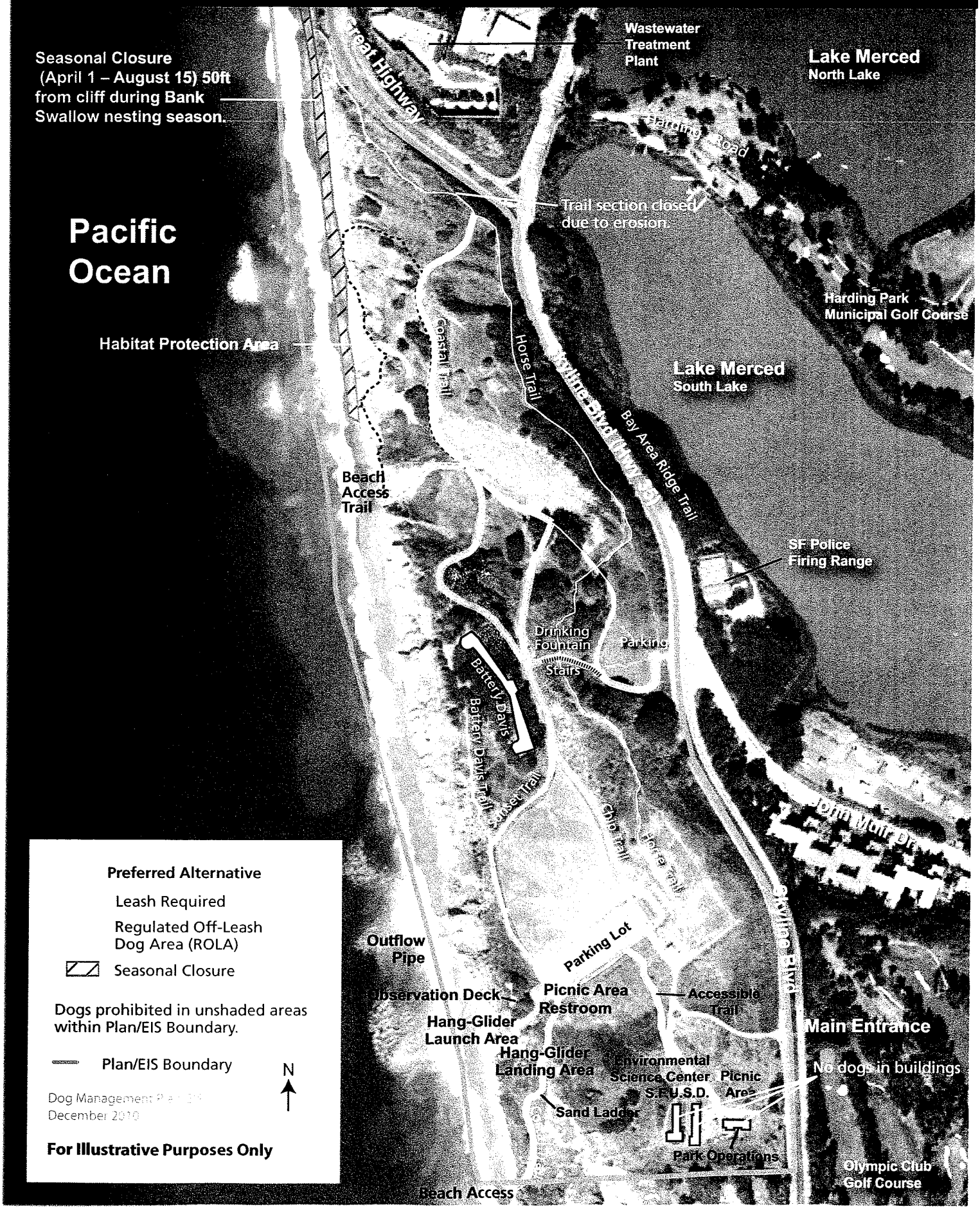
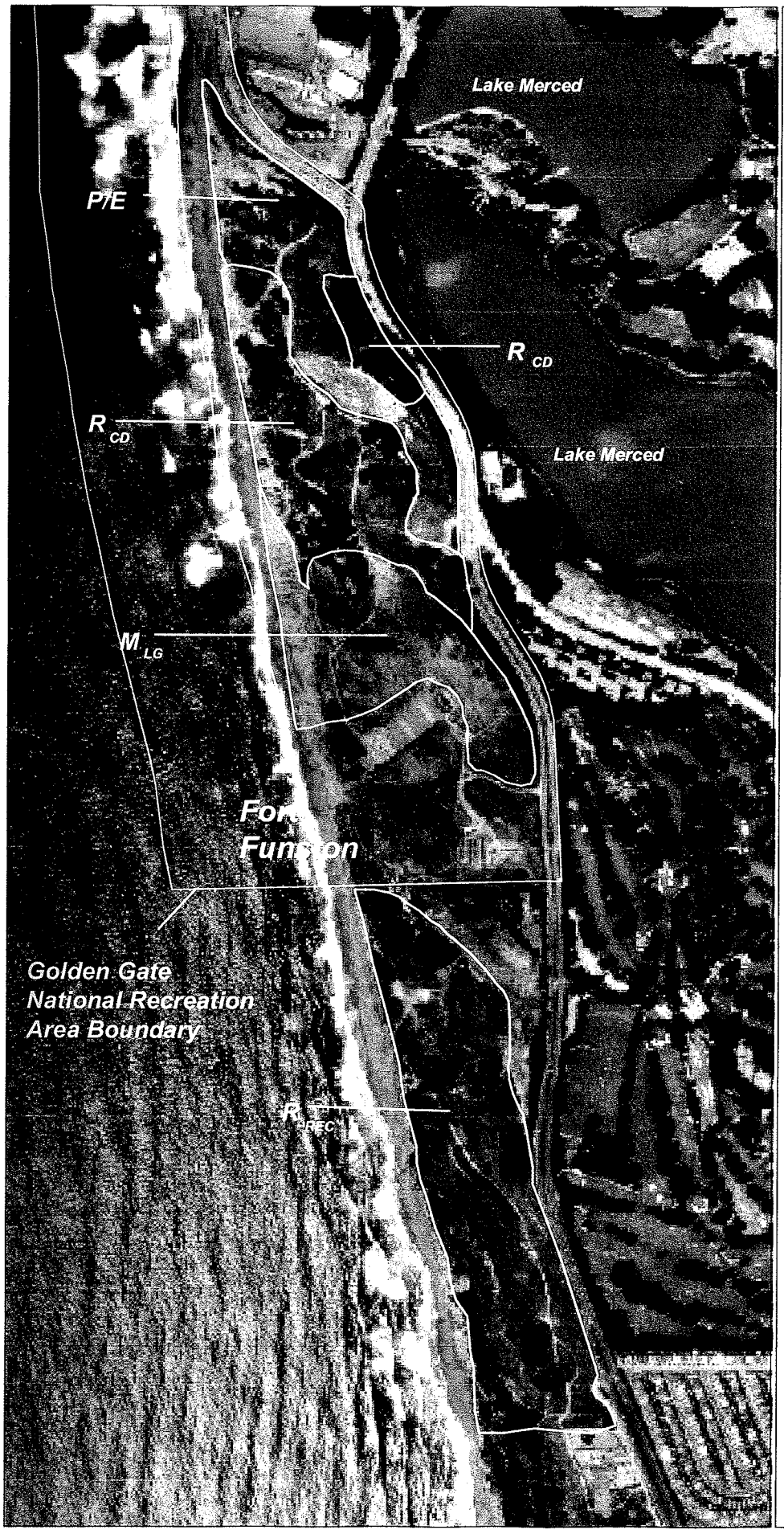
My Preferred Alternative

National Park Service
U.S. Department of the Interior

Golden Gate National Recreation Area

Map 16 Preferred Alternative: Fort Funston





Recovery Plan for Coastal Plants of the San Francisco Peninsula

Fort Funston and Vicinity

Figure 12: Southern Recovery Unit for San Francisco Lessingia (Lessingia germanorum) Fort Funston proposed reintroduction, restoration, and protected areas within Fort Funston (Golden Gate National Recreation Area) dunes, near historic Lake Merced Collection Locality.

M_{LG} - Manage existing habitats compatible with sustainable reestablished populations of *Lessingia germanorum*

P/E - Protect and enhance existing habitat

R_{CD} - Restore coastal dune habitat suitable for *Lessingia germanorum* restablish populations

R_{REC} - Rehabilitate degraded coastal bluff landslides for recreation-priority use to relieve intensive recreational pressures on Fort Funston dune habitats

Boundary of Designated Area

Fort Funston is the main component of the Southern Recovery Unit for San Francisco Lessingia. It is the southwestern tip of the San Francisco dune system, and overrides raised ancient coastal sand deposits, the Merced bluffs. This is a multiple use park, with heavy recreational use, especially near the trails close to the parking areas. San Francisco lessingia may be quite compatible with appropriate levels of disturbances and vegetation gaps that trampling pressures provide. To help distribute recreational uses with conservation of native habitat, the recovery plan proposes to rehabilitate an extensive area south of the National Park boundary, and dedicate it to recreation-priority uses. It also proposes a gradient of management within the National Park, ranging from no endangered species management, mixed recreation and experimental endangered plant habitat, and restored coastal dune habitat with priority for conservation of San Francisco lessingia and associated native species.

USFW 2003

MAP PROJECTION: Transverse Mercator, UTM Coordinate System, Zone 10, Datum NAD83

PHOTO SOURCE: Digital Orthophoto Quarter Quads (DOQQ), USGS Images, June and July 1993, One Meter Resolution.

GIS DATA: Digitized On-Screen with DOQQs as backdrops by USFWS, Sacramento Ecological Services Office, GIS Branch

U.S. FISH & WILDLIFE SERVICE

N W E S

0 0.09 0.18 Kilometers

1:3,132

dominated by annuals and short-lived perennials should be a minimum of 15 percent. Trampling impacts that cause partial devegetation of dunes, if rotated among areas to alternate between years of disturbance and years of protected revegetation, may be compatible with this criterion at this locality. This criterion should be achieved incrementally in phases within 10 years.

The approximately 4-hectare (10-acre) south end reserve would be less intensively managed or restored for San Francisco lessingia, and criteria would be accordingly more flexible. The 4-hectare (10-acre) reserve will be located within the southern portion of the Fort Funston Reserve. Vegetation dominated by iceplant, Monterey cypress (*Cupressus macrocarpa*), or other nonnative vegetation must not exceed 40 percent of the area. Cover of sparse, low, native dune vegetation structurally suitable for San Francisco lessingia must be at least 5 percent. Intensively trampled areas that effectively preclude establishment of San Francisco lessingia seedlings may not exceed 60 percent of the area.

(b) *Population and vegetation criteria.* The reintroduced Fort Funston population, derived from founders obtained from the Daly City population, must achieve a minimum size of approximately 500,000 plants within 10 years after founders are transplanted. The use of the Daly City seed source is based on genetic testing showing that population is genetically distinct from that of the Presidio. Population size may be expected to reach millions of plants temporarily in early phases of dune succession after restoration, but extremely large population size is not prescribed as a recovery criterion. The population must exhibit no progressive long-term (more than 3 consecutive years) declines, and a minimum annual population size of 10,000 plants the fifth year after reintroduction. Multiple new colonies must spontaneously establish outside sites of introduction (with no additional artificial seeding) within the complex within 10 years after implementation of dune restoration work. The population should at least initially be distributed in discrete or coalescing multiple colonies. Cover by nonnative woody vegetation within the reserve must be below 1 percent at any time. Cover of iceplant and European beachgrass by year 10 must be below 10 percent of the reserve area, and must decline progressively. Iceplant must be effectively eradicated from the reserve by year 20, and its density in adjacent buffer areas must be reduced to less than

iceplant seems to hold back the sand and prevents erosion ?!!

10 percent. Native dune scrub and grassland vegetation with ample open, partially and moderately disturbed patches should dominate this reserve area.

iii. Satellite Recovery Unit

The Satellite Recovery Unit consists of reserves at Sunset Heights and the Sutro Heights/Cliff House/Lands End area dune remnants. The specific size, number, and configuration of reserves needs to be determined on the basis of more detailed site-specific information than is currently available.

The exact location of restorable dune habitat areas, and their relationship to particular parcels and current ownership was not available during the development of the recovery plan. We will work to find opportunities where there is suitable habitat and willingness of owners to participate or willing sellers and willing buyers who are interested in restoring dune scrub habitat.

Preliminary criteria for this unit are as follows: cumulative population size among all of the remnant dune sites must reach 100,000 plants within 10 years after founders are introduced, with a minimum cumulative annual population size of 5,000 plants for at least 3 consecutive years. Population size criteria should be revised for the Satellite Recovery Unit when the carrying capacity and management constraints of these small sites are better understood through experience and adaptive management. Criteria for vegetation management at the southern reserve at Fort Funston apply to these sites, but management goals should strive to exceed criteria.

iv. Areas adjacent to the Presidio Recovery Unit to be evaluated. The Presidio Trust has proposed that restoration of dune scrub habitat to enlarge the Presidio Recovery Unit following the removal of West Washington Housing over the next 30 years may increase the likelihood of recovery for San Francisco lessingia. The West Washington Housing area is located adjacent to both the Wherry Housing and Rob Hill Reserves. The suitability of the site for addition to the Presidio Recovery Unit and potential to expand the currently proposed reserves should be evaluated and incorporated into the recovery plan, if appropriate. We will evaluate the addition of the West Washington Housing area during implementation of the recovery plan to determine whether it will

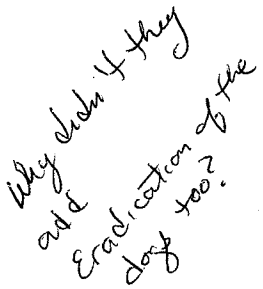
areas supporting shifting populations within the species' narrow historic range. Recovery of Raven's manzanita will include, but will not be limited to, the original recovery strategy presented in the *Raven's Manzanita Recovery Plan* (U.S. Fish and Wildlife Service 1984). This strategy emphasized the stabilization of the single remaining genetic individual, which is necessary, but without further measures would result in a dead end to the species' evolution. This recovery plan seeks to re-establish multiple sexually reproducing populations of Raven's manzanita in association with historically associated species of local serpentine outcrops.

We recognize that the implementation of recovery plans is always affected by circumstances and new information. Furthermore, this recovery plan focuses on biological analysis; review of other aspects of implementing the recovery actions in this plan will be done as required by such laws as the National Environmental Policy Act and the National Historic Preservation Act. If requested funding is not approved, and other partnerships cannot be formed, the implementation schedule will have to be adjusted to the means available.

Specific actions needed include:

(1) Protect and restore a series of ecological urban wildland reserves.

(2) Promote population increases of target species within urban wildland reserves and reintroduce target species to restored habitat.



(3) Long-term removal (local eradication) or suppression of invasive, nonnative vegetation within and around all reserves and subsequent reestablishment of native communities compatible with endangered species within the ecological reserves.

Recovery actions will occur in three identified recovery units for San Francisco lessingia including: (1) the Presidio of San Francisco (National Park Service and Presidio Trust lands); (2) Fort Funston (National Park Service lands) and Hillside Park (City of Daly City); and (3) the satellite reserves, which are smaller urban park dune remnants (City of San Francisco and National Park Service lands).

Actions for Raven's manzanita will occur in serpentine bedrock and soil outcrops of the Presidio, mostly along bluffs of the north shore, and on hilltop bedrock outcrops at selected locations within San Francisco (city and some Federal lands).

Recovery Criteria:

San Francisco lessingia will be considered for downlisting to threatened status when interim recovery criteria are met and the Lobos Dunes unit has expanded to Battery Caulfield Road and upper Baker Beach. The species will be considered for delisting when long-term recovery criteria are met.

Interim Recovery Criteria

(1) Long-term expansion of existing populations and reduction of nonnative vegetation occurs in dune reserves in the Presidio Recovery Unit (Lobos Creek, Battery Caulfield, Wherry, Rob Hill, and Public Health Services Hospital sites). The populations in these reserves are expected to fluctuate but should not decline below 50,000, 1,000, 5,000, 5,000, and 5,000, respectively. Cover of nonnative vegetation in these reserves should be less than 5 percent, 20 percent, 5 percent, 20 percent, and 20 percent, respectively. Research and monitoring are expected to determine the most efficient methods for control of nonnative vegetation and may result in modification of these recovery criteria.

(2) The population of the Daly City reserve shows no net long-term decrease. Populations are expected to fluctuate but should not decline below 50,000 plants. Cover of nonnative vegetation should show no progressive increase over more than 2 years.

(3) Recreation management needs for maintenance of a dune scrub community in the Fort Funston Reserve are established through site-specific studies, and a reintroduced population has persisted over a full precipitation cycle. The population is expected to fluctuate but should achieve a minimum self-sustaining population size of approximately 500,000 plants within the first ten years after founders are transplanted.

(4) At least 1,000 seeds representing both the existing Presidio and Daly City populations are stored and maintained in qualified botanical gardens as insurance against extinction in the wild.

Long-term Recovery Criteria

All reserves must be protected in perpetuity with appropriate vegetation management.

(1) Expanded, restored reserves with natural vegetation and dune dynamics are established in the Presidio Recovery Unit. The area including Baker Beach dunes, Lobos Dunes and nearby conifer groves, Wherry Dunes and Housing sites, and the Battery Caulfield Road site must be restored to a contiguous dune field (approximately 44 hectares [110 acres]) with unobstructed wind fetch to the Golden Gate, locally steep dune slopes, and a natural successional mosaic of active and stabilizing dune blowouts (population at least 500,000 plants; nonnative vegetative cover must not exceed 5 percent during the first 10 years of restoration and must decline over the first 15 years). Dune habitat at the Rob Hill reserve area must increase to 2 hectares (5 acres) and the southwest slope of Rob Hill must be restored to dune scrub (population at least 100,000 plants; nonnative vegetative cover must not exceed 5 percent). At least 3 hectares (7 acres) of the Public Health Services Hospital dune area above the slope must be restored to native dune vegetation (population at least 50,000 plants; nonnative vegetative cover must not exceed 5 percent). Research and monitoring are expected to determine the most efficient methods for control of nonnative vegetation and may result in modification of these recovery criteria.

(2) At least 1.2 hectares (3 acres) of Daly City Reserve in the Southern Recovery Unit are cleared of nonnative vegetation and intensively managed (population at least 50,000 plants; no increases in nonnative vegetation).

(3) Dune restoration and vegetation management should be done on 30 hectares (75 acres) at Fort Funston Reserve in the Southern Recovery Unit

sufficient to establish ecosystem function and support a self-sustaining population of San Francisco lessingia. Site-specific studies of recreational use management compatible with maintenance of a dune scrub community must be completed to further define the restoration and management strategies. Buffers of landscape vegetation around all historic structures and buffer management needs will also need to be identified. A population should be reintroduced from the Daly City seed source (population at least 10,000 plants after 5 years; must reach 500,000 plants after 10 years; new colonies must spontaneously establish within 10 years). Nonnative woody vegetative cover must be below 1 percent; iceplant and European beachgrass cover must decline and be below 10 percent after 10 years. Research and monitoring are expected to determine the most efficient methods for control of nonnative vegetation and may result in modification of these recovery criteria.

(4) Populations must be introduced in the Satellite Recovery Unit (should reach 100,000 plants within 10 years, with minimum size of 5,000 plants). This criterion is preliminary subject to additional information. The locations of dune areas suitable for management within this Recovery Unit are scattered around the western half of San Francisco County. The specific size, number, and configuration of reserves needs to be determined on the basis of more detailed site-specific information.

Raven's manzanita will be considered for downlisting to threatened when interim recovery criteria are met, five spontaneously reproducing, ecologically, morphologically, and genetically variable populations are established in reserves in San Francisco outside the Presidio, two sexually reproduced generations are established within the Presidio, and net population size (net number of clones) and net individual mean (average) clone size increase at all sites over 30 years.

Interim Recovery Criteria

(1) The original site of the remnant clone and the sites of its daughter clones are maintained and protected in perpetuity. All of the clones in the wild must increase in size over a 10-year period, and the number of clones must increase in the same period.

(2) Cultivated populations of Raven's manzanita are perpetually maintained at two or more botanical gardens. Populations must include 50 daughter clones of the original Presidio plant, with an additional goal of 50 seedling-grown plants with at least two clonal replicates each.

(3) Five or more spontaneously reproducing new populations (comprising at least five daughter clones each) are established in reserves on bedrock outcrops in San Francisco outside the Presidio, preferably in proximity to historic localities. At least three reserves must be on serpentine substrates. New colonies must show net growth 5 years after transplanting with intensive maintenance and 5 years after cessation of maintenance.

(4) The taxonomic relationships and reproductive biology of Raven's manzanita are studied.

Estimated Costs of Recovery: Approximately **$23,432,500** (plus costs to be determined). Costs to be determined include: the costs of public outreach, the costs of implementing vegetation management plans, habitat acquisition for Raven's manzanita, and site preparation for Raven's manzanita.

Date of Recovery:
Raven's manzanita: If recovery criteria are met, downlisting to threatened could occur by 2030.
San Francisco lessingia: If recovery criteria are met, downlisting to threatened could occur by 2020, and delisting could occur by 2030.

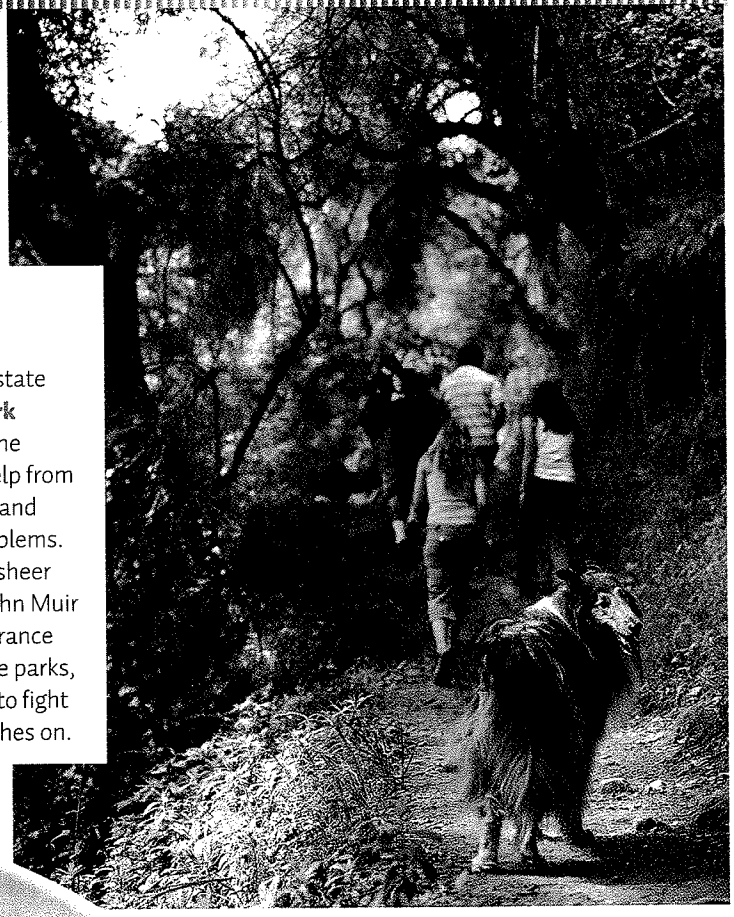
For 2 types of vegetation!! That money could and should be used to save some schools in the Bay Area they are a definite endangered species!!

Healthy Parks Healthy People US 2011

Cavallo Point - Sausalito, California

Monday, April 4th		
7:00-8:30 pm	Early Registration & Fireside Chat	Callippe Terrace
Tuesday, April 5th		
7:30 - 8:45am	Breakfast & Registration	Tidewater
9:00 - 9:20am	Opening Remarks: NPS Director Jon Jarvis	Mission Blue Chapel
9:20 - 9:45am	A Conversation with the Director Participants: Bill Jackson, Parks Victoria; Claire Haskell, UnitedHealth Group; Robin Schepper, Let's Move	Mission Blue Chapel
9:45 - 10:30am	Introductions	Mission Blue Chapel
10:30 - 11:00am	Break	Mission Blue Chapel
11:00am - 12:00pm	Exploring Connections	Mission Blue Chapel
12:15 - 1:30pm	Lunch and Presentation: Taking a Leap Fedele Bauccio, Bon Appetit Management Co.	Tidewater
1:30 - 2:30pm	Panel: Pilots & Partnerships Participants: Katie Adamson, YMCA; Kirsten Tobey, Revolution Foods; Stephen Lockhart, MD, Sutter Health	Tidewater
2:30 - 3:00pm	Break	Tidewater
3:00 - 4:00pm	Breakouts: Experts On Tap Roundtable discussions on the following topics: medical, active recreation, research, communications, food, ecosystem health, national plans & strategies, and emerging topics.	Tidewater
4:00 - 5:00pm	Breakout Reports	Tidewater
6:00 - 7:00pm	Dinner	Tidewater

7:15 - 9:00pm	Combined Reception with National Parks Institute Keynotes: NPS Director Jon Jarvis and Majora Carter, Majora Carter Group	Callippe
Wednesday April 6th		
7:00 - 7:30am	Sunrise Hike	Mission Blue Chapel
7:30 - 8:45am	Breakfast	Callippe
9:00 - 9:15am	Opening: Connecting Parks and People	Callippe
9:15 - 9:45am	SYP Presents Story of Parks and Health	Callippe
9:45 - 10:45am	Breakouts: Taking Action Open space forum to discuss potential projects and partnerships	Callippe
10:45 - 11:45am	Closing Conversation	Callippe
11:45am - 12:15pm	Closing Remarks from NPS Director Jon Jarvis	Callippe
12:15 - 1:00pm	Lunch & Farewell	Callippe
2:00 - 5:00pm	Intergovernmental Debrief	Tidewater
6:00 - 7:00pm	Intergovernmental Dinner	Tidewater



Park Rx

Imagine your health insurance springing for the gate fee at state and national parks, and you get the idea behind the new **Park Prescriptions** program *(parksconservancy.org)*. Launched at the Institute at the Golden Gate in Sausalito, California, with help from the National Park Service, it brings together parks, doctors, and insurance companies to tackle obesity and other health problems. Aside from the obvious benefits of exercising outdoors, the sheer awe factor of nature may actually reduce anxiety (clearly, John Muir was onto something). In California, SeeChange Health insurance company now reimburses patients for entry fees to 278 state parks, while New Mexico is building a system of **Prescription Trails** to fight rising diabetes rates *(prescriptiontrails.org)*. Let's hope it catches on.

SAVORY SPICE
Blend yogurt with a pinch or two *each* of toasted cumin, coriander, and cayenne, and a spoonful of currants.

DIP INTO SPRING

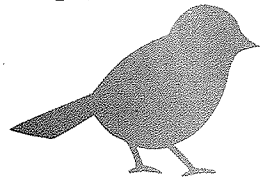
Whole-milk Greek yogurt dips make an easy, good-for-you alternative to the bowl of ranch.

FRESH & ZESTY
Stir chopped herbs like dill, chives, and parsley with lemon zest into yogurt.

GARDEN CLASSIC
Whirl yogurt with blanched chopped spinach, marinated artichoke hearts, and minced garlic.

Birding? There's an app for that

Forget the field guide. With iBird's app, newbie birders can narrow in on an avian ID simply by entering a bird's size and colors, its location, and the month. Bonus: The color illustrations would make Audubon proud. *$15; ibird explorer.com*



FROM TOP: LISA ROMEREIN/GETTY IMAGES; JEFFREY COLE/GETTY IMAGES (FOOD STYLIST: KEVIN CRAFTS)